

INFORMATION HANDOUT

For Contract No. 07-3X8204

At 07-LA-39-21.7, 22.0

Identified by

Project ID 0713000218

DECISION MEMO

DECISION MEMO AND ATTACHMENT (INCLUDING FOREST FIRE PLAN AND SPILL RESPONSE PLAN)
FROM UNITED STATES DEPARTMENT OF AGRICULTURE-FOREST SERVICE DATED MAY 31, 2014

MATERIALS INFORMATION

FOUNDATION REPORT FOR EMBANKMENT REPAIR AT ROUTE 39 DISTRESS SITES DATED 5/28/2013

BATTERY BACKUP SYSTEM



United States
Department of
Agriculture

Forest
Service

San Gabriel River
Ranger District

110 N. Wabash Ave.
Glendora, CA 91741
626-335-1251 Voice
626-447-8992 TTY

File Code: 2720

Date: May 31, 2014

Billy Ho
CalTrans District 7
Environmental Planning Division
100 Main Street, Mail Stop 16A
Los Angeles, CA 90012

Dear Mr. Ho:

Enclosed please find the signed Decision Memo for the proposed Solider Pile Wall project on State Route 39 at the southern junction of San Gabriel Dam Road.

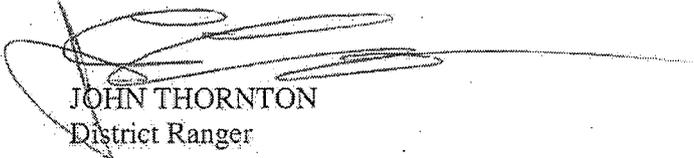
You may proceed with implementation of the project adhering to the Avoidance and Minimization Measures as identified in the project description of the enclosed Decision Memo.

Be advised that prior to project implementation, your contractor will need to coordinate all equipment inspections and equipment permits through our Fire Prevention Staff Officer, Chris Fry. He may be reached at 626-335-1251 x246.

Attached please find copies of the Forest Fire Plan and Spill Response Plan. Your contractor must fill out and submit a copy of the Fire Plan with information relating to key personnel and must follow protocols in the Forest Spill Response Plan during all phases of the project.

Please keep my staff advised of your project start date and any concerns that might arise during implementation. Should you have any questions please contact Chris Fabbro, Lands Specialist, at 626-335-1251 x235.

SINCERELY,


JOHN THORNTON
District Ranger



Highway 39 at San Gabriel Dam Road – Soldier Pile Wall Project

USDA Forest Service, Angeles National Forest Service
San Gabriel River Ranger District

File Code	2720
Subject:	Highway 39 Soldier Pile Wall Project – Categorical Exclusion from Documentation in an Environmental Assessment or Environmental Impact Statement
For:	Project File

This administrative memo for the file documents my decision to categorically exclude the Highway 39 Soldier Pile Wall Project from further analysis in an environmental assessment (EA) or environmental impact statement (EIS). This action does not individually or cumulatively have significant effects on the quality of the human environment. Furthermore, this action fits a category for which a Decision Memo or project documentation is not required. According to 36 CFR 220.6(d), “a supporting record and a decision memo are not required, but at the discretion of the responsible official, may be prepared”. Therefore, I have decided to establish a brief project file and document my decision on the proposed action in this memo.

DECISION

For safety, road stabilization and access, it is my decision to approve the installation of a soldier pile wall on Highway 39. Improvements will take place at the southern junction of San Gabriel Dam access road. Extending the existing wall into an area of ongoing instability measure approximately 40 feet from road level to the bottom of the impacted area in which support posts will be installed. Work will involve drilling into bedrock and extending a slope-stabilizing wall, approximately 50 feet in length.

REASON FOR THE DECISION

There is a critical need for the forest to support CalTrans in maintaining a minimum safety standard for its highways as well as meet the needs of the public and service providers, including fire and emergency personnel.

The current conditions pose safety concerns for motor vehicles accessing this midslope portion of the highway and a threat slope stability, including riparian dependent species and their habitat at the canyon bottom. The purpose of this project is to provide a long-term solution to erosion issues plaguing the area and reducing the overall environmental impacts associated with the absence of a stable roadbed.

REASONS FOR CATEGORICALLY EXCLUDING THE DECISION

Decisions may be categorically excluded from documentation in an environmental impact statement or an environmental assessment when they are within one of the categories found in

36 CFR 220.6(d), and there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative effect on the human environment.

Category of Exclusion

Based upon internal scoping and experience with similar activities on the Angeles National Forest, I have concluded that this decision can be appropriately categorically excluded from documentation in an environmental impact statement or environmental assessment. Currently, the slope below the roadbed requires stabilization. Therefore, I have determined that the selected action is an activity within the following category of exclusion found at 36 CFR 220.6(d) (4): "Repair and maintenance of roads, trails, and landline boundaries"

In addition the following avoidance and minimization measures will be adhered to during project implementation to avoid or minimize any effects to the human environment:

- The Forest Service must be notified at least 10 days prior to project implementation.
- The Contractor must adhere to the Spill Plan and Fire Plan protocols.
- Construction personnel will be required to call the Project Activity Level (PAL) hotline prior to any work within the Angeles National Forest. All construction activities will be halted in response to a predicted or actual "Red Flag Warning".
- All equipment must contain appropriate spill containment kits to respond to leaks and spills less than 1 gallon in size. Spills and leaks over one gallon will require the assistance of a certified Hazardous Material (HAZMAT) cleanup crew. The project proponent and/or its contractors must follow protocols in the Forest Spill Plan for **all spills** regardless of size.
- Prior to being brought on the Forest, any tools or equipment used for project implementation must be cleaned to ensure that they are free of any plant parts that could introduce invasive plant species to the project area.
- All appropriate BMPs shall be implemented to minimize damage to surface soil structure and to reduce potential for erosion and sediment transport to drainages due to project activities. All ground disturbing activities with the potential for erosion must be consistent with FSH 2509.22 – Soil and Water Conservation Practices Handbook and Best Management Practices.
- Project generated garbage must be properly stored/disposed for the duration of the project. When operations are complete, any excess materials or debris shall be removed from the work area.
- Side casting is not permitted. Efforts will be made to ensure that project generated material does not roll downhill.
- Concrete mixing and pouring will be conducted in a manner that ensures all materials will be properly contained. Excess concrete will not be left on site.
- A qualified biologist must conduct surveys for nesting birds and tree roosting bats two weeks prior to any construction related activities and provide the Forest Service with the results.
- If nesting birds are discovered in the project area during construction, all work must stop and F

- All work will be limited to the prism of the roadway or the un- vegetated shoulder for the purposes of the equipment maneuvering and traffic control. At no time is any heavy equipment allowed on vegetated slopes.
- The restoration/planting plan must be reviewed and approved by Forest Service botanist prior to implementation.
- A qualified biologist must be present for any clearing of vegetation.
- Vegetation to be removed must be replaced with native plants only. All restoration efforts must be approved by a FS botanist.

FINDING ON EXTRAORDINARY CIRCUMSTANCES

The list of seven extraordinary circumstances that were examined for this analysis may be found at 36 CFR 220.6(b). The mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion. It is the degree of the potential effects of a proposed action on these resource conditions that determines whether extraordinary circumstances exist. I have concluded that there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative effect on the quality of the human environment. Extraordinary circumstances would include but are not limited to negative impacts on the following:

- 1. Federally listed threatened or endangered species or designated critical habitat, species proposed for federal listing or proposed critical habitat, or Forest Service sensitive species.**

There is federally listed occupied and designated habitat near the project area for the Santa Ana sucker. This project will help reduce the amount of sediment and trash going into the stream, consequently a small improvement in water quality is expected. However, this action will not have a negative effect on the Santa Ana sucker or its designated critical habitat.

- 2. Floodplains, wetlands, or municipal watersheds.**

This project is located adjacent to the stream therefore; the amount of sediment and trash in the stream is expected to decrease, contributing to a small improvement in water quality. However, this action will have no negative impacts on floodplains, wetlands, and municipal watersheds.

- 3. Congressionally designated areas, such as Wilderness, Wilderness Study areas, or National Recreation Areas.**

There are no congressionally designated areas within the project area.

- 4. Inventoried roadless areas.**

The project area is not located within an inventoried roadless area.

5. Research Natural Areas.

There is no Research Natural Area within the project area.

6. American Indian and Alaska Native religious or cultural areas.

There are no identified Native American or Alaska Native religious or cultural sites within the project area.

7. Archaeological sites or historic properties or areas.

There are archaeological sites or historic properties within the project area.

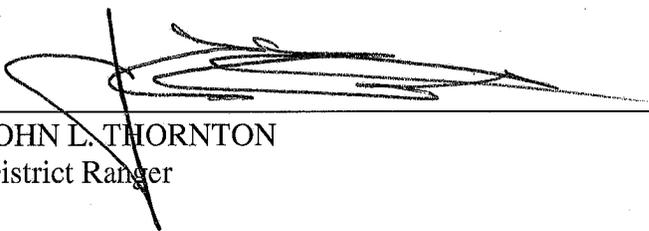
My conclusion is based on information presented in this document and the entirety of the record.

FOREST PLAN CONSISTENCY

This project is consistent with the objectives, strategies, and management direction of the Angeles National Forest Land Management Plan (LMP) where it identifies the need to provide for public use and natural resource protection (LMP Part 1, Goal 3.1) and encourages the Forest to offer a wide range of high quality, environmentally sustainable developed and dispersed recreation opportunities to a rapidly growing and culturally diverse visitor population, with minimal visitor conflicts and effects to other resources (LMP Part 2, Strategy REC 3). The LMP also supports the Forest to analyze, stabilize and restore areas where visitor use is negatively affecting recreation experiences, public safety and environmental resources (LMP Part 2, Strategy REC 2). These strategies are linked to the National Strategic Plan, Goal 3 and objective 1; to provide outdoor recreation opportunities and improve public access to National Forest System land and water and provide opportunities for outdoor health-enhancing activities.

ADMINISTRATIVE REVIEW OR APPEAL AND IMPLEMENTATION DATE

This decision is not subject to an administrative review or appeal pursuant to 36 CFR 215. Only supportive comments were received for this project during the internal scoping period. This decision may be implemented immediately.



