Exhibit H

DEBRIS REMOVAL - SPECIAL PROVISIONS

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Acronyms and Abbreviations

ACM	Asbestos Containing Material
AHERA	Asbestos Hazard Emergency Response Act
AQMD	Air Quality Management District
BP	Branch Planner
BMP	Best Management Practices
CAC	Certified Asbestos Consultant
CalEPA	California Environmental Protection Agency
Cal OES	California Office of Emergency Services
CalRecycle	Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CIH	Certified Industrial Hygienist
CL	Crew Leader
CM	Contract Manager
CSST	Certified Site Surveillance Technician
DFW	Department of Fish and Wildlife (California)

DGS	Debris Group Supervisor
DOT	Department of Transportation
DMV	Department of Motor Vehicles
DROC	Debris Removal Operations Center
DTSC	Department of Toxic Substances Control
ECP	Environmental Compliance Plan
EPA	Environmental Protection Agency
EPP	Environmental Protection Plan
FEMA	Federal Emergency Management Agency
FSC	Finance Section Chief
FSL	Finance Unit Leader
GPS	Geographic Positioning System
HAZWOPER	Hazardous Waste Operations and Emergency Response
HHW	Household Hazardous Waste
ICS	Incident Command System
ICT	Incident Command Team
IFB	Invitation for Bid
MOU	Memorandum of Understanding
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
Operations Team	Debris Removal Operations Team
OSHA	Occupational Safety and Health Administration
OSC	Operations Section Chief
PPE	Personal Protective Equipment
Proclamation	Proclamation of a State of Emergency
PSC	Planning Section Chief
RFP	Request for Proposals
ROE	Right-of-Entry Permit
SEMS	Standardized Emergency Management System
USA	Underground Service Alert
USEPA	United States Environmental Protections Agency
UXO	Unexploded Ordinance

INTRODUCTION

The purpose of these Special Provisions is to provide the Contractor with a detailed understanding of the extent of services required by the State of California, Department of Resources Recycling and Recovery (CalRecycle) for emergency debris removal Operations. Not all emergency debris removal Operations in California are conducted by the State. For the State to respond to a State declared emergency, the Governor of California issues a *Proclamation of a State of Emergency* (Proclamation), which declares a state of emergency in specific Counties with provision to include State agency and contract resources.

In the process of developing the overall response to an emergency, a series of actions are taken at different levels of government before agency and contractor work takes place. At the County level, the County Health Officers issues a Proclamation of a Local Health Emergency and request State assistance. The Governor's Proclamation is issued and may include provisions for all agencies of the state government to utilize and employ state personnel, equipment, and facilities for the performance of any and all activities related to this state of emergency consistent, with the direction of the Office of Emergency Services and the State Emergency Plan. Additionally, the President of the United States of America may approve a Major Disaster Declaration for California, which allows federal disaster assistance through the Federal Emergency Management Agency (FEMA), which will include both federal funding and potentially additional federal contracting requirements.

The State Proclamation typically suspends, to the extent they apply, the following activities:

a) removal, storage, transportation, and disposal of hazardous and non-hazardous solid waste and debris resulting from a disaster in affected Counties and that are subject to the jurisdiction of agencies within the California Environmental Protection Agency (CalEPA) and the California Natural Resources Agency (CNRA);
b) necessary restoration and rehabilitation of timberland, streams, rivers, and other waterways.

Such State statutes, rules, regulations, and requirements are hereby suspended, only to the extent necessary for expediting the removal and cleanup of debris from the fire and for implementing any restoration plan by the affected Counties. Though, CalRecycle will need to pursue signed waivers from these agencies that will need to be supported by an Environmental Protect Plan (EPP) and an Environmental Compliance Plan (ECP) prepared by CalRecycle staff, other state staff and/or CalRecycle Consultants. Contractors will be required to be aware of and implement the best management practices (BMPs) and the Avoidance and Minimization Measures (AMMs) listed in them.

The Proclamation may also suspend compliance with applicable provisions of the California Government Code and the Public Contract Code for state contracts, including but not limited to travel, advertising, and competitive bidding requirements to assist with procuring materials, goods, and services necessary to quickly remove dangerous debris and repair damaged resources. Lastly, the Proclamation may also state that State agencies shall work with local officials to design and implement a comprehensive structural debris removal plan.

In response to the Proclamation that includes State resources, the California Governor's Office of Emergency Services (Cal OES) typically issues mission tasks to the Department of Resources Recycling and Recovery (CalRecycle), to enter into contracts to arrange for the procurement of materials, goods, and services necessary to quickly remove dangerous debris from private property resulting from a disaster in the affected Counties. CalRecycle will work

with the affected Counties to clear the debris, provide state certification of cleanup for the individual sites, and track and provide costs to the Counties for insurance recovery on a per lot basis. As part of the work, CalRecycle will prepare an overarching Debris Management Plan to describe how the operation will be managed and these Special Provisions, which identify and specify procedures and best management practices for undertaking the removal of debris from destroyed residential structures to protect response personnel, the surrounding community, public health, and the environment. The Debris Management Plan establishes procedures and guidelines for managing disaster debris removal programs in a coordinated, environmentally-responsible, and cost-effective manner. It provides general direction on how resources involved in performing the work will be managed, including a listing of agencies involved, individual personnel positions, lines of communication between the parties, a schedule of regular coordination meetings and written forms and lines of communication to coordinate the Operation.

CalRecycle will work with environmental consultants to evaluate the environmental protection concerns in the burn scar area(s) for state and federal endangered species, endangered species habitat protection, streambed crossings that will require state and federal emergency permits. These evaluations and permitting actions will commence prior to and during the early asbestos and debris removal process. Properties will not be entered for debris or asbestos removal processes until the IMT has received approved copies of the individual property Right-of-Entry (ROE) forms from the affected County(ies).

1.1 Purpose

The purpose of these Special Provisions is to describe the technical approach to managing the removal of Structural Debris Removal Program which includes removal of debris, waste, and hazardous material resulting from a State and/or Federally declared Disaster. These Special Provisions are based on CalEPA's "Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State or Local Emergency Proclamation" dated October 7, 2011, and identifies best management practices (BMP) for undertaking the removal of debris and hazardous materials (including asbestos) from residential and commercial structures. These BMPs and standardized methods will provide a consistent approach to conducting removal and cleanup actions to protect response personnel, the surrounding community, public health, and the environment. This document does not address the removal of debris from commercial and industrial sites.

1.2 Objective

The objective of these Special Provisions is to meet the above requirements and detail processes and procedures for debris removal operations, and will provide Contractor guidance for state-sponsored Structural Debris Removal Program and to mitigate known hazards and dangerous conditions to limit the impacts to the public, the affected County(ies) and the surrounding environment.

PROGRAM OVERVIEW

2.1 Site Description

The Disaster related Wildfire disaster Incidents is described in the Invitation for Bid (IFB) and consists primarily of residential structural debris located within the area described in the IFB.

The Incident may include structural wildfire debris or structural debris generated from other types of disasters (ie floods, earthquakes, etc.). The removal of structural debris from a wildfire incident is described in these Special Provisions, as this type of debris tends to be more impactful on the human health and safety of the community impacted and on the debris removal crews as well as potentially negatively impacting the local or regional environment. Therefore this type of debris is typically more hazardous and also more complicated to remove and represents significant concern for worker safety and for the protection of the health and safety of the public and the environment.

2.2 Ownership

The affected County(ties) will identify and work with each property owner to obtain legal authority to enter the property by obtaining an executed ROE forms. CalRecycle will not direct its Consultants and Contractors to perform work on a property until provided with a copy of a County verified and fully executed ROE.

2.3 Site Characterization

Based on past studies of burned residential homes and structures from large scale wildland fires, the resulting ash and debris from residential structures burned by fires can contain toxic concentrated amounts of heavy metals such as antimony, arsenic, cadmium, copper, lead, and zinc. Additionally, the ash and debris may contain higher concentrations of lead if the home was built prior 1978 when lead was banned from household paint in the United States. These heavy metals as discussed in the “Assessment of Burn Debris - 2007 Wildfires San Bernardino and San Diego Counties, California” (Geosyntech Consultants for DTSC 2007) and in the subsequent report, "Assessment of Burn Debris - 2015 Wildfires Lake and Calaveras Counties, California " (Geosyntech Consultants, for DTSC 2015) can have significant impact to individual properties, local communities, and watersheds if the ash and debris is not removed promptly.

The residual materials such as stucco, roofing, floor tile, linoleum, fireplaces, furnaces, vinyl tiles and mastic, sheetrock and joint compound, cement pipe, exterior home siding, thermal system insulation, concrete and mortar, and other building materials commonly used in homes built before 1984 may also contain other chemicals of concern such as asbestos.

2.4 Known Hazards

The type and number of known hazards will depend on specific conditions of each incident and each property within the incident such as how much of the structure is remaining, age of the structure, building materials used, and damage level of the site trees. If only ash and debris are present, the site is expected to contain elevated levels of heavy metals and possibly asbestos.

The Department of Toxic Substances Control (DTSC) will conduct a Phase 1 assessment of household hazardous wastes prior to the Phase 2 Structural Debris Removal Program operation that these Special Provisions contemplate. A part of DTSC’s Phase 1 work includes the preliminary hazardous waste assessment for ACM and removal of bulk quantities of ACM in the impacted area soon after the fire. ACM has been commonly found on fire debris removal Operations, especially in structure construction that precede the mid 1980’s. If DTSC finds possible ACM and/or removes bulk ACM and/or other hazardous materials on individual properties they will report these findings directly to CalRecycle. CalRecycle will in turn notify the Contractor of these findings prior to the contractor’s crews being deployed to these properties.

All responders should be aware that asbestos is a human carcinogen with no known risk-free levels of exposure.

2.5 Worker Safety

All Contractor and Contractor's subcontractor personnel shall prepare and operate under their own Site Specific Health and Safety Plan developed and signed by certified industrial hygienist, or other registered safety professional, working for or hired by the Contractor. The presence and disturbance of asbestos and heavy metals are the primary health hazards that need to be addressed in the Contractor's Health and Safety Plan.

Fall hazards are present on sites with chimneys, partially remaining structures, and burned trees. Physical hazards (i.e., slips, trips, and falls) are also present from exposed foundations, glass, metals, and debris. Additional hazards may be present if hazardous materials or medical wastes are discovered during the removal. Utilities such as (i.e., electrical, gas, cable, telephone, dead/dying or damaged trees, and sewer) are unmarked and must be accounted for during debris removal operations. The weather may also pose hazards from excessive heat, lightning, rain, and high winds.

Site personnel shall operate vehicles and equipment in a safe manner to ensure safety of its employees and the public. Site personnel must pay particular attention to operations around local roads and take the necessary precautions. Site personnel must note the number of downed power lines and dangerous trees, chimneys, and underground utilities.

Since fire debris removal Operations contain ash with elevated levels of heavy metals, silica, and/or friable asbestos, an exclusion zone will be set up around each site during removal. All personnel entering and leaving the exclusion zone will be required to be hazwoper trained and certified, respirator trained and medically cleared to use respirators, and to wear Level C protective personnel equipment (PPE) including Tyvek coveralls depending on the work zone and hazard level. Other PPE for heavy equipment work sites should be worn as designated in the Contractor's Health and Safety Plan. Site personnel should use designated eating areas exterior to the exclusion and transition work zone, and hand washing stations to reduce exposure.

The Contractor shall also be aware of and prepared for providing instruction and necessary PPE for other issues such as pandemics and other local or regional health issues.

