



✓ **EXHIBIT "A"**

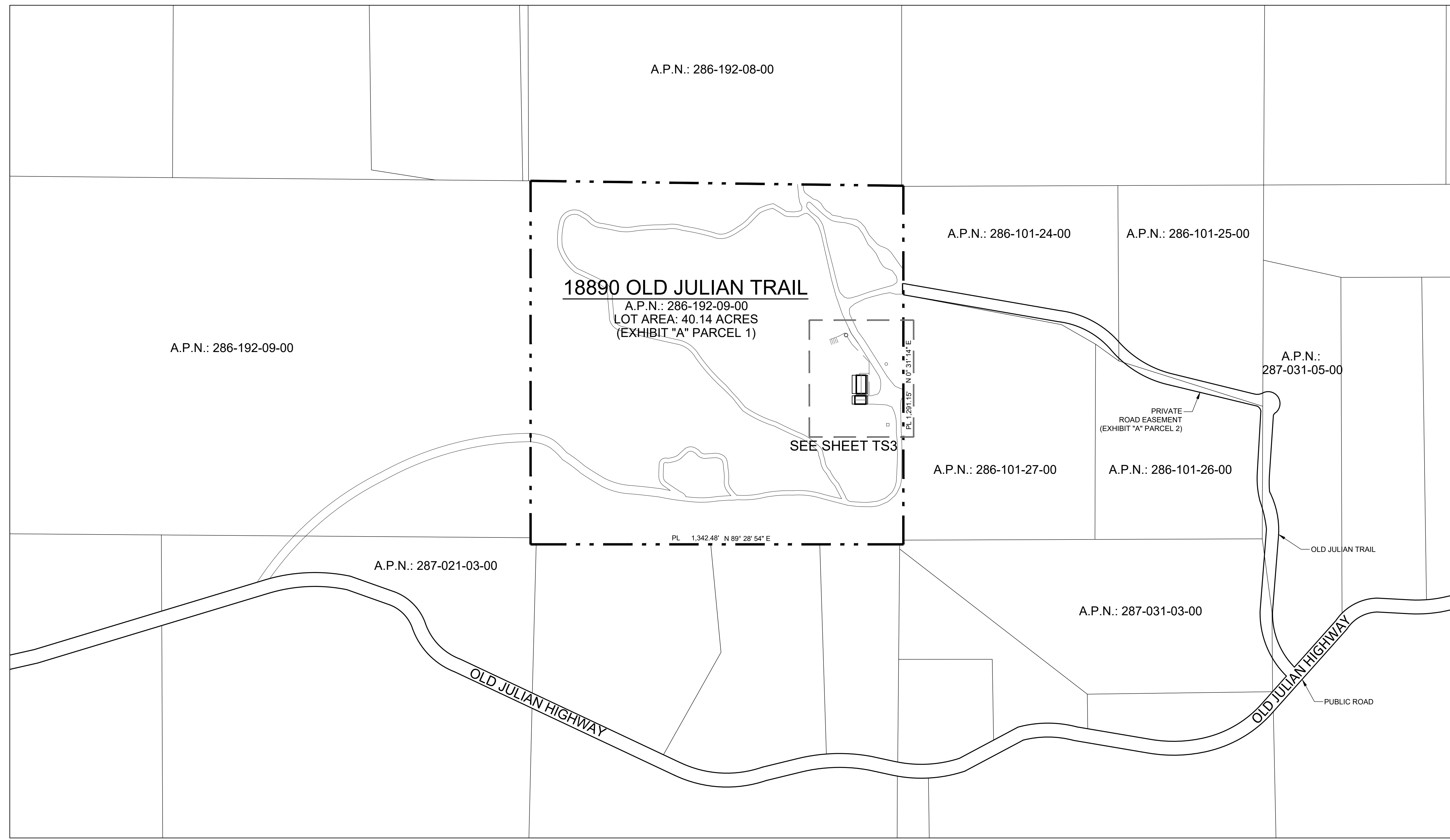
Legal Description

For APN/Parcel ID(s): 286-192-09-00

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF RAMONA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

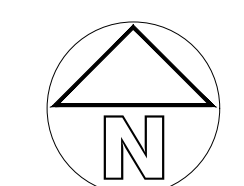
PARCEL 1:  
THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 8, TOWNSHIP 13 SOUTH, RANGE 2 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

PARCEL 2:  
AN EASEMENT AND RIGHT OF WAY FOR INGRESS AND EGRESS FOR ROAD PURPOSES THROUGH, OVER, ALONG AND ACROSS THE ROAD AS SAME EXISTED APRIL 20, 1956 OVER THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 8 AND THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 17, ALL IN TOWNSHIP 13 SOUTH, RANGE 2 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, FROM WHERE SAID ROAD INTERSECTS WITH THE COUNTY ROAD GRANTED TO THE COUNTY OF SAN DIEGO BY DEED RECORDED SEPTEMBER 20, 1912 IN BOOK 505, PAGE 120 OF DEEDS TO THE PROPERTY LINE OF THE LAND DESCRIBED IN PARCEL 1 ABOVE.



**SITE PLAN**

SCALE: 1" = 200'-0"

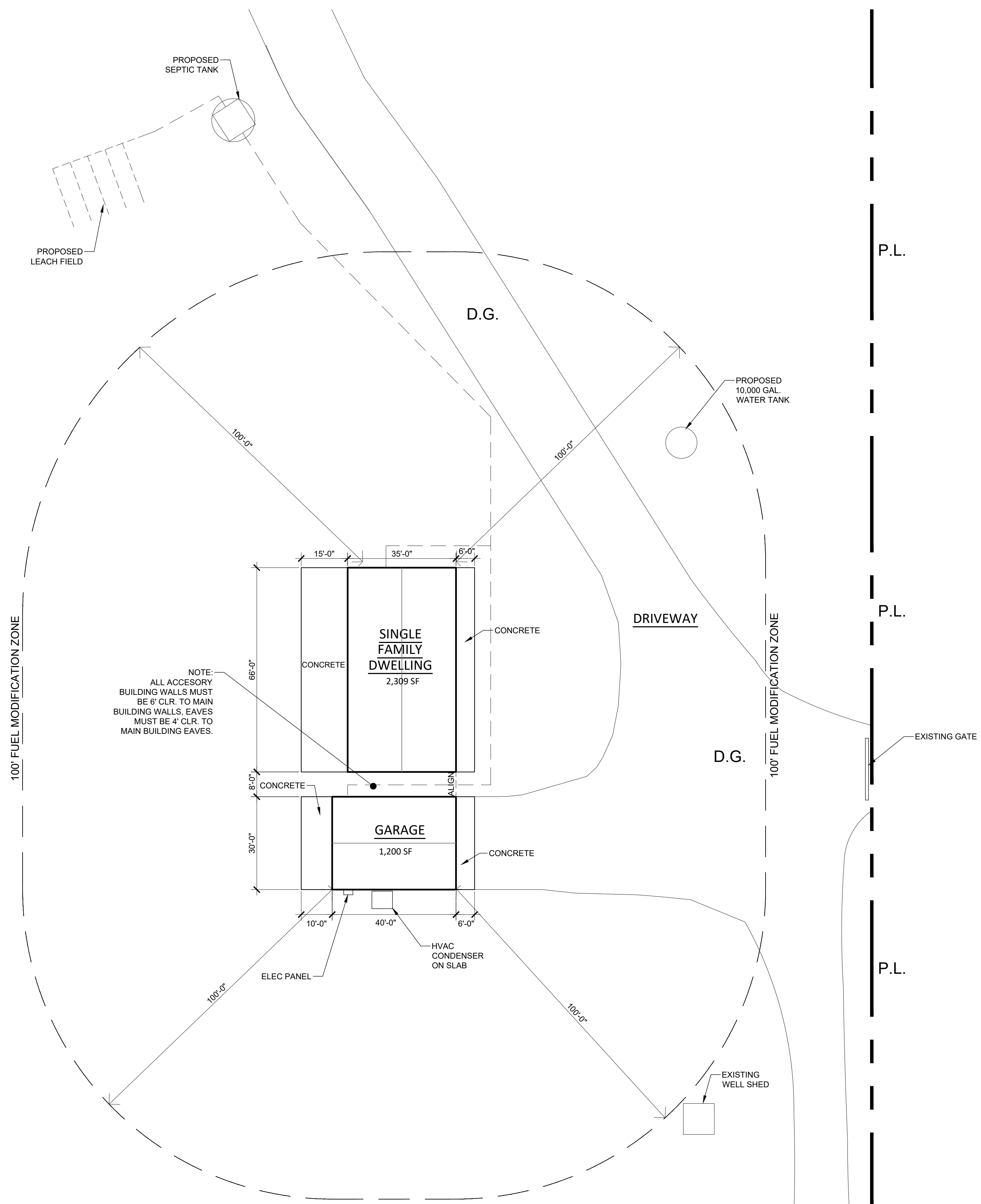


**WRIGHT VALLEY RANCH**

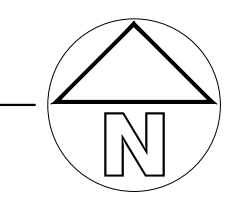
18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

**TS2**



ENLARGED SITE PLAN  
SCALE: 1" = 20'-0"



**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

TS3

**CONSTRUCTION STORMWATER BMPS**

BONDED FIBER MATRIX OR STABILIZED FIBER MATRIX	SS-3
FIBER ROLLS (STRAW WATTLES)	SC-5
STABILIZED CONSTRUCTION ENTRANCE	TC-1
MATERIAL DELIVERY & STORAGE	WM-1
SPILL PREVENTION & CONTROL	WM-4
CONCRETE WASTE MANAGEMENT	WM-8
SOLID WASTE MANAGEMENT	WM-5
SANITARY WASTE MANAGEMENT	WM-9

**GRADING**

AMOUNT CUT: 185 CY  
 AMOUNT FILL: 185 CY  
 AMOUNT EXPORT: 0 CY  
 AMOUNT IMPORT: 0 CY

TOTAL DISTURBANCE AREA: 11,019 SF

**IMPERVIOUS AREA**

EXISTING AMOUNT OF IMPERVIOUS AREA: 140 SF  
 PROPOSED AMOUNT OF REPLACED IMPERVIOUS AREA: 0 SF  
 PROPOSED AMOUNT OF REMOVED IMPERVIOUS AREA: NONE  
 PROPOSED AMOUNT OF IMPERVIOUS AREA: 5,376 SF  
 TOTAL IMPERVIOUS AREA: 5,516 SF  
 IMPERVIOUS % INCREASE: 0.307%

THE PROJECT PROPOSED TO EXPORT 0 CY OF MATERIAL FROM THIS SITE. ALL EXPORT MATERIAL SHALL BE DISCHARGED TO A LEGAL DISPOSAL SITE. THE APPROVAL OF THIS PROJECT DOES NOT ALLOW PROCESSING AND SALE OF THE MATERIAL, ALL SUCH ACTIVITIES REQUIRE A SEPARATE CONDITIONAL USE PERMIT.

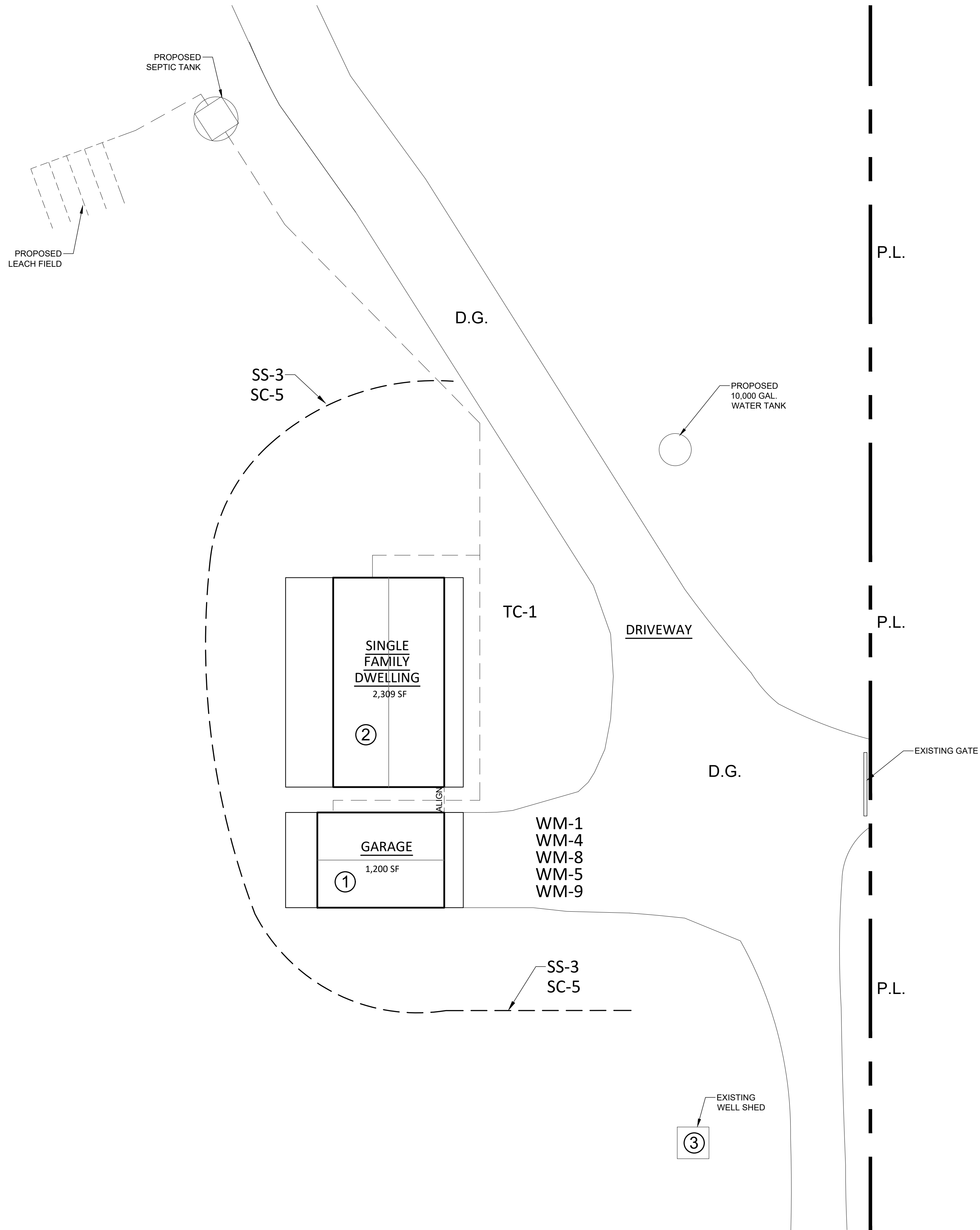
NOTE:  
 NO WORK IS PROPOSED WITHIN A PUBLIC EASEMENT.

STORMWATER FROM PROPOSED DOWNSPOUTS AND IMPERVIOUS AREAS SHALL BE ROUTED TO WITHER LANDSCAPE AREAS OR PLANTER BOXES PRIOR TO REACHING THE PUBLIC DRAIN SYSTEM

**CONSTRUCTED IMPERVIOUS SURFACES**

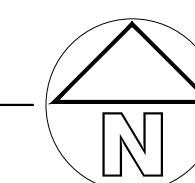
ID	ITEM	NEW OR REPLACED	EXISTING
①	GARAGE	1,680 SF	0 SF
②	SFD	3,696 SF	0 SF
③	WELL SHED	0 SF	140 SF
TOTAL =		5,376 SF	140 SF
TOTAL =		5,516 SF	

IMPERVIOUS: 0.315% INCREASED: 0.307%



**BMP PLAN**

SCALE: 1" = 20'-0"



**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
 Ramona, CA 92065

DATE	DESCRIPTION

**BMP**

A. General

Applicable codes. All projects will comply with the following building codes and associated County of San Diego amendment.
2022 California Building Code (CBC) and/or California Residential Code (CRC)
2022 California Green Building Standards Code (CalGreen)
2022 California Electrical Code (CEC)
2022 California Mechanical Code (CMC)
2022 California Plumbing Code (CPC)
2022 California Fire Code (CFC)
2022 California Building Energy Efficiency Standards (CEES)

B. Electrical, Plumbing, and Mechanical

- 1. Exterior lighting. All projects shall comply with the County of San Diego lighting ordinance.
2. GFCI outlets. Ground Fault Circuit Interrupter (GFCI) outlets are required in bathrooms, at kitchen countertops, at laundry and wet bar sinks, in garages, in crawlspaces, in unfinished basements, and outdoors. (CEC 210.8)
3. AFCI outlets. Electrical circuits in bedrooms, living rooms, dining rooms, dens, closets, hallways, or similar rooms must be protected by Arc Fault Circuit Interrupters (AFCI). (CEC 210.12)
4. Luminaire relocations. Installed luminaires shall meet the efficacy and fixture requirements of CEES 150.0(K).
5. Smoke detectors in building remodels. Smoke detectors are required in each existing sleeping room, outside each separate sleeping area in the immediate vicinity of sleeping rooms, and on each story of a dwelling including basements. Battery-operated detectors are acceptable in existing areas with no construction taking place in an alterations not resulting in removal of interior wall or ceiling finishes and without access via an attic, crawl space, or basement. (CRC R314.3)
6. Carbon monoxide detectors in building remodels. Carbon monoxide detectors are required outside each separate sleeping area in the immediate vicinity of sleeping rooms and on each story of a dwelling including basements. Battery-operated detectors are acceptable in existing areas with no construction taking place in an alterations not resulting in removal of interior wall or ceiling finishes and without access via an attic, crawl space, or basement. (CRC R315.3)
7. Water heater seismic strapping. Minimum two 3/4-inch-by-24-gauge straps required around water heaters, with 1/4-inch-by-3-inch lag bolts attached directly to framing. Straps shall be at points within upper third and lower third of water heater vertical dimension. Lower connection shall occur minimum 4 inches above controls. (CPC 507.13 and CMC 305.1)
8. Gas appliances in garages. Water heaters and heating/cooling equipment capable of igniting flammable vapors shall be placed on minimum 18-inch-high platform unless listing report number provided showing ignition-resistant appliance. (CPC 507.13 and CMC 305.1)
9. Impact protection of appliances. Water heaters and heating/cooling equipment subject to vehicular impact shall be protected by bolsters or an equivalent measure. (CPC 507.13, I and CMC 305.11)
10. Water closet clearance. Minimum 30-inch-wide by 24-inch-deep clearance required at front of water closets. (CPC 402.5)
11. Shower size. Shower compartments shall have minimum area of 102½ square inches and be able to encompass a 30-inch-diameter circle. Shower doors shall have a minimum 22-inch unobstructed width. (CPC 408.5 and CPC 408.6)
12. Fireplace appliances. Fireplaces with gas appliances are required to have a flame damper permanently fixed in the open position and fireplaces with LPG appliances are to have no "pit" or "stump" configurations. (CMC 303.7.1)
13. Chimney clearance. Minimum 2-foot chimney clearance required above building within 10-foot horizontally of chimney. The chimney shall extend minimum 3 feet above highest point where chimney passes through roof. (CRC R1003.8)

C. Mechanical Ventilation and Indoor Air Quality (ASHRAE 62.2-2010)

- 1. Transfer air. Ventilation air shall be provided directly from the outdoors and no air transfer air from adjacent dwelling units or other spaces, such as garages, unconditioned crawlspaces, or unconditioned attics. (CEES 150.0(O))
2. Instructions and labeling. Ventilation system controls shall be labeled, and the homeowner shall be provided with instructions on how to operate the system. (CEES 150.0(O))
3. Combustion and solid-fuel burning appliances. Combustion appliances shall be properly vented and air systems shall be designed to prevent back drafting. (CEES 150.0(O))
4. Garages. The wall and openings between occupiable spaces and the garage shall be sealed. HVAC systems that include air handlers or return ducts located in garages shall have total air leakage of no more than 5% of total fan flow when measured at 0.1 in. w.g. using California Title 24 or equivalents. (CEES 150.0(O))
5. Minimum filtration. Mechanical systems supplying air to occupiable space through ductwork shall be provided with a filter having a minimum efficiency of MERV 6 or better. (CEES 150.0(O))
6. Air inlets. Air inlets (not exhaust) shall be located away from known contaminants. (CEES 150.0(O))
7. Air moving equipment. Air moving equipment used to meet either the whole-building ventilation requirement or the local ventilation exhaust requirement shall be rated in terms of airflow and sound. (CEES 150.0(O))
a. All continuously operated fans shall be rated at a maximum of 1.0 sone.
b. Intermittently operated whole-building ventilation fans shall be rated at a maximum of 1.0 sone.
c. Intermittently operated local exhaust fans shall be rated at maximum of 3.0 sone.
8. Remotely located air-moving equipment (mounted outside of habitable spaces) need not meet sound requirements if at least 4 feet of ductwork between fan and intake grill.

D. Foundation and Underfloor

- 1. Foundation reinforcement. Continuous footings and stem walls shall be provided with a minimum two longitudinal No. 4 bars, one at the top and one at the bottom of the footing. (CRC R403.1.3.3)
2. Shear wall foundation support. Shear walls shall be supported by continuous foundations. (CRC 403.1.2)
3. Concrete slabs-on-grade. Slabs-on-grade shall be minimum 3-1/2-inches thick. (CRC R506.1)
4. Vapor retarder. A 10-mil polyethylene or approved vapor retarder with joints lapped minimum 18 inches shall be placed between a concrete slab-on-grade and the base course or subgrade. (CRC 506.2.3)
5. Anchor bolts and sills. Foundation plates or sills shall be bolted or anchored to the foundation or foundation wall per the following (CRC R403.1.6 and CRC R602.11.1):
a. Minimum 1/2-inch-diameter steel bolts
b. Bolts embedded at least 7 inches into concrete or masonry
c. Bolts spaced maximum 6 feet on center
d. Minimum two bolts per plate/sill with one bolt located maximum 12 inches and minimum 7 bolt diameters from each end of each sill plate/plate
e. Minimum 3-inch by 3-inch by 0.299-inch-thick plate washer between sill and nut on each bolt
6. Hold-downs. All hold-downs must be tied in place prior to foundation inspection.
7. Protection of wood against decay. Naturally durable or preservative-treated wood shall be provided in the following locations (CRC R317.1):
a. All wood in contact with ground, embedded in concrete in direct contact with ground, or embedded in concrete exposed to weather
b. Wood joists within 18 inches and wood girders within 12 inches of the exposed ground in crawl spaces shall be of naturally durable or preservative-treated wood
c. Wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches from exposed earth shall be of naturally durable or preservative-treated wood
8. Wood framing, sheathing, and siding on the exterior of the building and having clearance less than 6 inches from the exposed ground or less than 2 inches vertically from concrete steps, porch slabs, patio slabs, and similar horizontal surface exposed to weather
9. Sills and sleepers on concrete or masonry slab in direct contact with ground unless separated from such slab by impervious moisture barrier
10. Ends of wood girders entering masonry or concrete walls with clearances less than 1/2 inch on legs, sides, and ends
11. Wood structural members supporting moisture-permeable floors or roofs exposed to weather, such as concrete or masonry slabs, unless separated from floors or roofs by an impervious moisture barrier

- 1. Underfloor ventilation. Underfloor areas shall have ventilation openings through foundation walls or exterior walls, with minimum net area of ventilation openings of 1 square foot for each 150 square feet of underfloor area. On such ventilating opening shall be within 3 feet of each corner of the building. (CRC R404.4)
2. Underfloor access. Underfloor areas shall be provided with a minimum 18-inch by 24-inch access opening. (CRC R408.4)
3. Roofing member lateral support. Roof framing members and ceiling joists with a nominal depth-to-thickness ratio exceeding 5:1 shall be provided with lateral support at points of bearing or concrete. (CRC R602.6)
4. Rafter-to-rafter connections. Ceiling joists and rafters shall be nailed to each other per CRC Table R602.5.1(9), and the rafter shall be nailed to the wall top plate per CRC Table R602.5.1(9) where they meet over interior partitions and are nailed to adjacent rafters to provide a continuous tie across the building when such joists are parallel to rafters. Where ceiling joists are connected to the rafters at the wall top plate, joists connected higher in the attic shall be installed as rafter ties, or rafter ties shall be installed to provide a continuous tie. Where ceiling joists are not parallel to rafters, rafter ties shall be installed per the following: Rafter ties shall be 1/2-inch nominal, installed per CRC Table R602.5.1(9), or connectors of equivalent capacity shall be provided. Where ceiling joists or rafters ties are not provided, the ridge formed by these rafters shall be supported by a wall or engineer-designed girder. (CRC R602.3.1)
5. Ceiling joists lapped. Ends of ceiling joists shall be lapped minimum 3 inches or bolted overbearing partitions or beams and toenailed to the bearing element. Where ceiling joists provide resistance to rafter thrust, lapped joists shall be nailed together per CRC Table R602.5.1(1) and bolted joists shall be tied together in a manner to resist such thrust. (CRC R602.3.2)
6. Collar ties. Collar ties or ridge straps to resist wind uplift shall be connected in the upper third of the attic space. Collar ties shall be a minimum 1 inch by 4 inches nominal and spaced at maximum 4 feet on center. (CRC R602.3.1)
7. Purlins. Purlins installed to reduce the span of rafters shall be sized not less than the required size of the rafters they support. Purlins shall be continuous and shall be supported by 2-inch-by-4-inch nominal braces installed to bearing walls at a minimum 45-degree angle from horizontal. The braces shall be spaced maximum 4 feet on center with a maximum 8-foot unbraced length. (CRC R602.5.1)
8. Roofing member bearing. The ends of each rafter or ceiling joist shall have not less than 1-1/2 inches of bearing on wood or metal and not less than 3 inches of bearing on masonry or concrete. (CRC R602.6)
9. Roofing member lateral support. Roof framing members and ceiling joists with a nominal depth-to-thickness ratio exceeding 5:1 shall be provided with lateral support at points of bearing or concrete. (CRC R602.6)
10. Roofing member bridging. Rafters and ceiling joists with a nominal depth-to-thickness ratio exceeding 8:1 shall be supported laterally by solid blocking, diagonal bracing (wood or metal), or a continuous 1-inch-by-3-inch wood strip nailed across the rafters or ceiling joists at maximum 8-foot intervals. (CRC R602.6.1)

E. Wood Framing

- 1. Fastener requirements. The number, size, and spacing of fasteners connecting wood members/elements shall not be less than that set forth in CRC Table R602.3.1(1), (CRC R502.9, CRC R602.3, and CRC R602.2)
2. Stud size, height, and spacing. The size, height, and spacing of studs shall be in accordance with CRC Table R602.3(5), (CRC R602.3.1)

E. Wood Framing (Continued)

- 3. Sill plate. Studs shall have full bearing on nominal 2-inch-thick or larger sill plate with wall at least equal to stud width. (CRC R602.3.4)
4. Bearing studs. Where joists, trusses, or rafters are spaced more than 16 inches on center and the bearing studs below are spaced 24 inches on center, such members shall bear within 5 inches of the studs beneath. (CRC R602.3.3)
5. Drilling and notching of studs. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25% of its width. Studs in nonbearing partitions may be notched to a depth not exceeding 40% of a single stud width. Any stud may be bored or drilled, provided the diameter of the resulting hole is no more than 60% of the stud width, the edge of the hole is no more than 5/8 inch to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior wall or bearing partition shall be drilled up 40% and up to 60% shall also be doubled with not more than two successive studs bored. (CRC R602.6)
6. Top plate. Wood stud walls shall be capped with a double top plate installed to provide overlapping at corners and at intersections with other partitions. End joints in double top plates shall be offset at least 24 inches. Joints in plates need not occur over studs. Plates shall be minimum nominal 2 inches thick and have width at least equal to width of studs. (CRC R602.3.2)
7. Top plate splices. Top plate lap splices shall be face-nailed with minimum 8 16d nails on each side of splice. (CRC R602.10.8.1)
8. Drilling and notching of top plate. When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling, or notching of the top plate by more than 50% of its width, a galvanized metal tie not less than 0.054-inch-thick and 1-1/2-inches wide shall be fastened across and to the plate at each side of the opening with not less than 10d nails having a minimum depth of 1-1/2 inches at each side or equivalent. The metal tie must extend minimum 6 inches past the opening. (CRC R602.6.1)
9. Cripple walls. Foundation cripple walls shall be framed of studs not less in size than the stud above. Cripple walls more than 4 feet in height shall have studs sized as required for an additional story. Cripple walls with stud height less than 14 inches shall be sheathed on at least one side with a wood structural panel fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. Cripple walls shall be supported on continuous foundations. (CRC R602.9)
10. Wall bracing. Buildings shall be braced in accordance with the methods allowed per CRC R602.10.2, CRC R602.10.4, and/or CRC R602.10.5.

F. Wood Framing (Continued)

- 11. Braced wall line spacing. Spacing between braced wall lines shall not exceed 20 feet or alternate provisions of CRC R602.10.1, 3.
12. Shear wall cumulative length. The cumulative length of shear walls within each braced wall line shall meet the provisions of CRC Table R602.10.3(1) for wind loads and CRC Table R602.10.3(2) for seismic loads. (CRC R602.10.1, 1)
13. Shear wall spacing. Shear walls shall be located not more than 25 feet on center. (CRC R602.10.2.2)
14. Shear wall offset. Shear walls may be offset out-of-plan not more than 4 feet from the designated braced wall line and not more than 8 feet from any other offset wall considered part of the same braced wall line. (CRC R602.10.1, 2)
15. Shear wall location. Shear walls shall be located at the ends of each braced wall line or meet at least one side with a wood structural panel fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. Cripple walls shall be supported on continuous foundations. (CRC R602.9)
16. Individual shear wall length. Shear walls shall meet minimum length requirements of CRC R602.10.6.5.1.
17. Cripple wall bracing. Cripple walls shall be braced per CRC R602.10.11.
18. Shear wall and diaphragm nailing. All shear walls, roof diaphragms, and floor diaphragms shall be nailed to supporting construction per CRC Table R602.3(1), (CRC R604.3)
19. Shear wall joints. All vertical joints in shear wall sheathing shall occur over, and be fastened to, common studs. Horizontal joints in shear walls shall occur over, and be fastened to, minimum 1-1/2-inch-thick blocking. (CRC R602.10.10)
20. Framing over openings. Headers, double joists, or trusses of adequate size to transfer loads to vertical members shall be provided over window and door openings in load-bearing walls and partitions. (CRC R304.3.2)
21. Joists under bearing partitions. Joists under parallel bearing partitions shall be of adequate size to support the load. Double joists used to support the load shall be connected to permit the installation of piping or vents shall be full-depth solid-blocked with minimum 2-inch nominal lumber spaced at maximum 4 feet on center. Bearing partitions perpendicular to joists shall not be fastened from supporting girders, walls, or partitions more than the joist depth unless such joists are of sufficient size to carry the additional load. (CRC R502.4)
22. Joists above or below shear walls. Where joists are perpendicular to a shear wall above or below, a rim joist, band joint, or blocking shall be provided along the entire length of the shear wall. Where joists are parallel to a shear wall above or below, a rim joist, end joint, or other parallel framing shall be provided above and/or below the shear wall. Where a parallel framing member cannot be located directly above and/or below the shear wall, full-depth blocking at 16-inch spacing shall be provided between the parallel framing members to each side of the shear wall. (CRC R602.10.8)
23. Floor member bearing. The ends of each floor joist, beam, or girder shall have minimum 1-1/2 inches of bearing on wood or metal and minimum 3 inches of bearing on masonry or concrete except where supported on a 1-inch-by-4-inch ribbon strip and nailed to the adjoining stud or by the use of approved joist hangers. (CRC R502.2)
24. Floor joist. Floor joists facing opposite sides over a bearing support shall lap minimum 3 inches and shall be nailed together at minimum 3 10d face nails. A wood or metal splice with strength equal to or greater than that provided by the nail is permitted. (CRC R502.6.1)
25. Floor joist-to-girder support. Floor joists framing into the side of a wood girder shall be supported by approved framing anchors or on ledger strips minimum nominal 2 inches by 2 inches. (CRC R502.6.2)
26. Floor joist lateral restraint. Floor joists shall be supported laterally at ends and each intermediate support by minimum 2-inch full-depth blocking, by attachment to full-depth header, band joint, or rim joist, to an adjoining stud, or shall be otherwise provided with lateral support to prevent rotation. (CRC R502.7)
27. Floor joist bridging. Floor joists exceeding nominal 2 inches by 12 inches shall be supported laterally by solid blocking, diagonal bridging (wood or metal), or a continuous 1-inch-by-3-inch strip nailed across the bottom of joists perpendicular to joists at maximum 8-foot intervals. (CRC R502.7.1)
28. Framing of floor openings. Openings in floor framing shall be framed with a header and trimmer joists. When the header joist span does not exceed 4 feet, the header joist may be a single member the same size as the floor joist. Single trimmer joists may be used to carry a single header joist located within 3 feet of the trimmer joist bearing. When the header joist span exceeds 4 feet, the trimmer joist and header joist shall be doubled and of sufficient cross section to support the floor joists framing into the header. Approved hangers shall be used for the header-joist-to-trimmer-joist connections when the header joist span exceeds 6 feet. Tail joists over 12 feet long shall be supported at the header by framing anchors or on ledger strips minimum 2 inches by 2 inches. (CRC R502.10)
29. Girders. Girders for single-story construction or girders supporting loads from a single floor shall not be less than 4 inches by 6 inches for spans 6 feet or less, provided that girders are spaced not more than 8 feet on center. Other girders shall be designed to support the loads specified in the CBC. Girder end joints shall occur over supports. When a girder is spliced over a support, an adequate tie shall be provided. The ends of beams or girders supported on masonry or concrete shall not have less than 3 inches of bearing. (CBC R308.7)
30. Ridges, hips, and valleys. Rafters shall be framed to a ridge board or to each other with a gusset plate as a tie. Ridge boards shall be minimum 1-inch nominal thickness and not less in depth than the cut end of the rafter. At all valley and hips, there shall be a valley or hip rafter not less than 2-inch nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the support load at that point. Where the roof pitch is less than 3:12 slope (25% gradient), structural members that support rafters and ceiling joists, such as ridges, hips, and valleys, shall be designed as beams. (CRC R602.3)
31. Ceiling joist and rafter connections. Ceiling joists and rafters shall be nailed to each other per CRC Table R602.5.1(9), and the rafter shall be nailed to the wall top plate per CRC Table R602.5.1(9) where they meet over interior partitions and are nailed to adjacent rafters to provide a continuous tie across the building when such joists are parallel to rafters. Where ceiling joists are connected to the rafters at the wall top plate, joists connected higher in the attic shall be installed as rafter ties, or rafter ties shall be installed to provide a continuous tie. Where ceiling joists are not parallel to rafters, rafter ties shall be installed per the following: Rafter ties shall be 1/2-inch nominal, installed per CRC Table R602.5.1(9), or connectors of equivalent capacity shall be provided. Where ceiling joists or rafters ties are not provided, the ridge formed by these rafters shall be supported by a wall or engineer-designed girder. (CRC R602.3.1)
32. Ceiling joists lapped. Ends of ceiling joists shall be lapped minimum 3 inches or bolted overbearing partitions or beams and toenailed to the bearing element. Where ceiling joists provide resistance to rafter thrust, lapped joists shall be nailed together per CRC Table R602.5.1(1) and bolted joists shall be tied together in a manner to resist such thrust. (CRC R602.3.2)
33. Collar ties. Collar ties or ridge straps to resist wind uplift shall be connected in the upper third of the attic space. Collar ties shall be a minimum 1 inch by 4 inches nominal and spaced at maximum 4 feet on center. (CRC R602.3.1)
34. Purlins. Purlins installed to reduce the span of rafters shall be sized not less than the required size of the rafters they support. Purlins shall be continuous and shall be supported by 2-inch-by-4-inch nominal braces installed to bearing walls at a minimum 45-degree angle from horizontal. The braces shall be spaced maximum 4 feet on center with a maximum 8-foot unbraced length. (CRC R602.5.1)
35. Roofing member bearing. The ends of each rafter or ceiling joist shall have not less than 1-1/2 inches of bearing on wood or metal and not less than 3 inches of bearing on masonry or concrete. (CRC R602.6)
36. Roofing member lateral support. Roof framing members and ceiling joists with a nominal depth-to-thickness ratio exceeding 5:1 shall be provided with lateral support at points of bearing or concrete. (CRC R602.6)
37. Roofing member bridging. Rafters and ceiling joists with a nominal depth-to-thickness ratio exceeding 8:1 shall be supported laterally by solid blocking, diagonal bracing (wood or metal), or a continuous 1-inch-by-3-inch wood strip nailed across the rafters or ceiling joists at maximum 8-foot intervals. (CRC R602.6.1)

E. Wood Framing (Continued)

- 38. Framing of roofceiling openings. Openings in roof and ceiling framing shall be framed with a header and trimmer joists. When the header joist span does not exceed 4 feet, the header joist may be a single member the same size as the ceiling joist or rafter. Single trimmer joists may be used to carry a single header joist located within 3 feet of the trimmer joist bearing. When the header joist span exceeds 4 feet, the trimmer joist and header joist shall be doubled and of sufficient cross section to support the floor joists framing into the header. Approved hangers shall be used for the header-joist-to-trimmer-joist connections when the header joist span exceeds 6 feet. Tail joists over 12 feet long shall be supported at the header by framing anchors or on ledger strips minimum 2 inches by 2 inches. (CRC R502.10)
39. Roof framing above shear walls. Rafters or roof trusses shall be connected to top plates of shear walls with blocking between the rafters or trusses. (CRC R602.10.8)
40. Roof diaphragm under fill framing. Roof plywood shall be continuous under California fill framing.
41. Roof diaphragm at ridges. Minimum 2-inch nominal blocking required for roof diaphragm raftering at ridges.
42. Blocking of roof trusses. Minimum 2-inch nominal blocking required between trusses at ridge lines and at points of bracing at exterior walls. (CRC R406.1)
43. Truss clearance. Minimum 1/2-inch clearance required between top plates of interior non-bearing partitions and bottom chords of trusses.
44. Drilling, cutting, and notching of roof framing. Notches in solid lumber joists, rafters, blocking, and beams shall not exceed one-sixth the member depth, shall not be longer than one-sixth the member depth and shall not be cut at or closer than one-third the member depth. At member ends shall not exceed one-fourth the member depth. The tension side of members 4 inches or greater in nominal thickness shall not be notched except at member ends. The tension side of members 4 inches or greater in nominal thickness shall not be notched except at member ends. Holes shall not be closer than 2 inches to the top or bottom of the member or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2 inches to the notch. (CRC R502.8.1)
45. Exterior landings, decks, balconies, and stairs. Such elements shall be positively anchored to the primary structure to resist both wind and lateral forces and be designed to be self-supporting. Attachments shall not be accomplished by use of toenails or nails subject to withdrawal. (CRC R311.3)
46. Fireblocking. Fireblocking shall be provided in the following locations (CRC R302.11 and CRC R302.11.2):
a. In concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs, as follows:
I. Vertically at the ceiling and floor levels
II. Horizontally at intervals not exceeding 10 feet
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 the run
d. At openings around vents, pipes, ducts, cables and wires in ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion
e. At chimneys and fireplaces per Item E.49
f. Cornices of a two-family dwelling at the line of dwelling-unit separation
47. Fireblocking materials. Except as otherwise specified in Items E.48 and E.49, fireblocking shall consist of the following materials with the integrity maintained (CRC R302.11.1):
a. Two-inch nominal lumber
b. Two thicknesses of one-inch nominal lumber with broken joint splices
c. One thickness of 2/32-inch wood structural panel with joints backed by 2/32-inch wood structural panel
d. One thickness of 3/4-inch particleboard with joints backed by 3/4-inch particleboard
e. 1/2-inch gypsum board
f. 1/4-inch cement-mineral millboard
g. Batts or blankets of mineral or glass fiber of other approved materials installed in such a manner as to be securely retained in place. Batts or blankets of mineral or glass fiber or other approved non-rigid materials shall be permitted for compliance with the 10-foot horizontal fireblocking in walls constructed using parallel rows of studs or staggered studs. Unfaced fiberglass batt insulation used as fireblocking shall fill the entire cross-section of the wall cavity to a minimum height of 16 inches measured vertically. When piping, conduit, or similar obstructions are encountered, the insulation, landscape ordinance, or the current California Department of Water Resources Model Water Efficient Landscape Ordinance (MVELLO), whichever is more stringent, (CalGreen 4.304.1)
48. Fireblocking at openings around vents, pipes, ducts, cables, and wires at ceiling and floor level. Such openings shall be fireblocked with an approved material to resist the free passage of flame and products of combustion. (CRC R302.11)
49. Fireblocking of chimneys and fireplaces. All spaces between chimneys and floors and ceilings through which chimneys pass shall be fireblocked with noncombustible material securely fastened in place between chimneys and wood joists. Unfaced fiberglass batt insulation used as fireblocking shall fill the entire cross-section of the wall cavity to a minimum height of 16 inches measured vertically. When piping, conduit, or similar obstructions are encountered, the insulation, landscape ordinance, or the current California Department of Water Resources Model Water Efficient Landscape Ordinance (MVELLO), whichever is more stringent, (CalGreen 4.304.1) shall be used.
50. Draftstopping. In combustible construction where there is usable space both above and below the concealed space of a floor/ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1000 square feet. Draftstopping shall divide the concealed space into approximately equal areas. Where the assembly is enclosed by a floor membrane above and a ceiling membrane below, draftstopping shall be provided in floor/ceiling assemblies under the following circumstances (CRC R302.12):
a. Ceiling is suspended under the floor framing
b. Floor framing is constructed of truss-type open-web or perforated members
c. Draftstopping materials. Draftstopping shall not be less than 1/2-inch gypsum board, 3/8-inch wood structural panels, or other approved materials adequately supported. Draftstopping shall be installed parallel to the floor framing members unless otherwise approved by the building official. The integrity of the draftstop shall be maintained. (CRC R302.12.1)
51. Combustible insulation clearance. Combustible insulation shall be separated minimum 3 inches from recessed luminaires, fan motors, and other heat-producing devices. (CRC R302.14)
52. Identification of construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvaged for future use or sale.
53. Specify if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).
54. Identify diversion facilities where the construction and demolition waste materials will be taken.
55. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
56. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.
57. 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, (CalGreen 4.408.3)
58. Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste company.
59. 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 2 pounds per square foot of the building area shall meet the 65 percent construction waste reduction requirement in Section 4.408.1, (CalGreen 4.408.4)
60. Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.1, Items 55, 56, 57, and 58, and Section 4.408.4.
61. Operation and maintenance manual. Prior to final inspection, a manual, compact disc, web-based reference, or other acceptable media which includes all of the following shall be placed in the building (CalGreen 4.410.1):
a. Directions to owner or occupant that manual shall remain with the building throughout the life cycle of the structure.
b. Operation and maintenance instructions for the following:
I. Equipment and appliances, including water-saving devices and systems, HVAC system, photovoltaic systems, water-heating systems and other major appliances and equipment.
II. Roof and yard drainage, including gutters and downspouts.
III. Space conditioning systems, including condensers and air filters.
IV. Landscape irrigation systems.
V. Water reuse systems.
c. Information from local utility, water, and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
d. Public transportation and/or carpool options available in the area.
e. Educational material on the positive impacts of an inter relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
f. Information about water-conserving landscape and irrigation design and controllers which conserve water.
g. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.

E. Wood Framing (Continued)

- 38. Framing of roofceiling openings. Openings in roof and ceiling framing shall be framed with a header and trimmer joists. When the header joist span does not exceed 4 feet, the header joist may be a single member the same size as the ceiling joist or rafter. Single trimmer joists may be used to carry a single header joist located within 3 feet of the trimmer joist bearing. When the header joist span exceeds 4 feet, the trimmer joist and header joist shall be doubled and of sufficient cross section to support the floor joists framing into the header. Approved hangers shall be used for the header-joist-to-trimmer-joist connections when the header joist span exceeds 6 feet. Tail joists over 12 feet long shall be supported at the header by framing anchors or on ledger strips minimum 2 inches by 2 inches. (CRC R502.10)
39. Roof framing above shear walls. Rafters or roof trusses shall be connected to top plates of shear walls with blocking between the rafters or trusses. (CRC R602.10.8)
40. Roof diaphragm under fill framing. Roof plywood shall be continuous under California fill framing.
41. Roof diaphragm at ridges. Minimum 2-inch nominal blocking required for roof diaphragm raftering at ridges.
42. Blocking of roof trusses. Minimum 2-inch nominal blocking required between trusses at ridge lines and at points of bracing at exterior walls. (CRC R406.1)
43. Truss clearance. Minimum 1/2-inch clearance required between top plates of interior non-bearing partitions and bottom chords of trusses.
44. Drilling, cutting, and notching of roof framing. Notches in solid lumber joists, rafters, blocking, and beams shall not exceed one-sixth the member depth, shall not be longer than one-sixth the member depth and shall not be cut at or closer than one-third the member depth. At member ends shall not exceed one-fourth the member depth. The tension side of members 4 inches or greater in nominal thickness shall not be notched except at member ends. The tension side of members 4 inches or greater in nominal thickness shall not be notched except at member ends. Holes shall not be closer than 2 inches to the top or bottom of the member or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2 inches to the notch. (CRC R502.8.1)
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II. Roof and yard drainage, including gutters and downspouts.
III. Space conditioning systems, including condensers and air filters.
IV. Landscape irrigation systems.
V. Water reuse systems.
c. Information from local utility, water, and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
d. Public transportation and/or carpool options available in the area.
e. Educational material on the positive impacts of an inter relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
f. Information about water-conserving landscape and irrigation design and controllers which conserve water.
g. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.

