



**DRAFT SCOPE OF WORK AND  
PROJECT SPECIFICATIONS**

FOR THE

**ANGORA FIRE STRUCTURAL DEBRIS REMOVAL  
LAKE TAHOE, CALIFORNIA**

**JULY 3, 2007**

Prepare By:  
Todd Thalhamer, P.E.  
California Integrated Waste Management Board  
Solid Waste Cleanup Program  
1001 "I" Street  
Sacramento, California 95826

For:  
County of El Dorado  
Environmental Management  
2850 Fairlane Ct., Bldg. C  
Placerville, CA 95667

Version 1.0 – State Contractor Scope of Work

Submitted by *Laura Biel*

at Board Hearing of *7/3/07*  
*#32*

## **DOCUMENTATION**

The California Integrated Waste Management Board (CIWMB) staff prepared this report for the County of El Dorado, Environmental Management, and CIWMB's cleanup contractor. A separate but similar document will be prepared for home owners who decide to opt out of the state sponsored cleanup process and perform the structure debris removal on their own.. The findings, information, and professional opinions are presented in accordance with generally accepted professional engineering methods and waste management strategies. Any questions or comments concerning this report should be referred to Mr. Todd Thalhamer at (916) 341-6356 or by e-mail at [tthalhamer@ciwmb.ca.gov](mailto:tthalhamer@ciwmb.ca.gov). Mr. Thalhamer is a registered Professional Engineer in the State of California.

# CONTENTS

Section	Page
1.0 INTRODUCTION .....	
1.1 Site Descriptions.....	
1.2 Vicinity and Site Maps .....	
1.3 Site Characterization .....	
1.4 Known Hazards .....	
2.0 PROPOSED CLEANUP .....	
2.1 Scope of Work.....	
2.2 Work Plan.....	
2.3 General Conditions.....	
2.4 Special Provisions .....	
2.5 Erosion Control .....	
2.6 Materials .....	
2.7 Permits .....	
3.0 LIST OF TABLES	
Table 1. SOW Project Responsibility .....	
Table 2. Estimated Debris Volume.....	
Table 3. Disposal Matrix for Materials .....	
Table 4. Permit Matrix.....	
4.0 LIST OF FIGURES	
Figure 1. Site Location Map.....	
Figure 2. Site Sampling Location Map .....	
5.0 APPENDICES	
Appendix A. Site Sampling Plan	
Appendix B. TBA - Erosion Control BMPs	
Appendix C. TBA	

---

## 1.0 Introduction

The California Integrated Waste Management Board (CIWMB) is responsible for executing the Solid Waste Cleanup Program (SWCP) throughout the state. The SWCP provides funds to remediate closed or abandoned solid waste sites and to clean up illegal disposal sites where the responsible party either cannot be identified or is unable or unwilling to pay for timely remediation and where cleanup is needed to protect public health and safety and/or the environment. Based on a review of the sampling and analysis performed on the Cedar and Paradise Fires in San Diego County (December 2003), environmental sampling is required to determine if the residual ash is a hazardous wastes. The CIWMB will mobilize its environmental consultant to begin sampling all the homes sites once the sampling plan is designed and site authorization is obtained.

The CIWMB has compiled this Scope of Work (SOW) and Project Specifications for the Angora Structural Debris Removal Project. Information related to this project was obtained from the Angora Incident, El Dorado County, Environmental Management, sampling from the San Diego 2003 fires, and past removals.

The CIWMB has authorized its CONTRACTOR (A.J. Diani) to perform the structural debris removal for the County of El Dorado. This SOW will be provided to the County of El Dorado and other agencies for comment and review. Once comments are provide the CONTRACTOR will use this SOW to prepare their Work Plan. The SOW presents the overall removal plan for the state sponsored cleanup. Table 1 outlines the project participants and their responsibilities relative to Angora Structural Debris Removal Project (ASDRP).