2.6 Operation Cost Tracking

Operation costs that can be directly attributed to an individual property shall be tracked by Contractors on a per Assessor's Parcel Number (APN) basis. These are designated as "individual property costs." Other costs that cannot be directly attributed to an individual property but are necessary as part of the success of the operation, such as community water tenders, street sweeping, and Operation management, community health and safety or monitoring activities will be tracked as "Community Costs." In the event costs are incurred relating to public properties such as government buildings, certain schools and institutions, those costs will be tracked pursuant to written direction provided by the Contract Manager (CM). In all cases, Contractors are required to track costs with sufficient level of detail, redundancy, and integrity necessary to provide accurate and timely invoices.

OPERATION ROLES AND RESPONSIBILITIES

The debris removal operation will be managed per the Contract, a sample of which is attached the IFB, and in particular, by these Special Provisions set as part of the Contract. Past Operations have operated in accordance with the Standardized Emergency Management System (SEMS), utilizing the Incident Command System (ICS) for field response, although this Incident may not be managed using ICS. ICS is the model management tool used in disaster response scenarios for the command, control and coordination of all agencies and/or private companies working on an incident. The CalRecycle positions listed in these Special Provisions as Debris Group Supervisor (DGS), Branch Planner (BP), Finance Unit Leader (FUL) and Branch Director (BD) are positions derived from the ICS system. The DGS, BP, FUL and BD are specific positions used to manage these operations.

During the course of this operation, the Planning Section will publish the Incident Action Plan (IAP) once every operational period (every three days). The IAP will contain the specific personnel assigned to the various roles in the operation. The IAP will contain the contact information for the personnel assigned to the operation.

PRELIMINARY WORK

4.1 Overview of Operations (Contractor, Consultant)

The operation will follow a systematic approach to removing debris off the property. The overall work in the operations will be divided up among technical consultants, local, State, and possibly Federal agencies, and debris removal Contractors. The debris removal sequencing is outlined below, with work performed by the debris removal Contractor described as (Contractor):

- Initial Burn Scar Areas Reconnaissance:
  - Obtain, analyze, and evaluate burn scar area-wide background soil samples to inform the preparation of the operational cleanup goals (Consultant)
  - Identify water (dust control and street sweeping, etc) and electrical sources (Contractor)
  - Identify equipment and material staging area (Contractor and DGS)
  - Identify materials disposal and recycling options (Contractor and DGS)
  - Identify immediate Erosion Control needs to protect waterways from contamination by hazardous ash and debris. (Consultant + Contractor, approved by DGS)

- Initial Environmental Assessment of the entire burn area (DGS, BP, Environmental Unit Lead, and Consultant):
  - Evaluate Federal National Environmental Policy Act (NEPA – for Federally funded operations or operations located on federal lands) and California Environmental Quality Act (CEQA) requirements for the protection of the environment including surface water, endangered species, and cultural resources as required in the EPP. The EPP is the basis of preparing an Operation's ECP which lists the required best management practices (bmps) to be implemented by the Contractor as part of the Operation.
  - Coordinate with local and federal resources agencies with respect to these requirements when conducting in declared emergencies
  - Develop a Operation Specific EPP and ECP, as directed by the IMT.

- Conduct initial visual survey of roadways and infrastructure along those roads that could potentially be impacted by the Structural Debris cleanup operations. Evaluate pre-operational conditions with video recording and notes collected during the evaluation. The IMT shall review and approve all of the roadway pre-operation videos prior to Contractor commencing with services that require travel on them. These shall be compared to post-operational evaluation for potential local agency reimbursement by state or federal funding agency.

- Individual Site Assessments (Consultant):
  - Install individual address signs for each property with a signed ROE. This new sign will assist in the accountability and direct emergency services to proper address. Consultant will also Contact Underground Service Alert (USA) or other utility locator service to verify the location of the sign will not impact local utilities. (Consultant)
  - Identify septic tank and leach field locations on each property (1 Property Owner through ROE, 2 City/County, 3 Consultant, and 4 Contractor to mark. Contractor is ultimately responsible for damaged septic tanks and leach field systems)
  - Identify water wells on properties not serviced by the local water agency (1 Property owner, 2 City/County, 3 Consultant)
  - Photograph each site from all sides to document all aspects of the property (Consultant)
  - Sketch footprint and describe type of foundation(s) and other hardscape (Consultant)
  - Sketch and record ash footprints in addition to structures (ie vehicles, equipment, ATVs, trailers, recreational vehicles, creek beds, culverts, bridges etc., (Consultant)
  - Identify and photograph other property-specific hazards (i.e. swimming pools, retaining walls, basements, chimneys, partial walls, hazardous trees, large vehicles) (Consultant)
  - Check that registration abatement of any registered vehicles (inc=l. automobiles, trucks, equipment, boats, trailers, recreational vehicles, motorcycles, all-terrain vehicles, etc...) (1 City/County, 2 California Highway Patrol, 3 Department of Motor Vehicles, other)
  - Conduct radiological and mercury sweeps (as necessary depending on geologic history of mining operations) and inspect for bullets and mortar rounds, and other explosive materials. (Consultant)
  - Consultant;s Certified Asbestos Consultant (CAC) to assess each property for any remaining asbestos and mark it for removal (Consultant)
  - Report the need for placement of Erosion Control BMPs for immediate protection of waterways, culverts, drainage inlets, etc. (Contractor to install)

- Debris Removal (Contractor, Consultant – monitors and documents)
  - Check for underground utilities by alerting Underground Service Alert (USA) for public right of way (Contractor)
  - Check for underground utilities by using an independent private utility locator service for private right-of-way, if necessary (Contractor)
  - Knock down Chimneys and/or partial walls for CAC to safely assess them for asbestos containing materials. (Contractor)
  - Remove gross asbestos containing materials for those properties where asbestos is found or suspected as identified by the Consultant's CAC (Contractor's Asbestos Removal Contractor)
  - Initiate contact with property owners to notify the estimated commencement of debris removal activities (Consultant)

- Prior to any debris remvoal activities, CL and Division Supervisor to conduct a 360 degree Site Walk with the Contractor's Crew Lead/Operator prior to commencing with any site work (including debris consolidation), review the property owner's ROE comments and requests, verify the extents of the property with review of the Site Assessment Report, point out locations of items to protect or stay away from (septic tanks, leach fields, water wells, drop offs, etc...). Determine how and where the operator intends to load the trucks. Determine limits of Exclusion zone.
- Remove vehicles for adjudication, by law enforcement, at Contractor selected and prepared and operated (and IMT approved) transfer facility then transport to recycling or disposal facility (Contractor)
- Collect, consolidate, and remove metals for recycling (Contractor)
- Collect, consolidate, and remove ash and debris for disposal (Contractor)
- Collect and remove any on-site wattles placed, by others, that have collected ash and debris sediment between the ash footprint and a nearby waterway. Dispose of the wattles and sediment with the ash and debris. (Contractor)
- Collect, consolidate, and remove 3 to 6 inches of ash contaminated soil from the ash and debris footprint for disposal or landfill reuse for cover soil. This will include the removal of soils around concrete slabs, walkways, patios, and foundations, etc. while still in place. These soils may best be removed by laborers utilizing hand shovels. Once the 3-6- inches of soil is removed, concrete can be removed. (Contractor)
- Collect, consolidate, and remove concrete for recycling (Contractor)
- Track and log each truck used and the total quantities and types of materials transported to landfill or recycling facility (Consultant and Contractor)
- Record trucks identification numbers and type of material removed by each truck from each lot (Consultant)
- Finish grading/smoothing ground surface. (Contractor, consultant to monitor)
- Consultant together with the Debris Contractor's laborers shall connduct a final site walk to make sure there are no remaining nails, glass shards or other debris remaining within the former structural debris ash footprint. Once it looks to be clear, call the Division Supervisor and DGS or designee to confirm that the site is should be cleared for soil sampling.
- Prior to forecasted storm events, Install temporary BMPs near waterways, as directed by the DGS and approved by the IMT and the CM. (Contractor)

- Confirmation Sampling (Consultant):
  - Sample and analyze soil, as described in the CalRecycle Soil Sampling Plan.
  - Compare soil results to cleanup goals, developed by the Consultant (Consultant and DGS or designee)
  - If results exceed cleanup goals, another layer of soil will be removed from the specific area that exceeded these goals, as directed by the DGS or designee, for disposal (Contractor) and the site re-sampled (Consultant)

- Implement Erosion Control (Contractor, Consultant – monitors and documents)
  - If results are less than or equal to cleanup goals, the site will be prepared for final erosion control (Contractor) and certification (Consultant)
  - Place required storm water best management practices to control sediment runoff from each remediated property, as identified in the ECP and Section 7.1 Erosion Control Methods, or as otherwise directed by the DGS or designee. (Contractor)

- Documentation Tracking and Consolidation (Consultant)

- o Collect and organize debris removal documentation through web based database (Consultant)
- o Prepare site specific final reports and database (at CM's direction) for delivery to CalRecycle (Consultant)

4.2 Hours of Operation

All on-site debris removal work will typically be performed between the hours of 7:00 am to 6:00 pm, Monday through Saturday, or adjusted as specified by local noise ordinances. Debris removal crews may commence health and safety briefings at either the beginning and/or end of shift, outside of these allowed operational hours, which should not impact compliance with the noise ordinance.

4.3 Initial Operational Area Reconnaissance

Permits (CalRecycle, Consultants)

Table 4 lists the requirements and permissions anticipated for the Operation.

Table 4. Summary of Permit Requirements

Requirement/ Permission	Entity Responsible for Obtaining	Comments
Property owner Site Access/ Authorization for Right-of-Entry	Counties	Executed forms are required by owners before work can begin on their property.
California Environmental Quality Act (CEQA)	Exempt	Operations undertaken, carried out, or approved by a public agency to maintain, repair, restore, demolish, or replace property or facilities damaged or destroyed because of a disaster are exempt from CEQA. Public Resources Code, §§ 21080(b) (3), 21172; see also, 14 CCR 15269(a).
Section 1602 Streambed Alteration, Department of Fish and Wildlife (DFW)	CalRecycle	Except for removal of dangerous burned trees. Typically, the Operation does not include work in, or through, a streambed. If a stream crossing is necessary to access and remove burned debris, CalRecycle will submit a Lake or Streambed Alteration Program Notification of Emergency Work Permit to DFW within 14-days of commencing with streambed crossing.
Federally Funded or on Federal Property – Follow National Environmenatl Policy Act (NEPA)	FEMA as lead Agency; CalRecycle	CalRecycle's BP, DGS, Environmental Unit Lead, and Consultant will Consult with FEMA or Federal lead agency regarding the debris removal operation and potential impacts on federally protected resources (ie waters of the US, etc...) endangered species, and historical and cultural artifactsm, etc. to be addressed and incorporated in the EPP and protection used in the ECP.

