



East Fork Fire and Paramedic Districts
Training and Safety Division

WILDLAND

TOPIC:	JESUSITA BURNOVER
TIME FRAME:	2:00
METHOD:	Handout, Discussion
OBJECTIVES:	<ul style="list-style-type: none">• Describe the sequence of events leading up to the burnover• Describe weather conditions on the incident leading up to the burnover• Describe the challenges the structure protection division was faced with• Review safety issues associated with the burnover
MATERIALS NEEDED:	<ul style="list-style-type: none">• Handout
REFERENCES:	<ul style="list-style-type: none">• <u>CalFire Green Sheet</u>
ASSIGNMENT:	<ul style="list-style-type: none">• Discuss ways to better provide for safety while assigned to structure protection.
SUNPRO CODE:	<ul style="list-style-type: none">• WLD 04.09

GREEN SHEET

California Department of Forestry and Fire Protection (CAL FIRE)

Informational Summary Report of Serious CAL FIRE Injuries, Illnesses, Accidents and Near-Miss Incidents



Jesusita Fire Burnover

Firefighter Burn Injuries with Engine Burnover, and Additional Related Near Miss Incidents

Wednesday, May 6, 2009

**CA-LPF-001479 – P5EV5C
CA-CSR-000031**

California Southern Region

A Board of Review has not approved this 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.

Lookouts

Communications

Escape Routes

Safety Zones

Summary

On the afternoon of Wednesday, May 6, 2009, several engine companies assigned to structure protection on the Jesusita Fire, North of the City of Santa Barbara, experienced extreme fire behavior related to the surfacing of strong down slope (sundowner) winds typical of the area. This sudden increase in fire behavior resulted in the burn over of a Ventura County engine company, causing burns and smoke inhalation to the engine crew members, and major damage to the fire engine.

During this same fire behavior event, several other engine companies and overhead personnel were required to take refuge in structures and apparatus. This event resulted in significant damage to one Type One engine, minor damage to three Type One engines, destroyed two light duty vehicles, and minor injuries to fire personnel.

Conditions

Fire Apparatus: The fire apparatus assigned to the Jesusita Incident directly involved with the serious accident (burnover) and near miss incidents are described in each event narrative.

Personnel: Abbreviations used to describe the firefighting personnel are as follows:

STEN	Strike Team Leader – Engines
STEN(T)	Strike Team Leader Trainee – Engines
ST	Strike Team
BC	Battalion Chief
FC	Fire Captain
FAE	Fire Apparatus Engineer or Apparatus Operator
FF	Firefighter

Location: North of the City of Santa Barbara in the urban interface border with the Los Padres National Forest; in the area of Mission Canyon.

Fuel Type: Fuels in the area were a true Model (4) chaparral; Sumac, Scrub Oak, Manzanita, Toyon, Chamise, Lemonade Berry, Ceanothus and Sage. Annual grasses with a contingent of Buckwheat played a significant role in spotting receptivity, especially in the urban interface. The heavy concentration of ornamental vegetation acted as a ladder fuel element. Ornamental species included Italian Cypress, Oleander, Juniper, Palm, Pepper, and a high concentration of Eucalyptus. Structures and personal property became supplementary fuel sources when ignited. A significant dead component existed in the fuel bed due to decreased seasonal precipitation and long term regional drought.

Fuel Loading: Canopy heights in the Model (4) fuels were estimated in the 8 to 12 foot range which supports fuel loading of approximately 15 tons per acre. This fuel bed had not been impacted by fire since the Coyote Fire of 1964, resulting in heavy fuel loading and high fireline intensities. Again, the high volume of structures within the vegetation contributed greatly to the overall fuel load and subsequent fire intensity and spread.

Fuel Continuity: Fuels in the chaparral layer were classified as continuous and dense; though fire behavior was generally pushed into the extreme category by the wind event. When the fire entered the interface; widespread spotting was observed in the less continuous annual grasses which propagated into heavier fuel beds.

Live Fuel Moisture: Live fuel moistures taken from regionally based measuring stations confirm that the observed and climatological based estimates of live fuel moistures were approximately 100 percent; accelerated in their traditional curing timeline by recent record high temperatures and drastically lower seasonal precipitation levels.

Dead Fuel Moisture: Fine dead fuel moisture in the 1 hour timelag category was calculated at between 2 and 4 percent on the day of the extreme fire behavior event. This exceptionally dry fuelbed was calculated at between 90 and 100 percent receptive to fire from an ignition source.

Weather Observations of May 6, 2009:

Time	Temperature	Relative Humidity	Wind Speed	Wind Direction
1200	87	36	4-10 Gust 13	SW
1300	95	18	5-10 Gust 12	N/NW
1400	98	14	4-10 Gust 21	N/NE
1500	98	17	10-17 Gust 43	NE
1600	96	19	17-20 Gust 39	NW

Precipitation Year	Normal	Seasonal to Date
2009	17.00 inches	10.00 inches

(Weather obtained from field observations, representation RAWs, and recognized weather networks)

Topography: Topography in the fire area was characterized by a principal ridge approximately 4000 feet in elevation with a generally south facing aspect. In the fire area the prevailing drainages run from the northeast to the southwest. Homes are placed in every aspect and level within the landscape between 500 and 1100 feet in elevation. Slope steepness runs from approximately 12 percent on the lower slopes to 57 percent in the higher canyons along the forest border.

Fire Behavior: On the morning of May 6th, fire behavior was classified as backing. However, the intensity of this backing fire was considerable, with nearly complete consumption of the chaparral fuel bed at the 1500 foot elevation. By 12:00 PM, the fire was reacting to the effects of an upslope wind component and increased solar radiation. Short fire runs from small scale spotting were being recorded. The fire was readily burning through retardant treated fuels. By 2:00 PM the predicted offshore wind stream began to interact with established up canyon winds resulting in an erratic, gusty wind flow. By 3:30 PM the downslope wind component, locally known as a "sundowner", was in full control with large scale spotting now being observed. This "sundowner" phenomenon is the product of a strong pressure gradient where stable air inland pushes downward. Often, the

subsiding air funnels downslope through canyons and passes with great velocity. Propelled by this wind pattern, fire spread was principally accomplished through spotting; often up to ½ mile ahead of the main body of fire. Each new spot then took full advantage of favorable topography and caused the fire to extend in multiple directions.

Sequence of Events

On Tuesday, May 5, 2009, at 1:45 PM, a wildland fire was reported burning in the foothills north of the City of Santa Barbara along the “Jesusita” hiking trail within the Los Padres National Forest – Santa Barbara Ranger District. Los Padres National Forest (LPF), Santa Barbara County Fire Department (SBC), and Santa Barbara City Fire Department (STB) initiated a coordinated wildland fire dispatch of fire suppression resources to the incident.

The first arriving SBC Division Chief reported a fire burning in heavy brush along the Jesusita Trail, approximately 1 mile above the Lauro Canyon reservoir, within the Direct Protection Area of the LPF. Access into the fire area was limited by the mid slope location of the fire. By 2:30 PM, Unified Command was established with the three agencies. Potential existed for the fire to move into State Responsibility Area (SRA), as well as the urban interface area, and a Type 1 Incident Command Team was selected to manage this incident due to the anticipated complexities of incident management. A CAL FIRE Incident Command Team (ICT) was ordered based on the predicted weather and potential for fire spread down slope off of the Forest, into SRA, and urbanized areas of Santa Barbara.

On Wednesday, May 6, 2009, an extended attack command structure (Type 3 Incident Command Organization per Interagency Standards for Fire and Aviation Standards – “Red Book”) conducted the operational briefing. This briefing covered incident objectives, weather, division assignments, communication plan, and a safety message. Weather predictions were discussed during the morning briefing for the potential of downslope “Sundowner” winds for the late afternoon and evening hours. The incident was planned to transition to CAL FIRE ICT-4 at 6:00 PM.

The fire was estimated at 400 acres, and later reduced in size to 200 acres after more accurate mapping. Fire spread was topography and fuel driven, and the predicted winds had not yet surfaced. The incident strategy for perimeter control included direct attack using Fire Crews, Type 3 engines, and aircraft. The fire was divided into two branches; Branch I (East portion), and Branch II (West portion). Branch I control operations were direct attack starting in the Spyglass area in Mission Canyon working to the West. Branch II control operations were direct attack from the origin along the Jesusita trail working to the East. Both Branches had significant challenges with limited access to the fire line and the mid slope location of the fire.

The Structure Protection Branch coordinated fire suppression resources among the residential areas. Three Structure Groups were developed: Tunnel Structure Group for the Tunnel Road area; San Roque Structure Group for the San Roque Canyon area; Mission Structure Group for the Mission Canyon Road area. Control operations for all structure groups within the Structure Branch were to prepare and triage structures which

could be threatened by an advancing fire. Access challenges existed for all Structure Groups due to the narrow roads, ornamental and native vegetation, and the arrangement of the homes among the canyons and ridges. An evacuation order was in place for the Northern portions of Mission and San Roque Canyons.