**Table 1. SOW Project Responsibility**

<b>Agency/Company</b>	<b>Contact</b>	<b>Responsibility/Assistance</b>
CIWMB, SWCP	Todd Thalhamer <i>On-site Project Engineer</i>	Oversight of project, cost control, waste removal, identifying hazards, load checks, and project mgmt.
TBA		
TBA		
El Dorado County, Environmental Management	TBA	On-site compliance and county oversight.
A. J. Diani Primary Contractor	<i>TBA Project Manager</i>	Contractor responsible for removing structural debris and waste.
Subcontractor	<i>TBA</i>	

## 1.1 Site Description

TBA

Over 254 structures were destroyed and 17 were damaged during the Angora Fire. 1400 cubic yards of waste have been identified for removal and 400 cubic yards of metal is targeted for recycling. The sites vary in composition, some contain burned out structures and metal debris while others are foundations with ash and metal debris.

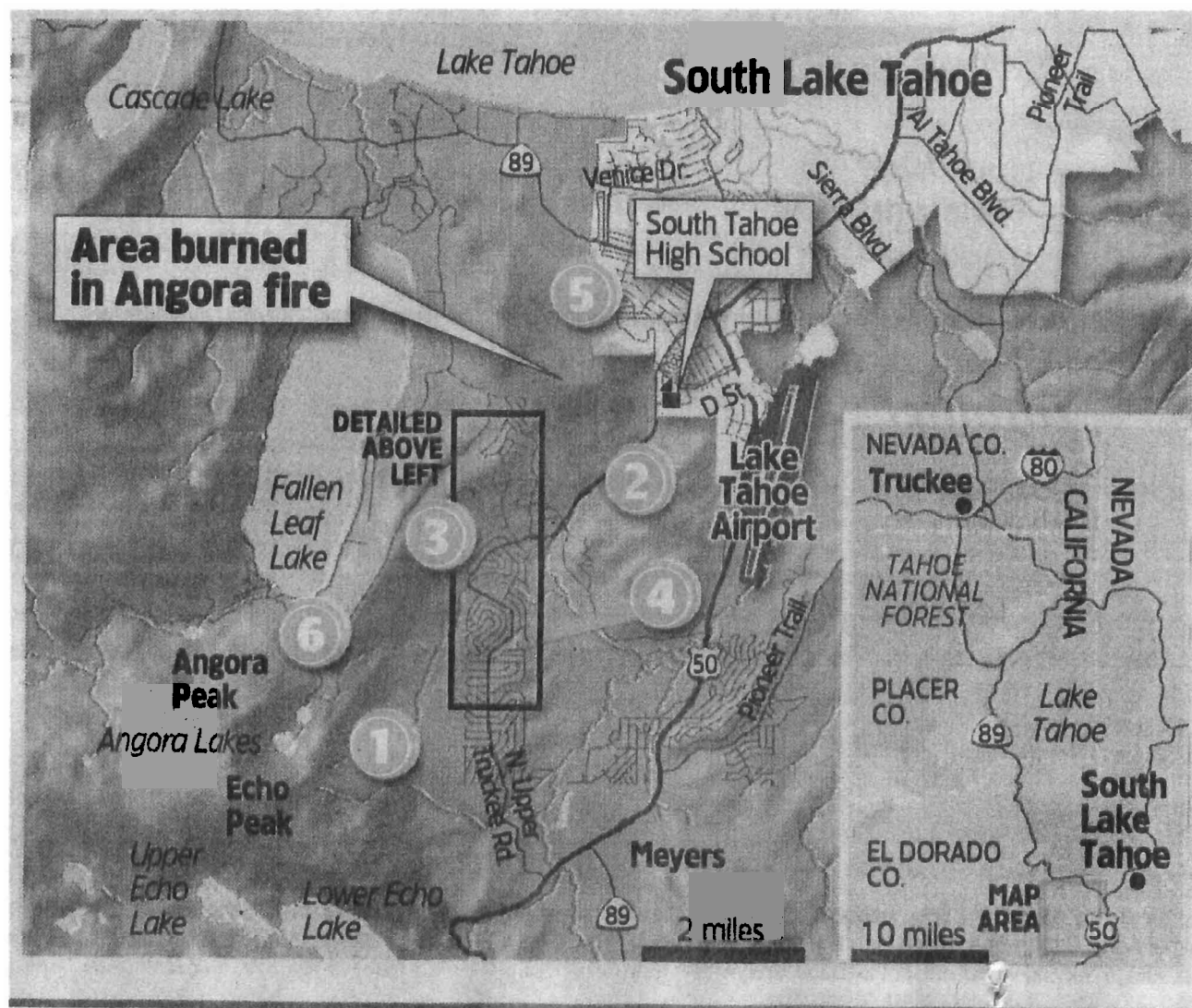
### 1.1.1 Site Ownership

The ownership of each structure debris site varies. Legal authority to enter each site will be handled by the County of El Dorado. No work will begin unless the property owner signs both the site access and hold harmless documents.