JOHN L. THORNTON
District Ranger

5-30-14

Date

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's target center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-w, Whitten Building, 1400 Independence Ave. SW, Washington, DC 20250-9410 or call 202-720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

SPILL RESPONSE PLAN

If a spill occurs during the course of operations, personnel will first assess the situation for unsafe conditions; employee safety is priority. If needed, safety concerns will be addressed first, Material Safety Data Sheets (MSDS) will be referenced for cleanup precautions, and the appropriate safety and emergency personnel will be notified.

After the safety of all personnel has been addressed, the discovering personnel will take the following actions:

- Immediately stop the source of the spill.
- Reference Material Safety Data Sheets (MSDS) for personal safety and cleanup precautions
- Start containment actions using on-site equipment and spill supplies to safely respond, contain, and clean-up the spill. If needed, call for additional supplies, equipment and manpower to assist with clean-up efforts.
- Report the spill (of any size) to Forest Service dispatch by phoning (661) 723-3620 or (661) 723-7619 and Angeles National Forest HazMat Staff, Joe Gonzales by phoning (626) 574-5288, cell 626-430-8812
- Notifications of spills will comply with California State and federal laws
- All on-site personnel will assist with clean-up efforts to the fullest extent possible.

A comprehensive spill report document will be completed and submitted to the Forest (attn: Joe Gonzales) within seven days of the spill. The report, at a minimum, will include: date, time, and location of spill. What type of material was spilled, estimated quantity spilled, contamination type (e.g. air, water, ground), action taken, cause of spill, photos of the site, name of person documenting spill.

If the spill cannot be safely handled by on-site personnel, a licensed spill response contractor will be contracted to contain, clean up and perform required sampling, disposal, and reporting of spilled materials and debris. For smaller spills, the hazardous waste will not be left overnight on Forest lands without prior approval from the Forest Service.

The only temporary storage of hazardous wastes awaiting disposal that would occur on ANF lands would be during the cleanup effort in the event of a spill. After the cleanup effort is finished, unless weather events, end of daylight, or other unforeseen conditions prevent its immediate removal, waste will not be left overnight on ANF lands. If waste must be left stored overnight due to such a circumstance, it will be in a lidded container, such as a 55-gallon drum or a five-gallon bucket with a secure lid.

Used Personal Protective Equipment (PPE) and Spill cleanup materials will be placed into three millimeter plastic bags, which will be in turn deposited into 55-gallon drums with tops labeled, "Stained PPE and materials", while being accumulated off ANF lands. Containers will be inspected at least weekly to identify any leaks, and/or deterioration caused by erosion or other factors, and to ensure containers are not over-packed.

These waste materials will be collected in small amounts, off ANF lands, throughout the duration of this project in 55-gallon drums with tops, individually encased in plastic bags for small drips/spills that are a result of general construction activities. The 55-gallon drums will be placed in an area off the ANF, which has plastic lining and a dirt berm containing the drums. Large-scale spills will fill 55-gallon drums with tops, no plastic lining. These drums will be disposed of at an appropriate time, either when there is limited space or upon completion of construction. Each drum will be labeled "Stained Soils", while being accumulated off the ANF. Containers will be inspected at least weekly to identify any leaks, and/or deterioration caused by corrosion or other factors, and to ensure containers are not over-packed.

All waste materials will be transported in accordance with applicable local, State, and Federal DOT regulations including, but not limited to, bills of lading, manifests, placards, etc. All wastes will be shipped using properly permitted vehicles operated by drivers with Commercial Drivers Licenses (CDLs) and Hazardous Materials endorsements. All hazardous waste will be shipped using transporters with RCRA identification numbers.

FIRE PLAN FOR CONSTRUCTION AND SERVICE CONTRACTS

08/02/2012

1. SCOPE:

The provisions set forth below outline the responsibility for fire prevention and suppression activities and establish a suppression plan for fires within the contract area. The contract area is delineated by map in the contract. The provisions set forth below also specify conditions under which contract activities will be curtailed or shut down.

2. RESPONSIBILITIES:

A. Contractor

- (1) Shall abide by the requirements of this Fire Plan.
- (2) Shall take all steps necessary to prevent his/her employees, subcontractors and their employees from setting fires not required in completion of the contract, shall be responsible for preventing the escape of fires set directly or indirectly as a result of contract operations, and shall extinguish all such fires which may escape.
- (3) Shall permit and assist in periodic testing and inspection of required fire equipment. Contractor shall certify compliance with specific fire precautionary measures in the fire plan, before beginning operations during Fire Precautionary Period and shall update such certification when operations change.
- (4) Shall designate in the Fire Plan and furnish on Contract Area, during operating hours, a qualified fire supervisor authorized to act on behalf of Contractor in fire prevention and suppression matters.

B. Forest Service

The Forest Service may conduct one or more inspections for compliance with the Fire Plan. The number, timing, and scope of such inspections will be at the discretion of agency employees responsible for contract administration. Such inspections do not relieve the Contractor of responsibility for correcting violations of the fire plan or for fire safety in general, as outlined in paragraph 2.A above.

3. DEFINITIONS:

The following definitions shall apply:

Active Landing: A location the contractor may be skidding logs into, or performing other operations such as delimiting, log manufacturing, and chipping logs. Except for EV and E days, loading logs or stockpiling chips only, on a cleared landing, does not constitute an Active Landing.

