WUI Fire Safe Plan

Kuhl Single-Family Residential Dwelling
El Dorado County Parcels # 011-030-055 / 011-030-058
County of El Dorado CUP24-0000
July 9, 2024

Phillips Consulting Services

4328 Empire Creek Circle, Georgetown, CA 95634
E-Mail: Rphillips3401@yahoo.com
Cell Phone # 530.217.7432

PREPARED FOR THE COUNTY OF EL DORADO

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PLAN APPROVAL SHEET

The Kuhl Single-Family Residential Dwelling WUI Fire Protection Plan (Fire Safe Plan or FSP) for El Dorado County Permit # CUP24-000 has been designed to mitigate the wildfire risk presented for the single-family residential dwelling project at El Dorado County Parcel #'s 011-030-055 and 011-030-058 in Pollock Pines, CA. The plan has been developed to conform with California Code of Regulations Title 14 §§ 1270-1276 (Fire Safe Regulations), California Code of Regulations Title 24, Part 9 – § 4903 (Plans) and El Dorado County Fire Protection Standard W-002 (Wildland Urban Interface Fire Protection Plans).

The Kuhl Single-Family Residential Dwelling WUI Fire Safe Plan has been reviewed and approved by the following fire agencies located in El Dorado County:

DATE PUBLISHED: July 9, 2024

PREPARED BY:

DocuSigned by:
Ronald Phillips, Jr.
DFF4B5E2CDDA4C4...

Ronald A. Phillips
Phillips Consulting Services

APPROVED BY:

DocuSigned by:
Jeff Hoag
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Jeff Hoag, Battalion Chief
CAL FIRE – AEU

FORWARD

The following **Kuhl Single-Family Residential Dwelling** WUI Fire Protection Plan (Fire Safe Plan or FSP) has been prepared for the Kuhl Single-Family Residential Dwelling (Project) in Pollock Pines, California. This FSP for the Project meets the requirements described in Chapter 49 of the California Fire Code and various other State and County statues and regulations. The FSP addresses the following topics:

- Project Scope
- Fire Risk Analysis
- Fuel Modification Practices for the Project
- Fire Safety Plan Recommendations
- Plan Appendix Materials

The goals of this Fire Safe Plan are as follows:

- Reduce the exposure of vulnerable buildings to high intensity flames.
- Reduce the quantity of embers accumulating at a building based on factors related to the building characteristics and adjacent fuel treatments.
- Reduce the likelihood of urban conflagration due to treatment of fuels in proximity to buildings.

The FSP specifically applies to the Kuhl Single-Family Residential Dwelling Project (CUP24-000). The FSP provides a framework for protection of residents and visitors from natural hazards, the prevention of fire, and preparation for responding to an emergency evacuation of the Project should the need arise. The FSP is intended to be utilized during the development, construction, and occupancy phases of the Project.

For the purpose of interpreting and applying the provisions found within each chapter the terms shall and should are found throughout. The use of the term “shall” refer to requirements of the Plan as mandated through State statue or regulation. The use of the term “should” refer to recommendations cited in the document by the authors. Refer to Chapter 5 – Appendix A for a Glossary of Terms associated with this Project.

CHAPTER 1: INTRODUCTION

1.1 Plan Purpose, Project Location, Description and Environmental Setting

1.1.1 Plan Purpose

The purpose of this plan is to generate and memorialize the fire safety requirements of the Fire Authority Having Jurisdiction (FAHJ), namely the California Department of Forestry and Fire Protection (CAL FIRE), during all phases of the development process. Recommendations for effectively mitigating identified impacts are based on site-specific characteristics and incorporate input from the project applicant and CAL FIRE. This FSP incorporates applicable fire safety regulations and requirements and documents a selection of these regulations that are most pertinent to the Project's unique residential development and location.

This FSP has been prepared for the proposed Project in unincorporated area of Pollock Pines in El Dorado County, California. The purpose of the FSP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, this plan has considered the fire risk presented by the site including: property location and topography, geology (soils and slopes), combustible vegetation (fuel types), climatic conditions, fire history and the proposed land use and configuration.

This FSP addresses water supply, access, structural ignitability and ignition resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. This plan identifies fuel modification/management zones and recommends the types and methods of treatment that will protect this project and its essential infrastructure. In addition, this FSP recommends enhanced fire protection measures that the Project and the property owners will take to reduce the probability of structural ignition during the occupancy phase of the Project.

The FSP should be updated no less than once every 5 years or as changes to state and local regulations occur to ensure that the plan can be effectively utilized by all stakeholders.

1.1.2 Location

The Project is located north of Union Valley Reservoir in the unincorporated area of Pollock Pines, California. The El Dorado County Assessor Parcel Numbers for the project are # 011-030-055 and 011-030-058. The Project is approximately 65.78 acres in size, and is currently zoned as a Timberland Preserve Zone (TPZ) parcel. The map coordinate for the Project is 38.88145, -120.41552. The Project applicant is Mr. Michael J. Kuhl of San Rafael, CA. See Figure 1 for an area map for the Project site.

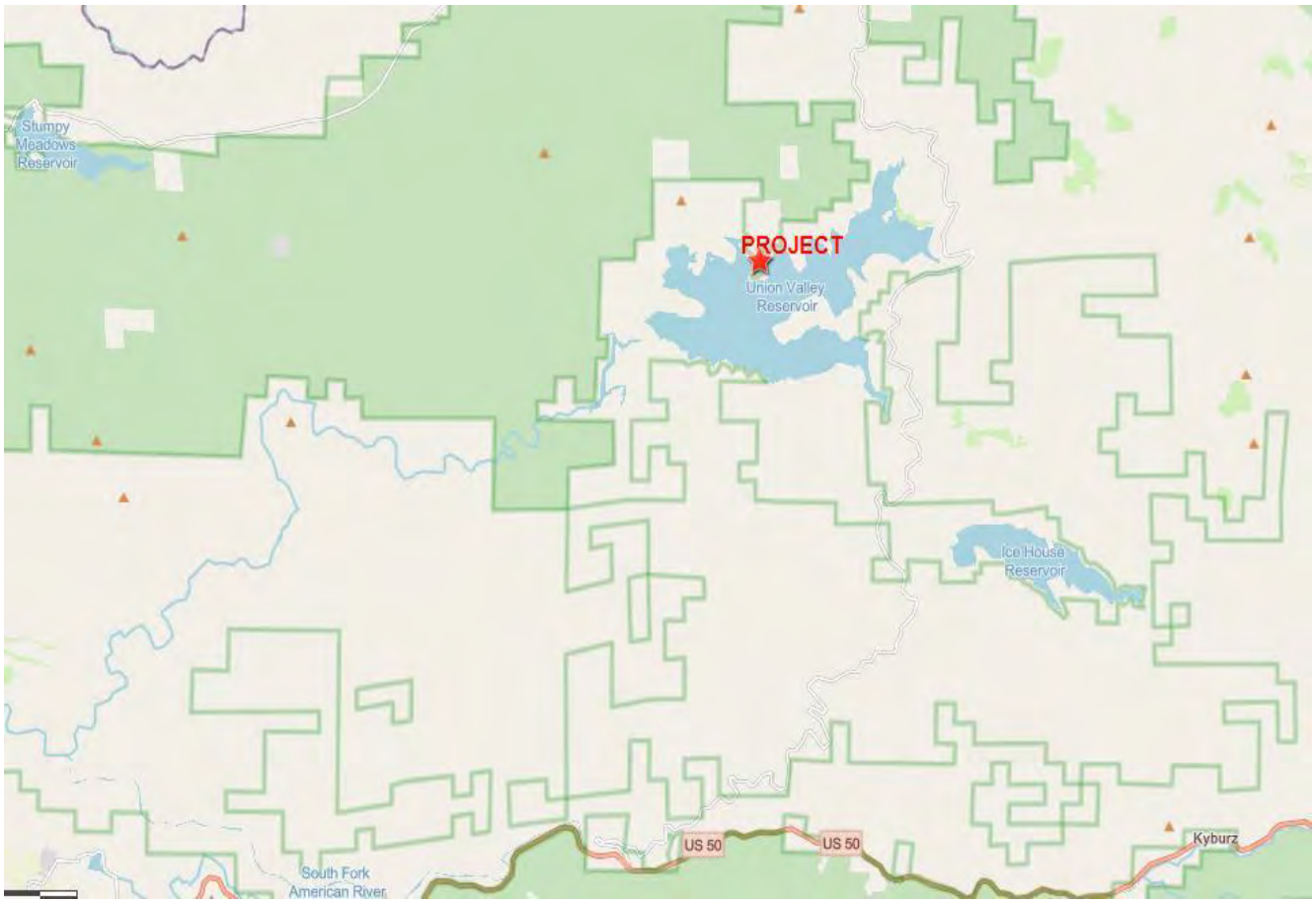


Figure 1: Area Map

1.1.3 Project Description

The Project is seeking to obtain a Conditional Use Permit (CUP) from the County of El Dorado for the construction of a 2,556 square foot, multi-story single-family residential dwelling (SFD). The Project will be located on the southern end of the parcel near the Union Valley Reservoir. See Appendix F for a Preliminary Site and Grading Plan, dated February, 2024, for the Project.

The Project is partially developed at this time with an existing historic building on the south end of the property. The Project site will be accessed by a private driveway that connects the parcel to Forest Service Road 12N30. The existing 10-foot-wide unimproved driveway is approximately 4,000 feet in length, and is located within an existing 50-foot-wide road and emergency access easement. See Figure 2 for the existing land use condition of the Project.

Figure 2: Existing Land Use Condition at Homesite

The Project is bordered by the following adjoining properties:

- **North Side** - A 120-acre unimproved parcel, APN # 011-030-004, is located north of the Project. The parcel is zoned TPZ.

- **West Side** – A 40.80-acre unimproved parcel, APN # 011-030-054, and a 42.75-acre unimproved parcel, APN # 011-030-057 are located west of the Project. Both parcels are zoned TPZ.

- **East Side** – A 20.10-acre unimproved parcel, APN # 011-030-056, and a 44.74-acre unimproved parcel, APN # 011-030-059 are located east of the Project. Both parcels are zoned TPZ.

- **South Side** – A 210.60-acre exempt parcel is located south of the Project. The parcel is zoned as Vacant Recreational Land. Union Valley Reservoir is also located south of the Project.

See Figure 3 for a photo the shows the proposed SFD location in proximity to the existing historic building on the south end of the parcel.

Figure 3: Proposed Project Location and Historic Building Looking East

1.1.4 Environmental Setting

A site inspection of the parcel was conducted on May 22, 2024, by myself, Battalion Chief Jeff Hoag from CAL FIRE and Mr. Michael J. Kuhl. Access to the Project is gated by a manual swing gate from Forest Service Road 12N30. The Project was evaluated using personal observations, site plans provided prior to the site visit, and architectural plans made available on-site by Mr. Kuhl.

The Project is located in a densely forested area and is adjacent to both public and private lands used for timber harvesting, hydroelectric power generation, and recreation uses. The lands are generally described as being mixed-conifers. No significant tree mortality was observed near the Project site. See Figure 4 for a photo that shows the proposed SFD location on the parcel.

Figure 4: Proposed Project Looking West

Chapter 2: FIRE PROTECTION PLANNING

2.1 Fire Hazard Versus Fire Risk

The threat of wildfire exposure to people, critical infrastructure, structures, and communities is based upon a comprehensive vulnerability assessment of an area. This vulnerability assessment is usually completed through the evaluation of both *fire hazard* and *fire risk* factors. The term "hazard" describes the density of live or dead vegetation that may be ignited by the various fire risks or causes that can increase a fires intensity or rate of spread such as topography or weather conditions. The term "risk" describes the potential damage a fire can cause to buildings, critical assets/infrastructure, and other values at risk in individual open space areas and other wildland urban interface areas.

Landowners, managers, and fire officials need to consider the potential fire hazard and risk factors that may make their community vulnerable to a wildfire when making land management and development decisions in fire-prone areas[1]. This assessment also aids fire agencies in the preparation of pre-incident plans and resource deployment actions such as fire equipment staffing levels and resource placement during critical fire periods. This assessment should consider the factors described in Table 1 when assessing the wildfire exposure potential for an area:

Table 1: **Hazard and Risk Assessment Factors**

Hazard Assessment Factors	Risk Assessment Factors
• Vegetation (fuel) types present • Topography of the area • Weather conditions present during both seasonal and critical fire weather periods • Other criteria as determined by either CAL FIRE or the local fire agency	• Size and configuration of the WUI • Proximity of structures to the WUI • Building construction and defensible space provisions for structures near the WUI • Emergency access including public/private roads and trails • Local Fire Protection Capabilities • Water supply sources and other risk factors

[1] Wildfire Hazard and Risk Assessment, United Nations Office for Disaster Risk Reduction, 2017

2.2 Fire Hazard Assessment for the Project

The term Fire Hazard refers to the dangerous accumulation of flammable fuels in open space areas and other wildland urban interface areas (WUI). It is typically described at the landscape (area) level, usually referring to the density of live or dead vegetation that may be ignited by the various fire risks or causes that can increase a fires intensity or rate of spread. Fire hazard is based on the vegetation types likely to be present over the next 50 years that contribute to fire severity and ember production, the topography of the area and the average fire weather conditions present in the area.