A Staging Area was set up at the Incident Base at Earl Warren Show Grounds. There was a considerable amount of fire suppression resources staged due to the possibility of fire progression downslope due to the forecasted "Sundowner" winds. Resources continued to arrive at staging throughout the day.

At approximately 2:20 PM, the fire was slightly over 200 acres, and the windy conditions at the higher elevations grounded the fixed wing aircraft. The fire continued to become more active as Northwest "Sundowner" winds began to surface, and a high intensity backing fire started to push down slope toward structures in the Mission Canyon Area. Branch I disengaged perimeter control resources and removed them from the upper sections of Mission Canyon due to this increase in winds and fire behavior. Branch II also disengaged the perimeter control resources and moved them back to a safe location. Both Branches were now experiencing stronger winds and increased activity.

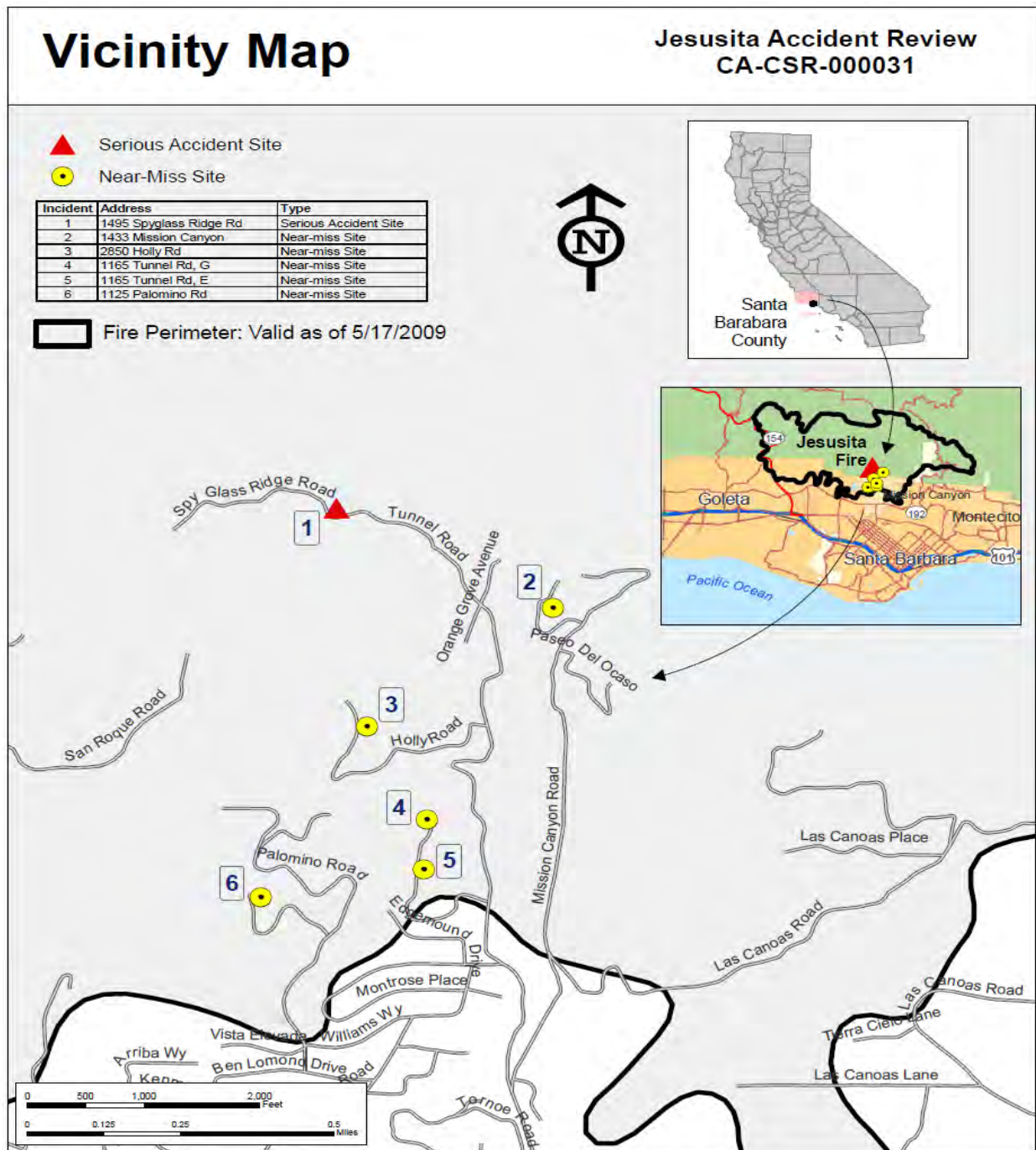
Structure Branch recognized the increased fire activity, and was coordinating resource movements within the Tunnel Group and Mission Group for structure protection. At 3:39 PM, Branch I reported significant fire activity and that the fire had moved down slope and was in the vicinity of the water tank at the end of Tunnel Road. Winds were reported to be between 20 and 30 miles per hour from the Northwest. At 3:46 PM, the Operations Section Chief reported substantial fire activity in the upper Spyglass Ridge Road and Mission Canyon area. In addition, the winds had increased to velocities that grounded rotary wing aircraft. At 3:50 PM hours Branch I reported the fire was burning above and below homes and resources in Mission Canyon and advised Structure Branch to pull the resources out of Mission Canyon.

At 3:52 PM, Tunnel Structure Group requested additional strike teams of engines for structure protection as the fire was spotting ¼ mile in front of the main fire front which was headed down slope. At approximately 4:00 PM, the fire front moved into the residential areas of upper Mission Canyon. Spot fires ahead of the fire front became established in the drainages above Lauro Reservoir, and caused multiple uphill fire runs from all directions into the residential areas of Mission Canyon. Engine companies assigned to Mission and Tunnel Structure Groups became engaged in structure protection operations.

Radio reports of firefighters trapped in structures, taking refuge in structures, or taking refuge in their engine were being reported. At 4:08 PM, the first report of injured firefighters was received. The Operations Section Chief and Structure Branch Director directed resources into the Mission Canyon area to assist with structure protection. Narrow roads, extreme fire behavior, downed powerlines, and heavy smoke conditions precluded fire suppression resources from exiting the area, as well as hampering resources from entering into the area to assist. Residents who remained in their homes within the evacuation area sought refuge with various engine companies in various locations. Multiple homes were burning adding to the heavy smoke and extreme temperatures. Some water systems within the residential area lost volume and pressure.

Strike Team Leaders and Engine Companies were bringing injured personnel to Santa Barbara County Fire Station 15 (located at Mission Canyon Road and Foothill Road) for initial treatment, or were taking them directly to the hospital outside of the knowledge of the incident. Residents that sought refuge with engine companies were escorted out of the area.

