

# **GREEN SHEET**

**California Department of Forestry and Fire Protection  
(CAL FIRE)**

## **Informational Summary Report of Serious CAL FIRE Injuries, Illnesses, Accidents and Near Serious Accidents**



### **Valley Fire Shelter Deployment and Serious Burn Injuries**

**September 12, 2015**

**Valley SART**

**15-CA-LNU-008670  
15-CA-CDF-000580**

**California Northern Region**

A Board of Review has not approved this Informational Summary Report. It is intended as a safety and training tool, an aid to preventing future occurrences, and to inform interested parties. Because it is published on a short time frame, the information contained herein is subject to revision as further investigation is conducted and additional information is developed.

**Lookout**

**Communications**

**Escape Routes**

**Safety Zones**

## SUMMARY

This Informational Summary Report references, on Saturday, September 12, 2015, at approximately 1402 hours, one helitack fire captain and three helitack firefighters suffered serious burn injuries after becoming entrapped and then deployed their fire shelters on the Valley Incident, in Lake County, California.

## CONDITIONS

### Weather

Konocti Remote Automated Weather Station, approximately 5.5 miles north east of the burnover location at 1400 hours;

- Temperature: 88°
- Relative Humidity: 12%
- Wind: West 18 mph, gusts of 30 mph
- Fuel Moisture: Chamise 51%, fine dead fuels 3% (unshaded)
- Probability of Ignition: 89%

### Fuel Type

Conifers intermixed with hardwoods, pockets of Manzanita and Chamise. Size of brush: 6 foot plus, south of the deployment site.

### Road Conditions

Clear, dry

### Topography

Multiple intersecting drainages with short, moderate to steep, slopes.

### Fire Behavior

Approximately 110-130 acres with multiple spot fires resulting in understory burning with group tree torching and short crown runs driven by wind and/or slope alignment.

## SEQUENCE OF EVENTS

On Saturday, September 12, 2015, at approximately 1323 hours, a helitack crew was dispatched to a vegetation fire as part of an initial attack wildland response. The vegetation fire was reported at 8015 High Valley Road, in Kelseyville, California. At approximately 1330 hours, the helicopter (C1) with two fire captains, six firefighter I's, and one pilot lifted off from the Sonoma-Lake-Napa-Unit (LNU) helitack base. The front seat fire captain's (FC1) report on conditions was: two acres in grass and oak woodland, a moderate rate of spread, with one structure immediately threatened and the potential to burn 20 acres. C1 crew observed short range spotting with some isolated tree torching. FC1 and FC2 determined the left flank of the fire would be their priority. C1 landed in a field near an access road which led to the fire's left flank. When the helitack crew started a direct attack on the left flank towards a structure (RES1),

FC2 advised FC1 they should stay mobile and provide structure defense.

At 1332 hours, a battalion chief arrived at scene and assumed Valley Incident Commander, (IC). Shortly after, the Air Attack (AA) and two air tankers responded from the local airbase. The AA immediately requested three additional multi-engine type 3 air tankers.

FC1 told FC2 he was going to bump ahead of the helitack crew to scout. FC1 hiked across the black using a deer trail. After some time, FC1 told FC2, over the radio, to bump up. FC2 and helitack firefighters could see FC1 ahead of them as they approached a second residence (RES2). FC2 observed several spot fires and directed the helitack firefighters to assist FC1 in extinguishing the spot fires in the grass and on the wood deck surrounding RES2.

FC2 started hiking up the driveway and told FC1 that he was going to bump further ahead. Without direction, FF1 and FF6 followed FC2 up the driveway (Helitack B) in search of more structures to defend. FC2 observed a spot fire spreading near RES2 on the west side of the driveway, and advised FF6 to watch the spot fire. FC2 also yelled to FF1 to hustle up to their location due to the additional spot fires which spotted over the driveway. At approximately this time, FC1 directed FF2 to remain at RES2 for structure defense and told him to call on the radio if there were any issues. FC1, FF3, FF4 and FF5 (Helitack A) hiked cross country to the southeast toward a structure that was to their right on a ridge top. When they reached the ridge top FF3 observed spot fires advancing up the slope toward them. FF3 stood at the top as a lookout for a few minutes then met up with FC1, FF4 and FF 5.