G. Roofing and Weatherproofing (Continued)

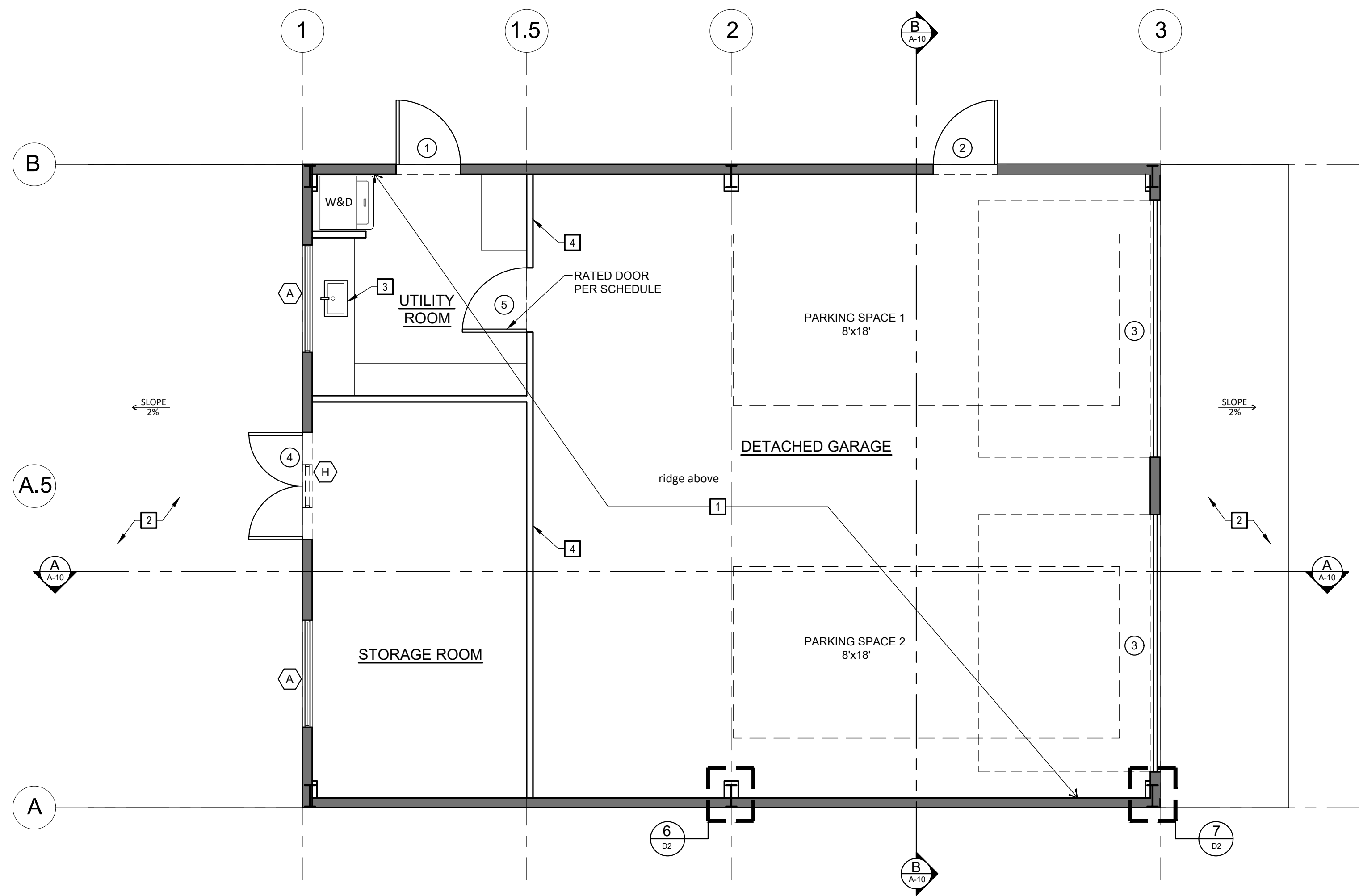
- 4. Water-resistant barrier. A minimum of one layer of No. 15 asphalt felt shall be attached to studs or sheathing, with a second layer of water-resistant barrier applied horizontally, with the upper layer lapped over the lower layer minimum 2 inches. Where joints occur, felt shall be lapped minimum 6 inches. The felt shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to maintain a weather-resistant exterior wall envelope. (CRC R703.2)
5. Wall flashing. Approved corrosion-resistant flashing shall be applied shingle fashion at the following locations to prevent entry of water into the wall cavity or penetration of water to the building structural framing components (CRC R703.8):
a. Exterior door and window openings, extending to the surface of the exterior wall finish or to the water-resistant barrier substrate drainage
b. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting joists on both sides under stucco copings
c. Under and at the ends of masonry, wood, or metal copings and sills
d. Continuously above all projecting wood trim
e. Where exterior porches, decks, or stairs attach to a wall or floor assembly of wood-frame construction
f. At wall and roof intersections
g. At built-in gutters
6. Damp proofing. Damp proofing materials for foundation walls enclosing usable space below grade shall be installed on the exterior surface of the wall and shall extend from the top of the footing to finished grade. (CRC R406.1)
7. Weep screed. A minimum 0.019-inch (No. 28 galvanized sheet gauge), corrosion-resistant weep screed or plastic weep screed with a minimum vertical attachment flange of 3-1/2 inches shall be provided at and below the foundation plate line on exterior stud walls in accordance with ASTM C 92. The weep screed shall be placed a minimum of 1/2 inch above the depth of 2 inches above paved areas and shall be of a type allowing trapped water to drain to the exterior of the building. (CRC R703.2.1)
8. Grading and soils
1. Grading permit. Grading permit required if volume of earth moved exceeds 200 cubic yards or if any cuts or fills exceed 8 feet in height/depth. (County General Ordinance 2002)
2. Compaction report. Compaction report required for fill material 12 inches or more in depth. (CRC 1903.5.8)
9. Green Building Standards Code (CALGreen) Requirements
1. Applicability. CalGreen residential mandatory measures shall apply to every newly constructed building or structure and within any addition or alteration increasing a building's conditioned area, volume, or size. (CalGreen 101.3, CalGreen 101.3.1.1)
Exception: All residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures per CalGreen 301.1.1 and CalGreen 4.303.1
2. Water conserving plumbing fixtures and fittings. Plumbing fixtures and fittings shall comply with the following per CalGreen 4.303.1:
a. Water closets: Maximum 1.28 gallons per flush
b. Urinals: Maximum 0.5 gallons per flush
c. Single showheads: Maximum flow rate of 1.8 gallons per minute at 80 psi
d. Multiple showheads serving one shower: Maximum combined flow rate of 1.8 gallons per minute at 80 psi
e. Lavatory faucets: Maximum flow rate of 1.2 gallons per minute at 60 psi, minimum flow rate of 0.8 gallons per minute at 20 psi
f. Kitchen faucets: Maximum flow rate of 1.5 gallons per minute at 60 psi (County Green Building Code 97.1.4.303.1.4)
3. Appliances: Maximum increase allowed to maximum 2.2 gallons per minute at 60 psi if faucet defaults back to maximum 1.15 gallons per minute at 60 psi
4. Appliances: At least one qualified ENERGY STAR

**WALL LEGEND**

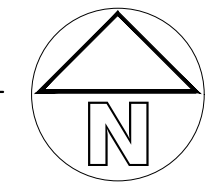
	2x6 wood studs @ 16" O.C., non load bearing exterior wall, per detail 2/D1
	2x4 wood studs @ 16" O.C., non load bearing interior wall, per detail 1/D1
	2x6 wood studs @ 16" O.C., non load bearing interior wall, per detail 1/D1

**KEYNOTES**

1	VAULTED CEILING
2	CONCRETE
3	UTILITY SINK
4	MIN. 5/8" TYPE X GYPSUM BOARD

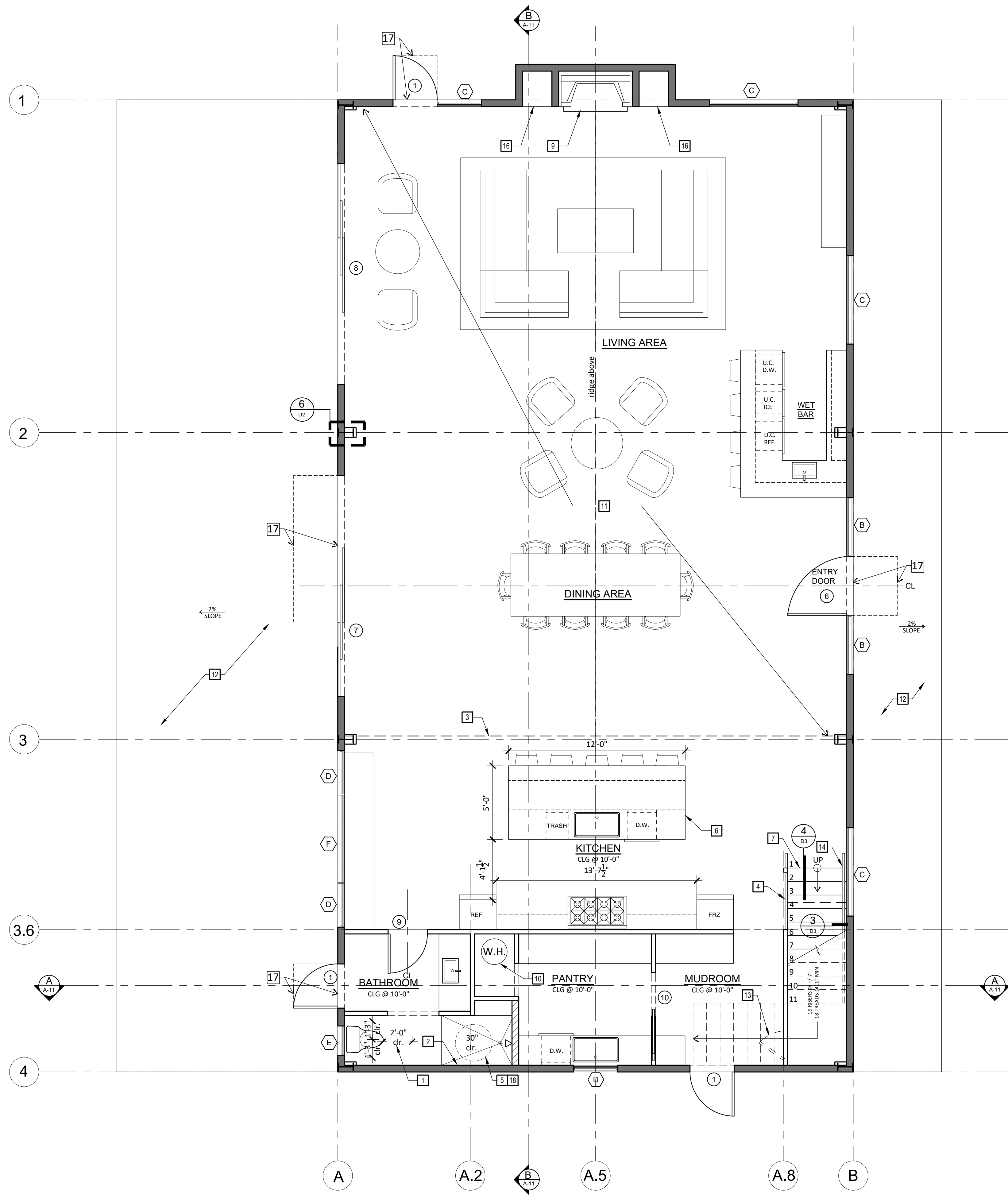


**PROPOSED DETACHED GARAGE FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

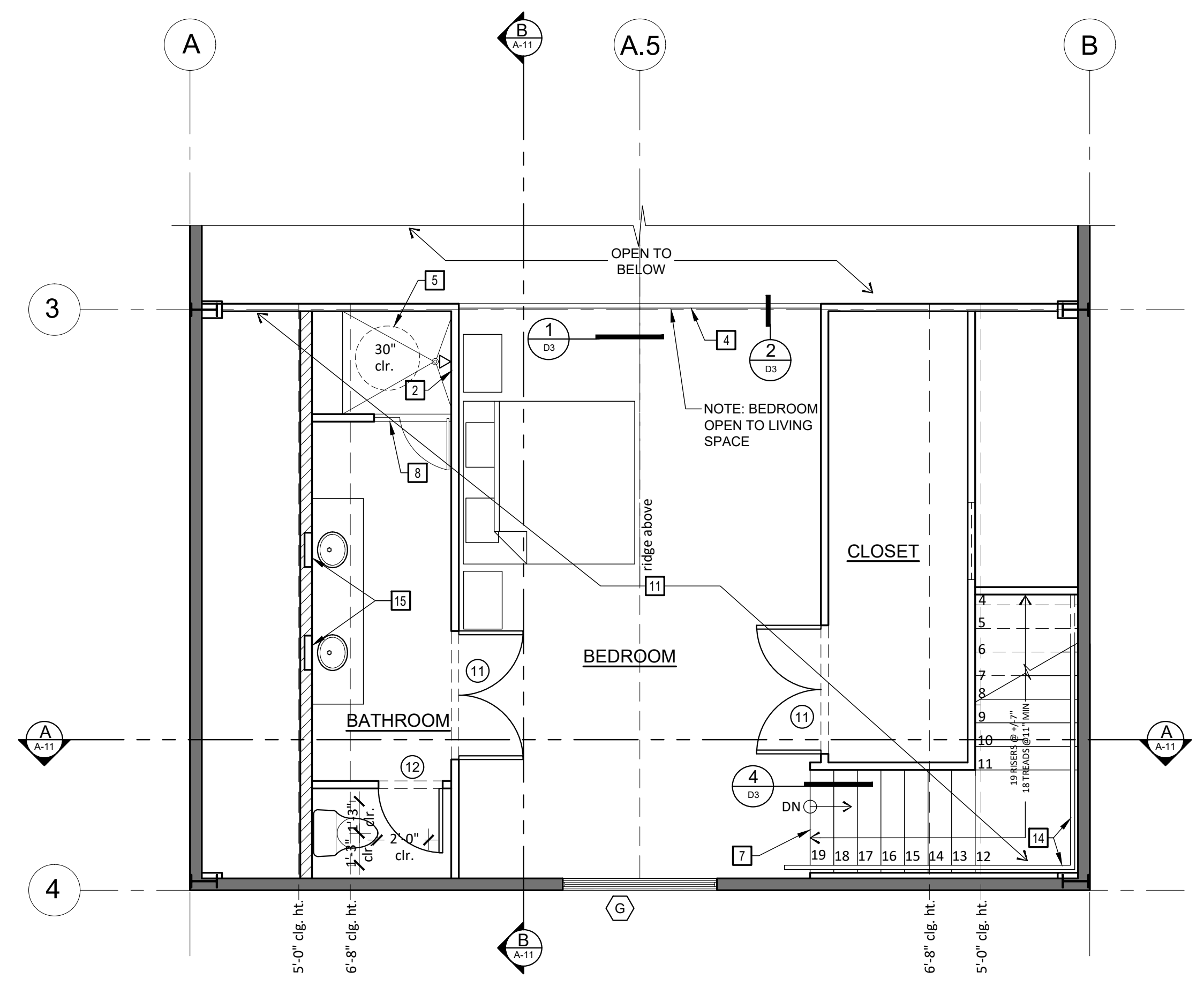
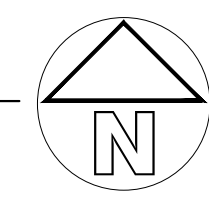


**WRIGHT VALLEY RANCH**  
18890 Old Julian Trail  
Ramona, CA 92065

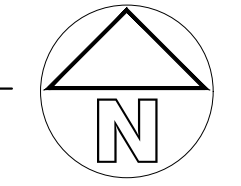
DATE	DESCRIPTION



**PROPOSED SINGLE FAMILY DWELLING FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



**PROPOSED LOFT FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



**WALL LEGEND**

- 2x6 wood studs @ 16" O.C., non load bearing exterior wall, per detail 2/D1
- 2x4 wood studs @ 16" O.C., non load bearing interior wall, per detail 1/D1
- 2x6 wood studs @ 16" O.C., non load bearing interior wall, per detail 1/D1

**KEYNOTES**

- 1 24" CLR. IN FRONT, 15" CLR. ON EITHER SIDE OF TOILET
- 2 SHOWER AND TUB WALLS WITH TILE FINISH. SHOWER COMPARTMENTS AND BATH TUBS SHALL BE FINISHED WITH A NONABSORBENT SURFACE THAT EXTENDS TO A HEIGHT OF NOT LESS THAN 6" ABOVE THE FLOOR
- 3 EDGE OF LOFT ABOVE
- 4 (N) 42" TALL GUARDRAIL W/ ALL OPENINGS LESS THAN 4"
- 5 30" CLR. DIAMETER
- 6 KITCHEN ISLAND
- 7 STAIR, 6" RISERS + 12" TREAD DEPTH
- 8 TEMPERED GLASS AT SHOWER DOOR
- 9 ISOKERN FIREPLACE WITH METAL FLU, PER ICC-ESR 2316. SEE SHEETS D4 & D5.
- 10 HYBRID HEAT PUMP WATER HEATER
- 11 VAULTED CEILING
- 12 CONCRETE
- 13 CONCEALED DOOR UNDER STAIRS
- 14 HANDRAIL, PER DETAIL 3/D3
- 15 IN WALL MEDICINE CABINET
- 16 FIREWOOD STORAGE
- 17 LEVEL LANDING, MIN. WIDTH OF DOOR + 36" MIN. DEPTH, 7.75" MAX. THRESHOLD HT.
- 18 DEPRESSED SLAB IN SHOWER

**WRIGHT VALLEY RANCH**  
18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

**UNVENTED ATTIC**

Per R806.5 Unvented Attics shall be permitted where all of the following apply:

- The unvented attic space is completely within the building thermal envelope.
- Interior Class I vapor retarders are not installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
- N/A
- N/A
- Insulation shall comply with Item 5.3 and either Item 5.1 or 5.2:

5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing. No insulation shall be required when roof tiles, wood shingles or wood shakes, or any other roofing system using battens and no continuous underlayment is installed. A continuous underlayment shall be considered to exist if sheathing, roofing paper or any continuous layer having a perm rate of no more than one perm under the dry cup method is present.

5.1.1. Where only air-impermeable insulation is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.

5.1.2. Where air-permeable insulation is installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R-values in Table R806.5 for condensation control.

5.1.3. Where both air-impermeable and air-permeable insulation are provided, the air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the R-values in Table R806.5 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation.

5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.

5.2. In Climate Zones 3-15, air-permeable insulation installed in unvented attics shall meet the following requirements:

- An approved vapor diffusion port shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.
- The port area shall be greater than or equal to 1:600 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.
- The vapor-permeable membrane in the vapor diffusion port shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.
- The vapor diffusion port shall serve as an air barrier between the attic and the exterior of the building.
- The vapor diffusion port shall protect the attic against the entrance of rain and snow.
- Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.
- The roof slope shall be greater than or equal to 3:12 (vertical/horizontal).
- Where only air-permeable insulation is used, it shall be installed directly below the structural roof sheathing.
- Air-impermeable insulation, if any, shall be directly above or below the structural roof sheathing and is not required to meet the R-value in Table 806.5. Where directly below the structural roof sheathing, there shall be no space between the air-impermeable insulation and air-permeable insulation.
- The air shall be supplied at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m<sup>2</sup>) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating.

5.3. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

**ROOFING UNDERLAYMENT**

**FOR METAL ROOFING PANELS:**

Roof Slopes 4:12 and greater  
Underlayment shall be two layers applied in the following manner: apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet.

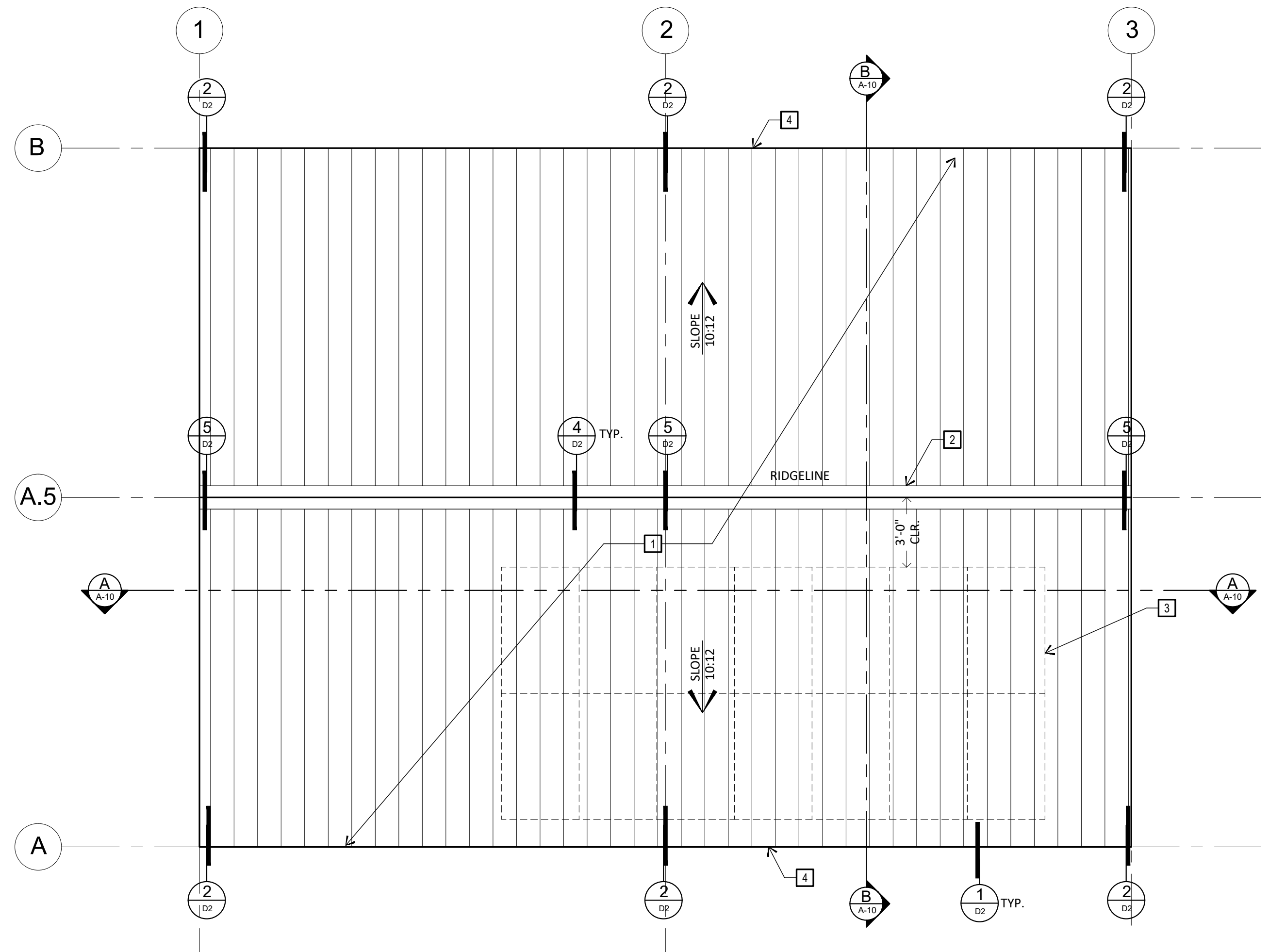
The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches between side laps with a 6 inch spacing at side and end laps. Underlayment shall be attached using annular ring or deformed shank nails with 1-inch-diameter metal or plastic caps. Metal caps shall have a thickness of not less than 32-gauge sheet metal. Power-driven metal caps shall have a minimum thickness of 0.010 inch. Minimum thickness of the outside edge of plastic caps shall be 0.035 inch. The cap nail shank shall be not less than 0.083 inch. The cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 1/2 inch into the roof sheathing.

**ROOF NOTES**

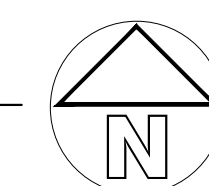
- Radiant barrier is required.
- Paper-faced insulation prohibited in attics or other ventilated spaces.
- Paints, coatings, and stains, or other surface treatments are not acceptable means of compliance with any wildfire-resistive construction requirement.
- Vents prohibited in eaves, eave overhangs, soffits, or cornices.  
Exception: Approved vents resisting intrusion of flames and embers. Gable-end vents allowed if located min. 12" below lowest eave/rake projection.  
Exception: As allowed by building official and local fire authority and per approved fire resistive eave details.
- All vents to be protected by louvers and 1/8-inch noncombustible, corrosion-resistant mesh.  
Exception: Approved vents resisting intrusion of flames and embers & Turbine attic vents equipped to allow rotation in only one direction
- Drip edge flashing used at the free edges of roofing materials shall be non-combustible.

**KEYNOTES**

- CLASS 'A' STANDING SEAM METAL ROOF, 0.1 ROOF REFLECTANCE, W/UNDERLAYMENT, (PER ROOFING UNDERLAYMENT NOTES. UNVENTED ROOF PER DETAILS FROM 1 TO 5/D2).
- RIDGE CAP
- SOLAR PANELS, PER T-24 REPORT, PER SEPARATE PERMIT. (MIN. 1.6 KWDC REQ. AT OFFICE)
- ROOF EDGE DRAINS TO LANDSCAPE



**PROPOSED DETACHED GARAGE ROOF PLAN**  
SCALE: 1/4" = 1'-0"

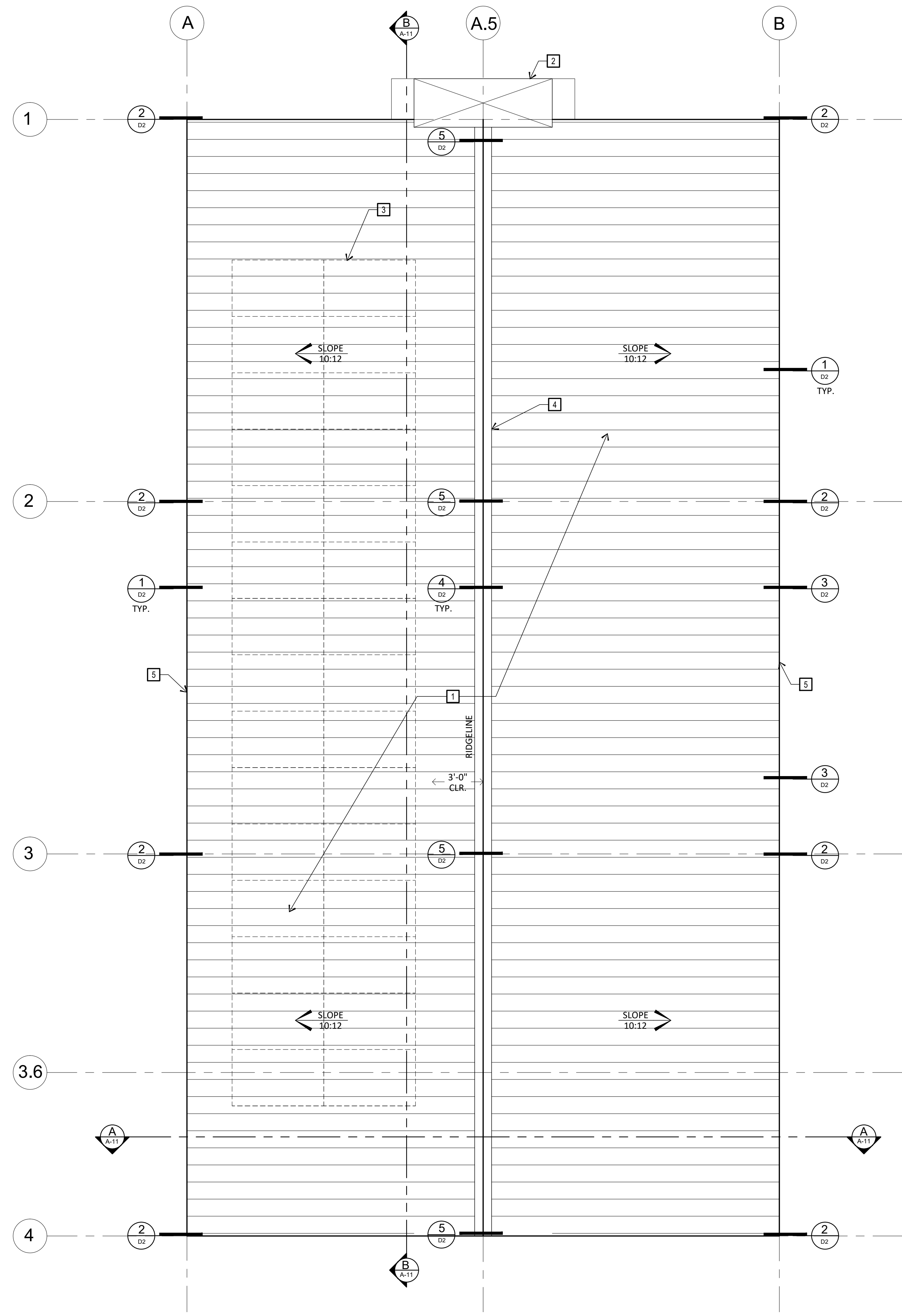


**WRIGHT VALLEY RANCH**

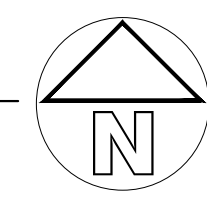
18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

A-3



**PROPOSED SINGLE FAMILY DWELLING ROOF PLAN**  
SCALE: 1/4" = 1'-0"



- KEYNOTES**
- 1 CLASS 'A' STANDING SEAM METAL ROOF, 0.1 ROOF REFLECTANCE, W/UNDERLAYMENT, (PER ROOFING UNDERLAYMENT NOTES. UNVENTED ROOF PER DETAILS FROM 1 TO 5/D2)
  - 2 CHIMNEY CAP, CHIMNEY OPENING TO BE 3' ABOVE ROOF LINE AND 2' ABOVE ALL ROOF WITHIN 10'.
  - 3 SOLAR PANELS, PER T-24 REPORT, PER SEPARATE PERMIT. (3.32 KWDC REQ. AT SFD)
  - 4 RIDGE CAP
  - 5 ROOF EDGE DRAINS TO LANDSCAPE

- ROOF NOTES**
1. Radiant barrier is required.
  2. Paper-faced insulation prohibited in attics or other ventilated spaces.
  3. Paints, coatings, and stains, or other surface treatments are not acceptable means of compliance with any wildfire-resistive construction requirement.
  4. Vents prohibited in eaves, eave overhangs, soffits, or cornices.  
Exception: Approved vents resisting intrusion of flames and embers.  
Exception: Gable-end vents allowed if located min. 12" below lowest eave/rake projection.  
Exception: As allowed by building official and local fire authority and per approved fire resistive eave details
  5. All vents to be protected by louvers and 1/8-inch noncombustible, corrosion-resistant mesh.  
Exception: Approved vents resisting intrusion of flames and embers & Turbine attic vents equipped to allow rotation in only one direction
  6. Drip edge flashing used at the free edges of roofing materials shall be non-combustible.

**ROOFING UNDERLAYMENT**

FOR METAL ROOFING PANELS:

Roof Slopes 4:12 and greater  
Underlayment shall be two layers applied in the following manner: apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. End laps shall be 4 inches and shall be offset by 6 feet.

The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches between side laps with a 6 inch spacing at side and end laps. Underlayment shall be attached using annular ring or deformed shank nails with 1-inch-diameter metal or plastic caps. Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall a minimum thickness of 0.010 inch. Minimum thickness of the outside edge of plastic caps shall be 0.035 inch. The cap nail shank shall be not less than 0.083 inch. The cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 1/4 inch into the roof sheathing.

- UNVENTED ATTIC**
- Per R806.5 Unvented Attics shall be permitted where all of the following apply:
1. The unvented attic space is completely within the building thermal envelope.
  2. Interior Class I vapor retarders are not installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed roof framing assembly.
  3. N/A
  4. N/A
  5. Insulation shall comply with Item 5.3 and either Item 5.1 or 5.2:
- 5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing. No insulation shall be required when roof tiles, wood shingles or wood shakes, or any other roofing system using battens and no continuous underlayment is installed. A continuous underlayment shall be considered to exist if sheathing, roofing paper or any continuous layer having a perm rate of no more than one perm under the dry cup method is present.
  - 5.1.1. Where only air-impermeable insulation is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.
  - 5.1.2. Where air-permeable insulation is installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R-values in Table R806.5 for condensation control.
  - 5.1.3. Where both air-impermeable and air-permeable insulation are provided, the air-impermeable insulation shall be installed directly under the air-impermeable insulation.
  - 5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.
  - 5.2. In Climate Zones 3-15, air-permeable insulation installed in unvented attics shall meet the following requirements:
    - 5.2.1. An approved vapor diffusion port shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.
    - 5.2.2. The port area shall be greater than or equal to 1:600 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.
    - 5.2.3. The vapor-permeable membrane in the vapor diffusion port shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.
    - 5.2.4. The vapor diffusion port shall serve as an air barrier between the attic and the exterior of the building.
    - 5.2.5. The vapor diffusion port shall protect the attic against the entrance of rain and snow.
    - 5.2.6. Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.
    - 5.2.7. The roof slope shall be greater than or equal to 3:12 (vertical/horizontal).
    - 5.2.8. Where only air-permeable insulation is used, it shall be installed directly below the structural roof sheathing.
    - 5.2.9. Air-impermeable insulation, if any, shall be directly above or below the structural roof sheathing and is not required to meet the R-value in Table R806.5. Where directly below the structural roof sheathing, there shall be no space between the air-impermeable insulation and air-permeable insulation.
    - 5.2.10. The air shall be supplied at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m<sup>2</sup>) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating.
  - 5.3. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

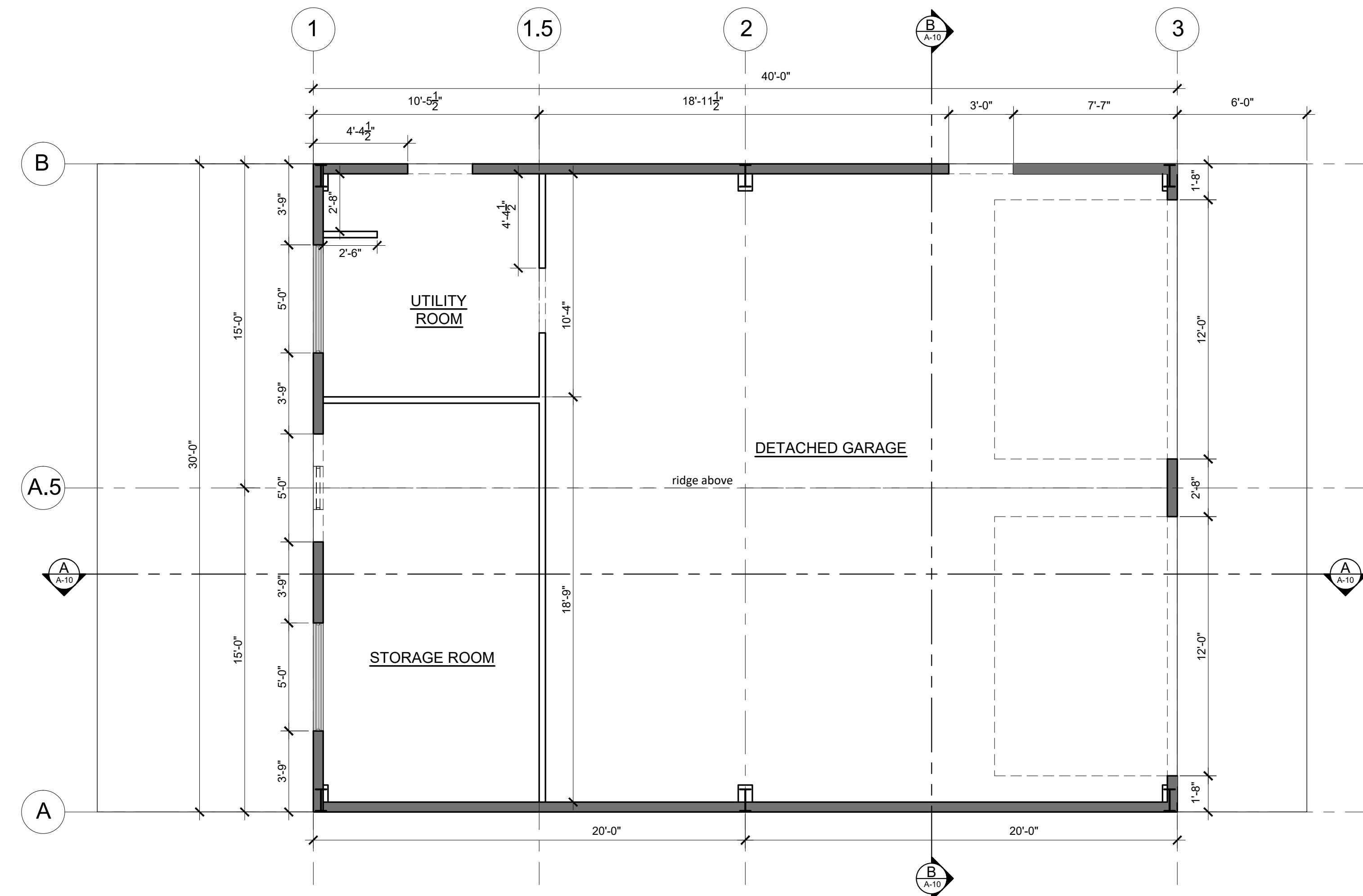
**WRIGHT VALLEY RANCH**  
18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

**A-4**

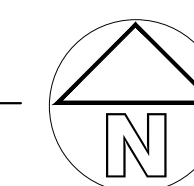
DIMENSION PLAN NOTES

1. ALL DIMENSIONS ARE TO FACE OF STRUCTURE (FACE OF STUD, POST, CONCRETE, OR BLOCK) UNLESS OTHERWISE NOTED.
2. G.C. TO REFER TO MANUFACTURER TO VERIFY FINISH DOOR, WINDOW, SIZES AND ROUGH OPENING SIZES AS REQUIRED.



PROPOSED DETACHED GARAGE DIM-PLAN

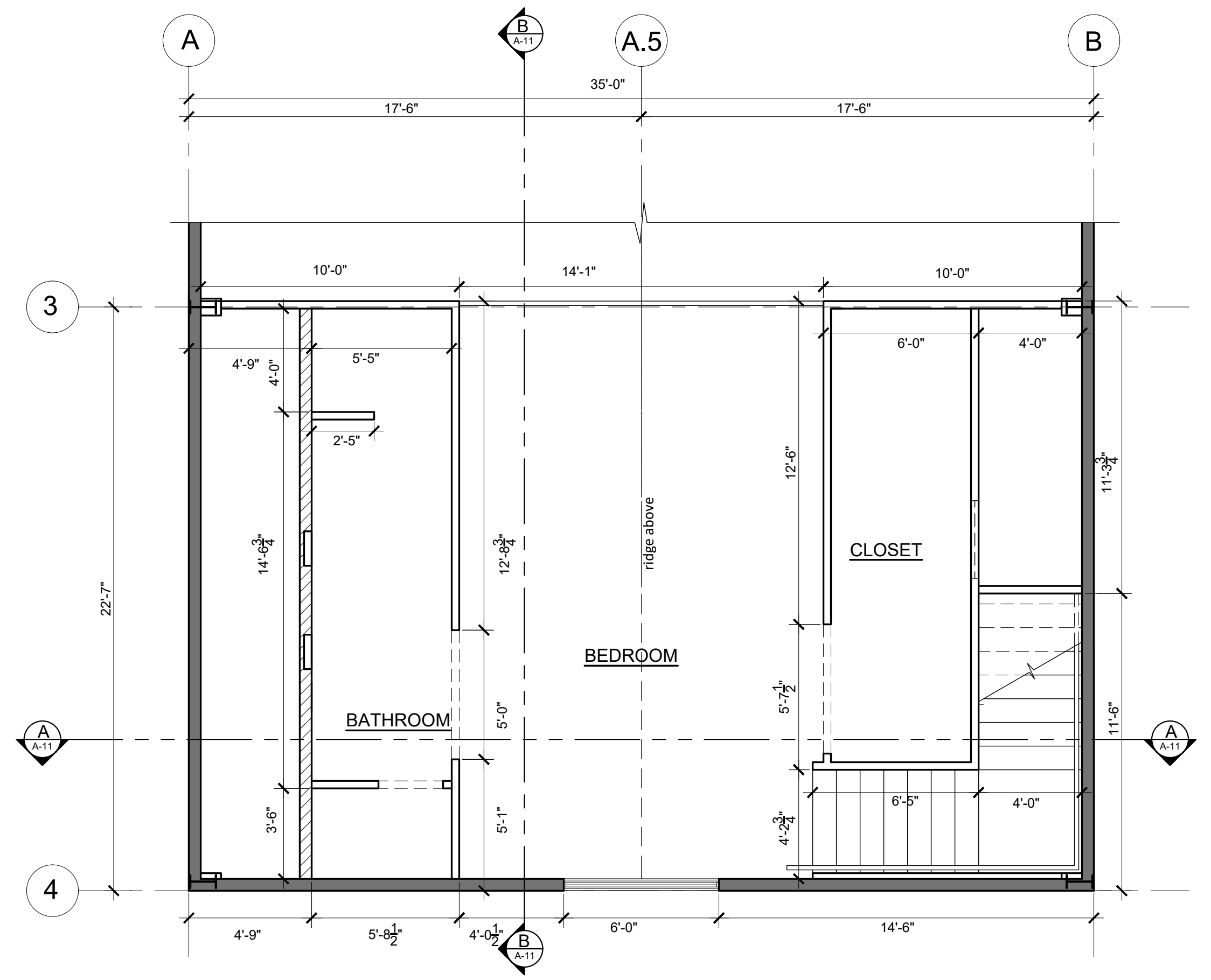
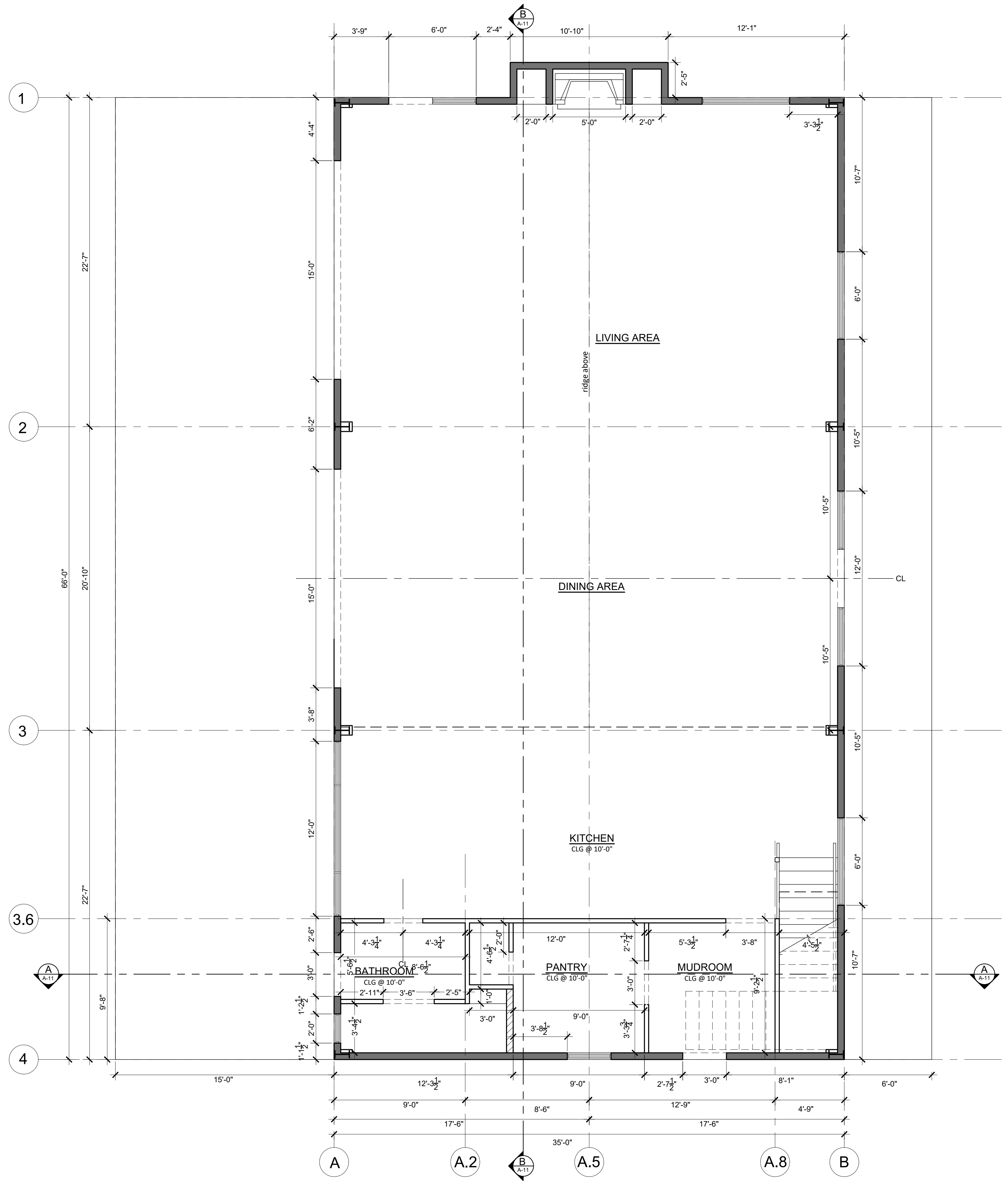
SCALE: 1/4" = 1'-0"



**WRIGHT VALLEY RANCH**

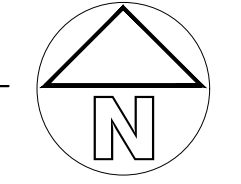
18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION



**PROPOSED LOFT DIM-PLAN**

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



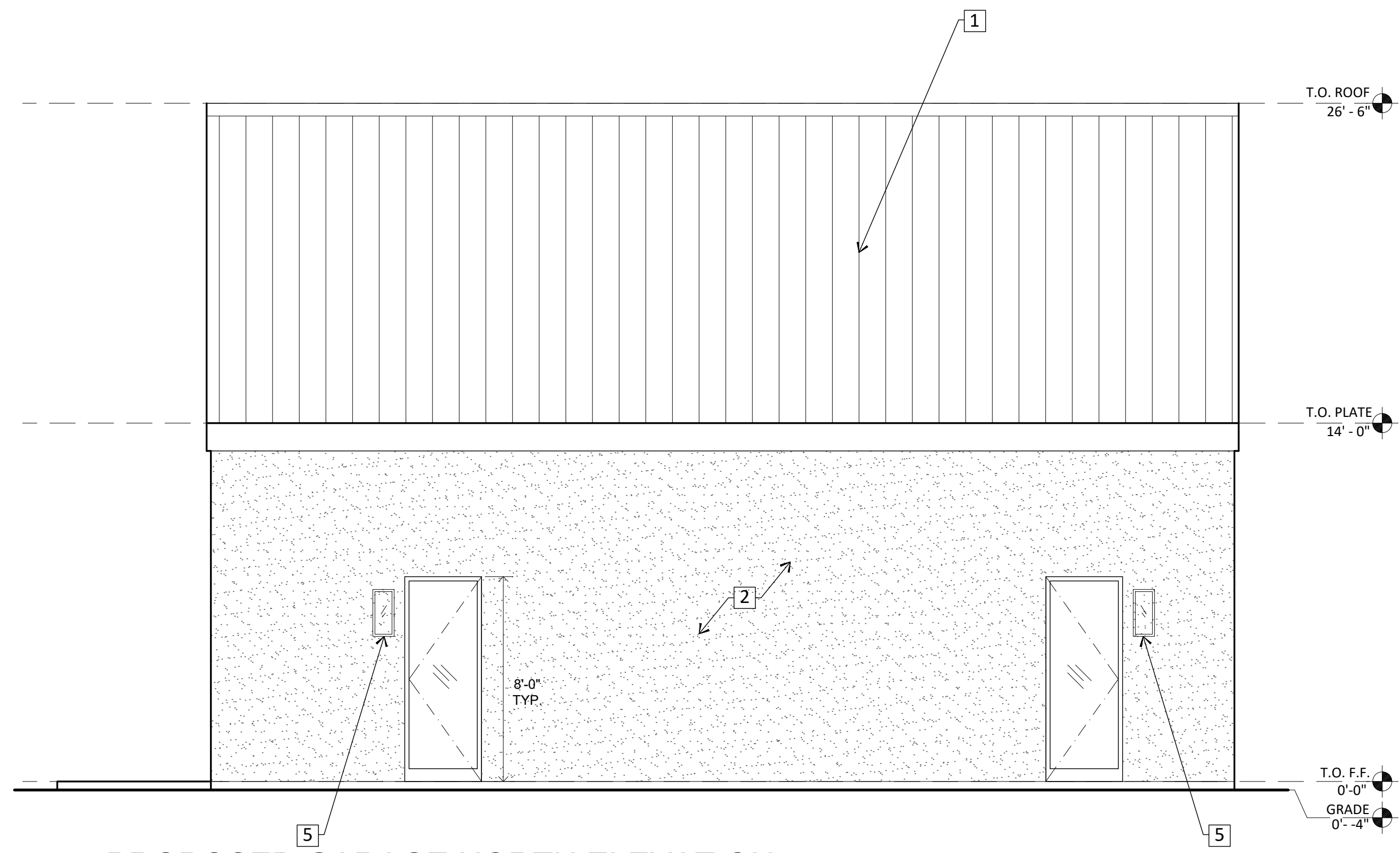
- DIMENSION PLAN NOTES**
1. ALL DIMENSIONS ARE TO FACE OF STRUCTURE (FACE OF STUD, POST, CONCRETE, OR BLOCK) UNLESS OTHERWISE NOTED.
  2. G.C. TO REFER TO MANUFACTURER TO VERIFY FINISH DOOR, WINDOW, SIZES AND ROUGH OPENING SIZES AS REQUIRED.