Federally Funded or on Federal Property - Federal Section 7 Permit for Federally Endangered Species	CalRecycle's Section Chiefs or its Consultant	CalRecycle will Consult with FEMA or Federal lead agency regarding the debris removal operation and potential impacts on federally endangered species or endangered species habitat as described in the EPP and protection used in the ECP.
Federally Funded or on Federal Property – Section 106 National Historic Preservation Act assessments	CalRecycle or its Consultant	CalRecycle Coordinate through Archaeological Consultant to consult with the State Historic Preservation Office (SHPO) to determine if there are any archeological sites of interest/concern within the footprint of the debris removal operation. If so determine how to mitigate, as addressed in the EPP and ECP.
Federally Funded or on Federal Property - US Army Corps of Engineers (USACE) Non-Reporting Nationwide 33 Streambed crossing permit	CalRecycle or its Consultant	CalRecycle or its Consultant will Consult with the USACE regarding the applicability of the Nationwide 33 permit for the emergency response/recovery activities affiliated with the operation. May need to obtain a 401 Permit approval from the local Regional Water Quality Control Board (RWQCB). As addresed in the EPP.
401 Permit with the RWQCB	CalRecycle or its Consultant	Contact the RWQCB, and submit information required for review and approval as addressed in the EPP and ECP
County Encroachment Permit	Contractor (May be waived)	Use of temporary trailers or storage units on County right-of-way will require submittal of an application.
County Demolition Permit	CalRecycle (may be waived)	Counties to issue a blanket permit to demolish all structures destroyed by the fire under this program.
Air District Asbestos Demolition Permit/ Notification	CalRecycle (may be waived)	CalRecycle or its Consultant will make appropriate notification to local Air Quality Management District (AQMD) California air Resources Board (CARB) and Federal EPA for demolition of any remaining standing structures and chimneys that fall under the requirement, as necessary.
Site Hazardous Waste Transport	CalRecycle	CalRecycle will submit and emergency Department of Transportation (DOT) waiver to allow for the transport and consolation of hazardous materials at a predefined staging area.
Traffic Control	Contractor	CalRecycle contractors will supply necessary signage as appropriate.
Hazardous Waste Disposal	CalRecycle	CalRecycle will contact the DTSC if any household hazardous waste is found on properties, may arrange for these materials to be accumulated at one location, if appropriate, and arrange for the DTSC to

		make special collection trips to the operation to appropriately transport and dispose of such materials.

Water Source (Contractor)

The Contractor will be responsible for obtaining water use permits, complying with permit conditions, and monitoring water usage from water hydrants using a meter or other required and approved method of tracking water usage. A water source will be identified by the State before contractor work commences.

Background Soil Assessment (CalRecycle/ Consultant)

CalRecycle and its consultant will identify regions with potentially differing soil types footprint of the Incident. Soils in the vicinity but not in the ash impacted area will be collected and sampled to establish the naturally or anthropogenic occurring metal concentrations around the Incident.

In addition, if directed by the DGS, baseline assessment samples may be taken at truck staging areas and equipment yards. These samples shall be analyzed for California Code of Regulations (CCR) Title 22 metals and Total Recovered Petroleum Hydrocarbons (TRPH) by a California-certified laboratory. Results from these samples will be used to establish a baseline and additional samples will be collected upon demobilizing to ensure no residual material or hydrocarbon spill was left behind.

The Debris Removal Contractor will be responsible for removing contaminated soils contributed by its operation in these staging areas, as verified by the Consultant following appropriate predetermined soil sampling and analysis protocols.

Air Monitoring (Consultant)

Prior to commencement of debris removal, CalRecycle and its consultant will collect background air monitoring samples to establish baseline levels for air contaminants collected from community and highly sensitive receptor areas as determined by the DGS, or designee, and the Consultant. The air monitoring will including particulate matter, airborne metals and asbestos. Once debris removal commences ongoing air monitoring in the community and at the job sites will be performed as outlined in the DGS approved Air Monitoring Plan.

4.4 Site Assessment (Consultant)

CalRecycle and its Consultant will assess and document information prior to debris removal as described below.

Address Signs

The Consultant shall complete underground service alert (USA) assessments at the entrance to each property for which an ROE has been obtained and prior to or as part of conducting the initial site assessment for such property. Once cleared, the Consultant shall install one reflective aluminum address sign will be required to be installed per parcel. The sign dimension should be 4 to 6 inches in width and 18 to 24 inches in height. The edges shall be round and free of sharp edges. The background shall be a reflective green and all text shall be reflective white. Each sign shall be mounted on a 6-foot pre-drill, u-channel steel post. The numbering for the address shall be at 3 to 4 inches in height.

Address sign example (not to scale):

Property Survey

Property surveys will include, but not be limited to: apparent property lines, sketching the foundation and hardscape footprints and debris field footprints, septic tank and leachfield locations (if applicable), sanitary sewer laterals, water lines, water wells, electrical lines, fuel tanks, dead and dying trees in and around the footprint of the debris fields, possible environmental concerns (surface waterways, creeks, streambeds, or other pre-determined habitats of concern) and identifying property-specific hazards on a field data form. Oversized debris (i.e., burned cars, large appliances, water heaters, etc.), potentially hazardous materials (i.e., propane tanks, chemical containers, ammunition cases, etc.), and potentially hazardous conditions (unstable walls, exposed electrical lines, wells, cisterns, damaged trees, steep slopes, post tension concrete slabs, etc.) will be noted and mapped on the form. Photographs will be taken from each angle of the property and additional photographs should be taken to document hazards or other existing conditions.

Asbestos Survey

As part of the Phase 1 disaster response (not part of this Phase 2 - Debris Remobal Operation), the Department of Toxic Substances Control (DTSC) conducts an independent hazardous waste sweep for hazardous wastes and potential asbestos containing material (ACM) for the destroyed structures in the impacted area prior to the commencement of debris removal operations. Among other hazardous wastes, DTSC removes suspected bulk ACM where possible. DTSC asbestos removal protocols do not include laboratory confirmation of ACM. DTSC will evaluate potential ACM based on a certified asbestos consultant opinion and remove the suspected ACM. CalRecycle and DTSC coordinate on the remaining ACM and other hazardous waste issues.

CalRecycle will request an asbestos consultation from the local Air Quality Management District or Air Resources Board, as appropriate for the area, to comply with ACM collection, transport, and disposal requirements and regulations.

To be protective of the workforce, public health, and surrounding community, The Consultant shall perform an asbestos survey, by a Certified Asbestos Consultant (CAC), with laboratory analysis of samples collected on each site to evaluate each property for the presence of asbestos containing materials (ACM) for the need for removal. Additional scrutiny is placed on homes constructed before 1985 and debris sites with cement siding or vermiculite insulation.

Consultant shall conduct asbestos sampling will be conducted for suspected ACM materials which will include concrete samples. The goal of this survey is to reduce sending false positive ACM to the landfill and provide additional quality assurance and control that other bulk ACM was not missed in the initial surveys.

The Consutant shall perform full National Emission Standards for Hazardous Air Pollutants (NESHAP) asbestos surveys on partially burned structures and chimneys as long as they are

structurally safe. A CAC, or licensed structural or civil engineer will determine if the partially burned structure is safe to perform as asbestos removal on. Should the structure be deemed unsafe, the debris removal Contractor will use wet methods and heavy equipment to eliminate the risks. Once the structure or chimney is safely on the ground the Consultant shall perform a NESHAP asbestos survey

Radiological Monitoring

While it is unlikely that radiological debris will be found, based on past debris removals, radiological surveys are necessary to prevent exposure. CalRecycle's consultant shall perform a radiological survey around destroyed structures. Survey equipment should be designed for general radiological surveying such as a Ludlum 2241 or equivalent.

The action level for this Operation is set at two times background. Should a level of 2x background be detected, the surveyor will isolate (i.e., cordon off) the area and notify the Operations Section Chief. The elevated reading(s) will be traced until the source is determined to be due natural sources such as brick or geological formations. Should the reading not result from natural sources the Operations Section Chief will determine the location and rate and develop an action plan to secure the source as long as the reading does not exceed one milliroentgen per hour (1mR/hr) at one foot.

5.0 DEBRIS REMOVAL

5.1 Notifications

The following notices prior to start of the Operation, at a minimum:

Contractor

- Underground Services Alert (USA) will be notified at least 48 hours prior to debris removal.
- Local utility providers (i.e. water, sewer, power) will be notified prior to removal of any damaged structure to ensure the utilities are secure and off.
- Conduct underground utility survey by a private contractor on private property if necessary.

Consultant

- The property owner will be notified at least 48 hours prior to any debris removal.
- CARB Asbestos NESHAP Program will be notified of any demolition of a partially destroyed structure within one working day (as directed by CalRecycle). Notification form will be provided.

5.2 Debris Removal Site Documentation (Consultant)

The Branch Planner will develop an Incident Action Plan that defines work tasks for each Task Force and/or Division Supervisor to implement and will be produced on an as-needed basis, may be as frequent as daily.Typically IAPs are prepared 2 times per week.

Crew Leaders will document activities for each individual site according to the procedures established by the IMT and CM. Photographs taken before, during, and after debris removal shall include the property address, either by using the installed Operation sign or white board

with full address if Operation sign is not available. Crew Leaders will document all relevant activities and property conditions, including issuing tickets for each truck that transports debris or other materials from the property on which debris removal is occurring.

It is very important, for FEMA and CalOES funding eligibility purposes that CLs shall also monitor the debris removal crews as they load trucks to make sure that the operators do not mix loads with multiple material types. Trucks are to be loaded with one material type only (ie. to the extent possible, ash and debris will not be mixed with concrete; contaminated soil will not be mixed with concrete or metals, etc).

The CalRecycle consultant(s) will collect and organize all site and administrative documentation and will make the documents available electronically through a web-based portal. The CalRecycle consultant(s) will also review the contractor invoices and recommend payment for CalRecycle. The tracking and documentation will be consistent with current FEMA debris removal standard for reimbursement as practicable.

5.3 Household Hazardous Waste Identification and Removal

Based on past experiences, additional household hazardous waste remains under the debris, after DTSC completes its hazard waste survey and removal. Therefore, sometimes during Phase 1 removal operation, the DTSC team cannot remove all of the HHHW, since it may be partially buried. If the DTSC discovers a questionable item, it will be marked as hazardous with bright orange spray paint to be checked by a qualified individual. If the qualified individual does not deem it a hazard (e.g., propane tank without a valve), then the item will be marked with bright green spray paint with the words “O.K.,” or two stripes indicating whether the item is to be removed as debris or recycled.

If the Debris Removal Contractor or CL identifies an item and deems it hazardous, the waste will be segregated by the removal team to a temporary on-site storage. DTSC will collect and transport the hazardous waste to an appropriate facility at no charge to the State.

In an attempt to visually communicate hazards in the field, the guide shown below will be used to indicate if a hazard is or is not visually present. Each Crew Leader will determine if any member has color perception issues.

Table 5. Hazardous Materials Marking Colors

Debris or Potential Hazard	Spray Paint Color
Household Hazardous Waste (HHW), Battery, Tank, Cylinder	Bright Orange
Possible ACM	Bright Pink
Material Safe for Normal Disposal	Bright Green

5.4 Asbestos Containing Material Removal (Contractor, Assessed and documented by Consultant)

At minimum, the Contractor’s ACM removal team will implement the following best management practices for removing ACM:

- The Consultant's CAC or OSHA Certified Site Surveillance Technician (CSST) will consult with a licensed asbestos removal contractor to identify the location and area of ACM to be removed. (Consultant)
- The Contractor's registered Asbestos Removal Contractor will oversee and remove the ACM identified on-site by the Consultant's CAC. (Contractor)
- All on-site personnel removing ACM must have received the necessary health and safety training for conducting asbestos removal activities pursuant to Occupational Health and Safety Administration (OSHA) 1910.100, and CCR Title 8, Section 5192, and will be required to wear Level C personal protective equipment (PPE) when working in the exclusion zone. (Contractor)
- All gross ACM that can be safely and easily removed from the site will be adequately wetted prior to being bagged to meet the NESHAP leak-tight requirement for removal. At a minimum the plastic bags must be of at least 6-mil thickness, and the contents must remain wet. (Contractor)
- If bulk loading of ACM is utilized, the bin or container used for transport (e.g. end-dump trailer or roll-off box) will be tarped before transport. In addition, each load will be double-lined with 10-mil ply in such a way that once loaded both layers can be sealed up independently if as required by the landfill. (Contractor)
- All ACM must be sufficiently wetted 48 to 72 hours in advance of initiating removal of the material. The water shall be applied in a manner so not to generate significant runoff. (Contractor)
- ACM removed from the property must be manifested and transported for disposal by the asbestos removal contractor. An EPA Generator ID number will be assigned to this incident. (Contractor)
- Consultant Shall prepare manifests and obtain CalRecyle's DGS or designee signature on the manifest when the ACM is ready to be transported to landfill permitted to accept ACM. (Consultant)

5.5 Appliance (White Goods) and Vehicle Recycling (Contractor, documented by Consultant)

For any vehicles left on a property, vehicle registration abatement (incl. automobiles, trucks, equipment, boats, trailers, recreational vehicles, motorcycles, all-terrain vehicles, etc...) must be conducted prior to their removal from the property, unless otherwise directed by the DGS. These registration abatements will likely be conducted by the local City/County, the Department of Motor Vehicles, the California Highway Patrol, or another means, as determined by the IMT.