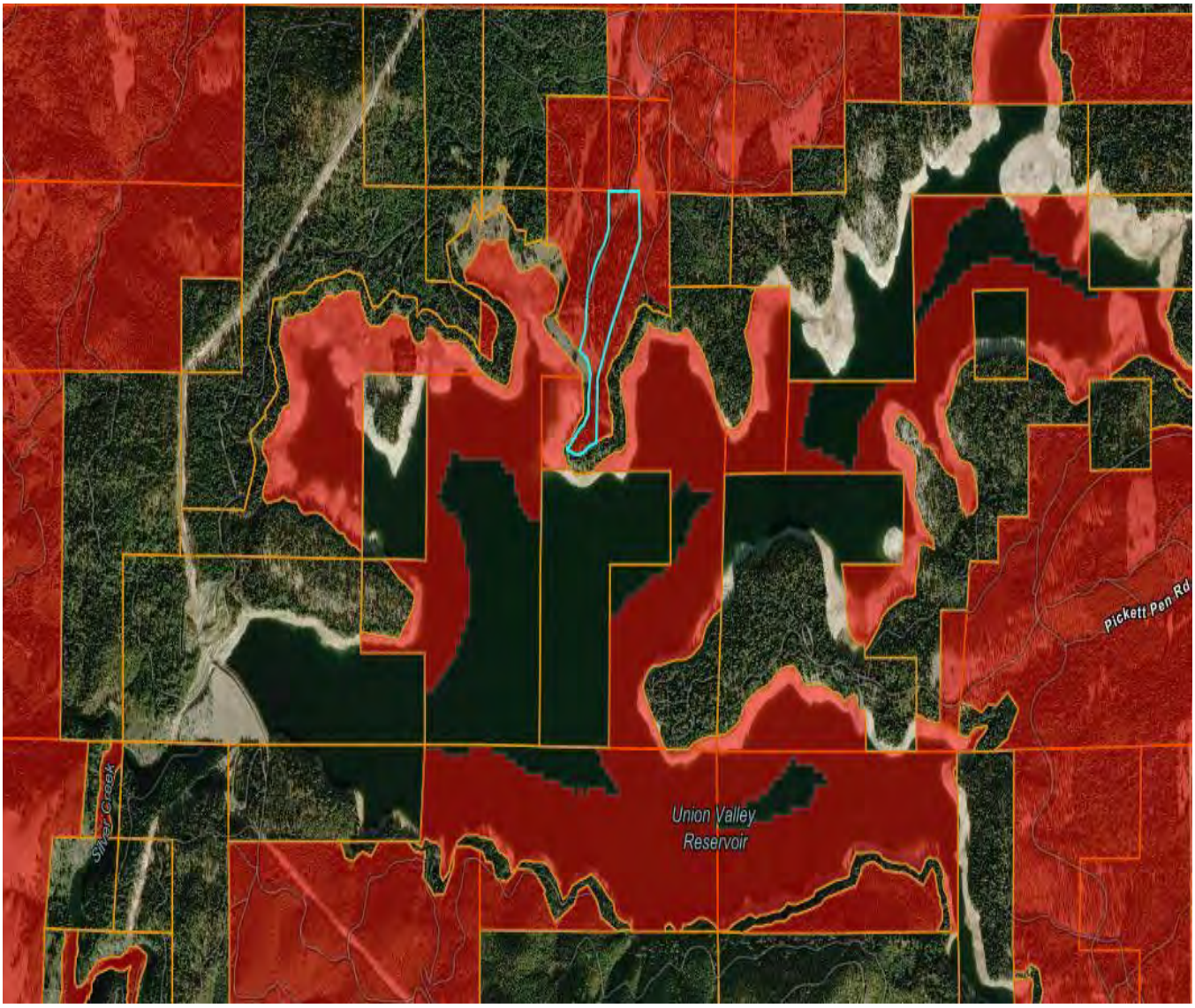
Fire Hazard ratings are provided by CAL FIRE as part of their *Fire Hazard Zone Severity Mapping* program. One of the major hazards in the Western El Dorado County region is the threat of a disastrous wildfire endangering both people and property. The Project is also located within a designated[2] Wildland Urban Interface (WUI) community identified by the Federal Government as being at risk from a large wildfire due to fire behavior potential and values at risk.

The area is vulnerable to the threat of wildfire throughout the year subject to a variety of conditions including, but not limited to:

- Daily weather conditions such as air temperature, humidity, wind speed and direction.
- Climatic conditions such as drought, extended seasonal periods of hot, dry weather typically found in the summer and fall months, or seasonal rains typically found in the winter and spring months.
- Fuel moisture and growth cycle periods, especially in fine fuels such as the herbs and shrubs that are prevalent in the area.
- Human caused ignition factors such as arson, escaped debris burns and unsafe equipment operation.

[2] Federal Register *Urban Wildland Interface Communities within the Vicinity of Federal Lands that are at High Risk from Wildfires; (January, 2001);* Federal Register :: Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire

The Project area is located within a State Responsibility Area (SRA) for fire management. The current CAL FIRE Hazard Severity Zone[3] Map for El Dorado County identifies the Project as being inside a **Very-High Fire Hazard Severity Zone (VHFHSZ).** All lands within 1,000 feet of the Project are located within either an SRA **VHFHSZ** zone or Federal Responsibility Area (FRA) lands. See Figure 4 for the Fire Hazard Map information for the Project and surrounding community.



Red State Responsibility Area (SRA) Very-High Fire Hazard Severity Zone
No Color Federal Responsibility Area (FRA) - No Fire Hazard Classification

Figure 4: Fire Hazard Severity Zone Classification for the Project Site

[3] CAL FIRE; Fire Hazard Severity Zone Map for El Dorado County (April, 2024); Fire Hazard Severity Zones in State Responsibility Area - El Dorado County (azureedge.net).

2.3 Historical Fire Weather Conditions in the Project Area

Fire weather in El Dorado County is typically dominated by three general weather phenomena; the Delta push influence, north wind events, and east foehn winds caused by high pressure development in the Great Basin[4]. All three weather conditions cause potential increases in fire intensity and size. The Delta influence is the most common and occurs frequently throughout the summer.

Characteristically, high pressure systems will dominate Northern California in the summer months bringing extremely hot and dry conditions over much of the region. As these systems develop, they tend to originate near the Delta and Sacramento areas bringing the marine influence to the area. This is generally considered a beneficial condition for fire behavior; slightly cooler afternoon temperatures and increases in relative humidity. However, the downside is the strong winds that typically accompany these patterns which can override any benefit that may come from cool, moist marine air.

This type of wind generally subsides after sundown causing fire behavior to drop off dramatically. The other critical wind patterns that are difficult to predict for El Dorado County are the northerly and easterly winds. They are relatively rare, and often are forecasted only the day before. Northerly or easterly winds are typically warmer and drier than most other wind patterns due to air compression. These conditions provide the perfect environment for increased fire intensity and large fire growth.

Predominant local weather patterns in the Project area[5] are characterized by warm, dry summers and cool, wet winters. Dry conditions traditionally begin around the beginning of May and last into late October. An average summer day is 95°- 105° Fahrenheit, winds from the southwest at 0-10 miles per hour, and relative humidity levels in the 15-25 percent range. Summer lightning storms are frequent in the area. On average, the strongest wind speeds in the Pollock Pines area occur in March through May, but winds can frequently exceed 20 mph throughout the local fire season period.

[4] See Strategic Fire Plan for Amador El Dorado Unit; 2023; 2023 Strategic Fire Plan Amador El Dorado Unit (ca.gov); P.5.
[5] Ben Bolt Remote Automated Weather Station Site; National Weather Service. https://weather.nifc.gov

2.4 Vegetation (Fuels)

The predominant fire fuel types found in the Union Valley area include White Fir (*Abies concolor*), Ponderosa Pine (*Pinus ponderosa)*, and meadow / grassland. No significant tree mortality was observed at the Project site. See Chapter 3 for additional details on the hazardous vegetation management requirements for the Project.

2.5 Topography

The topography in the general area of the Project is classified as being a "Mixed-conifer Forest" terrain type which transitions from the Central Valley area of California to the Sierra Nevada Mountain range. The Project is located in the Union Valley Reservoir area at an elevation range of between 4,880 – 5,080 feet above sea level. Existing slopes within the Project are generally between 20-40%. See Figure 5 for the existing topographic condition of the Project area.

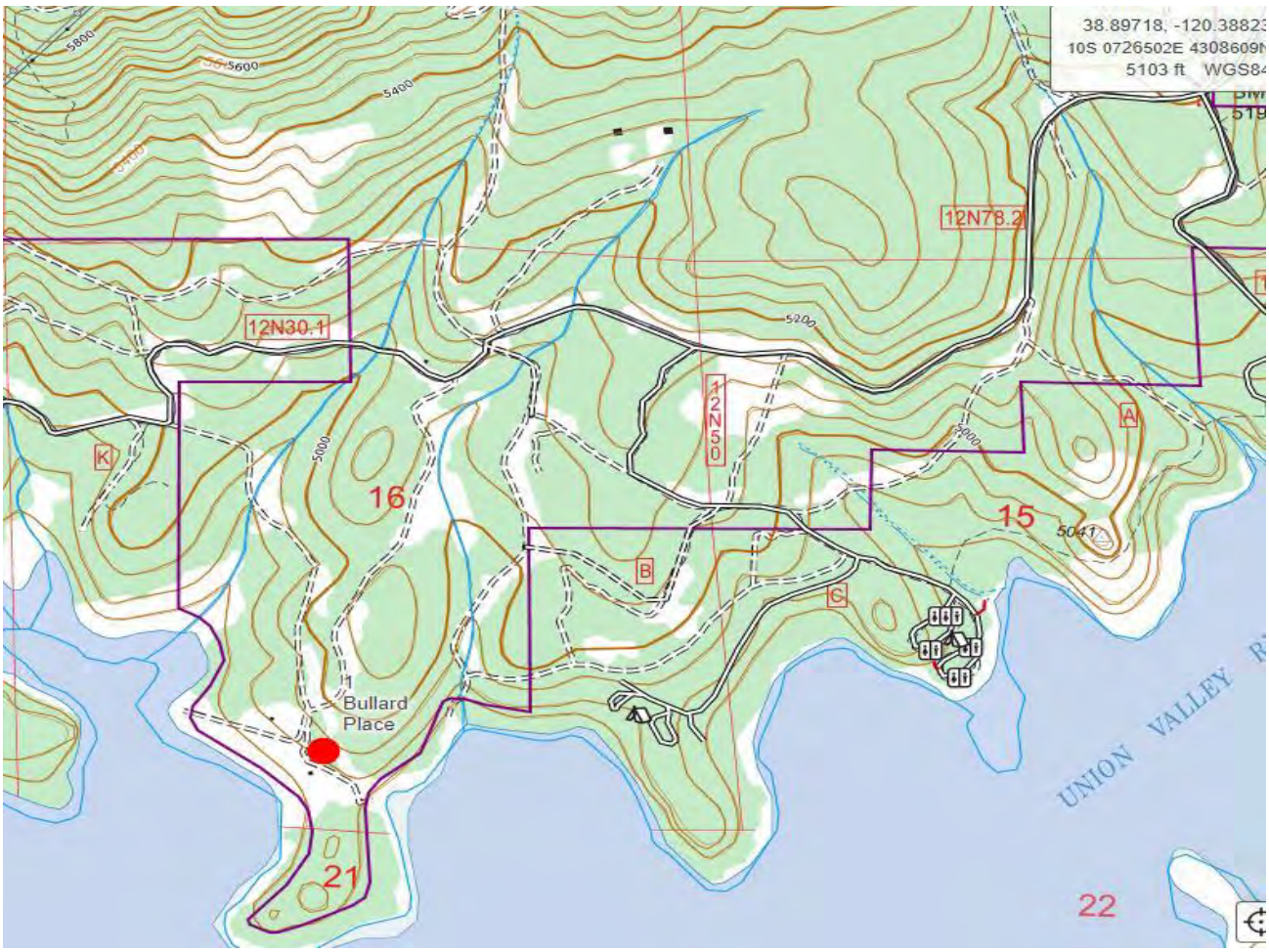


Figure 5: Topography Map for the Project and Surrounding Area

2.6 Wildfire History

According to CAL FIRE statistics the majority of wildland fires that have occurred in the El Dorado County area were human caused[6]. Common fire ignition sources have included arson, equipment failure, escaped debris burns, and vehicle related causes. Table 2 describes the significant wildland fire history in the vicinity of the Project area:

Table 2: **Pollock Pines Area Fire History** [7]

Year	Fire Name	Acres Damaged
1992	Cleveland	22,519
2002	Hunter	545
2004	Freds	7,558
2014	King	97,685
2021	Caldor	221,786

No recorded wildfires have impacted the Project site within the reporting period,

2.7 Fire Risk Assessment for the Project Area

A comprehensive fire risk analysis is an important component of the Fire Safety Plan for the Project. The term "risk[8]" describes the probability of adverse wildfire exposure to people, to structures, critical assets/infrastructure and other values at risk located in the WUI Zone. This fire risk assessment was performed for the Project to determine relative risk, the extent of the wildfire hazards present, and applicable mitigation measures as outlined in National Fire Protection Association Standard No. 1144 (*Assessing Wildland Fire Hazards in the Structure Ignition Zone*), 2018 Edition.

Risk factors examined as part of this Project analysis include the following:

- Existing Conditions Found on the Project Site
- Size and configuration of the Wildland Urban Interface (WUI) Zone Adjacent to the Project
- Proximity of Structures Within the Project to the WUI Zone

6 2023 *Strategic Fire Plan Amador-El Dorado-Alpine-Sacramento Unit;* P.60.
7 Capitol Radio (2023) *A History of California Wildfires;* California Wildfire History Map (capradio.org)
8 National Fire Protection Association Standard No 1144 (2018); Chapter 3, Section 3.3.19

- Building Construction of Structures and Hazardous Fuel Reduction Strategies Required to Reduce the Risk of Fire
- Emergency Vehicle Access Including Public/ Private Roads
- Local Fire Protection Capabilities
- Water Supply Sources for Fire Protection
- Critical Assets / Infrastructure at Risk

A detailed risk analysis of each of these points can be found below within this section.

2.8 Existing Conditions Found on the Project Site

The Project site is currently mostly undeveloped. An existing historic building is located at the south end the Project on the parcel. See Figure 6 for additional information on the existing condition of the Project site.

Figure 6: Existing Structure and Project Area

No high-voltage electric transmission power lines, essential service facilities, populations at risk, or critical infrastructure were identified within the current lands of the Project. See Chapter 5 - Appendix B for a complete inventory of the locations described as part of this Project.

2.9 Size and Configuration of the Wildland Urban Interface (WUI) Zone Adjacent to the Project

The Project is located approximately north of the Union Valley Reservoir. The Project is located within an area that is generally described as a wildland urban intermix zone[9]. Wildland vegetation is adjacent to the Project which will place the buildings on the property at very-high fire risk due to firebrands, embers, and crown fires from a wildfire within ½ mile of the parcel. Unless the buildings are properly designed to withstand this vulnerability and defensible space is maintained, the Project will be vulnerable to destruction during a wildland fire.

2.10 Building Construction and Fuel Modification Strategies Required to Reduce the Risk of Fire

New buildings constructed within the Project shall comply with the current requirements of the California Building Standards Code (CBSC). The new single-family residential dwellings shall be provided with an approved automatic fire sprinkler system, as required by State law, and County of El Dorado Planning & Building Department requirements. Accessory buildings, detached garages, outdoor living space buildings, and other miscellaneous buildings located on the property shall be constructed in accordance with the current CBSC requirements to reduce the risk of a fire spreading to the primary buildings on-site. For general building construction standards for new residential dwellings refer to the current California Building Standards Code located at: Codes (ca.gov).

The Project is proposing a future garage structure as an accessory structure to the SFD. The applicant indicates that the SFD will be provided with a detached solar power system and a liquified propane (LP) gas tank for heating and lighting of the SFD. The water well will be powered by the solar power supply and outfitted with a generator for secondary power. Both the

[9] A location where scattered house intermingle with wildland vegetation.

future accessory structure and the equipment supporting the SFD shall be designed, constructed, and maintained in accordance with the CBSC.

Single-family dwellings, storage buildings and accessory buildings constructed within the Project shall be constructed and maintained in accordance with the current design standards found in *California Building Code (CBC) Chapter 7A* (**Materials and Construction Methods for Exterior Wildfire Exposure**). Examples of where construction methods and other development activities shall meet the ignition resistant requirements found in this Chapter include, but are not limited to, the following:

- Class A roof assembly with a Class A roof covering, fire resistant valley flashing, and an approved means to prevent the accumulation of leaves and debris in roof gutters.
- Ventilation openings into enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces and underfloor ventilation openings.
- Exterior wall materials, decks, porches, balconies, stairs, and other projections.
- Roof eaves and exterior porch ceilings.
- Exterior windows, doors, glazing and skylights.
- Accessory buildings and miscellaneous buildings located within 50’ of another building.

Areas located between 0-feet and 5-feet from a building shall remain non-combustible. Landscape materials and other vegetation located within 30’ of buildings shall comply with the fire-resistant standards of CAL FIRE. Avoid planting highly flammable trees and shrubs such as those described in Appendix G.