**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
Ramona, CA 92065

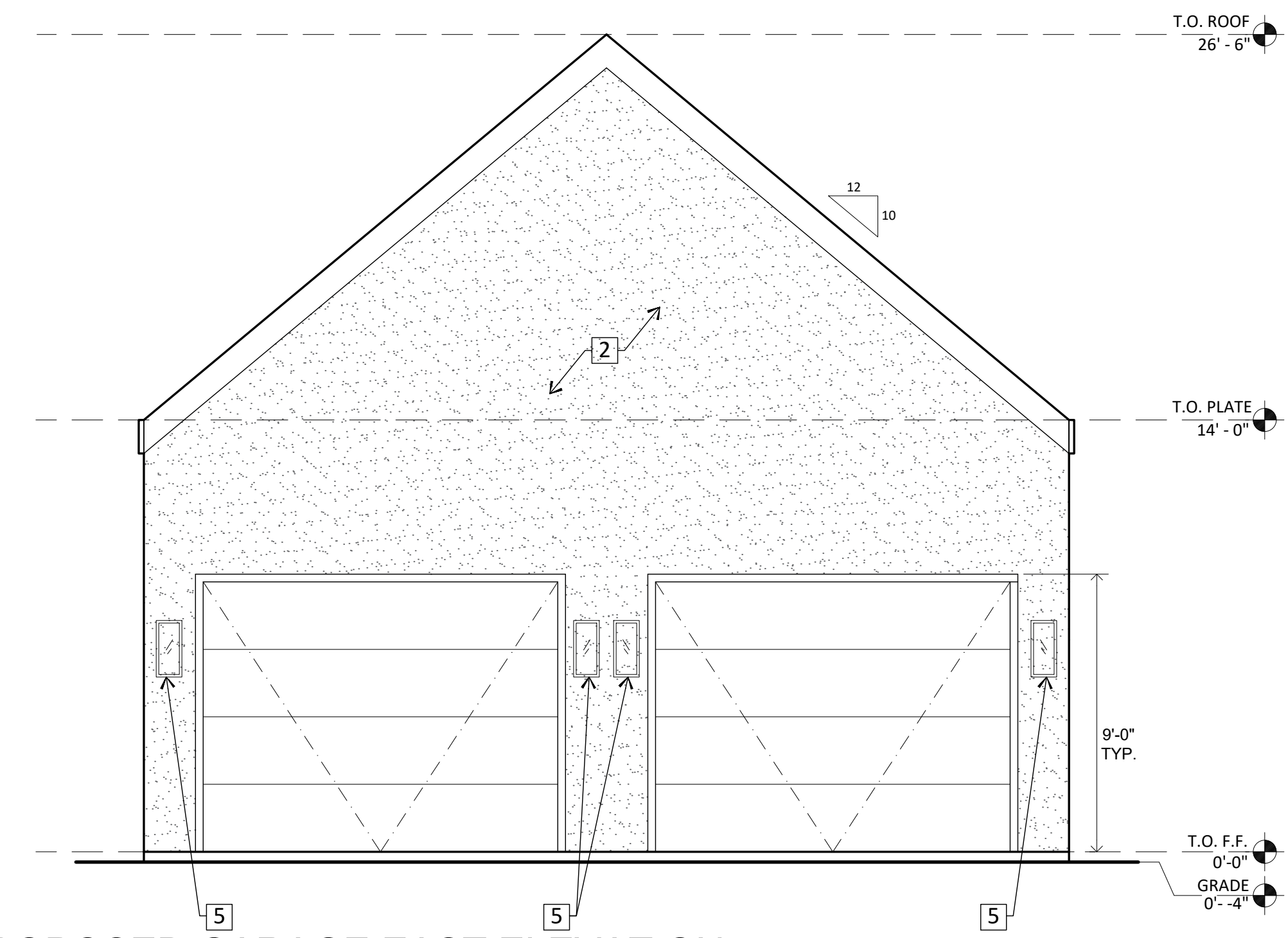
DATE	DESCRIPTION

- KEYNOTES**
- 1 CLASS 'A' STANDING SEAM METAL ROOF W/  
UNDERLAYMENT (PER ROOF PLAN).
  - 2 STUCCO FINISH
  - 3 CUSTOM CHIMNEY CAP WITH SPARK ARRESTOR, CHIMNEY  
OPENING TO BE 3' ABOVE ROOF LINE AND 2' ABOVE ALL ROOF  
WITHIN 10'.
  - 4 ALUMINUM CLAD WOOD WINDOW
  - 5 OUTDOOR WALL SCONCE, SEE ELECTRICAL PLANS
  - 6 EXPOSED CHIMNEY WITH BRICK VENEER
  - 7 NO OPERABLE PORTION OF WINDOW WITHIN 2' HT. A.F.F., ALL  
PANES TEMPERED WITHIN 18" A.F.F.
  - 8 ALL PANES TEMPERED



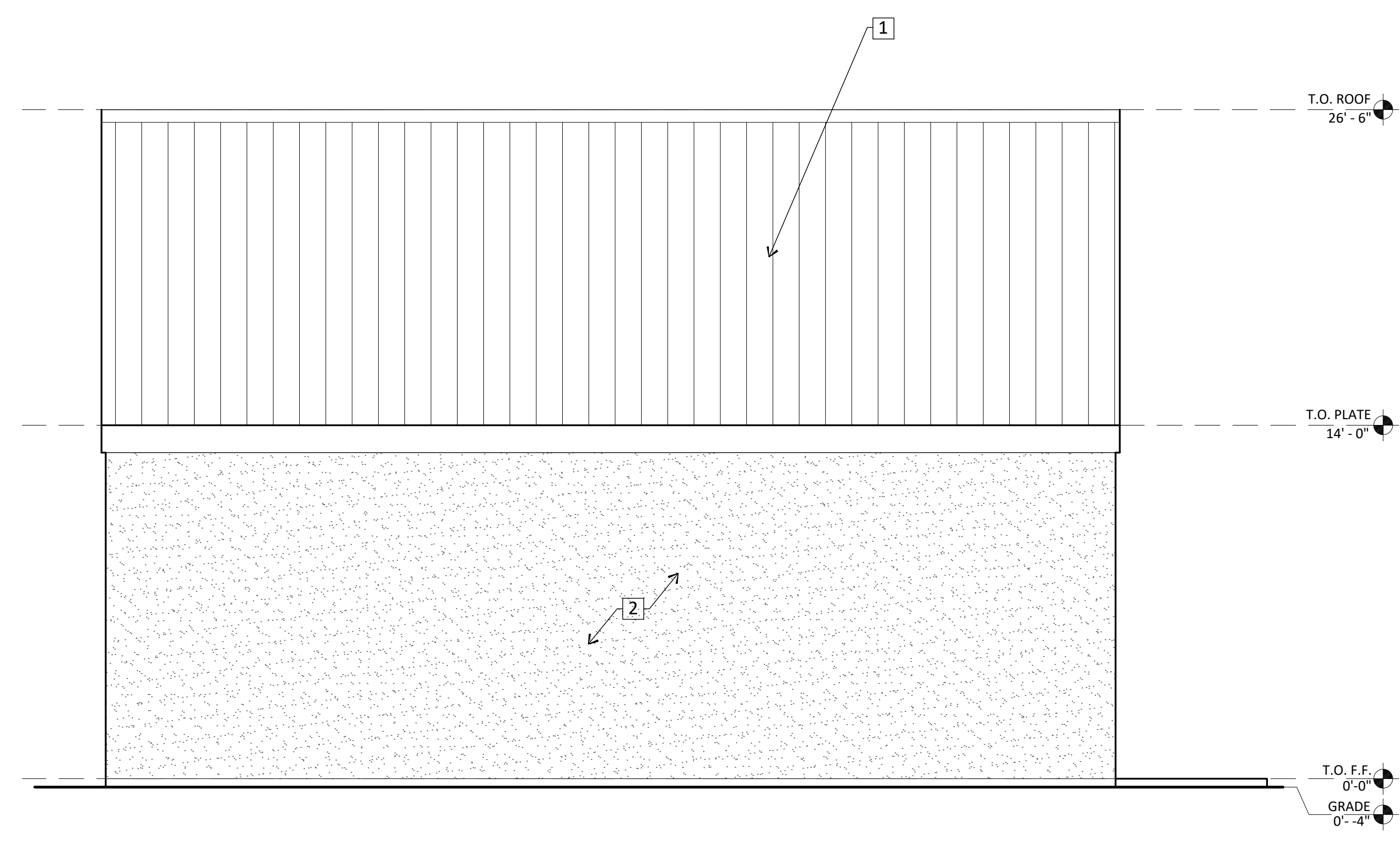
**PROPOSED GARAGE NORTH ELEVATION**

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



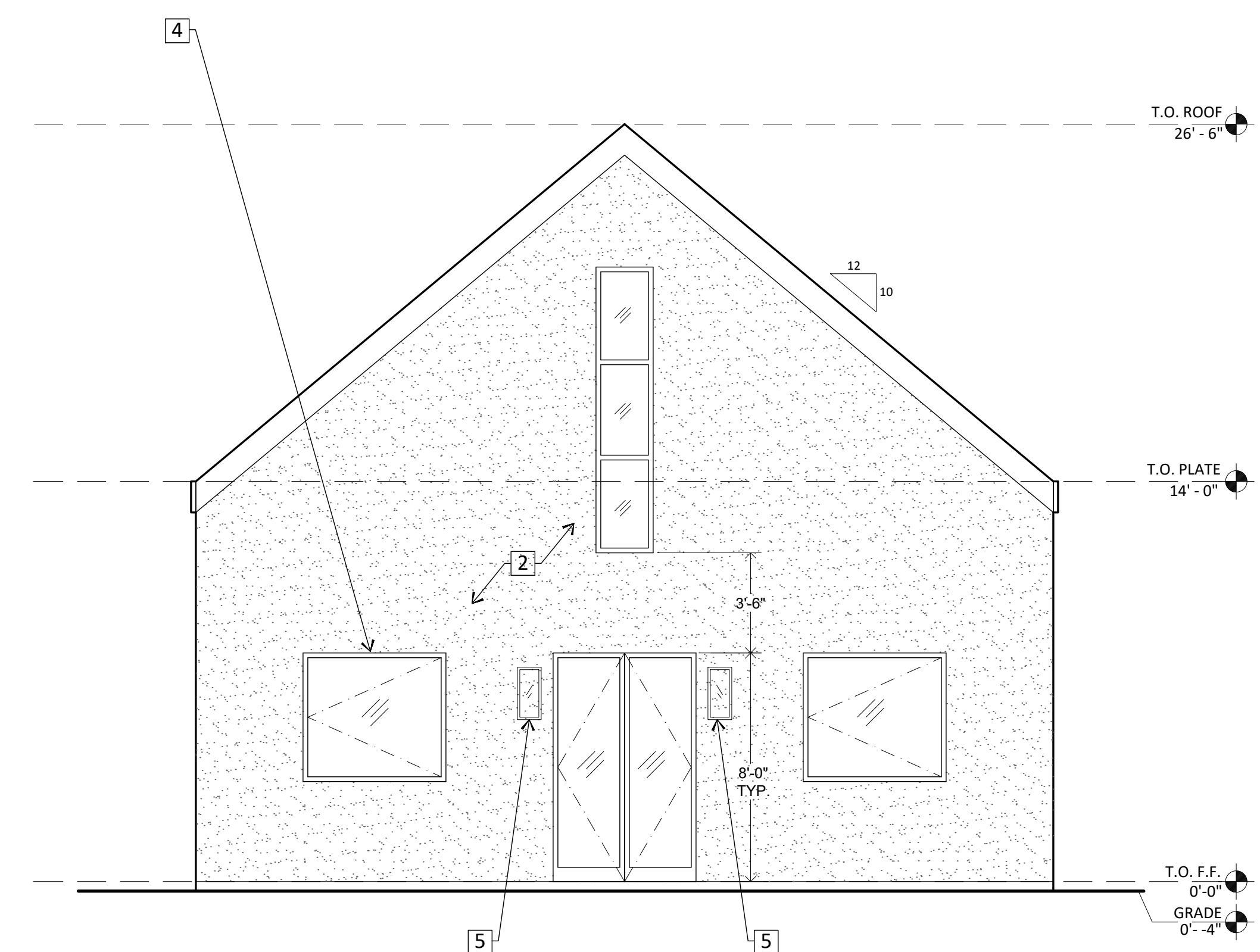
**PROPOSED GARAGE EAST ELEVATION**

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



**PROPOSED GARAGE SOUTH ELEVATION**

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



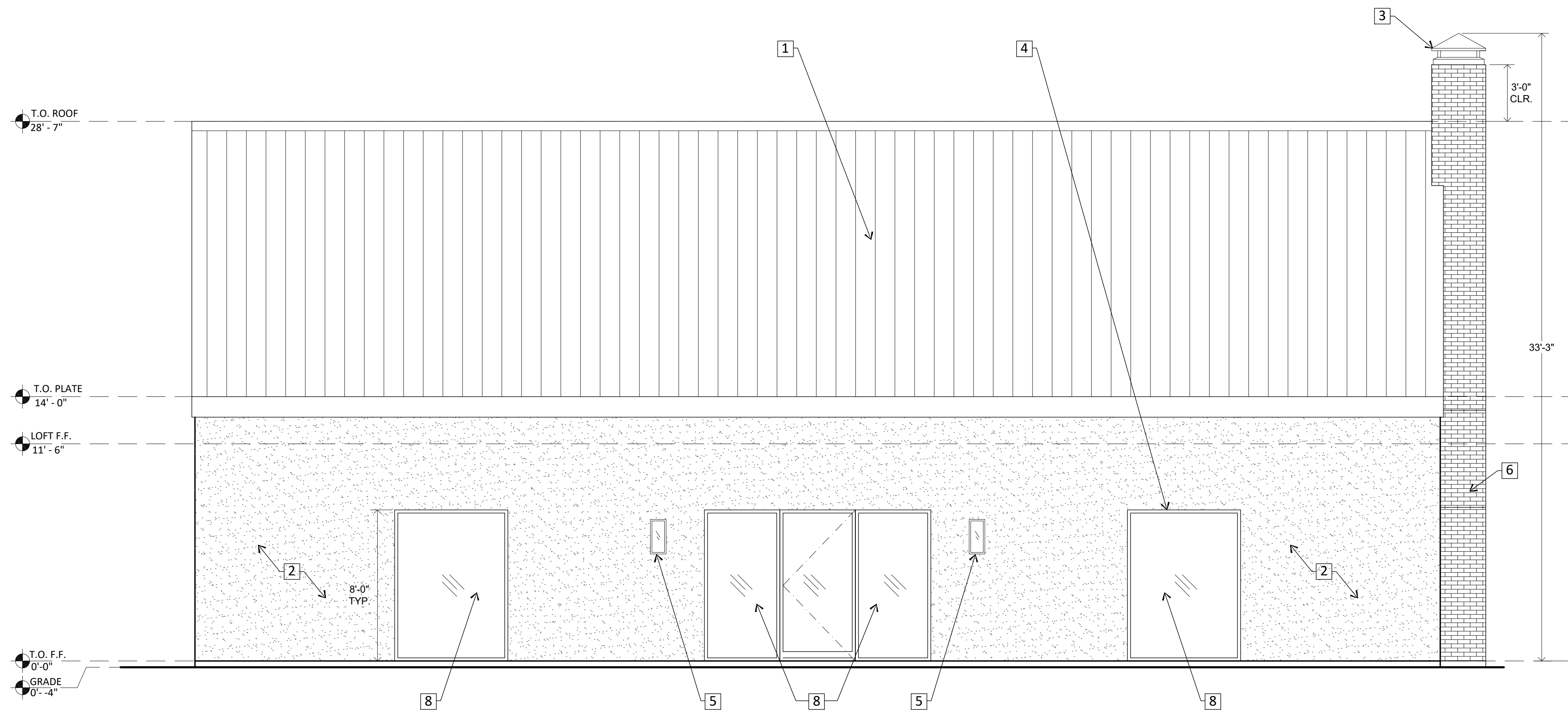
**PROPOSED GARAGE WEST ELEVATION**

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

**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
Ramona, CA 92065

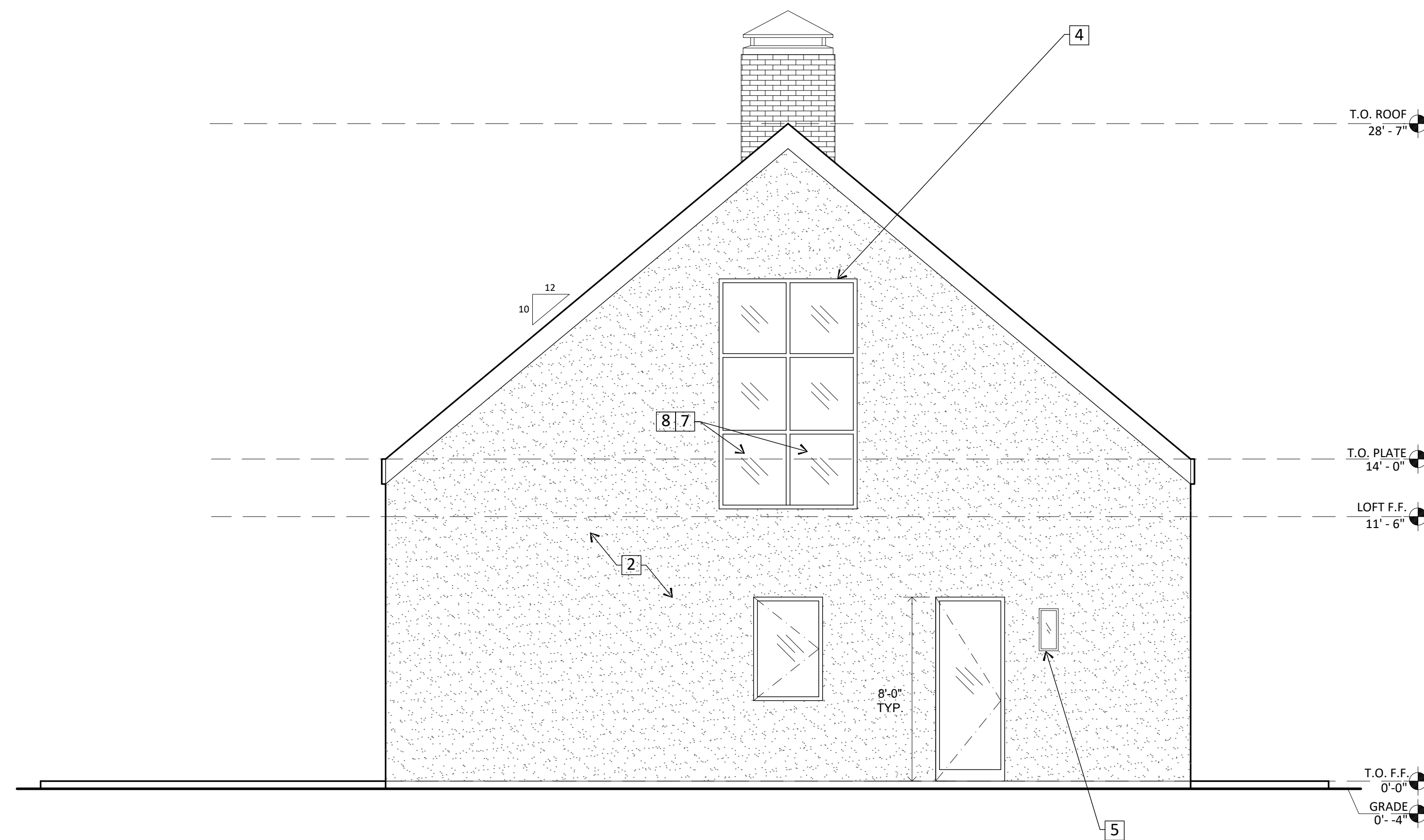
DATE	DESCRIPTION



KEYNOTES	
1	CLASS 'A' STANDING SEAM METAL ROOF W/ UNDERLAYMENT (PER ROOF PLAN).
2	STUCCO FINISH
3	CUSTOM CHIMNEY CAP WITH SPARK ARRESTOR, CHIMNEY OPENING TO BE 3' ABOVE ROOF LINE AND 2' ABOVE ALL ROOF WITHIN 10'.
4	ALUMINUM CLAD WOOD WINDOW
5	OUTDOOR WALL SCONCE, SEE ELECTRICAL PLANS
6	EXPOSED CHIMNEY WITH BRICK VENEER
7	NO OPERABLE PORTION OF WINDOW WITHIN 2' HT. A.F.F., ALL PANES TEMPERED WITHIN 18" A.F.F.
8	ALL PANES TEMPERED

**PROPOSED SINGLE FAMILY DWELLING EAST ELEVATION**

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



**PROPOSED SINGLE FAMILY DWELLING SOUTH ELEVATION**

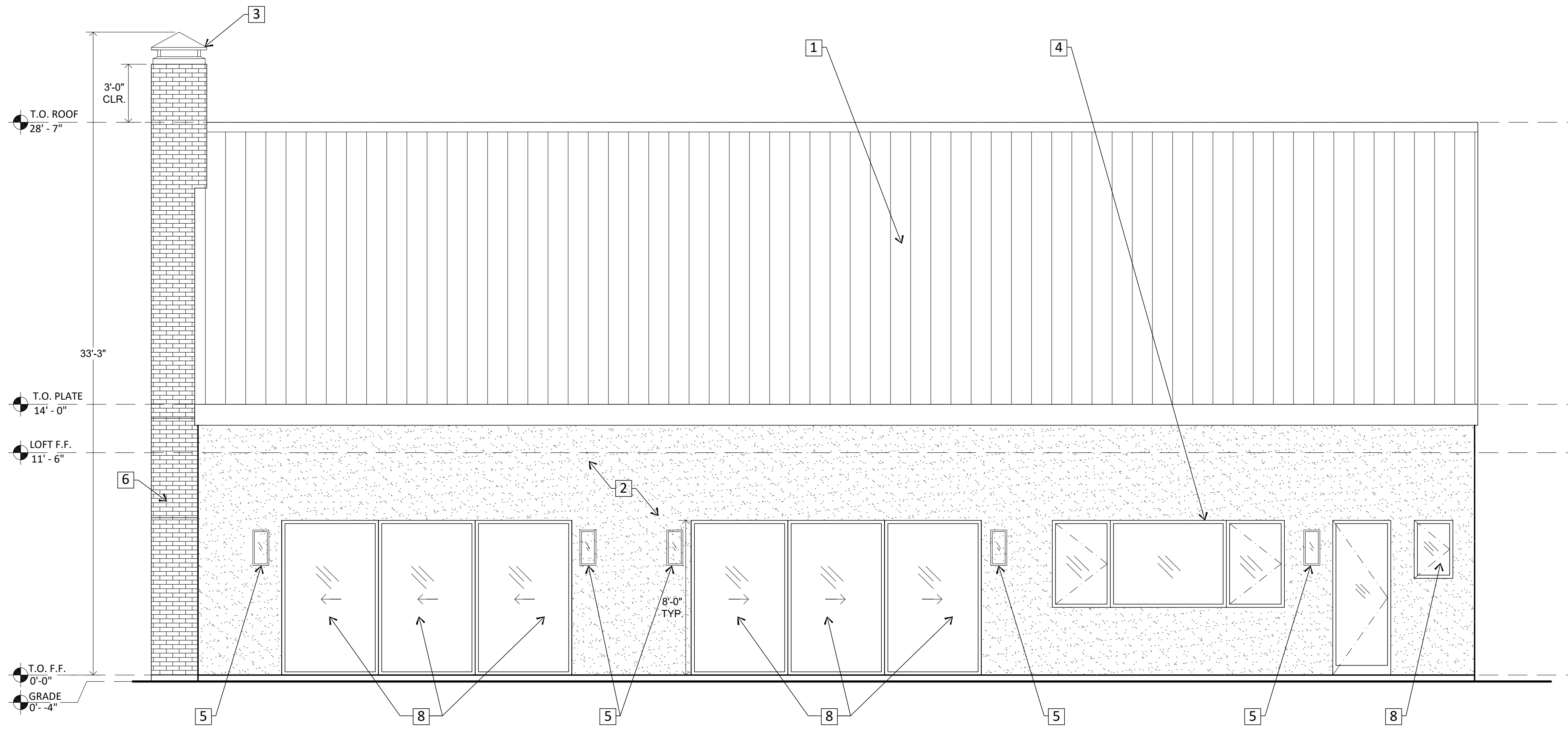
SCALE: 1/4" = 1'-0"

**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
Ramona, CA 92065

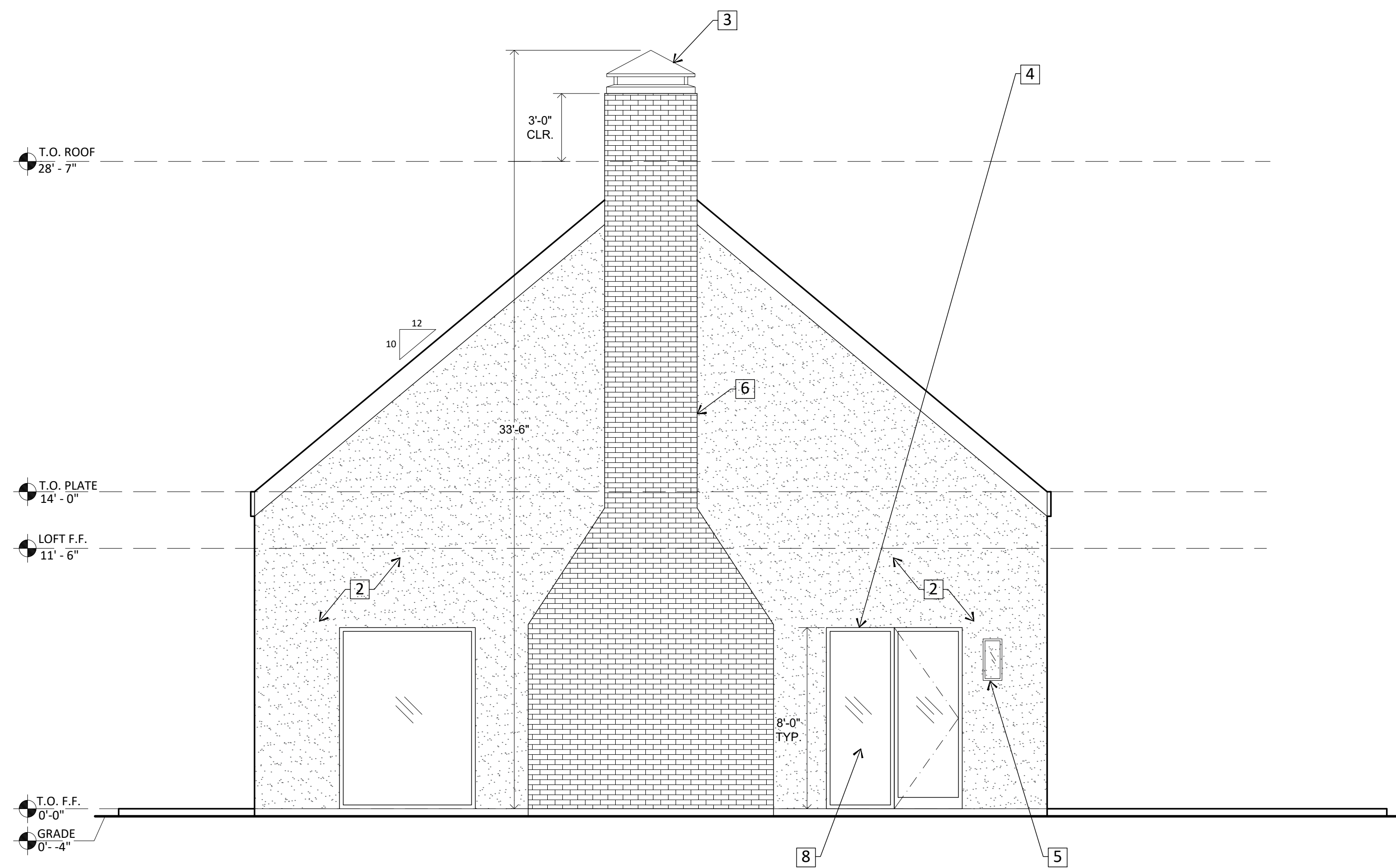
DATE	DESCRIPTION

**A-8**



**PROPOSED SINGLE FAMILY DWELLING WEST ELEVATION**

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



**PROPOSED SINGLE FAMILY DWELLING NORTH ELEVATION**

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

**KEYNOTES**

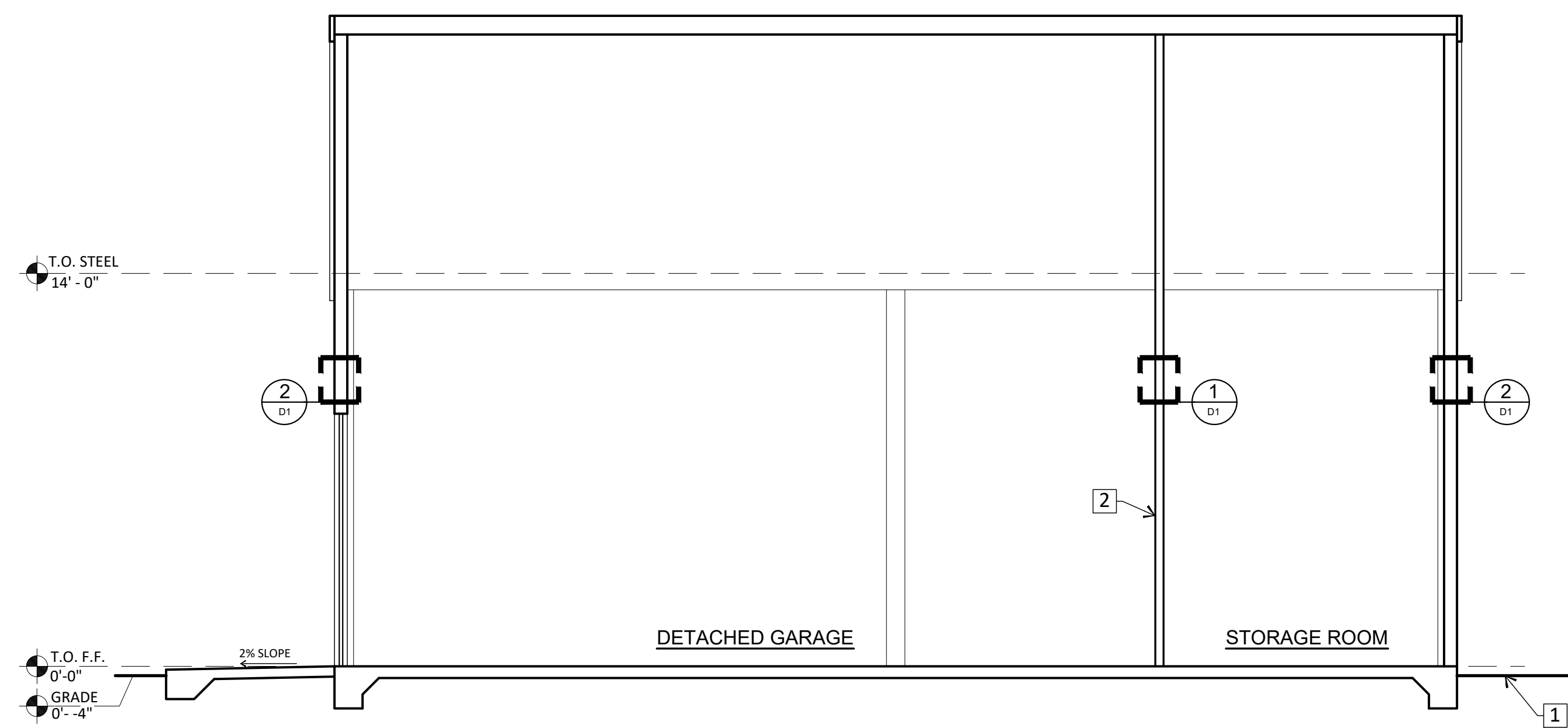
- 1 CLASS 'A' STANDING SEAM METAL ROOF W/  
UNDERLAYMENT (PER ROOF PLAN).
- 2 STUCCO FINISH
- 3 CUSTOM CHIMNEY CAP WITH SPARK ARRESTOR, CHIMNEY  
OPENING TO BE 3' ABOVE ROOF LINE AND 2' ABOVE ALL ROOF  
WITHIN 10'.
- 4 ALUMINUM CLAD WOOD WINDOW
- 5 OUTDOOR WALL SCONCE, SEE ELECTRICAL PLANS
- 6 EXPOSED CHIMNEY WITH BRICK VENEER
- 7 NO OPERABLE PORTION OF WINDOW WITHIN 2' HT. A.F.F., ALL  
PANES TEMPERED WITHIN 18" A.F.F.
- 8 ALL PANES TEMPERED

**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
Ramona, CA 92065

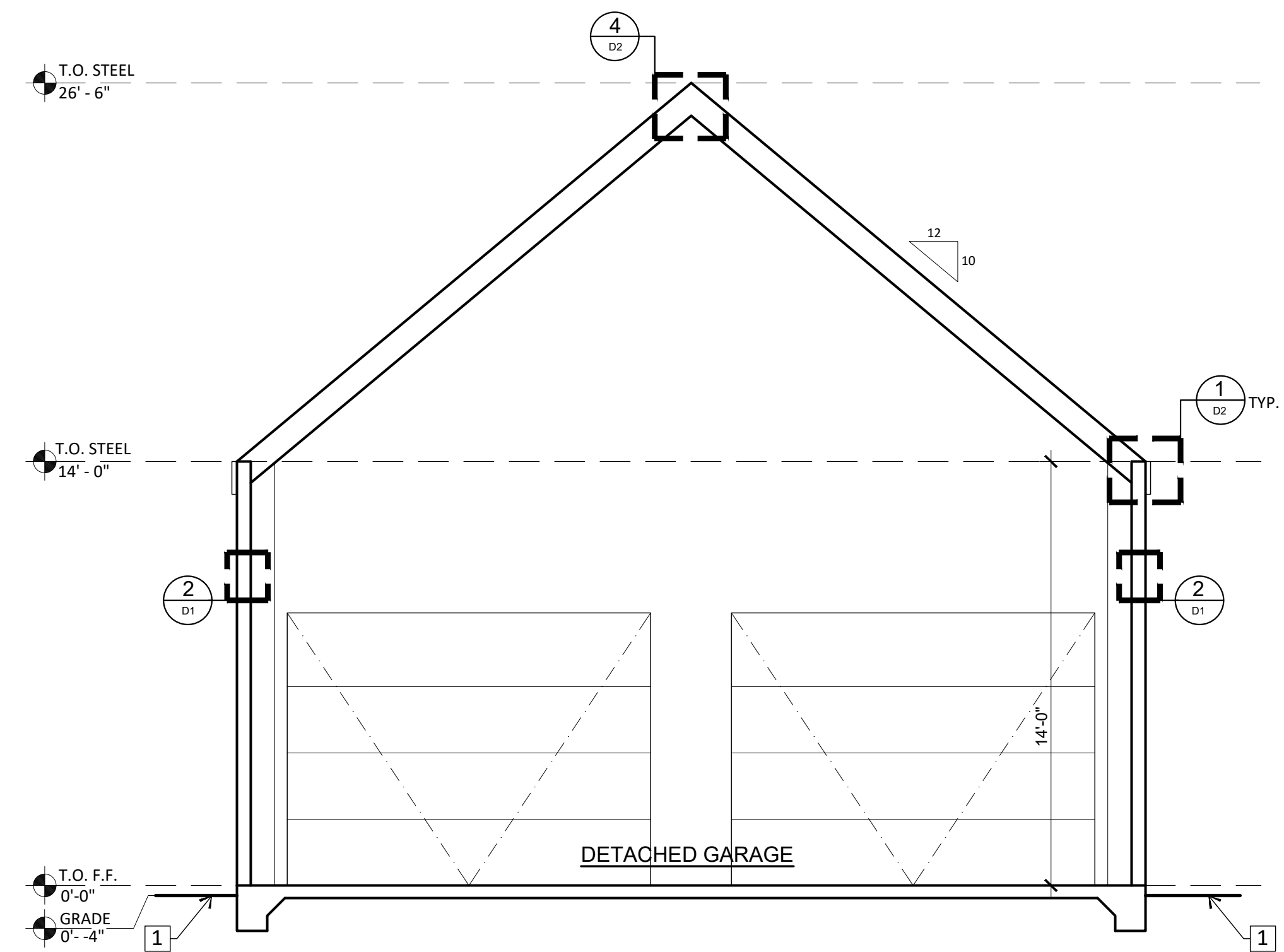
DATE	DESCRIPTION

KEYNOTES	
1	EXISTING GRADE
2	R-23 ROCKWOOL INSULATION @ WALLS
3	R-6 POLYISO INSULATION, SEE DETAILS 1+4/D2



**PROPOSED GARAGE SECTION A**

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



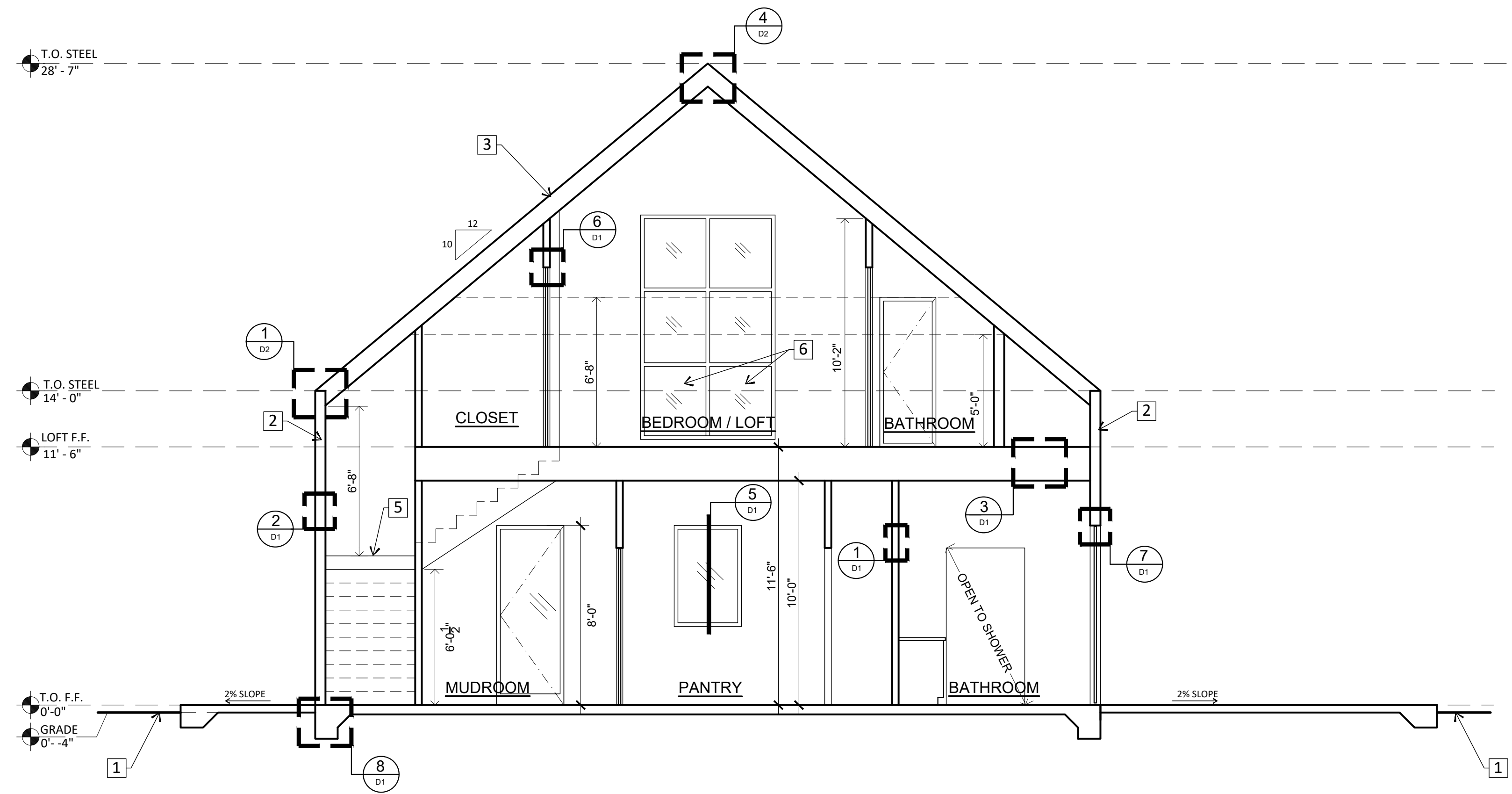
**PROPOSED GARAGE SECTION B**

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

**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
Ramona, CA 92065

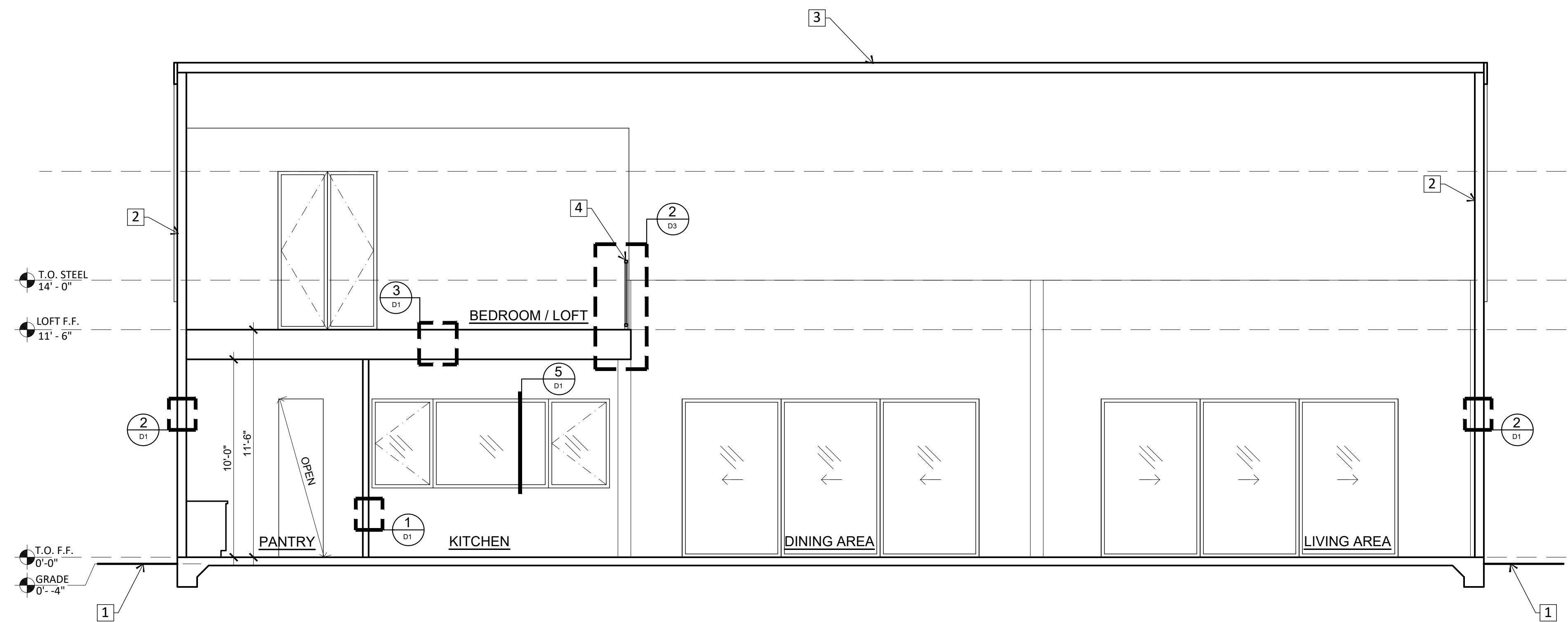
DATE	DESCRIPTION



**PROPOSED SINGLE FAMILY DWELLING SECTION A**

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

KEYNOTES	
1	EXISTING GRADE
2	R-23 ROCKWOOL INSULATION @ WALLS
3	R-6 POLYISO INSULATION, SEE DETAILS 1+4/D2
4	METAL GUARDRAIL 42" HT. FROM F.F., TYP.
5	STAIR, 6" RISERS + 12" TREAD DEPTH
6	NO OPERABLE PORTION OF WINDOW WITHIN 2' HT. A.F.F., ALL PANES TEMPERED WITHIN 18" A.F.F.



**PROPOSED SINGLE FAMILY DWELLING SECTION B**

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

# WRIGHT VALLEY RANCH

18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

WINDOW SCHEDULE					ALL WINDOWS: U-FACTOR = 0.29, SHGC = 0.19
#	SIZE (wxh)	WINDOW			REMARKS
		QTY.	MAT.	U-VALUE / SHGC	
A	5'-0" X 4'-6"	2	ALUM-WOOD CLAD	0.29 / 0.18	MARVIN - CASEMENT
B	4'-0" X 8'-0"	2	STEEL	0.29 / 0.23	EUROLINE - FIXED - BOTH PANES TEMPERED
C	6'-0" X 8'-0"	3	ALUM-WOOD CLAD	0.26 / 0.21	MARVIN - FIXED - BOTH PANES TEMPERED
D	3'-0" X 4'-6"	3	ALUM-WOOD CLAD	0.29 / 0.18	MARVIN - CASEMENT
E	2'-0" X 3'-0"	1	ALUM-WOOD CLAD	0.29 / 0.18	MARVIN - CASEMENT - BOTH PANES TEMPERED
F	6'-0" X 4'-6"	1	ALUM-WOOD CLAD	0.29 / 0.18	MARVIN - FIXED
G	6'-0" X 10'-0"	1	ALUM-WOOD CLAD	0.26 / 0.21	MARVIN - FIXED - BOTH PANES TEMPERED WHERE WITHIN 18" A.F.F.
H	2'-0" X 10'-0"	1	ALUM-WOOD CLAD	0.26 / 0.21	MARVIN - FIXED
NOTES:					
ALL WINDOWS TO BE THERMALLY BROKEN AT FRAMES					

DOOR SCHEDULE								REMARKS
#	SIZE (wxh)	DOOR			MAT.	U-VALUE / SHGC	REMARKS	
		TYPE	QTY.	HINGE OPERATION				
1	3'-0" X 8'-0"	EXTERIOR	4	RIGHT	OUT-SWING	ALUM-WOOD CLAD	0.29 / 0.15	MARVIN
2	3'-0" X 8'-0"	EXTERIOR	1	LEFT	OUT-SWING	ALUM-WOOD CLAD	0.29 / 0.15	MARVIN
3	12'-0" X 9'-0"	GARAGE DOOR	2	-	ROLL UP	ALUM.		
4	5'-0" X 8'-0"	EXTERIOR	1	R - L	OUT-SWING	ALUM-WOOD CLAD	0.29 / 0.15	MARVIN
5	3'-0" X 8'-0"	SWING DOOR	1	LEFT	IN-SWING	WOOD		TRUSTILE - V-GROOVE, FIRE RATED (1 1/2" MIN., 20 MIN. RATED)
6	4'-0" X 8'-0"	EXTERIOR	1	RIGHT	IN-SWING	STEEL		EUROLINE
7	(3) 5'-0" X 8'-0"	EXTERIOR	1	-	OXX SLIDER	STEEL	0.49 / 0.23	EUROLINE
8	(3) 5'-0" X 8'-0"	EXTERIOR	1	-	XXO SLIDER	STEEL	0.49 / 0.23	EUROLINE
9	2'-8" X 8'-0"	SWING DOOR	1	LEFT	IN-SWING	WOOD		TRUSTILE - V-GROOVE
10	3'-0" X 8'-0"	POCKET DOOR	1	-	SLIDER	WOOD		TRUSTILE - V-GROOVE
11	5'-0" X 8'-0"	SWING DOOR	2	R - L	OUT-SWING	WOOD		TRUSTILE - V-GROOVE
12	2'-6" X 6'-8"	SWING DOOR	1	RIGHT	IN-SWING	WOOD		TRUSTILE - V-GROOVE
NOTES:								
ALL METAL FRAMED DOORS TO BE THERMALLY BROKEN								

SIMULATED = 0.48 / 0.16  
SIMULATED = 0.42 / 0.24  
SIMULATED = 0.42 / 0.24

**NATURAL VENTILATION**

1. Provide natural ventilation by means of windows or doors opening to the outdoor air at all new/modified bedrooms. The minimum openable area shall be 4 percent of the floor area being ventilated.

**EMERGENCY ESCAPE**

1. Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet. The minimum net clear opening for emergency escape grade-level openings shall be 5 square feet.

2. Emergency escape and rescue openings shall have the following dimensions: The minimum net clear opening height dimension shall be 24 inches. The minimum net clear opening width dimension shall be 20 inches. The net clear opening dimension shall be the result of normal operation of the opening.

3. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches measured from the floor.

**WINDOW FALL PROTECTION**

Where the top of the sill of an operable window opening is located less than 24 inches above the finished floor and greater than 72 inches above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of the following:

1. Operable windows with openings that will not allow a 4-inch-diameter sphere to pass through the opening where the opening is in its largest opened position.

2. Operable windows that are provided with window fall prevention devices that comply with ASTM F2090.

3. Operable windows that are provided with window opening control devices that comply with Section R312.2.2.

**TEMPERED SAFETY GLAZING**

Tempered glass safety glazing required in hazardous locations (CRC R308 4.3.) Glazing that meets all of the following is in a hazardous location:

1) pane larger than 9 sf  
2) bottom edge less than 18" from floor  
3) top edge more than 36" from floor  
4) floor is within 36" measured horizontally

Exceptions: 1) decorative glazing  
2) horizontal rail (see Code for specifications)

**WINDOW SPECIFICATIONS**

1. Glazing to be minimum double pane, U-factor & SHGC per T24 Energy Report, all windows to be thermally broken

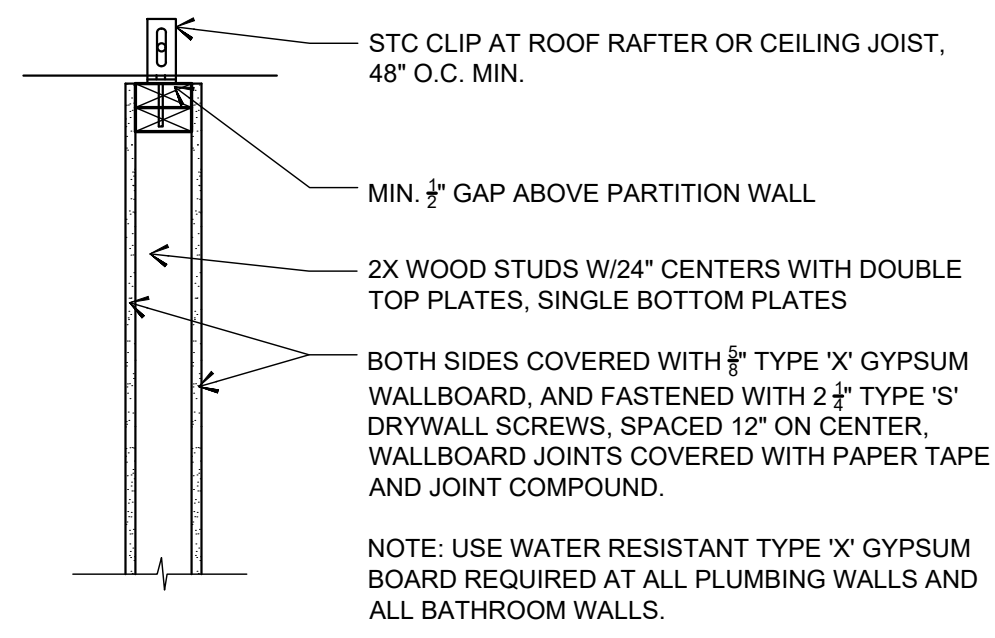
2. Window opening control devices serving emergency escape and rescue openings shall comply with ASTM F2090.

3. Each pane of safety glazing installed in hazardous locations shall bear the permanent manufacturer's mark designating the type and thickness of the glass or glazing material, specifying who applied the designation, the manufacturer or installer and the safety glazing standard with which it complies. This identification mark shall be acid etched, sand blasted, ceramic fired, laser etched, embossed or of a type that, once applied, cannot be removed without being destroyed.