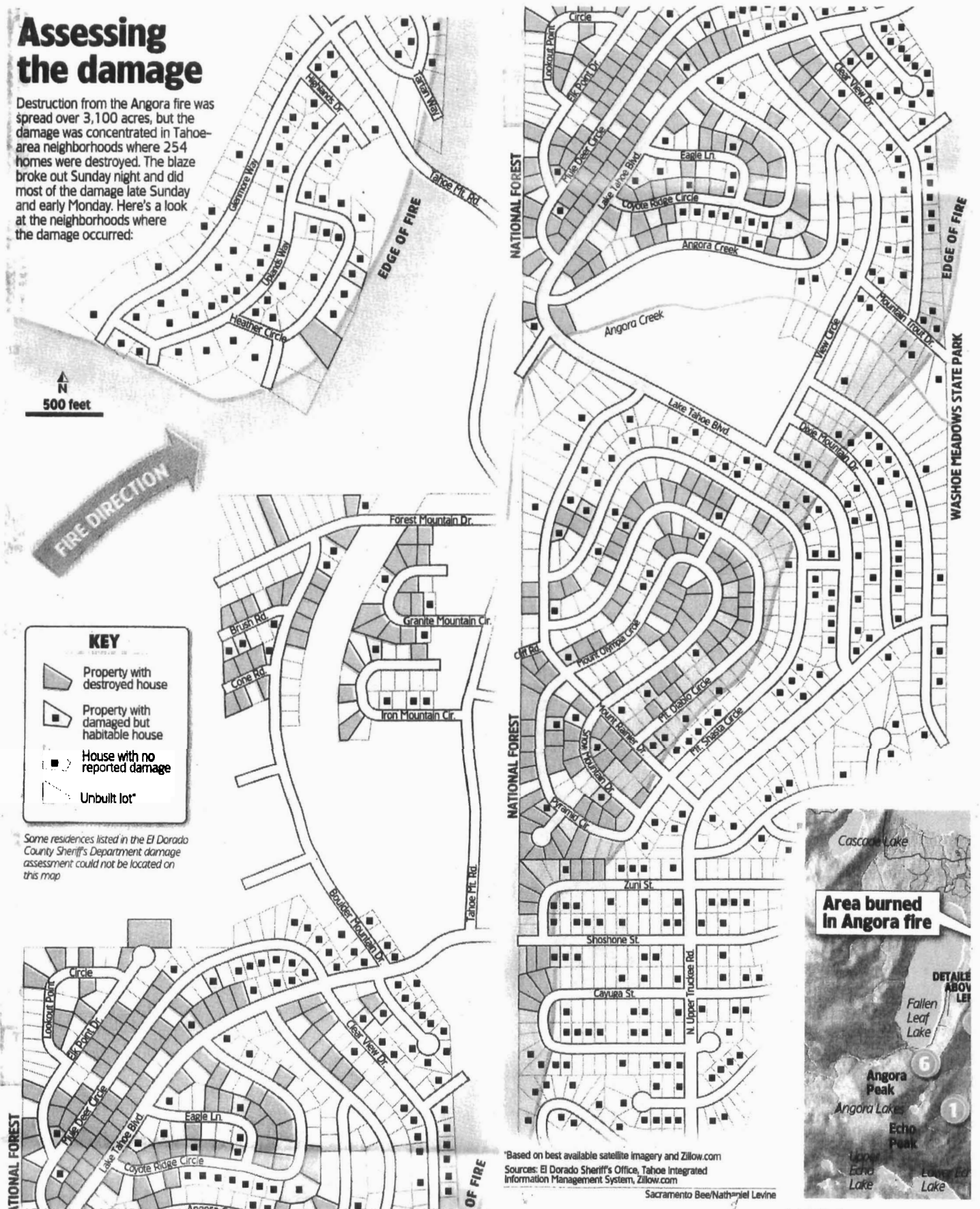
## 1.2 Vicinity and Site Maps

The Angora structure removal sites are located throughout the North Upper Truckee Road, Lake Tahoe Blvd, Boulder Mountain Road, and Tahoe Mt. Road in South Lake Tahoe, California. Figure 1 and Figure 2 provide site details.

**Figure 1. Site Location Map (Source Sacramento Bee, July 1, 2007)**



**Figure 2. Angora Structure Debris Locations (Sacramento Bee, July 1, 2007)**



---

### 1.3 Site Characterization

From the San Diego Fire in 2003 the majority of the ash will be classified as a California Hazardous Waste. However, the CIWMB staff is recommending all structural sites be sampled in order to determine the proper waste classification. Table 2 provides an estimated range of cubic yards of material per house.

**Table 2. Estimated Debris per Home Site to be Transported to an Appropriate Facility**

<b>MATERIAL</b>	<b>Cubic Yards</b>
Ash	10 to 50
Concrete Debris	20 to 50
Fire Place and Brick	5 to 50
Metal Debris	5 to 25
Other Debris	0 to 100

Based on a count of 254 homes destroyed and 17 damaged, the volume of debris may reach as high as 75,000 cubic yards.

### 1.4 Known Hazards

Depending on how much of the structure is present, the known hazards will vary. If just ash, the likelihood the removal site will contain hazardous wastes (i.e., ash residual) is high. All home sites re located where burned trees will pose a fall hazard. There is also a physical hazard from exposed glass and metals and unstable chimneys. Other hazardous material or medical wastes may be discovered during the removal. Utilities, such as electrical, gas, cable, telephone, and sewer, are present and need to be account for while removing the debris.

#### 1.4.1 Asbestos Sampling (Only for damaged homes)

The CIWMB's contractor will perform an asbestos survey remaining damaged home that are participating in the state sponsored cleanup. The survey is necessary to comply with the California Health and Safety Code Section 25914 and 25915, et seq. since some structures will be demolished.