Exterior decks that cantilever over the natural slope of the property shall be constructed of ignition-resistant materials and enclosed to reduce the potential of burning embers from a wildfire creating spot fires that can extend into the building.

Construction activities shall comply with California Fire Code (CCR T24 - Part 9), Chapter 33 (Fire Safety During Construction and Demolition) as required by CAL FIRE. The relevant provisions found in this Chapter of the fire code include:

- Section 3303 - Development of a Site Safety Plan
- Section 3304 - Temporary Heating Equipment

- Section 3305 - Precautions Against Fire
- Section 3306 - Flammable and Combustible Liquids
- Section 3307 - Flammable Gases
- Section 3308 - Explosive Materials
- Section 3309 - Portable Generators
- Section 3310 - Fire Reporting
- Section 3311 - Required Access for Emergency Vehicles
- Section 3313 - Water Supply for Fire Protection
- Section 3316 - Portable Fire Extinguishers
- Section 3317 - Motorized Construction Equipment

2.11 Emergency Vehicle Access Including Public/Private Roads

Emergency vehicle access to the Project is from Ice House Road onto Forest Service Roads 12N78 and 12N30. Both Forest Service roads are improved. The existing driveway to the Project is compacted soil. See Figure 7 for information showing the existing driveway serving the Project.

Figure 7: Existing Driveway Serving the Project

Primary emergency vehicle access for the Project site shall comply with all of the driveway requirements described in CCR Title 14 – Sections 1273.01. See Appendix E for additional information on the regulation provisions described below. An emergency vehicle access driveway shall be constructed from Road 12N30 to the Project site. This access driveway shall comply with the following measures:

a. The driveway shall provide a minimum of one (1) ten (10) foot traffic lane, not including shoulders and striping, with fourteen (14) feet unobstructed horizontal clearance, and an unobstructed vertical clearance of thirteen feet, six inches (13'6") as required by CCR Title 14 – Section 1273.01 (Width).

b. The driveway shall support the imposed load of fire apparatus weighing at least 40,000 pounds and shall provide an aggregate base, as required by CCR Title 14 – Section 1273.02 (Road Surface).

c. The driveway shall provide turnouts along the entire route from Road 12N30 to the dwelling at distances of no less than one for every 400-feet. Turnouts shall be constructed to a minimum of twelve (12) feet in width and thirty (30) feet long with a minimum twenty-five (25) foot taper on each end.

d. Road structures[10] shall be designed and maintained to support at least 40,000 pounds, as required by CCR Title 14 – Section 1273.02 (b).

e. At no point along the road shall the grade exceed 16%, as required by CCR Title 14 – Section 1273.03 (Grades).

f. No road or road structures shall have a horizontal inside radius or curvature of less than fifty (50) feet, as required by CCR Title 14 – Section 1273.04 (Radius).

[10] CCR Title 14 – Section 1270.01 (Road Structure) includes bridges, culverts, and other appurtenant structures which supplement the traffic lane or shoulders.

g. A turnaround shall be provided within fifty (50) feet of the building when the driveway is a dead-end. The minimum turning radius for the turnaround shall be forty (40) feet, not including parking, in accordance with Figure B of CCR Title 14 – Section 1273.05(f).

h. An area of no less than thirty (30) feet in length and ten (10) feet in width shall be constructed in front of the existing gated location from Road 12N30 to the Project to allow for a vehicle to stop without obstructing traffic on the road.

i. Gated entrances across the road shall comply with the requirements described in El Dorado County Fire Chiefs Association Standard No. B-002 (Automatic & Manual Gates on Fire Access Roadways & Driveways). This document can be accessed via the following link: Fire Prevention Officers - El Dorado County Fire Chiefs association (edchiefs.org).

The Project shall be issued an address by the County of El Dorado which conforms with its overall address system. The Project is currently described as **1 Bullard Place** by the applicant. This proposed address will need to be confirmed by the County to ensure that it does not conflict with other address number assignments in the area to avoid confusion during an emergency.

When the building address is located more than 150-feet from the road serving the Project the address sign shall be placed at the driveway entrance onto the parcel. The address sign shall meet the following additional criteria:

- Signs shall be mounted between 4-feet and 7-feet above grade.
- Posted no further than 5-feet from either the driveway or roadway travelled way, and on the same side of the road as the serviced driveway.
- Oriented perpendicular to the direction of travel on the roadway and legible from both directions of travel on the driveway.
- Address numbers shall be reflective and contrasting in color to the sign background, and with a number height of not less than 4-inches and with a stroke width of 1/2-inch.

Where multiple addresses are served by a single driveway they shall be mounted on a single sign or post at the driveway entrance from Forest Service Road 12N30 to the Project.

2.12 Local Fire Protection Capabilities

The Project location is not currently within a local government fire protection and rescue services service area[11]. Wildland and structural fire protection responsibility is under the authority of the California Department of Forestry and Fire Protection, Amador-El Dorado-Alpine-Sacramento Ranger Unit (CAL FIRE). Emergency medical services, including ground ambulance transport, are provided to the Project under the authority of El Dorado County.

The closest fire station to the Project area is CAL FIRE Station No. 20 located at 1 Mt. Danaher Road in the Camino community. Station 20 is approximately 35 miles west of the Project site. Services are provided by a minimum of one Type III fire engine staffed daily by three full-time firefighters.

The Project is located within an Insurance Service Office (ISO) Fire Suppression rating schedule class of 10Y[12]. CAL FIRE emergency response travel times for the first arriving unit to the Project are, on-average, less than forty-five (45) minutes[13]. These response times are consistent with El Dorado County General Plan Policy 5.1.2.2[14] which calls for an average response time to emergency calls of between fifteen (15) and forty-five (45) minutes in rural region areas.

2.13 Water Supply Sources for Fire Protection

The design, installation, and maintenance of the water supply system for fire protection shall be in accordance with CCR Title 14 §§ 1275-1275.04 (Emergency Water Standards) and CCR Title 24 – Part 9 (California Fire Code), Section 507 (Fire Protection Water Supplies).

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[11] Per phone communications on May 16, 2024, with Fire Marshal Braden Sterling of the El Dorado County Fire Protection District (ECF). The Project is outside the service area of ECF and the District has elected to not request the parcel be annexed into it at this time.

[12] ISO Class 10Y is assigned to areas without a municipal fire hydrant within 1,000 feet of the property.

[13] Response times are based on an average 90 second turnout time by firefighters from their station plus travel time using the closest roads available to the project. The response time standard the county uses to evaluate the adequacy of the project meeting General Plan Policy 6.2.3.1 are based on the closest station (Station 20) only, and not the average response times of all resources responding to an incident.

[14] See *El Dorado County General Plan*, 2004; Public Services and Utilities Element Section, P.91.

The Project is not located within a rural region that receives municipal water service. The nearest available municipal fire hydrant is located in the community of Kyburz, nearly 20 miles away. The Project has an on-site well that will be utilized for both domestic drinking and fire protection water supply. A storage tank system for emergency water supply is proposed for the Project.

Where a municipal-type water system is unavailable to serve the Project, as determined by CAL FIRE, National Fire Protection Association (NFPA) 1142, "Standard on Water Supplies for Suburban and Rural Firefighting", (2017 Edition) shall be accepted as meeting the emergency water standards found in Title 14 and 24. The required fire-flow requirements, based on NFPA 1142, for the Project is shown in Table 3 below.

Table 3: Fire-Flow Requirements[15] for the Project Based on NFPA 1142

Building Name	Square Footage (FT^2)	OHC[16]	CCN[17]	GPM[18]	Flow Duration (minutes)	Total Gallons Stored Required
Single-Family Dwelling	2,556	7	V-000	500	10	5,000

The minimum emergency water supply storage on-site at all times for the Project is **5,000** gallons. One draft hydrant is required between fifty (50) feet and two-hundred and fifty (250) feet of the structure. The draft hydrant outlet size shall be 4.5 inches. A 4.5" outlet requires a minimum 4" supply piping from the tank to the 4.5" male national hose thread (NH) draft hydrant outlet assembly and shall include a 4.5" female to 2.5" male NH reducer with cap.

The location of the water system and fire hydrant location shall be approved by CAL FIRE. The installation of the water system shall comply with the requirements described in El Dorado County Fire Chiefs Association Standard No. D-003 (Water Supplies for Suburban and Rural Fire Fighting). This document can be accessed via the following link: Fire Prevention Officers - El Dorado County Fire Chiefs association (edchiefs.org).

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15 "Fire Flow" is the flow rate of a water supply, measured at 20 pounds per square inch (psi) residual pressure, that is available for firefighting.
16 Refers to Occupancy Hazard Classification. See NFPA 1142 – Chapter 5.
17 Refers to Construction Classification Number. See NFPA 1142 – Chapter 6.
18 Refers to Gallons Per Minute.

2.14 Critical Assets / Infrastructure at Risk

The identification and analysis of Critical Assets and Infrastructure at Risk is an important part of a comprehensive fire risk analysis. This analysis also looks at potential risks associated with public service sites designated in California as being "Essential" that must conform to current seismic design criteria. Refer to *Appendix B: Critical Assets / Infrastructure at Risk Table* for additional information on the various categories of uses that have been identified within the Project area.

The Project has no proposed uses that are identified as *Critical Assets* that could be at risk during a wildfire. No *Essential Service* building uses are proposed within the Project. No *Infrastructure at Risk* site has been identified as a location within the Project area that could be adversely impacted by a wildfire.

2.15 Fire Risk Rating for the Project

The fire risk factor scoring for the Project is found in Table 4. The overall risk rating can be described as Low (0-29), Moderate (30-59), High (60-79) and Very-High (80-100). When analyzing individual fire risk factor ratings within the Project area the following terms are used:

- **LOW RISK** – Fire risk factors present typically do not support rapid fire spread.
- **MODERATE RISK** – Fire risk factors present may support moderate fire spread, but burning ember distribution is limited to less than ½ mile.
- **HIGH RISK** – Fire risk factors present may support rapid fire spread and ember distribution beyond ½ mile.
- **VERY-HIGH RISK** – Fire risk factors present may support extreme fire spread and intensity.

Table 4 provides the analysis of the fire risk rating that are specific for the Project site.

Table 4: Fire Risk Factor Rating for the Project

No.	Risk Factor	Low	Moderate	High	Very-High	Total
		0-3	4-6	7-8	9-10	
1	Fire Hazard Severity Rating				⑩	10
2	Local Fire Department Capabilities				⑩	10
3	Anticipated Fire Behavior in Area				⑩	10
4	Size / Configuration of the WUI				⑩	10
5	Proximity of Structures to WUI				⑩	10
6	Building Construction Meets CBC CH 7A			⑧		8
7	Defensible Space Complies with PRC 4291		⑥			6
8	Emergency Access to WUI			⑧		8
9	Water Supply for Fire Suppression			⑧		8
10	Critical Assets / Infrastructure at Risk	①				1
	Total	1	6	24	50	**81**

Overall Wildfire Risk Rating: *Very-High (80-100)*

NOTE: **Five** Very High-Risk factors are currently found within the Project area.

It is important to remember that the risk factor ratings described do not infer that a community is at greater or less risk due to its overall rating. Fires can, and do, cause significant damage to property even when they occur in areas that may receive an overall low or moderate rating. Failure to maintain adequate defensible space, critical fire weather conditions and/or lack of available fire suppression resources due to other emergency incidents may cause a fire to increase its intensity and fire spread beyond the capabilities of firefighters on scene.

CHAPTER 3: FUEL REDUCTION PRACTICES

The purpose of this chapter is to describe the recommended long-term comprehensive hazardous fuel reduction management and defensible space best practices for the Project. The best practices include adequate defensible space within 100' of all buildings. This Chapter is based on California Government Code Section 51182 and California Fire Code Section 4903 and includes analysis on the following subjects:

- Defensible Space Requirements
- Defensible Space Zone Criteria
- Hazardous Fuel Reduction Near the Driveway / Utilities
- Reoccurring Hazardous Fuel Reduction Maintenance Frequency

3.1 Hazardous Fuel Reduction Regulations Applicable to the Project

Both California Public Resource Code (PRC) 4291 and County of El Dorado Code Chapter 8.09 state that property owners shall maintain a 100-feet defensible space perimeter around all structures[19]on their property if they are in proximity to forests, grasslands, or similar undeveloped areas. Defensible space on each property is the responsibility of the individual property owner, except as required by El Dorado County Code Chapter 8.09. Defensible space within the Project starts at the structure and extends out 100-feet or to the property line that faces the undeveloped area if the property line is less than 100 feet from the structure.

3.2 Hazardous Fuel Reduction Program

A *Kuhl Single-Family Residential Dwelling Hazardous Fuel Reduction Program*[20] shall be established to maintain defensible space for the Project and associated parcels where required by El Dorado County Code. The program should be designed to ensure the following fuel management activities are completed in a timely manner:

[19] Defensible space is required on each side, and from the front and rear, of all structures.
[20] The program includes the administration, resource types used and funding sources to apply the Fuel Management Plan described here.

a. Confirm that fuel reduction activities are identified, scheduled, and completed in accordance with the Fuel Management Program.
b. Coordinate the use of resources (e.g., crews, mechanical equipment, domestic livestock, prescribed fire, etc.) that are most appropriate for the fuel reduction work that is required.
c. Ensure that sensitive biological resources within each area are identified in advance of the fuel management Project. Complete pre/post activity inspections of these areas to safeguard sensitive areas from damage and/or destruction.
d. Ensure the safe disposal (e.g., hauling it to a landfill, chipping/mulching on site, etc.) of biomass materials removed as part of a fuel management program.

3.3 Defensible Space Requirements

The term “Defensible Space” refers to reducing the wildfire vulnerability in WUI Zones by actions that will decrease the potential of heat, flames and embers spreading to buildings. Figure 8 provides additional information on defensible zone spaces around buildings.