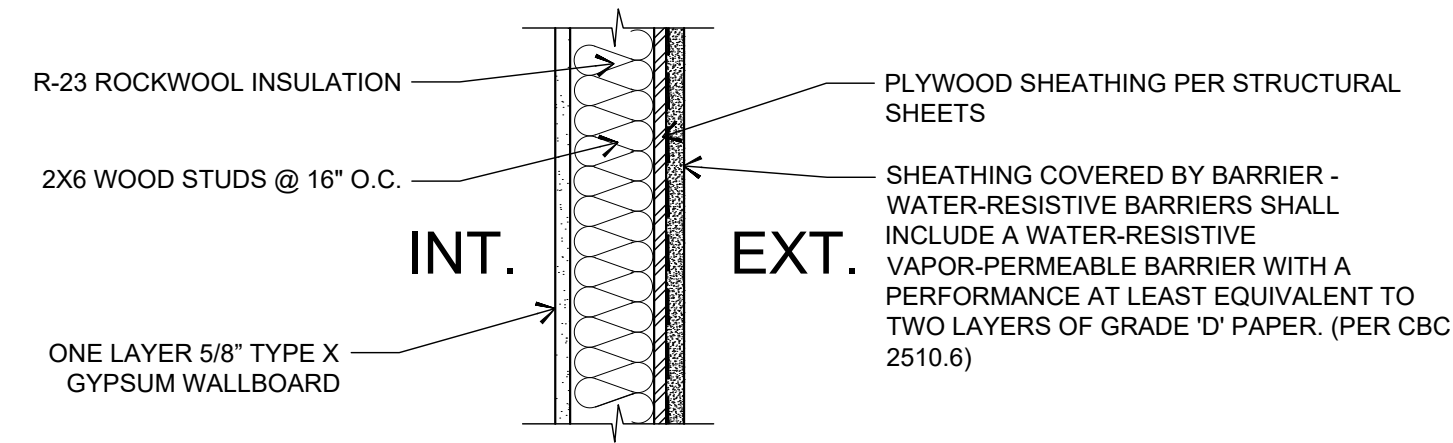
4. Unit skylights and tubular day lighting devices shall be tested by an approved independent laboratory, and bear a label identifying manufacturer, performance grade rating and approved inspection agency to indicate compliance with the requirements of AAMA/WDMA/CSA 101/I.S.2/A440.

**WRIGHT VALLEY RANCH**  
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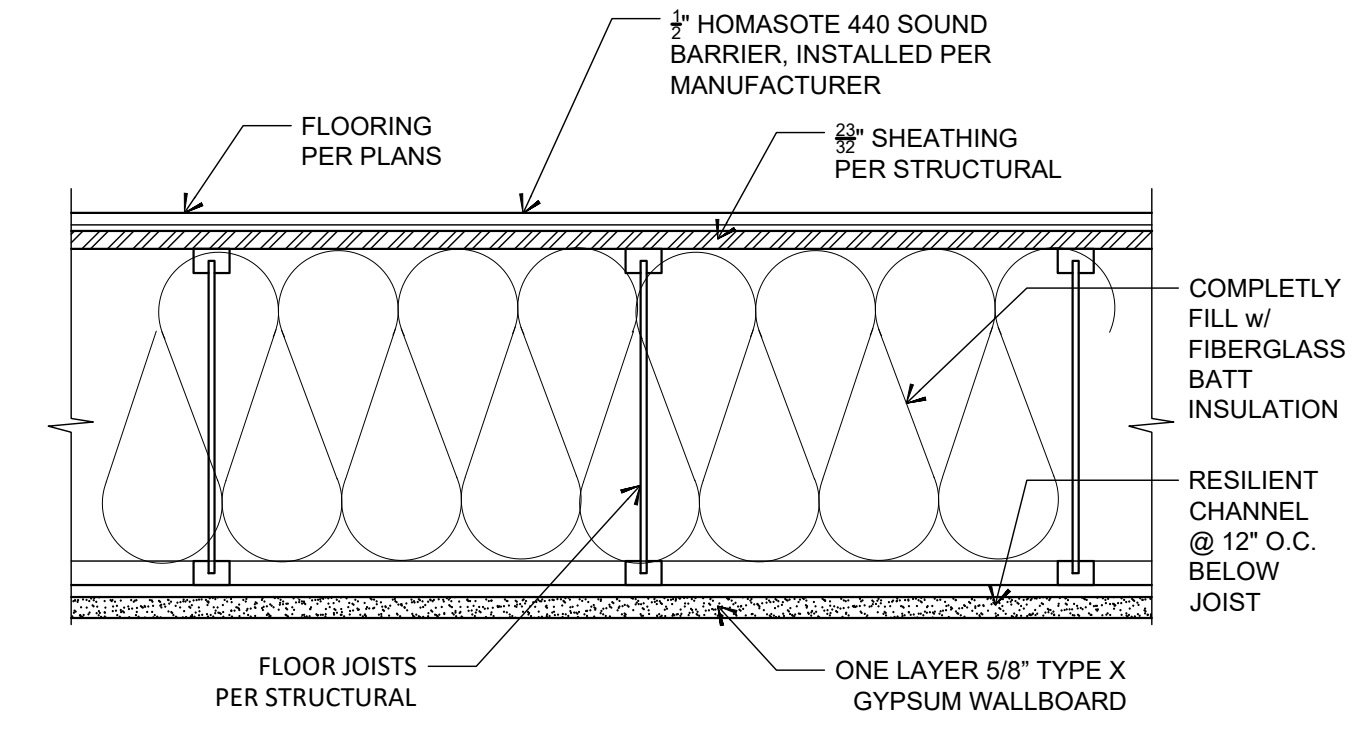
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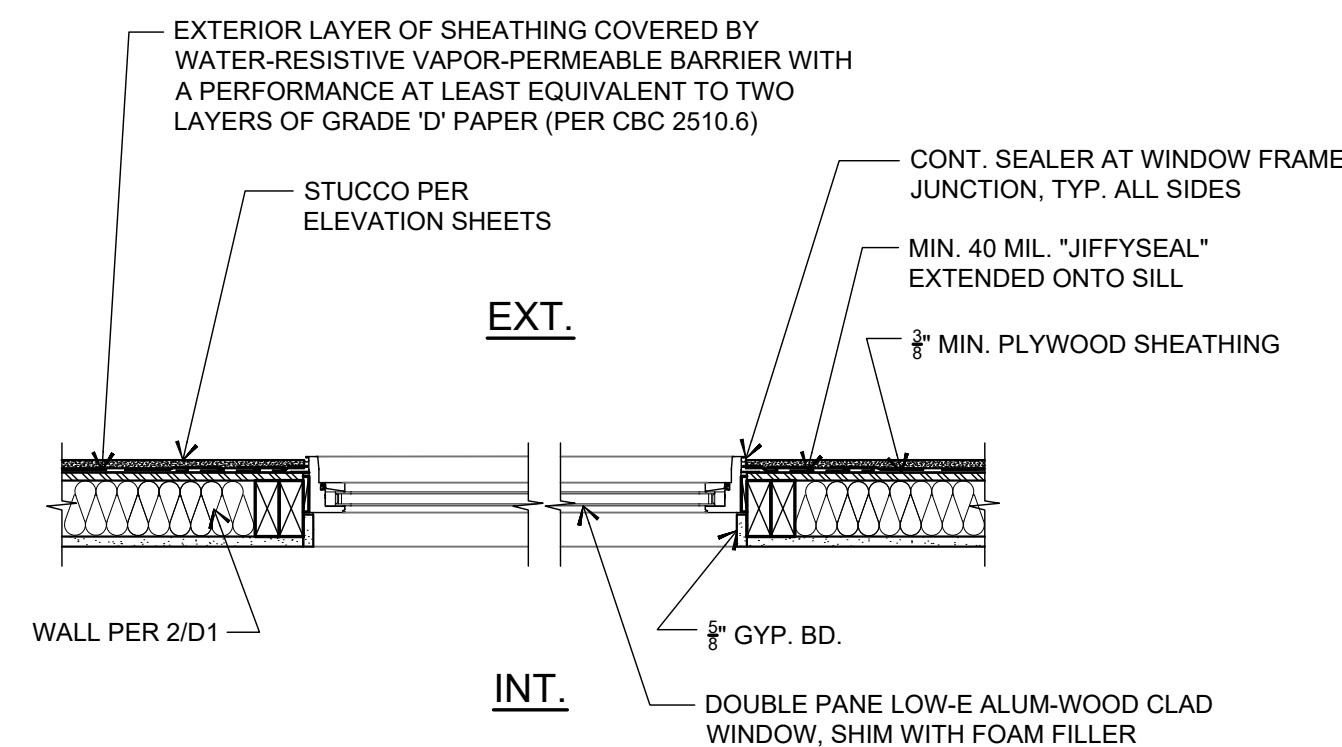
**1** TYP. INT. NON-BEARING WALL  
1"=1'-0"



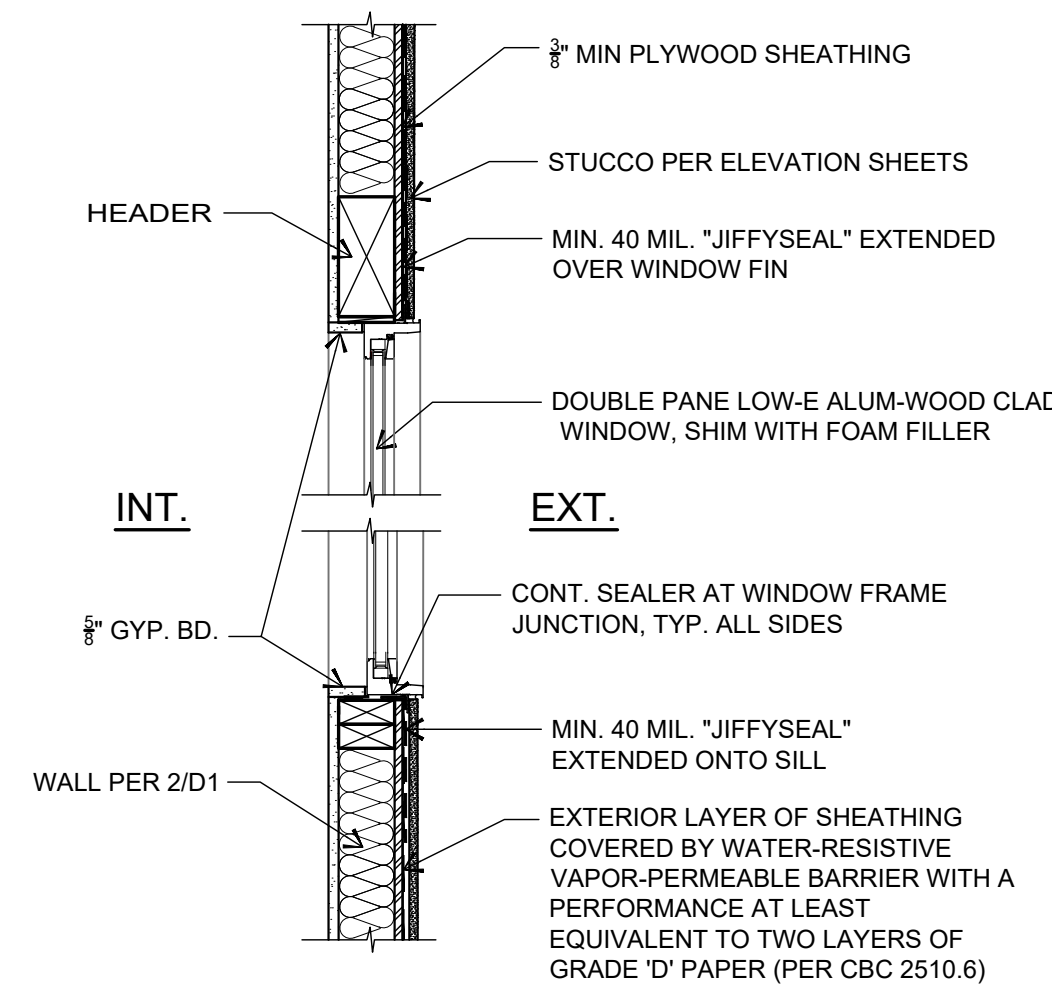
**2** NON-RATED EXT. WALL - STUCCO  
1-1/2"=1'-0"



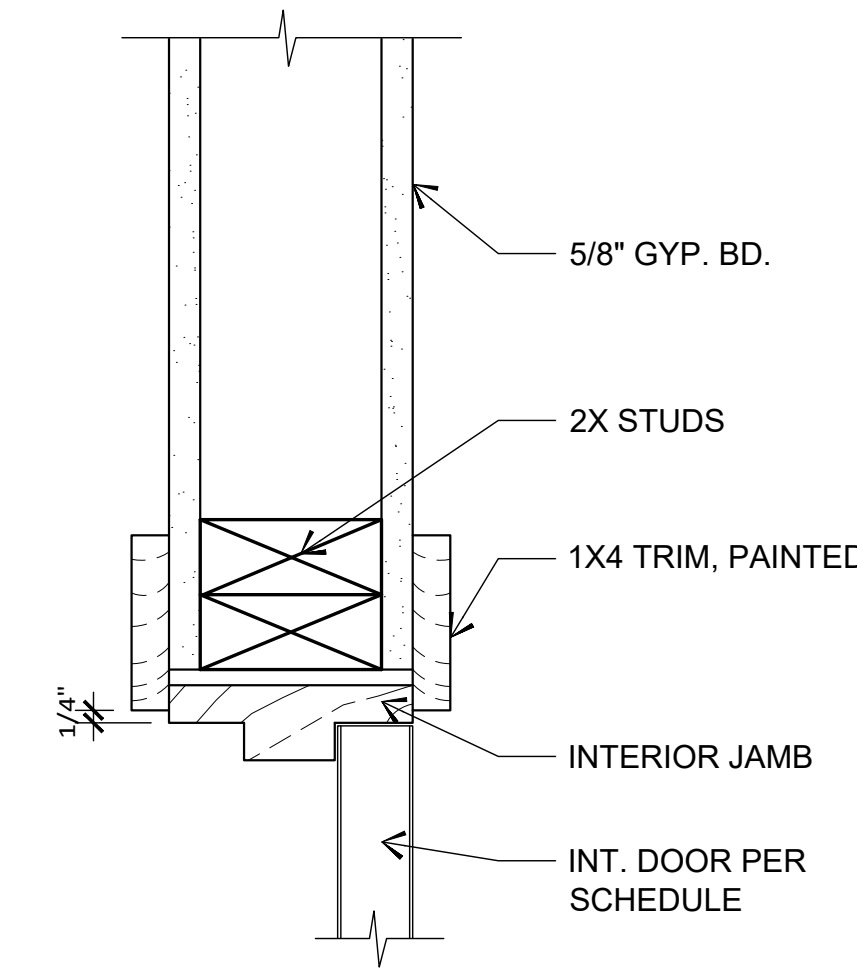
**3** TYP. LOFT FLOOR/CEILING ASSEMBLY  
1-1/2"=1'-0" NON-RATED



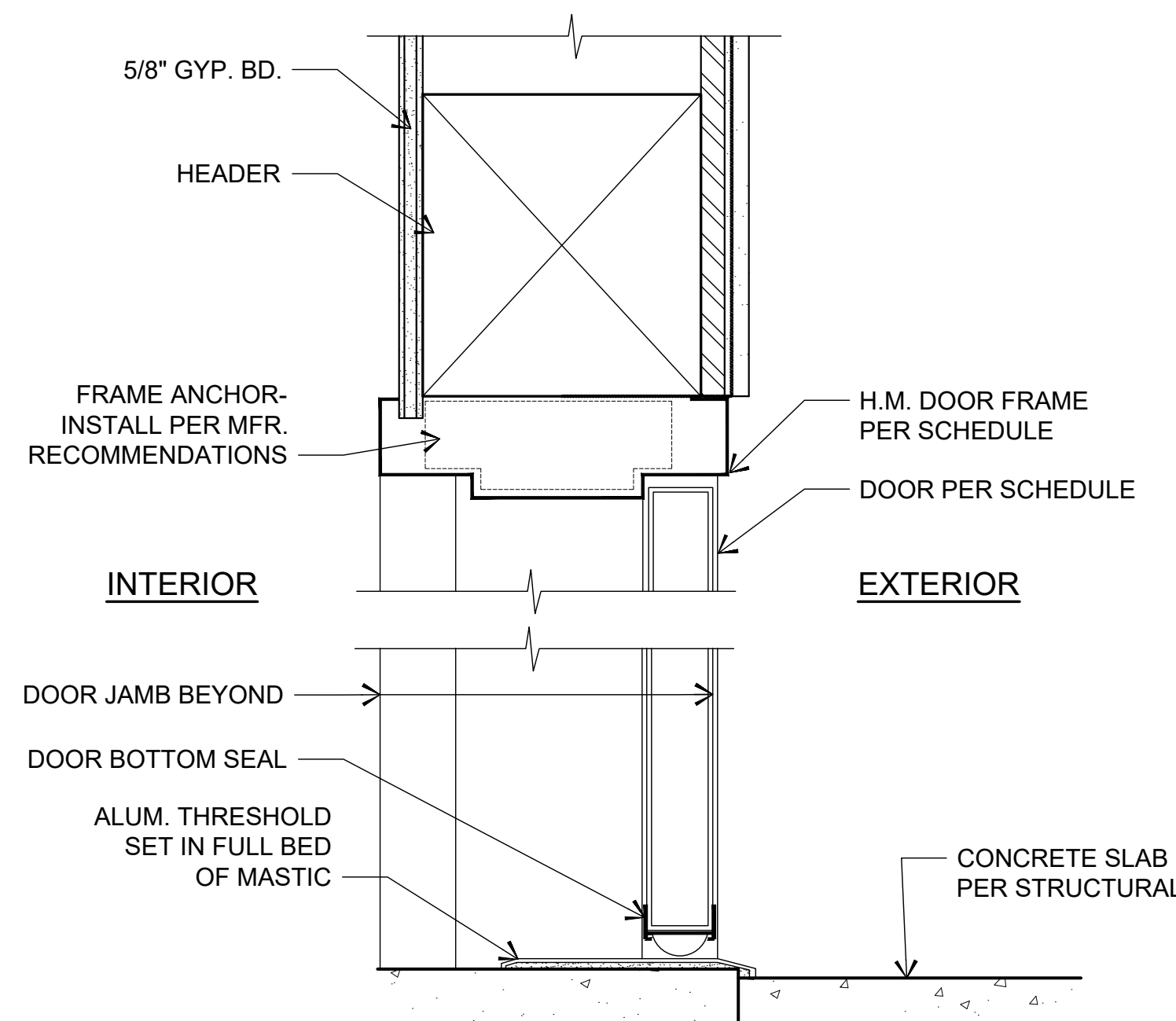
**4** WINDOW JAMB DETAIL  
1"=1'-0"



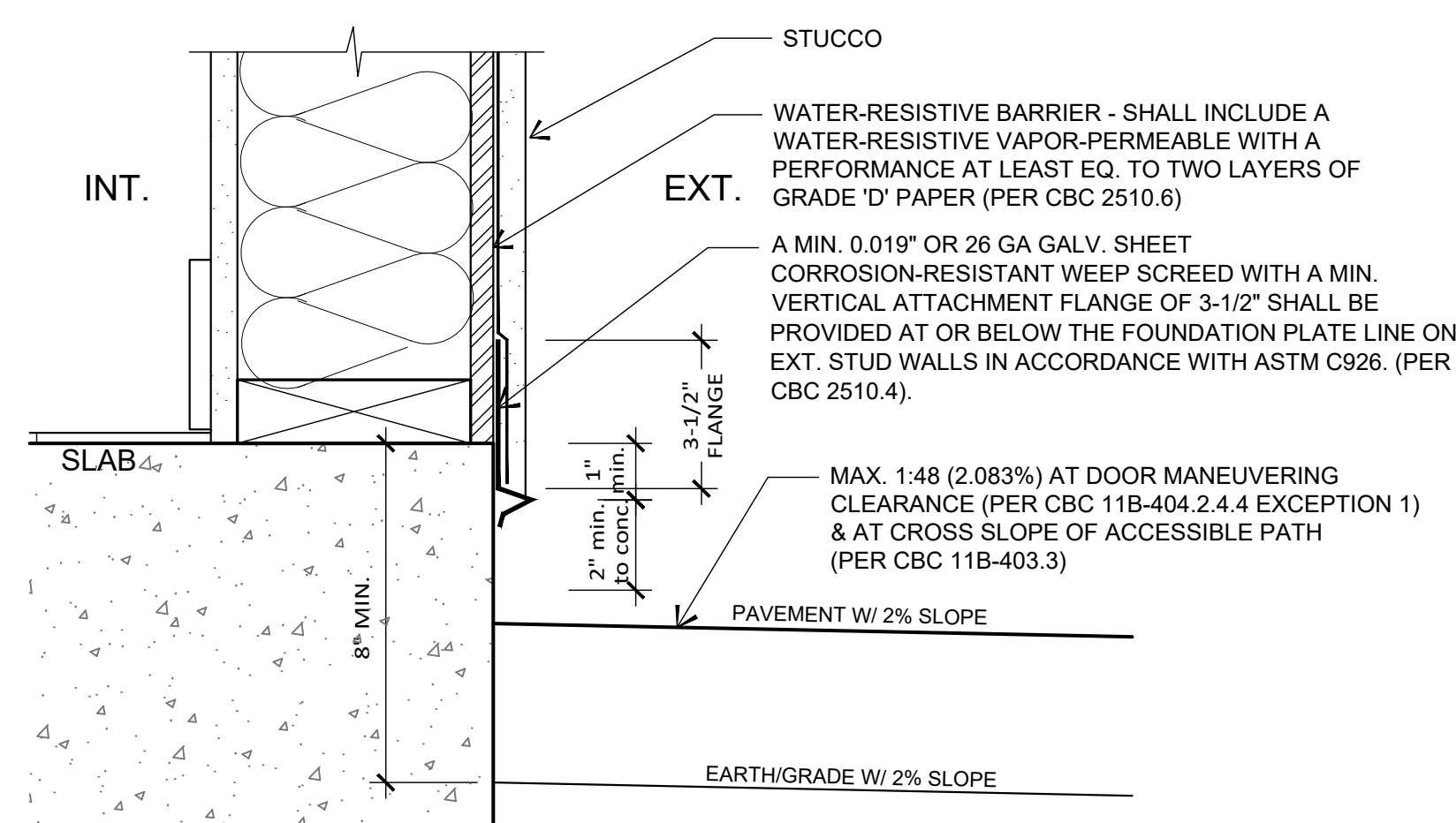
**5** WINDOW SILL-HEADER DETAIL  
1"=1'-0"



**6** INTERIOR DOOR HEAD  
3"=1'-0"



**7** EXTERIOR DOOR HEAD/SILL AT ENTRY  
3"=1'-0"

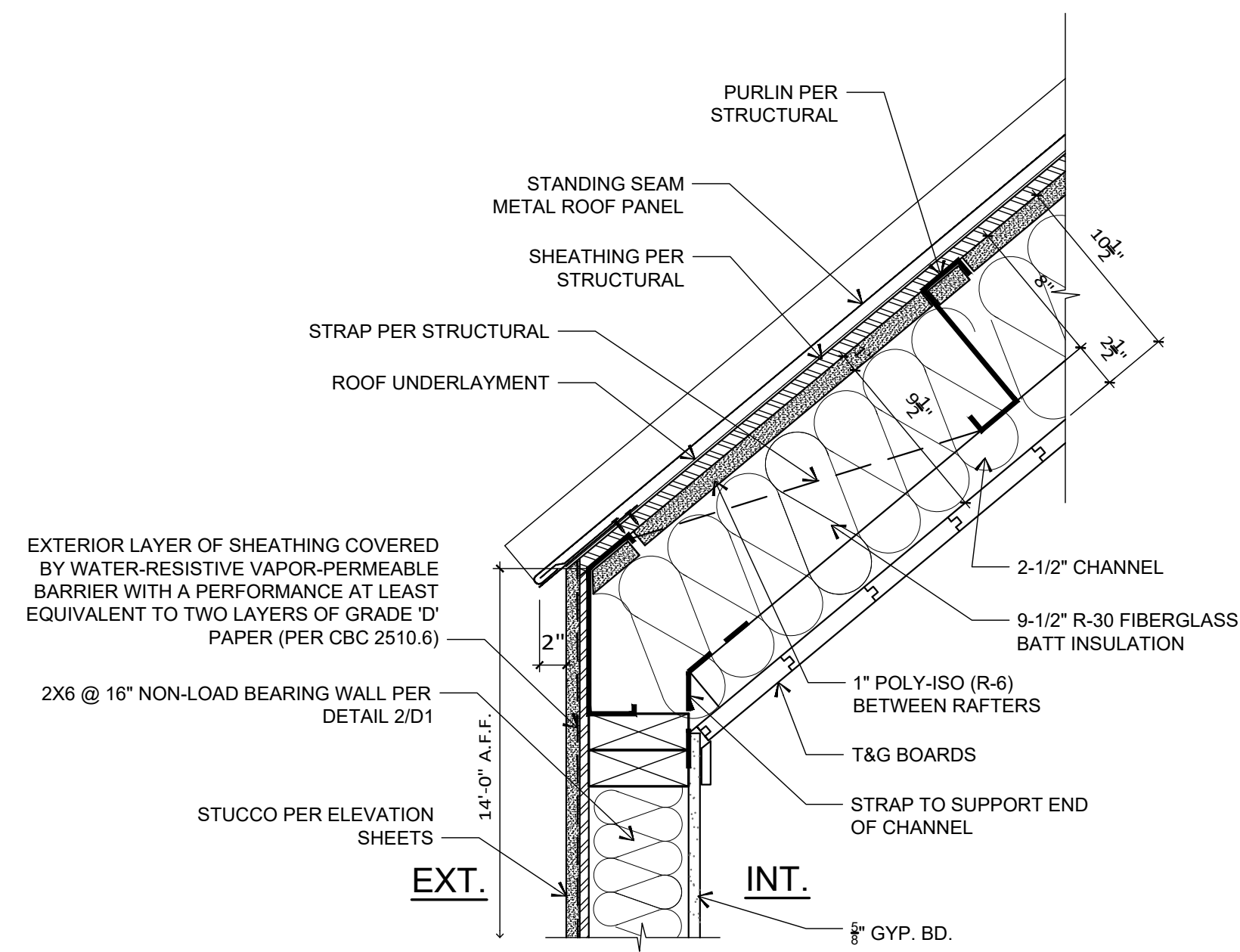


**8** TYP. STUCCO WEEP SCREED  
3"=1'-0"

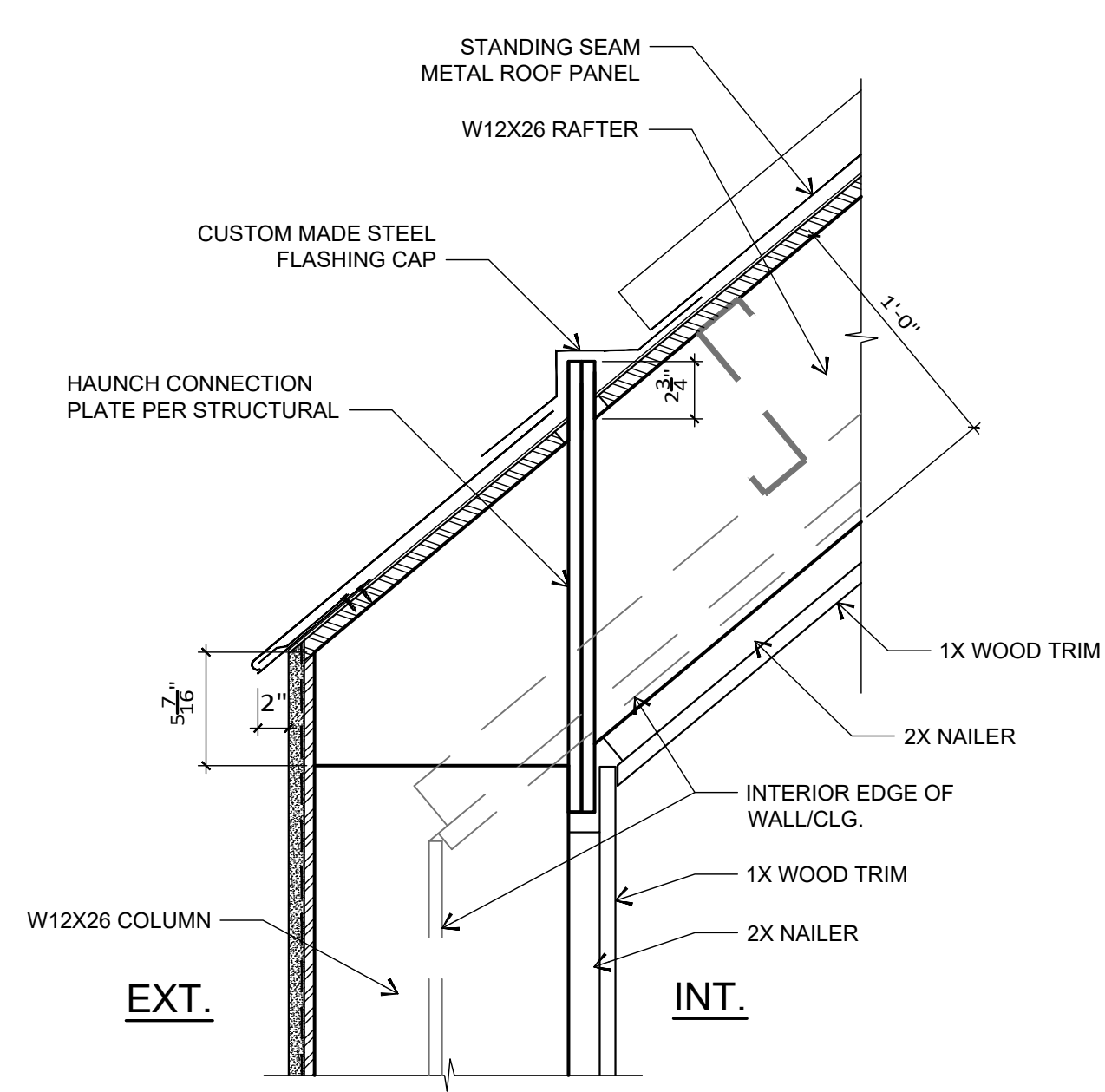
**WRIGHT VALLEY RANCH**  
1890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

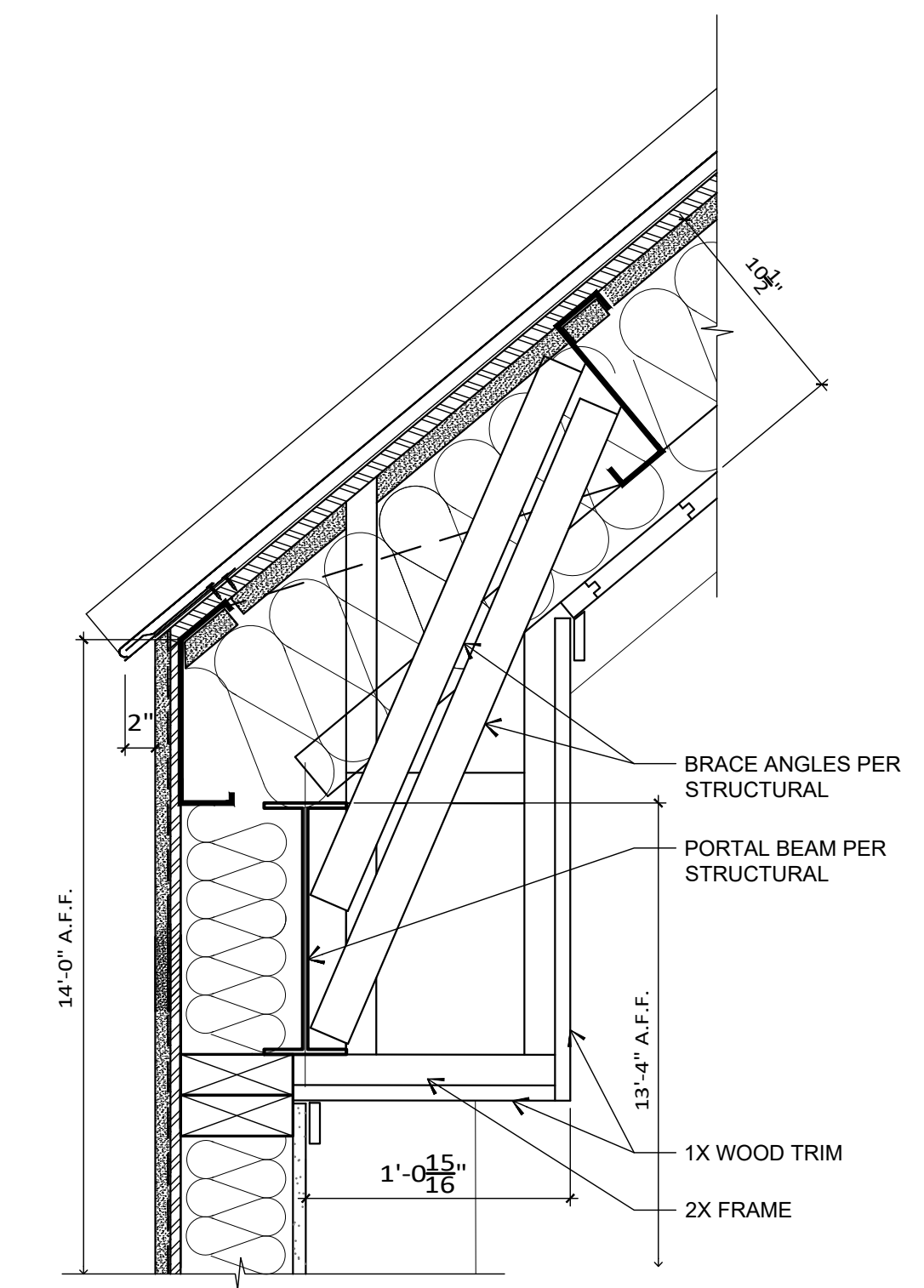
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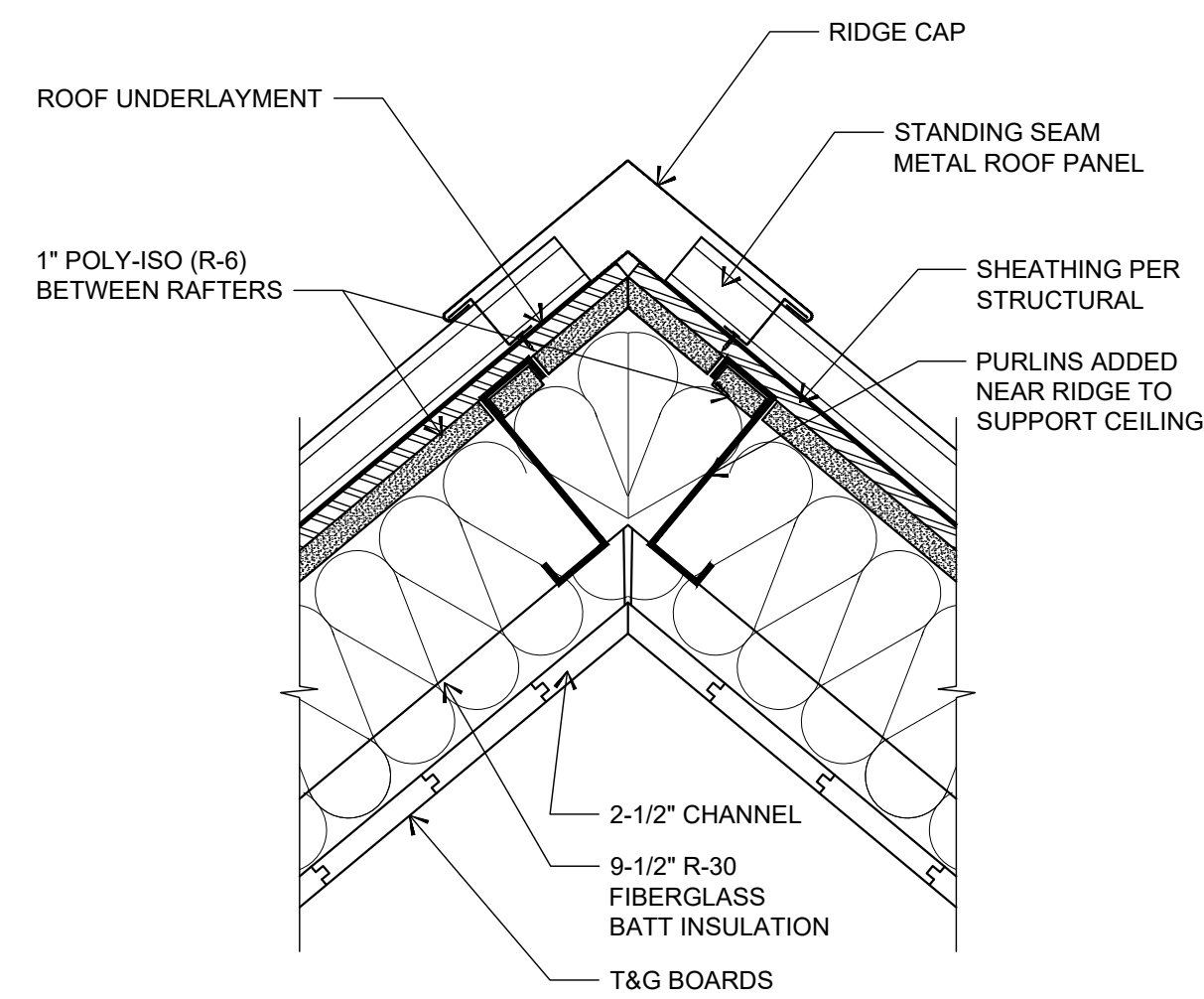
**1 TYP. EAVE**  
1-1/2"=1'-0"



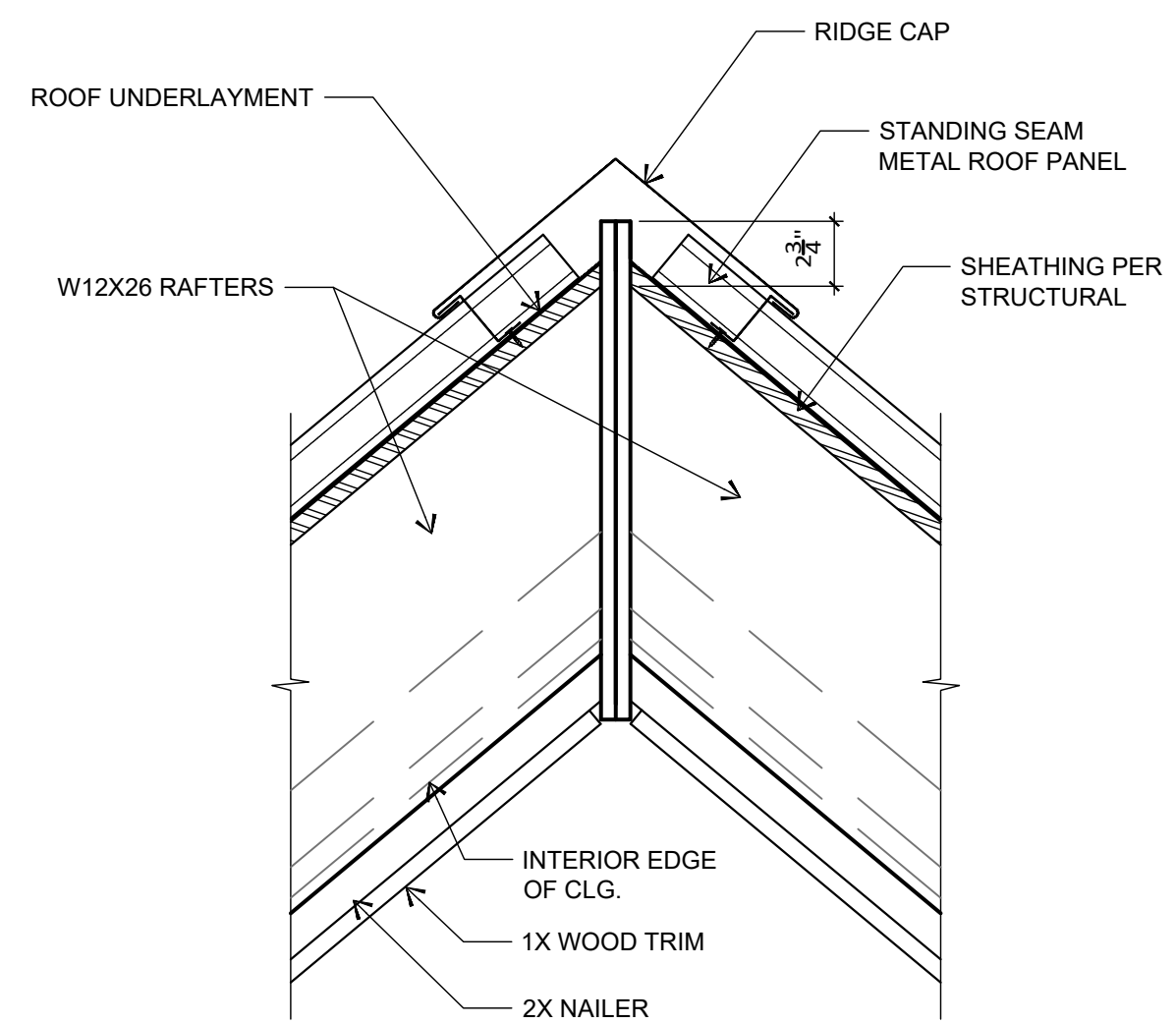
**2 EAVE AT COLUMN/RAFTER**  
1-1/2"=1'-0"



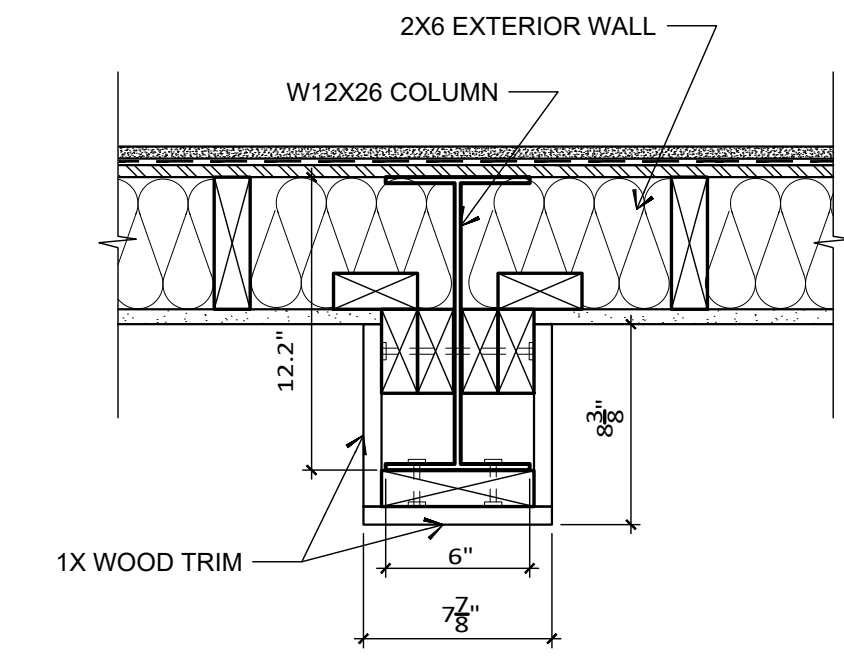
**3 EAVE AT PORTAL BEAM**  
1-1/2"=1'-0"



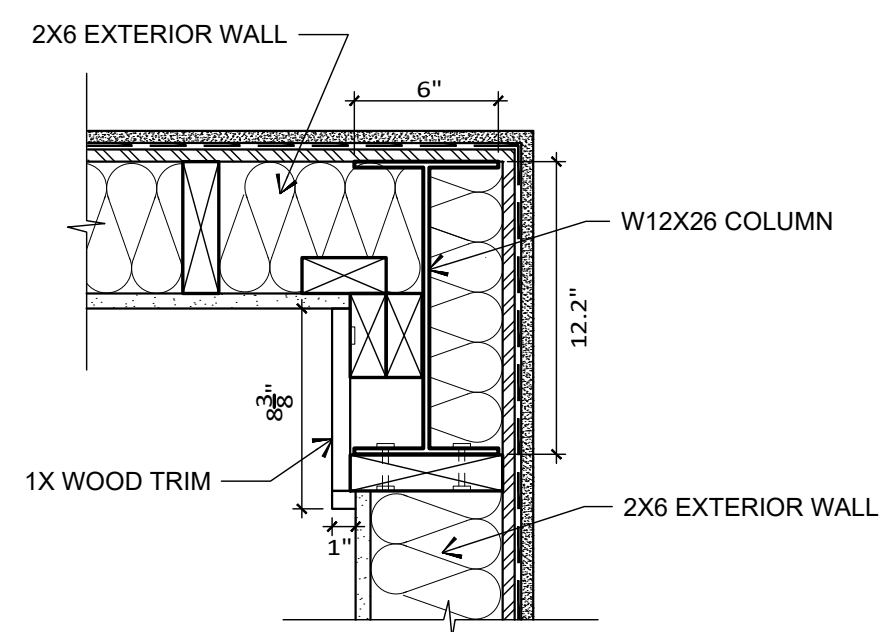
**4 TYP. RIDGE DETAIL**  
1-1/2"=1'-0"



**5 RIDGE DETAIL AT RAFTERS**  
1-1/2"=1'-0"



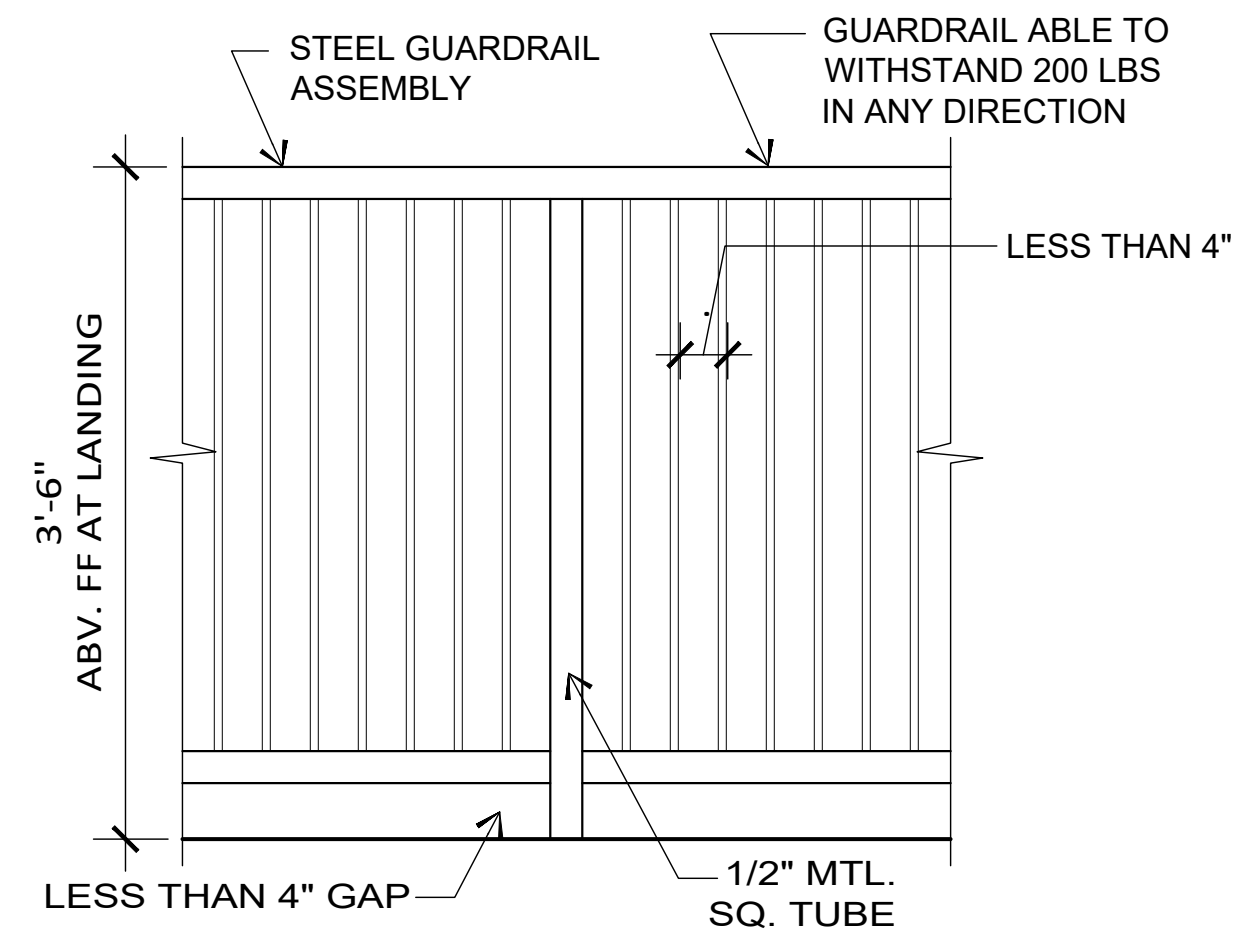
**6 PLAN DETAIL AT COLUMN**  
1-1/2"=1'-0"