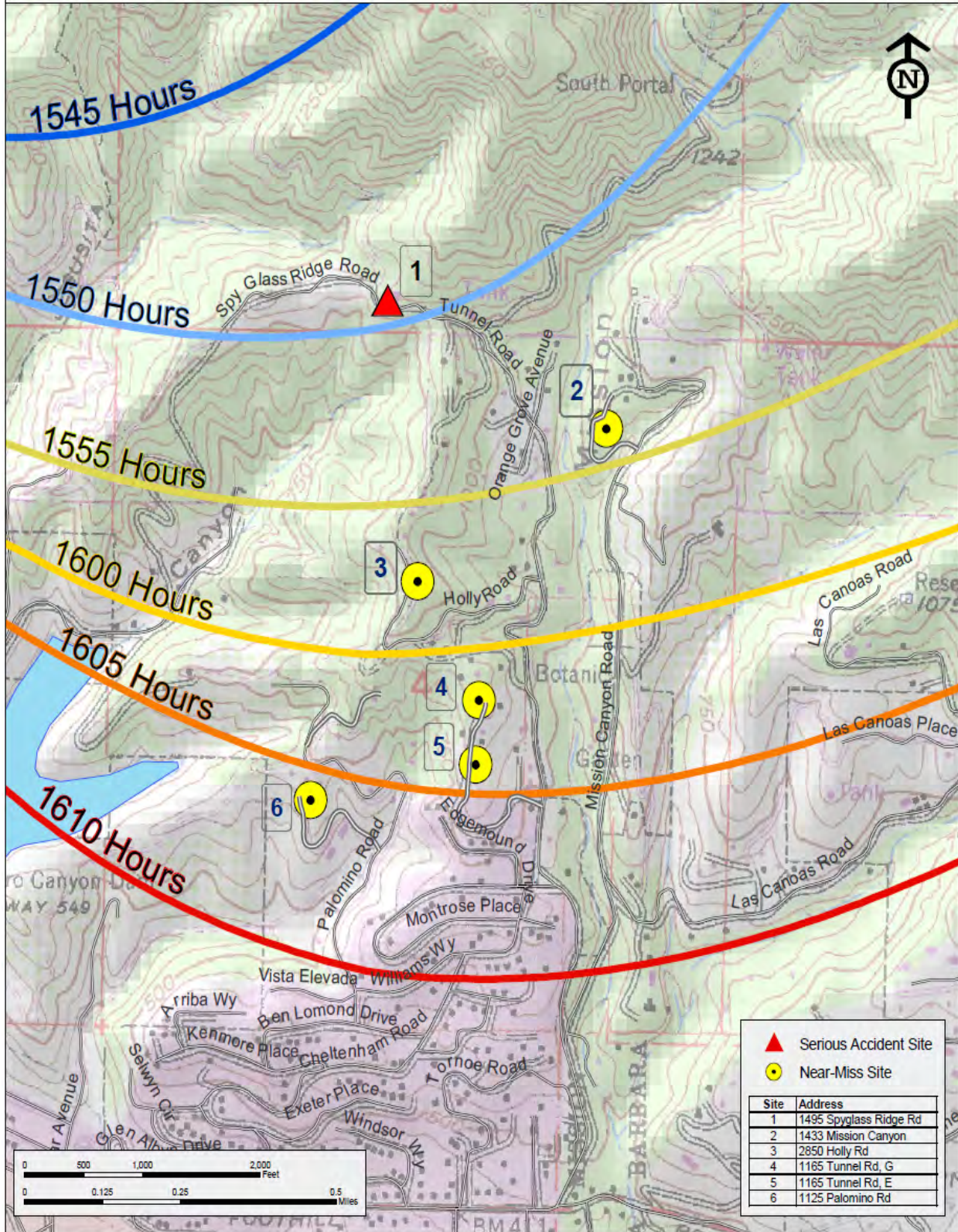
At 4:52 PM, the Operations Section Chief gathered intelligence on the burnover and firefighter injuries to brief the Incident Commander. The Agency Administrators were advised of the burnover and firefighter injuries, and a CAL FIRE Serious Accident Review Team (SART) was requested at 6:00 PM.



Incident Progression

Jesusita Accident Review
 CA-CSR-000031

5/6/2009, 1545 hrs to 1610 hrs

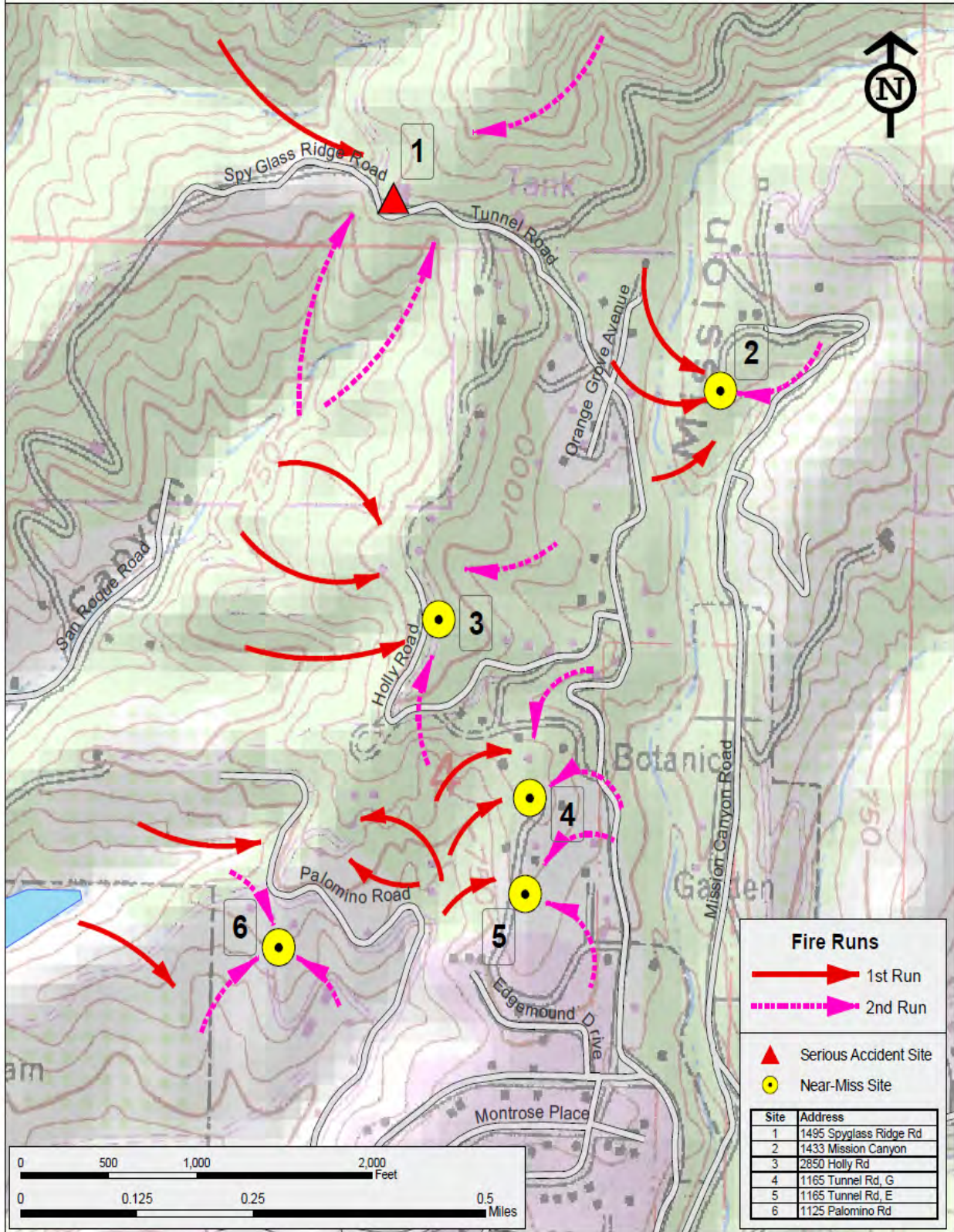


Kennedy, 5/17/2009

Fire Runs

5/6/2009, 1545 hrs to 1610 hrs

Jesusita Accident Review
 CA-CSR-000031



Kennedy, 5/17/2009

Detailed Sequence of Events for each burn over or Near Miss incident:

Spyglass Ridge Road

Equipment and Personnel:

Ventura County Department (VNC)

VNC Engine 54 (E-54) is a 2007 American LaFrance Type I fire Engine. E-54 was staffed with a Fire Captain, a Fire Apparatus Engineer and one Firefighter during the burnover.

VNC Engine 30 (E-30) is a 2004 American LaFrance Type I Fire Engine. E-30 was staffed with a Fire Captain, a Fire Apparatus Engineer and one Firefighter.

(See 1495 Spyglass Ridge Road Map attached)

Ventura County Fire Department (VNC) Engine Strike Team (ST) 1580A was assigned to the Tunnel Structure Group of the Structure Protection Branch. The strike team moved to the Santa Barbara Mission where an additional safety briefing was conducted by the Tunnel Structure Group Supervisor.

At approximately 9:00 am, VNC ST-1580A was positioned in the Spyglass Ridge Road residential area. A tailgate safety briefing was conducted, and the cul-de-sac at the end of Spyglass Ridge Road was identified as the Safety Zone. The fire was located on the ridge above (North of) their location. Fire behavior was of low intensity as the fire backed downhill against the wind, and was burning in a continuous fuel bed of mature chamise.

Throughout the day the engine crews from VNC ST-1580A performed structure preparation; moved combustible items away from the structures; cleaned out rain gutters; and applied aluminum foil to vent openings. VNC E-54 performed these tasks at their assigned location of 1495 Spyglass Ridge Road. Two hose lines were pre-positioned around the main house. VNC E-54 prepositioned two hoselines. A 100' 1 ½" hose was placed along the West side of the main house, and a 100' 1 ¾" was placed at the bottom of the driveway near the Northwest corner of the main house. Both hose lines were connected to a gated wye for connection to the water supply when needed. Three Self-Contained Breathing Apparatus (SCBA) were also prepositioned inside the living room of the main house.

At approximately 2:01 P.M., VNC E-42, located at the adjacent residence to the West, observed and documented a shift in the wind direction and speed. The winds changed from upslope South-Southwest to across the slope from the Northwest. Fire activity began to increase on the ridge above their position. The Northwest wind continued to increase, and the fire began to move downslope toward Spyglass Ridge Road.

At approximately 3:35 P.M., FC-54 noticed a spot fire above the location of E-54. At the same time, FF-54 pointed out another spot fire near the Southeast corner of the main house. A 200' 1 ¾ hose line was then connected from E-54 to the gated wye to charge

the pre-positioned hose lines. FC-54 then radioed STEN 1580A and advised that another fire engine was needed. E-30 moved to assist, and backed in next to E-54.