The ridge top was under a canopy of pines and oaks but had very little low surface and ground level vegetation. Around the steel garage, was a 58 foot by 30 foot garden along the northwest (D) side of the steel garage, a 53 foot by 73 foot goat pen, and an eight foot wide dirt road running northwest/southeast separating the goat pen and garden. Soon after reaching the ridge top, FC1 directed FF5 to scout the southern side of a goat pen. FF5 hiked to the southwest side of the goat pen and observed a steep brush covered slope with no visible smoke or fire; the brush was approximately six to seven foot tall manzanita and chamise. Helitack A observed increased spot fires in the pine needles and leaf litter along the southwest side of the goat pen. They started to extinguish the spot fires but there were too many. FC1 directed FF3, FF4 and FF5 to get into the goat pen, which was clear to bare mineral soil. While in the goat pen they observed the fire behavior changing. There was an increase in the wind speed, and an increased number of spot fires in the pine needle duff and leaf litter surrounding them. FF3 saw fire sheeting and swirling across the dirt driveway on the northwest side of the goat pen; several pines torched on the west side of the steel garage.

From the location of RES2, FF2 observed increased fire behavior advancing toward Helitack A's location. FF2 communicated the increased fire behavior using the radio; FC1 acknowledged FF2's observation.

At approximately 1402 hours, the brush covered slope to their east completely torched into a wall of flame. The wall of flame sent a significant wave of radiant heat through the goat pen and onto the firefighters. They could feel their faces burning from the

radiant heat and all four firefighters ran to the fence, climbed over, and ran towards the steel garage. At the steel garage Helitack A started to deploy their fire shelters.

“May-Day” was transmitted from FC1 and was heard over the radio. From the location of a third residence (RES3), FC2 could hear FC1 say over the radio, “Four have deployed their shelters, near a barn on the right flank.” FF4 had difficulty opening the fire shelter case from the Chainsaw Pack; the clear plastic covering of the fire shelter was soft and melted. FF4 had to remove the gloves to tear the plastic away from the aluminum shell of the fire shelter. FF3 couldn’t get the fire shelter out of the case because the clear plastic cover was melted to the white plastic protective sleeve. FF3 looked up and saw FF4 at the north side (D) of the steel garage. FF3 dropped the fire shelter on the ground and ran to FF4’s location. FF3 and FF4 shared FF4’s fire shelter and stayed together in a crouched position. FC1 and FF5 deployed their fire shelters on the east side (A) of the steel garage. The heat in front of the steel garage was too intense so they moved to the north side (D) of the steel garage with FF3 and FF4 where the atmosphere seemed to be cooler.

Helitack A huddled together shielding the heat away from their already burned faces and hands; each of them could see the visible burns to one another’s faces and hands. FC1 continued to use the radio requesting bucket drops from C1 on their deployment location to cool the atmosphere. FF5 attempted to drink the water from the hydration pack but the water from the mouth piece was too hot to drink. While crouched in their fire shelters next to the steel garage, Helitack A suddenly heard explosions coming from inside the now burning structure. As a group, Helitack A moved a safe distance from the structure. Helitack A eventually crouched along the dirt driveway, separating the dirt garden and the goat pen.

From the driveways of RES3 and a fourth residence (RES4), FC2 directed C1 to make bucket drops into Helitack A’s location at the top of the ridge. C1 orbiting above and was unable to get near their location at the top of the ridge due to the thick column of smoke convecting straight up into the atmosphere.