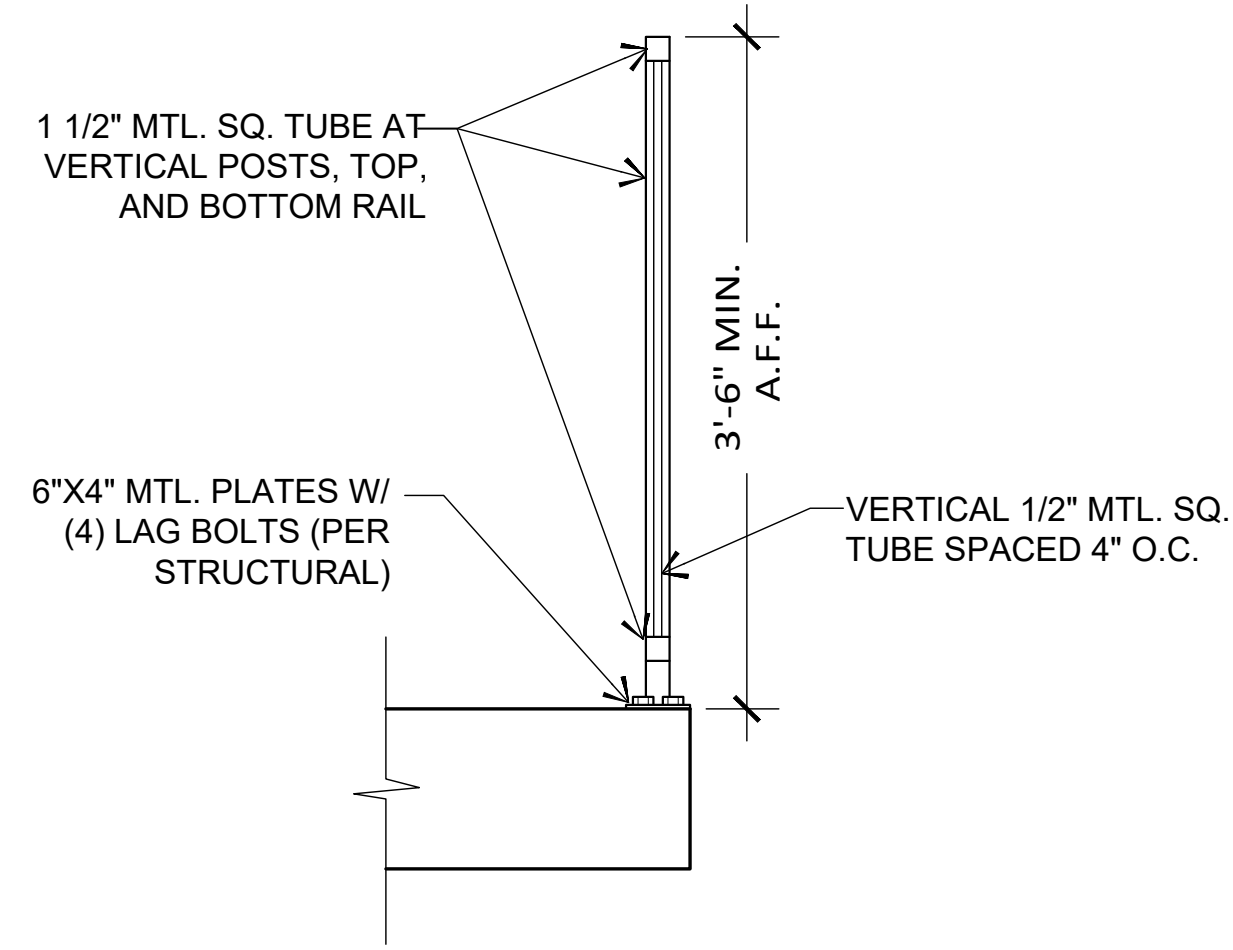
**7 @ CORNER PLAN DETAIL AT COLUMN**  
1-1/2"=1'-0"

**WRIGHT VALLEY RANCH**  
18890 Old Julian Trail  
Ramona, CA 92065

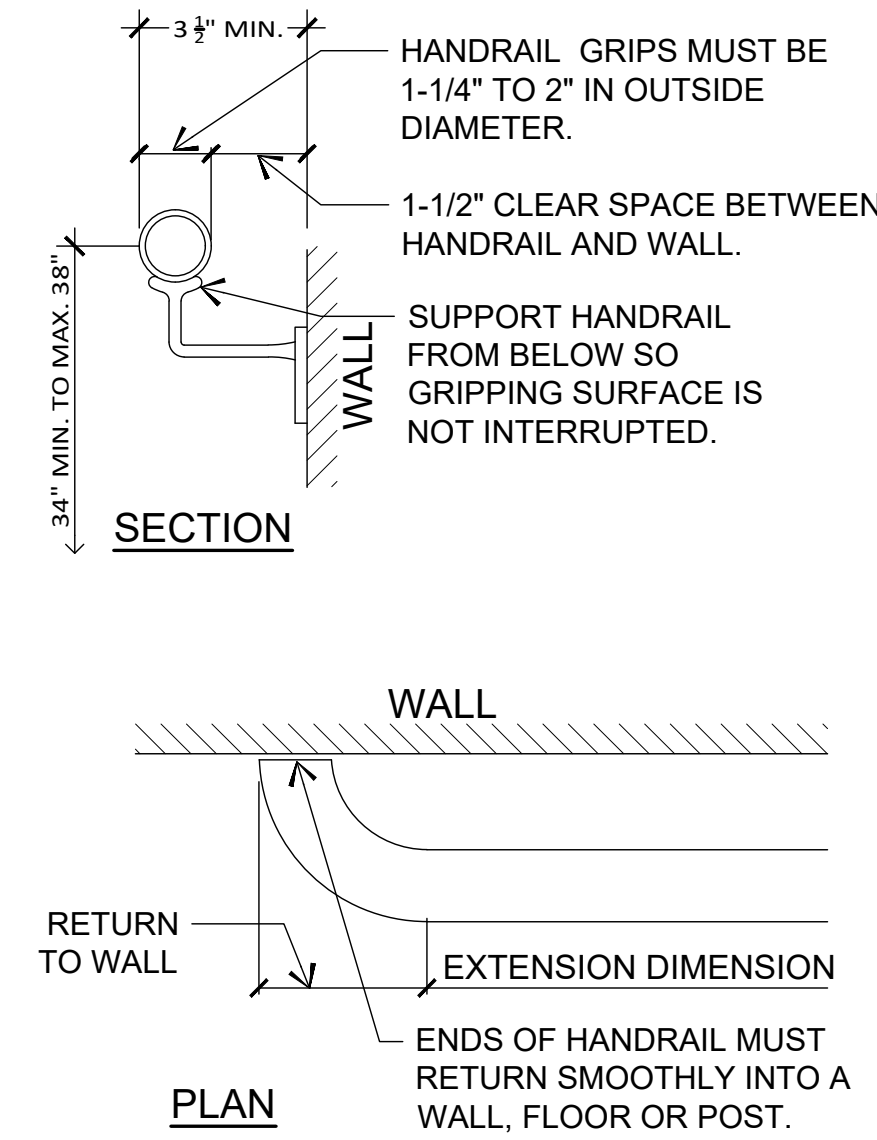
DATE	DESCRIPTION



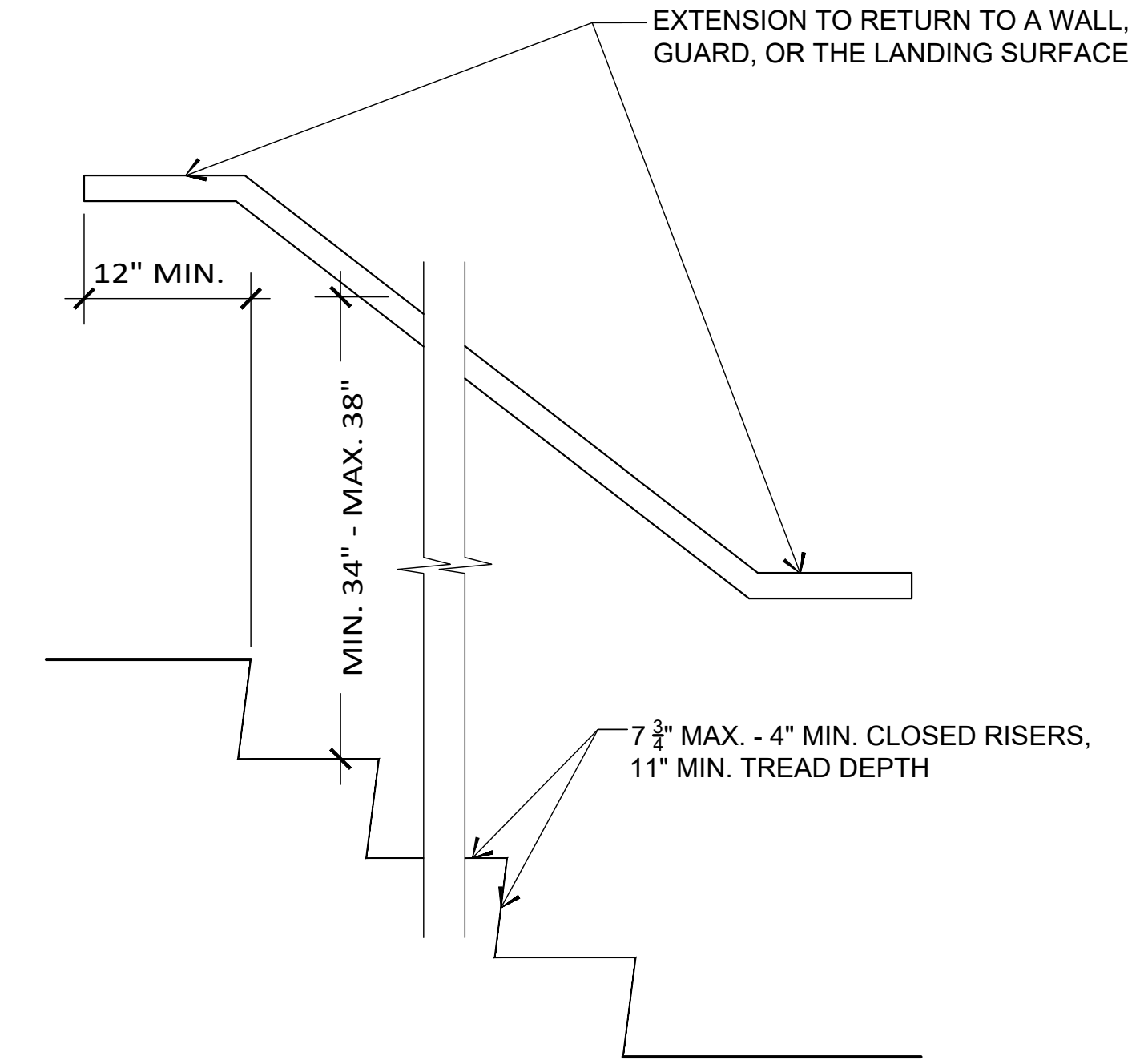
**1** GUARDRAIL DETAIL  
1"=1'-0"



**2** TYP. GUARDRAIL SECTION  
1"=1'-0"



**3** WALL MOUNTED HANDRAIL  
3"=1'-0"



**4** STAIR HANDRAIL  
1"=1'-0"

**HANDRAIL REQUIREMENTS**

R311.7.8 Handrails shall be provided on not less than one side of each continuous run of treads or flight with four or more risers.

R311.7.8.1 Height. Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches and not more than 38 inches.

**Exceptions:**

- The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
- Where handrail fittings or bendings are used to provide continuous transition between flights, transitions at winder treads, the transition from handrail to guard, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed 38 inches.

R311.7.8.2 Continuity. Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1-1/2 inches between the wall and the handrails.

**Exceptions:**

- Handrails shall be permitted to be interrupted by a newel post at the turn.

- The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.

R311.7.8.3 Grip-size. Required handrails shall be of one of the following types or provide equivalent graspability.

- Type I. Handrails with a circular cross section shall have an outside diameter of not less than 1-1/4 inches and not greater than 2 inches. If the handrail is not circular, it shall have a perimeter dimension of not less than 4 inches and not greater than 6-1/4 inches with a cross section of dimension of not more than 2-1/4 inches. Edges shall have a radius of not less than 0.01 inch.
- Type II. Handrails with a perimeter greater than 6-1/4 inches shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of 3/4 inch measured vertically from the tallest portion of the profile and achieve a depth of not less than 5/16 inch within 7/8 inch below the widest portion of the profile. This required depth shall continue for not less than 3/8 inch to a level that is not less than 1-3/4 inches below the tallest portion of the profile. The width of the handrail above the recess shall be not less than 1-1/4 inches and not more than 2-3/4 inches. Edges shall have a radius of not less than 0.01 inch.

**STAIRWAY REQUIREMENTS**

R311.7.1 Width. Stairways shall be not less than 36 inches in clear width at all points above the permitted handrail height and below the required headroom height.

Handrails shall not project more than 4-1/2 inches on either side of the stairway and the clear width of the stairway at and below the handrail height, including treads and landings, shall be not less than 31-1/2 inches where a handrail is installed on one side and 27 inches where handrails are provided on both sides.

R311.7.2 Headroom. The headroom in stairways shall be not less than 6 feet 8 inches measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

**Exceptions:**

- Where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom not more than 4-3/4 inches.

R311.7.3 Vertical rise. A flight of stairs shall not have a vertical rise larger than 147 inches between floor levels or landings.

**WINDER REQUIREMENTS**

R311.7.4 Walkline. The walkline across winder treads shall be concentric to the curved direction of travel through the turn and located 12 inches from the side where the winders are narrower. The 12-inch dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder. If winders are adjacent within the flight, the point of the widest clear stair width of the adjacent winders shall be used.

R311.7.5.2.1 Winder treads. Winder treads shall have a tread depth of not less than 6 inches at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walkline shall not exceed the smallest winder tread by more than 3/8 inch. Consistently shaped winders at the walkline shall be allowed within the same flight of stairs as rectangular treads and do not have to be within 3/8 inch of the rectangular tread depth.

**GUARDRAIL REQUIREMENTS**

R312.1.2 Height. Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 42 inches in height as measured vertically above the adjacent walking surface or the line connecting the leading edges of the treads.

**Exceptions:**

- Guards on the open sides of stairs shall have a height not less than 34 inches measured vertically from a line connecting the leading edges of the treads.
- Where the top of the guard serves as a handrail on the open sides of stairs, the top of the guard shall be not less than 34 inches and not more than 38 inches as measured vertically from a line connecting the leading edges of the treads.

R312.1.3 Opening limitations. Required guards shall not have openings from the walking surface to the required guard height that allow passage of a sphere 4 inches (102 mm) in diameter.

**Exceptions:**

- The triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches (153 mm) in diameter.
- Guards on the open side of stairs shall not have openings that allow passage of a sphere 4 3/8 inches (111 mm) in diameter.

**TREAD & RISER REQUIREMENTS**

R311.7.5 Stair treads and risers. Stair treads and risers shall meet the requirements of this section. For the purposes of this section, dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.

R311.7.5.1 Risers. The riser height shall be not more than 7-3/4 inches. The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees from the vertical. Open risers are permitted provided that the openings located more than 30 inches, as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter sphere.

R311.7.5.2 Treads. The tread depth shall be not less than 10 inches. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch.

R311.7.5.3 Nosings. The radius of curvature at the nosing shall be not greater than 9/16 inch. A nosing projection not less than 3/4 inch and not more than 1-1/4 inches shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch between two stories, including the nosing at the level of floors and landings. Beveling of nosings shall not exceed 1/2 inch.

Exception: A nosing projection is not required where the tread depth is not less than 11 inches

**WRIGHT VALLEY RANCH**

18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION



# ICC-ES Evaluation Report

ESR-2316

Reissued October 2024

This report also contains:

- City of LA Supplement
- CA Supplement

Subject to renewal October 2026

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<b>DIVISION:</b> 10 00 00 — <b>SPECIALTIES</b> Section: 10 31 00 — Manufactured Fireplaces	<b>REPORT HOLDER:</b> EARTHCORE INDUSTRIES, LLC	<b>EVALUATION SUBJECT:</b> ISOKERN STANDARD MODELS 36-INCH, 42- INCH AND 46-INCH FIREPLACE AND DM CHIMNEY SYSTEMS; ISOKERN MAGNUM FIREPLACE SERIES MODELS 28, 36, 42, 48, 60 AND 72; ISOKERN FIREPLACE WITH FIRE- LITE APPLICATION	
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## 1.0 EVALUATION SCOPE

### Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Residential Code®* (IRC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Mechanical Code®* (IMC)

### Properties evaluated:

- Fire resistance
- Seismic resistance

## 2.0 USES

The Isokern fireplaces are wood-burning that are constructed in the field using prefabricated cementitious blocks.

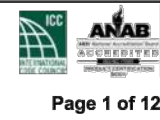
## 3.0 DESCRIPTION

### 3.1 Solid-fuel-burning Fireplaces: Isokern Standard Models 36-inch, 42-inch, and 46-inch with DM Chimney; and Magnum Fireplace Series Models 28, 36, 42, 48, 60 and 72 with DM54 Chimney:

Isokern fireplaces and DM54 chimney systems are modular refractory units designed for field assembly. The units consist of interlocking precast parts that are fitted together in the field using a premixed mortar called Earthcore mortar, supplied with the units, to form a solid-fuel-burning fireplace and chimney system. The refractory parts are manufactured using a proprietary mixture of volcanic pumice aggregate and aluminate cement. The firebox, smoke dome and chimney outer casing are manufactured with medium-density material, and the flue liner with high-density material. High-temperature refractory firebricks, a minimum of 1 1/8 inches (28.6 mm) thick, are provided to line the interior of the firebox. The firebox is available in sizes noted in Table 2. See Figures 1 through 3 for further details.

### 3.2 Fire-Lite Systems:

3.2.1 General: The Fire-Lite systems consist of Standard Models 36-inch, 42-inch, and 46-inch fireplaces and Magnum Series Models 28-inch, 36-inch, 42-inch 48-inch, 60-inch and 72-inch fireplaces, described in



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## 5.0 CONDITIONS OF USE:

The Isokern fireplaces and chimney systems described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- The fireplaces must be installed in accordance with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between this report and the manufacturer's instructions, this report governs.
- Structural design and calculations from a registered design professional must be provided to the code official to justify the supporting structure for all applicable loads, including gravity, wind and earthquake loading, and applicable load combinations per IBC Section 1605.
- An analysis shall be provided to the code official establishing that the seismic conditions for the installation site do not exceed the specified seismic limitations.
- The fireplaces must not be installed with doors.
- Compliance with the fireplace air leakage provisions found in 2021, 2018 and 2015 *International Energy Conservation Code®* (IECC) Section R402.4.2; 2012 *International Energy Conservation Code®* (IECC) Section R402.4.2 and Table R402.4.1.1; 2021, 2018 and 2015 *International Energy Conservation Code®* (IECC) Section R402.4.2; 2012 IRC Section N1102.4.2 and Table N1102.4.1.1; 2009 IECC Section 402.4.3; and 2009 IRC Section N1102.4.3, are outside the scope of this report.
- Under the 2021 and 2018 IRC and 2021 and 2018 IMC, where factory-built chimneys pass through insulated assemblies, an insulation shield complying with 2021 and 2018 IRC Section R1005.8 or 2021 and 2018 IMC Section 805.7, as applicable, must be installed.
- Under the 2021 IRC Section R101.13, fireplace accessories must comply with UL 907 as being listed and labeled fireplace accessories and be installed in with the conditions of the listing, the manufacturer's installation instructions and the report holder's installation instructions.
- The wood-fired fireplaces are manufactured in Chesapeake, Virginia, under a quality control program with inspections by ICC-ES.

## 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Field-constructed Fireplace Systems Using Prefabricated Blocks (AC375), dated February 2012 (editorially revised July 2021).

## 7.0 IDENTIFICATION

- Product labeling shall include the name of the report holder or listee, and the ICC-ES mark of conformity. The listing or evaluation report number (ICC-ES ESR-2316) may be used in lieu of the mark of conformity. The components of the fireplace and chimney are supplied to the jobsite on shrink-wrapped pallets bearing a label with the Earthcore Industries, LLC, name, and address; the product name; the address of the manufacturing plant and the evaluation report number (ESR-2316). A permanent label must be attached to the fireplace, bearing the Earthcore Industries, LLC, name; the product name; the manufacturing location; the date of manufacture and the serial number; the clearances to combustibles; other information required by UL 127 for wood-fired fireplaces; and the evaluation report number (ESR-2316).
- The report holder's contact information is the following:

**EARTHCORE INDUSTRIES, LLC**  
**6899 PHILLIPS INDUSTRIAL BOULEVARD**  
**JACKSONVILLE, FLORIDA 32256**  
**(904) 363-3417**  
[www.earthcore.com](http://www.earthcore.com)  
[www.isokern.net](http://www.isokern.net)

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Section 3.1, and a factory-built chimney. All conditions of fireplace manufacture and installation noted in Section 3.1 apply, except as noted in Section 3.2.2.

### 3.2.2 Factory-built Chimney: A listed and labeled factory-built chimney is used with the fireplaces, subject to the following requirements:

- The factory-built chimney is listed by an approved agency for compliance with the requirements of UL 103 for continuous use at 1000°F (537°C) and intermittent use at 1700°F (927°C).
- The factory-built chimney is for use only with an open combustion chamber and must be marked "Residential Type and Building Heating Appliance Chimney."
- The chimney is either solid-pack insulated, a combination of insulation and air space, or noninsulated, completely thermal siphoning, double-wall air-cooled.
- Listed chimney liners conforming to the 1700°F (927°C) requirements of UL 1777, ULC S635, or ULC S640 may be used.
- Chimneys and chimney liners must be installed and terminated in accordance with the manufacturer's installation instructions and under the terms of the manufacturer's listing for use with open-faced, masonry fireplaces.
- A minimum 2-inch (51 mm) clearance to combustible construction and 3-inch (76 mm) clearance to insulation is maintained.

As an alternative, a listed and labeled Earthcore Industries, LLC ECO factory-built chimney may be used with the fireplaces based on UL 127 testing, subject to the following requirements:

- The factory-built chimney must be installed and terminated in accordance with the report holder's installation instructions and under the terms of the report holder's listing for the fireplaces.
- A minimum 2-inch (51 mm) clearance to combustible construction and insulation is maintained.

### 3.3 Fireplaces installed with Factory-built Chimney in Seismic Design Categories C, D, E and F:

The firebox units, described in this report, may be used in conjunction with factory-built chimneys listed and labeled as complying with UL103, and must be used with one in Seismic Design Categories C, D, E, and F. The factory-built chimneys must comply with Type HT requirements of UL 103 and be marked "Type HT" and "Residential Type and Building Heating Appliances." As an alternative, a listed and labeled Earthcore Industries, LLC ECO factory-built chimney may be used with the fireplaces. The chimneys are limited to a maximum height of 80 feet (24380 mm) and a minimum height of 14 feet (4270 mm); except that where offsets are used, the minimum height is 17 feet (5180 mm). The maximum number of offsets is two.

### 3.4 Grout and Mortar:

Grout used in construction of the fireplace unit is Quickcrete Concrete Mix #1001, 4000 psi concrete mix or equivalent. Mortar used with the fireplace unit is Earthcore mortar.

## 4.0 DESIGN AND INSTALLATION

### 4.1 General:

The fireplaces must be installed in accordance with this report, the manufacturer's instructions, and the applicable code. A copy of the manufacturer's published instructions must be available at the jobsite at all times during installation. The fireplaces are not recognized for use with doors.

Combustion air must be provided in accordance with IBC Section 2111.14 or IRC Section R1006.1, as applicable, and the manufacturer's published installation instructions.

### 4.2 Design:

Installation is limited to Seismic Design Categories A and B, except that when installation is in accordance with Section 4.3 of this report, the fireplaces may be installed in Seismic Design Categories C, D, E and F, provided the seismic design factors are limited to the values noted in Table 1. The seismic design must be in accordance with Sections 15.3.2 (1) and 13.3, 13.4, 13.5 and 13.6 of ASCE 7. Fireplace systems used in Seismic Design Categories C, D, E, and F are limited to those incorporating listed and labeled factory-built chimneys.

Structural design calculations and construction plans prepared by a licensed design professional are required to determine the requirements for the fireplace foundation and anchorage of the fireplace to the foundation.

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TABLE 1—SEISMIC DESIGN FACTORS FOR SEISMIC DESIGN CATEGORIES C, D, E AND F

FACTOR	VALUE
Amplification Factor, $a_p$	1.0
Component response modification factor, $R_p$	3.0
Z/h factor, where Z is the height in structure of point of attachment with respect to the base; and h is the average roof height of structure with respect to the base	0.65
Spectral response acceleration parameter, $S_{DS}$	2.0
Weight, $W$ , (lbs)	See Figure 1
Fundamental period of fireplace unit, $T$ .	0.35

For SI: 1 foot = 305 mm; 1 lb = 4.45 N.

TABLE 2—ISOKERN FIREPLACE DIMENSIONS

MODEL	OVERALL SIZE (inches)			FIREBOX OPENING SIZE (inches), Width x Height	HEARTH EXTENSION SIZE (inches), Width x Depth	CHIMNEY MINIMUM SIZE (inches), I.D.	INSTALLED HEIGHT, FIREPLACE AND CHIMNEY DM SYSTEM (feet)	
	Width	Depth	Height				Minimum	Maximum
36-inch	43	25 1/4	63 1/4	37 x 32	58 x 20	12 1/4	18	80
42-inch	49	25 1/4	63 1/4	42 x 32	64 x 20	12 1/4	18	80
46-inch	53	25 1/4	63 1/4	47 x 32	68 x 20	12 1/4	18	80
Mag-28	35 1/2	28	60 1/4	31 x 28 1/2	57 1/2 x 20	12	18	80
Mag-36	43	28	69 1/4	38 1/2 x 38	60 1/2 x 20	12 1/4	18	80
Mag-42	48 1/2	28	69 1/4	44 1/2 x 38	6 1/2 x 20	12 1/4	18	80
Mag-48	53	28	69 1/4	48 1/2 x 38	70 1/2 x 20	12 1/4	18	80
Mag-60	73 1/2	28	85 1/4	69 1/2 x 38	91 x 33	12 1/4	18	80
Mag-72	85 1/2	28	85 1/4	81 1/4 x 38	101 1/4 x 33	12 1/4	18	80

For SI: 1 foot = 305 mm; 1 lb = 4.45 N.

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When installation is on wood floor construction, the licensed design professional must determine the requirements for support and anchorage for the combined gravity and seismic loading. The applicability of the seismic design parameters in Table 1, for Seismic Design Categories C, D, E and F, must be verified with due consideration of the flexibility of anchorage and supports. In addition, the calculated long-term deflection of the wood members supporting the fireplace must not exceed the values shown in IBC Table 1604.3 for floor members. Under the IRC, an engineered design must be provided in accordance with IRC Section R301.1.3.

### 4.3 Installation:

4.3.1 General: A noncombustible foundation, adequate to support all required loads, is necessary and must be approved by the building inspector. Fire-Lite systems may be installed on combustible systems. For combustible supporting systems, installation of a 3-inch-thick (76 mm) Earthcore base plate is required before placement of the firebox hearth components. The Fire-Lite system firebox is assembled following the manufacturer's published instructions. For Seismic Design Categories C, D, E and F, anchorage of the fireplace unit to the foundation or supporting floor must be designed as described in Section 4.2. Units are assembled on the foundation by installing the base plate, firebox wall sections, damper assembly, and smoke dome. Earthcore Mortar is mixed with water until smooth and without dry spots and is then poured into the supplied Earthcore application bag and applied to one adjoining component face of each joint. A 1/2-inch-wide (12.7 mm) line of mortar is applied 1/2 inch (12.7 mm) from all edges of the face with two longitudinal lines between. Mortar must be exposed at the joints when components are joined, and the excess must be smoothed out. The firebox hearth, side walls and back wall are then lined with approved refractory bricks a minimum of 1 1/8 inches (28.6 mm) thick, except for the Magnum Models 60 and 72, which require minimum 4-inch-thick (101.6 mm) approved refractory bricks, complying with ASTM C27 or ASTM C1261, at the side walls using a refractory mortar, complying with ASTM C199, recommended by Earthcore Industries, LLC.

4.3.2 Clearances: Minimum clearance from the fireplace opening to side walls is 26 inches (660 mm). Sheathing and trim must be kept at least 8 inches (203 mm) from the opening. Combustible mantles must be at least 14 inches (356 mm) above the opening. A noncombustible hearth extension is necessary and must extend a minimum of 20 inches (508 mm) in front and 12 inches (305 mm) beyond each side of the fireplace opening.

For the Magnum Series Models 60 and 72, minimum clearance from the fireplace opening to side walls is 48 inches (305 mm). Sheathing and trim must be kept at least 9 inches (228 mm) from the opening. Combustible mantles must be at least 24 inches (610 mm) above the opening. A noncombustible hearth extension is necessary and must extend a minimum of 30 inches (762 mm) in front of and 12 inches (305 mm) beyond each side of the fireplace opening.

4.3.3 DM54 Chimney Systems: The DM54 chimney system must be supported from the top plate of the smoke dome. The chimney is assembled starting with a 6-inch-high (152 mm) liner that offsets the joints in the octagonal inner Earthcore liner from those in the square outer chimney casing. The mortar mix is applied in all joints as previously described. The outer chimney blocks have provisions for installation of reinforcing bars. Chimneys may include offsets with a maximum horizontal distance of 6 feet (1829 mm) which is 24 offset blocks in sequence. The offset blocks are supplied by Earthcore Industries, LLC. The fourth and sixth offset blocks and every third block thereafter must be supported by a concrete block support wall. Where required by the code official, details of the support wall construction must be provided.

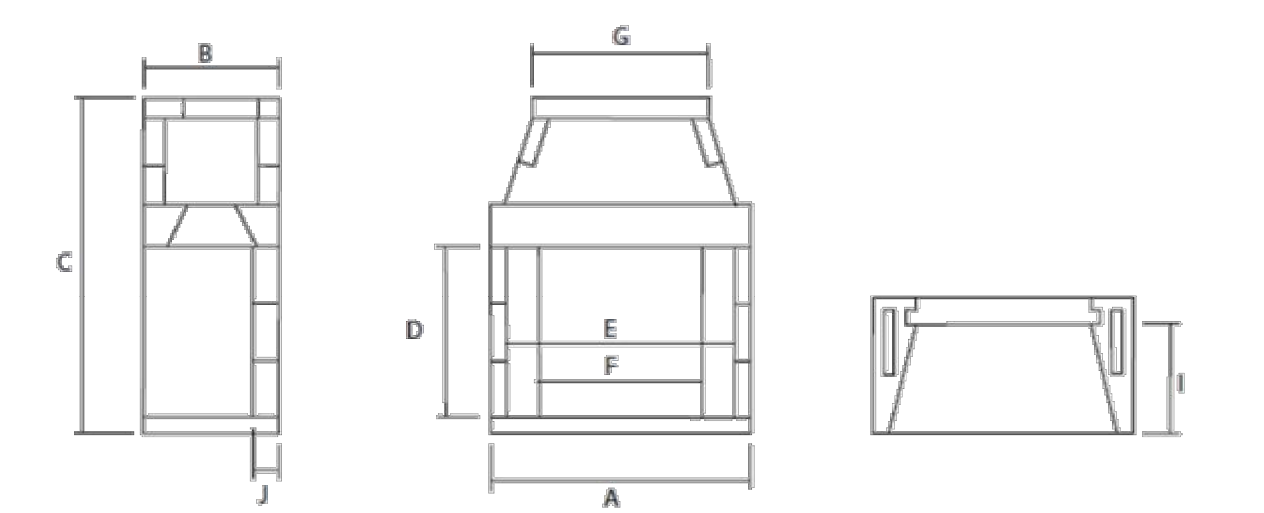
The portion of the chimney exposed to the exterior must be covered with weather protection material such as exterior plaster or brick veneer, in accordance with the applicable code. Terminations must comply with IBC Section 2113.9 and IRC Section R1003.9. Where required by the code official, an approved spark arrester complying with 2021, 2018, 2015, 2012 IBC Section 2113.9.2, 2009 and 2006 IRC Section 2113.9.1 or IRC R1003.9.2, as applicable, must be used. Under the 2021, 2018, 2015, 2012 IBC and IRC, a chimney cap must be installed in accordance with IBC Section 2113.9.1 or IRC Section R1003.9.1, as applicable.

For installations with vertical chimneys, the fireplace and chimney may be installed with zero clearance to combustibles, except that the Magnum series units require a minimum 1/2-inch (38 mm) clearance on the sides and back of the firebox and smoke chamber. When offset blocks are used, the system must be installed with minimum 1 1/2-inch (38 mm) clearance on the sides and back of the firebox and smoke chamber, and with zero clearance on the top; the chimney is installed at zero clearance to combustibles. Except as noted in this section for clearances to combustibles, chimney fireblocking must be in accordance with IBC Section 2113.20 and IRC Section R1003.19, as applicable.

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Top Plate - Medium	Part No.	Model	Qty	Top Plate - Large	Part No.	Model	Qty
M77	36	1	M81	46	1		
M77	42	1					

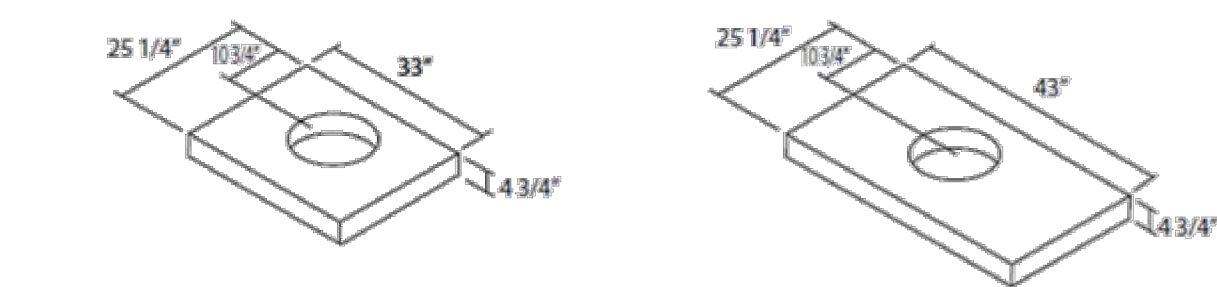


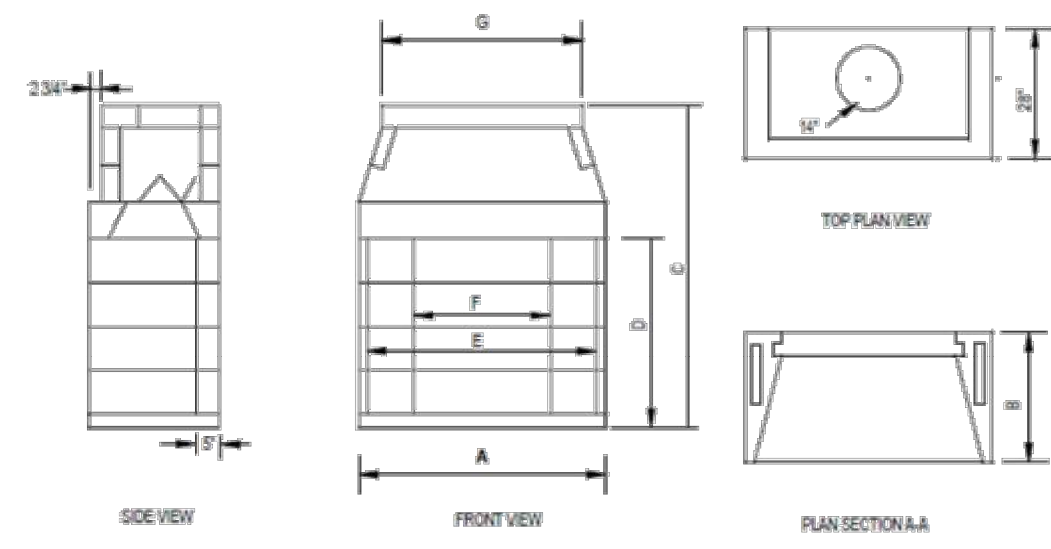
FIGURE 1—STANDARD SERIES DIMENSIONS

WRIGHT VALLEY RANCH

18890 Old Julian Trail  
Ramona, CA 92065

DATE DESCRIPTION

D4



MODEL	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	MINIMUM FRAMING	WEIGHT
28"	35 1/2"	28"	60 1/4"	31 1/2"	31"	19 3/4"	22 1/4"	39 1/2" x 41 1/2" x 29 1/2"	1040 lbs.
36"	42"	28"	65 3/4"	41"	35 3/8"	27 1/4"	32"	46 1/2" x 47 1/2" x 29 1/2"	1300 lbs.
42"	48"	28"	71 3/4"	41"	44 1/2"	33 1/4"	32"	52 1/2" x 53 1/2" x 29 1/2"	1400 lbs.
48"	54"	28"	77 3/4"	41"	48 1/2"	33 1/4"	48"	58 1/2" x 59 1/2" x 29 1/2"	1600 lbs.

\*28" Model comes with three (3) sidevents

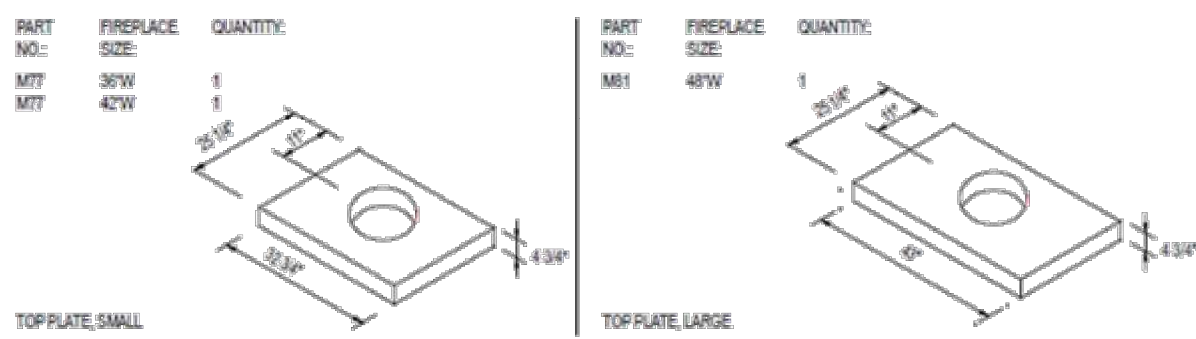
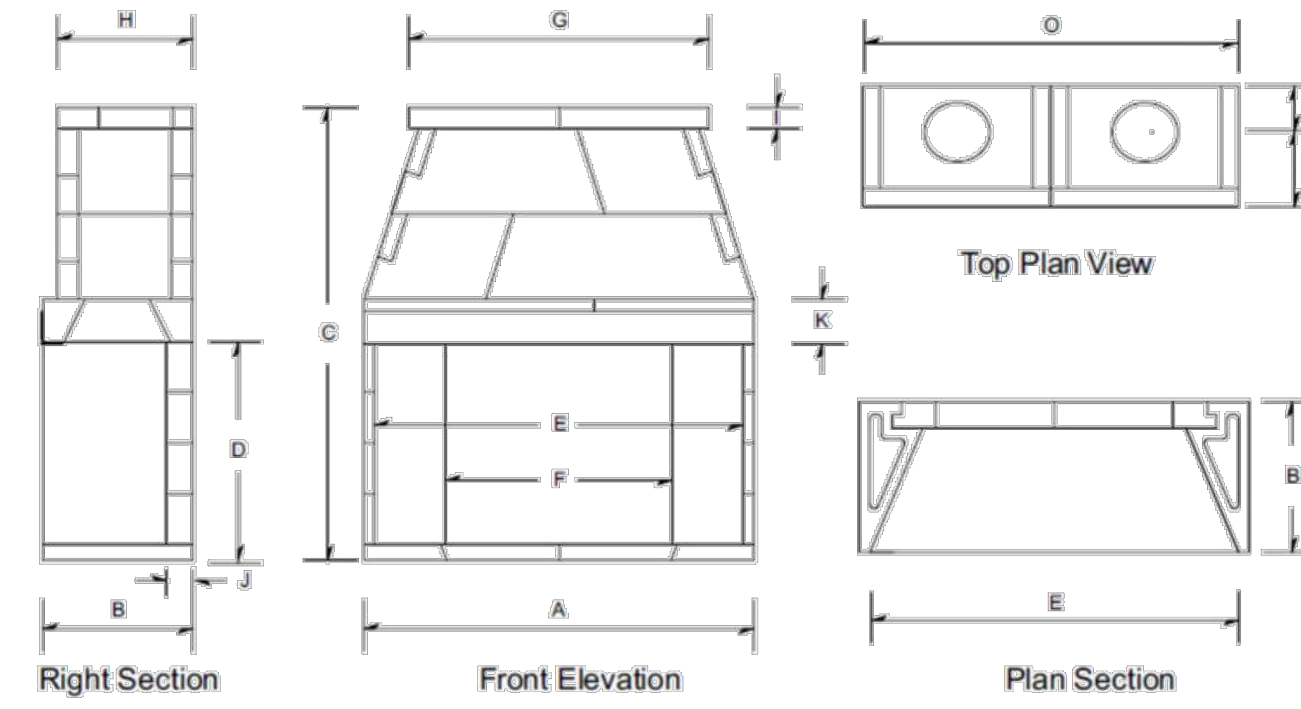


FIGURE 2—MAGNUM 28, 36, 42 AND 48 SERIES DIMENSIONS

- The Isokern fireplaces must be installed in accordance with the manufacturer's published installation instructions, the 2020 LABC or 2020 LARC, and the evaluation report ESR-2316. A copy of the manufacturer's published installation instructions must be available at the jobsite.

This supplement expires concurrently with the evaluation report, reissued October 2024.



Model	A	B	C	D	E	F	G	H	I	J	K	M	N	O
60"	73 1/2"	28"	65 3/4"	41"	69"	57 1/4"	55 1/2"	25 1/2"	4 3/4"	5"	8"	14 1/4"	11"	55 1/2"
72"	85 1/2"	28"	65 3/4"	41"	81 1/4"	69 3/4"	65 1/2"	25 1/2"	4 3/4"	5"	8"	14 1/4"	11"	65 1/2"

Minimum Framing	Weight
76 1/2" W x 87 1/2" H x 29 1/2"	2500 lbs.
88 1/2" W x 87 1/2" H x 29 1/2"	2900 lbs.

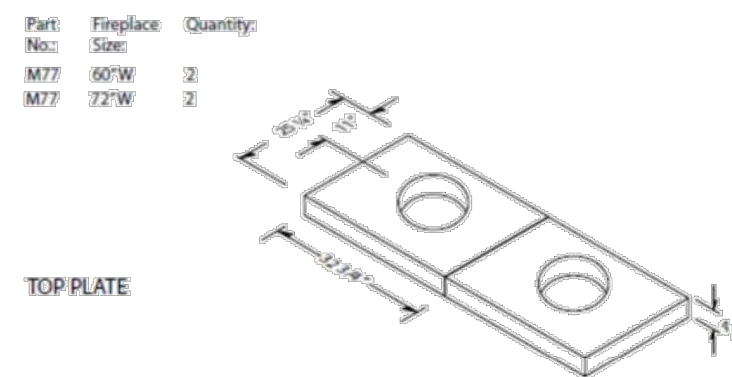


FIGURE 3—MAGNUM 60 AND 72 SERIES DIMENSIONS

DIVISION: 10 00 00—SPECIALTIES  
Section: 10 31 00—Manufactured Fireplaces

REPORT HOLDER:

EARTHCORE INDUSTRIES, LLC

EVALUATION SUBJECT:

ISOKERN STANDARD MODELS 36-INCH, 42-INCH AND 46-INCH FIREPLACE AND DM CHIMNEY SYSTEMS; ISOKERN MAGNUM FIREPLACE SERIES MODELS 28, 36, 42, 48, 60 AND 72; ISOKERN FIREPLACE WITH FIRE-LITE APPLICATION

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Isokern wood-burning fireplaces, described in ICC-ES evaluation report ESR-2316, have also been evaluated for compliance with the code(s) noted below.

Applicable code editions:

- 2019 California Building Code (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 California Residential Code (CRC)
- 2019 California Energy Code (CEC)

2.0 CONCLUSIONS

2.1 CBC:

The Isokern wood-burning fireplaces, described in Sections 2.0 through 7.0 of the evaluation report ESR-2316, comply with CBC Chapters CBC Chapters 13 and 28, provided the design and installation are in accordance with the 2018 International Building Code® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 13 and 28, as applicable.

2.1.1 OSHPD: The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA: The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Isokern wood-burning fireplaces, described in Sections 2.0 through 7.0 of the evaluation report ESR-2316, comply with the CRC, provided the design and installation are in accordance with the 2019 International Residential Code® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Parts IV, V and VI, as applicable.

2.3 CEC:

The Isokern wood-burning fireplaces, described in Sections 2.0 through 7.0 of the evaluation report ESR-2316, comply with the CEC, provided the design and installation are in accordance with the evaluation report ESR-2316 and the additional requirements of CEC Sections 110.1 and 110.5, as applicable.

3.0 CONDITIONS OF USE

The Isokern wood-burning fireplaces, described in this evaluation report supplement must comply with all of the following conditions:

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

DIVISION: 10 00 00—SPECIALTIES  
Section: 10 31 00—Manufactured Fireplaces

REPORT HOLDER:

EARTHCORE INDUSTRIES, LLC

EVALUATION SUBJECT:

ISOKERN STANDARD MODELS 36-INCH, 42-INCH AND 46-INCH FIREPLACE AND DM CHIMNEY SYSTEMS; ISOKERN MAGNUM FIREPLACE SERIES MODELS 28, 36, 42, 48, 60 AND 72; ISOKERN FIREPLACE WITH FIRE-LITE APPLICATION

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Isokern fireplaces, described in ICC-ES evaluation report ESR-2316, have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 City of Los Angeles Building Code (LABC)
- 2020 City of Los Angeles Residential Code (LARC)

2.0 CONCLUSIONS

The Isokern fireplaces, described in Sections 2.0 through 7.0 of the evaluation report ESR-2316, comply with the LABC Chapters 13 and 28 and LARC Section R1004 (with the exception of LARC Section R1004.1.1), and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Isokern fireplaces described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-2316.
- The design, installation, conditions of use and identification of the fireplaces are in accordance with the 2018 International Building Code® (IBC) and 2018 International Residential Code® (IRC) provisions noted in the evaluation report ESR-2316.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- The Isokern fireplaces must not be installed in locations in which closable doors are required by the 2019 California Energy Code or the 2020 Los Angeles City Green Building Code.
- When required by the 2019 California Energy Code (CEC), the fireplaces must be installed with the combustible air intake specified in the evaluation report ESR-2316.
- The exterior air supply system to the fireplaces must comply with the requirements noted in 2020 LABC Section 2111.14.1 or 2020 LARC Section R1006, as applicable.
- The installation of the Isokern fireplaces is limited to base floor and seismic parameters noted in Table 1 of the evaluation report ESR-2316.
- The Isokern fireplaces installations in new or existing construction must conform to the provisions of South Coast Air Quality Management District Rule 445.

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

- All applicable sections in the evaluation report ESR-2316.

- The design, installation and inspection are in accordance with additional requirements of CBC Chapters 16 and 17, as applicable.
- The Isokern wood-burning fireplaces are approved for use with solid wood logs or manufactured logs.
- The installation of the Isokern wood-burning fireplaces is limited to base floor and seismic parameters noted in Table 1 of the evaluation report ESR-2316.
- When required by the California Energy Code (CEC), the combustible air intake must be as specified in the evaluation report ESR-2316.
- The exterior air supply system to the fireplaces must comply with the requirements noted in 2019 CBC Section 2111.14.1 or 2019 CRC Section R1006, as applicable.
- The Isokern wood-burning fireplaces must be installed in accordance with the manufacturer's published installation instructions, the 2019 CBC or 2019 CRC, and the evaluation report ESR-2316. A copy of the manufacturer's published installation instructions must be available at the jobsite.

This supplement expires concurrently with the evaluation report, reissued October 2024.

WRIGHT VALLEY RANCH  
18890 Old Julian Trail  
Ramona, CA 92065

DATE	DESCRIPTION

D5

# MP NOTES

All Plumbing Fixtures and Fittings will be water conserving and will comply with the 2022 CGBSC.

Provide lavatory faucets with a maximum flow of 1.2 GPM.

Provide shower heads with a maximum flow of 1.8 GPM.

Provide kitchen faucets with a maximum 1.8 GPM.

Provide water closet with a maximum 1.28 GPF.

Per 2022 CGBSC, when a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 GPM at 80 psi, or the shower shall be designed to only allow one shower outlet to be operational at a time. Handheld showers are considered showerheads.

Outdoor shower drains and sinks are not permitted to connect to the public sewer system unless equipped with an approved cover. Cold water connection only.

Per 2022 Green Code, Mechanical exhaust fans which exhaust directly from bathrooms shall comply with the following:

- Fans shall be Energy Star Compliant and be ducted to terminate outside the building.
- Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible. Humidistat controls shall be capable of adjustments between relative humidity range of 50 to 80 percent.