#### 1.4.2 Hazardous Waste from the Ash

Because the sites contain ash from a structure fire, the presence of elevated and/or hazardous levels of metals is expected. Sampling will be performed by the CIWMB to confirm the presence of hazardous concentrations of metals or other chemical of concern. Appendix A contains the sampling plan.

---

### 1.4.3 Disposal Options

If hazardous concentrations are detected in the ash then an exclusion zone will be setup around the contaminated area during removal. All personnel entering this area will be required to wear level "C" protective attire.

Following excavation and removal of the waste, confirmation samples will be collected from the native soil, at random locations, and analyzed to confirm the absence of hazardous concentrations of lead and other metals.

## 2.0 Proposed Cleanup

The CIWMB's contractor, CONTRACTOR will first inspect all structures site and evaluate hazards. Next CONTRACTOR will coordinate with local agencies and resources to determine what materials and task are required. The CONTRACTOR then shall install site addresses and the appropriate erosion control. The CONTRACTOR will load and haul the damage homes and solid waste (e.g., household garbage, wood debris, etc.) to the appropriate landfill and separate and haul white goods and metal debris to accepted facility for recycling.

Finally the CONTRACTOR will begin work on the destroyed home sites. The CONTRACTOR will determine if the chimney is recyclable with out posing a safety risk. If feasible, once the metal debris and ash are removed the concrete foundation or slab will be recycled. The slab or foundation may have to be pressure washed to ensure the concrete is not contaminated. The CONTRACTOR will remove 6 inches of soil from the foundation or slab area to ensure residual contamination is removed.