A Division Chief (Div1) drove in the driveway of 15185 Bottle Rock Road and met up with Helitack B. Div1 drove up the driveway toward the deployment site approximately 200 yards to a fork in the driveway. At the fork, Div1 experienced heavy smoke and heat conditions. Div1 drove back to where Helitack B was standing, Helitack B loaded into Div1’s pick-up and they drove back up the driveway a second time toward the deployment site. The conditions were very smoky and hot. Div1 continued up the driveway using the line of trees on the right and left of the driveway as a guide. FC2 directed Div1 to stay left at the fork. They could see the shiny aluminum of the fire shelters ahead of them. Div1 honked the horn and drove up next to the deployed fire shelters. FC2 and FF6 exited the pick-up and assisted Helitack A into the bed of Div1’s pick-up. To protect them from the heat during the extrication, FF6 draped and held the fire shelters over Helitack A. Div1 drove down the driveway toward Bottle Rock Road to an emergency landing zone. Helitack A firefighters were stripped of their personal protective equipment and treated for their burns prior to being assisted into C1. C1 transported Helitack A to the LNU helitack base. At the helitack base, the treatment of the Helitack A firefighters continued. FC1 was transported by a medical helicopter and

FF5 was transported by another medical helicopter. At approximately 1520 hours, FF3 and FF4 were transported by C1 to the University of California Davis (UCD) Medical Hospital in Sacramento, California.

During the time Helitack A was being transported to the helitack base, Div1 and FF6 returned to RES2 to locate FF2. FF2 was located at RES2 uninjured and they returned to the helitack base.

## **INJURIES/DAMAGES**

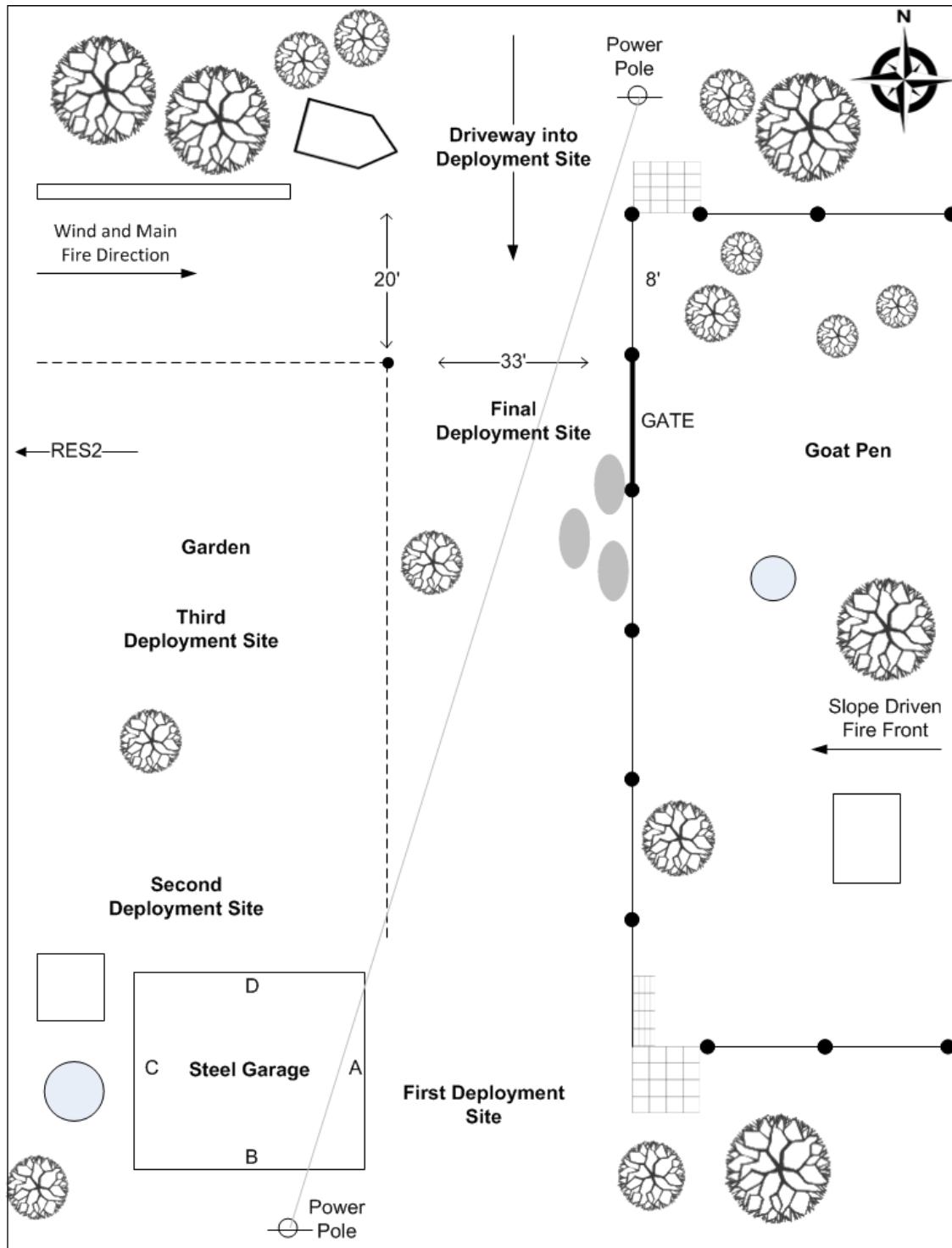
- FC1 suffered second and third degree burns to the head, face, ears, neck, back, arms, hands, legs and feet and has had several surgeries. FC1 remains in critical condition and is under the continued care of UCD Burn Center.
- FF4 suffered first and second degree burns to the face, head, ears, arms and hands and is under the continued care of UCD Medical Center.
- FF5 suffered first and second degree burns to the face, head, ears, arms, foot and hands and is under the continued care of UCD Medical Center.
- FF3 suffered first and second degree burns to the face, head, ears, arms and hands and is under the continued care of UCD Medical Center.