At approximately 4:00 p.m. the fire made extreme advances towards the Spyglass Ridge Road area. Numerous spot fires caused a condition similar to area ignition around 1495 Spyglass Ridge Road. FC-54 told FF-54 to protect the rear of the main structure. After several minutes of firefighting, FC-54 took FF-54 into the structure, entering through the back door on the Southwest side to wait for the fire to pass. While inside the structure, FF-54 removed his web gear and fire shelter and donned his SCBA. FC-54 also donned his SCBA over his web gear and fire shelter.

As the fire intensity increased, FC-54 radioed STEN-1580A and advised that the FC-54 and FF-54 were in the structure and needed immediate aircraft support. The main house began to burn, and FC-54 and FF-54 moved to various rooms in the house as the fire progressed through the structure. FAE-54 had remained at E-54, and used the engine protection line to protect the engine from the advancing fire.

FAE-54 was trying to make radio communication with FC-54 and FF-54 but no contact was made. FAE-54 again radioed FC-54 and advised him E-54 was out of water. As the fire advanced towards E-30 location, E-30 dropped their hoselines, donned their SCBA's, and took refuge in the cab. E-30 was out of water, and FC-30 told FAE-54 to get in the cab of E-30. With concerns for E-54's crew, he reluctantly jumped into the cab of E-30. With FAE-54 now inside the cab with E-30's crew, they attempted to drive down the driveway to safety but were halted by a wall of flames. E-30 waited for a break in the flaming front then drove down the driveway dragging all their hose and nozzles.

With the majority of the main house burning, FF-54 crouched down and removed the fire shelter belonging to FC-54 and prepared to use it as a heat shield while exiting the structure. Before the fire shelter could be fully opened, the sliding glass door shattered, and a rush of heat entered the room. FC-54 made the decision to leave without using the fire shelter.

As FC-54 and FF-54 exited the structure, FC-54 instantly felt his skin burning. FF-54 fell to the ground as FC-54 ran up the driveway towards E-54. FC-54 thought that FF-54 was attempting to deploy the fire shelter at that location. FC-54 yelled at FF-54 to continue to the fire engine. FC-54 arrived at the fire engine and climbed into the back seat on the passenger side still wearing his SCBA. FC-54 could not locate FF-54 and his low air warning device was sounding on his SCBA.

FC-54 radioed to STEN-1580A and told him that he had returned to the location of E-54. STEN-1580A radioed back and told him that he would come and get him. FF-54 then radioed that he was also back at E-54. STEN-1580A arrived at E-54 and the STEN (T)-1580A placed FF-54 and FC-54 into the rear seat of the vehicle. STEN-1580A drove the injured FC-54 and FF-54 to the residence located at 2845 Spyglass Ridge Road where Paramedic Engine 32 initiated treatment. Both victims were assessed by the Paramedic and a medivac helicopter was requested due to their extensive burn injuries, but could not make access due to the conditions.

Branch I arrived, and was preparing to transport FF-54 along with the Paramedic when a paramedic ambulance escorted by a law enforcement officer arrived. The paramedic ambulance with the injured FC-54 and FF-54, assisted by a FF-Paramedic from ME-32, transported both patients to Cottage Hospital for evaluation. They were subsequently flown to Grossman Burn Center. STEN (T)-1580A was transported by Branch I to Santa Barbara County Fire Station #15 for smoke inhalation injuries. A paramedic ambulance transported STEN (T)-1580A to Cottage Hospital for initial evaluation, and was subsequently flown to Grossman Burn Center. FAE-54 sought treatment for smoke inhalation on May 9, 2009. All structures at 1495 Spyglass Ridge Road were destroyed.

INJURIES:

VNC Strike Team Leader-Trainee (STEN-T) Fire Captain:

- Smoke inhalation

VNC Engine 54 Fire Captain (FC-54):

- 1st and 2nd degree burns to both ears, sideburn areas, and forehead.
- 1st and 2nd degree burns to both arms, from the wrist to just above the elbow.
- 1st and 2nd degree burns to the back of right hand
- 1st and 2nd degree burns to left calf

VNC Engine 54 Fire Apparatus Engineer (FAE-54)

- Smoke inhalation

VNC Engine 54 Firefighter (FF-54)

- 1st and 2nd degree burns to forehead
- 1st and 2nd degree burns to left side of neck
- 2nd and 3rd degree burns left ear
- 3 ½ inch laceration to right side of neck below jaw
- 2nd and 3rd degree burns to both shoulders and upper back
- 1st, 2nd, and 3rd degree burns to triceps area of both arms
- 2nd and 3rd degree burns to palm of right hand
 - Includes palm side of all fingers

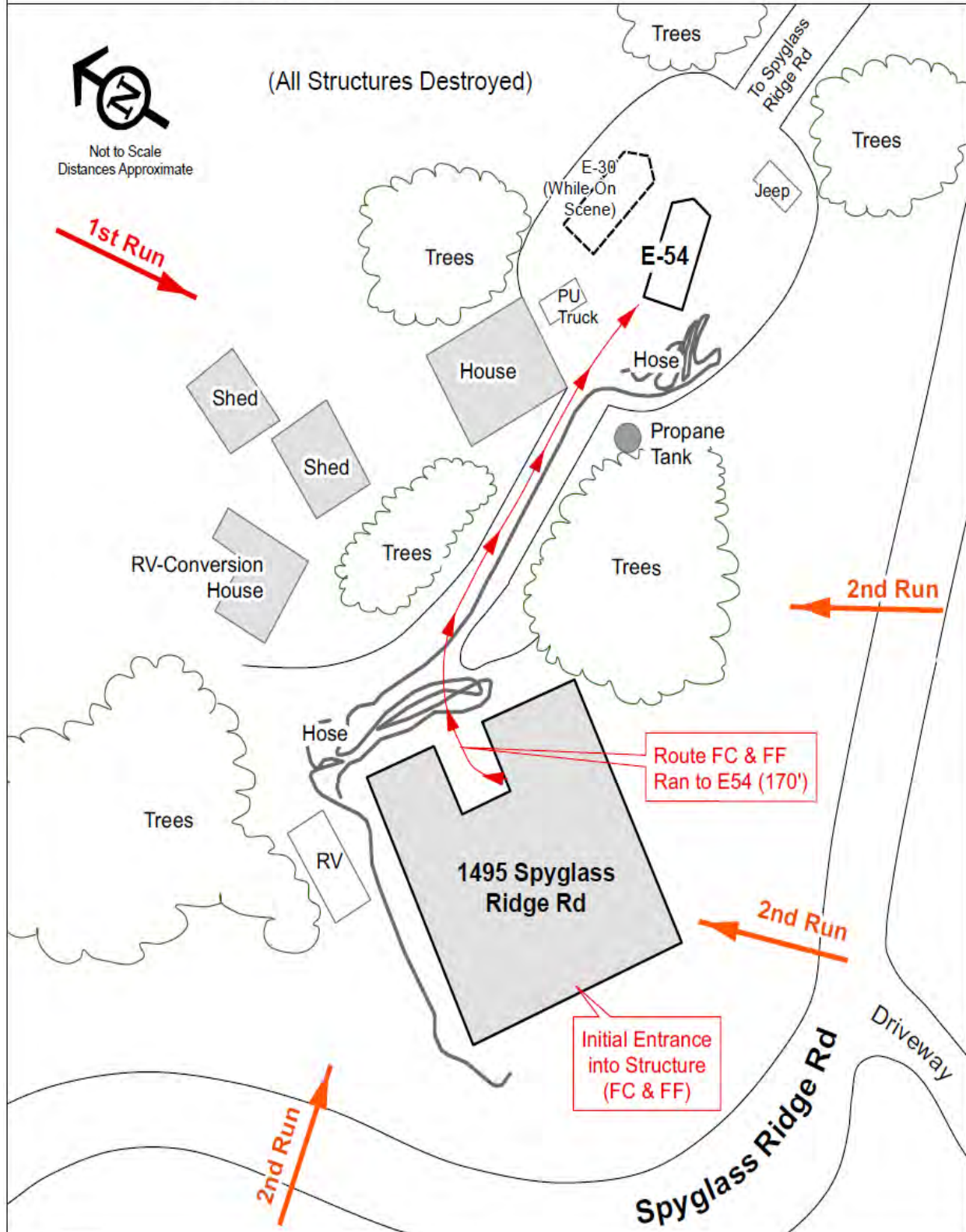
DAMAGES:

- VNC E-54 had severe fire damage to the front and left side of the apparatus. The hose bed had major damage from the cribbing and hose that caught fire. The apparatus had a transmission leak along the left frame rail, but was physically driven off the mountain.
- VNC E-30 received minor exterior heat/fire damage.