Materials that must be removed from appliances and vehicles (that are not completely burned) prior to crushing, baling or shredding for recycling include, but are not limited to:

- Used oils as defined in Article 13 of Chapter 6.5 of the Health and Safety Code (includes engine oil, lubricating fluids, compressor oils, and transmission oils)
- Fuel
- Chlorofluorocarbons, hydrofluorocarbons, and hydrochloroflourocarbons used as refrigerants
- Polychlorinated biphenyls known to be contained within motor capacitors and fluorescent light ballasts
- 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
- Putrescent materials (ie decomposing food wastes, etcf)

Records detailing removal and disposal operations involving all such materials will be recorded and manifested by the Consultant.

Appliances and vehicles that were completely consumed by the fire will likely not contain any of the above items. Appliances will be treated as metal debris and removed accordingly. Vehicles will be removed from the site and checked/processed for fluids before shipment to the recycling facility, unless otherwise directed by the DGS.

5.6 Storm Water Protection (Contractor, documented by Consultant)

Best management practices (BMPs) will be employed to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Potential sources of sediment from cleanup activities include vehicle and equipment tracking, exposed soil and slopes, export operations, disposal operations, and ash-filled topsoil stripping and stockpiling. Authorized non-storm water discharges anticipated for the Operation include water used to control dust, potable water, and uncontaminated excavation dewatering.

BMPs guidelines include, but are not limited to, the following:

- Water to Control Dust: Dust control is of the utmost importance on this Operation. Adequate dust control is required on all parcels within the Operation scope until all burn ash and debris, concrete, and soil materials are removed. This includes parcels where the Contractor is actively working and parcels awaiting remediation and gravel and dirt roads used to transport contractor debris truck traffic. The Contractor is required to provide one (1) water buffalo (or equal) for every debris removal crew assigned to an operation.

  Dust control will be implemented when there is visible dust generated from the site using fire-grade nozzles, small diameter (3/4" to 1") fire or garden hose, or with a water truck depending on the area being serviced. Water to be used for dust suppression may only be from designated areas. While the goal is to apply water spray for dust control to avoid surface run off, dust control shall take precedence. In the event there is significant surface run off, the contractor will control runoff with erosions control BMPs.

- Good Site Management Housekeeping: Good site management measures include cover or berming loose consolidated materials that are not actively being removed; storing any chemicals in watertight containers; control of off-site tracking of loose soils; preventing disposal of rinse or wash waters into the storm drain system; ensuring containment of sanitation facilities; cleaning or replacing sanitation facilities by inspecting them regularly for leaks; and inspecting and keeping equipment in good working order to prevent leaks.

- Vehicle Washing or Decontamination: Wash vehicles in a manner as to prevent unauthorized non-storm water discharges from reaching storm drain systems.

- Street Cleaning: Clean streets to collect tracked out sediment and operate street sweeping vehicles to prevent unauthorized non-storm water discharges from reaching storm drain systems. The Contractor is to provide street sweeping on roadways throughout the Operation on which debris and other disposal materials are hauled and tracked off parcels within the operational area. The street sweepers are to be PM10 efficient street sweepers that are certified by the South Coast Air Quality Management District (SCAQMD) as meeting the testing and performance standards set forth in SCAQMD Rule 1186. The Contractor is to provide the number of street sweepers as indicated in the IFB.

- Sediment Controls: Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. Best management practices include the use of silt fencing, fiber rolls, and street sweeping to prevent sediment migration. All materials shall be certified weed free in an effort to control the spread of noxious weeds. Sufficient quantities of temporary sediment control materials will be maintained on site throughout the duration of the Operation to allow implementation of temporary sediment controls in the event of significant rain.

- Run-on and Run-off Controls: Run-on and run-off will be managed within the immediate vicinity of each property's debris footprint area and areas used for equipment and truck access.

- Public Rights of Way: The Contractor will be responsible for all storm water protection on public rights of way on which the Contractor assigned debris removal properties.

5.7 Trackout Management (Contractor, documented by Consultant)

The Contractor will implement procedures to prevent or cleanup carryout and trackout of mud and soils as specified below. The use of blower devices, or dry rotary brushes or brooms, for removal of carryout and trackout materials from the heavy equipment on public roads is expressly prohibited. The removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.

The contractor shall prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site and at the minimum remove all other visible carryout and trackout at the end of each workday.

Cleanup of carryout and trackout shall be accomplished by:

- Manually sweeping and picking-up; or
- Operating a rotary brush or broom accompanied or preceded by sufficient wetting; or
- Operating a PM10-efficient street sweeper.

Waste from a street sweeper during this operation shall be disposed of as contaminated soils and transported directly to the landfill or covered in a waste hauler.

5.8 Traffic Control (Contractor, Consultant – monitors and documents)

Traffic control is required for these Operations and traffic control crews are required to provide traffic control throughout the Operation as required for safety and as approved by the IMT. The traffic control crews shall be trained in the principles of the California Department of Transportation (Caltrans) Revision 5 (Rev 5) of the 2014 California Manual on Uniform Traffic Control Devices (CA MUTCD), prior to commencing their work. the number of traffic control crews expected to be provided by the Contractor is indicated in the IFB.

Traffic controls and warnings standard to the construction industry and as required by the State of California motor vehicle code will be implemented on an as needed basis. Vehicles utilized for debris removal will be of legal weight according to the CalTrans State Standard Specifications (2018 Edition), Chapter 3 Section 702 “Public Convenience”, Chapter 3 Section 702 “Public Safety”, Section 12 ”Construction Area Traffic Control Devices”.

Traffic signs will be placed at both entrances to the community as needed. Traffic control will be updated as needed to adjust for changing conditions on site and in the community. Updated traffic plans will be prepared by the construction contractor and reviewed by the appropriate County representatives and DGS and communicated to all Operation personnel at each Safety Meeting.

All construction equipment working within the residential zones shall maintain a speed of 15 mph or less.

The DGS together with the State Health and Safety Officer will establish additional traffic controls as needed for safety reasons as well as to control site vehicle traffic during specific site activities such as equipment movement, press events or visits by dignitaries.

5.9 Pavement and Drainage Protections (Contractor, Consultant – monitors and documents)

The contractor, at all times, will protect the edge of pavement and drainage features to the extent feasibly possible. The contractor will also protect other crossings such as cattle guards and bridges.

5.10 Community Health and Safety (CalRecycle, Contractor, Consultant)

A Community Health and Safety Plan will be prepared by the CalRecycle Health and Safety Profesional. All site activities will be conducted consistent with this community plan and with consideration to the surrounding community and all citizens affected by the Incident. A copy of the Community Health and Safety Plan will be provided to the Contractor and Consultant.

5.11 Operational Health and Safety (CalRecycle, Contractor, Consultant)

The debris removal operations including consultants and contractors will, at all times, operate equipment and perform labor in a safe manner to ensure the safety of its employees and the public. The team will pay particular attention to operations around local roads and take the necessary precautions. Prior to start of debris removal, the contractors should note the number of power lines crossing the site, dead and dying trees, chimneys, mines, hand dug wells, and all underground utilities.

Appropriate eating areas will be designated and hand and eye washing and mobile sanitary facilities will be provided for each Operation site.

The Contractor shall also be aware of, include in the Contractor's Health and Safety Plan and provide instruction and necessary PPE for other local or regional health issues health issues such as pandemics.

5.12 Site Personnel and Community Air Monitoring (Contractor – Personnel Air Monitoirng, Consultant – Community and Personnel Air Monitoring)

Personnel air monitoring for Contractor debris removal crews, Consultant assessment teams and CLs (as determined by the Consultant's Health and Safety Plan) will include monitoring for asbestos, silica, and heavy metals (at a minimum arsenic, cadmium, chromium, (chromium +6 and mercury will be limited to the first 10 days of the initial personnel breathing zone samples or as directed by the Debris Group Supervisor based on site history and geological observations), copper, lead, manganese, nickel, silver and zinc) per OSHA requirements for hazardous waste operations. Samples are not required during soil re-scrapes or any other work after debris materials have been removed. At a minimum, the Contractor shall monitor one crew out of every five crews, or one crew if under five crews, two crews if under 10, three crews of under 15, etc. Crews shall be monitored on a rotational basis during the workweek. The personnel air monitoring results shall be submitted to the incident management team no later than seven (7) days of the sample event.

The Consultant will develop an DGS approved Community Air Monitoring Plan and implement the plan. Work sites will also be monitored on a DGS or designee, pre-approved basis for asbestos, heavy metals, and dust for the duration of the Operation or until such time the DGS or designee determines that air monitoring may cease. The locations of the air sampling stations will be approved by the DGS.

5.13 Debris and Ash Removal (Contractor, Consultant – monitors and documents)

Debris removal will be conducted on each property in the following order:

1. As directed by the BP, the Contractor will knock chimneys down to ground level for Health and Safety reasons. This will assist the Consultant's asbestos assessment CAC to safely assess chimneys and other portions of the debris for ACM. All chimneys taken down will be done with proper dust control.
2. Likewise, as directed by the BP, the Contractor will knock down hazard vertical walls that pose an eminent threat to the asbestos or debris removal crews.
3. If as ACM is found by the CAC, the Contractor's licensed ACM abatement contractor will remove Asbestos removal prior to debris removal operations being scheduled by the BP.
4. Once the Contractor Crew has been directed in the IAP and is slated on the crew's property runway the Contractor will mobilize to the property to commence operations.
5. The Consultant will be responsible for contacting the property owner 24-48 hours prior to debris removal Crew's mobilization to each new property.
6. Once there or prior to mobilization the Contractor's Excavator Operator and Superintendent will walk completely around the property (360 walk) with the CL and Division Supervisor to acknowledge what is on the property to be removed, confirming what the homeowner has asked to be saved, the locations of utilities, septic tanks and leach fields, power poles, above fuel and propane ground tanks, dead and dying trees,

location where the operator plans on loading trucks, planned ingress and egress for the property, and other operational concerns can be addressed prior to commencing with any work.
7. Segregate and remove and load out all metals onto metals trucks.
8. Remove ash and commingled debris and load out onto debris trucks.
9. Collect and remove any on-site wattles placed, by others, that have collected ash and debris sediment between the ash footprint and a nearby waterway. Dispose of the wattles and sediment with the ash and debris..
10. Collect, consolidate, and remove 3 to 6 inches of ash contaminated soil from the ash and debris footprint for disposal or landfill reuse for cover soil. This will include the removal of soils around concrete slabs, walkways, patios, and foundations, etc. while still in place. These soils may best be removed by laborers utilizing hand shovels. Once the 3-6- inches of soil is removed, concrete can be removed.
11. Remove fire damaged concrete foundations, walkways etc within the former footprint, from the site and load out onto concrete trucks and transport to the pre-determined dinsposal site. Any remaining concrete shards/chips shall be removed by hand and disposed of in a concrete loaded truck.
12. Potential final destinations for all debris types is included in the IFB.