Hot Saw: A harvesting system that employs a high-speed (>1100 rpm) rotating felling head, i.e., full rotation lateral tilt head.

Mechanical Operations: The process of felling, skidding, chipping, shredding, masticating, piling, log processing and/or yarding which requires the use of motorized power which includes, chainsaws, chippers, motorized carriages, masticators, stroke delimiters, skidders, dozers etc.

4. TOOLS AND EQUIPMENT:

The Contractor shall comply with the following requirements during the fire precautionary period, as defined by unit administering contracts:

The Fire Precautionary Period is set by the State of California which is April 1 through December 1 of any year.

• This contract requires, does not require, a Fire Box and associated Fire Tools according to CPRC Section 4428.

A. Fire Tools and Equipment: Contractor shall meet minimum requirements of Section 4428 of the California Public Resources Code (C.P.R.C.). Fire tools kept at each operating landing shall be sufficient to equip all employees in the felling, yarding, loading, chipping, and material processing operations associated with each landing. Fire equipment shall include two tractor headlights for each tractor dozer used in Contractor's Operations. Tractor headlights shall be attachable to each tractor and served by an adequate power source. All required fire tools shall be maintained in suitable and serviceable condition for fire fighting purposes.

Trucks, tractors, skidders, pickups and other similar mobile equipment shall be equipped with and carry at all times a size 0 or larger shovel with an overall length of not less than 46 inches and a 2-1/2 pound axe or larger with an overall length of not less than 28 inches.

Where cable yarding is used, Contractor shall provide a size 0 or larger shovel with an overall length of not less than 46 inches and a filled backpack can (4 or 5 gallon) with hand pump within 25 feet of each tail and corner block.

B. Fire Extinguishers: Contractor shall equip each internal combustion yarder, fuel truck, and loader with a fire extinguisher for oil and grease fires (4-A:60-B:C).

Skidders and tractors shall be equipped with a minimum 5-BC fire extinguisher.

All Fire Extinguishers shall be mounted, readily accessible, properly maintained and fully charged.

Contractor shall equip each mechanized harvesting machine with hydraulic systems, powered by an internal combustion engine (chipper, feller/buncher, harvester, forwarder, hot saws, stroke delimeter, etc), except tractors and skidders, with at least two 4-A:60-B:C fire extinguishers or equivalent.

C. Spark Arresters and Mufflers: Contractor shall equip each operating tractor and any other internal combustion engine with a spark arrester, except for motor vehicles equipped with a maintained muffler as defined in C.P.R.C. Section 4442 or tractors with exhaust-operated turbochargers. Spark Arresters shall be a model tested and approved under Forest Service Standard 5100-1a as shown in the National Wildlife Coordinating Group Spark Arrester Guide, Volumes 1 and 2, and shall be maintained in good operating condition. Every motor vehicle subject to registration shall at all times be equipped with an adequate exhaust system meeting the requirements of the California Vehicle Code.

D. Power Saws: Each power saw shall be equipped with a spark arrester approved according to C.P.R.C. Section 4442 or 4443 and shall be maintained in effective working order. An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept with each operating power saw. In addition, a size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can but not more than 300 feet from each power saw when used off cleared landing areas.

• This contract requires, does not require, Section 4E of the Fire Plan.

E. Tank Truck or Trailer: Contractor shall provide a **water tank truck or trailer** on or in proximity to Contract Area during Contractor's Operations hereunder during Fire Precautionary Period. When Project Activity Level B or higher is in effect, a tank truck or trailer shall be on or immediately adjacent to each active landing, unless otherwise excepted when Hot Saws or Masticators are being used. See Section 6 for specific contract requirements.

The tank shall contain at least 300 gallons of water available for fire suppression. Ample power and hitch shall be readily available for promptly and safely moving tank over roads serving Contract Area. Tank truck or trailer shall be equipped with the following:

- (1) Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds per square inch measured at the pump outlet. Pumps shall be tested on Contract Area using a 5/16 inch orifice in the Forester One Inch In-Line Gauge test kit. Pump shall meet or exceed the pressure value in the following table for nearest temperature and elevation:

T e m p	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet	
55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139	21
70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20
85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20
100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20
	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G
	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P
	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M

The pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

- (2) 300 feet of 3/4-inch inside diameter rubber-covered high-pressure hose mounted on live reel attached to pump with no segments longer than approximately 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.
- (3) A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

	G.P.M.	Horizontal Range
Straight Stream	10	38 feet
Fog Spray	6 - 20	N/A

- (4) Sufficient fuel to run the pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump.

When Contractor is using Hot Saws or Masticators, an additional 250 feet of light weight hose, approved by the Forest Service, shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurturances in (2) and (3) above.

This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific activity level identified in Section 6.

F. Compressed Air Foam System: A Compressed Air Foam System (CAFS) is a fire suppression system where compressed air is added to water and a foaming agent. By agreement, Contractor may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer or fire extinguishers, provided it meets or exceeds the following specifications and requirements:

1. Variable foam expansion ratio – 10:1 to 20:1.
2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system.
3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellent.
4. The unit shall be capable of being completely recharged within 10 minutes.
5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit.

Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section 4 B. above may be substituted with a 3 gallon CAFS.

Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an adjustable nozzle with enough water, air and foam concentrate for at least one recharge.