1495 Spyglass Ridge Rd

Jesusita Accident Review
CA-CSR-000031

Accident Site



Kennedy, 5/17/2009

Lookouts

Communications

Escape Routes

Safety Zones

Mission Canyon Road

Equipment and Personnel:

Los Angeles County Fire Department (LAC)

LAC Engine 149 (E-149) is a 1995 KME Type I Fire Engine. E-149 was staffed by a Captain, a Fire Apparatus Engineer, and two Firefighters.

(See 1433 Mission Canyon Map attached)

On Wednesday May 6, 2009 Los Angeles County Fire Department (LAC) ST-1241A was assigned to the Mission Structure Group. The entire strike team was briefed by STEN-1241A, and staged in the Botanical Gardens in Mission Canyon. STEN-1241A performed a reconnaissance of upper Mission Canyon Road and deployed the engines to protect structures in the northern end of Mission Canyon Road. STEN-1241A provided a safety briefing identifying the structures and a graded lot below 1433 Mission Canyon Road as safety zones. E-149 was assigned the structure located at 1433 Mission Canyon Road, backed into the driveway, and deployed two 1" reel-lines to the entrance of the driveway and front of the house.

At approximately 3:00 PM the wind transitioned from an upslope southerly direction to a down canyon northerly direction and increased substantially. The head fire made a run down the Mission Canyon Drainage toward 1433 Mission Canyon Road. Spot fires developed around the structure. At approximately 3:40 PM conditions deteriorated more than anticipated. At approximately 3:55 PM, due to strong winds, intense heat and poor visibility, FC-149 called for the crew to retreat into the structure. Accountability was conducted and STEN-1241A was notified via radio.

The engine crew entered the structure twice to avoid heat and once to get out of the smoke. One firefighter suffered heat related symptoms and moderate respiratory distress. He was transported to Cottage Hospital by STEN-1241A, kept overnight for observation and released the next day. The engine sustained damage to a hose reel and ladder protectors. The house received minor damage.

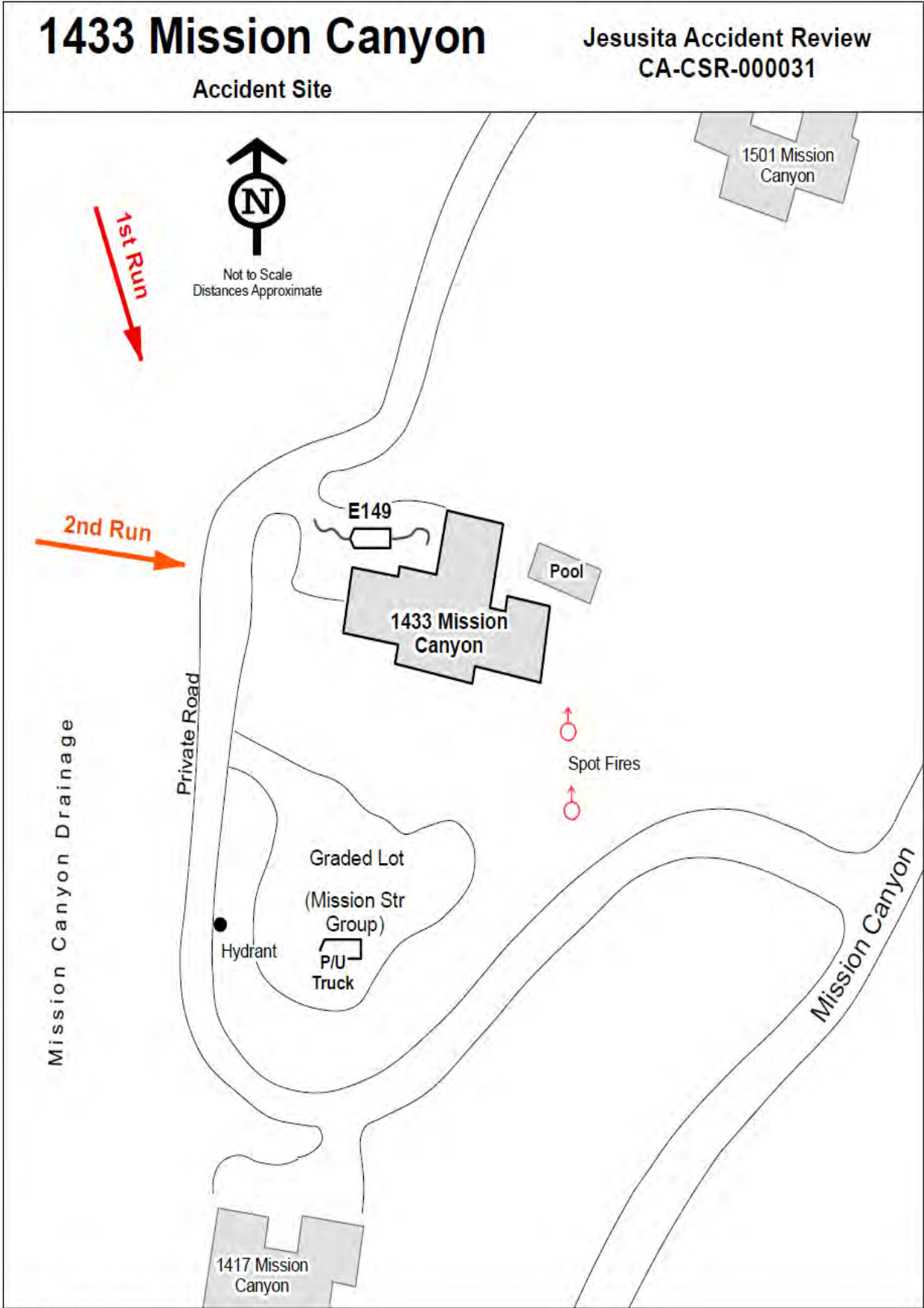
INJURIES:

LAC Engine 149 Firefighter (FF-149)

- Heat exhaustion and smoke inhalation

DAMAGE:

LAC E-149 had the ladder cover with heat/fire damage.



Holly Road

Equipment and Personnel:

Los Angeles City Fire Department (LFD)

LFD Battalion 18 (B-18) is a 2007 Chevy Suburban. B-18 was staffed with a Battalion Chief and a Firefighter-Staff Assistant.

LFD Utility 33 (U-33) is a 2003 Ford Crew-cab two-wheel-drive pick-up truck. Utility 33 was staffed by a Battalion Chief.

(See 2850 Holly Rd Map attached)

On Wednesday, May 6, 2009, Los Angeles Fire Department (LFD) ST-1001A was assigned to Tunnel Structure Group. STEN-1001A was given a tour of the area by the Tunnel Structure Group Supervisor, and at 11:00 AM returned to brief the crews and give out assignments. Engines were in place at their locations at approximately 11:30 A.M. E-14 was assigned as a roving engine for ST-1001A and was the lookout for Holly Road.

At approximately 2:50 P.M., the winds began to increase and turn down slope. At approximately 3:00 P.M. the winds were periodically gusting at an estimated 40 to 60 miles per hour; according to the crew of E-14 at the top of Holly Road. E14 requested more engines for assistance on Holly Road because of the large amount of unprotected structures and change in weather.

At approximately 3:45 P.M., lead by B-18 and U-33, E-35 drove up Holly Road to the turnaround at 2910. E-35 noticed a spot fire in the north drainage beyond 2911 Holly Road. Shortly after that, the ridge area surrounding Holly Road where E-14, E-35, STEN-1001A, STEN(T)-1001A and their staff assistant was located experienced multiple spot fires, which led to extreme fire behavior resulting in multiple fire fronts moving through the area. During the same time the hydrant system in the area lost water.

STEN-1001A immediately gave the order to take refuge. STEN-1001A, STEN(T)-1001A, FAE-14, one firefighter from E-14, FAE-35, and 5 civilians took refuge in the residence at 2910 Holly Road. FC-35 and two Firefighters from E-35 took refuge in the structure located at 2911 Holly Road as their escape route was blocked. FC-14 and one firefighter from E-14 took refuge in the structure located at 2931 Holly Road. They decided the structure would not withstand the fire, and moved to 2921 Holly Road. They took refuge for approximately 15-20 minutes, and when conditions permitted, made their way to 2910 Holly Road with the other personnel.

The Staff Assistant originally took refuge in a structure at 2850 Holly Road and moved to the garage after the front window gave way and the fire moved into the house. The staff assistant moved to the home at 2910 Holly Road when conditions permitted. Eight fire personnel took refuge at 2910 Holly Road and remained there with the five civilians for approximately 20 additional minutes. Structure PPE and 5 SCBA's were brought inside

2910 Holly Road as a precaution when the windows cracked due to the fire. The three fire personnel from E-35 took refuge in the home at 2911 for the entire fire siege.

During the entrapment, accountability reports were made via a LFD tactical frequency with all the engine crews involved with STEN-1001A. The Crews of E-14 and E-35 resumed firefighting operations after the fire had passed and located additional water sources. LFD Command Vehicle B-18 and U-33 were parked in the driveway at 2850 Holly Road and were destroyed by fire. STEN-1001A experienced debris in both eyes, and was treated and released at a local hospital. Structures at 2931 Holly Road, 2921 Holly Road, 2850 Holly Road were destroyed.