Additionally,

- All materials removal equipment should have glass enclosures and weigh less than 60,000 pounds. The goal is to use equipment that minimizes the impact to the local roadway while completing the removal. For example, excavators should be smaller than or equal to a 325 Caterpillar or equivalent and front-end loaders should be small than or equal to a 950 Caterpillar or equivalent. However, certain operations may require large equipment.
- A water fog will be used during debris handling and waste loading operations utilizing a fire grade firefighting nozzle with shut off valves for dust control. The fire nozzle shall have sufficient water pressure to generate a high mist fog stream. The fire nozzle should have an adjustable flow rate, preferably 20 to 60 gallons per minute.
- All burn ash and debris must be sufficiently wetted 48 to 72 hours in advance of initiating removal of the material. The water shall be applied in a manner so not to generate significant runoff.
- All Ash and debris and contaminated soil loads must be well wetted and placed in plastic lined trucks and burrito wrapped to minimize any discharges on the roadways to the disposal site.
- All loads shall be covered with a tarp; this includes metal debris, contaminated soil, and concrete. Ash and debris loads will be placed in a plastic liner before covering with a tarp. Tarps shall be secured with no less than 6 anchors around the perimeter of the truck. No auto tarps will be allowed for this purpose.
- All waste material that is not loaded out at the end of each workday should be consolidated, sufficiently wetted, and/or covered to prevent the offsite migration of contaminants. No trucks can be pre-loaded with ash and debris.

5.14 Hazardous Waste Concrete Removal (Retaining Walls, Foundations and Slabs) (Contractor, Consultant – monitors and documents)

Existing footings, slabs, and foundation systems in fire-destroyed buildings should not be and/or not typically permitted for re-used. The effects of intense heat and fire on a foundation system renders the foundation unusable, or impractical for re-use. A long burning house fire can generate enough heat to damage and weaken the concrete and steel reinforcement bars in footings, slabs, and footing stem walls. Even though concrete is non-flammable and offers fire protective qualities for preventing the spread of fire, it loses most, if not all of its structural strength characteristics when exposed to extreme heat for a long period of time.

Foundation anchorage hardware (steel bolts and hold-down anchors) are typically lost or severely compromised during a serious fire and cannot be replaced or repaired without significant expense. Installing replacement anchors in an existing footing is labor intensive and requires special inspection during installation, which can add substantial cost. Replacement anchors for hold down hardware must be re-engineered and are difficult and expensive to install in existing concrete footings. Plumbing pipes and electrical conduit embedded in the concrete is usually destroyed or heavily damaged during a fire. Repairs and replacement of pipes and conduit in existing foundations involves the removal and replacement of portions of the concrete that encapsulates them, which further compromises the concrete. This process usually involves the saw-cutting or jack-hammering out those portions of concrete containing pipes and conduit, removing and replacing the damaged pipes and conduit, and pouring the replacement concrete. This task becomes dangerous when dealing with a post tension slab damaged by a fire. Additionally, moisture barriers placed under concrete slabs can be destroy or damage by heat and fail to prevent water from impacting the structure.

Older foundation systems typically do not meet today's structural design requirements for earthquake safety or wind loads. This is especially true in cases where the original building was constructed prior to 1974. Current State Codes require that new buildings meet or exceed certain minimum design and construction safety standards. In most cases, compliance with these standards is difficult or impossible to verify in an existing foundation system because the foundation is below ground and the size, spacing, and location of steel reinforcement steel embedded in the concrete is difficult to determine.

While some concrete structures such as retaining walls greater than four feet and piers, pilings, caissons, and horizontal structural will be left in place for slope stability, the IMT cannot guarantee these structures will be undamaged or are structurally sound. The owner should consult a license civil or structural engineer to determine the proper course of action to rebuild any concrete structure left by the IMT.

CalRecycle considers all structural foundations for residential structures to be destroyed by the heat from an unsuppressed structure fire. These slabs and foundations are no longer structurally sound and now considered debris. Additionally, with the known amounts of carcinogens, heavy metals, and asbestos, structural slabs, foundations and retaining walls shorter than 4 feet tall, will need to be removed to assess the former building sites for residual ash contamination.

5.15 Hazardous Waste Operations Best Management Practices (BMP) (Contractor, Consultant – monitors and documents)

The following BMPs should be used when undertaking removal actions pursuant to a declared State of Emergency. These BMPs should be undertaken to address the removal of hazardous materials, household hazardous waste (HHW), debris, asbestos containing materials (ACM), and air monitoring and sampling from the disaster or incident site. Use of BMPs will also ensure the proper management and removal of hazardous materials, debris, burn ash, and other asbestos containing materials in a manner that ensures protection of public health and the environment, as well as, ensuring the health and safety of on-site personnel.

At a minimum, site personnel shall follow the following BMPs for undertaking debris removal activities:

- All on-site personnel working in the exclusion zone (EZ) shall receive the necessary health and safety training and medical surveillance pursuant to OSHA 1910.100, and CCR Title 8, Section 5192. An exclusion zone contains areas where contamination is either known or likely to be present or, because of work activity, has the potential to cause harm to personnel. The exclusion zone is identified as the debris/ash footprint of each property.
- All on-site personnel working in the EZ shall be required to wear Level C PPE when working in the exclusion zone
- The contamination reduction zone (CRZ) is an area of the property not visibly contaminated with ash and debris. The contamination reduction zone will be used for doffing PPE.
- A support zone (SZ) may consist of any uncontaminated and nonhazardous part of the property. Donning of clean PPE is completed in the support zone.
- The Contractor and Consultant will conduct on-site and off-site air monitoring and sampling for asbestos and heavy metals during all ACM and debris removal operations to demonstrate the effectiveness of engineering controls to protect cleanup personnel and the surrounding community.
- All non-hazardous waste haulers who observe loading operations outside of the vehicle cab, and/or covering (e.g. tarping) the trailer or container must wear N95 masks and Tyvek coveralls.
- All landfill operators that may come in contact with the waste during off-loading operations should follow their facilities protocols for wearing PPE and respiratory protection.

5.16 Overview of Waste Types and Destination Facilities (CalRecycle determines, Contractor enters into agreements)

The specific facilities to be used in an Incident will be identified at the time of the Incident and will be provided to the Contractor in the IFB. The typical facilities that will be provided are listed below:

LANDFILLS

CalRecycle will coordinate with the Contrator regarding the names and locations of the nearest landfills that can accept ash and debris, as well as ACM,from the operation. The Contractor will inform the IMT to which landfill(s) they intend to dispose of these materials.

CONCRETE RECYCLER
CalRecycle will coordinate with the Contrator regarding the names and locations of the nearest concrete recyclers. The Contractor will inform the IMT to which recycler(s) they intend to deliver these materials.

METAL RECYCLER
CalRecycle will coordinate with the Contrator regarding the names and locations of the nearest metttal recyclers. The Contractor will inform the IMT to which recycler(s) they intend to deliver these materials.
Table 5 provides waste types and destination information for a typical Incident.

Table 6. Waste Destination Summary

Material	Disposal Contact or Facility
Ash and Debris	IMT approved Landfill
ACM	Landfills with special permits for disposal of ACM. Friable asbestos will be disposed of an appropriate facility by the asbestos removal contractor under EPA Generator ID# provided by CalRecycle
Metal Debris	IMT Approved Metal Recycling Facility
Metal Discards (Appliances)	Freon Extraction is REQUIRED for refrigerators not impacted by the fire. DTSC has removed refrigerant. Remaining metal will be recycled at IMT Approved Metal Recycling Facility
Vehicles and Trailers	Vehicles and/or hauling trailers that did not sustain damage or vehicles and/or trailers that sustained minor damage will be left on the property. These vehicles and/or trailer may be moved by the debris removal team to ensure worker safety and as needed to complete the debris removal. Other damaged vehicles and/or trailers will be properly adjudicated either on-property removed by the contractor to in intermediary location for adjudicatdion, through a covered vehicle transporter or low bed The contractor is ultimately responsible that the adjudicated vehicle is taken to a metals recyclery .
Concrete	IMT Approved Concrete Recycling Facility
Tires	Tires will be shredded and disposed of at IMT Approved disposal site
Household Hazardous Waste (HHW)	Contrator will set aside such materials, if safe to do so, out of the way of the operation. DTSC will collect and transport HHW to a permitted hazardous waste disposal site.

Material	Disposal Contact or Facility
Human Remains	If human remains are located, the work will stop and CalRecycle will contact the County. Due care of the remains will be taken.
Dead Animals	If dead animals are discovered, they will be disposed of in accordance with local restrictions with the ash and debris, unless directed by the property owner or Cpounty Health department.
UXO (Unexploded Ordinance)	If UXO is discovered, CalRecycle will notify the local Sheriff Department to arrange for proper disposal.
Radioactive Debris	All impacted lots will be screened for radiation before removal. If radioactive debris is encountered, the material will be removed and properly disposed of by DTSC.

5.17 Commercial Department of Transportation (DOT) Inspections (Consultant)

The Consultant will hire an independent third party 2-person DOT commercial truck inspector teams. The inspector teams shall perform a level one inspection for all commercial trucks assigned to the incident. Inspections will include all haul trucks, water tenders, tow trucks, street sweeper, low-beds, and other commercially licensed vehicles used on the Operation. Water trucks used specifically on site lots are not subject to inspection provided they are not carrying water loads on a public road. These water trucks are considered construction vehicles.

5.18 Significant Cultural Artifacts and Tribal Remains Protocols (Awareness by all)

Based on past debris removals, culturally significant artifacts and/or remains are highly likely to be found. CalRecycle will work with the local Native American tribe(s) to ensure that artifacts and/or are properly cared for per the tribes policies and procedures.

In the event that Native American human remains are found during these activities, debris removal crews will immediately cease work on the site and contact the appropriate Tribal Lead Monitor to come view the find. The Tribal Monitors are empowered to recommend stoppage or relocate excavation activities, for short periods of time, to conduct further controlled excavation of inadvertently discovered cultural items for evaluation by an archaeologist.

If Native American human remains are found, coordination of the treatment of Native American remains and funerary objects and any cultural, archaeological, and ceremonial items will be conducted by the local tribe.

If necessary, a qualified archaeologist may be required to be present during grading activities to identify and/or ascertain the significance of any subsurface cultural resources or to aid in the avoidance of sensitive areas. It is agreed that the local tribe may select the archaeologist to ensure the archaeologist is familiar with the Tribes' indigenous lands. Tribal monitors must also comply with Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements while on site during debris operations.

5.19 Driveways (Contractor, Consultant – monitors and documents)

Undamaged driveways shall be preserved to the extent practicable. The goal is to provide a stabilized construction entrance for reconstruction. If the driveway is damaged or contaminated by burned vehicles or by debris removal equipment or haul trucks to the extent that the driveway is unsafe, the driveway will be removed to the extent necessary. Remove the driveway to the nearest concrete joint or five feet if asphalt outside the contamination or damage. All driveway cuts will be made using a concrete saw. Use PPE.

5.20 Pools (Contractor, Consultant – monitors and documents)

In general, pools are not eligible for removal and will not be drained by the IMT. The owner should contact the local government for assistance or evaluation of pools due to possible vector and health issues. Debris may be removed from the pool depending site circumstances.