This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level identified in Section 6.

5. **GENERAL**

- A. **State Law:** In addition to the requirements in this Fire Plan, the Contractor shall comply with all applicable laws of the State of California. In particular, see California Public Resource Codes.
- B. **Permits Required:** The Contractor must secure a special written permit from the District Ranger or designated representative before burning, welding or cutting metal or starting any warming fires. If contract requires Blasting and Storing of Explosives and Detonators, an Explosives Permit may be required pursuant to the California Health and Safety Code, Section 12101.
- C. **Blasting:** Contractor shall use electric caps only unless otherwise agreed in writing. When blasting is necessary in slash areas, a Fire Patrolperson equipped with a size 0 or larger shovel with an overall length of not less than 46 inches and a filled backpack can (4 or 5 gallon) with hand pump shall remain in the immediate area for an hour after blasting has been completed.
- D. **Smoking:** Smoking shall not be permitted during fire season, except in a barren area or in an area cleared to mineral soil at least three feet in diameter. In areas closed to smoking, the CO may approve special areas to be used for smoking. The Contractor shall sign designated smoking areas. Contractor shall post signs regarding smoking and fire rules in conspicuous places for all employees to see. Contractor's supervisory personnel shall require compliance with these rules. Under no circumstances shall smoking be permitted during fire season while employees are operating light or heavy equipment, or walking or working in grass and woodlands.
- E. **Storage and Parking Areas.** Equipment service areas, parking areas, and gas and oil storage areas shall be cleared of all flammable material for a radius of at least 10 feet unless otherwise specified by local administrative unit. Small mobile or stationary internal combustion engine sites shall be cleared of flammable material for a slope distance of at least 10 feet from such engine. The COR shall approve such sites in writing.
- F. **Reporting Fires:** As soon as feasible but no later than 15 minutes after initial discovery, Contractor shall notify Forest Service of any fires on Contract Area or along roads used by Contractor. Contractor's employees shall report all fires as soon as possible to any of the following Forest Service facilities and/or personnel listed below, but not necessarily in the order shown:

	Name	Office Address	Office telephone
Dispatch Center	Incident Dispatcher	661-723-3620	661-948-6082
Nearest FS Station	Rincon Fire Station	626-910-1140	626-910-1327
Inspector	Sean Barry	626-698-8514	626-335-1251 x222
COR	Esmeralda Bracamonte	626-607-6759	626-335-1251 x238
District Ranger	John Thorton		626-335-1251 x250

When reporting a fire, provide the following information:

- Your Name
- Call back telephone number
- Project Name
- Location: Legal description (Township, Range, Section); and Descriptive location (Reference point)
- Fire Information: Including Acres, Rate of Spread and Wind Conditions.

This contract requires, does not require, Section 5G of the Fire Plan.

- G. **Communications:** Contractor shall furnish a serviceable telephone, radio-telephone or radio system connecting each operating side with Contractor's headquarters. When such headquarters is at a location which makes communication to it clearly impractical, Forest Service may accept a reasonable alternative location. The communication system shall provide prompt and reliable communications between Contractor's headquarters (or agreed to alternative) and Forest Service via commercial or Forest Service telephone.

This contract requires, does not require, Section 5H of the Fire Plan.

- H. **Fire Patrolperson:** Contractor shall furnish a qualified fire patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, sole responsibility of patrolperson shall be to patrol the operation for prevention and detection of fires, take suppression action where necessary and notify the Forest Service as required. This Fire patrol is required on foot, unless otherwise agreed. By agreement, one patrolperson may provide patrol on this and adjacent projects. No patrolperson shall be required on Specified Road construction jobs except during clearing operations unless otherwise specified.

The Contractor shall, prior to commencing work, furnish the following information relating to key personnel:

<u>Title</u>	<u>Name</u>	<u>Telephone Number</u>
<u>Fire Supervisor</u>		
<u>Fire Patrolperson</u>		

- I. **Clearing of Fuels:** Contractor shall clear away, and keep clear, fuels and logging debris as follows:

Welding equipment and stationary log loaders, yarders and other equipment listed in California State Law:	10 feet slope radius
Tail or corner haulback blocks:	All running blocks shall be located in the center of an area cleared to mineral soil at least 15 feet in diameter.
Lines near, between or above blocks:	Sufficient clearing to prevent line from rubbing on snags, down logs and other dead woody material.

6. EMERGENCY PRECAUTIONS

Contractor's Operations shall conform to the limitations or requirements in the Project Activity Level (PAL) table below. Project Activity Levels applicable to this project shall be the predicted activity levels for the Fire Danger Rating Area(s), or fire weather station(s) stated in the Contract Area Map Legend on Integrated Resource Service Contracts (IRSC's), and other contracts where applicable.

Fire Danger Rating Area/Fire Weather Station for Project

The Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant an adjustment. If practicable, Forest Service will determine the following day's activity level by 6:00 PM. Contractor shall obtain the predicted Project Activity Level from the appropriate Ranger District Office before starting work each day.

Phone Number or Website to obtain Predicted Activity Levels: 661-723-3620

Forest Service may change the Project Activity Level Table to other values upon revision of the National Fire Danger Rating System. When Contractor is notified, the revised Project Activity Levels will supersede the levels in the Project Activity Level Table below.