INJURIES:

Strike Team Leader (STEN) Battalion Chief

- Severe eye irritation

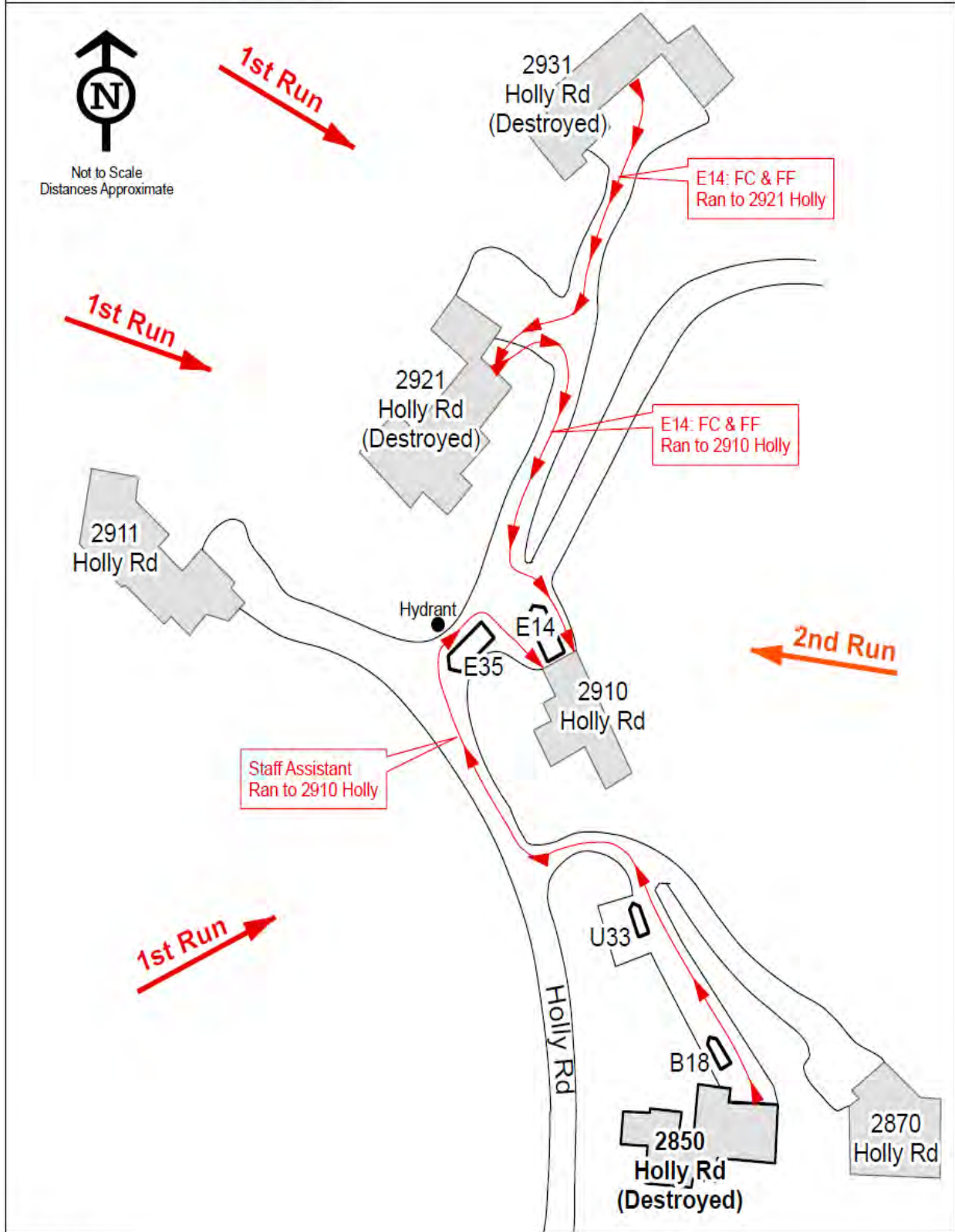
DAMAGES:

- LFD B-18 was completely destroyed.
- LFD Utility 33 was completely destroyed.

2850 Holly Rd

Accident Site

Jesuita Accident Review
CA-CSR-000031



Kennedy, 5/17/2009

Lookouts

Communications

Escape Routes

Safety Zones

Tunnel Road

Equipment and Personnel:

Santa Paula City Fire Department (SPA)

SPA Engine 81 (E-81) is a 2001 Ferrara Type I Fire Engine. E-81 was staffed by a Captain, a Fire Apparatus Engineer, and one Firefighter.

Ventura City Fire Department (VEN)

VEN Medic Engine 5 (ME-5) is a 2000 Seagrave Type I Fire Engine. ME-5 was staffed by a Captain, a Fire Apparatus Engineer. and two Firefighters.

(See 1165 Tunnel Road E and G attached)

On May 6 at approximately 7:30 AM, Ventura County Operational Area (XVE) ST-1550A was assigned to the Tunnel Structure Group. Santa Paula City Engine E-81 performed structure triage at 1165 Tunnel Road #E. At approximately 4:00 P.M., E-81 experienced heavy spotting from the East and West. FC-81 gave the order to apply Class A foam directly to E-81 for protection from the extreme heat. FC-81 directed self contained breathing apparatus from E-81 to be placed by the side entrance of 1165 Tunnel Road #E. After 2 to 3 minutes FC-81 gave the order to take refuge in the residence. After entering the residence the decision was made to move E-81. The FAE-81 and FF-81 each donned a SCBA and repositioned E-81. When the fire front passed the crew from E-81 met with Ventura City Engine ME-5, and XVE STEN-1550A to debrief. No firefighters were injured.

The engine received minor damage to the left rear upper equipment compartment while being repositioned. The crew from E-81 returned to firefighting duties and completed their shift. No injuries resulted. Minor Damage occurred to the wall at 1165 Tunnel Road #E from the contact with E81.

Medic Engine 5 (ME-5), also part of XVE ST-1550A, performed structure triage at 1165 Tunnel Road #G. At approximately 4:00 P.M., ME-5 also experienced numerous spot fires from all directions. FC-5 gave the order to don SCBA, and continue firefighting. After the crew went through one and a half bottles of air, the crew from ME-5 experienced zero visibility and extreme heat. FC-5 gave the order to take refuge in ME-5. When inside ME-5, FC-5 gave the order to remove fire shelters from their cases. FC-5 opened his fire shelter and placed it on the dash board of the engine to deploy as a heat shield if needed. Radio contact was made with XVE STEN-1550A, and told of their situation. FC-5 gave the order to move to the location of E-81 where they were briefed by XVE STEN-1550A. All firefighters were uninjured and resumed their firefighting duties.

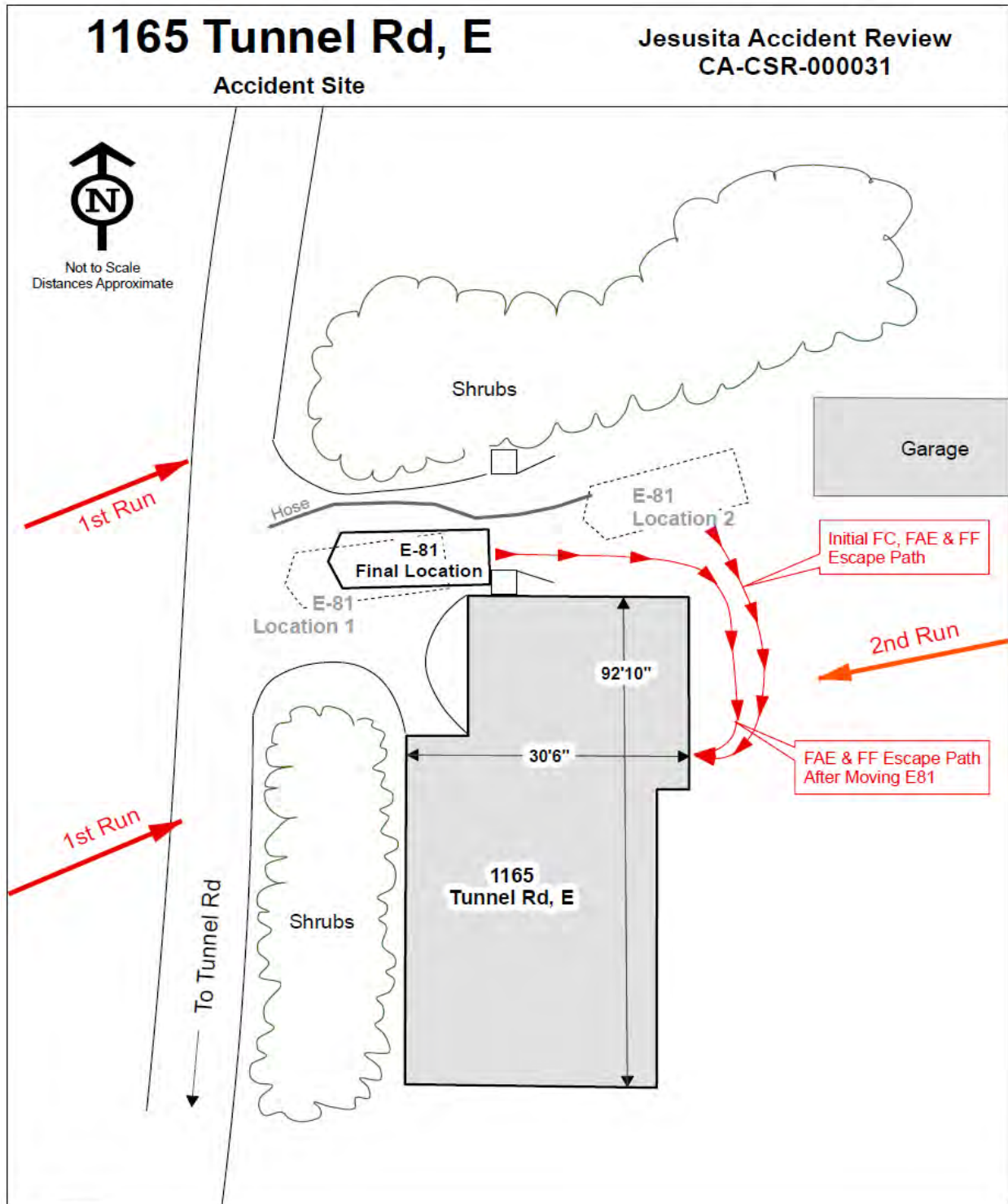
Out buildings were destroyed at 1165 Tunnel Road #G. The main structure received minor damage. All structures were destroyed at 1165 Tunnel Road # A and 1255 Tunnel Road.