## **SAFETY ISSUES FOR REVIEW AND LESSONS LEARNED**

- Crews must utilize L.C.E.S when engaged in firefighting operations
- ALL Ten Standard Fire Orders MUST be obeyed at ALL TIMES
- Personnel MUST wear ALL CAL FIRE APPROVED PPE when engaged in firefighting operations
- Modifying Personal Protective Equipment can alter the protective properties
- Practice and prepare for shelter deployment in adverse and extreme conditions
- Be familiar with the WUI guidelines, S-FACTS, and Leader's Intent
- Maintain radio discipline and be familiar with Emergency Traffic Procedures
- Maintain incident and crew accountability at all times
- Correlate topographical features and changing fuel models
- Recognize the alignment of the three factors that influence wildland fire behavior
- Recognize extreme fire behavior indicators and anticipate the unexpected
- Utilize proper risk management methods and procedures
- Inspect fire shelters according to Handbook 4306.16

## PHOTOS/SITE DIAGRAMS/MAPS

### Sketch Map – Valley Fire Deployment Site



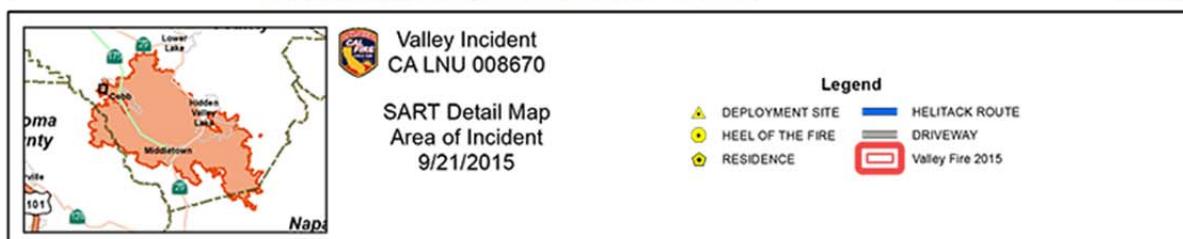
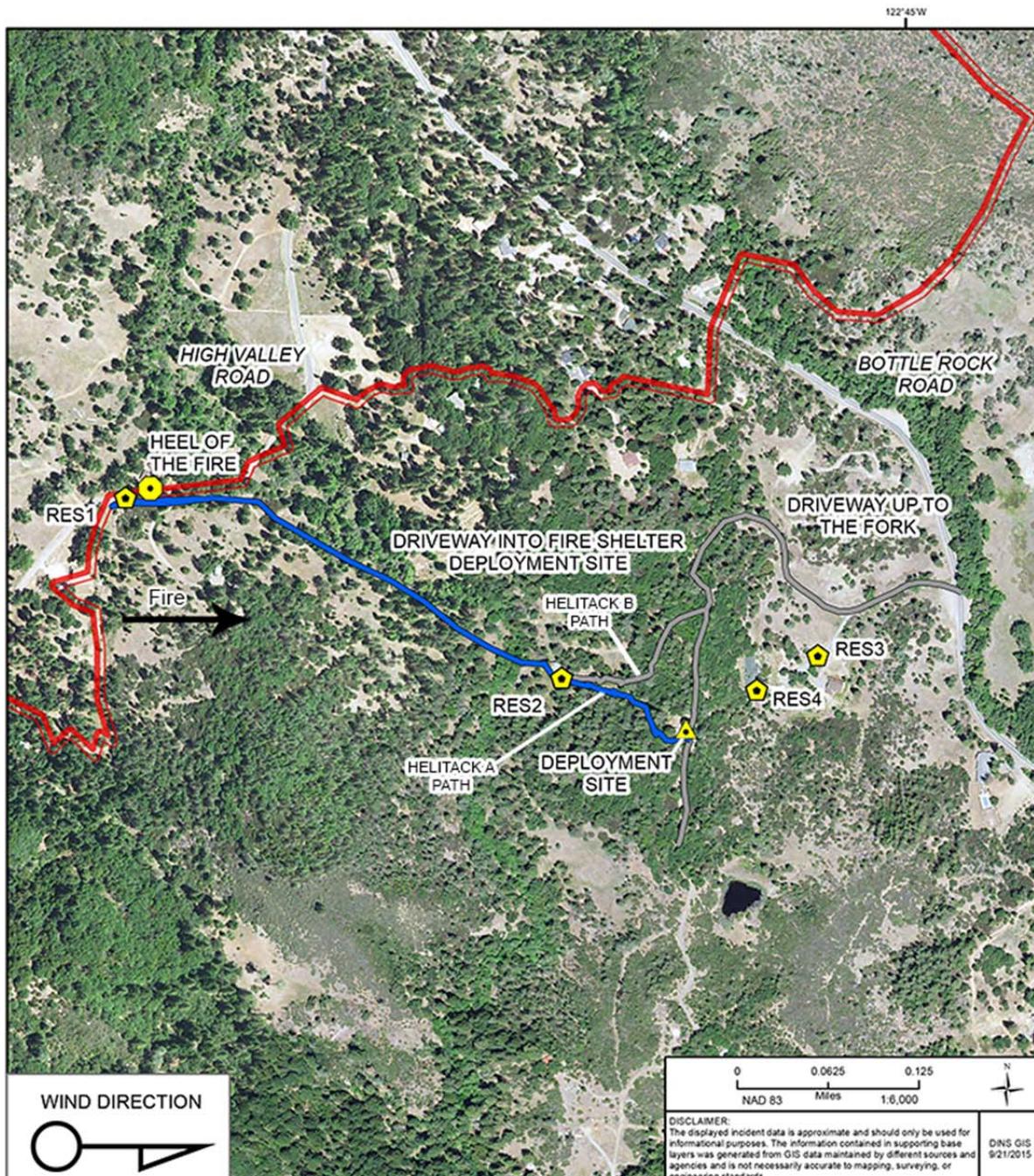
Lookout

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## Terrain Map – Valley Fire