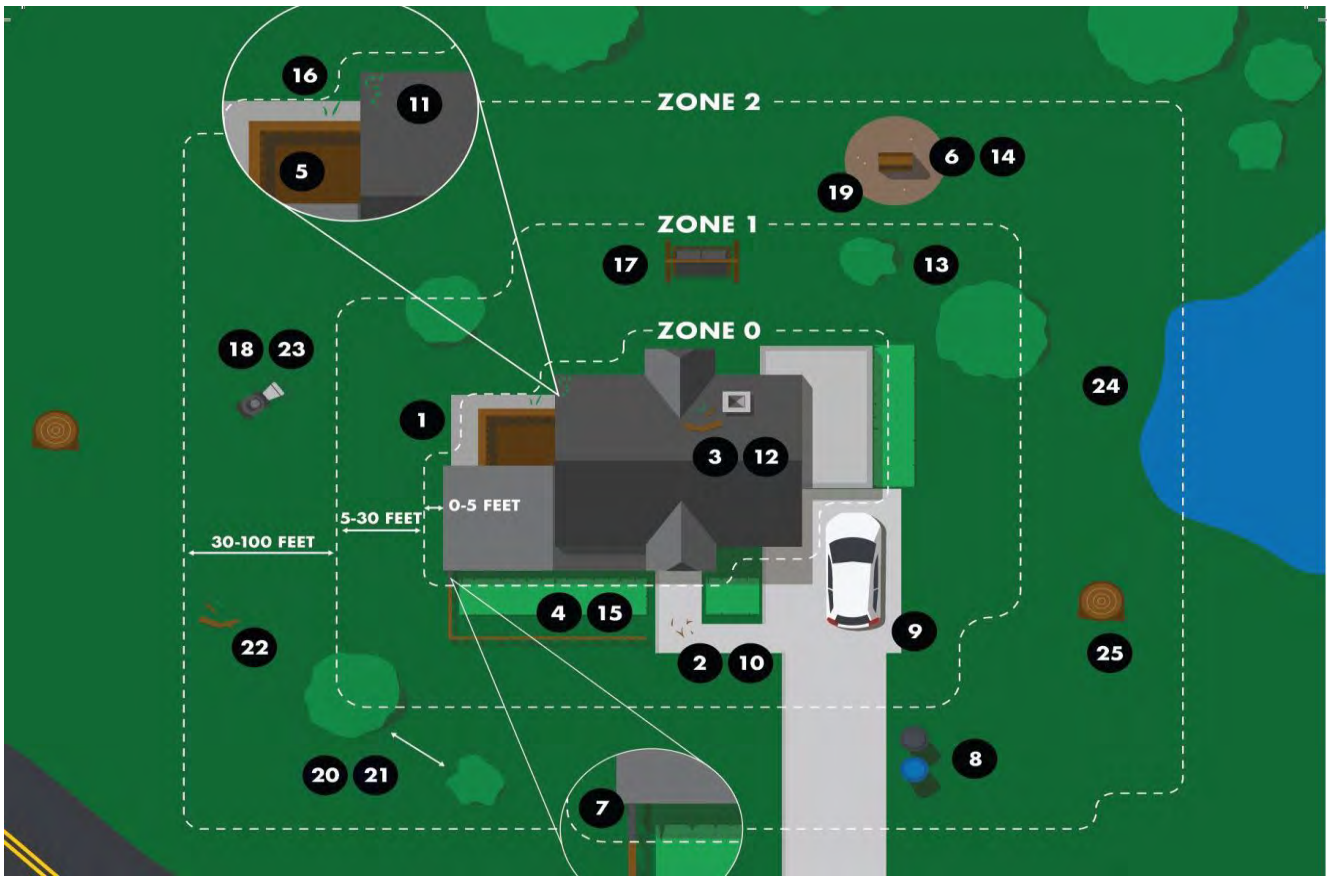


Figure 8: CAL FIRE Defensible Space Zones

Defensible space work around the buildings on site should be performed within 3 zone areas based on the fire risk reduction efforts necessary to protect the occupants and property. The 3 defensible space zones around buildings are described as:

Zone 0 – Ember Resistant Zone

Zone 0 extends 5-feet from buildings, buildings, decks, etc.

The ember-resistant zone is currently not required by law, but scientific data has proven it to be the most important of all the defensible space zones. This zone includes the area under and around all attached decks, and requires the most stringent wildfire fuel reduction. The ember-resistant zone is designed to keep fire or embers from igniting materials that can spread the fire to the home. The following provides guidance for this zone, which may change based on the regulation developed by the California Board of Forestry and Fire Protection.

1. Use hardscape like gravel, pavers, concrete, and non-combustible mulch materials. No combustible bark or mulch.
2. Remove all dead and dying weeds, grass, plants, shrubs, trees, branches, and vegetative debris (leaves, needles, cones, bark, etc.); Check roofs, gutters, decks, porches, stairways, etc.
3. Remove all branches within 10-feet of any chimney or stovepipe outlet
4. Limit plants in this area to low growing, nonwoody, properly watered, and maintained plants.
5. Limit combustible items (outdoor furniture, planters, etc.) on top of decks
6. Relocate firewood and lumber to Zone 2
7. Replace combustible fencing, gates, and arbors attached to the home with non-combustible alternatives
8. Consider relocating garbage and recycling containers outside this zone
9. Consider relocating boats, RVs, vehicles, and other combustible items outside this zone

Zone 1 – Lean, Clean and Green Zone

Zone 1 extends 30-feet from buildings, decks, etc. or to the property line, whichever is closer.

10. Remove all dead plants, grass, and weeds (vegetation).
11. Remove dead or dry leaves and pine needles from yard, roof, and rain gutters.
12. Remove branches that hang over roof and keep dead branches 10-feet away from your chimney.
13. Trim trees regularly to keep branches a minimum of 10- feet from other trees.
14. Relocate wood piles to Zone 2.
15. Remove or prune flammable plants and shrubs near windows.
16. Remove vegetation and items that could catch fire from around and under decks, balconies, and stairs.
17. Create a separation between trees, shrubs and items that could catch fire, such as patio furniture, wood piles, swing sets, etc.

Zone 2 – Reduce Fuel Zone

Zone 2 extends from 30-feet to 100-feet out from buildings, buildings, decks, etc. or to the property line, whichever is closer.

18. Cut or mow annual grass down to a maximum height of 4 inches.
19. All exposed wood piles must have a minimum of 10 feet clearance around them, down to bare mineral soil, in all directions.
20. Create horizontal space between shrubs and trees. (See diagram)
21. Create vertical space between grass, shrubs, and trees. (See diagram)
22. Remove fallen leaves, needles, twigs, bark, cones, and small branches. However, they may be permitted to a depth of 3 inches.

All Zones

23. Mow before 10:00 am, but never when its windy or excessively dry.

24. Protect water quality, do not clear vegetation near waterways to bare soil. Vegetation removal can cause soil erosion – especially on steep slopes.

25. Logs or stumps embedded in the soil must be removed in Zone 0. In Zones 1 and 2 they need to be removed or isolated from other vegetation.

3.4 Hazardous Fuel Reduction Criteria for the Project

A. Fuel reduction work shall include the mowing of annual grasses down to a height of 2-inches or less, removal of dead and diseased trees, debris, and the removal of tree limbs on live trees up to a height of 6-feet above the ground. Tree branches are to be limbed to at least 6-feet when possible. The minimum height may be lowered when trees are young or small; or if it is unsafe to reach a 6-foot height due to terrain, equipment, or skill level.

B. Understory fuels over 1-foot in height are to be removed in order to develop vertical separation and low horizontal continuity of fuels. Individual plants or pairs of plants may be retained provided there is a horizontal separation between plants of 3 to 5 times the height of the residual plants and the residual plants are not within the drip lines of an overstory tree.

C. Fuel reduction work shall include the removal of all dead vegetation 2 inches or less in diameter. Trunks shall be cut flush with the ground. The removal of additional trees shall be done in consultation with CAL FIRE and El Dorado County Planning & Building Department staff.

D. Threatened and/or endangered species may be present within the Project area. The recommendations of the Project biologist shall be implemented with respect to avoiding loss or harm to the affected species, or restoration and/or compensation measures to be undertaken if the species' habitat cannot be avoided. For example, if nesting raptors are present, the nesting tree shall not be removed and no tree removal or mechanical activity shall occur within a buffer zone established around the nest until the young have fledged. The Federal and/or State agency with jurisdiction over the affected protected species shall also be consulted.

E. Annual grasses shall be maintained below 2-inches in height just after the grasses cure in early summer. Additional fuel treatment work may be necessary throughout the year within 100-feet of structures to maintain defensible space requirements.

F. Tree snags shall be removed when they meet one or more of the following criteria:

- Snags 17-inch Diameter Breast Height (DBH) or smaller
- Snags greater than 30-feet in height
- Snags which are capable of reaching a structure
- Snags closer than 100-feet from adjoining snags.

G. The cutting of vegetation materials shall be done with CAL FIRE approved spark arrestors.

H. The removal of annual grasses and similar hazardous vegetation shall be completed through the use of plastic string weed trimmers or other DSP or CAL FIRE approved equipment.

I. Chipping of material is permitted. Chipped material shall be removed from the site unless otherwise approved by the landowner representative.

J. Prescribed burning and / or herbicide use is not allowed within the Project area unless such use is approved by the County of El Dorado and CAL FIRE.

K. Approved fire suppression equipment is required on-site at all times during the fuel-modification activities

L. All fuel reduction work shall be performed using every reasonable measure to minimize erosion, ground disturbing activities and soil damage. Where the ground is exposed by fuel reduction efforts, the area shall be revegetated and/or erosion control measures shall be installed prior to October 15.

M. Pruning on live trees shall be performed in accordance with the Best Management Practices set forth by the International Society of Arboriculture (ISA) and conform to ANSI A300 Standards for Tree Care.

N. The following tree-spacing guidelines are recommended when feasible; when not in conflict with applicable standards or codes; and after consultation with the CAL FIRE, County of El Dorado, or the respective agency representative(s):

- Intermediate Zone (5-feet to 30-feet from structures) - trees / clumps of trees should have a minimum of 18 feet between tree tops. This provision would typically include those trees on private property that extend into the open space.

- Extended Zone (30-feet to 100 feet from structures) - trees/clumps of trees should have a minimum of 12 feet between tree tops.

- Extended Zone (100-feet to 300-feet from structures) - trees/clumps of trees should have a minimum of 6 feet between tree tops.

3.5 Hazardous Fuel Reduction Near the Driveway / Utilities

To reduce the risk of wildfires obstructing the emergency vehicle access route to the Project, and the use of the driveway by occupants during an evacuation, the following hazardous vegetation requirements shall be provided prior to occupancy:

A. All diseased and dead trees within ten (10) feet beyond the edge of the driveway on both sides shall be removed.

B. All ladder fuels shall be cleared to a minimum width of a ten (10) foot wide strip of land beyond the edge of the driveway on both sides.

C. All tree limbs and hazardous vegetation shall be maintained to an unobstructed vertical clearance height of fifteen (15) feet above the driveway.

D. Free standing photovoltaic systems and equipment, not exceeding 1,500 square feet in combined panel area, shall provide a minimum ten (10) foot clearance to bare mineral soil, or other approved non-combustible surface. Panel areas greater than 1,500 square feet shall provide a minimum thirty (30) foot clearance.

E. The emergency water supply storage tanks on-site shall have a minimum thirty (30) foot clearance from hazardous vegetation on all sides of the tank. The draft hydrant shall have a minimum three (3) foot clearance on all sides from hazardous vegetation.

F. Create and maintain a minimum ten (10) foot clearance to bare mineral soil and no flammable vegetation for an additional 10 feet around the exterior of LP-Gas storage tanks.

3.6 Annual Hazardous Fuel Management Maintenance Frequency

The effectiveness of the Hazardous Fuel Modification program requires certain elements to be maintained on an annual or otherwise noted frequency. The coordination of fuel modification work between the property owner and CAL FIRE staff, and the adjacent land owner(s) to complete these activities in a timely fashion is imperative for the success in minimizing the wildfire risk in the Project area. Table 5 provides additional details regarding the recommended maintenance frequency for various activities described in the Plan.

Table 5: Maintenance Frequency for Hazardous Fuel Management Work

Action Item	Party Responsible	Frequency
Remove/trim annual grasses to less than 2-inches height within 100-feet of buildings.	**Property Owner**	**Annual**
Remove debris piles, dead trees (snags) or dying trees, down trees, and limbs.[21]	**Property Owner**	**Annual**
Removal of understory fuels that contribute to fire spread.	**Property Owner**	**Annual**
Remove biomass materials from the site and dispose of in accordance with best practices.	**Property Owner**	**Annual**
Remove ladder fuels (tree limbs) to 6-foot DBH and increase tree canopy spacing.	**Property Owner**	**10 Year**

[21] This plan recognizes that dead and dying trees may provide a beneficial use for the habitat. The removal of this vegetation should be completed after an annual inspection by representatives from CAL FIRE and the Property Owner has been completed and a scope of work agreed on by both parties.

CHAPTER 4: KEY FINDINGS, APPLICABLE CODES AND DESIGN CONSIDERATIONS

4.1 Key Findings for the Project

4.1.1 The Project is consistent with the regulations described in Sections 4290 and 4291 of the California Public Resources Code in accordance with California Government Code § 66474.02 (a)(1).

4.1.2 Fire and rescue services for the Project site are the responsibility of the California Department of Forestry and Fire Protection (CAL FIRE) in accordance with California Government Code § 66474.02(a)(2)(B).

4.1.3 The Fire Department response to the Project will, on-average, meet the 15-45-minute minimum level of service for Rural Regions as described in Policy 5.1.2.2 of the El Dorado County General Plan.

4.1.4 Wildfire protection for the adjacent undeveloped SRA lands near the Project are the responsibility of CAL FIRE.

4.1.5 The Project is located within a CAL FIRE SRA designated **Very-High** Fire Hazard Severity Zone. The Project is therefore subject to the regulations found in California Public Resource Code Section's 4290 and 4291. See Appendix E for additional information.

4.1.6 The Project shall be subject to the wildfire regulations found in the California Building Standard Codes (California Code of Regulations Title 24, Parts 1-12).

4.1.7 The Project has no proposed uses that are identified as Critical Assets, Essential Service Locations, or Vulnerable Populations that could be at risk during a wildfire.

4.1.8 No strategic ridgelines to reduce fire risk and improve fire protection, as described by California Code of Regulations Title 14 - §1276.02, have been identified by CAL FIRE within the Project or adjoining areas.

4.2 Fire Protection Statutes and Regulations Applicable to the Project

1.2.1 An approved address number shall be assigned to the Project parcel by the County of El Dorado Surveyors Office.

1.2.2 All roads and driveways associated with the Project shall meet the current design requirements found in CCR Title 14 §§ 1273.00 – 1273.09. See the design considerations described in Section 2.13 of this Plan for additional details.

4.2.3 The Project shall provide an immediately available water supply that is capable of providing the required fire flow for fire protection at the premise as required by CCR Title 14 - §§ 1275.00 – 1273.04. See Section 2.13 of this plan for additional information regarding the design criteria for the Project water system.

4.2.4 The single-family dwelling structure shall comply with all applicable material and construction methods for exterior wildfire exposure as described in the current version of California Code of Regulations Title 24 – Parts 1 through 9 (Building Standards Code), and as found in Section 4.3 of this plan.

4.3 Design Considerations

4.3.1 An approved address sign shall be placed near the road entrance from Forest Service Road 12N30 to the Project site. The address sign shall have address numbers no less than 4-inches high with a minimum stroke width of ½-inch. The address numbers shall contrast with their background and remain unobstructed at all times. Where multiple addresses are required at a single road they shall be mounted on a single sign or post.

4.3.2 An emergency vehicle access driveway shall be constructed from Forest Service Road 12N30 to the Project site. This access road shall comply with the following measures:

j. The driveway shall provide a minimum of one (1) ten (10) foot traffic lane, not including shoulders and striping, with fourteen (14) feet unobstructed horizontal clearance, and an unobstructed vertical clearance of thirteen feet, six inches (13'6") as required by CCR Title 14 – Section 1273.01 (Width).

k. The driveway shall support the imposed load of fire apparatus weighing at least 40,000 pounds and shall provide an aggregate base, as required by CCR Title 14 – Section 1273.02 (Road Surface).

l. The driveway shall provide turnouts along the entire route from Forest Service Road 12N30 to the dwelling at distances of no less than one for every 400-feet. Turnouts shall be constructed to a minimum of twelve (12) feet in width and thirty (30) feet long with a minimum twenty-five (25) foot taper on each end.

m. Road structures[22] shall be designed and maintained to support at least 40,000 pounds, as required by CCR Title 14 – Section 1273.02 (b).

n. At no point along the road shall the grade exceed 16%, as required by CCR Title 14 – Section 1273.03 (Grades).

o. No road or road structures shall have a horizontal inside radius or curvature of less than fifty (50) feet, as required by CCR Title 14 – Section 1273.04 (Radius).

p. A turnaround shall be provided within fifty (50) feet of the building. The minimum turning radius for the turnaround shall be forty (40) feet, not including parking, in accordance with Figure B of CCR Title 14 – Section 1273.05(f).

q. An area of no less than thirty (30) feet in length and ten (10) feet in width shall be constructed in front of the existing gated location from Forest Service Road 12N30 to the Project to allow for a vehicle to stop without obstructing traffic on the road.