Heating and Air Conditioners shall be sized, designed and have their equipment selected using the following methods:

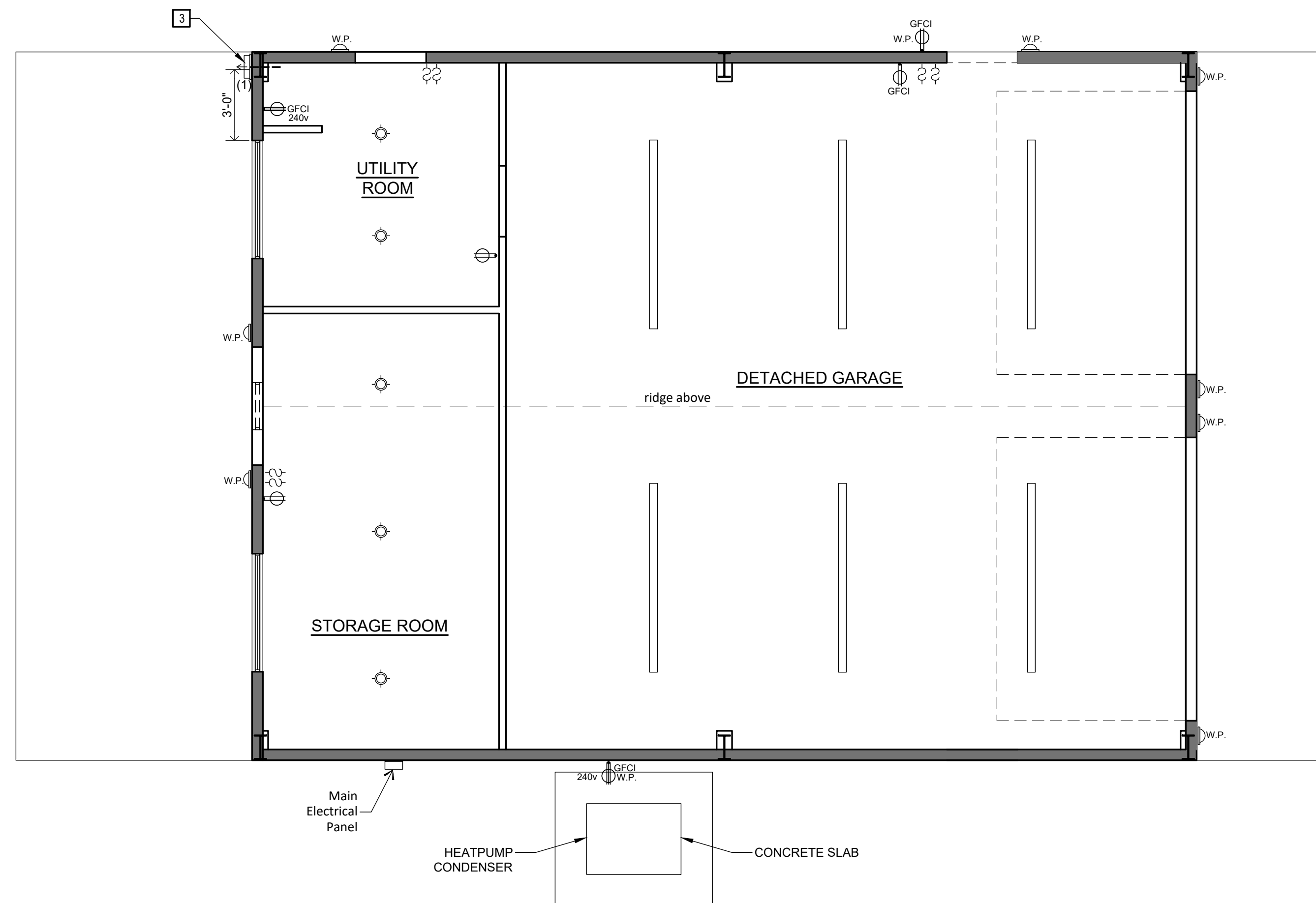
- The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2004 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
- Duct systems are sized according to ANSI/ACCA 1 Manual D - 2009 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
- Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2004 (Residential Equipment Selection)

## KEYNOTES

- DUCTED HEAT PUMP FAN COIL, CONDENSER NEAR GARAGE, HSPF2, COP 8, CAP 47=60,000 BTU/H, CAP 17=25,000 BTU/H, SEER=15.
- BATHROOM EXHAUST FAN 50 CFM MIN., 1.5 SONES OR LESS, ENERGY STAR RATED + CONTROLLED BY HUMIDISTAT CAPABLE OF ADJUSTING BATHROOM 50%-80% HUMIDITY.
- DRYER EXHAUST 4" DRYER VENT W/BACKDRAFT DAMPER (14' MAX. LENGTH W/2 TURNS) 3' MIN. FROM EXTERIOR OPENINGS.
- WATER HEATER HYBRID HEAT PUMP RHEEM CPROPH40 T2 RH400-15 40 GAL.
- IAQ EXHAUST FAN 131 CFM MIN., 1 SONE OR LESS, TO PROVIDE WHOLE BUILDING VENTILATION, 0.35 EFFICIENCY, INTERMITTENT USE, ENERGY STAR RATED + CONTROLLED BY HUMIDISTAT CAPABLE OF ADJUSTING BATHROOM 50%-80% HUMIDITY, EXHAUST THROUGH WALL.

## MEP LEGEND

- ELECTRIC DUPLEX RECEPTACLE
- GFCI DUPLEX RECEPTACLE
- EXTERIOR DUPLEX RECEPTACLE
- HOT DUPLEX RECEPTACLE
- 240V DUPLEX RECEPTACLE
- CEILING DUPLEX RECEPTACLE
- FLOOR DUPLEX RECEPTACLE
- ELECTRICAL SWITCH
- ELECTRICAL SWITCH ON DIMMER
- ELECTRICAL SWITCH 3-WAY
- ELECTRICAL METER BOX
- GARBAGE DISPOSAL
- CEILING MOUNTED EXHAUST LIGHT NUTONE QT 100 FL SERIES OR APPROVED EQUAL
- CEILING MOUNTED EXHAUST FAN NUTONE QT SERIES OR APPROVED EQUAL
- WALL MOUNTED EXHAUST FAN
- PENDANT LIGHT
- PIN LIGHT (LOW VOLTAGE)
- WALL SCONCE BY OWNER
- WALL SCONCE (WET LOCATION)
- UNDERCABINET LED LIGHTING
- CAN LIGHT FIXTURE
- CEILING MOUNTED LIGHT
- CEILING FAN
- SHATTERPROOF (WET LOCATION)
- 2" RECESSED LED LIGHT FIXTURE
- BRACKET TYPE FIXTURE (W.P.)
- BRACKET TYPE FIXTURE
- CHANDELIER
- MOTION SENSOR LIGHT
- LINEAR GARAGE STRIP LIGHT, LED
- DOORBELL
- RECESSED LED STEP LIGHT
- 2" RECESSED LED DIRECTIONAL LIGHT FIXTURE
- RETURN AIR GRILL - CEILING
- SUPPLY AIR GRILL - WALL
- SUPPLY AIR GRILL - CEILING
- SUPPLY AIR GRILL - FLOOR
- GAS KEY
- FUEL GAS
- HOSE BIBB
- COMBINATION SMOKE ALARM/ CARBON MONOXIDE DETECTOR
- SMOKE DETECTOR
- DATA / CABLE
- RANGE HOOD
- PHOTOCELL SENSOR
- VENT PIPE
- WALL VENT (NUMBER OF VENTS)



PROPOSED DETACHED GARAGE MEP PLAN

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

**WRIGHT VALLEY RANCH**  
 18890 Old Julian Trail  
 Ramona, CA 92065

DATE	DESCRIPTION

MEP1

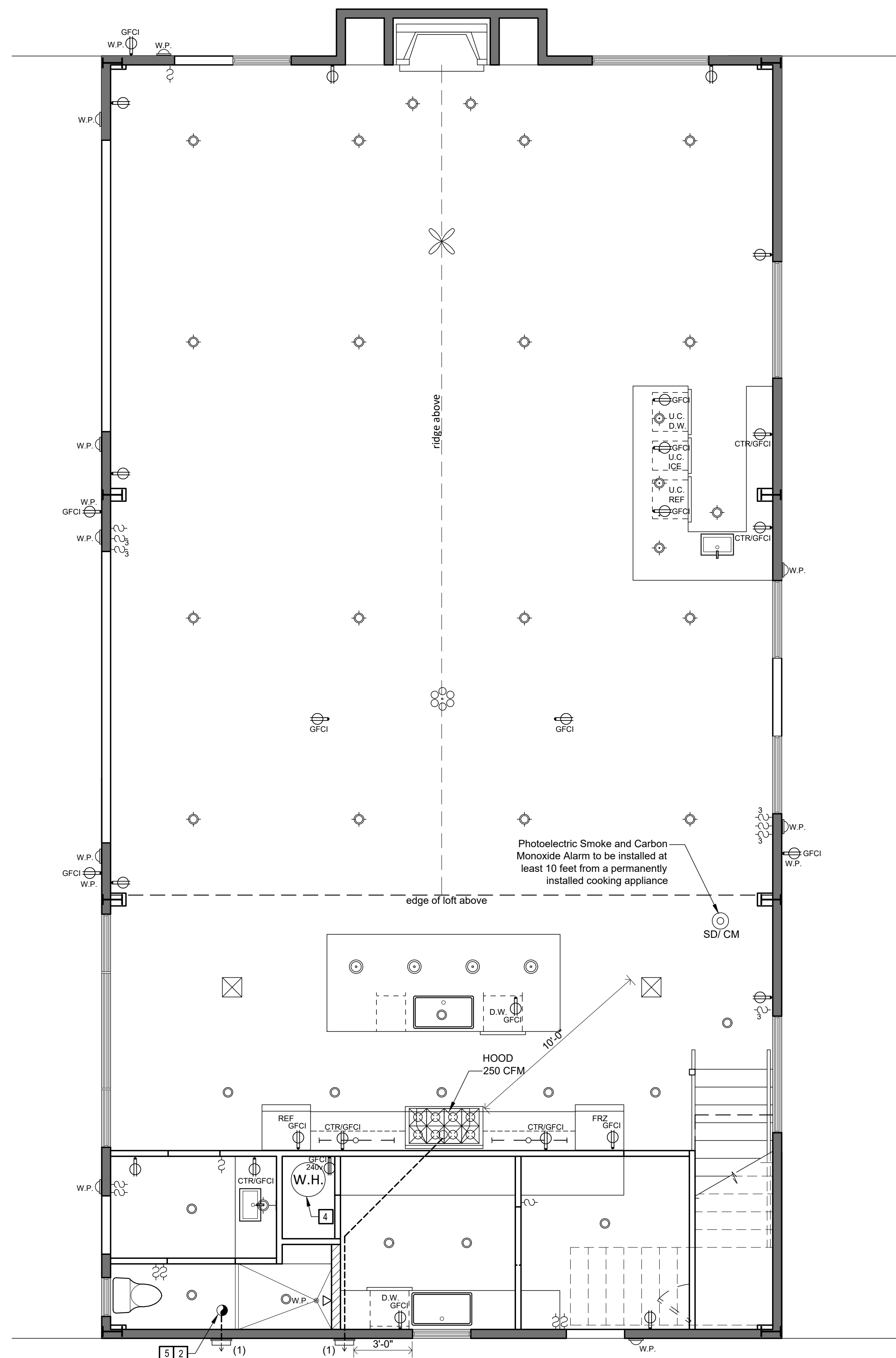
- ### KEYNOTES
- DUCTED HEAT PUMP FAN COIL, CONDENSER NEAR GARAGE, HSPF2, COP 8, CAP 47=60,000 BTU/H, CAP 17=25,000 BTU/H, SEER=15, EER=12.37.
  - BATHROOM EXHAUST FAN 50 CFM MIN., 1.5 SONES OR LESS, ENERGY STAR RATED + CONTROLLED BY HUMIDISTAT CAPABLE OF ADJUSTING BATHROOM 50%-80% HUMIDITY.
  - DRYER EXHAUST 4" DRYER VENT W/BACKDRAFT DAMPER (14' MAX. LENGTH W/2 TURNS) 3' MIN. FROM EXTERIOR OPENINGS.
  - WATER HEATER HYBRID HEAT PUMP RHEEM CPROPH40 T2 RH400-15 40 GAL.
  - IAQ EXHAUST FAN 131 CFM MIN., 1 SONE OR LESS, TO PROVIDE WHOLE BUILDING VENTILATION, 0.35 EFFICIENCY, INTERMITTENT USE, ENERGY STAR RATED + CONTROLLED BY HUMIDISTAT CAPABLE OF ADJUSTING BATHROOM 50%-80% HUMIDITY, EXHAUST THROUGH WALL.

- ### MEP LEGEND
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  - GFCI DUPLEX RECEPTACLE
  - EXTERIOR DUPLEX RECEPTACLE
  - HOT DUPLEX RECEPTACLE
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  - CEILING DUPLEX RECEPTACLE
  - FLOOR DUPLEX RECEPTACLE
  - ELECTRICAL SWITCH
  - ELECTRICAL SWITCH ON DIMMER
  - ELECTRICAL SWITCH 3-WAY
  - ELECTRICAL METER BOX
  - GARBAGE DISPOSAL
  - CEILING MOUNTED EXHAUST LIGHT NUTONE QT 100 FL SERIES OR APPROVED EQUAL
  - CEILING MOUNTED EXHAUST FAN NUTONE QT SERIES OR APPROVED EQUAL
  - WALL MOUNTED EXHAUST FAN
  - PENDANT LIGHT
  - PIN LIGHT (LOW VOLTAGE)
  - WALL SCONCE BY OWNER
  - WALL SCONCE (WET LOCATION)
  - UNDERCABINET LED LIGHTING
  - CAN LIGHT FIXTURE
  - CEILING MOUNTED LIGHT
  - CEILING FAN
  - S.P. SHATTERPROOF (WET LOCATION)
  - 2" RECESSED LED LIGHT FIXTURE
  - W.P. BRACKET TYPE FIXTURE (W.P.)
  - BRACKET TYPE FIXTURE
  - CHANDELIER
  - MOTION SENSOR LIGHT
  - LINEAR GARAGE STRIP LIGHT, LED
  - DOORBELL
  - RECESSED LED STEP LIGHT
  - 2" RECESSED LED DIRECTIONAL LIGHT FIXTURE
  - RAG RETURN AIR GRILL - CEILING
  - SAG SUPPLY AIR GRILL - WALL
  - SAG SUPPLY AIR GRILL - CEILING
  - SAG SUPPLY AIR GRILL - FLOOR
  - GAS KEY
  - F.G. FUEL GAS
  - H.B. HOSE BIBB
  - SD/CM COMBINATION SMOKE ALARM/ CARBON MONOXIDE DETECTOR
  - SD SMOKE DETECTOR
  - DATA / CABLE
  - RANGE HOOD
  - P.S. PHOTOCCELL SENSOR
  - VENT PIPE
  - (3) WALL VENT (NUMBER OF VENTS)

**WRIGHT VALLEY RANCH**  
 18890 Old Julian Trail  
 Ramona, CA 92065

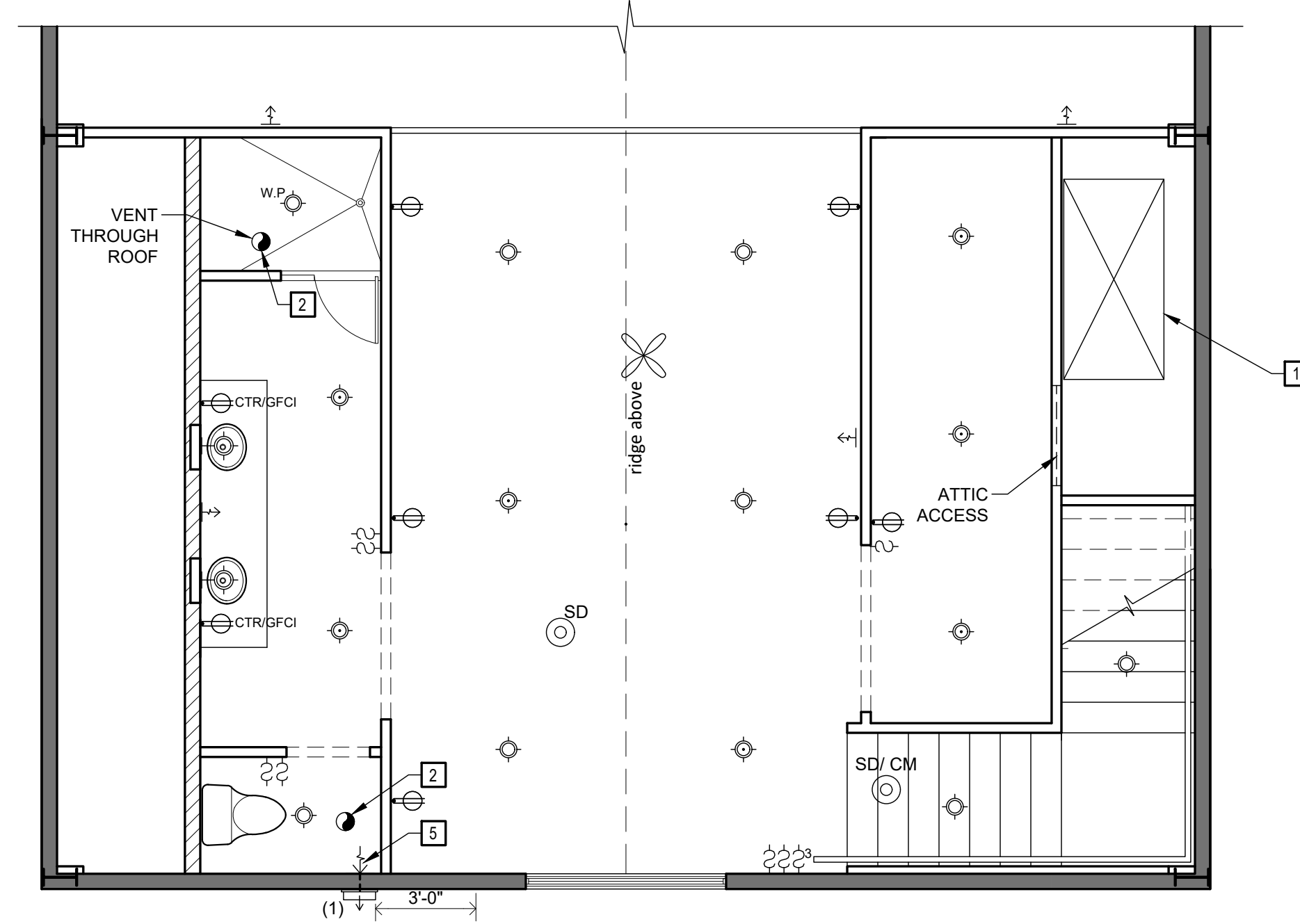
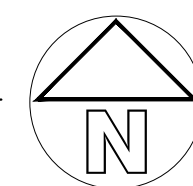
DATE	DESCRIPTION

**MEP2**



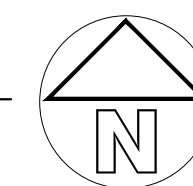
**PROPOSED SINGLE FAMILY DWELLING MEP PLAN**

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



**PROPOSED LOFT MEP PLAN**

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



**CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**  
 Project Name: NEW HOUSE  
 Calculation Description: Remodel/Addition  
 Calculation Date/Time: 2025-12-15T14:10:26-08:00  
 Input File Name: AM-JULIAN TRAI SFR.rbd22  
 CF1R-PRF-01-E (Page 1 of 11)

GENERAL INFORMATION				
01	Project Name	NEW HOUSE		
02	Run Title	Remodel/Addition		
03	Project Location	1890 Old Julian Trail		
04	City	Ramona	05 Standards Version	2022
06	Zip code	92065	07 Software Version	CRECC-Res 2022.3.2-SP1
08	Climate Zone	10	09 Front Orientation (deg/ Cardinal)	90
10	Building Type	Single family	11 Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13 Number of Bedrooms	4
14	Addition Cond. Floor Area (ft²)	0	15 Number of Stories	2
16	Existing Cond. Floor Area (ft²)	n/a	17 Fenestration Average U-factor	0.37
18	Total Cond. Floor Area (ft²)	3108	19 Glazing Percentage (%)	18.19%
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 CE-approved HERS provider.
03	This building incorporates one or more Special Features shown below

Registration Number: 425-PO10371754A-000-000-0000000-0000  
 Registration Date/Time: 12/15/2025 15:50  
 HERS Provider: CHEERS  
 NOTE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.  
 CA Building Energy Efficiency Standards - 2022 Residential Compliance  
 Report Version: 2022.0.000  
 Report Generated: 2025-12-15 14:11:16  
 Schema Version: rev 20220901

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 CF1R-PRF-01-E (Page 2 of 11)

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)
Standard Design	36	40.1	26.7			
Proposed Design	30.5	39.8	26.5	5.5	0.3	0.2
RESULT: PASS						
<sup>1</sup> Efficiency EDR includes improvements like a better building envelope and more efficient equipment <sup>2</sup> 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: 3.32 kWdc • PV System resized to 3.32 kWdc (a factor of 3.321) to achieve 'Standard Design PV' PV scaling						

**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 CE-approved HERS provider.
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 Input File Name: AM-JULIAN TRAI SFR.rbd22  
 CF1R-PRF-01-E (Page 3 of 11)

ENERGY USE SUMMARY							
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft²-yr)	Standard Design TDV Energy (EDR2) (kWh/ft²-yr)	Proposed Design Source Energy (EDR1) (kBtu/ft²-yr)	Proposed Design TDV Energy (EDR2) (kWh/ft²-yr)	Margin (EDR1)	Margin (EDR2)	
Space Heating	2.65	11.94	1.6	11.28	1.05	0.66	
Space Cooling	0.69	17.69	0.75	20.89	-0.06	-3.2	
IAQ Ventilation	0.33	3.43	0.33	3.43	0	0	
Water Heating	0.96	9.88	0.69	7	0.27	2.88	
Self Utilization/Flexibility Credit			0	0	0	0	
Efficiency Compliance Total	4.63	42.94	3.37	42.6	1.26	0.34	
Photovoltaics	-1.22	-34.16	-1.22	-34.1			
Battery			0	0			
Flexibility			0	0			
Indoor Lighting	0.65	6.27	0.65	6.27			
Appl. & Cooking	1.95	12.48	1.95	12.51			
Plug Loads	2.06	21.07	2.06	21.07			
Outdoor Lighting	0.18	1.64	0.18	1.64			
TOTAL COMPLIANCE	8.25	50.24	6.99	49.99			

**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 CE-approved HERS provider.
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 CF1R-PRF-01-E (Page 4 of 11)

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft²-yr)	Proposed Design (kBtu/ft²-yr)	Margin (kBtu/ft²-yr)	Margin Percentage
Gross EUI <sup>1</sup>	11.9	9.95	1.95	16.39
Net EUI <sup>2</sup>	5.68	3.73	1.95	34.33

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	Alcimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff (%)	Annual Solar Access (%)
3.32	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:

- PV System: 3.32 kWdc
- Window overhangs and/or fins
- Non-standard duct location (any location other than attic)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed
- One or more heat pump water heaters have been modeled as demand response compatible

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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
NEW HOUSE	3108	1	4	1	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
SFR	Conditioned	HVAC System 1	3108	10	DHW System 1	New

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Alcimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft²)	Tilt (deg)
FRONT	SFR	2X6 R23 METAL	90	Front	660	144	90
RIGHT	SFR	2X6 R23 METAL	0	Right	700	97	90
LEFT	SFR	2x6 R19	180	Left	700	47.5	90
BACK	SFR	2X6 R23 METAL	270	Back	660	379.5	90

**REQUIRED SPECIAL FEATURES**

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 Refrigerant Charge
- Fan Efficiency Watts/CFM
- Verified heat pump rated heating capacity
- Duct leakage testing

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OPAQUE SURFACES - CATHEDRAL CEILINGS										
01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Alcimuth	Orientation	Area (ft²)	Skylight Area (ft²)	Roof Rise (x in 12)	Roof Reflectance	Roof Emissance	Cool Roof
Cathedral Ceiling 1	SFR	Cathedral R30	180	Left	2310	0	10	0.1	0.85	No

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Alcimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
F 6X8	Window	FRONT	Front	90	6	8	1	48	0.26	NFRC	0.21	NFRC	Bug Screen
H 4X8	Window	FRONT	Front	90	4	8	2	64	0.29	NFRC	0.23	NFRC	Bug Screen
G 6X10	Window	RIGHT	Right	0	6	10	1	60	0.26	NFRC	0.21	NFRC	Bug Screen
A 3X4.5	Window	RIGHT	Right	0	3	4.5	1	13.5	0.29	NFRC	0.18	NFRC	Bug Screen
C 2.8X8	Window	LEFT	Left	180	3	8	1	24	0.29	NFRC	0.15	NFRC	Bug Screen
15X8 SLD 11 12	Window	BACK	Back	270	15	8	2	240	0.49	NFRC	0.23	NFRC	Bug Screen
A E A	Window	BACK	Back	270	12	4.5	2	108	0.29	NFRC	0.18	NFRC	Bug Screen
2X3 D	Window	BACK	Back	270	2	4	1	8	0.29	NFRC	0.18	NFRC	Bug Screen

OPAQUE DOORS			
01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
InputDoor 14 ENTRY	FRONT	32	0.2
InputDoor 2	RIGHT	23.5	0.2
InputDoor L2	LEFT	23.5	0.2

**REQUIRED SPECIAL FEATURES**

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

- PV System: 3.32 kWdc
- Window overhangs and/or fins
- Non-standard duct location (any location other than attic)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed
- One or more heat pump water heaters have been modeled as demand response compatible

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OPAQUE DOORS			
01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
InputDoor 82	BACK	23.5	0.2

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 1	SFR	2310	202	none	0	80%	No

OPAQUE SURFACE CONSTRUCTIONS							
01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
2X6 R23 METAL	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R-23	None / None	0.066	Inside Finish: Gypsum Board Cavity / Frame: R-23 / 2x6 Exterior Finish: 3 Coat Stucco
2x6 R19	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R-19	None / None	0.072	Inside Finish: Gypsum Board Cavity / Frame: R-19 / 2x6 Exterior Finish: 3 Coat Stucco
Cathedral R30	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 16 in. O.C.	R-30	None / 6	0.029	Roofing: Light Roof (Metal Tile) Tile Gaps: present Above Deck Insulation: R-6 Sheathing Roof Deck: Wood Siding/Sheathing/Decking Cavity / Frame: R-30 / 2x10 Inside Finish: Gypsum Board

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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 System 1	Domestic Hot Water (DHW)	Standard	Water Heater 1	1	n/a	None	n/a	Water 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
Water Heater 1	1	50	Rheem	CP19P150 T2 RH400-15 (50 gal)	Outside	Outside	Outside

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 System 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

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SPACE CONDITIONING SYSTEMS							
01	02	03	04	05	06	07	08
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name
HVAC System 1	Heat pump heating cooling	Heat Pump System 3	1	Heat Pump System 3	1	HVAC Fan System 1	Duct

HVAC - HEAT PUMPS												
01	02	03	04	05	06	07	08	09	10	11	12	

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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
Duct-hers-dst	Yes	5.0	Not Required	Not Required	Not Required	Credits not taken	Not Required	No

HVAC - FAN SYSTEMS			
01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan System 1	HVAC Fan	0.35	HVAC Fan System 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION			
01	02	03	04
Name	Verified Fan Watt Draw	Required Fan Watts/CFM	
HVAC Fan System 1-hers-fan	Required	0.35	

INDOOR AIR QUALITY (IAQ) RANS								
01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficiency (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery	IAQ Recovery Effectiveness - SRS/ABE	Includes Fault Indicator Display?	HRS Verification	Status
SfAm IAQventKit	331	0.35	Exhaust	No	n/a / n/a	No	Yes	

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**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**  
 I, I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: All Nehme  
 Company: All Nehme P.E.  
 Address: 22914 Dry Creek Road, Diamond Bar, CA 91765  
 City/State/Zip: Diamond Bar, CA 91765  
 Phone: 909-295-9018

**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 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: All Nehme  
 Company: All Nehme P.E.  
 Address: 22914 Dry Creek Road, Diamond Bar, CA 91765  
 City/State/Zip: Diamond Bar, CA 91765  
 Phone: 909-295-9018

Registration Number: 425-P01037774A-000-000-000000-0000  
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**2022 Single-Family Residential Mandatory Requirements Summary**

**Building Envelope:**

- 110.6a(1): Air Leakage.** Manufactured lamination, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-69, ASTM E283, or AIAA/NIAA/AMCA/CA. 1011.02-04-02-2011.
- 110.6a(2): Field lamination.** Fenestration products and exterior doors must have a label meeting the requirements of § 110-111(a).
- 110.6a(3): Field lamination.** Fenestration products and exterior doors must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6A, 110.6B, or JAK-1 for exterior doors. They must be installed and/or weather stopped.
- 110.7: Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be sealed, gasketed, or weather stopped.
- 110.8a: Insulation Requirements by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
- 110.8b: Roofing Products Solar Reflectance and Thermal Emittance.** The Normal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(a) and be labeled per 110-113 when the installation of a roof roof is specified on the CFI.
- 110.8c: Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
- 110.8d: Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed cities in climate zones 4 and 5-16 shall have weighted average U-factor not exceeding 0.04. 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 0.044 or less. Also, access doors must have permanently attached insulation with adhesive or mechanical fasteners. The attic access door must be gasketed to prevent air leakage. Insulation attached to insulation in direct contact with a roof or ceiling shall be sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the access door on top of a drywall ceiling.
- 110.8e: Loose-fill Insulation.** Loose-fill insulation must meet the manufacturer's required density for the intended R-value.
- 110.8f: 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. Chapan non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Table 150.1A or B.
- 110.8g: Slab Edge Insulation.** Minimum R-5 insulation in raised wood framed floor or 0.037 maximum U-factor.
- 110.8h: Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water vapor permeance no greater than the insulation material without hefting, no greater than 0.3 perm; 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(i).
- 110.8i: Vapor Retarder.** In climate zones 14 and 16, a Class II or Class III vapor retarder must be installed on the conditioned space side of all insulation in exterior walls, vented attics, and unvented attics with air-permeable insulation.
- 110.8j: Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a minimum U-factor of 0.45, or area-weighted average U-factor not exceeding 0.45.
- 110.8k: Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.

**Space Conditioning, Water Heating, and Plumbing System:**

- 110.9.1: Certification, Heating, Ventilation, and Air Conditioning (HVAC) equipment.** water heaters, showheats, faucets, and all other required appliances must be certified by the manufacturer to the California Energy Commission.
- 110.9.2: HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2.4 through Table 110.2.4.
- 110.9.3: Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heating operation when the heating load can be met by the heat pump alone, and in which the coil temperature for compression heating is higher than the coil temperature for supplementary heating, and the coil temperature for supplementary heating is higher than the coil temperature for supplementary heating.
- 110.9.4: Thermostats.** All heating or cooling systems not controlled by a central energy management control system (CEMCS) must have a setback thermostat.
- 110.9.5: Insulation.** Driftless service water heater storage tanks and solar water heating backup tanks must have adequate insulation, or tank surface heat loss rating.
- 110.9.6: Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

**2022 Single-Family Residential Mandatory Requirements Summary**

- 110.5: Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas, fan-type central furnaces, household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour), and pool and spa heaters.
- 110.5(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 SHS/CA Residential Comfort System Installation Standards Manual, or the ACCA Manual J using design conditions specified in § 150.0(2).
- 110.5(2): Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least six feet from the outside of any pipe.
- 110.5(3): 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.
- 110.5(4): Water Pipes.** Solar Water-Heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping must be insulated as specified in § 605.11 of the California Plumbing Code.
- 110.5(5): Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, volatile equipment maintenance, and wind as required by § 110.3(b). Insulation applied to weather must be water resistant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation below grade must be installed in a waterproof and non-combustible casing or sleeve.
- 110.5(6): 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.
- 110.5(7): 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/RAT), or by a listing agency that is approved by the executive director.

**Ducts and Fans:**

- 110.5(8): Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.1 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.
- 110.5(9): CMCC Compliance.** All air-distribution system ducts and plenums must meet CMCC § 601.0-606.0 and ANSI/SACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible, 3rd Edition. Profiles 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 (R3.1.4.3.3) do not require insulation. Connections of metal ducts and inner cores of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-sealing system that meets the applicable U.S. requirements, or sealed resilient flat duct. The combination of mastic and other seal or tape must be used to seal openings greater than 1/4" in each direction. Building envelopes, air transfer support partitions, and air transfer partitions must be sealed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support partitions may contain ducts installed in these spaces must not be compressed.
- 110.5(10): Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and downsize joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tapes are used in combination with mastic and duct tapes.
- 110.5(11): Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for pressure-resistance tapes, mastic, adhesives, and other requirements specified for duct construction.
- 110.5(12): Backdraft Damper.** Fan systems that discharge air between the conditioned space and outdoors must have backdraft or automatic dampers.
- 110.5(13): Gravity Ventilation Fans.** Gravity ventilation systems serving conditioned space must have other automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents. Protection of insulation, insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (i.e., protected by a minimum 1/2" thick, white, elastomeric, or plastic cover). Cellular foam insulation must be protected from damage by a water resistant and solar radiation-resistant coating.
- 110.5(14): Porous Inner Core Fire Duct.** Porous inner cores of fire ducts must have a non-porous layer or air barrier between the inner core and outer barrier.
- 110.5(15): Field-Fabricated Duct Systems.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must limit duct leakage levels, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
- 110.5(16): 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 one-inch depth or can be one inch deep per Equation 150.1A. Clean-air pressure drop and labeling must meet the requirements in § 150.0(12). Filters must be accessible for regular service. Filter racks or grilles must use gaskets, seals, or other means to close gaps around the inserted filter and be prevent air from bypassing the filter.

**2022 Single-Family Residential Mandatory Requirements Summary**

- 150.0(1)(3): Space Conditioning System Airflow Rates and Fan Efficiency.** Space conditioning systems that use ducts to supply cooling must have a flow for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be a 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy  $\geq 0.45$  watts per CFM for gas furnace air handlers and  $\geq 0.58$  watts per CFM for other. Small duct high velocity systems must provide an airflow  $\geq 250$  CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy  $\geq 0.02$  watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.

**Ventilation and Indoor Air Quality:**

- 150.0(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(1).
- 150.0(2): 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(1). A mechanical 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 and controlled per § 150.0(1)(B)(ii). CFI ventilation systems must have controls that track outdoor ventilation rate, and either open or close the mechanical damper(s) for compliance with § 150.0(1).
- 150.0(3): Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and Townhouses.** Single-family detached dwelling units, and attached dwelling units not sharing walls or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(1)(C).
- 150.0(4): Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust. Nonremovable kitchens must have demand-controlled exhaust system meeting requirements of § 150.0(1)(D). Removable kitchens and bathrooms can use demand-controlled or continuous exhaust meeting § 150.0(1)(D)-iv. Airflow must be measured by the installer per § 150.0(1)(D), and rated for sound per § 150.0(1)(D).
- 150.0(5): Airflow Measurement and Sound Rating of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(1)(C) must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/gates per Reference Residential Appendix RA3.7. Whole-dwelling-unit ventilation systems must be rated for sound per ASHRAE 62.2 § 7.2.4 or no less than the minimum air-flow rate required by § 150.0(1)(C).
- 150.0(6): Field Verification and Diagnostic Testing.** Whole-Dwelling Unit Ventilation, 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 it is rated by AHAM to comply with the airflow rates and sound requirements per § 150.0(1)(D).

**Pool and Spa Systems and Equipment:**

- 110.4(1): Certification of 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 testing in IMC/IECC; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent thermostatic safety or cut-off with operating instructions; and must not use electric resistance heating.
- 110.4(2): Piping.** Any pool or spa heating system or equipment must be installed with at least 3/4 inch of pipe between the filter and the heater; or dedicated suction return lines, or built-in or built-up connections to allow for future solar heating.
- 110.4(3): Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
- 110.4(4): Directional Heats and Time Switches for Pools.** Pools must have directional heaters that automatically shut 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 have a continuously burning pilot light.
- 150.0(1): Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filter, 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(1)(A): Luminaires Efficacy.** All installed luminaires must meet the requirements in Table 150.10.A, except lighting integral to exhaust fans, kitchen range hoods, built-in vanity mirrors, and garage door openers, including lighting less than 5' high, and lighting integral to downspout, gutters, and downspout with an efficacy of at least 45 lumens per foot.
- 150.0(1)(B): Screw-based Luminaires.** Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JAK.
- 150.0(1)(C): Luminaires in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JAS elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires, and must be sealed with a gasket or cap. California Electrical Code § 410.118 also applies.
- 150.0(1)(D): Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JAS elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
- 150.0(1)(E): 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 not be more than the number of bedrooms. These boxes must be sealed by a dimer, vacancy sensor control, or voltage sensor.
- 150.0(1)(F): Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(1).

**2022 Single-Family Residential Mandatory Requirements Summary**

- 150.0(1)(C): Screw-based Luminaires.** Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JAK.
- 150.0(1)(H): Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JAS elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
- 150.0(1)(I): Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.1A, or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 100 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
- 150.0(1)(J): Interior Switches and Controls.** All forward phase-out dimmers used with LED light sources must comply with NEMA SSL 7A.
- 150.0(2)(B): Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems.
- 150.0(2)(C): Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on or off.
- 150.0(2)(D): 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(1).
- 150.0(2)(E): Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
- 150.0(2)(F): Energy Management Control System.** 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 control specified in § 150.0(2)(A).
- 150.0(2)(G): 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(2)(H): 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-out dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
- 150.0(2)(I): 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(3)(A): 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 photo-cell 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 applicable requirements may be used to meet these requirements.
- 150.0(4): Internally Illuminated Address Signs.** Internally illuminated address signs must comply with § 140.8 or consume no more than 5 watts of power.
- 150.0(5): Residential Garages for Light or Motor Vehicles.** Lighting for residential parking garages for light or motor vehicles must comply with the applicable requirements for recessed lighting in § 110.9, 150.0, 150.1, 150.2, 150.3, 140.8, 140.9, and 141.0.

**Solar Readiness:**

- 110.10(1): Single-Family Readiness.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map has been deemed complete and approved by the enforcement agency, shall not have a photovoltaic system installed, must comply with the requirements of § 110.10(1)(a).
- 110.10(1)(a): Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, and ventilation, and spacing requirements as specified in Title 24, Part 1 or other parts of Title 24 in any requirements adopted by local jurisdiction. The solar zone total area must be composed of areas that have no obstructions less than 5 feet and no less than 10 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 100 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(1)(b): Access.** All sections of the solar zone located on oblong-shaped roofs must have an access between 60:300° of true north.
- 110.10(1)(c): Shading.** The solar zone must contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof-mounted equipment.
- 110.10(1)(d): Reading.** Any document located on the roof or any part of the building that projects above 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(1)(e): Solar Zone Design.** 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(1)(f): Interconnection Pathways.** The construction documents must indicate a location reserved for inverters and metering equipment and a pathway reserved for routing of conductors from the solar zone to the point of interconnection with the electrical service, and for single-family residences and central water-heating systems. Allowways reserved for routing plumbing from the solar zone to the water-heating system. Documentation. A copy of the construction documents or a comparable document indicating the information from § 110.10(1)(d) must be provided to the occupant.
- 110.10(1)(g): Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
- 110.10(1)(h): 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 system. The reserved space must be permanently marked as "For Future 240V use."

**Electric and Energy Storage Ready:**

**2022 Single-Family Residential Mandatory Requirements Summary**

- 150.0(1): 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 applied branch circuits, or a dedicated racway from the main service to a sub-panel that supplies the branch circuits in § 150.0(1); at least four branch circuits must be identified and have their source allocated at a single panelboard suitable to be supplied by the ESS, with one circuit applying the refrigerator, one lighting circuit near the primary unit, and one circuit applying 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(2): 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(3): 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.

DRAWN BY: AN

CHECKED BY: AN

DATE: SEE FORMS

JOB NUMBER: T24-2

SHEET NO. T24-2

Title 24 forms

REV	DESCRIPTION	BY	DATE
1			

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### FOR BUILDING PERMIT

THESE DRAWINGS, BEING FOR PERMIT, ARE BY DEFINITION NOT FINAL FOR INSTALLATION UNLESS THE FABRICATOR APPROVES IT AS SUCH.

PROJECT : WRIGHT

LOCATION : 18890 OLD JULIAN TRAIL  
RAMONA, CA

DESCRIPTION : 35'x66'x14' STEEL BUILDING

#### LOADING INFORMATION

ROOF DEAD LOAD : 3.0 PSF  
 ROOF COLLATERAL LOAD : 2.0 PSF  
 ROOF LIVE LOAD : 20 PSF  
 FLOOR LIVE LOAD : 60 PSF  
 FLOOR DEAD LOAD : 10 PSF  
 SNOW LOAD : 0 PSF  
 ULTIMATE DESIGN WIND SPEED: 100 MPH  
 FOR RISK CATEGORY II BUILDINGS AS PER FIGURE 1609C.  
 WIND EXPOSURE : C  
 DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING : 24.1 PSF, 28.2 PSF,  
 LATITUDE : 33.053153 N  
 LONGITUDE : 117.786975 W  
 SEISMIC DESIGN CATEGORY : D  
 TYPE OF OCCUPANCY : U  
 TYPE OF CONSTRUCTION : V ONE STORY, APPR. 28'-7" HIGH  
 FLOOR AREA : 2310 SQ. FT.

#### CONCRETE NOTES:

1. ALL CONCRETE SHALL WITHSTAND 2500 LBS. PER SQUARE INCH ULTIMATE COMPRESSIVE STRESS AT 28 DAYS.
2. ALL LOAD BEARING FOOTING SHALL BE A MINIMUM OF TWO FEET (2'-0") BELOW NATURAL GRADE. ALLOWABLE SOIL BEARING PRESSURE IS 1500 LBS. PER SQUARE FOOT PER TABLE 1806.2 OF 2025 C.B.C.
3. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY DISCREPANCIES, OMISSIONS OR ERRORS ON THE PLAN, BEFORE CONSTRUCTION. OTHERWISE, IT SHALL BE DONE AS INTENDED BY THE ENGINEER.
4. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION SUPERVISION OR DEVIATION FROM THESE PLANS WITHOUT PRIOR WRITTEN APPROVAL.
5. ALL REINFORCING BARS SHALL CONFORM TO A.S.T.M A-615, GRADE 40. LAP A MINIMUM OF 40 DIAMETER AT SPLICES.
6. ALL ANCHOR BOLTS SHALL PROJECT FROM THE SAME ELEVATIONS. ALL ANCHOR BOLTS TO CONFORM WITH A.S.T.M. A-307.
7. ALL CONSTRUCTION SHALL COMPLY WITH THE 2025 C.B.C. AS AMENDED BY THE LOCAL AGENCY HAVING JURISDICTIONS.
8. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
9. ANY ENGINEERING DESIGN PROVIDED BY OTHERS MUST BE SUBMITTED FOR REVIEW AND SHALL BEAR THE STAMP AND SIGNATURE OF A REGISTERED ENGINEER.
10. CONTRACTOR SHALL VERIFY ANCHOR BOLT SIZES, LOCATIONS AND DIMENSIONS WITH METAL BUILDING MANUFACTURER ANCHOR BOLT SETTING PLAN PRIOR TO PLACING OF ANCHOR BOLTS IN CONCRETE.
11. ANCHOR BOLTS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.
12. ALL CONSTRUCTION JOINTS SHALL BE KEYS OR DOWELED.
13. WELDED WIRE MESH SHALL CONFORM TO ASTM A-185.
14. ALL PLUMBING, ELECTRICAL OR MISCELLANEOUS STUB OUT SHALL BE A MINIMUM OF NINE INCHES (9") CLEAR OF THE OUTSIDE OF CONCRETE IN ORDER TO CLEAR WALLS.
15. 1/4" POWER DRIVEN FASTENERS OR 3/8" X 2 1/2" WEDGE ANCHORS SHALL BE USED TO SECURE BASE ANGLE TO THE CONCRETE.
16. FOOTINGS SHALL BE CENTERED ON CENTERLINE OF COLUMN ABOVE UNLESS OTHERWISE NOTED.
17. IF EXPANSIVE SOILS ARE ENCOUNTERED ON THE JOB SITE THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY BEFORE ANY EXCAVATION IS DONE.
18. THE MINIMUM DEPTH REQUIREMENTS AND LOCAL FROST LINE REQUIREMENTS MAY SUPERSEDE DESIGN CALL OUTS. CONTACT THE LOCAL BUILDING DEPARTMENT FOR MINIMUM DEPTH REQUIREMENTS.

#### STEEL NOTES:

1. ALL CONSTRUCTION TO COMPLY WITH THE LATEST EDITION OF 2025 C.B.C. AND A.I.S.C. STEEL CONSTRUCTION MANUAL 14TH EDITION
2. ALL MACHINE BOLTS TO COMPLY WITH A.S.T.M. A-307.
3. ALL HOT ROLLED OR COLD ROLLED SHEET AND STRIP USED IN FABRICATION OF COLD FORMED STRUCTURAL MEMBERS SHALL HAVE A MINIMUM YIELD STRENGTH OF 55 K.S.I.
4. COLD FORMED STEEL SHALL BE IDENTIFIED BY THE FABRICATOR IN ACCORDANCE WITH 2025 C.B.C. THIS A.S.T.M. SPECIFICATION DESIGNATION AND YIELD STRENGTH SHALL BE INDICATED BY PAINTING, DECAL, OR TAGGING EACH LIFT OR BUNDLE.
5. ALL SHOP CONNECTIONS SHALL BE WELDED IN ACCORDANCE WITH THE LATEST A.W.S. "STRUCTURAL WELDING CODE".
6. INSTALLATION OF HIGH-STRENGTH BOLTS SHALL BE PERIODICALLY INSPECTED IN ACCORDANCE WITH AISI SPECIFICATIONS AND IN ACCORDANCE WITH SECTION 1704.3 OF CBC 2025.
7. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST A.W.S. SPECIFICATIONS.
8. DO NOT USE WELD METAL KNOWN AS "120" OR "E 70T-4".
9. ALL STRUCTURAL STEEL TO COMPLY WITH A.S.T.M. A-572 DUAL SPECIFICATIONS. (Fy = 50 K.S.I.)

#### BUILDING SPECIFICATIONS:

THIS STRUCTURE HAS BEEN DESIGNED AND DETAILED FOR THE LOADS AND CONDITIONS SHOWN ON THESE DRAWINGS. ANY ALTERATIONS TO THE STRUCTURAL SYSTEM OR REMOVAL OF ANY COMPONENT PARTS, OR THE ADDITION OF OTHER CONSTRUCTION MATERIALS OR LOADS MUST BE DONE UNDER THE ADVICE AND DIRECTION OF A REGISTERED ARCHITECT, CIVIL OR STRUCTURAL ENGINEER.

STANDARD DESIGN PRACTICES WHICH ARE BASED ON PERTINENT PROCEDURES AND RECOMMENDATIONS OF THE FOLLOWING ORGANIZATIONS AND CODES, AND ARE ACCEPTED PRACTICES IN THE LOW RISE METAL AND AGRICULTURAL BUILDING INDUSTRY.

#### AMERICAN INSTITUTE OF STEEL CONSTRUCTION:

"SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" 14TH EDITION.  
 A.I.S.C. DESIGN GUIDE 3 AND 2024 MBMA "SERVICEABILITY" STANDARDS WILL BE USED FOR THIS DESIGN.

#### AMERICAN IRON AND STEEL INSTITUTE:

2020 EDITION: NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

#### INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS:

"CALIFORNIA BUILDING CODE" 2025 EDITION

#### AMERICAN WELDING SOCIETY:

"STRUCTURAL WELDING CODE" AWS D1.1/D1.1M:2020

#### METAL BUILDING MANUFACTURER'S ASSOCIATION:

METAL BUILDING SYSTEMS MANUAL" 2024

#### GENERAL NOTES:

SHOP AND FIELD INSPECTIONS AND ASSOCIATED FEES ARE THE RESPONSIBILITY OF THE OWNER.  
 ERECTION BRACING SHALL BE THE RESPONSIBILITY OF THE ERECTOR AS PER M.B.M.A.

### PURCHASER APPROVAL

I ( WE ) HAVE REVIEWED ALL INFORMATION CONTAINED HEREON AND HAVE FOUND IT TO BE CORRECT, ACCURATE AND CONSISTENT WITH MY ( OUR ) INTENT AND PURPOSE. I ( WE ) HEREBY REQUEST FABRICATION BE COMMENCED, AND ACCEPT ALL PURCHASER RESPONSIBILITIES. I ( WE ) FURTHER STATE THAT I ( WE ) ARE AUTHORIZED TO PROVIDE ACCEPTANCE ON BEHALF OF THE LISTED COMPANY.