The CONTRACTOR will also be responsible for removing any asbestos or other hazardous wastes except for household hazardous wastes. Household hazardous waste will be segregated and stored on-site by the CIWMB for pickup by the County of El Dorado.

## 2.1 Scope of Work

Major items of work anticipated in this project may include:

1. Reestablish residential addresses
2. Removal and disposal of solid waste and demolition debris, including waste tires;
3. Perform a asbestos survey and necessary removal and disposal on damaged homes;
4. Segregation and sorting of recyclable metal debris and delivery to recycling facilities;
5. Haul ash debris to an appropriate facility;
6. Recycle concrete debris
7. Provide traffic control signs;
8. Site contouring, posting of signs, and erosion protection;
9. Cost Tracking;



---

10. Foundation Verification;

## 2.2 Work Plan

Table 3 supplies the disposal information to CONTRACTOR to assist in the development of their Work Plan. CONTRACTOR is responsible for contacting the individual companies below and determining if they are available and properly licensed.

**Table 4. Disposal Matrix for Materials**

<b>Material</b>	<b>Disposal Contact or Facility</b>
<b>Ash (Non-Hazardous)</b>	CONTRACTOR will be responsible for identifying the appropriate facility.
<b>Construction Debris</b>	CONTRACTOR will be responsible for identifying the appropriate facility.
<b>Vegetation</b>	CONTRACTOR will be responsible for identifying the appropriate facility.
<b>Metal Debris</b>	CONTRACTOR will be responsible for identifying the appropriate metal recycler.
<b>Metal Discards (Appliances)</b>	Freon Extraction is REQUIRED for refrigerators. Check with above metal recyclers to determine if they are in compliance with the Metallic Discard Act. Note: Furnaces shall be check for asbestos before disposal.
<b>Vehicles and Trailers</b>	Vehicles and/or trailers that did not sustain damage or vehicles and/or trailer that sustained minor damage will be left on the property. These vehicles and/or trailer may be moved by the CONTRACTOR to complete the debris removal.
<b>Burned Vehicles and Trailers</b>	If a vehicle or trailer has been burned the vehicle or trailer will be treated as metal debris. The CONTRACTOR shall ensure all the fluid has been removed from the vehicle and/or trailer before transport. All fluids from the vehicle and/or trailer shall be properly collected and disposed.
<b>Tires</b>	CONTRACTOR will be responsible for identifying the appropriate tire hauler.
<b>Hazardous Waste</b>	CONTRACTOR will be responsible for identifying the appropriate facility.
<b>Household Hazardous Waste (HHW)</b>	<b>Unlikely.</b> The County of El Dorado has performed a HHW sweep of the impacted area. If HHW is discovered the HHW will be segregated by the CIWMB and/or the CONTRACTOR to a temporary on-site storage. As necessary the County of El Dorado will collect and transport HHW to the County facility @ no charge to the CIWMB and or CONTRACTOR.
<b>Asbestos Waste (Damaged Structures)</b>	Asbestos containing building materials shall be removed and properly disposed by a certified asbestos contractor.
<b>UXO (Unexploded Ordinance)</b>	<b>Unlikely.</b> With the high temperatures from a forested wildland fire the likelihood of discovering any UXO is remote. If UXO is discovered the CONTRACTOR shall notify the

---

CIWMB so proper disposal can occur by the County of El Dorado. Small arms ammo may be found in the damaged homes.

**Radioactive Debris**

**Unlikely.** All impacted lots will be screen for radiation before environmental sampling. If radioactive debris is encounter, the material will be removed and properly disposed of by the CIWMB and its CONTRACTOR

**Medical Waste**

**Unlikely.** If medical wastes are discovered, they will be properly bagged and transported to the appropriate facility by the CIWMB and its CONTRACTOR. Small quantities of sharps (e.g., needles and illegal drug items) will be removed and disposed of through the CIWMB and its CONTRACTOR. CIWMB Site engineer will use sharp "mail-back" containers provide by CONTRACTOR.

---

**2.2.1 Disposal Options**

If hazardous concentrations are detected in the ash then an exclusion zone will be setup around the contaminated area during removal. All personnel entering this area will be required to wear level "C" protective attire.