The contractor will place safety fencing (as per Caltrans 2018 Standard Specifications 16-2.03) completely around the pool where feasible and notify the property owner. Should the pool be structurally built into the foundation/slab, the IMT will discuss removal options with the property owner and Contractor to determine the course of action.

Above grounds may be removed if the property owner wants the above ground removed. Pool water may be used as dust control if feasible.

5.21 Tree Identification and Removal (Contractor, Consultant – monitors and documents)

While certain burned trees are obviously hazardous and the Contractor and/or the Operations Section Chief can approve the removal, a forester or arborist may be necessary to perform an assessment of questionable trees, which may pose a hazard. Trees that the Contractor determines pose a threat to incident personnel may be removed prior to the start of Structural Debris Removal operations. The identification and removal of these trees is a different function than the identification and removal of Hazard Trees during a separate Hazard Tree Removal Function (if that is part of the Contractor's scope of services).

Following identification and marking of hazardous trees, the Contractor, or an approved subcontractor, will remove trees employing all engineering controls to mitigate dust generation and ensure site safety protocols. Trees should be felled in areas away from utilities, septic tanks, or ash. Should it be necessary to fall a tree in the ash, the tree shall be appropriately decontaminated. All wastes generated from the removal of trees will be hauled to an appropriate waste or recycling facility.

5.22 Damage to Public and Private Property (Contractor, Consultant – monitors and documents)

Damage to private or public property for which the Contractor or a subcontractor is responsible, as part of the Operation, will be repaired by the Contractor at no cost to the State. Responsibility of the Contractor to repair incidental damage, referred to in the private property ROE, shall be considered and determined by the CM, the DGS and the IC. Damages to such items as roads, road shoulders, trails, and other improvements (including but not limited to gates, fences or signs, etc) damaged by the Contractor will be repaired to a like or better condition as that found prior to the start of work. Repairs may include repairing or replacing drainage control features.

Significant damage to existing roads, road shoulders, trails or other improvements, determined to be caused by Contractor must be repaired by Contractor at Contractor's expense within thirty (30) calendar days of notification by the IMT.

Roads and shoulders used as part of the Hazard Tree Removal Operation will be maintained as needed. Road and shoulder repair expenses will be the responsibility of the Contractor.

5.23 Damage Claims from Public and Private Properties (Contractor, Consultant – monitors and documents)

Damage claims that arise from Debris Removal or Tree Removal operations will be documented by the Consultant(s). After a review of the details, from the documentation, of the damage, the IMT will make a decision regarding the validity of the damage claim and who, if anyone, will be responsible for repairing the reported damage.

6. Post Debris Removal

6.1 Confirmation Sampling (Consultant)

Confirmation sampling will be conducted after fire-related structural debris has been removed from a property. After the debris is removed, representative soil samples will be collected and analyzed to measure concentrations of constituents of concern.
If any of the areas exceed the site-specific screening levels, the sampling locations will be inspected and it will be decided by the DGS or designee and the Consultant if a localized soil re-scrape will be needed. Upon completion of this remediation, the DGS or designee and Consultant will collect additional samples from the area and submit them for analysis as discussed above.

Confirmation sampling results will be compared to the Operation established cleanup goals to assess the effectiveness of the ash and debris removal. Once the entire property meets the cleanup goals it will be ready for final erosion control bmp placement and a final site walk.

Confirmation sampling will be conducted after fire-related debris from structures, mobile homes, large debris fields, RVs, and vehicles have been removed from a property. After the debris is removed, representative soil samples will be collected and analyzed to measure concentrations of constituents of concern. CalRecycle's confirmation sampling will be based on the United States Environmental Protection Agency's "Superfund Lead-Contaminated Residential Sites Handbook." The number of soil samples collected per excavated area on a parcel will be determined based on the estimated square footage of the ash footprint; a minimum of one composite sample will be collected from a footprint measuring approximately 100 square feet or less.

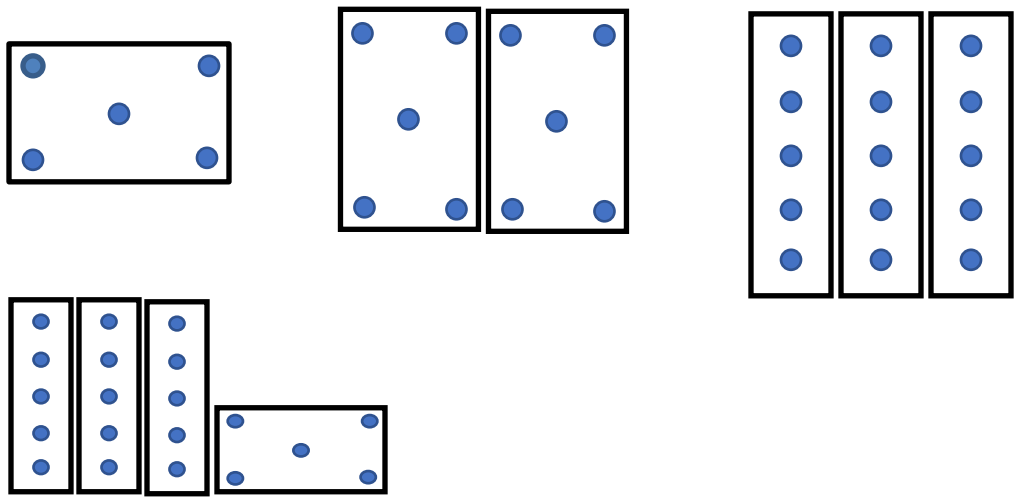
If the ash footprint is greater than 5,000 square feet, the consultant will prepare a sampling strategy such no five-point decision unit has any dimension greater than 100 feet. In general, a sampling strategy of one additional decision unit per 1,000 square feet if the ash footprint exceeds 5,000 square feet should be followed. All sampling strategies should use a five-point dice pattern for single, double, or irregular shape decision units. If two, five-point dice decision units are used, the adjacent five-point composite sample point shall be a minimum of 12 inches away from the other decision unit. Each decision unit shall have a unique sampling location and

should not be co-located. Contiguous decision units of three or more should favor the use of a straight-line pattern. Table 7 indicates the total number of five-point, composite samples needed to be collected based on the estimated square footage of ash footprint.
The Figure below shows examples of sampling strategies for different size decision units.

Table 7. Confirmation Sampling Matrix	
Estimated Square Footage of Ash Footprint (Decision Unit)	**Number of 5-Point Aliquots**
0-100 square feet	1
101-1,000 square feet	2
1,001-1,500 square feet	3
1,501-2,000 square feet	4
2,001-5,000 square feet	5
>5,000 square feet	Sampling strategy will be discussed between the IMT and Environmental Consultant

The Figure below shows examples of sampling strategies for different size decision units.

Figure 6.1 Typical Confirmation Sampling Strategies for Decision Units.



All confirmation samples will be collected from a depth of 0-3 inches using a dedicated 4-ounce plastic scoop and placed in 8-ounce jars. Samples will be shipped to an approved laboratory for analysis for Title 22 Metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc) by EPA Method 6020 and/or EPA Method 7471A for Mercury. Other analytes were not selected based on previous fire incident sampling (CalEPA 2015). Each aliquot location will be recorded on the site assessment log and physically marked with irrigation flags. A geographic positioning system (GPS) may also be used if sample locations are not easily determined.

If any of the areas exceed the site-specific screening levels, the aliquot (sample) locations will be evaluated and it will be decided by CalRecycle and the Consultant if a localized scrape or a full scape of the portion of the remediated footprint will be needed. Upon completion of this remediation, the Consultant will collect the same five-point composite sample from the area and submit them for analysis as discussed above.

Confirmation sampling results will be compared to the project established cleanup goals to assess the effectiveness of the ash and debris removal. The Consultant will evaluate the analytical results by comparing the soil sampling results to the pre-determined background concentrations and cleanup goals. If any of the confirmation sampling results exceed cleanup goals, the parcel will be further excavated at the direction of the DGS and the Consultant will collect additional confirmation soil samples after the excavation is complete.

All soil confirmation samples will go through a Level 2 verification process.

Once the samples pass the cleanup goals or site-specific goals, a sample approval form will be forwarded to the local government so the property owner can begin the permit process. The property owner is not allowed to impact the sampling area until erosion control and final site walk is complete.

6.2 Cleanup Goals (Consultant)

California and Federal health-based standards were compiled to evaluate cleanup goals for the Camp Incident debris operation. These goals are based on screening levels established by the United States Environmental Protection Agency (USEPA), DTSC Office of Human Health and Ecological Risk Assessment, and the Office of Environmental Health Hazard Assessment for residential uses, and the local soil concentrations that are naturally occurring or from anthropogenic sources. These background levels are critical in determining the cleanup goals. Using appropriate background levels ensure that soil is not removed which may be above the health-based standards, but are not related to the debris from the incident.

While some fire debris projects are localized and backgrounds levels do not vary, some debris projects cover 100 square miles, multiple geological units, and may be impacted from former mining or other anthropogenic sources (i.e., highways, industrial businesses, etc.) where local soil concentrations can vary.

Based on natural and anthropogenic variability of metals in the local County area, the 95% upper tolerance limit (UTL) will be used as a screening value, unless the California Health Standards are higher. All other metals will use pre-designated health screening levels. In addition, the Consultant will establish cleanup goals for the project and will prepare a Background Sampling and Cleanup Goals ReportTypical background and health-based standards are shown in the Figure below.

Figure 6.2 Typical Soil Background and Health-Based Standards for California Wildfire Structural Debris Removals

California Residential Wildfire Soil Cleanup Goals Work Sheet 2019 [1]

	Antimony (Sb)	Arsenic (As)	Barium (Ba)	Beryllium (Be)	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Selenium (Se)	Silver (Ag)	Thallium (Tl)	Vanadium (V)	Zinc (Zn)
Typical Background Metals Calcuations		Background					Background		Background								
Hazardous Waste TTLC Limit[b]	500	50	10000	75	100	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
US EPA RSL[c]	31	0.7	15000	160	71	120000	23	3100	400	11	390	1500	390	390	0.8	390	23000
CalEPA CHHSL[d]															5.0		
DTSC HERO[e]	-	0.07	-	15	5.2	36000	-	-	80	1	-	490	-	390	-	390	-
Typical EPA 6020 Practical Quantitation Limit (PQL)	1	1	1	1	1	1	1	2	1	0.2	1	2	2	1	1	1	20
Typical EPA 6020 Method Detection Limits (MDL)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.1	0.5	1	1	0.5	0.5	0.5	10
California Residental Wildfire Cleanup Goals	**31**	**Background**	**9999**	**15**	**5.2**	**2499**	**Background**	**2499**	**80**	**1/11**	**390**	**490**	**99**	**390**	**5.0**	**390**	**4999**
Laboratory Error Rate of 20%	**6.2**		**0**	**3**	**1.04**	**0**		**0**	**16**	**8695.2**	**78**	**98**	**0**	**78**	**1**	**78**	**0**
California Residental Wildfire Cleanup Goals[f]	**37.2**	**Background**	**9999**	**18**	**6.24**	**2499**	**Background**	**2499**	**96**	**1.2/13.2[g]**	**468**	**588**	**99**	**468**	**6**	**468**	**4999**

Notes:

All results presented in milligrams per kilogram (mg/kg)

Use these values for the first rescrape of soil. Additional rescrapes should include site specific background study to ensure clean soil is not being removed. Second rescapes may be performed if results are outside screening and/or background levels.