PROJECT ACTIVITY LEVEL

Level	<i>Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.</i>
A	Minimum requirements noted above in Sections 4 and 5.
B	1. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to the Active Landing.
C	1. When Hot Saws or Masticators are operating, a tank truck, trailer, or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing. 2. Immediately after Mechanical Operations cease, Fire patrol is required for two hours.
D	1. Immediately after Hot Saw or Masticator operations cease, Fire patrol is required for three hours. 2. No Dead Tree felling after 1:00 PM, except recently dead. 3. No burning, blasting, welding or cutting of metal after 1:00 PM, except by special permit.
Ev	<p>1. The following activities may operate all day:</p> <ul style="list-style-type: none"> a) Loading and hauling logs decked at approved landings. b) Loading and hauling chips stockpiled at approved landings. c) Servicing equipment at approved sites. d) Dust abatement, road maintenance (Chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development). e) Chainsaw and log processing operations associated with loading logs or other forest products at approved landings. <p>2. Hot Saws or Masticators may operate until 1:00 PM; provided that:</p> <ul style="list-style-type: none"> a) A tractor or other equipment with a blade capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator. b) Any additional restrictions specified by the Forest. <p>3. All other conventional Mechanical Operations are permitted until 1:00 PM.</p> <p>4. Some operations may be permitted after 1:00 PM, on a case-by-case basis, under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are:</p> <ul style="list-style-type: none"> • Rubber Tire Skidding • Chipping on Landings • Helicopter Yarding • Fire Salvage <p>When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Contracting Officer for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of the Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Contractor's equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement).</p>
E	<p>The following activities may operate all day:</p> <ul style="list-style-type: none"> 1. Loading and hauling logs decked at approved landings. 2. Loading and hauling chips stockpiled at approved landings. 3. Servicing Equipment at approved sites. 4. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development). 5. Chainsaw operation associated with loading at approved landings. <p>All other activities are prohibited.</p>

Region 5 Project Activity Level (PAL) Ev Variance Application/Agreement

Project Name: _____
 Contract Number: _____
 Contractor Name: _____
 Request #__, for period: _____
 Units/Subdivisions Affected: _____

Location of operation:	
Slope	
Aspect	
Elevation	
Fuels on site	
Fuels in surrounding area	
7 Day PAL Outlook	
Short range predictions (Red Flags)	
Fuel Moistures	
Response time of suppression resources	
Potential for ignition	
RAWS location	
Current Fire Situation:	
Draw down information	
National Readiness Level	
Contractual considerations:	
Normal Operating Season	
Frequency of recent contract fires in area	
Type of operation	
Contractors past/current performance & equipment readiness	
Other site specific mitigation or precaution (i.e. Contractors proposals)	
Social & Community Considerations:	
Proximity of high value resources	
Sensitivity of location	

Proposed Actions:

Description of Mitigation Measures:

Remarks:

Fire Management Officer Concurrence

Date

Line Officer Approval

Date

I have considered the above request and determined the specified mitigation measures or actions must be implemented to continue operations in Project Activity Level Ev. Unless extended, the approval remains in effect for ten (10) calendar days unless cancelled sooner or extended by the Forest Service for an additional ten (10) days. At the sole discretion of the Forest Service, this variance can be modified and/or cancelled at no cost to the government.

Contracting Officer

Date

Contractor Representative

Date

M e m o r a n d u m*Flex your power!
Be energy efficient!*

To: Mr. MATT HOLM, Branch Chief
Senior Transportation Engineer
Structure Design

Date: May 28, 2013

File: 07-LA-39, PM 21.67/21.97
EA: 07-3X8201
Embankment Repair

Attn: Bill Addlespurger

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Geotechnical Services
Office of Geotechnical Design South 1
Branch C

Subject: Foundation Report For Embankment Repair at Route 39 Distress Sites

Per your request dated January 16, 2013, a Foundation Report (FR) has been prepared for the proposed Embankment repairs along Route 39 at Postmiles 21.67 and 21.97 (see the Site Vicinity Map Figure 1). This FR includes recommendations for new barrier slab and retaining wall systems which will be part of a repair for slope washouts at Postmiles 21.67 and 21.97 which have caused loss of northbound shoulder area at these two locations. The recommendations for the barrier slab at postmile 21.67 are based on plans provided by Structure Design. The retaining wall system for postmile 21.97 will be offset from the Edge of Travel Way (ETW) as shown below in order to restore lost shoulder areas.

Table 1 – Offset Summary

Postmile	Offset from ETW, ft	Comments
21.97	4	Per Correspondence with District 7 and SD

The recommendations provided below are based on observations of site conditions, including the adjacent retaining wall structure, review of soil borings drilled for this project, and the layout plans and cross sections of the two sites dated July 2010 and March 2013, respectively. A general alignment of the slab and wall is shown on the Site Vicinity Map, Figure 1.