Following excavation and removal of the waste, confirmation samples will be collected from the native soil, at random locations, and analyzed to confirm the absence of hazardous concentrations of lead and other metals.

**2.2.2 Schedule**

Prior to beginning work, CONTRACTOR shall submit a proposed schedule of operation. The schedule may be in a bar chart or CPM format at the option of CONTRACTOR.

**2.2.3 Sequence of Operation**

Scheduling and coordination of construction activity shall be the sole responsibility of CONTRACTOR within the following limitations:

- The CIWMB will determine which zone the Contractor will begin work. Tentatively three zones have been identified. (See Appendix C)
- All work shall be performed between the hours of 7:30 A.M. to 6:30 P.M., Monday through Saturday, unless authorized by the CIWMB engineer and the County of El Dorado.
- All construction equipment working within the residential zones shall maintain a speed of 15 mph or less.

**2.3 General Conditions**

**2.3.1 Safety**

---

CONTRACTOR shall, at all times, operate equipment and perform labor in a safe manner to ensure the safety of its employees and the public. CONTRACTOR must pay particular attention to operations around local road and take the necessary precautions. CONTRACTOR must note the number of power lines crossing the site and all underground utilities.

### 2.3.2 Notices

CONTRACTOR shall notify Underground Services Alert (USA) at least 48 hours prior to any excavation.

CONTRACTOR shall notify the local fire department prior to commencement of work.

CONTRACTOR shall notify the local power provider prior to removal of any structure to ensure the electrical power has been shut off.

CONTRACTOR shall notify CIWMB at least 48 hours prior to commencement of the cleanup project. CONTRACTOR will use caution around all existing living trees. Only trees marked by the CIWMB may be removed.

If CONTRACTOR discovers hazardous materials besides the ash, the site superintendent shall immediately cease operation in that area and contact the project engineer. No further work is to be performed in the area until the CIWMB and the County of El Dorado clears the hazard.

### 2.3.3 Site Controls

CONTRACTOR may need to provide water or dust palliative, or both, to prevent dust nuisance at the site and along the access road. Dust resulting from Contractor's performance of the work shall be controlled at all times during this project. { A goal of zero visible dust}

All loads of leaving the site shall be covered with a tarp; this includes metal and concrete loads.

### 2.3.4 Cost Controls

CONTRACTOR and the IWMB Engineer shall update cost of the removal on a daily basis. The CONTRACTOR will be responsible for establishing a daily cost tracking spread sheet.

### 2.3.5 Traffic Control

---

At a minimum the CONTRACTOR shall post construction ahead signs 300 feet in both directions of work zone to warning vehicle traffic of the removal work. Safety cones shall be placed along the ingress and egress to control site vehicle traffic.

## **2.4 Special Provisions**

### **2.4.1 Injury and Illness Prevention Program (IIPP)**

In addition to CONTRACTOR's IIPP site specific plan, CONTRACTOR will designate eating areas and supply a hand and eye washer and mobile sanitary facilities. Due to the biological hazards the hand washing station will include hot water and sanitizing gel.

### **2.4.2 Appliance Recycling**

CONTRACTOR or their subcontractor shall provide for removal and disposal of material, which may require special handling such as various automobile or appliance components.

Materials that must be removed from appliance and vehicles prior to crushing, baling or shredding for recycling include:

- Chlorofluorocarbons (CFCs) and hydrofluorocarbons (HCFCs) used as refrigerants.
- Polychlorinated biphenyls (PCBs) known to be contained within motor capacitors and fluorescent light ballasts.
- Used oils as defined in Article 13 of Chapter 6.5 of the Health and Safety Code (includes lubricating fluids, compressor oils, and transmission oils).
- Sodium azide canisters in unspent automobile air bags.
- Antifreeze in coolant systems.
- Mercury that may be found in thermometers, thermostats, barometers, electrical switches, and batteries.

The CONTRACTOR shall maintain accurate records detailing the removal and disposal operations involving all such materials, and shall provide the Engineer with all manifests and/or documentation pertaining to the work.