Cleanup goal selected using the higher value of background or appropriate health-based screening level

1- Developed by CalRecycle and based on past residential fires and background soils in California.

a - Background levels calculated based on 95th upper tolerance level with 95 percent coverage of data.

b -TTLC, California Code of Regulations, Title 22, Chapter 11, Article 3, used to define California regulated hazardous waste. Note: cleanup goal is below TTLC limit so no lab error rate applies.

c - United States Environmental Protection Agency (USEPA) November 2018 residential soil Regional Screening Levels (RSLs).

d - California Environmental Protection Agency, Revised California Human Health Screening Levels, 2010. Due to the techincal limitations of the PQL and MDL, CalRecycle will use 5 mg/kg for Tl.

e - Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) Note 3 June 2018 residential screening values.

f - If The TTLC is used for the cleanup goal if less than the environmental screening levels. Goal is 1 ppm less than the TTLC limit so no lab error rate applies.

g - Mercury goal is close to the practical quantitation limit. Use 1.2 mg/kg as the goal unless in an area with naturally occuring mercury. Then use site specific background value or 13.2 mg/kg.

Note: Cleanup goals are based on background levels, California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) DTSC-modified Residential Soil Screening Levels (SLs)**,** and/or the U.S. Environmental Protection Agency (USEPA) Residential Regional Screening Levels (RSLs) and the California Hazardous Waste Limits (TTLC)**.**

6.3 Dangerous Conditions (all Parties)

Wildfire disasters can uncover and cause a number of dangerous conditions that would otherwise go undetected. Besides the dangerous conditions from burned trees, past CalRecycle disaster Operation have also discovered hand-dug wells and cisterns, unsecured mine shafts and tunnels, and unsafe bridges. These items may need to be addressed by the Contractor either using contract bid items, if applicable, or by working through a contract change order process to assess the costs and include them in the Contractor's scope or work.

6.4 Potential Earthwork (Contractor, Consultant – monitors and documents)

This item is very rarely used, but is included for those rare instances. No more than 50 cubic yards of clean soil will be placed on any one site without written authorization from the affected Counties and the Operations Section Chief. If more than 50 cubic yards of fill material are necessary, the CalRecycle engineer will apply for a grading permit. If fill material is necessary the soil shall be placed in thin lifts. Lifts shall not exceed 8 inches uncompacted and shall be applied within 3 percent of optimum moisture content or as directed by the Operations Section Chief. The lift shall be compacted with a target compaction of 90 percent of the maximum dry density as determined by ASTM D 1557. If imported fill material is necessary the borrow pit will

be pre-identified and approved by the incident management team before operations. The import will be tested per CAM-17 to ensure the material is not contaminated before placement.

6.5 Cover Materials (Contractor, Consultant – monitors and documents)

This item is very rarely used, but is included for those rare instances. Shall it be necessary to cover a site due to potentially hazardous soil conditions, naturally or anthropogenic, the cover material shall also be tested per CAM-17 to ensure the import is below screening levels. The cover shall be applied at a depth of 3 to 6 inches and compacted. If imported cover material is necessary the borrow pit will be pre-identified and approved by the incident management team before operations. The cover materials should be applied to all contractor disturbed areas and other areas as directed by the Operations Section Chief. Erosion control devices should also be installed such as compost filter socks that do not require the trenching of the soil. Cover material will not require a grading permit.

6.6. Base Rock Placement (Contractor, Consultant – monitors and documents)

Base rock materials must meet the requirements of Section 26 of the 2018 CalTrans Standard Specifications for ¾" Class 2 Aggregate Base, placed at a nominal thickness of 3" with a 95% relative compaction. Recycled material that meets CalTrans specifications for Class 2 Aggregate Base is acceptable.

6.7. Temporary Safety Fencing Installation (CalTrans Type ESA) (Contractor, Consultant – monitors and documents)

Temporary Safety fence, as described in the following paragraphs, will be installed around potential safety hazards, such as swimming pools, drop-offs, ledges, cisterns, or other potential safety hazards for which such a fence would be protective, as determined by the DGS or designee. Sites on which fencing is to be placed will have been cleared of ash and or other debris, as part of the overall debris removal operation. Fencing will be installed after the debris removal Contractor has demobilized from the area and the property has passed its soil sampling and analysis testing. The fencing is intended as a safety precaution to indicate that there are a nearby fall hazards after the debris removal operation has been completed. The fence is intended to minimize access in areas directed by the DGS. This fencing will not be removed by the Contractor.

Temporary fence shall be furnished, installed, and maintained (while the Contractor is deployed to the Operational area and until the properties are signed off back to the County, in conformance with the details shown on the plans, as specified in these special provisions and as directed by the Engineer.

MATERIALS

Used materials may be installed provided the used materials conform to these special provisions. Materials for temporary safety fence (Type - Environmentally Sensitive Area - ESA) shall conform to the following:

High Visibility Fabric

High visibility fabric shall be machine produced, orange colored mesh manufactured from polypropylene or polyethylene. High visibility fabric may be made of recycled materials. Materials shall not contain biodegradable filler materials that can degrade the physical or

chemical characteristics of the finished fabric. High visibility fabric shall be fully stabilized ultraviolet resistant, shall be a minimum of 5-feet in width with a maximum mesh opening of 2 inches x 2 inches. High visibility fabric shall be furnished in one continuous width and shall not be spliced to conform to the specified width dimension.

Posts

Posts for temporary safety fence (Type ESA) shall be of one of the following:

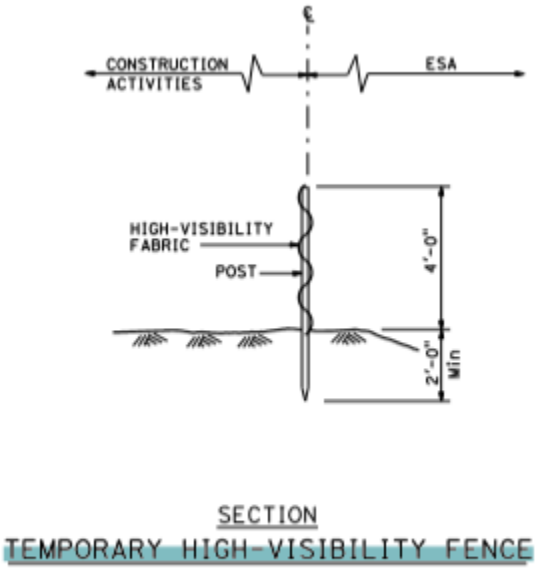
A. Wood posts shall be fir or pine, shall have a minimum cross section of 2 inches x 2 inches, and a minimum length of 5-6 feet The end of the post to be embedded in the soil shall be pointed. Wood posts shall not be treated with wood preservative.
B. Steel posts shall have a "U", "T", "L" or other cross sectional shape that resists failure by lateral loads. Steel posts shall have a minimum mass per length of 1.1 kg/m and a minimum length of 5-6 feet. One end of the steel post shall be pointed and the other end shall have a high visibility colored top.

Fasteners

Fasteners for attaching high visibility fabric to the posts shall be as follows:

A. The high visibility fabric shall be attached to wooden posts with commercial quality nails or staples, or as recommended by the manufacturer or supplier.
B. Tie wire or locking plastic fasteners shall be used for attaching the high visibility fabric to steel posts. Maximum spacing of tie wire or fasteners shall be 2-feet along the length of the steel post.

Figure 6.3 Temporary High Visibility Fence



SECTION
TEMPORARY HIGH-VISIBILITY FENCE

INSTALLATION

Temporary fence shall be installed as follows:

A. All fence construction activities shall be conducted from outside the ESA as shown on the figure above or as staked.
B. Posts shall be embedded in the soil a minimum of 1-foot. Post spacing shall be 8-feet maximum from center to center and shall at all times support the fence in a vertical position.

7.0 Final Erosion Control (Contractor, Consultant – monitors and documents)

Erosion control measures will be implemented to stabilize disturbed soil and reduce sediment transport caused by erosion from entering a storm drain system or receiving water body during debris removal after a disaster. Best management practices for erosion controls may include the use of fiber rolls, silt fences, erosion control blankets, hydraulic mulch, soil binders, and other mechanisms to reduce sediment. Erosion control plans will be developed by the DGS or designee, with input from the consultant, for those sites requiring Level 3 erosion control. These erosion control levels are described below. Erosion control shall be installed after each lot has met site specific cleanup goals. Effort should be made to preserve existing vegetation, if practicable. Once the removal has been completed, storm water control measures must be maintained by the property owner or local government. No seeds will be used for individual lots based on property owner concerns.

All erosion control methods, materials, and specifications will be described in the Environmental Compliance Plan (ECP) or as directed by the DGS or designee. Materials used for erosion control shall be placed at minimum in accordance with the manufacturers specifications. All materials shall be certified weed free in an effort to control the spread of noxious weeds.

7.1 Erosion Control Methods

Each residential parcel will receive one of the following measures:

- Level 1: Hydraulic mulch. Hydraulic mulch will include a wood base mulch along with a tackifier to cover over 90% of the lot impacted by the structural debris removal operations. No seeds will be used on this Operation.
- Level 2: Hydraulic mulch and compost biodegradable, weed free wattles and/or filter fiber socks. Compost filter socks, shall be a minimum of 8” to 12” diameter and shall be staked and keyed in. filter socks shall used in areas on slopes greater than 7%.
- Level 3: Hydraulic mulch, biodegradable, weed free wattles and/or filter compost filter socks or erosion control blankets (such as biodegradable compost blankets, etc).

7.2 Erosion Control Materials and Specifications

Materials used for erosion control shall be placed in accordance with these Special Provisions or as directed by the DGS or designee. All materials shall be certified weed-free in an effort to control the spread of noxious weeds.

The following materials have been identified for the Operation:

- Hydraulic mulch
- Organic tackifier or other proposed tackifier
- Fiber bundles
- Compost fibersocks
- Erosion control blankets

- Gravel and drain rock
- Silt fence
- Netting
- Anchors
- Gravel bags

Hydraulic Mulch – Hydraulic mulch or hydro-mulching is an erosion control process that uses a slurry wood fiber and a tackifier. The slurry is transported in a tank, either truck or trailer-mounted, and sprayed on prepared ground. Each contractor will develop a submittal for the hydraulic mulch for approval by the IMT. The mulch design will be based on virgin wood fiber and a non-toxic organic base tackifier. Application rates will also be submitted based on slopes.

Compost fiber socks - Compost fiber socks are a three-dimensional tubular sediment control and stormwater runoff filtration device typically used for perimeter control of sediment and soluble pollutants on and around construction activities. Compost filter socks trap sediment and soluble pollutants by filtering runoff water as it passes through the matrix of the compost filter socks. **Compost fiber socks shall be used on all hardscape areas for erosion control.** These areas include driveways, hardscape features including concrete, brick, asphalt and gravel roads, lava cap soils, and areas directed by the IMT. Compost filter socks shall be 5" to 8" inches in diameter.

Erosion Control Blanket – Erosion control blanket is a manufactured blanket or mat that is designed to hold soil and seed in place on slopes. It consists of organic biodegradable materials such as wood fiber, coconut fiber, or a combination of these materials. It is commercially manufactured and delivered to the site in rolls.

Erosion control blankets shall be 100% organic biodegradable (including parent material, stitching, and netting). The minimum thickness shall be 3/8" (9mm). The netting shall be stitched to prevent separation of the net from the parent material. The netting shall be capable of withstanding moderate foot traffic without tearing or puncturing. Neither the blanket or netting or the installation shall pose a safety risk to people walking on/crossing over it, or pose a hazard to wildlife such as birds, reptiles, and amphibians.