1.1 Scope of Work

The following tasks were prepared for the preparation of this Report:

- Review of Previous recommendations and Rock Core Logs.
- Review of rock cores and survey data obtained for this report.
- Geotechnical Analysis
- Preparation of this FR

2.0 PROJECT DESCRIPTION

2.1 Existing Site Conditions and Background

District 7 Construction had originally requested emergency repair of three washout locations between Postmiles 20.74 and 21.97 in September 2009. The washouts had occurred after periods of heavy rainfall in the winter season of 2008 and 2009. As described in previous memos and e-mail correspondence in 2009, the northbound shoulders had been washed down the slope face and the slope faces themselves had been left at grades of 0.26:1 to 1.2:1 (Horizontal:Vertical) just below the roadway elevation, see Photos. K-rail had been placed at the edge of travel way at these locations to protect the travelling public. As part of the emergency response, recommendations for soldier pile walls were provided to Maintenance and Structure Design Offices for the three washout locations. The recommendations were used to build a soldier pile wall at postmile 20.74. The other two locations were not repaired.

As part of the current investigation, the other two locations, postmiles 21.67 and 21.97 were re-evaluated to update their conditions and re-set repair boundaries. The washout damage had been observed to have expanded a few to several feet in either direction, since 2009. The repair lengths were then adjusted accordingly. The latest survey data indicated that the slope grade at postmile 21.67 was at about 0.25:1 (H:V) at its steepest with bedrock exposed facing. At postmile 21.97, the existing grade was determined to be at a 0.5:1 (H:V) at its steepest, with a sandy boulder slope face exposed surface.

The roadway itself is a two lane highway at both postmiles with a width between edge of travel ways of 22.55 ft at postmile 21.67 and 23.5 ft at postmile 21.97. At postmile 21.67, the highway has a 0.5 percent gradient sloping toward the uphill side, perpendicular to the roadway alignment, with an elevation of 1376.41 to 1376.51 ft near Station 11+92. At postmile 21.97 the gradient is 1.6 percent toward the downhill side, perpendicular to the roadway, with an elevation of 1449.36 to 1449.76 ft at Station 27+25. Both stations are based on the ALN3 surveyed alignment. The roadway grade, parallel to the roadway alignment, is about 5 percent northbound at both sites.

The washout at postmile 21.67 is adjacent to an existing retaining wall/side hill viaduct to the south most likely supported on spread footings (A similar structure, Carpenter Canyon Bridge, Bridge No. 53-116, at postmile 21.45, shows a spread footing foundation). An approximately 8 foot high wingwall is attached to the structure at adjacent to this project on the north end. Although as-built plans were not available for this structure, it is likely the wall is supported on spread footings due to the underlying bedrock foundation.

3.0 GEOLOGY

3.1 Site Geology

The project sites lie within the San Gabriel Mountains on east and north facing slopes at an elevation of approximately 1400 feet. The San Gabriel Mountains are characterized by deep v-shaped valleys and steep ridges and peaks, which are uplifting at a rate of 3mm/yr (SCEC, 1999). Natural slopes near the sites range from 35 to 65 degrees and consist of rocky soils over bedrock and bedrock. In general natural soil cover is very thin along ridges and peaks, and considerably thicker in valley bottoms near stream channels. Bedrock exposed in cuts along the slopes adjacent to the wall locations are composed of Mesozoic age quartz diorite, and Precambrian age Gneiss (Dibblee, T.W., 2002). Both types of bedrock exhibit foliation that is dipping generally to the south. Fracture and weathering characteristics are discussed in the Subsurface Conditions Section 4.0.

The closest fault to the site is the Sierra Madre fault (Clamshell/Sawpit segment) oriented in an east-west striking direction dipping 50 degrees toward the north. The distance to the fault is approximately 1.7 miles northwest of the project (Caltrans ARS Online Version 2.2.06, 2013).

4.0 SUBSURFACE CONDITIONS

Five rock core borings total were drilled at postmiles 21.67 and 21.97. Initially, two borings were drilled at these locations (one boring at each location) on September 29 to 30, 2009. The borings were drilled to depths of 30 and 20 feet at postmiles 21.67 and 21.97, respectively. For the present project, three additional borings were drilled at postmile 21.97 to more accurately determine the depth to bedrock. These borings were drilled on March 5th to 6th, 2013. The depth of these borings ranged from 26.5 to 61.5 feet. Boring location plans for 21.67 and 21.97 are shown on Figures 2 and 3, respectively. Stationing, offsets and elevations of the soil borings were determined by a survey and are summarized in the Table below. This information will also be provided on Log of Test Boring Sheets to be provided at a later date.

Table 2 – Rock Core Borings Summary

Borings	Date Drilled	Station	Offset, ft	Surface Elevation, ft	Location
RC-09-002	9/29/09	12+40	8R	1380	PM 21.67
RC-09-003	9/30/09	27+24.6	8R	1449	PM 21.97
RC-13-001	3/5/13	27+49.8	5R	1450.6	PM 21.97
RC-13-002	3/6/13	27+22	5R	1449.3	PM 21.97
RC-13-003	3/6/13	26+98	5.5R	1448.2	PM 21.97

Notes: (1) Stationing per layout plans dated March 2013

Postmile 21.67

According to the boring data the Route 39 embankment fill soils at postmile 21.67 are composed of 5 feet of medium dense Clayey Sand. These fill soils are underlain by Metamorphic Gneissic rock. The bedrock is generally slightly weathered and intensely to moderately fractured with intensely weathered zones. The slope face shows the same exposed bedrock except at the north end of the wall alignment. Here the slope face is largely covered with Colluvial gravelly sands with cobbles and possible boulders.