### **2.4.3 Industrial Air Monitoring**

The CONTRACTOR shall hire an independent third party, certified industrial hygienist to perform air monitoring for the duration of the project or until the industrial hygienist determines the site air monitoring may cease.

### **2.4.4 Potential Earthwork**

If fill material is necessary the soil shall be placed in thin lifts. Lifts shall not exceed 8 inches uncompacted and be applied within 3 percent of optimum moisture content or as

---

directed by the Engineer. The lift shall be compacted with at least 5 passes with a D8 bulldozer or equivalent and the top lift with at least 3 passes of a D8 or equivalent (i.e., target compaction is 90 percent of the maximum dry density as determined by ASTM D 1557).

#### 2.4.5 Project Signs

##### Notification Sign (TBA- min 2)

The sign shall consist of 2-foot by 4-foot sheet of 3/4-inch-thick plywood or smooth fiberboard painted with at least two coats of water-based white paint. All surfaces and edges shall be sanded and painted to produce a homogenous surface free of blemishes and color variations.

Posts supporting the sign shall consist of one 4-inch by 4-inch wood post or equal with length sufficient to place in a 5-gallon pail with concrete.

Lettering shall conform to the following:

## **Angora Structural Debris Removal Project**

FUNDED BY

**Governor's Office of Emergency Services  
California Disaster Assistance Act**

**County of El Dorado,**

**California Integrated Waste Management Board**

MANAGED BY

**EL DORADO COUNTY**

**ENVIRONMENTAL MANAGEMENT**

**CIWMB**

WORK BEING PERFORMED BY

**A. J. DIANI COMPANIES**

Address Sign.

---

A total of (TBA -264) reflective aluminum signs will also be required. The sign dimension shall be 6 inches in width and 24 inches in height. The background shall be a reflective green and all the text shall be white. The CONTRACTOR will reestablish all address. Each sign shall be mounted on a steel post. The numbering for the address shall be at minimum of 4" in height. An example is provided below.



## **2.5 Erosion Control**

Erosion control for this project is critical. Lake Tahoe's raining season begins on July 1 and at times rain fall can be heavy due to thunderstorms. Prior to the removal of the structure some erosion control will be necessary to prevent the migration of contaminates off site. Work may consist of installing silt fences, installing erosion control, and other work necessary for improving site stability. Erosion control and stand establishment shall be performed in accordance with these specifications and as directed by the Engineer. Additional erosion specifications will be provide by local agencies.

### **2.5.1 Materials**

**2.5.1.2 Straw Bale**—A straw bale is composed of tightly bound straw in an elongated cubical shape. The straw is bound with either twine or wire.

**2.5.1.2 Erosion Control Blanket**—Erosion control blanket is a carpet-like material manufactured for the purpose of holding the soil and seed in place on steep slopes. It consists of organic, biodegradable mulch, such as straw, curled wood fiber, coconut fiber, or a combination of these materials. It is commercially manufactured and delivered to the site in rolls. These materials are evenly distributed on or between photodegradable polypropylene or biodegradable natural fiber netting.

**2.5.1.3 Anchors**—Anchors shall be any device recommended by an erosion control blanket manufacturer for securing the erosion control blanket to the soil surface. Anchors are also any metal or wooden stake that is appropriately used to secure straw bales or silt fences when used for sediment control structures.

---

2.5.1.4 Netting—Netting shall be biodegradable paper, plastic, jute, cotton netting manufactured for the purpose of securing straw mulch to the soil surface. The netting material shall be approved by the CIWMB staff prior to its installation.

2.5.2 Erosion Control—Work shall consist of furnishing and applying erosion control materials. The work includes proper material handling, area preparation, proper application of the erosion control materials and structures, and stand maintenance for the areas shown on the Plans.

2.5.2.1 Soil Preparation—Soil preparation shall include all work necessary to prepare designated areas to receive the erosion control materials. Soil preparation work shall be performed under favorable weather and soil moisture conditions as determined by accepted local practice so as to preclude excessive soil compaction.