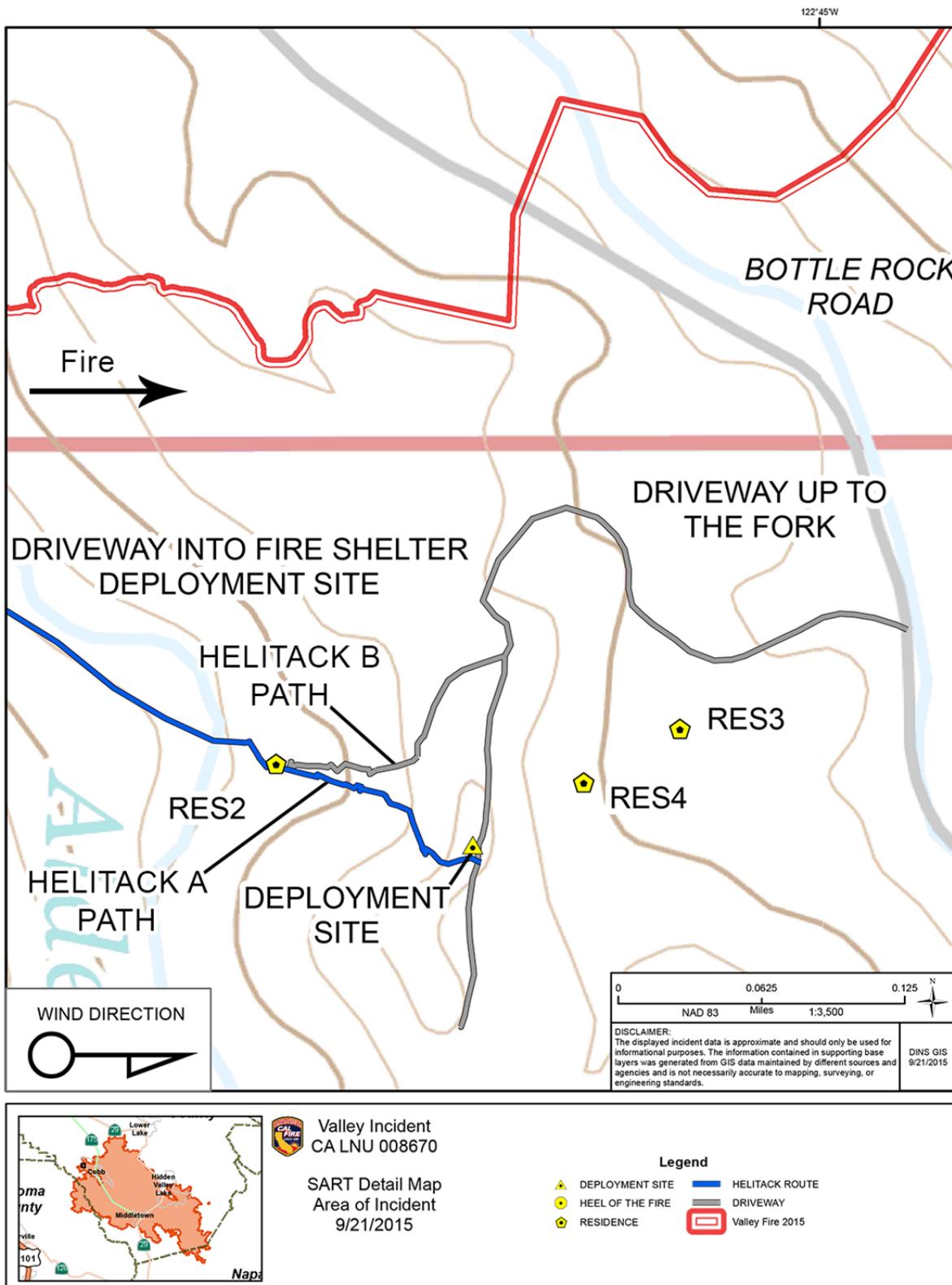
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## Terrain Map – Valley Fire



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AERIAL PHOTO – VALLEY FIRE