[22] CCR Title 14 – Section 1270.01 (Road Structure) includes bridges, culverts, and other appurtenant structures which supplement the traffic lane or shoulders.

r. Gated entrances across the road shall comply with the requirements described in El Dorado County Fire Chiefs Association Standard No. B-002 (Automatic & Manual Gates on Fire Access Roadways & Driveways). This document can be accessed via the following link: Fire Prevention Officers - El Dorado County Fire Chiefs association (edchiefs.org).

4.3.3 The minimum emergency water supply storage on-site for the Project is 5,000 gallons. The installation of the water system shall comply with the requirements described in El Dorado County Fire Chiefs Association Standard No. D-003 (Water Supplies for Suburban and Rural Fire Fighting). This document can be accessed via the following link: Fire Prevention Officers - El Dorado County Fire Chiefs association (edchiefs.org).

4.3.4 A Kuhl Single-Family Residential Dwelling Hazardous Fuel Management program shall be established to ensure that all hazardous fuel reduction efforts, including creating and maintaining defensible space near each building in the Project, is completed annually or more frequently as determined by CAL FIRE. See Chapter 3 of this plan for additional details.

4.3.5 Undeveloped areas within the Project shall have all hazardous fuels, including annual grasses and dead vegetation, removed, and/or maintained in accordance with the provisions outlined in Chapter 3 of this plan.

4.3.6 The Project shall avoid the use of certain highly flammable trees and vegetation within 100-feet of buildings and structures as identified in Appendix G of this Plan.

4.3.7 Construction activities shall conform to the applicable provisions found in Chapter 33 (Fire Safety During Construction) of the California Fire Code as required by CAL FIRE. Cutting, welding and similar “Hot Work” activities shall be conducted under a valid permit issued by CAL FIRE during the period of time that such work is conducted within a wildfire risk area.

Chapter 5: PLAN APPENDIXES

Appendix A: Glossary of Terms

Biomass – Refers to "green waste" materials generated during the defensible space clearing Project. This includes grass, weeds, and tree trimming materials.

CAL FIRE – Refers to the California Department of Forestry and Fire Protection.

Defensible Space – Is the design and maintenance of natural and/or landscaped areas in an area where mitigation actions are undertaken to reduce structure loss from a wildfire. It is also intended to provide access to firefighters for fire suppression actions and to provide a safe zone for them to work. Defensible space is based on four general concepts:

1. Elimination of combustible vegetation and other materials within 5' of the structure.
2. Fuel removal or reduction within 100' of structures in all directions
3. Thinning, pruning and removal of continues and dense uninterrupted layers of vegetation
4. Removal of ladder fuels within 8'-10' from the ground to prevent fire spread through tree canopies.

Driveway – A vehicular pathway that serves no more than four (4) Residential Units and any number of non-commercial or non-industrial Utility or Miscellaneous Group U Buildings on each parcel. A Driveway shall not serve commercial or industrial uses of any size or scale.

Fire Hazard – Is the dangerous accumulation of flammable fuels in open space areas and other wildland urban interface areas. It is typically described at the landscape (area) level. Usually referring to the density of live or dead vegetation that may be ignited by the various fire risks or causes that can increase a fires intensity or rate of spread. Fire hazard is based on the vegetation types likely to be present over the next 50 years that contribute to fire severity and ember production, the topography of the area and the average fire weather conditions present in the area.

Fire Risk – Is the potential damage a fire can due to buildings, critical assets/infrastructure, and other values at risk in individual open space areas and other wildland urban interface areas.

Fire risk does consider modification that may affect susceptibility of property to damage such as defensible space, fire sprinkler systems and building construction that can reduce the risk of burning embers igniting buildings. Fire hazard does not equal fire risk but is an important factor in determining fire risk.

Hazardous Fuel Reduction – Refers to the reduction of wildfire fuels such as trees, shrubbery, grasses, and other natural materials to decrease risks to human life and damage to personal property. Hazardous fuel reduction result in less extreme fire behavior and intensity through decreased fire spread rates and reduced flame lengths.

Improved Parcel – A portion of land determined by the County Assessor's Office to contain a dwelling (occupied or unoccupied).

Ladder Fuel – Refers to live or dead vegetation that allows a fire to climb up from the ground into the tree canopy. They provide vertical continuity between different layers of fuels, making it easier for a fire to spread from the surface to the crowns or trees or shrubs. Ladder fuels help initiate and sustain crowning, which is the spread of fire from one tree crown to another.

Road – A public or private vehicular pathway to more than four (4) Residential Units, or to any industrial of commercial occupancy.

Snag – Refers to a dead or partly dead tree that is still standing.

Wildland fire – Any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property or resources as defined in Public Resources Code Sections 4103 and 4104.

Wildland Urban Interface Zone – A geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with Public Resources Code Sections 4201through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires.

Appendix B: Critical Assets / Populations at Risk Table

Facility Type	Essential Service	Population at Risk	Infrastructure at Risk	Facility Count
Fire Station	X			0
Police Station	X			0
Emergency Evacuation Shelter*	X			0
Government Facilities	X			0
General Acute Care Hospital	X			0
Medical Health Facility		X		0
Adult Residential Care Facility		X		0
Child Care Facility		X		0
Adult Care Facility		X		0
Public Elementary School		X		0
Private Elementary School		X		0
Public Middle School		X		0
Private Middle School		X		0
Public High School		X		0
Private High School		X		0
College / University		X		0
Vulnerable Population Centers**		X		0
Water Treatment Plant			X	0
Water Storage Facility			X	0
Water Conveyance System			X	0
Electrical Transmission Lines			X	0
Electrical Substation			X	0
Sewer Lift Station			X	0
Telecommunications Facilities			X	0
Corporation Yard				0
* Includes General Population, Access/Functional Needs Shelters, and Animal Shelters				
** Includes Disadvantaged, Disabled and Low-Income Census Areas				

Appendix C: PRC 4290 and 4291 Checklist

Project Name:				
	CCR Title 14	**Conforms**	**Does Not Conform**	**N/A**
Safe Access and Egress				
Road Width	§1273.01	X		
Roadway Surface	§1273.02	X		
Road Grades	§1273.03	X		
Road Radius	§1273.04	X		
Road Turnarounds	§1273.05	X		
Road Turnouts	§1273.06	X		
Road and Driveway Structures	§1273.07	X		
Dead-end Roads	§1273.08	X		
Gate Entrances	§1273.09		X	
Signing and Building Numbering				
Road Name Signs	§1274.01		X	
Road Sign Installation	§1274.02		X	
Addresses for Buildings	§1274.03		X	
Address Installation, Location	§1274.04		X	
Fire Water Standards				
Application	§1275.01	X		
Approved Fire Water Supply	§1275.02	X		
Hydrants	§1275.03	X		
Signing of Water Sources	§1275.04	X		
Building Siting and Fuel Mod.				
Building and Parcel Siting/Setbacks	§1276.01	X		
Ridgelines	§1276.02			X
Fuel Breaks	§1276.03			X
Greenbelts, Open Spaces	§1276.04			X
Disposal of Flammable Vegetation	§1276.05			X

NOTES:

1. See Section 4.2 (Fire Protection Statues and Regulations) regarding proposed mitigation measures.

Appendix D: Emergency Evacuation Planning Checklist

No.	Risk Factor	Yes	No	Unknown
1	Existing Evacuation Plan is Current?			X
2	General Population Shelters Identified?			X
3	Special Care Shelters Identified?			X
4	Animal Care Shelters Identified?			X
5	Temporary Safe Refuge Areas Identified?			X
6	Emergency Evacuation Routes Identified?			X
7	Mass Notification System Identified/Used?			X
8	Ready-Set-Go or Similar Program Used?			X
9	Evacuation Plans Available to the Public?			X
10	Are First Responders Briefed on the Plan?			X
	Total	0	0	10

Notes:

1. Project is located in El Dorado County. A search of public websites did not identify an existing evacuation plan for this area.

2-4. El Dorado County OES has no pre-designated emergency shelters throughout the County during prior large-scale emergencies.

5-6. There are no reported temporary refuge areas identified in the Project area.

7. El Dorado County OES uses *RAVE* as its emergency notification system. The system relies on notifications through existing telephone lines and through "opt-in" sign-ups for cell phones and other devices.

8-10. A search of public websites did not identify R-S-G materials, evacuation plans for the Project area or information that first responders are briefed on the evacuation planning efforts. All of this information will be made available in the Project area through handout materials distributed to both members of the public and first responders.

Appendix E: California Code of Regulations Title 14 §1270-1276

UNOFFICIAL COPY

State Minimum Fire Safe Regulations

Board of Forestry and Fire Protection

FOR INFORMATIONAL USE ONLY
View the official California Code of Regulations online at govt.westlaw.com/calregs

As of April 1, 2023

California Code of Regulations
Title 14 Natural Resources
Division 1.5 Department of Forestry
Chapter 7 - Fire Protection
Subchapter 2 State Minimum Fire Safe Regulations
Articles 1-5

Contents

Article 1 Administration

§ 1270.00. Title

Subchapter 2 shall be known as the “State Minimum Fire Safe Regulations,” and shall constitute the minimum Wildfire protection standards of the California Board of Forestry and Fire Protection.

§ 1270.01. Definitions

The following definitions are applicable to Subchapter 2.
(a) Agriculture: Land used for agricultural purposes as defined in a Local Jurisdiction's zoning ordinances.
(b) Board: California Board of Forestry and Fire Protection.
(c) Building: Any Structure used or intended for supporting or sheltering any use or Occupancy, except those classified as Utility and Miscellaneous Group U.
(d) CAL FIRE: California Department of Forestry and Fire Protection.
(e) Dead-end Road: A Road that has only one point of vehicular ingress/egress, including cul-de-sacs and Roads that loop back on themselves
(f) Defensible Space: The area within the perimeter of a parcel, Development, neighborhood or community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from an approaching Wildfire or defense against encroaching Wildfires or escaping Structure fires. The perimeter as used in this regulation is the area encompassing the parcel or parcels proposed for construction and/or Development, excluding the physical Structure itself. The area is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, Road names and Building identification, and fuel modification measures.
(g) Development: As defined in section 66418.1 of the California Government Code.
(h) Director: Director of the Department of Forestry and Fire Protection or their designee.
(i) Driveway: A vehicular pathway that serves no more than four (4) Residential Units and any number of non-commercial or non-industrial Utility or Miscellaneous Group U Buildings on each parcel. A Driveway shall not serve commercial or industrial uses at any size or scale.
(j) Exception: An alternative to the specified standard requested by the applicant that may be necessary due to health, safety, environmental conditions, physical site limitations or other limiting conditions, such as recorded historical sites, that provides mitigation of the problem.
(k) Fire Apparatus: A vehicle designed to be used under emergency conditions to transport personnel and equipment or to support emergency response, including but not limited to the suppression of fires.
(l) Fire Authority: A fire department, agency, division, district, or other governmental body responsible for regulating and/or enforcing minimum fire safety standards in the Local Jurisdiction.
(m) Fire Hydrant: A valved connection on a water supply or storage system for the purpose of providing water for fire protection and suppression operations.
(n) Fuel Break: A strategically located area where the volume and arrangement of vegetation has been managed to limit fire intensity, fire severity, rate of spread, crown fire potential, and/or ember production.
(o) Greenbelts: open space, parks, wildlands, other areas, or a combination thereof, as designated by Local Jurisdictions, which are in, surround, or are adjacent to a city or urbanized area, that may function as Fuel Breaks and where Building construction is restricted or prohibited.
(p) Greenways: Linear open spaces or corridors that link parks and neighborhoods within a community through natural or manmade trails and paths.

(q) Hammerhead/T: A "T" shaped, three-point Turnaround space for Fire Apparatus on a Road or Driveway, being no narrower than the Road or Driveway that serves it.
(r) Hazardous Land Use: A land use that presents a significantly elevated potential for the ignition, prolonged duration, or increased intensity of a Wildfire due to the presence of flammable materials, liquids, or gasses, or other features that initiate or sustain combustion. Such uses are determined by the Local Jurisdiction and may include, but are not limited to, power-generation and distribution facilities; wood processing or storage sites; flammable gas or liquids processing or storage sites; or shooting ranges.
(s) Local Jurisdiction: Any county, city/county agency or department, or any locally authorized district that approves or has the authority to regulate Development.
(t) Municipal-Type Water System: A system having water pipes servicing Fire Hydrants and designed to furnish, over and above domestic consumption, a minimum of 250 gpm (950 L/min) at 20 psi (138 kPa) residual pressure for a two (2) hour duration.
(u) Occupancy: The purpose for which a Building, or part thereof, is used or intended to be used.
(v) One-way Road: A Road that provides a minimum of one Traffic Lane width designed for traffic flow in one direction only.
(w) Residential Unit: Any Building or portion thereof which contains living facilities including provisions for sleeping, eating, cooking and/or sanitation, for one or more persons. Manufactured homes, mobile homes, and factory-built housing are considered Residential Units.
(x) Ridgeline: The line of intersection of two opposing slope aspects running parallel to the long axis of the highest elevation of land; or an area of higher ground separating two adjacent streams or watersheds.
(y) Road: A public or private vehicular pathway to more than four (4) Residential Units, or to any industrial or commercial Occupancy.
(z) Road or Driveway Structures: Bridges, culverts, and other appurtenant Structures which supplement the Traffic Lane or Shoulders.
(aa) Same Practical Effect: As used in this subchapter, means an Exception or alternative with the capability of applying accepted wildland fire suppression strategies and tactics, and provisions for fire fighter safety, including:

(1) access for emergency wildland fire equipment,
(2) safe civilian evacuation,
(3) signing that avoids delays in emergency equipment response,
(4) available and accessible water to effectively attack Wildfire or defend a Structure from Wildfire, and
(5) fuel modification sufficient for civilian and fire fighter safety.

(bb) Shoulder: A vehicular pathway adjacent to the Traffic Lane.
(cc) State Responsibility Area (SRA): As defined in Public Resources Code sections 4126-4127; and the California Code of Regulations, title 14, division 1.5, chapter 7, article 1, sections 1220-1220.5.
§(ee) Structure: That which is built or constructed or any piece of work artificially built up or composed of parts joined together in some definite manner.
(ff) Traffic Lane: The portion of a Road or Driveway that provides a single line of vehicle travel.
(gg) Turnaround: An area which allows for a safe opposite change of direction for Fire Apparatus at the end of a Road or Driveway.
(hh) Turnout: A widening in a Road or Driveway to allow vehicles to pass.