2.5.2.1 Seeding—Seed shall be applied either mechanically in a dry condition or with hydraulic seeding equipment, at the option of the Contractor. The seed shall be distributed uniformly throughout the seeded area by hand. The basic seed mix will be TBA or equivalent.

2.5.2.3 Silt Fence—Install silt fences as directed by the engineer. Six inches of the fence should be buried in a trench along the base of the fence. The posts shall be spaced a maximum of 10 feet apart and driven into the ground a minimum of 18 inches. Sediment shall be removed from the up-slope side of the fence when it reaches 1/3 the height of the fence.

2.5.2.4 Erosion Control Blanket—Install Erosion Control Blankets as directed by the engineer. Starting at the top of the slope, anchor the blanket in a 6-inch trench, backfill, and securely tamp the backfilled soil. Unroll blanket down-slope overlapping parallel and subsequent blankets a minimum of 3 inches. Secure the blankets with anchors along the overlaps and place a minimum of 2 to 3 anchors per square yard. The Contractor shall determine if more anchors are required and shall be responsible for installing the erosion control blanket so that it will stay in place.

## **2.6 Materials**

Materials shall be placed in accordance with the SOW or as specified by the engineer. The following materials have been identified for the removal:

- TBA Silt Fence
- TBA Straw bundles
- TBA Erosion Control Blankets
- TBA cubic yards of class II road base or equivalent
- TBA. of grass seed

Quantities and location of the materials will be determined in the field by the engineer.

## **2.7 Permits**

To provide an understanding of the permits necessary for CONTRACTOR to obtain for the project, Table 5 is presented.

**Table 5. Permit Matrix**

<b>Permit and Agency</b>	<b>Responsibility</b>	<b>Contact/Comments</b>
<b>Site Authorization</b>	County of El Dorado	Prior signatures by property owners will required before work
<b>CEQA - Notice of Exemption</b>	Not Applicable	Emergency work
<b>1601 Stream Alteration, Dept. of Fish and Game (DFG)</b>	Not Applicable	Scope of Work does not include work in the stream bed. If material need to be removed from the stream, the CIWMB will contact DFG
<b>Storm Water Pollution Prevention Plan-RWQCB</b>	Not Applicable	Sites are all under 5 acres, however Best Management Practices will be required
<b>Grading</b>	Not Applicable	Soil removal will be kept to a maximum of 50 cy per home
<b>Road Encroachment</b>	Not Applicable	Emergency work
<b>Traffic Control</b>	CONTRACTOR shall supply	A minimum of two orange construction warning signs "Construction Ahead" and cones. Additional control device may be necessary based on location
<b>Asbestos Notification</b>	Not Applicable	Residential buildings having four or fewer dwelling units are exempt from the notification process.
<b>Asbestos Removal</b>	CONTRACTOR	CONTRACTOR shall removal asbestos containing building material before demolishing structures.
<b>Demolition Permit</b>	TBA	TBA
<b>Waste Permits</b>	Not Applicable	CONTRACTOR will comply with all waste laws and regulations
<b>Hazardous Waste</b>	CONTRACTOR	CONTRACTOR shall use the



---

appropriate hauler and  
disposal facility

---

---

# **Appendix A Site Sampling Plan**

---

**Appendix B**  
**TBA Erosion Control BMPs**

# Appendix C Work Zones

## Assessing the damage

Destruction from the Angora fire was spread over 3,100 acres, but the damage was concentrated in Tahoe-area neighborhoods where 254 homes were destroyed. The blaze broke out Sunday night and did most of the damage late Sunday and early Monday. Here's a look at the neighborhoods where the damage occurred:

500 feet

FIRE DIRECTION

**KEY**

- Property with destroyed house
- Property with damaged but habitable house
- House with no reported damage
- Unbuilt lot\*

Some residences listed in the El Dorado County Sheriff's Department damage assessment could not be located on this map.

# Zone A

# Zone B

# Zone B

# Zone C

\*Based on best available satellite imagery and Zillow.com  
Sources: El Dorado Sheriff's Office, Tahoe Integrated Information Management System, Zillow.com  
Sacramento DMA/Nathaniel Levine