COMPANY: \_\_\_\_\_

SIGNING PARTY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

PROJECT: WRIGHT  
18890 OLD JULIAN TRAIL  
RAMONA, CA

TITLE: COVER SHEET

REVISIONS DATE CHK BY

SUBMITAL DATE: 12-05-25

DRAWN BY: OM

CHECKED BY:

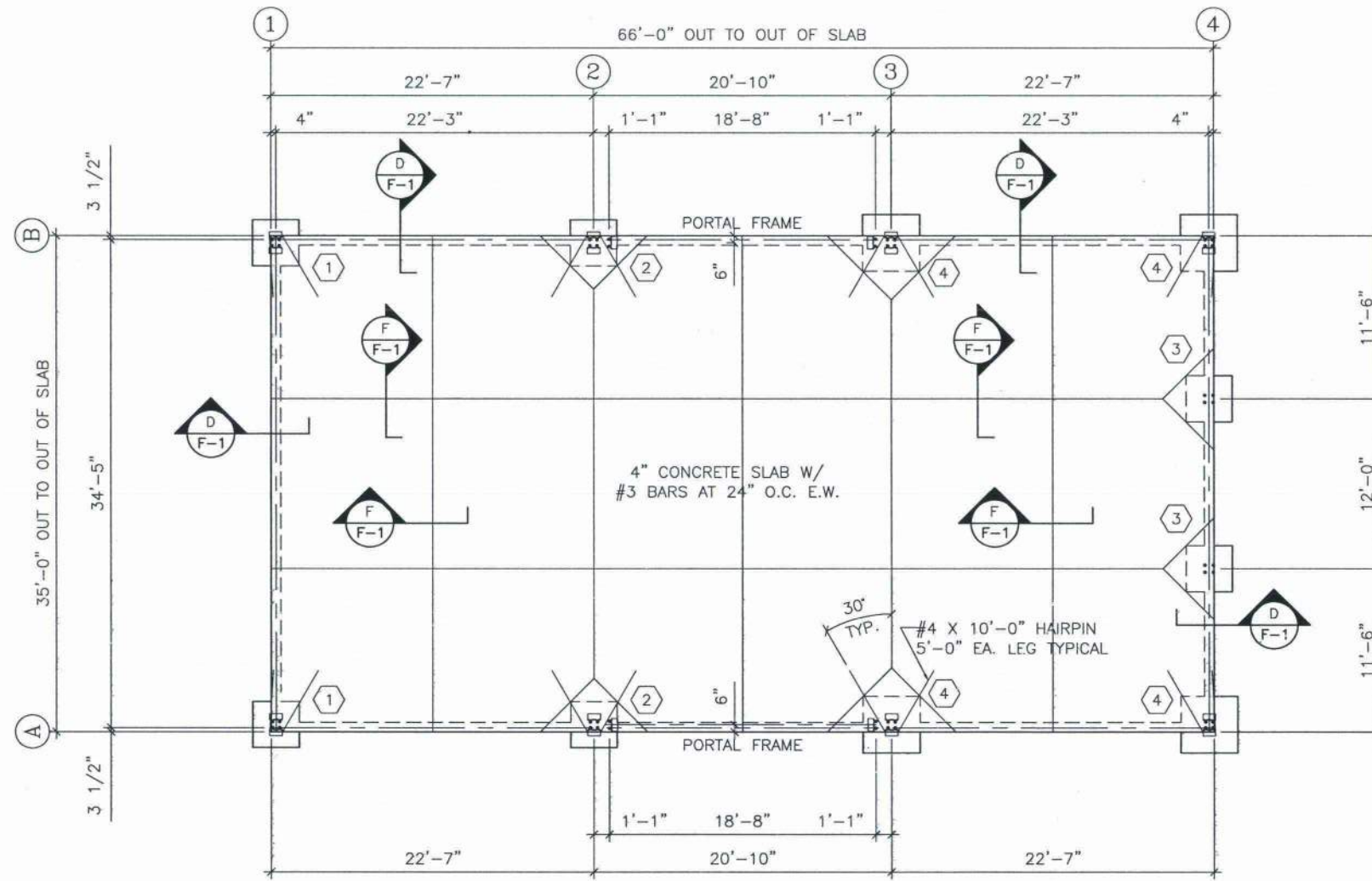
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JOB NO. 31679A-25

SHEET NO.

C-1A

1 OF 8 SHEETS

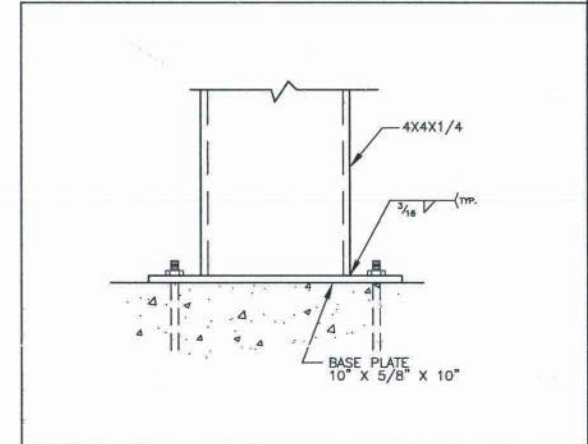


FOUNDATION PLAN

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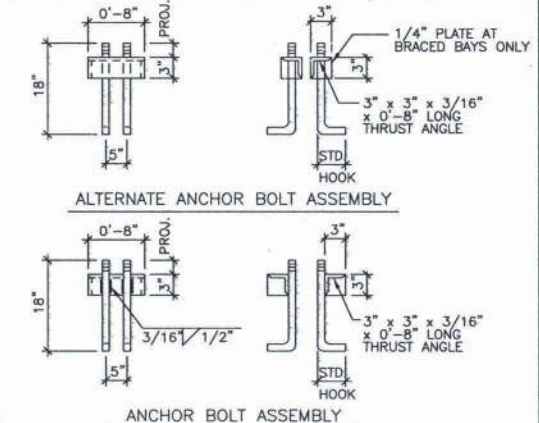
FOOTING SCHEDULE

TYPE	SIZE	DEPTH	ANCHOR	PROJ.	REBAR	THRUST ANGLE	HAIR PIN
1	3'-0" X 3'-0"	2'-0"	DIA- (4) 3/4" EMBED- 15" GA- 5"	2 1/2"	SEE DETAIL	3 X 3 X 3/16 X 0'-8" LONG	#4 BAR X 10'-0" LONG
2	4'-0" X 4'-0"	2-6	DIA- (6) 3/4" EMBED- 15" GA- 5"	2 1/2"	SEE DETAIL	3 X 3 X 3/16 X 0'-8" LONG	#4 BAR X 10'-0" LONG
3	3'-0" X 3'-0"	2'-0"	DIA- (2) 3/4" EMBED- 15" GA- 7"	2 1/2"	SEE DETAIL	NONE	NONE
4	4'-0" X 4'-0"	2-6	DIA- (4) 3/4" EMBED- 15" GA- 5"	2 1/2"	SEE DETAIL	3 X 3 X 3/16 X 0'-8" LONG	#4 BAR X 10'-0" LONG



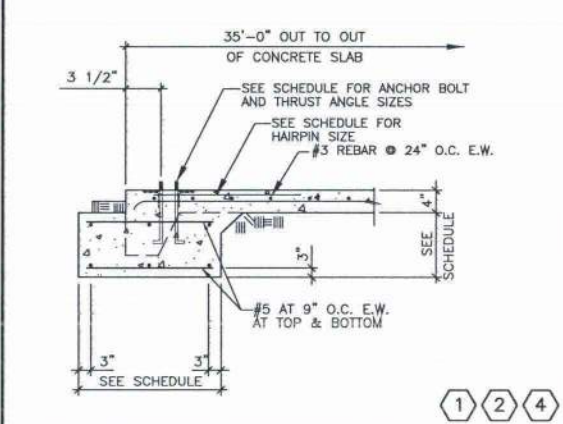
H BASE CONNECTION AT COLUMNS

SCALE: NONE



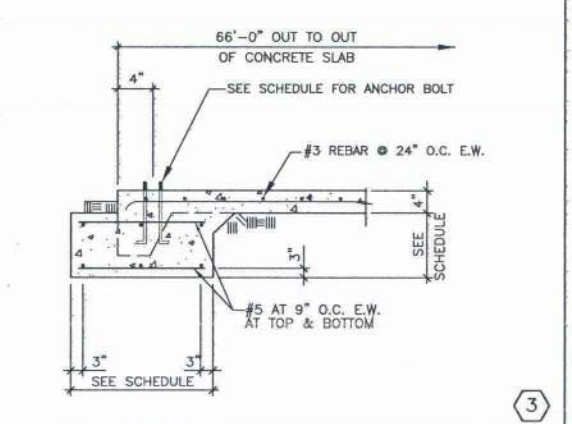
G ANCHOR BOLT ASSEMBLY AT RIGID FRAME OPTIONAL

SCALE: NONE



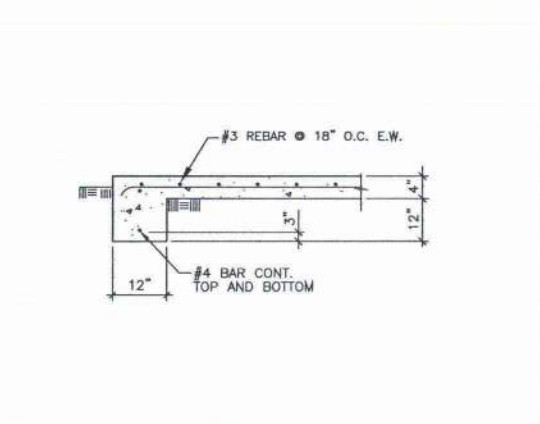
A SECTION AT FOOTING TYPE 1, 2 AND 4

MFD-001  
SCALE: NONE



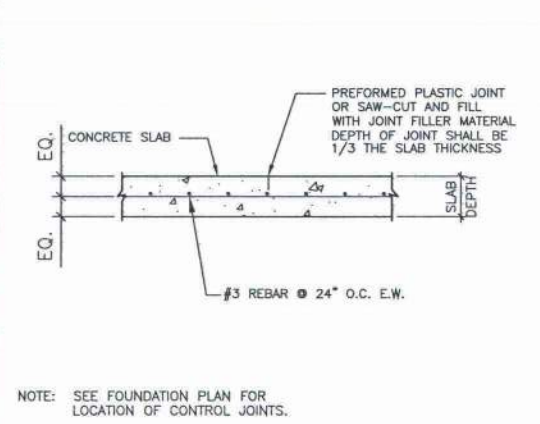
B SECTION AT FOOTING TYPE 3

MFD-001  
SCALE: NONE



D TYPICAL SECTION AT EDGE OF SLAB

MFD-004  
SCALE: NONE



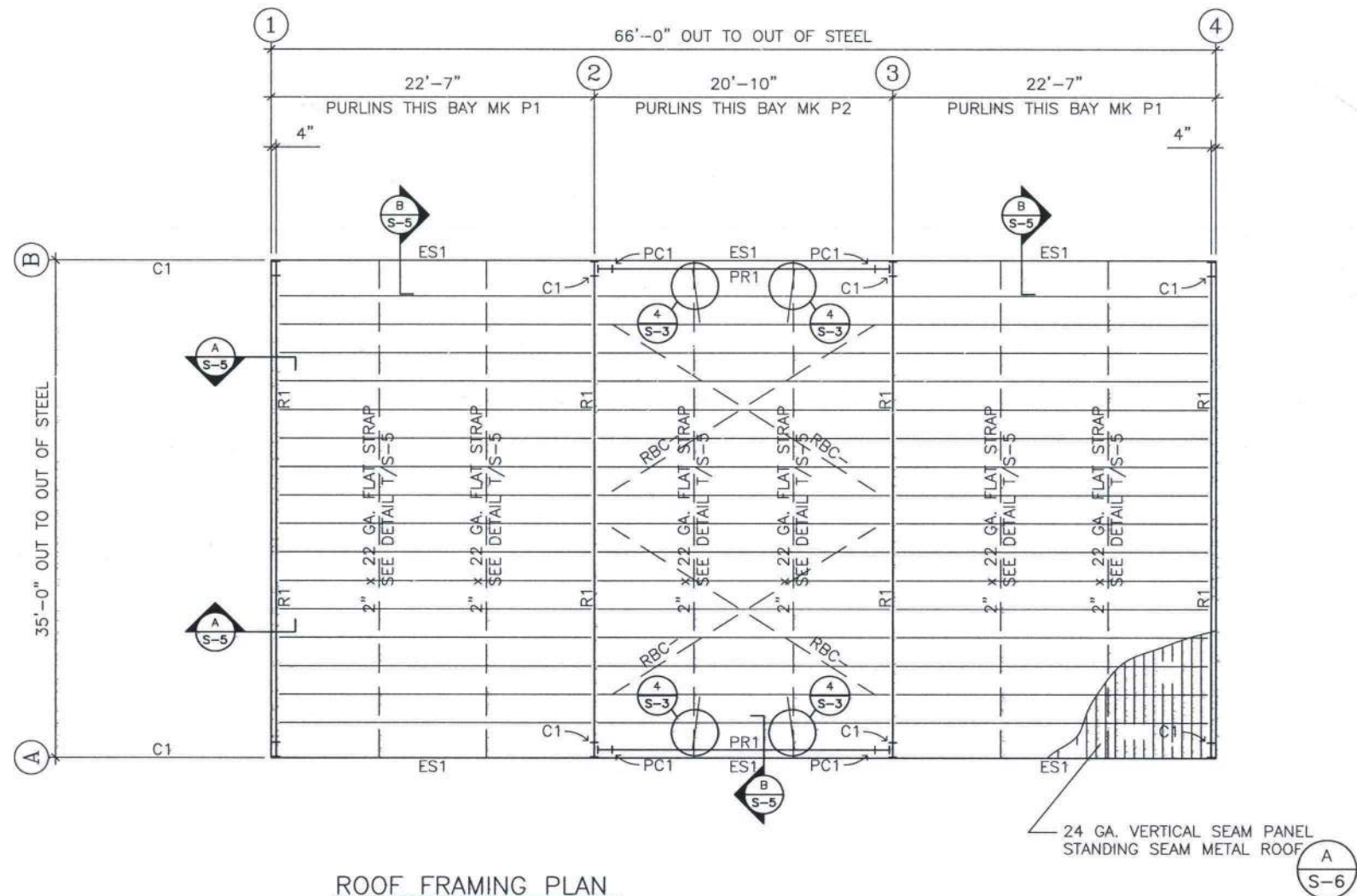
F TYPICAL CONTROL JOINT IN CONCRETE SLAB

M021W  
SCALE: NONE

PROJECT: WRIGHT 18890 OLD JULIAN TRAIL  
 LOCATION: RAMONA, CA  
 TITLE: FOUNDATION PLAN

REVISIONS: DATE: CHK BY:

SUBMITTAL DATE: 12-05-25  
 DRAWN BY: OM  
 CHECKED BY:  
 SCALE: NONE  
 JOB NO.: 31679A-25  
 SHEET NO.: F-1A  
 2 OF 8 SHEETS



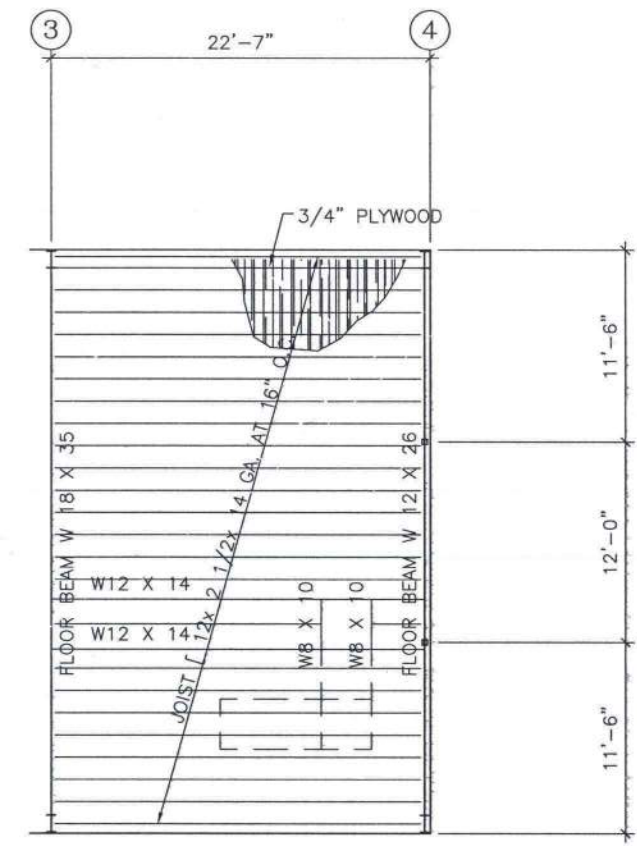
**ROOF FRAMING PLAN**

NO SCALE:

NOTE:  
IF SKYLIGHTS AND OR RIDGE VENTS ARE PLACED  
WITH ORDER, PLACEMENT IS AS SHOWN.

**PIECE MARKS AND SIZES:**

- |                    |      |                      |
|--------------------|------|----------------------|
| RIGID FRAME RAFTER | R1   | SEE CROSS SECTION    |
| RIGID FRAME COLUMN | C1   | SEE CROSS SECTION    |
| EAVE STRUT         | ES1- | [ 8 x 4 x 14 GA.     |
| PURLINS            | P1   | Z 8 x 2 1/2 x 16 GA. |
| ROOF BRACING CABLE | RBC- | 3/8" CABLE           |



**SECOND FLOOR PLAN**

NO SCALE:

PROJECT  
WRIGHT  
18890 JULIAN TRAIL  
LOCATION RAMONA, CA

REVISIONS	DATE	CHK BY

SUBMITAL DATE  
12-05-25

DRAWN BY:  
OM

CHECKED BY:

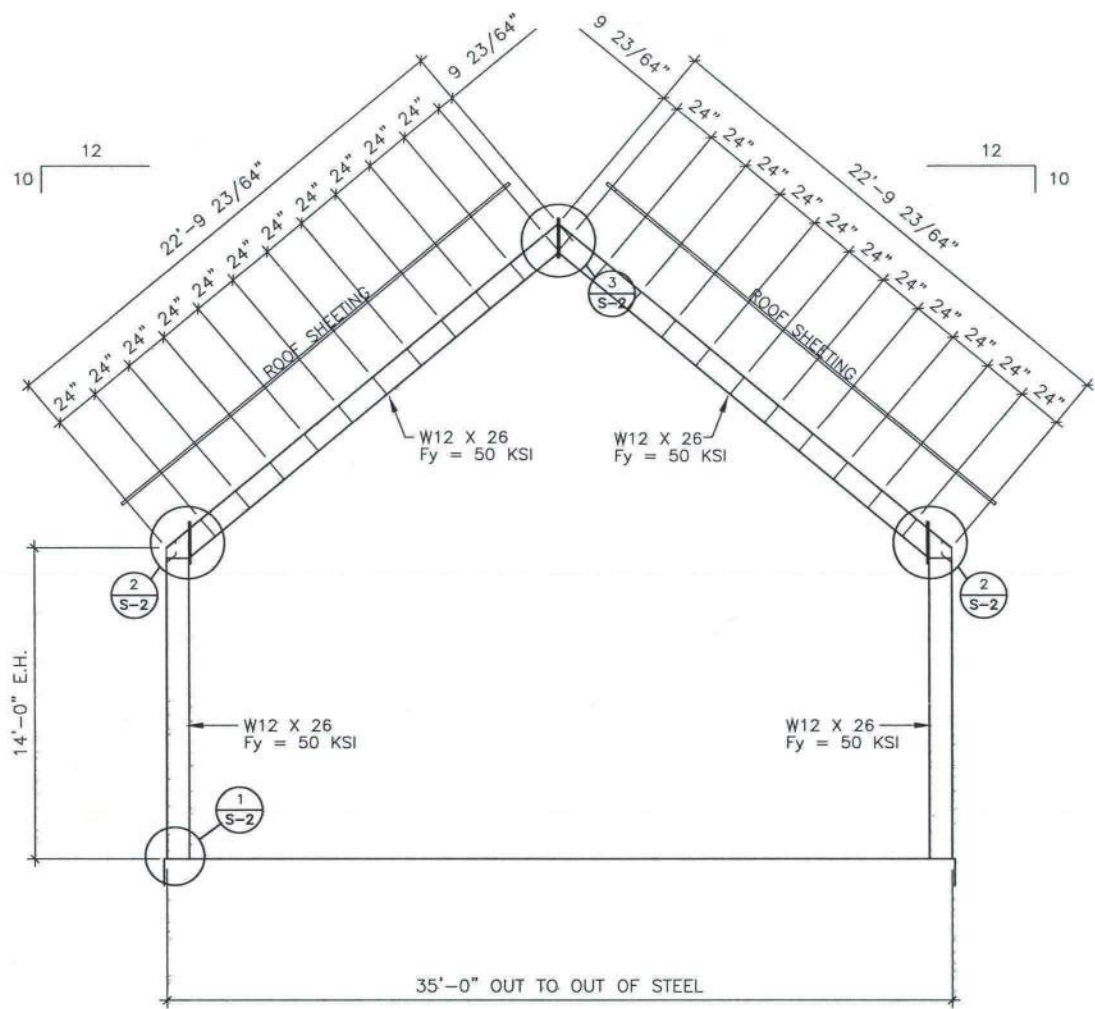
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AS NOTED

JOB NO.  
31679A-25

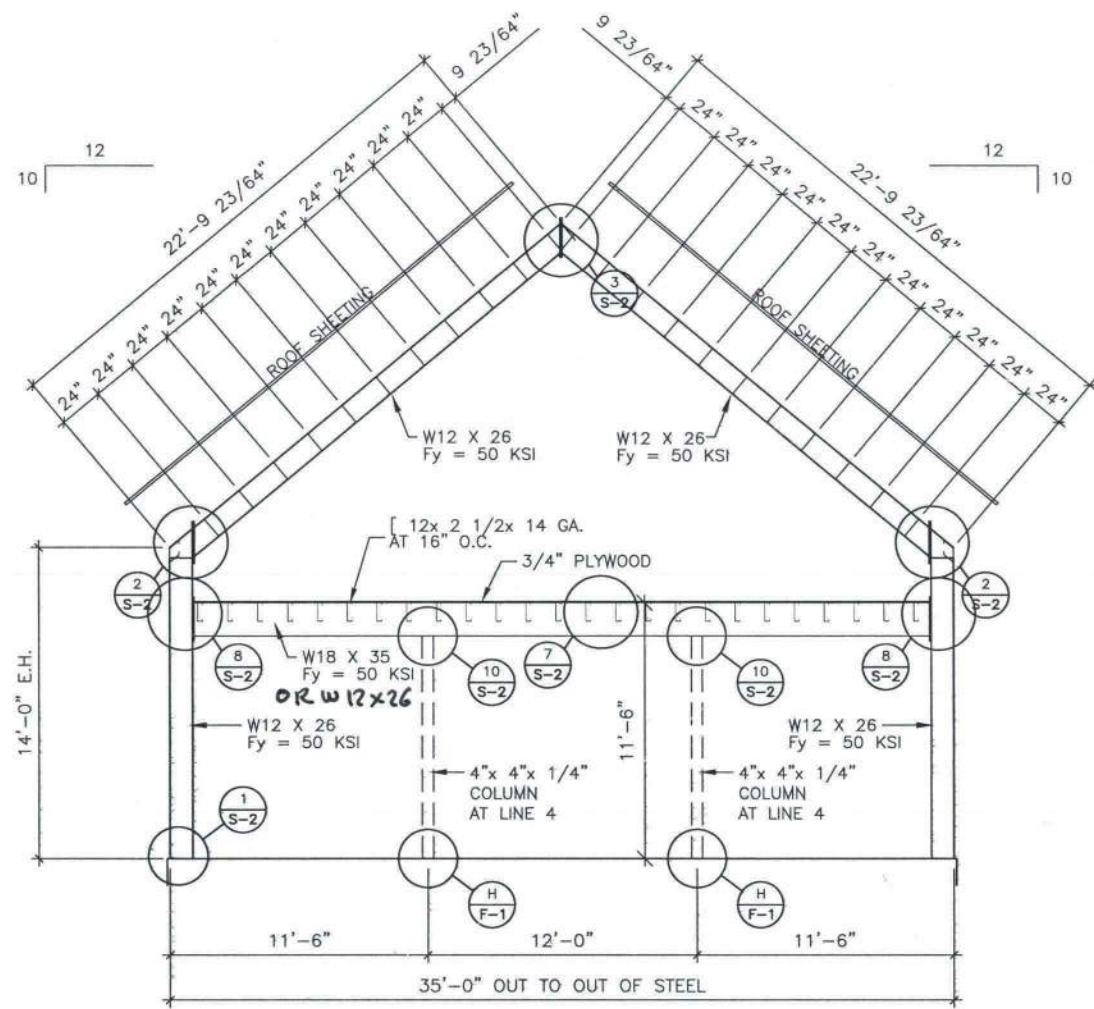
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**S-1A**

3 OF 8 SHEETS

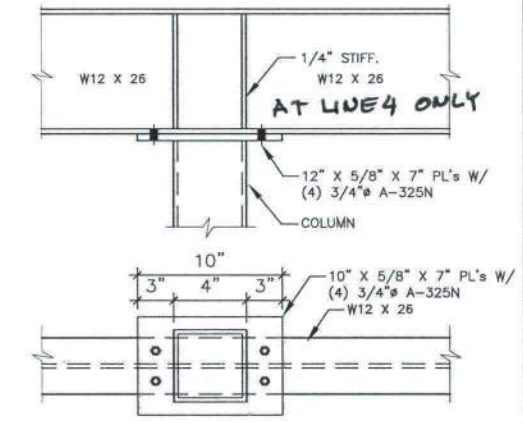
ROOF FRAMING PLAN



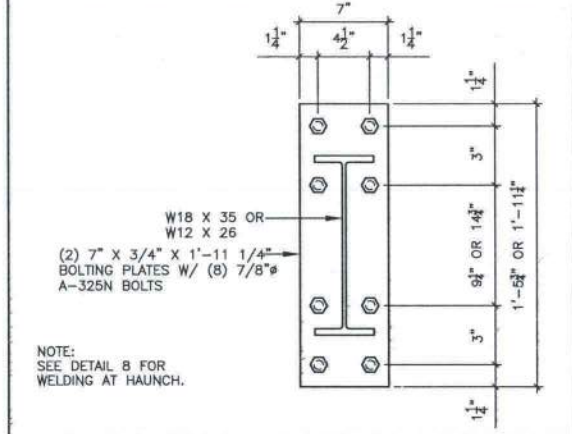
**CROSS SECTION AT LINE 1 AND 2**  
NO SCALE:



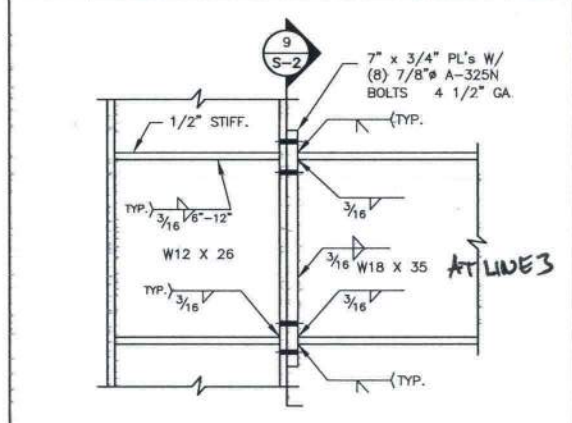
**CROSS SECTION AT LINE 3 AND 4**  
NO SCALE:



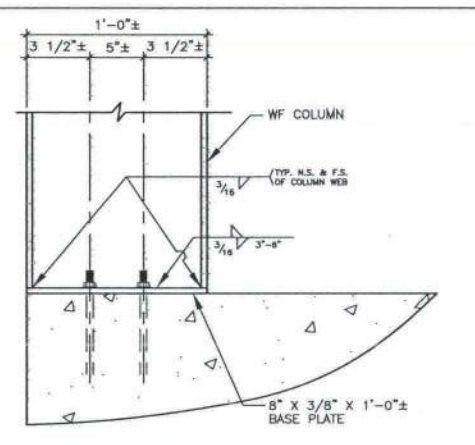
**10 INTERIOR POST TO FLOOR BEAM**  
SCALE: NONE



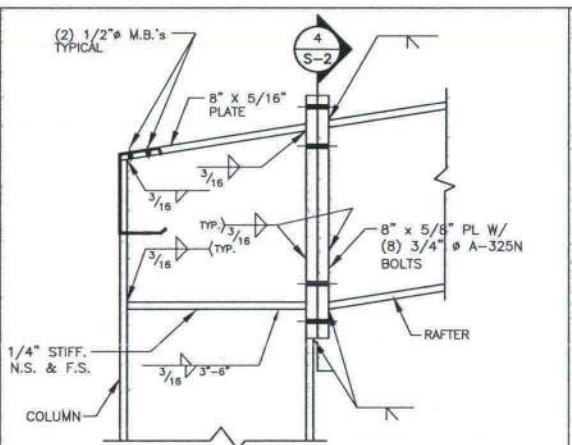
**9 SECTION AT FLOOR BEAM**  
SCALE: NONE



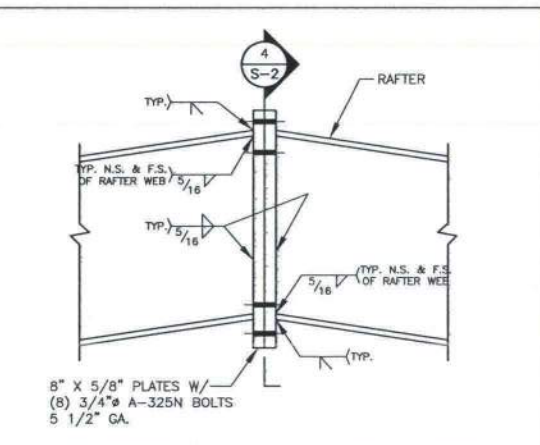
**8 RIGID FRAME TO BEAM CONNECTION**  
SCALE: NONE



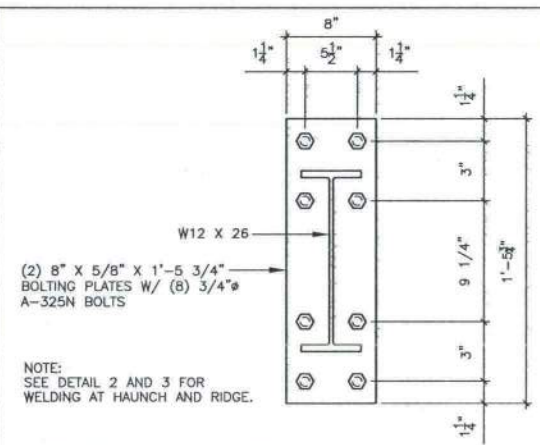
**1 RIGID FRAME BASE CONNECTION**  
MSB-003  
SCALE: NONE



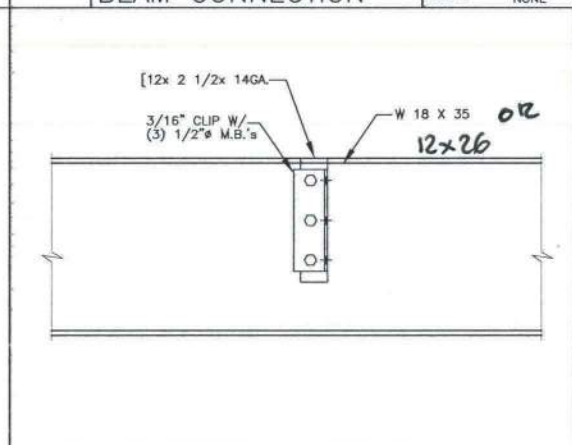
**2 RIGID FRAME HAUNCH CONNECTION**  
MSH-004  
SCALE: NONE



**3 RIGID FRAME RIDGE CONNECTION**  
MSR-001  
SCALE: NONE



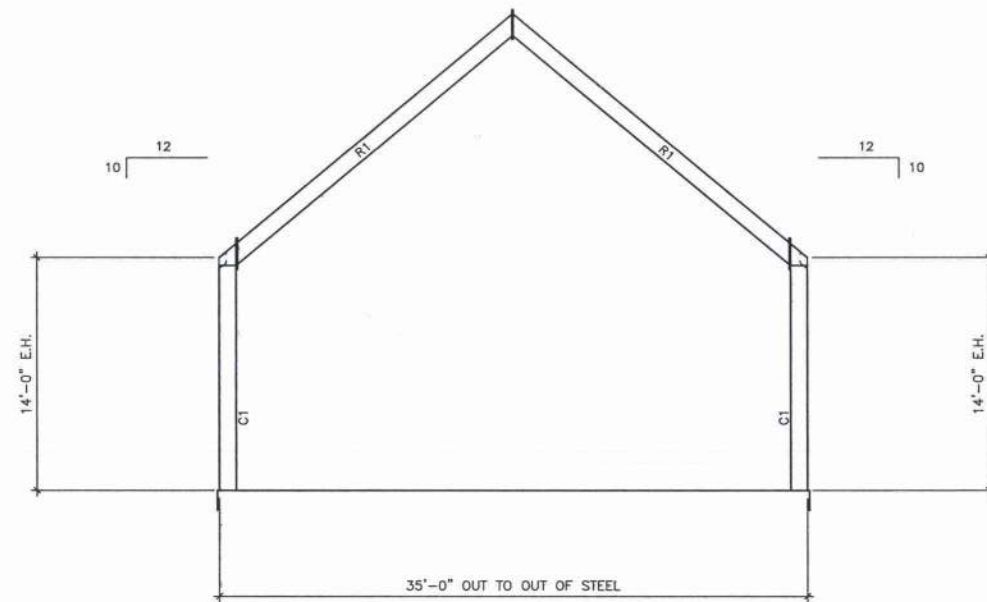
**4 SECTION AT HAUNCH & RIDGE PLATE**  
BP-002  
SCALE: NONE



**7 JOIST TO BEAM CONNECTION**  
SCALE: NONE

PROJECT	WRIGHT 18890 OLD JULIAN TRAIL LOCATION: RAMONA, CA
TITLE	CROSS SECTION
REVISIONS	DATE CHK BY
SUBMITAL DATE	12-05-25
DRAWN BY:	OM
CHECKED BY:	
SCALE:	NONE
JOB NO.	31679A-25
SHEET NO.	S-2A
	4 OF 8 SHEETS

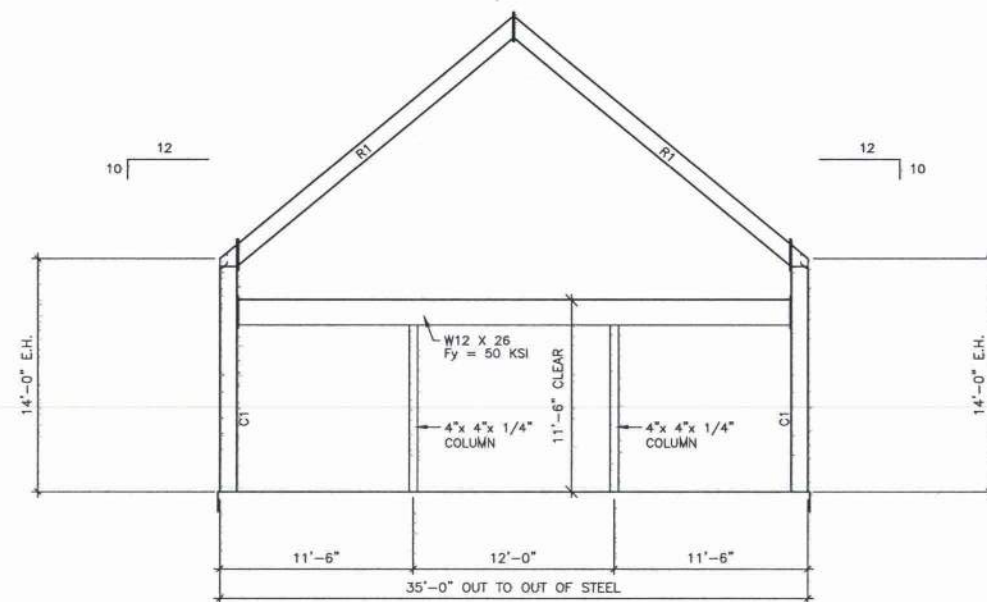




LEFT ENDWALL ELEVATION

NOTES:

1. FRAMED OPENING SIZES IN SIDEWALLS MAY VARY IN SIZE.
2. DOORS MAY BE FIELD LOCATED IN SIDEWALLS PROVIDED WALL BRACING IS NOT REMOVED.
3. WALL BRACING MAY BE RELOCATED INTO ANOTHER BAY OF SAME SIDEWALL TO ACCOMODATE DOORS.
4. FIELD CUT GIRTS FOR NEW FRAMED OPENINGS AS REQUIRED.



RIGHT ENDWALL ELEVATION

PIECE MARKS AND SIZES:

RIGID FRAME RAFTER	R1	SEE CROSS SECTION
RIGID FRAME COLUMN	C1	SEE CROSS SECTION
EAVE STRUT	ES1-	[ 8 x 4 x 14 GA.
PURLINS	P1	Z 8 x 2 1/2 x 16 GA.
ROOF BRACING CABLE	RBC-	<b>3/8"</b> CABLE

PROJECT  
 WRIGHT  
 18890 OLD JULIAN TRAIL  
 LOCATION RAMONA, CA  
 TITLE  
 ELEVATIONS

REVISIONS DATE CHK BY

SUBMITAL DATE  
 12-29-25

DRAWN BY:  
 OM

CHECKED BY:

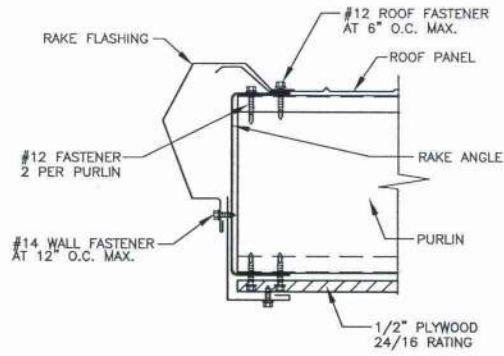
SCALE:  
 NONE

JOB NO.  
 31679A-25

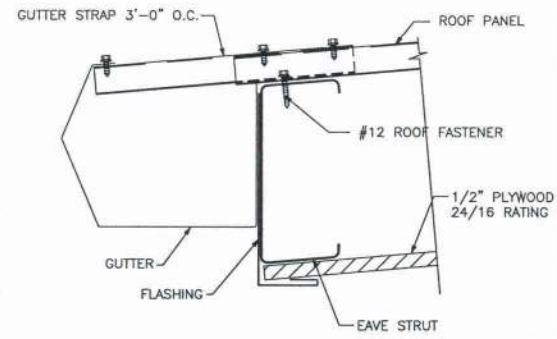
SHEET NO.

S-4A

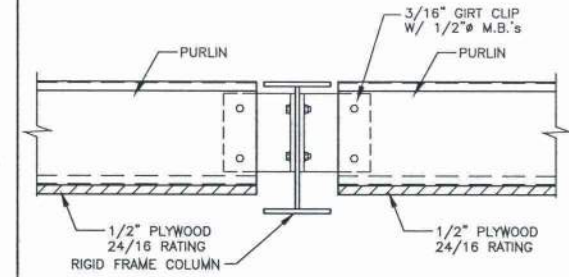
6 OF 8 SHEETS



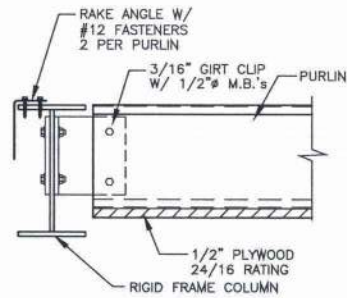
**A** RAKE DETAIL AT SHEETED ENDWALL MSS-001  
SCALE: NONE



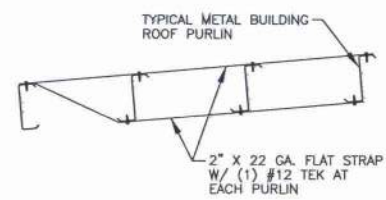
**B** EAVE DETAIL AT SHEETED SIDEWALL MSS-002  
SCALE: NONE



**E** PURLIN WITH PLYWOOD MSP-001  
SCALE: NONE



**G** PURLIN TO RIGID FRAME CONNECTION SCALE: NONE



**T** TYPICAL PURLIN STRAPING PSD-001  
SCALE: NONE

PROJECT WRIGHT OLD JULIAN TRAIL  
LOCATION RAMONA, CA  
TITLE DETAILS

REVISIONS DATE CHK BY

SUBMITAL DATE 12-29-25

DRAWN BY: OM

CHECKED BY:

SCALE: NONE

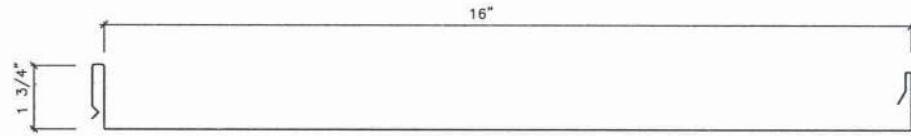
JOB NO. 31679A-25

SHEET NO.

S-5A

7 OF 8 SHEETS

VERTICAL SEAM PANEL\*



SECTION PROPERTIES

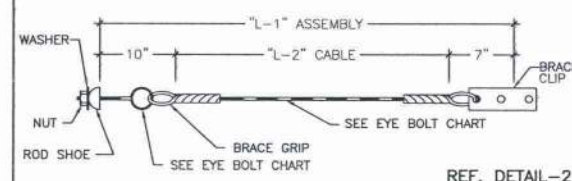
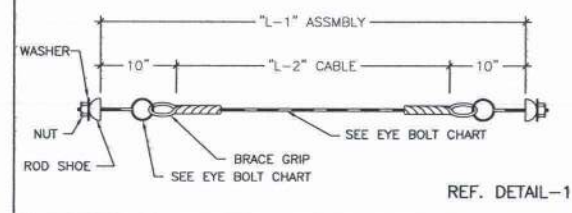
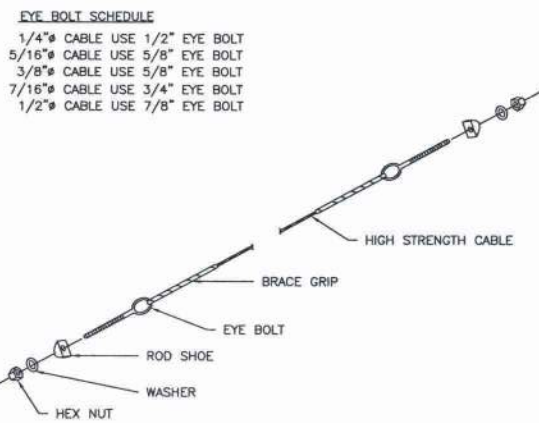
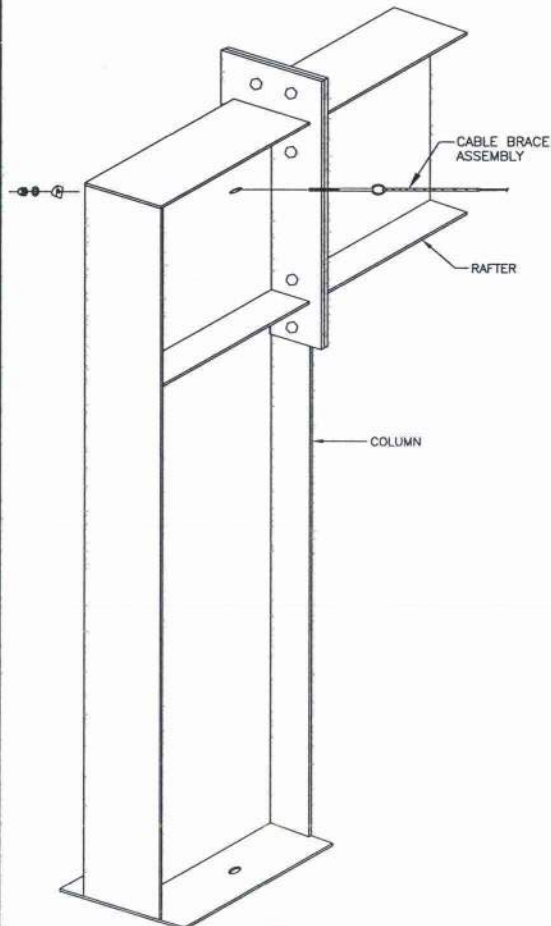
PANEL GAUGE	WEIGHT PSF	FY KSI	TOP IN COMPRESSION			BOTTOM IN COMPRESSION		
			I <sub>x</sub> IN <sup>4</sup>	S <sub>x</sub> IN <sup>3</sup>	M <sub>o</sub> KIP IN	I <sub>x</sub> IN <sup>4</sup>	S <sub>x</sub> IN <sup>3</sup>	M <sub>o</sub> KIP IN
24	1.26	50	.0885	.0559	1.677	.0398	.0416	1.248

NOTE: USE 24 GA.PANEL AT ROOF

A ROOF METAL DECKING STANDARD DETAILS

MSS-005

SCALE: NONE



D ISOMETRIC BRACING DETAIL AT R.F.

MBR-001  
SCALE: NONE

G TYP. CABLE BRACING REFERENCE DETAILS

MBR-004  
SCALE: NONE

PROJECT: WRIGHT 18890 OLD JULIAN TRAIL  
LOCATION: RAMONA, CA  
TITLE: DETAILS

REVISIONS	DATE	CHK BY

SUBMITAL DATE: 12-29-25  
DRAWN BY: OM  
CHECKED BY:  
SCALE: NONE  
JOB NO.: 31679A-25

SHEET NO.: S-6A  
8 OF 8 SHEETS

# TABLE OF CONTENTS

- C-1 COVER SHEET
- F-1 FOUNDATION PLAN
- S-1 ROOF PLAN
- S-2 CROSS SECTION
- S-3 ELEVATIONS
- S-4 ELEVATIONS
- S-5 DETAILS
- S-6 DETAILS

**FOR BUILDING PERMIT**  
 THESE DRAWINGS, BEING FOR PERMIT, ARE BY DEFINITION NOT FINAL FOR INSTALLATION UNLESS THE FABRICATOR APPROVES IT AS SUCH.

PROJECT : WRIGHT  
 LOCATION : 18890 OLD JULIAN TRAIL  
 RAMONA, CA  
 DESCRIPTION : 30'x40'x14' STEEL BUILDING

LOADING INFORMATION

ROOF DEAD LOAD : 5.0 PSF  
 COLLATERAL LOAD : 2.0 PSF  
 ROOF LIVE LOAD : 20 PSF  
 SNOW LOAD : 0 PSF  
 ULTIMATE DESIGN WIND SPEED: 100 MPH  
 FOR RISK CATEGORY II BUILDINGS AS PER FIGURE 1609C.  
 WIND EXPOSURE : C  
 DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING : 27.0 PSF, 28.2 PSF,  
 LATITUDE : 33.053153 N  
 LONGITUDE : 117.786975 W  
 SEISMIC DESIGN CATEGORY : D  
 TYPE OF OCCUPANCY : U  
 TYPE OF CONSTRUCTION : V ONE STORY, APPR. 26'-6" HIGH  
 FLOOR AREA : 1200 SQ. FT.

CONCRETE NOTES:

1. ALL CONCRETE SHALL WITHSTAND 2500 LBS. PER SQUARE INCH ULTIMATE COMPRESSIVE STRESS AT 28 DAYS.
2. ALL LOAD BEARING FOOTING SHALL BE A MINIMUM OF TWO FEET (2'-0") BELOW NATURAL GRADE. ALLOWABLE SOIL BEARING PRESSURE IS 1500 LBS. PER SQUARE FOOT PER TABLE 1806.2 OF 2025 C.B.C.
3. CONTRACTOR SHALL INFORM THE ENGINEER OF ANY DISCREPANCIES, OMISSIONS OR ERRORS ON THE PLAN, BEFORE CONSTRUCTION. OTHERWISE, IT SHALL BE DONE AS INTENDED BY THE ENGINEER.
4. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION SUPERVISION OR DEVIATION FROM THESE PLANS WITHOUT PRIOR WRITTEN APPROVAL.
5. ALL REINFORCING BARS SHALL CONFORM TO A.S.T.M A-615, GRADE 40. LAP A MINIMUM OF 40 DIAMETER AT SPLICES.
6. ALL ANCHOR BOLTS SHALL PROJECT FROM THE SAME ELEVATIONS. ALL ANCHOR BOLTS TO CONFORM WITH A.S.T.M. A-307.
7. ALL CONSTRUCTION SHALL COMPLY WITH THE 2025 C.B.C. AS AMENDED BY THE LOCAL AGENCY HAVING JURISDICTIONS.
8. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
9. ANY ENGINEERING DESIGN PROVIDED BY OTHERS MUST BE SUBMITTED FOR REVIEW AND SHALL BEAR THE STAMP AND SIGNATURE OF A REGISTERED ENGINEER.
10. CONTRACTOR SHALL VERIFY ANCHOR BOLT SIZES; LOCATIONS AND DIMENSIONS WITH METAL BUILDING MANUFACTURER ANCHOR BOLT SETTING PLAN PRIOR TO PLACING OF ANCHOR BOLTS IN CONCRETE.
11. ANCHOR BOLTS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.
12. ALL CONSTRUCTION JOINTS SHALL BE KEYS OR DOWELED.
13. WELDED WIRE MESH SHALL CONFORM TO ASTM A-185.
14. ALL PLUMBING, ELECTRICAL OR MISCELLANEOUS STUB OUT SHALL BE A MINIMUM OF NINE INCHES (9") CLEAR OF THE OUTSIDE OF CONCRETE IN ORDER TO CLEAR WALLS.
15. 1/4" POWER DRIVEN FASTENERS OR 3/8" X 2 1/2" WEDGE ANCHORS SHALL BE USED TO SECURE BASE ANGLE TO THE CONCRETE.
16. FOOTINGS SHALL BE CENTERED ON CENTERLINE OF COLUMN ABOVE UNLESS OTHERWISE NOTED.
17. IF EXPANSIVE SOILS ARE ENCOUNTERED ON THE JOB SITE THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY BEFORE ANY EXCAVATION IS DONE.
18. THE MINIMUM DEPTH REQUIREMENTS AND LOCAL FROST LINE REQUIREMENTS MAY SUPERSEDE DESIGN CALL OUTS. CONTACT THE LOCAL BUILDING DEPARTMENT FOR MINIMUM DEPTH REQUIREMENTS.