(ii) Undeveloped Ridgeline: A Ridgeline with no Buildings.
(jj) Utility and Miscellaneous Group U: A Structure of an accessory character or a miscellaneous Structure not classified in any specific Occupancy permitted, constructed, equipped, and maintained to conform to the requirements of Title 24, California Building Standards Code.
(kk) Vertical Clearance: The minimum specified height of a bridge, overhead projection, or vegetation clearance above the Road or Driveway.
(*ll*) Vertical Curve: A curve at a high or low point of a Road that provides a gradual transition between two Road grades or slopes.
(mm) Very High Fire Hazard Severity Zone (VHFHSZ): As defined in Government Code section 51177(i).
(nn) Wildfire: Has the same meaning as "forest fire" in Public Resources Code Section 4103.

§ 1270.02. Purpose

(a) Subchapter 2 has been prepared and adopted for the purpose of establishing state minimum Wildfire protection standards in conjunction with Building, construction, and Development in the State Responsibility Area (SRA) and, after July 1, 2021, the Very High Fire Hazard Severity Zones, as defined in Government Code § 51177(i) (VHFHSZ).
(b) The future design and construction of Structures, subdivisions and Developments in the SRA and, after July 1, 2021, the VHFHSZ shall provide for basic emergency access and perimeter Wildfire protection measures as specified in the following articles.
(c) These standards shall provide for emergency access; signing and Building numbering; private water supply reserves for emergency fire use; vegetation modification, Fuel Breaks, Greenbelts, and measures to preserve Undeveloped Ridgelines. Subchapter 2 specifies the minimums for such measures.

§ 1270.03. Scope

(a) Subchapter 2 shall apply to:
(1) the perimeters and access to all residential, commercial, and industrial Building construction within the SRA approved after January 1, 1991, and those approved after July 1, 2021 within the VHFHSZ, except as set forth below in subsection (b).
(2) the siting of newly installed commercial modulars, manufactured homes, mobilehomes, and factory-built housing, as defined in Health and Safety Code sections 18001.8, 18007, 18008, and 19971;
(3) all tentative and parcel maps or other Developments approved after January 1, 1991; and
(4) applications for Building permits on a parcel approved in a pre-1991 parcel or tentative map to the extent that conditions relating to the perimeters and access to the Buildings were not imposed as part of the approval of the parcel or tentative map.
(b) Subchapter 2 does not apply where an application for a Building permit is filed after January 1, 1991 for Building construction on a parcel that was formed from a parcel map or tentative map (if the final map for the tentative map is approved within the time prescribed by the local ordinance) approved prior to January 1, 1991, to the extent that conditions relating to the perimeters and access to the Buildings were imposed by the parcel map or final tentative map approved prior to January 1, 1991.
(c) Affected activities include, but are not limited to:
(1) permitting or approval of new parcels, excluding lot line adjustments as specified in Government Code (GC) section 66412(d);
(2) application for a Building permit for new construction not relating to an existing Structure;

(3) application for a use permit;
(4) Road construction including construction of a Road that does not currently exist, or extension of an existing Road.

(d) The standards in Subchapter 2 applicable to Roads shall not apply to Roads used solely for Agriculture; mining; or the management of timberland or harvesting of forest products.

§ 1270.04. Provisions for Application of these Regulations

This Subchapter shall be applied as follows:
(a) the Local Jurisdictions shall provide the Director of the California Department of Forestry and Fire Protection (CAL FIRE) or their designee with notice of applications for Building permits, tentative parcel maps, tentative maps, and installation or use permits for construction or Development within the SRA, or if after July, 1 2021, the VHFHSZ.
(b) the Director or their designee may review and make fire protection recommendations on applicable construction or development permits or maps provided by the Local Jurisdiction.
(c) the Local Jurisdiction shall ensure that the applicable sections of this Subchapter become a condition of approval of any applicable construction or Development permit or map.

§ 1270.05. Local Regulations

(a) Subchapter 2 shall serve as the minimum Wildfire protection standards applied in SRA and VHFHSZ. However, Subchapter 2 does not supersede local regulations which equal or exceed the standards of this Subchapter.
(b) A local regulation equals or exceeds a minimum standard of this Subchapter only if, at a minimum, the local regulation also fully complies with the corresponding minimum standard in this Subchapter.
(c) A Local Jurisdiction shall not apply exemptions to Subchapter 2 that are not enumerated in Subchapter 2. Exceptions requested and approved in conformance with § 1270.07 (Exceptions to Standards) may be granted on a case-by-case basis.
(d) Notwithstanding a local regulation that equals or exceeds the State Minimum Fire Safe Regulations, Building construction shall comply with the State Minimum Fire Safe Regulations.

§ 1270.06. Inspections

Inspections shall conform to the following requirements:
(a) Inspections in the SRA shall be made by:
(1) the Director, or
(2) Local Jurisdictions that have assumed state fire protection responsibility on SRA lands, or
(3) Local Jurisdictions where the inspection duties have been formally delegated by the Director to the Local Jurisdictions, pursuant to subsection (b).

(b) The Director may delegate inspection authority to a Local Jurisdiction subject to all of the following criteria:
(1) The Local Jurisdiction represents that they have appropriate resources to perform the delegated inspection authority.
(2) The Local Jurisdiction acknowledges that CAL FIRE's authority under subsection (d) shall not be waived or restricted.
(3) The Local Jurisdiction consents to the delegation of inspection authority.
(4) The Director may revoke the delegation at any time.
(5) The delegation of inspection authority, and any subsequent revocation of the delegation, shall be documented in writing, and retained on file at the CAL FIRE Unit headquarters that administers SRA fire protection in the area.

(c) Inspections in the VHFHSZ shall be made by the Local Jurisdiction.

(d) Nothing in this section abrogates CAL FIRE's authority to inspect and enforce state forest and fire laws in the SRA even when the inspection duties have been delegated pursuant to this section.
(e) Reports of violations within the SRA shall be provided to the CAL FIRE Unit headquarters that administers SRA fire protection in the Local Jurisdiction.
(f) When inspections are conducted, they shall occur prior to: the issuance of the use permit or certificate of Occupancy; the recordation of the parcel map or final map; the filing of a notice of completion; or the final inspection of any project or Building permit.

§ 1270.07. Exceptions to Standards

(a) Upon request by the applicant, an Exception to standards within this Subchapter may be allowed by the Inspection entity in accordance with 14 CCR § 1270.06 (Inspections) where the Exceptions provide the Same Practical Effect as these regulations towards providing Defensible Space. Exceptions granted by the Local Jurisdiction listed in 14 CCR § 1270.06, shall be made on a case-by-case basis only. Exceptions granted by the Local Jurisdiction listed in 14 CCR § 1270.06 shall be forwarded to the appropriate CAL FIRE unit headquarters that administers SRA fire protection in that Local Jurisdiction, or the county in which the Local Jurisdiction is located and shall be retained on file at the Unit Office.
(b) Requests for an Exception shall be made in writing to the Local Jurisdiction listed in 14 CCR § 1270.06 by the applicant or the applicant's authorized representative.
At a minimum, the request shall state the specific section(s) for which an Exception is requested; material facts supporting the contention of the applicant; the details of the Exception proposed; and a map showing the proposed location and siting of the Exception. Local Jurisdictions listed in § 1270.06 (Inspections) may establish additional procedures or requirements for Exception requests.
(c) Where an Exception is not granted by the inspection entity, the applicant may appeal such denial to the Local Jurisdiction. The Local Jurisdiction may establish or utilize an appeal process consistent with existing local building or planning department appeal processes.
(d) Before the Local Jurisdiction makes a determination on an appeal, the inspector shall be consulted and shall provide to that Local Jurisdiction documentation outlining the effects of the requested Exception on Wildfire protection.
(e) If an appeal is granted, the Local Jurisdiction shall make findings that the decision meets the intent of providing Defensible Space consistent with these regulations. Such findings shall include a statement of reasons for the decision. A written copy of these findings shall be provided to the CAL FIRE Unit headquarters that administers SRA fire protection in that Local Jurisdiction.

§ 1270.08. Distance Measurements

All specified or referenced distances are measured along the ground, unless otherwise stated.

Article 2 Ingress and Egress

§ 1273.00. Intent

Roads, and Driveways, whether public or private, unless exempted under 14 CCR § 1270.03(d), shall provide for safe access for emergency Wildfire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a Wildfire emergency consistent with 14 CCR §§ 1273.00 through 1273.09.

§ 1273.01. Width.

(a) All roads shall be constructed to provide a minimum of two ten (10) foot traffic lanes, not including shoulder and striping. These traffic lanes shall provide for two-way traffic flow to support emergency vehicle and civilian egress, unless other standards are provided in this article or additional requirements are mandated by Local Jurisdictions or local subdivision requirements. Vertical clearances shall conform to the requirements in California Vehicle Code section 35250.

(b) All One-way Roads shall be constructed to provide a minimum of one twelve (12) foot traffic lane, not including Shoulders. The Local Jurisdiction may approve One-way Roads.

(1) All one-way roads shall, at both ends, connect to a road with two traffic lanes providing for travel in different directions, and shall provide access to an area currently zoned for no more than ten (10) Residential Units.

(2) In no case shall a One-way Road exceed 2,640 feet in length. A turnout shall be placed and constructed at approximately the midpoint of each One-way Road.

(c) All driveways shall be constructed to provide a minimum of one (1) ten (10) foot traffic lane, fourteen (14) feet unobstructed horizontal clearance, and unobstructed vertical clearance of thirteen feet, six inches (13′ 6″).

§ 1273.02. Road Surface

(a) Roads shall be designed and maintained to support the imposed load of Fire Apparatus weighing at least 75,000 pounds, and provide an aggregate base.

(b) Road and Driveway Structures shall be designed and maintained to support at least 40,000 pounds.

(c) Project proponent shall provide engineering specifications to support design, if requested by the Local Jurisdiction.

§ 1273.03. Grades

(a) At no point shall the grade for all Roads and Driveways exceed 16 percent.

(b) The grade may exceed 16%, not to exceed 20%, with approval from the Local Jurisdiction and with mitigations to provide for Same Practical Effect.

§ 1273.04. Radius

(a) No Road or Road Structure shall have a horizontal inside radius of curvature of less than fifty (50) feet. An additional surface width of four (4) feet shall be added to curves of 50-100 feet radius; two (2) feet to those from 100-200 feet.

(b) The length of vertical curves in Roadways, exclusive of gutters, ditches, and drainage structures designed to hold or divert water, shall be not less than one hundred (100) feet.

§ 1273.05. Turnarounds

(a) Turnarounds are required on Driveways and Dead-end Roads.

(b) The minimum turning radius for a turnaround shall be forty (40) feet, not including parking, in accordance with the figures in 14 CCR §§ 1273.05(e) and 1273.05(f). If a hammerhead/T is used instead, the top of the "T" shall be a minimum of sixty (60) feet in length.
(c) Driveways exceeding 150 feet in length, but less than 800 feet in length, shall provide a turnout near the midpoint of the Driveway. Where the driveway exceeds 800 feet, turnouts shall be provided no more than 400 feet apart.
(d) A turnaround shall be provided on Driveways over 300 feet in length and shall be within fifty (50) feet of the building.
(d) Each Dead-end Road shall have a turnaround constructed at its terminus. Where parcels are zoned five (5) acres or larger, turnarounds shall be provided at a maximum of 1,320 foot intervals.
(e) Figure A. Turnarounds on roads with two ten-foot traffic lanes.
Figure A/Image 1 on the left is a visual representation of paragraph (b).
(f) Figure B. Turnarounds on driveways with one ten-foot traffic lane.
Figure B/Image 2 on the right is a visual representation of paragraph (b).

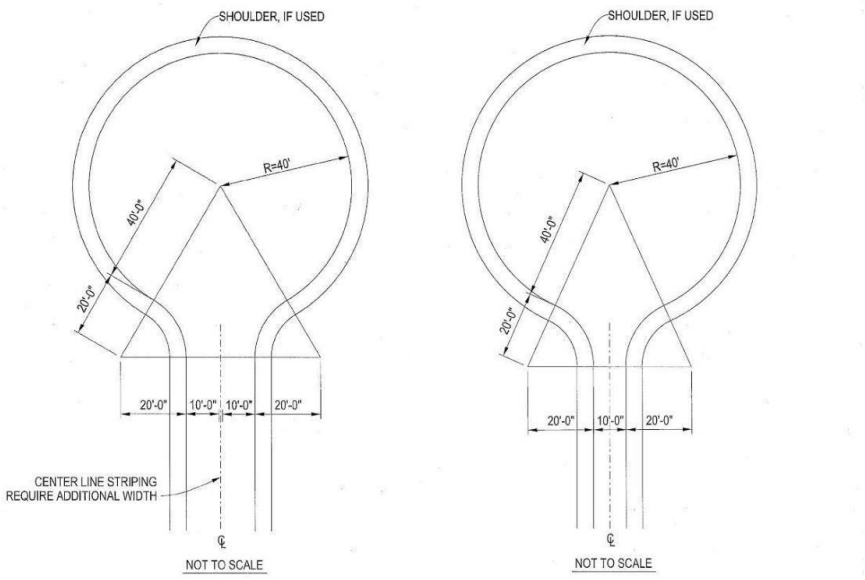


FIGURE FOR 14 CCR § 1273.05. TURNAROUND EXAMPLES

§ 1273.06. Turnouts

Turnouts shall be a minimum of twelve (12) feet wide and thirty (30) feet long with a minimum twenty-five (25) foot taper on each end.

§ 1273.07. Road and Driveway Structures

(a) Appropriate signing, including but not limited to weight or vertical clearance limitations, One-way Road or single traffic lane conditions, shall reflect the capability of each bridge.
(b) Where a bridge or an elevated surface is part of a Fire Apparatus access road, the bridge shall be constructed and maintained in accordance with the American Association of State and

Highway Transportation Officials Standard Specifications for Highway Bridges, 17th Edition, published 2002 (known as AASHTO HB-17), hereby incorporated by reference. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the local authority having jurisdiction.
(c) Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, barriers, or signs, or both, as approved by the local authority having jurisdiction, shall be installed and maintained.
(d) A bridge with only one traffic lane may be authorized by the Local Jurisdiction; however, it shall provide for unobstructed visibility from one end to the other and turnouts at both ends.

§ 1273.08. Dead-end Roads

(a) The maximum length of a Dead-end Road, including all Dead-end Roads accessed from that Dead-end Road, shall not exceed the following cumulative lengths, regardless of the number of parcels served:

parcels zoned for less than one acre - 800 feet
parcels zoned for 1 acre to 4.99 acres - 1,320 feet
parcels zoned for 5 acres to 19.99 acres - 2,640 feet
parcels zoned for 20 acres or larger - 5,280 feet

All lengths shall be measured from the edge of the Road surface at the intersection that begins the Road to the end of the Road surface at its farthest point. Where a dead-end road crosses areas of differing zoned parcel sizes requiring different length limits, the shortest allowable length shall apply.
(b) See 14 CCR § 1273.05 for dead-end road turnaround requirements.