INJUIRES:

None Reported

DAMAGE:

SPA E-81 received damage to the left rear upper compartment door and the body had scraping damage consistent with striking a concrete wall. The chrome bezel around the left rear stop, turn signal and back up light assemblies had scrape damage. The engine did not have an ember screen installed in the motor air intake system.



Kennedy, 5/17/2009

Lookouts

Communications

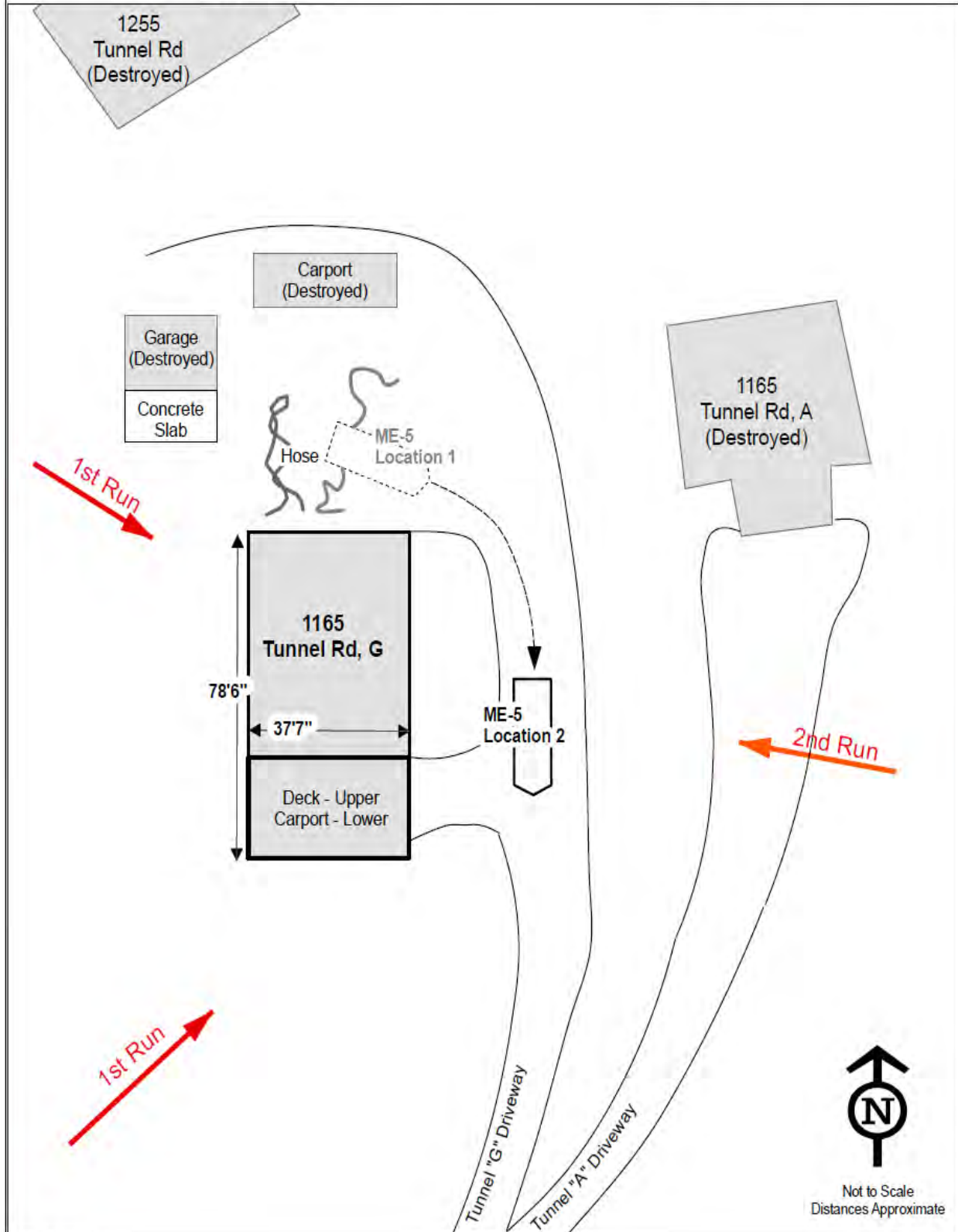
Escape Routes

Safety Zones

1165 Tunnel Rd, G

Accident Site

Jesusita Accident Review
CA-CSR-000031



Kennedy, 5/17/2009

Lookouts

Communications

Escape Routes

Safety Zones

1125 Palomino Road

Equipment and Personnel:

Los Angeles County Fire Department (LAC)

LAC Engine 70 (E-70) is a 2007 KME Type I Fire Engine. E-70 was staffed by a Captain, a Fire Apparatus Engineer, and two Firefighters

(See 1125 Palomino Road Map attached)

On May 6, 2009, Los Angeles Fire Department (LFD) ST 1002A was assigned to protect structures on Palomino Road. After receiving the morning briefing and instructions from LFD STEN-1002A, the strike team arrived on Palomino Road at approximately 10:00 AM.

LFD STEN-1002A scouted the area, developed a plan and began to prepare the homes for the fire front. LFD E-98 was positioned facing the direction of egress along Palomino Road directly in front of 1121 Palomino Road. Firefighters deployed two hose lines. One line was identified to protect the home at 1125 Palomino Road and the other line would be used to protect the structure at 1121 Palomino Road. Firefighters removed combustible items away from the structures and established a water source from a supply line pumped from another engine hooked to a hydrant located approximately 300 feet down the road.

LAC ST-1240A was off shift from the previous night and called back to duty from the Incident Base when additional resources were requested. LAC ST-1240A was then assigned to Tunnel Structure Group and arrived at Palomino Road at approximately 3:25 PM. After receiving instructions from LAC STEN -1240A, LAC E-125 and LAC E-70 drove up the lower spur of Palomino Road to protect structures. They were unaware of other engines located on Palomino Road.

Both LAC E-125 and LAC E-70 drove up lower Palomino Road and observed spot fires in the drainage below as they drove around the bend. LAC E-125 went to the end of Palomino Road and backed into the driveway of 1125 Palomino Road, LAC E-70 drove past LAC E-125 and stopped to allow LAC E-125 to clear the driveway. LAC E-125 pulled out of the driveway and proceeded back down Palomino Road.

LAC E-70 backed into the driveway at 1125 Palomino Road in an attempt to turn around. The fire activity increased and LAC E-70 was unable to make the turn and stopped. Firefighters attempted to deploy hose lines to protect their engine. LFD FC-98 observed LAC E-70's position getting hit by the fire front. LFD E-98 and his two firefighters placed E-98's second hose line into operation to protect LAC E-70. Conditions deteriorated, and LFD FC-98 gave instructions for everyone to take refuge in the structure located at 1125 Palomino Road. LAC FAE-98 remained at the engine while the remainder of the crew sought refuge. The crew from LAC E-70, along with two firefighters from LFD E-98, took refuge in the garage. LFD FC-98 took shelter in the main part of the structure. LFD FC-98 directed the crews to move from the garage to his location farther into the house

LAC FC-70 and LFD FC-98 contacted their respective STEN's by radio as to having had to shelter in the structure. A few minutes later LAC STEN-1240A radioed LAC FC-70 that

he was outside the building and it was safe to come out. The crew from LFD E-98 went back to their engine and continued fighting fire. The crew from LAC E-70 returned to the engine and found it had stopped running. The engine was re-started driven to base camp, and was placed out of service in Ground Support.