STEEL NOTES:

1. ALL CONSTRUCTION TO COMPLY WITH THE LATEST EDITION OF 2025 C.B.C. AND A.I.S.C. STEEL CONSTRUCTION MANUAL 14TH EDITION
2. ALL MACHINE BOLTS TO COMPLY WITH A.S.T.M. A-307.
3. ALL HOT ROLLED OR COLD ROLLED SHEET AND STRIP USED IN FABRICATION OF COLD FORMED STRUCTURAL MEMBERS SHALL HAVE A MINIMUM YIELD STRENGTH OF 55 K.S.I.
4. COLD FORMED STEEL SHALL BE IDENTIFIED BY THE FABRICATOR IN ACCORDANCE WITH 2025 C.B.C. THIS A.S.T.M. SPECIFICATION DESIGNATION AND YIELD STRENGTH SHALL BE INDICATED BY PAINTING, DECAL, OR TAGGING EACH LIFT OR BUNDLE.
5. ALL SHOP CONNECTIONS SHALL BE WELDED IN ACCORDANCE WITH THE LATEST A.W.S. "STRUCTURAL WELDING CODE".
6. INSTALLATION OF HIGH-STRENGTH BOLTS SHALL BE PERIODICALLY INSPECTED IN ACCORDANCE WITH AISC SPECIFICATIONS AND IN ACCORDANCE WITH SECTION 1704.3 OF CBC 2025.
7. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST A.W.S. SPECIFICATIONS.
8. DO NOT USE WELD METAL KNOWN AS "120" OR "E 70T-4".
9. ALL STRUCTURAL STEEL TO COMPLY WITH A.S.T.M. A-572 DUAL SPECIFICATIONS. (Fy = 50 K.S.I.)

BUILDING SPECIFICATIONS:

THIS STRUCTURE HAS BEEN DESIGNED AND DETAILED FOR THE LOADS AND CONDITIONS SHOWN ON THESE DRAWINGS. ANY ALTERATIONS TO THE STRUCTURAL SYSTEM OR REMOVAL OF ANY COMPONENT PARTS, OR THE ADDITION OF OTHER CONSTRUCTION MATERIALS OR LOADS MUST BE DONE UNDER THE ADVICE AND DIRECTION OF A REGISTERED ARCHITECT, CIVIL OR STRUCTURAL ENGINEER.

STANDARD DESIGN PRACTICES WHICH ARE BASED ON PERTINENT PROCEDURES AND RECOMMENDATIONS OF THE FOLLOWING ORGANIZATIONS AND CODES, AND ARE ACCEPTED PRACTICES IN THE LOW RISE METAL AND AGRICULTURAL BUILDING INDUSTRY.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION:

"SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" 14TH EDITION.  
 A.I.S.C. DESIGN GUIDE 3 AND 2024 MBMA "SERVICEABILITY" STANDARDS WILL BE USED FOR THIS DESIGN.

AMERICAN IRON AND STEEL INSTITUTE:

2020 EDITION: NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS:

"CALIFORNIA BUILDING CODE" 2025 EDITION

AMERICAN WELDING SOCIETY:

"STRUCTURAL WELDING CODE" AWS D1.1/D1.M:2020

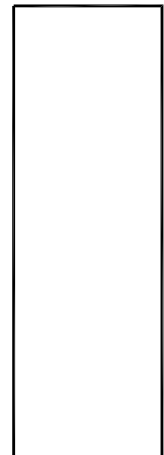
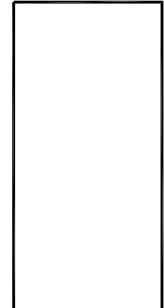
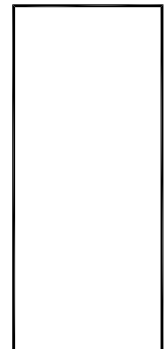
METAL BUILDING MANUFACTURER'S ASSOCIATION:

METAL BUILDING SYSTEMS MANUAL" 2024

GENERAL NOTES:

SHOP AND FIELD INSPECTIONS AND ASSOCIATED FEES ARE THE RESPONSIBILITY OF THE OWNER.  
 ERECTION BRACING SHALL BE THE RESPONSIBILITY OF THE ERECTOR AS PER M.B.M.A.

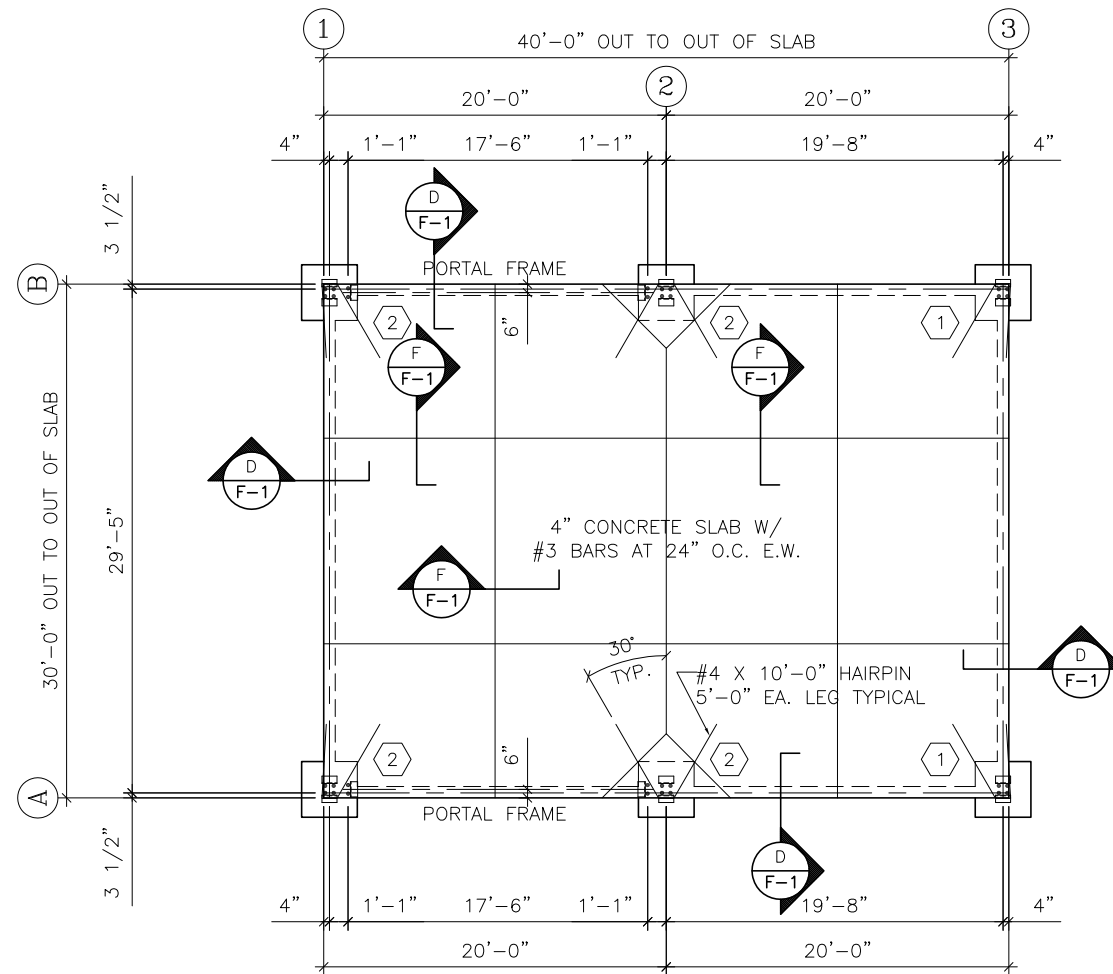
<b>PURCHASER APPROVAL</b>	COMPANY: _____
I ( WE ) HAVE REVIEWED ALL INFORMATION CONTAINED HEREON AND HAVE FOUND IT TO BE CORRECT, ACCURATE AND CONSISTENT WITH MY ( OUR ) INTENT AND PURPOSE. I ( WE ) HEREBY REQUEST FABRICATION BE COMMENCED, AND ACCEPT ALL PURCHASER RESPONSIBILITIES.	SIGNING PARTY: _____
I ( WE ) FURTHER STATE THAT I ( WE ) ARE AUTHORIZED TO PROVIDE ACCEPTANCE ON BEHALF OF THE LISTED COMPANY.	TITLE: _____
	DATE: _____



PROJECT WRIGHT 18890 OLD JULIAN TRAIL RAMONA, CA	TITLE COVER SHEET
---	----------------------

REVISIONS	DATE	CHK BY

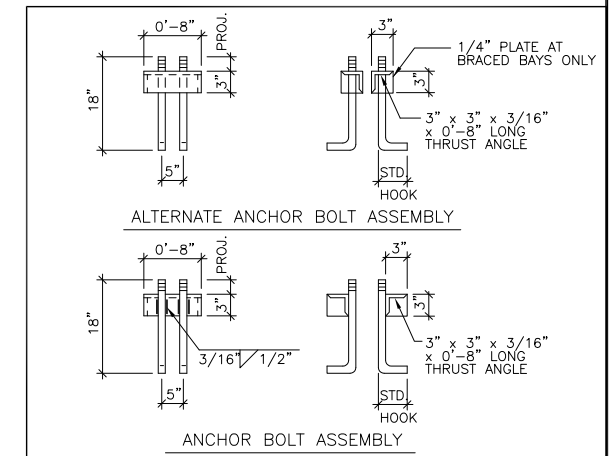
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 DRAWN BY : OM  
 CHECKED BY :  
 SCALE : NONE  
 JOB NO. : 31679B-25



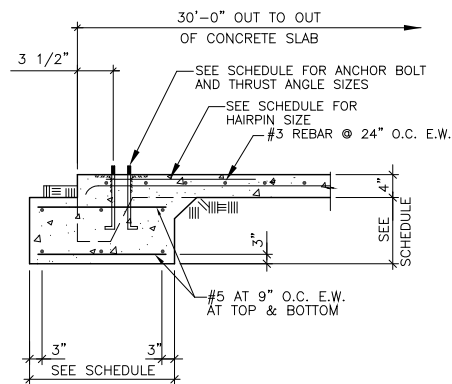
**FOUNDATION PLAN**  
NO SCALE:

**FOOTING SCHEDULE**

TYPE	SIZE	DEPTH	ANCHOR	PROJ.	REBAR	THRUST ANGLE	HAIR PIN
1	3'-0" X 3'-0"	2'-0"	DIA- (4) 3/4" EMBED- 15" GA- 5"	2 1/2"	SEE DETAIL	3 X 3 X 3/16 X 0'-8" LONG	#4 BAR X 10'-0" LONG
2	3'-0" X 3'-0"	2'-0"	DIA- (6) 3/4" EMBED- 15" GA- 5"	2 1/2"	SEE DETAIL	3 X 3 X 3/16 X 0'-8" LONG	#4 BAR X 10'-0" LONG



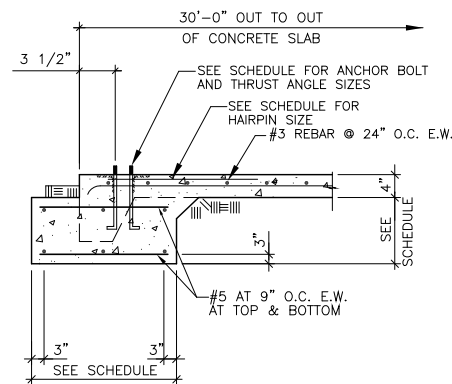
**G ANCHOR BOLT ASSEMBLY AT RIGID FRAME OPTIONAL**  
SCALE: NONE



1

**A SECTION AT FOOTING TYPE 1**

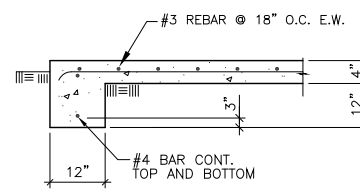
MFD-001  
SCALE: NONE



2

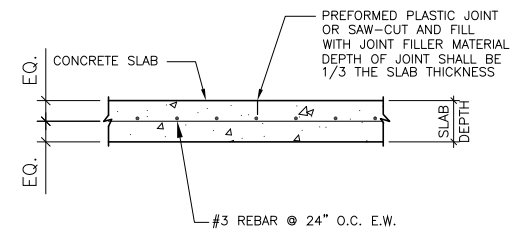
**B SECTION AT FOOTING TYPE 2**

MFD-001  
SCALE: NONE



**D TYPICAL SECTION AT EDGE OF SLAB**

MFD-004  
SCALE: NONE



**F TYPICAL CONTROL JOINT IN CONCRETE SLAB**

M021W  
SCALE: NONE

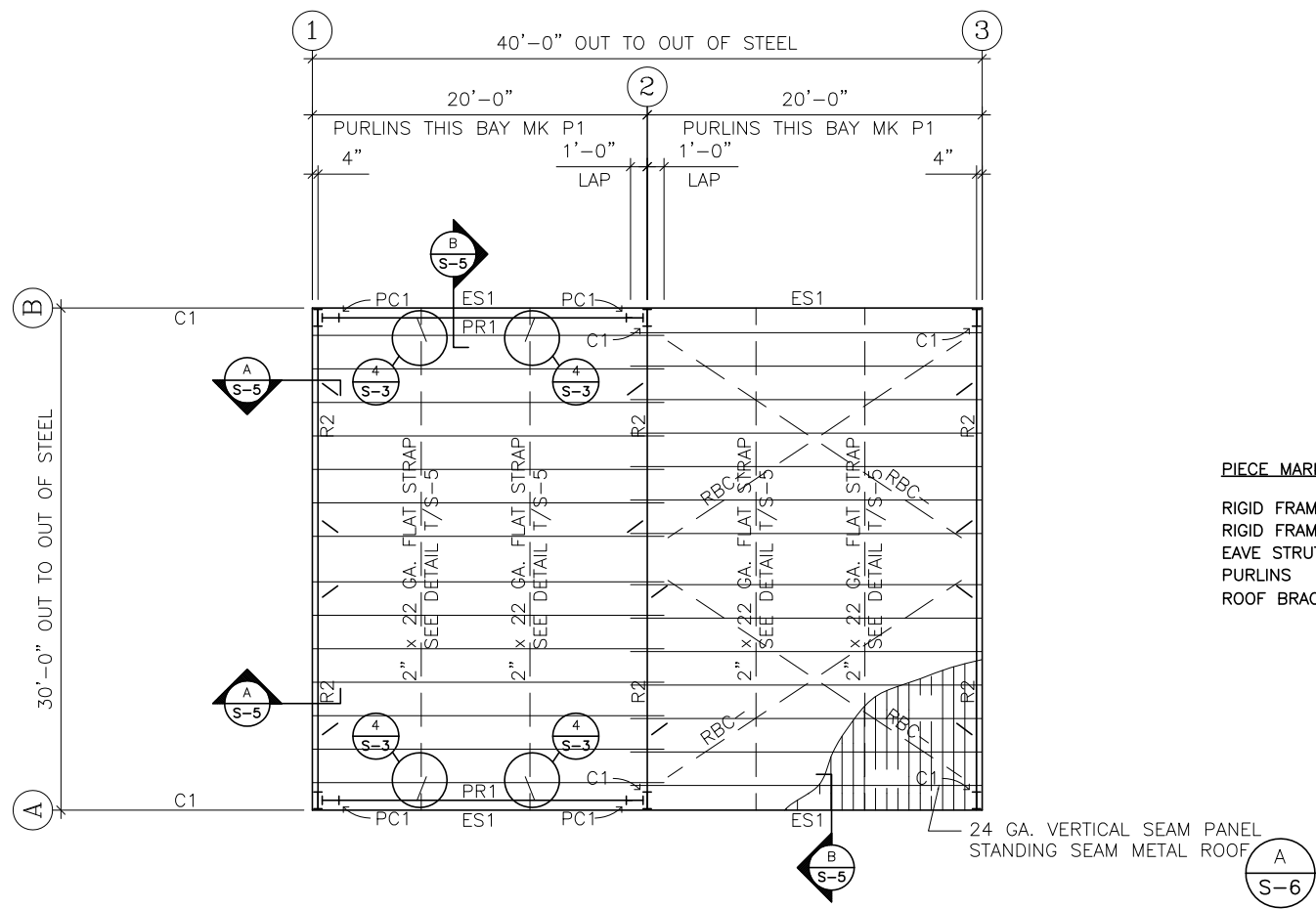
NOTE: SEE FOUNDATION PLAN FOR LOCATION OF CONTROL JOINTS.

PROJECT  
**WRIGHT**  
18890 OLD JULIAN TRAIL  
LOCATION  
RAMONA, CA  
TITLE  
**FOUNDATION PLAN**

REVISIONS	DATE	CHK BY

SUBMITAL DATE  
12-29-25  
DRAWN BY:  
OM  
CHECKED BY:  
SCALE:  
NONE  
JOB NO.  
31679B-25

SHEET NO.  
**F-1B**  
2 OF 8 SHEETS



**PIECE MARKS AND SIZES:**

- RIGID FRAME RAFTER R1
- RIGID FRAME COLUMN C1
- EAVE STRUT ES1-
- PURLINS P1
- ROOF BRACING CABLE RBC-

- SEE CROSS SECTION
- SEE CROSS SECTION
- [ 8 x 4 x 14 GA.
- Z 8 x 2 1/2 x 16 GA.
- 5/16"Ø CABLE

**ROOF FRAMING PLAN**

NO SCALE:

NOTE:  
IF SKYLIGHTS AND OR RIDGE VENTS ARE PLACED WITH ORDER, PLACEMENT IS AS SHOWN.

24 GA. VERTICAL SEAM PANEL  
STANDING SEAM METAL ROOF

PROJECT

WRIGHT  
18890 JULIAN TRAIL  
LOCATION RAMONA, CA

TITLE  
ROOF FRAMING PLAN

REVISIONS	DATE	CHK BY

SUBMITTAL DATE  
12-29-25

DRAWN BY:  
OM

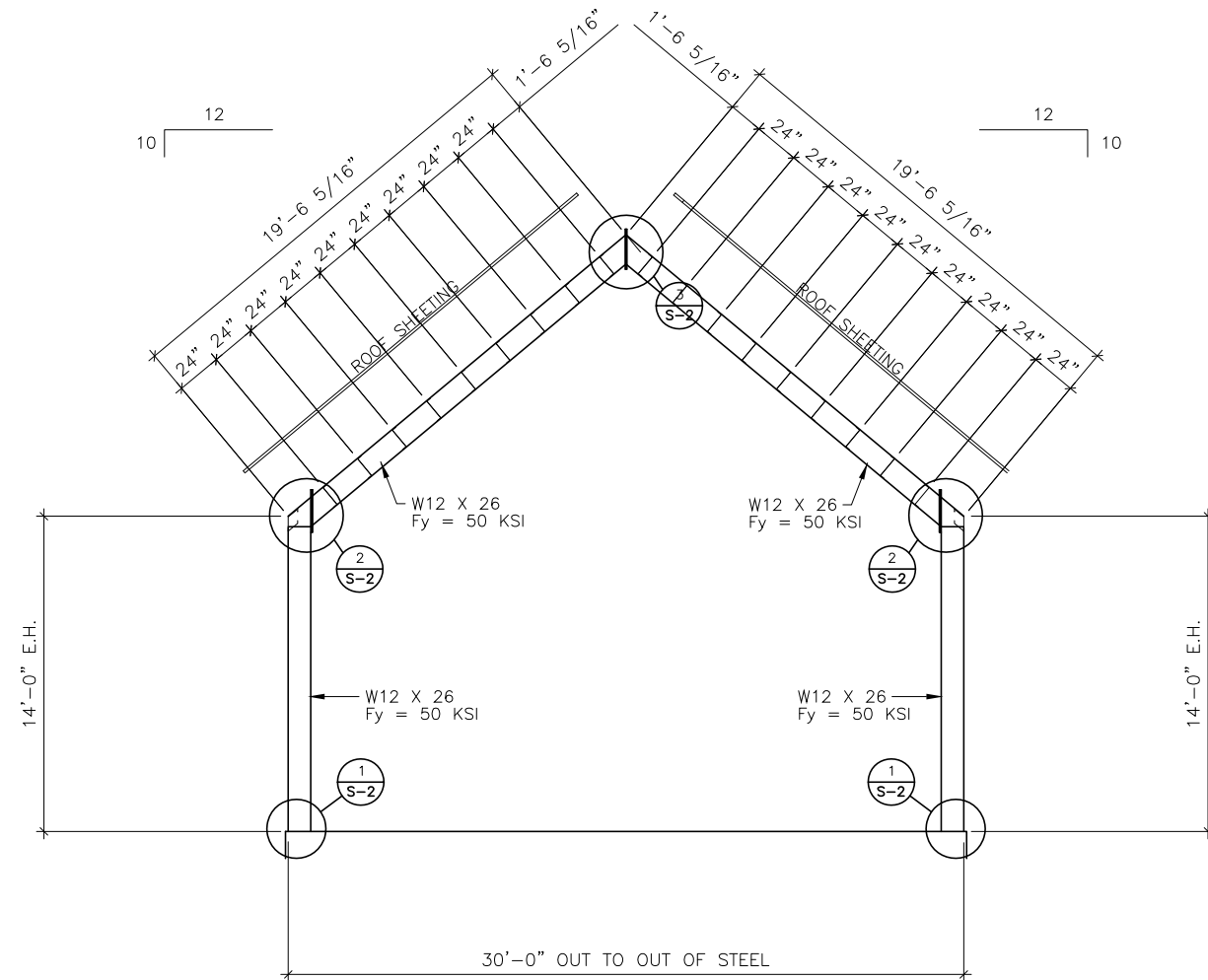
CHECKED BY:

SCALE:  
AS NOTED

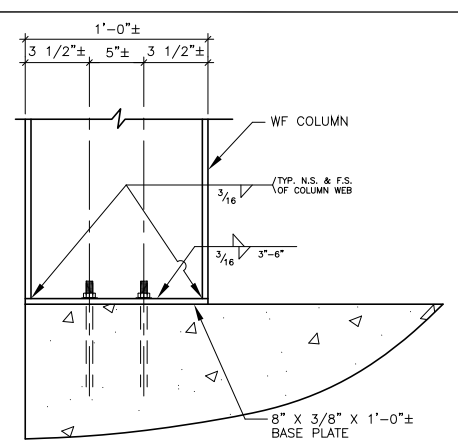
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31679b-25

SHEET NO.  
S-1B

3 OF 8 SHEETS

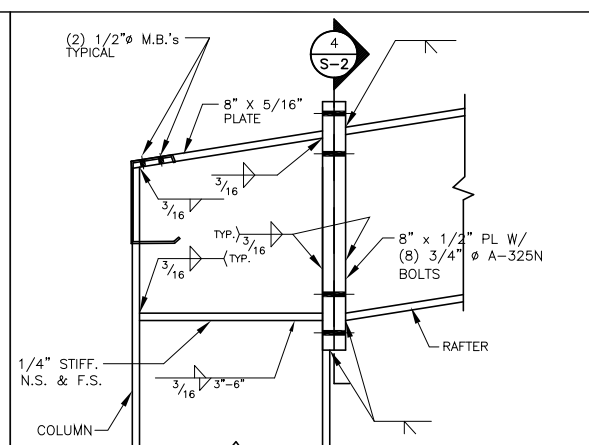


**TYPICAL CROSS SECTION**  
NO SCALE:



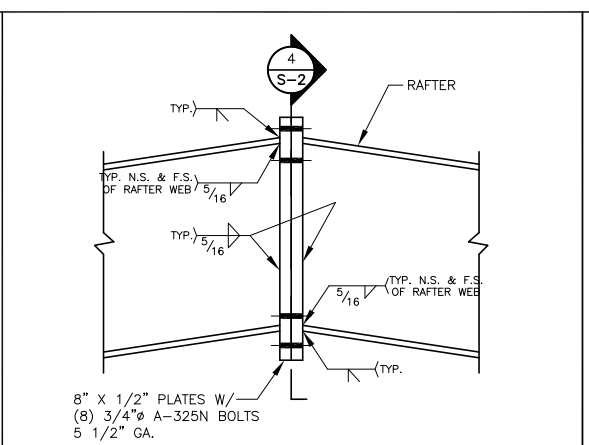
**1 RIGID FRAME BASE CONNECTION**

MSB-003  
SCALE: NONE



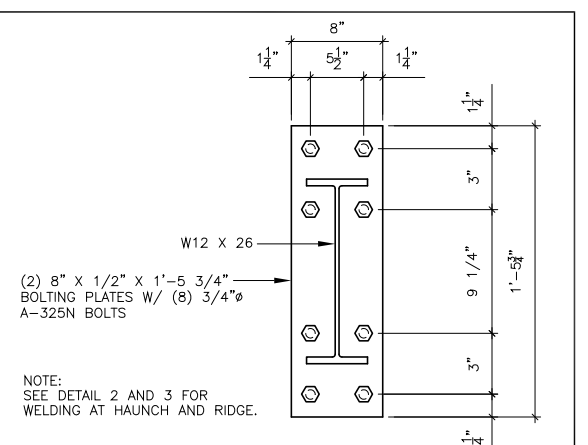
**2 RIGID FRAME HAUNCH CONNECTION**

MSH-004  
SCALE: NONE



**3 RIGID FRAME RIDGE CONNECTION**

MSR-001  
SCALE: NONE



**4 SECTION AT HAUNCH & RIDGE PLATE**

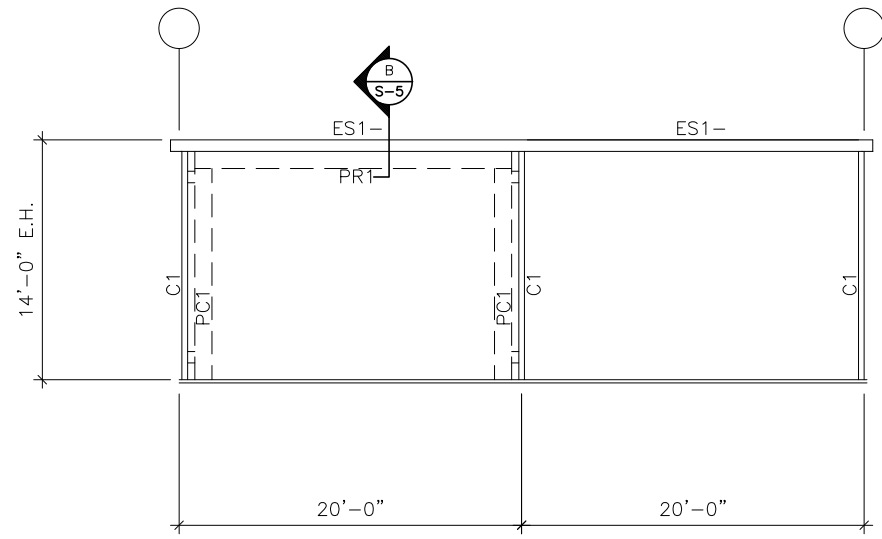
BP-002  
SCALE: NONE

PROJECT: WRIGHT 18890 OLD JULIAN TRAIL  
LOCATION: RAMONA, CA  
TITLE: CROSS SECTION

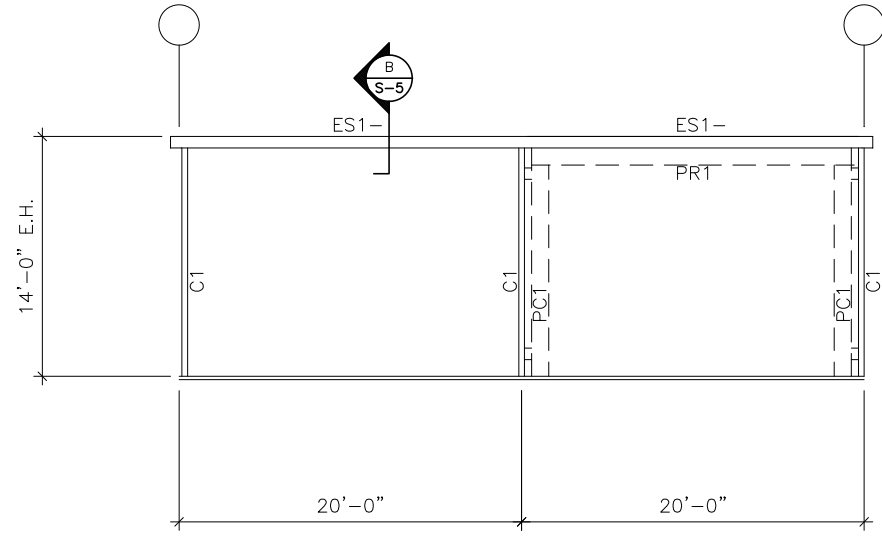
REVISIONS	DATE	CHK BY

SUBMITTAL DATE: 12-29-25  
DRAWN BY: OM  
CHECKED BY:  
SCALE: NONE  
JOB NO.: 31679b-25

SHEET NO.: S-2 B  
4 OF 8 SHEETS



**NEAR SIDEWALL ELEVATION**  
NO SCALE:



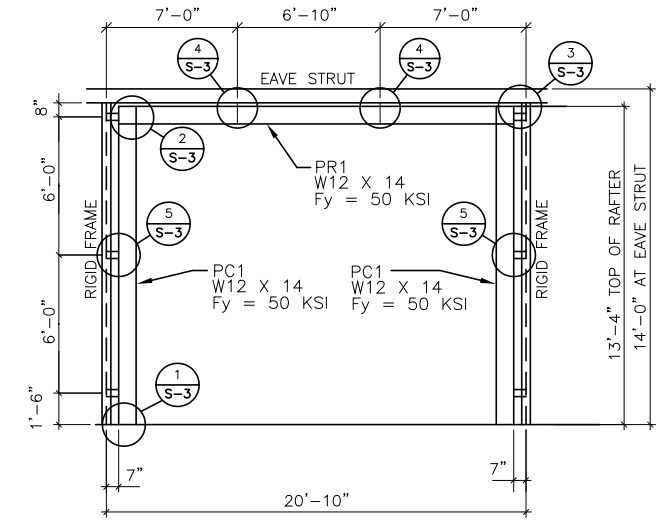
**REAR SIDEWALL ELEVATION**  
NO SCALE:

**PIECE MARKS AND SIZES:**

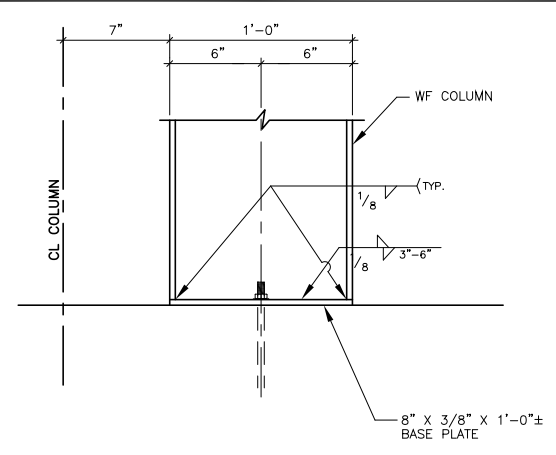
RIGID FRAME RAFTER	R1	SEE CROSS SECTION
RIGID FRAME COLUMN	C1	SEE CROSS SECTION
EAVE STRUT	ES1-	[ 8 x 4 x 14 GA.
PURLINS	P1	Z 8 x 2 1/2 x 16 GA.
ROOF BRACING CABLE	RBC-	5/16"Ø CABLE

**NOTES:**

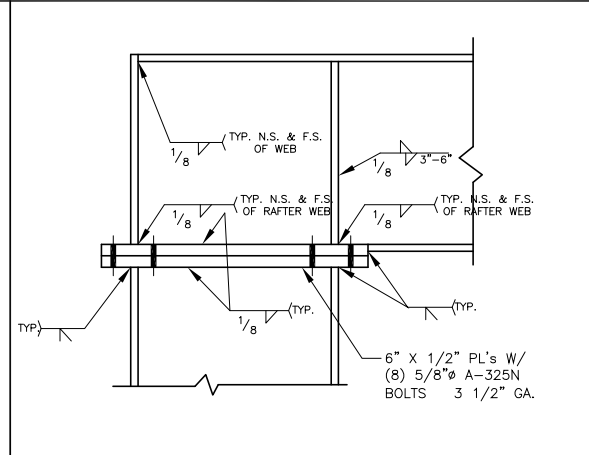
1. FRAMED OPENING SIZES IN SIDEWALLS MAY VARY IN SIZE.
2. DOORS MAY BE FIELD LOCATED IN SIDEWALLS PROVIDED WALL BRACING IS NOT REMOVED.
3. WALL BRACING MAY BE RELOCATED INTO ANOTHER BAY OF SAME SIDEWALL TO ACCOMMODATE DOORS.
4. FIELD CUT GIRTS FOR NEW FRAMED OPENINGS AS REQUIRED.



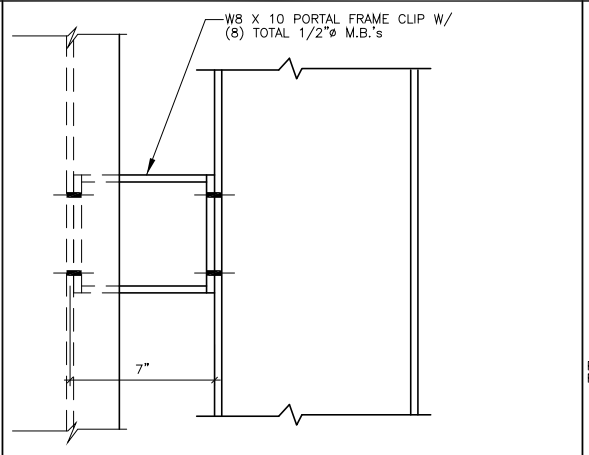
**PORTAL FRAME DETAIL**  
NO SCALE:



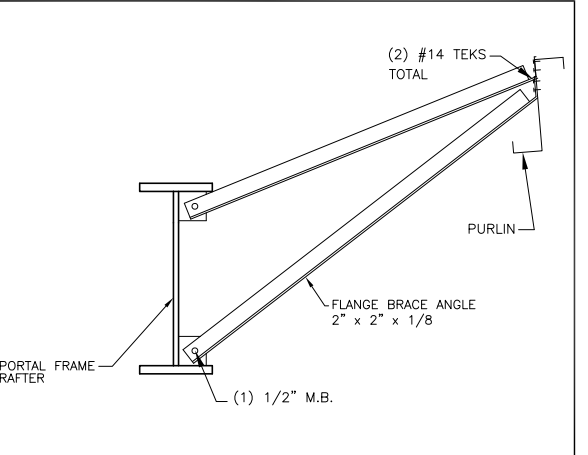
**1 PORTAL FRAME BASE CONNECTION**  
SCALE: NONE



**2 HAUNCH CONNECTION AT PORTAL FRAME**  
SCALE: NONE



**3 PORTAL FRAME TO RIGID FRAME CLIP**  
SCALE: NONE



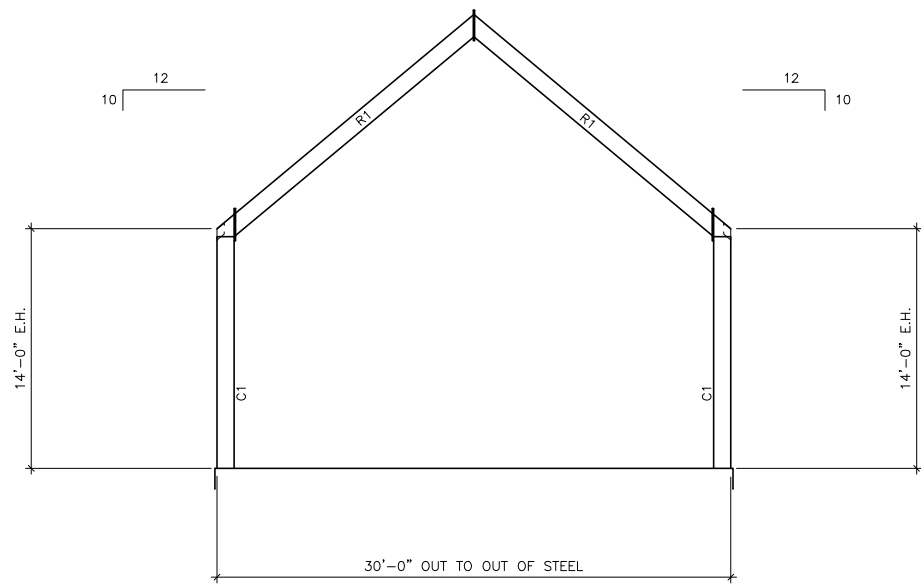
**4 PORTAL FRAME FLANGE BRACE**  
SCALE: NONE

PROJECT: **WRIGHT 18890 OLD JULIAN TRAIL**  
LOCATION: **RAMONA, CA**  
TITLE: **ELEVATIONS**

REVISIONS	DATE	CHK BY

SUBMITTAL DATE: **12-29-25**  
DRAWN BY: **OM**  
CHECKED BY:  
SCALE: **NONE**  
JOB NO.: **31679b-25**

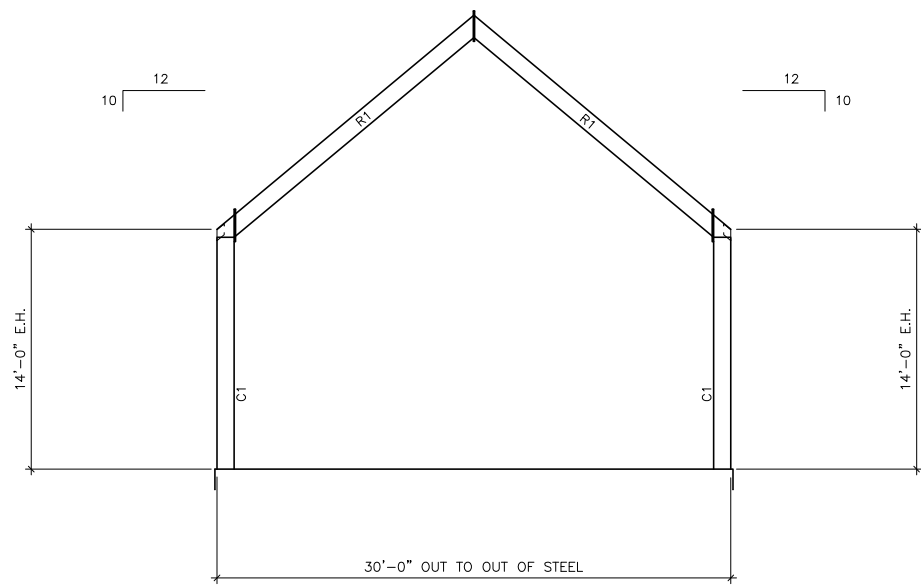
SHEET NO.: **S-3 B**  
5 OF 8 SHEETS



LEFT ENDWALL ELEVATION

NOTES:

1. FRAMED OPENING SIZES IN SIDEWALLS MAY VARY IN SIZE.
2. DOORS MAY BE FIELD LOCATED IN SIDEWALLS PROVIDED WALL BRACING IS NOT REMOVED.
3. WALL BRACING MAY BE RELOCATED INTO ANOTHER BAY OF SAME SIDEWALL TO ACCOMMODATE DOORS.
4. FIELD CUT GIRTS FOR NEW FRAMED OPENINGS AS REQUIRED.



RIGHT ENDWALL ELEVATION

PIECE MARKS AND SIZES:

RIGID FRAME RAFTER	R1	SEE CROSS SECTION
RIGID FRAME COLUMN	C1	SEE CROSS SECTION
EAVE STRUT	ES1-	[ 8 x 4 x 14 GA.
PURLINS	P1	Z 8 x 2 1/2 x 16 GA.
ROOF BRACING CABLE	RBC-	5/16"Ø CABLE

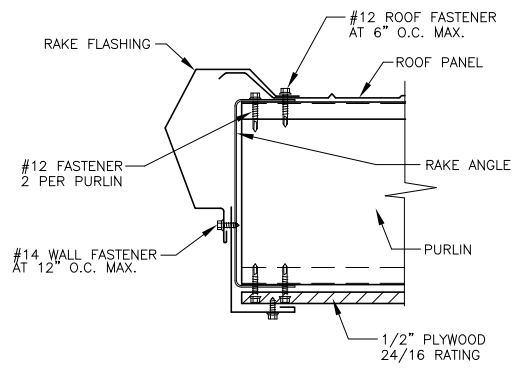
.....

PROJECT  
 WRIGHT  
 18890 OLD JULIAN TRAIL  
 LOCATION RAMONA, CA  
 TITLE  
 ELEVATIONS

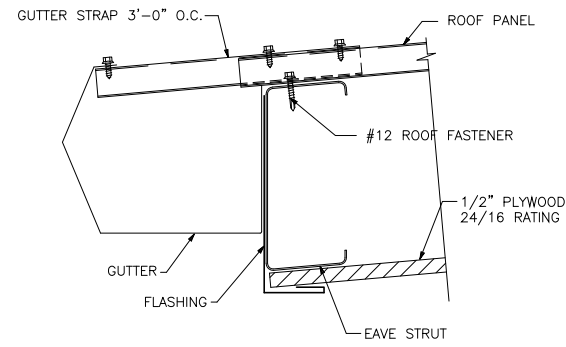
REVISIONS	DATE	CHK BY

SUBMITTAL DATE  
 12-29-25  
 DRAWN BY:  
 OM  
 CHECKED BY:

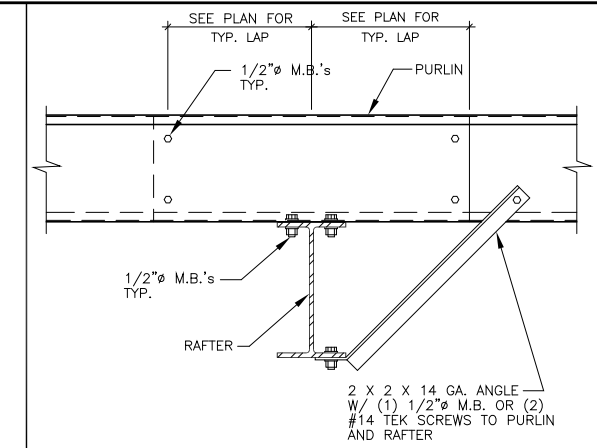
SCALE:  
 NONE  
 JOB NO.  
 31679B-25  
 SHEET NO.  
 S-4B  
 6 OF 8 SHEETS



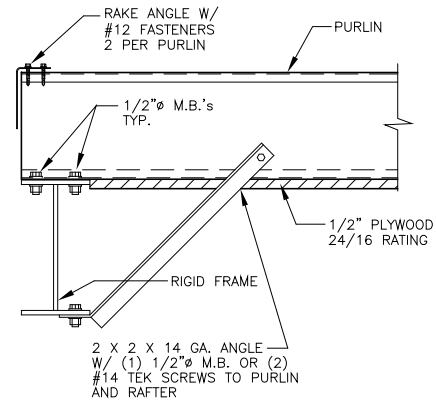
A RAKE DETAIL AT SHEETED ENDWALL MSS-001  
SCALE: NONE



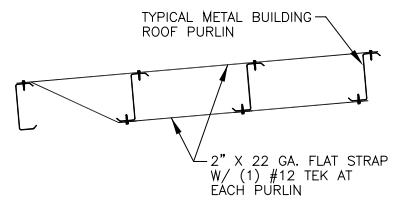
B EAVE DETAIL AT SHEETED SIDEWALL MSS-002  
SCALE: NONE



E CONTINUOUS PURLIN W/ FLANGE BRACE MSP-001  
SCALE: NONE



G BRACE TO RIGID FRAME CONNECTION  
SCALE: NONE



T TYPICAL PURLIN STRAPING PSD-001  
SCALE: NONE

PROJECT WRIGHT  
18890 OLD JULIAN TRAIL  
LOCATION RAMONA, CA

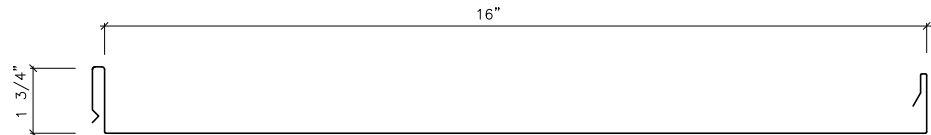
TITLE DETAILS

REVISIONS	DATE	CHK BY

SUBMITTAL DATE 12-29-25  
DRAWN BY: OM  
CHECKED BY:  
SCALE: NONE  
JOB NO. 31679B-25

SHEET NO. S-5B  
7 OF 8 SHEETS

VERTICAL SEAM PANEL \*



SECTION PROPERTIES

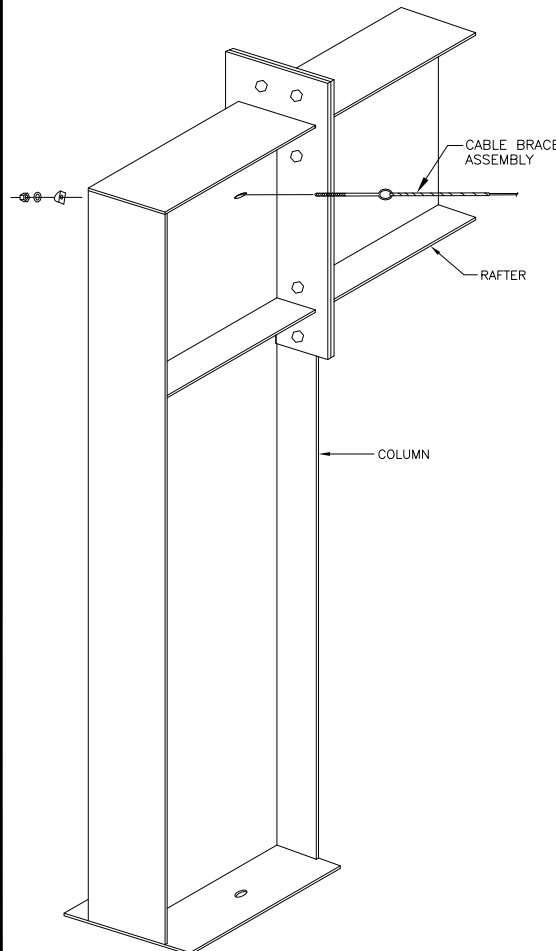
PANEL GAUGE	WEIGHT PSF	FY KSI	TOP IN COMPRESSION			BOTTOM IN COMPRESSION		
			I <sub>x</sub> IN <sup>4</sup>	S <sub>x</sub> IN <sup>3</sup>	M <sub>a</sub> KIP IN	I <sub>x</sub> IN <sup>4</sup>	S <sub>e</sub> IN <sup>3</sup>	M <sub>a</sub> KIP IN
24	1.26	50	.0885	.0559	1.677	.0398	.0416	1.248

NOTE: USE 24 GA. PANEL AT ROOF

A ROOF METAL DECKING STANDARD DETAILS

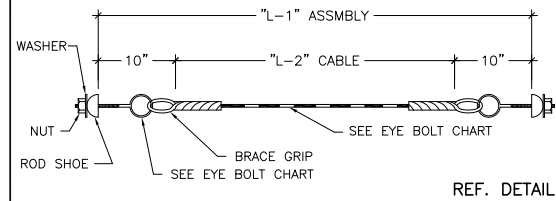
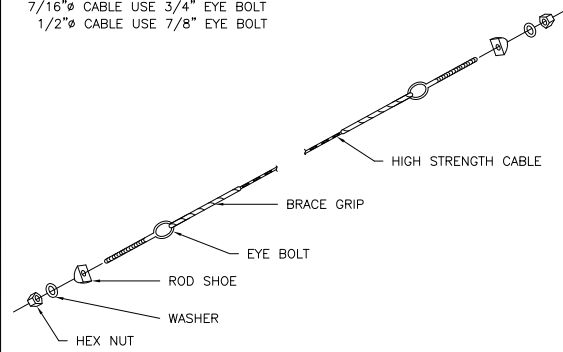
MSS-005

SCALE: NONE

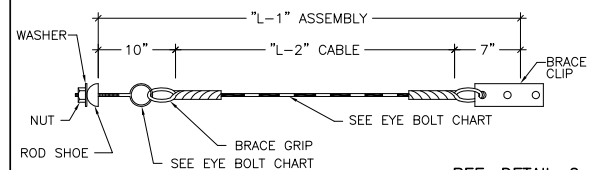


EYE BOLT SCHEDULE

- 1/4" CABLE USE 1/2" EYE BOLT
- 5/16" CABLE USE 5/8" EYE BOLT
- 3/8" CABLE USE 5/8" EYE BOLT
- 7/16" CABLE USE 3/4" EYE BOLT
- 1/2" CABLE USE 7/8" EYE BOLT



REF. DETAIL-1



REF. DETAIL-2

D ISOMETRIC BRACING DETAIL AT R.F.

MBR-001  
SCALE: NONE

G TYP. CABLE BRACING REFERENCE DETAILS

MBR-004  
SCALE: NONE

PROJECT: WRIGHT 18890 OLD JULIAN TRAIL  
LOCATION: RAMONA, CA  
TITLE: DETAILS

REVISIONS DATE CHK BY

SUBMITTAL DATE: 12-29-25

DRAWN BY: OM

CHECKED BY:

SCALE: NONE

JOB NO. 31679B-25

SHEET NO.

S-6B

8 OF 8 SHEETS