Appropriate products include, but may not be limited to:

- Curled I Fiber net (American Excelsior)
- Curled II Fiber net (American Excelsior)
- AEC Premier Straw Fiber net (American Excelsior)
- S 75 BD (North American Green)
- S 150 BN (North American Green)
- SC 150 BN (North American Green)
- C125 BN (North American Green)
- Excel S-2 All Natural (Western Excelsior)
- Excel SS-2 All Natural (Western Excelsior)
- Excel CS-3 All Natural (Western Excelsior)
- Excel CC-4 All Natural (Western Excelsior)

Fiber Roll Barriers – Fiber roll barriers (also called sediment logs or straw wattles) are commercially manufactured and usually consist of milled wood or other natural fibers are sewn into a circular weave fabric. Fiber rolls are good perimeter protection, designed to slow

stormwater runoff and trap small amounts of sediment. Fiber rolls shall be 8” to 12” diameter. Fiber rolls must be certified weed free.

Silt Fence – Silt fence consists of a permeable filter fabric that is keyed into the ground and staked beyond the toe of a slope. The fabric pools runoff, causing entrained sediment to settle out behind the fence while the water slowly filters through the fabric.

Anchors – Anchors are devices that secure erosion control materials such as fiber roll barriers, erosion control blankets, and silt fence.

For erosion control blankets, anchors shall be completely biodegradable, environmentally safe, and have no potential for soil and/or water contamination. Steel wire pins or staples may be approved by the Operations Section Chief if the alternative is not available or not functional. Petroleum-based plastics or composites containing petroleum-based plastics will not be approved. Materials deemed to present a hazard from splintering or spearing will not be approved. Wood stakes or stakes manufactured from wood byproducts may be approved.

Appropriate products include, but may not be limited to:

- E-Staple (American Excelsior)
- CF Bio Staple (CFM Corp)
- Green Stake (Green Stake)
- Bio-Stake (North American Green)
- Enviro-Stake (ODC Inc.)

For silt fence, anchor posts shall be at least 36” long. Steel posts should weigh no less than one pound per linear foot.

For fiber roll barriers, stakes shall be wooden and at least 18” long.

Netting – Netting is a manufactured product intended to secure wood chips or pine needle mulch to the soil surface.

Netting shall be 100% organic biodegradable and may consist of paper, jute, or cotton netting. Netting material shall be approved by CalRecycle staff prior to installation.

Gravel Bags – Gravel bags are intended to slow stormwater flows and trap sediment on paved surfaces.

Gravel bags shall be filled with ¾” to 1½” *washed* rock. Bags filled with sand will not be approved.

7.3 Installation Standards

Erosion control BMPs installation shall consist of furnishing and applying erosion control materials. The work includes proper material handling, area preparation, and proper application of the erosion control materials and structures.

Area Management – Construction/demolition materials shall be stored to the maximum extent possible on paved surfaces. When this is not possible, construction/demolition materials shall

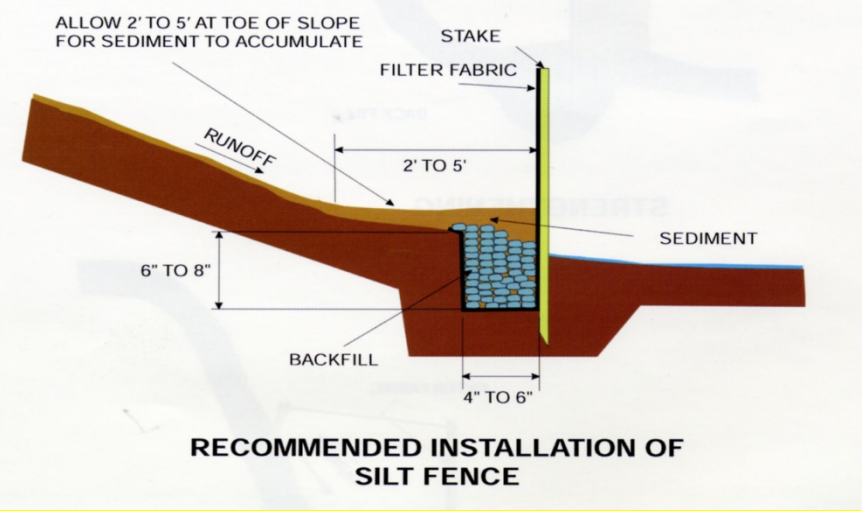
be stored on areas where a future structure or other hard impervious surfaces will be constructed, such as a future building foundation or driveway.

Compost filter socks and fiber roll barriers – Install 5, 8 or 12-inch diameter compost socks as directed by Operations Section Chief. Compost socks may require trenching or/and anchors, depending on the application, as directed by the Operations Section Chief. Compost socks do not require trenching when used to interrupt sheet flows on asphalt, concrete or other impervious surfaces.

Construction/demolition vehicles shall remain on paved surfaces to the maximum extent possible. When this is not possible, construction/demolition vehicles shall be used in areas where a rebuild of impervious surfaces will occur, such as building foundation or driveway locations.

Silt Fence – Install silt fences as directed by the Operations Section Chief. Six inches of the fence shall be buried in a trench along the base of the fence. The posts shall be spaced a maximum of 10 feet apart and driven 18" into the soil or to refusal. Sediment shall be removed from the up-slope side of the fence when it reaches 1/3 the height of the fence. Refer to Figure 12 below.

Figure 7-1. Silt Fence Detail Drawing



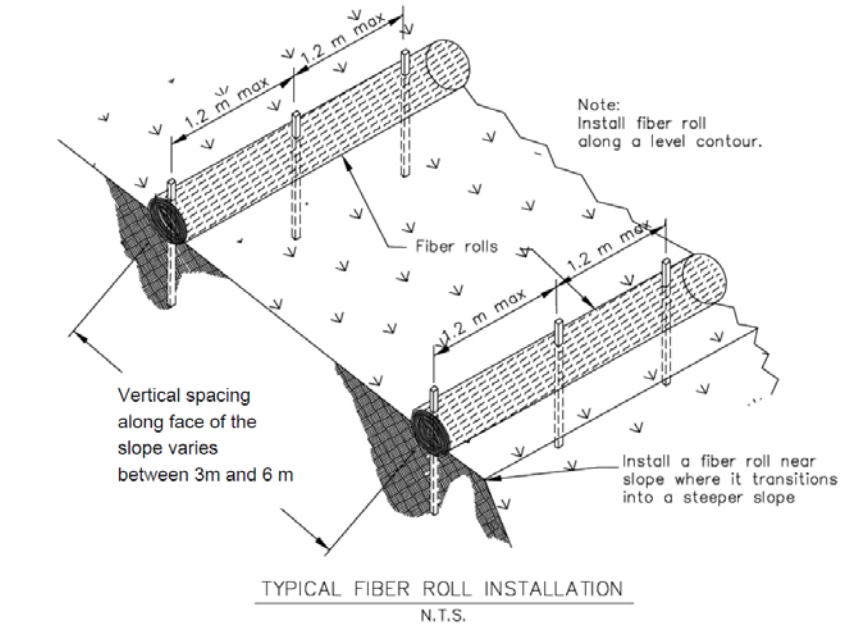
Erosion Control Blanket – Install erosion control blankets as directed by the Operations Section Chief. Starting at the top of the slope, anchor the blanket in a 6-inch trench, backfill, and securely tamp the backfilled soil. Unroll the blanket downslope, overlapping parallel and subsequent blankets a minimum of 4 inches. Secure blankets with anchors along with the overlaps and place a minimum of 3 anchors per square yard. 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.

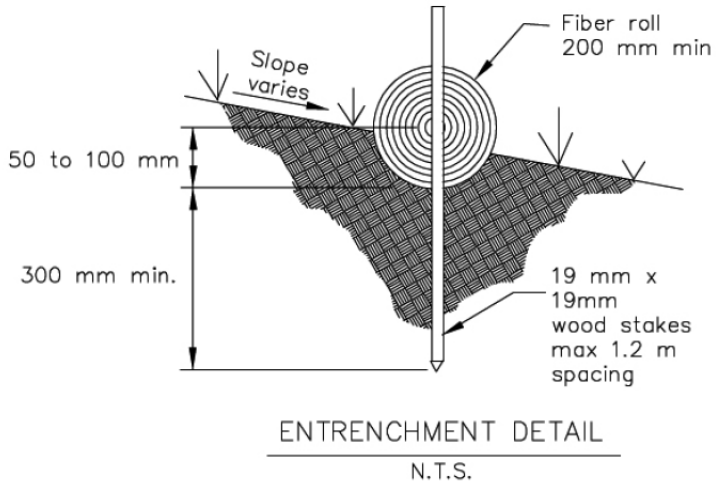
Fiber Roll Barriers – Install 8 or 12-inch fiber roll barriers as directed by Operations Section Chief. Place the fiber roll barrier in a 2 to 4-inch trench perpendicular to the flow path of stormwater. Drive stakes in perpendicular to the ground. If required on steep slopes, drive

stakes on either side of the roll and bind together with baling wire. Weighted rolls may be used as appropriate, especially on driveways. Refer to detail Figure 13 below. Typical installation spacing for the fiber rolls will be as follows:

- 10 feet apart for slopes steeper than 2:1 (horizontal: vertical)
- 15 feet apart for slopes from 2:1 to 4:1 (horizontal: vertical)
- 20 feet apart for slopes from 4:1 to 10:1 (horizontal: vertical)
- 50 feet apart for slopes flatter than 10:1 (horizontal: vertical)

Figure 7-2. Fiber Roll Detail Drawings for Steep Slopes





Compost fiber socks - The sock shall be installed down slope of any disturbed area requiring erosion and sediment control and filtration of soluble pollutants from runoff. Compost filter socks

are effective when installed perpendicular to sheet or low concentrated flow, and in areas that silt fence is normally considered appropriate. Acceptable applications include:

- Site perimeters
- Above and below disturbed areas subject to sheet runoff, inter rill and rill erosion
- Above and below exposed and erodible slopes
- Along the toe of stream and channel banks
- Around area drains or inlets located in a 'sump'
- On compacted soils where trenching of silt fence is difficult or impossible
- Around sensitive trees where trenching of silt fence is not beneficial for tree survival or may unnecessarily disturb established vegetation.
- On frozen ground where trenching of silt fence is impossible.
- On paved surfaces where trenching of silt fence is impossible.

Gravel Bags – Gravel bags or weighted fiber rolls shall be placed on the downslope edge of impervious surfaces, such as driveways. Place gravel bags in a double row in a "U" shape.

8.0 Site Approval and Final Reports (CalRecycle, Consultant – monitors and documents)

Following placement of erosion control, the DGS or designees will conduct final site walks of each property. The site walk sill consist of reviewing the ROE, Site Assessment report, debris removal information, then conducting a site visit to verify that the property looks ready to recommend to the County that it is ready for the county to review prior to authorizing construction permits for the property owner. The DGS or designee will prepare a final site walk checklist/report with sign-off signature and submit to the County.

Additionally, the Consultant will prepare final completion report package, for each property to the affected Counties that includes a copy of the initial property debris perimeter and foundation surveys, pre-removal site photographs, final site condition photographs, certified laboratory data for the confirmation samples, and tabulated laboratory data comparing the confirmation sample results to the established cleanup goals. The report will describe the work conducted, the results of site surveys and confirmation sample results, and provide an opinion regarding the adequacy of the debris removal and cleanup work. Reports will be signed by a Certified Engineering Geologist or Professional Engineer licensed in the State of California. This report will also include a site specific list of costs incurred in the cleanup of each program property including property specific contractor and consultant costs. An estimate of community costs that could be divided among all of the Operations properties may also be included in this final cost spreadsheet.