LAC FAE-70 suffered heat exhaustion, was transported to the hospital via ambulance, treated and released. LAC E-70 received moderate damage. The structure at 1125 Palomino Road was destroyed.

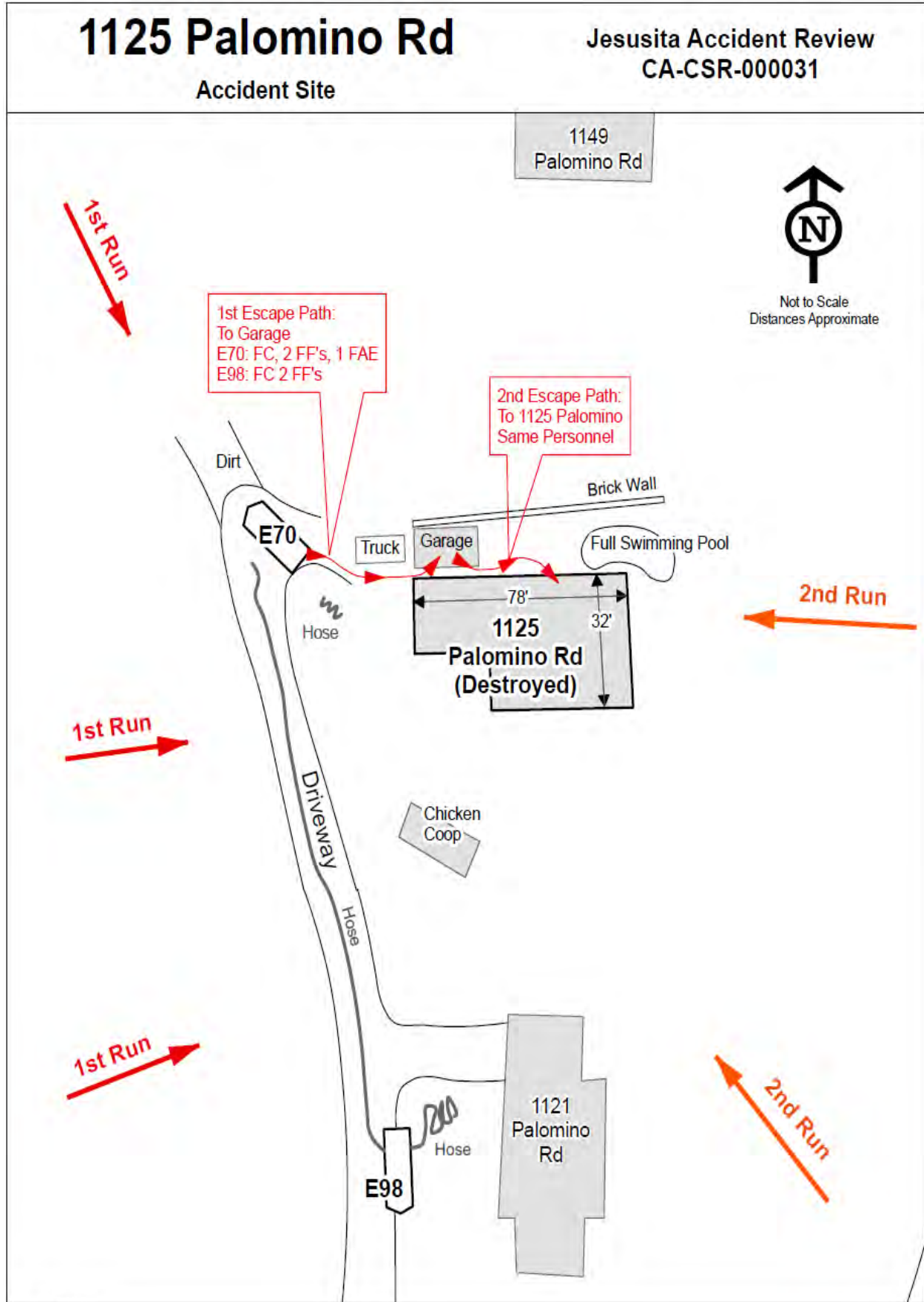
INJURIES:

Engine 70 Fire Apparatus Engineer (FAE-70)

- Heat exhaustion

DAMAGE:

LAC E-70 had moderate fire damage to the complete front side of the vehicle, including cracks to both front windshields and the cab mounted light bar destroyed. Left side tires were damaged. The motor had stalled on the incident, and the crew discovered the air cleaner had burned. The engine was equipped with an ember screen on the motor air intake.



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SAFETY ISSUES FOR REVIEW

I. Personal Protective Equipment

A. Proper utilization of ALL personal protective equipment prior to engaging in fire suppression.

II. Fire Line Safety Policy (Agency Specific)

A. 10 Standard Firefighting Orders

1. Base all actions on current and expected fire behavior.
2. Identify escape routes and safety zones and make them known.
3. Maintain prompt communications with your forces, your supervisor, and adjoining forces.
4. Fight fire aggressively having provided for safety first.

B. Eighteen Situations that Shout Watch Out

1. Safety Zones and escape routes not identified.
2. Attempting frontal assault on a fire.
3. Unburned fuel between you and the fire.
4. Weather is becoming hotter and drier.
5. Wind increases and/or changes direction.
6. Getting frequent spot fires across the line.
7. Terrain and fuels make escape to safety zones difficult.

C. Common Denominators of Near Fatal or Fatal Fires

1. On relatively small fire or deceptively quiet area of a large fire.
2. When there is an unexpected shift in wind direction or in speed.
3. When fire responds to topographic conditions and runs uphill.

D. Wildland-Urban Watch Outs (NWCG Incident Response Pocket Guide)

1. Poor access and narrow one-way roads.
2. Wooden construction and wood shake roofs.
3. Powerlines, propane tanks, and HazMat threats.
4. Inadequate water supply.
5. Natural fuels 30 feet or closer to structure.
6. Structures in chimneys, box canyons, narrow canyons, or on steep slopes (30% or greater).
7. Extreme fire behavior.
8. Strong winds.
9. Evacuation of public (panic).

III. Engine Protection Hoseline Policy (Agency Specific)

IV. Lookouts, Communications, Escape Routes, and Safety Zones (LCES)

A. **LCES CONSIDERATIONS:** Establish appropriate LCES mitigations for current and expected fire behavior. Be alert for changing conditions and adjust both tactics and LCES measures to meet new levels of risk.

1. **Lookouts:** Lookouts must be dedicated to their task and familiar with the responsibilities of this position.
2. **Communications:** All assigned resources must be familiar with the incident's communication plan and have radio capability for the listed frequencies.
3. **Escape Routes:** Escape routes are easily compromised in structure defense by remaining at the structure beyond what would be considered safe in wildland fire operations.
4. **Safety Zones:** Structures should not be relied on as safety zones. They are "survival zones" and should be used only as a last resort. If no adequate safety zones exist, decision points should be set for leaving the area.

INCIDENTAL ISSUES FOR REVIEW

- **SITUATIONAL AWARENESS:** Maintaining situational awareness is essential due to the numerous factors that can quickly compromise the safety of everyone involved. Critical information concerning recognized hazards, unexpected weather changes, significant events, etc. needs to be communicated to all resources as well as the Planning Section.
- **SPOT FIRES:** Spot fires create multiple fire fronts and firefighters protecting structures are often surrounded by flames, showered by burning embers, and are subjected to dense smoke.
- **USE OF BREATHING APPARATUS:** Usage of breathing apparatus to conduct structure protection during a wildland fire, or to remain in an untenable environment, is a situation that requires further evaluation. When conditions are degraded to this extent, a structure should be considered indefensible and resources moved to a safe area. Personnel involved in structure protection must not use breathing apparatus to justify taking greater risks, but rather as a last-resort "survival tool" in case of entrapment.
- **MOBILITY:** Mobility is one of the most important tactics employed in structure defense. Consider actions in the deployment of firefighting equipment that will allow for rapid response to the changing fire environment as well as maintaining the ability to escape to a safety zone. Avoid having engines anchored to hydrants.
- **BRIEFING:** Assure that all resources receive a quality briefing prior to engagement. Include local factors affecting fire behavior.
- **REPORTING OF INJURIES:** All injuries need to be reported to the incident for proper treatment and accountability
- **EMBER PROTECTION:** All fire equipment should have an ember protection screen mounted inside the air intake to protect the air cleaner.