§ 1273.09. Gate Entrances

(a) Gate entrances shall be at least two (2) feet wider than the width of the traffic lane(s) serving that gate and a minimum width of fourteen (14) feet unobstructed horizontal clearance and unobstructed vertical clearance of thirteen feet, six inches (13′ 6″).
(b) All gates providing access from a Road to a Driveway shall be located at least thirty (30) feet from the roadway and shall open to allow a vehicle to stop without obstructing traffic on that Road.
(c) Where a One-way Road with a single traffic lane provides access to a gated entrance, a forty (40) foot turning radius shall be used.
(d) Security gates shall not be installed without approval. Where security gates are installed, they shall have an approved means of emergency operation. Approval shall be by the local authority having jurisdiction. The security gates and the emergency operation shall be maintained operational at all times.

Article 3 Signing and Building Numbering

§ 1274.00. Intent

To facilitate locating a fire and to avoid delays in response, all newly constructed or approved Roads and Buildings shall be designated by names or numbers posted on signs clearly visible and legible from the Road. This section shall not restrict the size of letters or numbers appearing on road signs for other purposes.

§ 1274.01. Road Signs.

(a) Newly constructed or approved Roads must be identified by a name or number through a consistent system that provides for sequenced or patterned numbering and/or non-duplicative naming within each Local Jurisdiction. This section does not require any entity to rename or renumber existing roads, nor shall a Road providing access only to a single commercial or industrial Occupancy require naming or numbering.
(b) The size of letters, numbers, and symbols for Road signs shall be a minimum four (4) inch letter height, half inch (.5) inch stroke, reflectorized, contrasting with the background color of the sign.

§ 1274.02. Road Sign Installation, Location, and Visibility.

(a) Road signs shall be visible and legible from both directions of vehicle travel for a distance of at least one hundred (100) feet.
(b) Signs required by this article identifying intersecting Roads shall be placed at the intersection of those Roads.
(c) A sign identifying traffic access or flow limitations, including but not limited to weight or vertical clearance limitations, dead-end roads, one-way roads, or single lane conditions, shall be placed:
(1) at the intersection preceding the traffic access limitation, and
(2) no more than one hundred (100) feet before such traffic access limitation.
(d) Road signs required by this article shall be posted at the beginning of construction and shall be maintained thereafter.

§ 1274.03. Addresses for Buildings.

(a) All Buildings shall be issued an address by the Local Jurisdiction which conforms to that jurisdiction's overall address system. Utility and miscellaneous Group U Buildings are not required to have a separate address; however, each Residential Unit within a Building shall be separately identified.
(b) The size of letters, numbers, and symbols for addresses shall conform to the standards in the California Fire Code, California Code of Regulations title 24, part 9.
(c) Addresses for residential Buildings shall be reflectorized.

§ 1274.04. Address Installation, Location, and Visibility.

(a) All buildings shall have a permanently posted address which shall be plainly legible and visible from the Road fronting the property.
(b) Where access is by means of a private Road and the address identification cannot be viewed from the public way, an unobstructed sign or other means shall be used so that the address is visible from the public way.
(c) Address signs along one-way Roads shall be visible from both directions.
(d) Where multiple addresses are required at a single driveway, they shall be mounted on a single sign or post.

(e) Where a Road provides access solely to a single commercial or industrial business, the address sign shall be placed at the nearest Road intersection providing access to that site, or otherwise posted to provide for unobstructed visibility from that intersection.
(f) In all cases, the address shall be posted at the beginning of construction and shall be maintained thereafter.

Article 4 Emergency Water Standards

§ 1275.00. Intent

Emergency water for Wildfire protection shall be available, accessible, and maintained in quantities and locations specified in the statute and these regulations in order to attack a Wildfire or defend property from a Wildfire.

§ 1275.01. Application

The provisions of this article shall apply in the tentative and parcel map process when new parcels are approved by the Local Jurisdiction.

§ 1275.02. Water Supply.

(a) When a water supply for structure defense is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when alternative methods of protection are provided and approved by the Local Jurisdiction.
(b) Water systems equaling or exceeding the California Fire Code, California Code of Regulations title 24, part 9, or, where a municipal-type water supply is unavailable, National Fire Protection Association (NFPA) 1142, “Standard on Water Supplies for Suburban and Rural Fire Fighting,” 2017 Edition, hereby incorporated by reference, shall be accepted as meeting the requirements of this article.
(c) Such emergency water may be provided in a fire agency mobile water tender, or naturally occurring or man made containment structure, as long as the specified quantity is immediately available.
(d) Nothing in this article prohibits the combined storage of emergency Wildfire and structural firefighting water supplies unless so prohibited by local ordinance or specified by the local fire agency.
(e) Where freeze or crash protection is required by Local Jurisdictions, such protection measures shall be provided.

§ 1275.03. Hydrants and Fire Valves.

(a) The hydrant or fire valve shall be eighteen (18) inches above the finished surface. Its location in relation to the road or driveway and to the building(s) or structure(s) it serves shall comply with California Fire Code, California Code of Regulations title 24, part 9, Chapter 5, and Appendix C.
(b) The hydrant head shall be a two and half (2 1/2) inch National Hose male thread with cap for pressure and gravity flow systems and four and a half (4 1/2) inch for draft systems.
(c) Hydrants shall be wet or dry barrel and have suitable freeze or crash protection as required by the local jurisdiction.
§ 1275.04. Signing of Water Sources.
(a) Each hydrant, fire valve, or access to water shall be identified as follows:
(1) if located along a driveway, a reflectorized blue marker, with a minimum dimension of three (3) inches shall be located on the driveway address sign and mounted on a fire retardant post, or
(2) if located along a road,

(i) a reflectorized blue marker, with a minimum dimension of three (3) inches, shall be mounted on a fire retardant post. The sign post shall be within three (3) feet of said hydrant or fire valve, with the sign no less than three (3) feet nor greater than five (5) feet above ground, in a horizontal position and visible from the driveway, or
(ii) as specified in the State Fire Marshal's Guidelines for Fire Hydrant Markings Along State Highways and Freeways, May 1988.

§ 1275.04. Signing of Water Sources.

(a) Each Fire Hydrant or access to water shall be identified as follows:
(1) if located along a Driveway, a reflectorized blue marker, with a minimum dimension of three (3) inches shall be located on the Driveway address sign and mounted on a fire retardant post, or
(2) if located along a Road,
(i) a reflectorized blue marker, with a minimum dimension of three (3) inches, shall be mounted on a fire retardant post. The sign post shall be within three (3) feet of said Fire Hydrant with the sign no less than three (3) feet nor greater than five (5) feet above ground, in a horizontal position and visible from the Driveway, or
(ii) as specified in the State Fire Marshal's Guidelines for Fire Hydrant Markings Along State Highways and Freeways, May 1988.

Article 5 Building Siting, Setbacks, and Fuel Modification

§ 1276.00 Intent

To reduce the intensity of a Wildfire, reducing the volume and density of flammable vegetation around Development through strategic fuel modification, parcel siting and Building setbacks, and the protection of Undeveloped Ridgelines shall provide for increased safety for emergency fire equipment, including evacuating civilians, and a point of attack or defense from a Wildfire.

§ 1276.01. Building and Parcel Siting and Setbacks

(a) All parcels shall provide a minimum thirty (30) foot setback for all Buildings from all property lines and/or the center of a Road, except as provided for in subsection (b).
(b) A reduction in the minimum setback shall be based upon practical reasons, which may include but are not limited to, parcel dimensions or size, topographic limitations, Development density requirements or other Development patterns that promote low-carbon emission outcomes; sensitive habitat; or other site constraints, and shall provide for an alternative method to reduce Structure-to-Structure ignition by incorporating features such as, but not limited to:
(1) non-combustible block walls or fences; or
(2) non-combustible material extending five (5) feet horizontally from the furthest extent of the Building; or
(3) hardscape landscaping; or
(4) a reduction of exposed windows on the side of the Structure with a less than thirty (30) foot setback; or
(5) the most protective requirements in the California Building Code, California Code of Regulations Title 24, Part 2, Chapter 7A, as required by the Local Jurisdiction.

§ 1276.02. Ridgelines

(a) The Local Jurisdiction shall identify Strategic Ridgelines, if any, to reduce fire risk and improve fire protection through an assessment of the following factors:

(1) Topography;
(2) Vegetation;
(3) Proximity to any existing or proposed residential, commercial, or industrial land uses;
(4) Construction where mass grading may significantly alter the topography resulting in the elimination of Ridgeline fire risks;
(5) Ability to support effective fire suppression; and
(6) Other factors, if any, deemed relevant by the Local Jurisdiction.

(b) Preservation of Undeveloped Ridgelines identified as strategically important shall be required pursuant to this section.

(c) New Buildings on Undeveloped Ridgelines identified as strategically important are prohibited, as described in subsections (c)(1), (c)(2), and (c)(3).

(1) New Residential Units are prohibited within or at the top of drainages or other topographic features common to Ridgelines that act as chimneys to funnel convective heat from Wildfires.
(2) Nothing in this subsection shall be construed to alter the extent to which utility infrastructure, including but not limited to wireless telecommunications facilities, as defined in Government Code section 65850.6, subdivision (d)(2), or Storage Group S or Utility and Miscellaneous Group U Structures, may be constructed on Undeveloped Ridgelines.
(3) Local Jurisdictions may approve Buildings on Strategic Ridgelines where Development activities such as mass grading will significantly alter the topography that results in the elimination of Ridgeline fire risks.

(d) The Local Jurisdiction may implement further specific requirements to preserve Undeveloped Ridgelines.

§ 1276.03. Fuel Breaks

(a) When Building construction meets the following criteria, the Local Jurisdiction shall determine the need and location for Fuel Breaks in consultation with the Fire Authority:

(1) the permitting or approval of three (3) or more new parcels, excluding lot line adjustments as specified in Government Code (GC) section 66412(d); or
(2) an application for a change of zoning increasing zoning intensity or density; or
(3) an application for a change in use permit increasing use intensity or density.

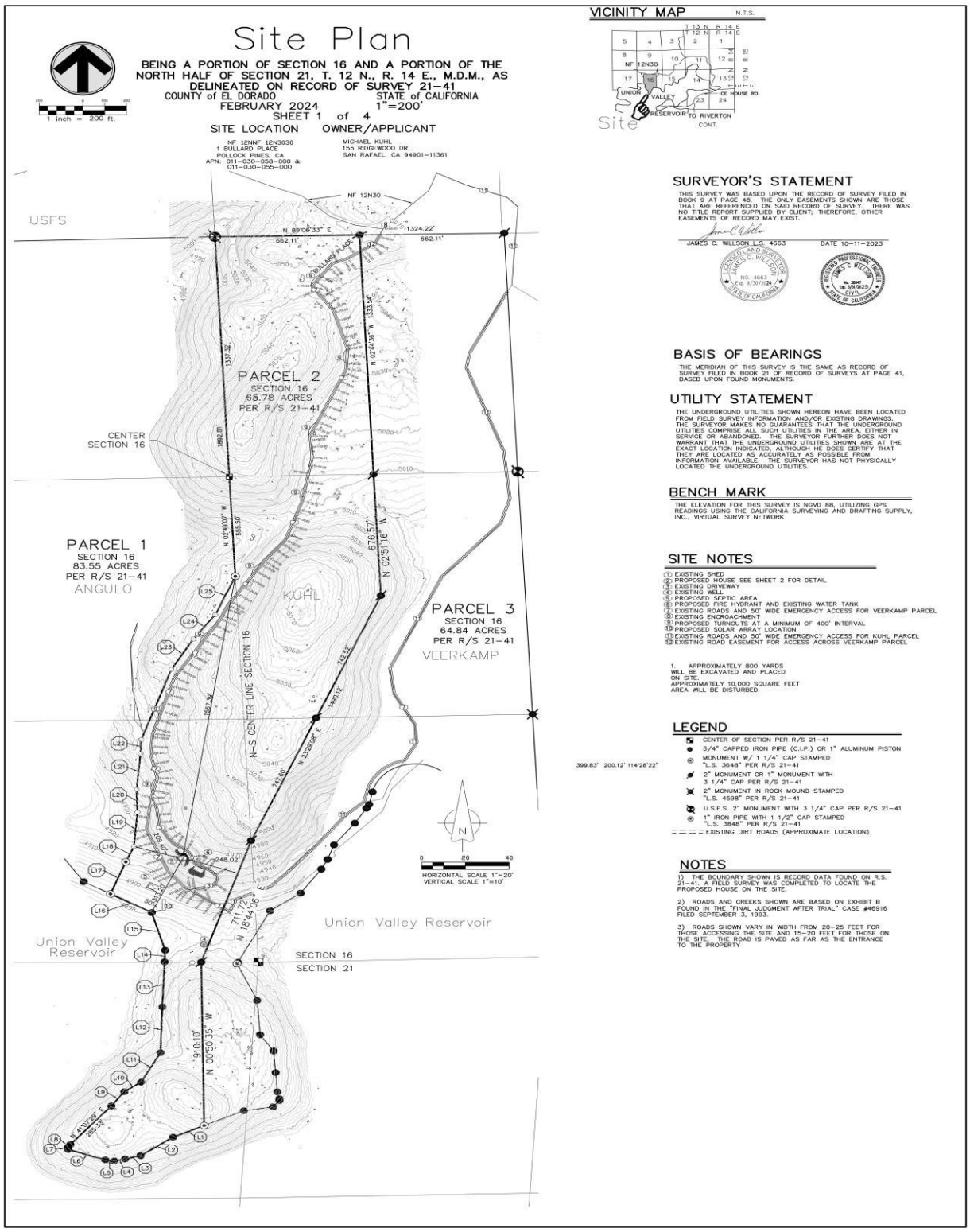
(b) Fuel Breaks required by the Local Jurisdiction, in consultation with the Fire Authority, shall be located, designed, and maintained in a condition that reduces the potential of damaging radiant and convective heat or ember exposure to Access routes, Buildings, or infrastructure within the Development.

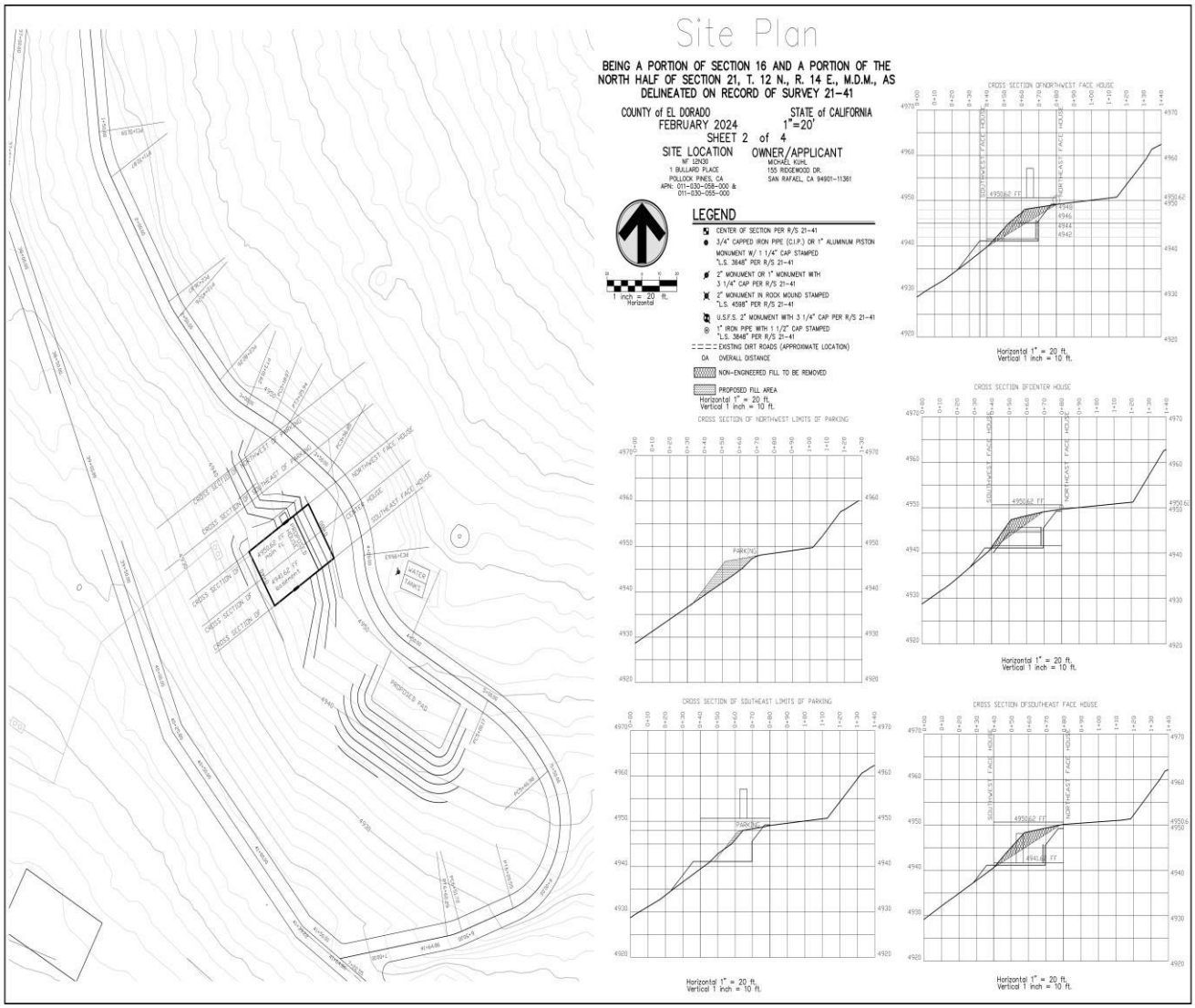
(c) Fuel Breaks shall have, at a minimum, one point of entry for fire fighters and any Fire Apparatus. The specific number of entry points and entry requirements shall be determined by the Local Jurisdiction, in consultation with the Fire Authority.

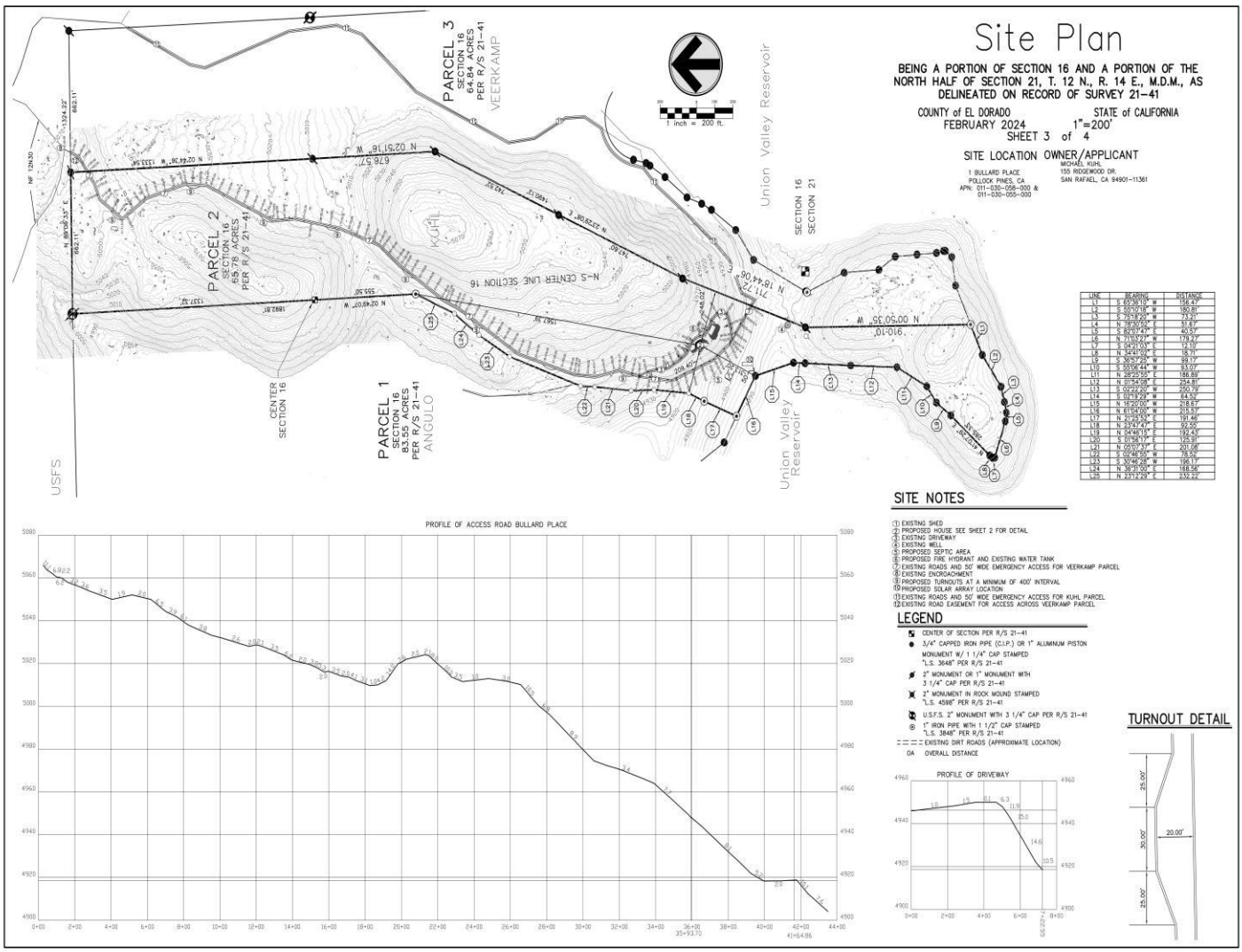
(d) Fuel Breaks may be required at locations such as, but not limited to:

(1) Directly adjacent to defensible space as defined by 14 CCR § 1299.02 to reduce radiant and convective heat exposure, ember impacts, or support fire suppression tactics;
(2) Directly adjacent to Roads to manage radiant and convective heat exposure or ember impacts, increase evacuation safety, or support fire suppression tactics;
(3) Directly adjacent to a Hazardous Land Use to limit the spread of fire from such uses, reduce radiant and convective heat exposure, or support fire suppression tactics;

Appendix F: Kuhl Single-Family Residential Dwelling Tentative Site Plans




Site Plan
BEING A PORTION OF SECTION 16 AND A PORTION OF THE NORTH HALF OF SECTION 21, T. 12 N., R. 14 E., M.D.M., AS DELINEATED ON RECORD OF SURVEY 21-41
COUNTY of EL DORADO
FEBRUARY 2024
STATE of CALIFORNIA
1"=20'
SHEET 2 of 4
SITE LOCATION
NF 12N30
1 BULLARD PLACE
POLLOCK PINES, CA
APN: 011-030-058-000 & 011-030-055-000
OWNER/APPLICANT
MICHAEL KUHL
155 RIDGEWOOD DR.
SAN RAFAEL, CA 94901-11361
LEGEND
CENTER OF SECTION PER R/S 21-41
3/4" CAPPED IRON PIPE (C.I.P.) OR 1" ALUMINUM PISTON MONUMENT W/ 1 1/4" CAP STAMPED "L.S. 3648" PER R/S 21-41
2" MONUMENT OR 1" MONUMENT WITH 3 1/4" CAP PER R/S 21-41
2" MONUMENT IN ROCK MOUND STAMPED "L.S. 4598" PER R/S 21-41
U.S.F.S. 2" MONUMENT WITH 3 1/4" CAP PER R/S 21-41
1" IRON PIPE WITH 1 1/2" CAP STAMPED "L.S. 3648" PER R/S 21-41
EXISTING DIRT ROADS (APPROXIMATE LOCATION)
OA OVERALL DISTANCE
NON-ENGINEERED FILL TO BE REMOVED
PROPOSED FILL AREA
Horizontal 1" = 20 ft.
Vertical 1 inch = 10 ft.
1 inch = 20 ft. Horizontal
CROSS SECTION OF NORTHWEST FACE HOUSE
CROSS SECTION OF CENTER HOUSE
CROSS SECTION OF NORTHWEST LIMITS OF PARKING
CROSS SECTION OF SOUTHEAST LIMITS OF PARKING
CROSS SECTION OF SOUTHEAST FACE HOUSE
Horizontal 1" = 20 ft.
Vertical 1 inch = 10 ft.


Site Plan
BEING A PORTION OF SECTION 16 AND A PORTION OF THE NORTH HALF OF SECTION 21, T. 12 N., R. 14 E., M.D.M., AS DELINEATED ON RECORD OF SURVEY 21-41
COUNTY of EL DORADO
FEBRUARY 2024
STATE of CALIFORNIA
1"=200'
SHEET 3 of 4
SITE LOCATION OWNER/APPLICANT
1 BULLARD PLACE
POLLOCK PINES, CA
APN: 011-030-058-000 & 011-030-055-000
MICHAEL KUHL
155 RIDGEWOOD DR.
SAN RAFAEL, CA 94901-11361
PARCEL 3
SECTION 16
64.84 ACRES
PER R/S 21-41
VEERKAMP
PARCEL 2
SECTION 16
65.78 ACRES
PER R/S 21-41
KUHL
PARCEL 1
SECTION 16
83.55 ACRES
PER R/S 21-41
ANGULO
CENTER SECTION 16
N-S CENTER LINE SECTION 16
Union Valley Reservoir
SECTION 16
SECTION 21
USFS
1 inch = 200 ft.
PROFILE OF ACCESS ROAD BULLARD PLACE
SITE NOTES
1) EXISTING SHED
2) PROPOSED HOUSE SEE SHEET 2 FOR DETAIL
3) EXISTING DRIVEWAY
4) EXISTING WELL
5) PROPOSED SEPTIC AREA
6) PROPOSED FIRE HYDRANT AND EXISTING WATER TANK
7) EXISTING ROADS AND 50' WIDE EMERGENCY ACCESS FOR VEERKAMP PARCEL
8) EXISTING ENCROACHMENT
9) PROPOSED TURNOUTS AT A MINIMUM OF 400' INTERVAL
10) PROPOSED SOLAR ARRAY LOCATION
11) EXISTING ROADS AND 50' WIDE EMERGENCY ACCESS FOR KUHL PARCEL
12) EXISTING ROAD EASEMENT FOR ACCESS ACROSS VEERKAMP PARCEL
LEGEND
CENTER OF SECTION PER R/S 21-41
3/4" CAPPED IRON PIPE (C.I.P.) OR 1" ALUMINUM PISTON MONUMENT W/ 1 1/4" CAP STAMPED "L.S. 3648" PER R/S 21-41
2" MONUMENT OR 1" MONUMENT WITH 3 1/4" CAP PER R/S 21-41
2" MONUMENT IN ROCK MOUND STAMPED "L.S. 4598" PER R/S 21-41
U.S.F.S. 2" MONUMENT WITH 3 1/4" CAP PER R/S 21-41
1" IRON PIPE WITH 1 1/2" CAP STAMPED "L.S. 3848" PER R/S 21-41
EXISTING DIRT ROADS (APPROXIMATE LOCATION)
OA OVERALL DISTANCE
PROFILE OF DRIVEWAY
TURNOUT DETAIL
25.00'
30.00'
20.00'
25.00'

Appendix G: Highly Flammable Trees & Vegetation

Highly Flammable Trees & Vegetation

It is advised that these trees and vegetation be removed from the defensible space area around structures.

Trees:	Grasses, Shrubs, Ground Cover
Acacia	Algerian Ivy
Arboritae California Bay	American Holly
Arizona Cypress	Bamboo
Bald Cypress	Black Sage
Blue Gum	Boxwood
Cedar	Brooms
Cryptomeria	California buckwheat
Cypress	California sagebrush
Eucalyptus	Chamise or greasewood
Pine	Deer Grasses
Hemlock	Dry annual Grasses
Italian Cypress	Fountain Grasses
Juniper	Gallberry Holly
Larch	Hopseed Bush
Leyland Cypress	Juniper
Manna Gum	Laurel sumac
Palm (when left untrimmed)	Coyote Brush
Palm Pine	Manzanita
Pepper Tree	Melaleuca
Fir	Pampas Grass
Red Cedar	Pine straw
Spruce	Podocarpus
Sugar Gum	Red Shanks
Tamarisk	Rosemary
Wax Myrtle Cabbage Palm	Salal
Yew	Saw Palmetto
	Scotch broom
	Scrub oak
	Spanish broom
	Sugar bush
	Toyon
	Wax Myrtle
	Yaupon Holly

*These plants are among those known for the amount of dead fuel that accumulates in them, and high oil, high resin, or low moisture content of their leaves and branches

**All plants are flammable if not pruned periodically and the risk attached to any one plant can be greatly diminished with maintenance.

Appendix H: Ready – Set – Go Wildfire Evacuation Program

WILDFIRE IS COMING. ARE YOU READY?

The geography, weather patterns and number of Wildland Urban Interface communities in California make it a state particularly threatened by devastating wildfire. To help educate property owners and residents in areas most at risk, CAL FIRE has developed a communications program called “Ready, Set, Go!” that breaks down the actions needed to be ready for wildfire.

Get prepared for wildfire before it strikes by following Ready, Set, Go!

- Be Ready: Create and maintain defensible space and harden your home against flying embers.
- Get Set: Prepare your family and home ahead of time for the possibility of having to evacuate.
- Be Ready to GO!: Take the evacuation steps necessary to give your family and home the best chance of surviving a wildfire.

Go to this link for additional information on the Ready - Set - Go program: https://www.readyforwildfire.org/prepare-for-wildfire/ready-set-go-campaign/ .

Appendix I: About the Author

This Fire Safe Plan was prepared in 2024 by Phillips Consulting Services of Georgetown, CA. The author, Ronald A. Phillips, has over 40 years of experience in both fire safety and emergency preparedness. Mr. Phillips served in a variety of positions within the California Fire Service including the position of Fire Chief for the City of Folsom between 2010 - 2016. He has a Bachelor of Science degree in Fire Administration along with several state and national program certificates in specialties such as the emergency management, fire prevention, arson & fire investigation, and the incident command system.

Phillips Consulting Services aids both public and private partners in the following areas of expertise:

Δ POST Incident Analysis & After-Action Reviews
Δ Homeland Security Exercises / Improvement Plans
Δ Emergency Management Planning & Documents
Δ Community Fire & Rescue Master Planning
Δ Special Event Planning
Δ Firewise™ Community Assessments & Plans
Δ WUI Site Assessments
Δ Pre-Incident Planning for First Responders
Δ Fire Code Inspections
Δ Emergency Evacuation Planning & Training