Postmile 21.97

Based on rock corings drilled in 2009 and in 2013 for this project, the subsurface soils are composed of varying thickness of Silty Clayey Sand with Gravels and Boulder size rocks overlying Quartz Diorite Bedrock. This material which serves as embankment fill is about 26.5 feet deep near the middle of the wall alignment (Station 27+50) and tapers to 6 feet thick near the south end (Station 27+20) and is 31.5 feet deep on the north end (Station 27+00). Quartz Diorite Bedrock (Igneous Rock) underlies this material. The bedrock is generally intensely to moderately weathered and intensely to moderately fractured and moderately hard.

5.0 SEISMICITY

The sites are not located within an Alquist-Priolo Earthquake Fault Zone as established by the California Geological Survey. Based on the Caltrans ARS Online program, the faults used to evaluate the deterministic and probabilistic acceleration response are included in Table 3 below. The USGS Probabilistic ARS curve (5% in 50 years Hazard) is shown on the ARS Online (Figure 3). The average shear wave velocity of the upper 30 meters (V_{s30}) is approximately 760 m/sec (2500 fps) based on Caltrans Seismic Design Criteria, Appendix B, Table B.1, Soil Profile Types correlations. The Peak Ground Acceleration (PGA) calculated for this site is 0.65g. A brief summary of the contributing fault parameters is shown in Table 3 below.

Table 3 – Fault and Design Ground Motion Parameters.

Fault	Fault ID	M_{max}	Type	Dip°	Dip Direction	R_{rup} (mile -km)	R_{JB} (mile -km)	R_x (mile -km)
Sierra Madre Fault Zone (Segment “D”)	323	7.2	R	53	N	2.1-3.4	0.0-0.0	2.7-4.3
Sierra Madre Fault Zone (Segment “E”)	327	7.2	R	53	N	2.2-3.6	0.0-0.0	2.8-4.6
Sierra Madre Fault Zone (Clamshell-Sawpit Segment)	315	6.6	R	50	N	1.7-2.74	1.7-2.74	1.7-2.74

6.0 LIQUEFACTION EVALUATION

Based on the soil borings drilled for this project, dense to very dense sandy soils overlying bedrock were observed well above known groundwater elevations in the area. Therefore, liquefaction potential is negligible for these sites.

7.0 CORROSIVITY

The soils and bedrock that are expected to come in contact with buried concrete and metal should be considered non-corrosive to metal and concrete. These soils and bedrock are highly granular and granitic, respectively and as such, these material types are considered to be non-corrosive.

8.0 SOIL PARAMETERS

Native soil and bedrock parameters summarized in the table below were derived from in-situ field tests and bedrock characterizations. The bedrock shear strength parameters were derived from the Hoek and Brown empirical failure criteria used for closely jointed rock masses. Unconfined compression lab test results of bedrock samples of the same formation taken from nearby areas were used for the Hoek and Brown analysis. These parameters were used in analysis of soldier piles walls discussed in the next section (Section 9).

Table No. 4 – Soil Parameters

Postmile Location	Depth, ft (1)	Soil/Bedrock Characterization	Unit Weight, γ , pcf	Friction angle, ϕ , degrees	Bedrock Shear Strength, psf
PM 21.67	0-5	Clayey Sand (SC)	130	32	N/A
	5-30	Slightly Weathered, Intensely to Moderately Fractured Metamorphic Bedrock	140	N/A	4,000
21.97	0-31.5	Boulders (moderately weathered, intensely fractured) with Sand	130	36	N/A
	31.5-51.5	Intensely to moderately weathered, moderately fractured, soft to hard Igneous Quartz Diorite	140	N/A	3,000

Note: (1) Depth below highway grade.

9.0 FOUNDATION RECOMMENDATIONS

Barrier slab and Soldier piles founded on drilled hole piles are a feasible foundation type for postmile locations 21.67 and 21.97, respectively. The details of the barrier slab foundation and soldier pile design on drilled-hole piles are summarized in this section. The soldier pile wall design is based on the Load Resistance Factor (LRFD) Method. As such, guidelines from Section 3 of the 2007 AASHTO LRFD Bridge Design Specifications are followed in this Report. The design was further based on available topography, cross sections and field observations of the geometry of the existing slopes. The design was also based on soil parameters summarized in Section 7 and Table 5 of this Report.

9.1 Barrier Slab – Postmile 21.67

A barrier slab is proposed between Stations 11+93.75 and 12+60.71 per District 7 Design Layout Plans. Per Structure Design Plans, the proposed structure is a reinforced concrete barrier slab supported on two rows of 24-inch cast-in-drilled-hole piles. Per available Structure Design Plans, the first row will be near the highway centerline and the second about 7 feet and 3-inch offset toward the slope side of the highway. The piles will be spaced 15 feet on-centers. The distance of the outer edge of the 16-inch thick barrier slab to the centerline of the nearer pile row will vary. A general layout of the slab is shown on Figure 2.

Loading conditions for the barrier slab piles were provided by the Structure Design Office. Loads for tension and compression on the piles were provided for the Extreme Case only. Lateral loads expected due to vehicle impact on the barrier were also provided. A tension load of 15 kips was

provided for the back row of piles (nearest the highway centerline). For the row nearest the slope face, a compression load of 65 kips was provided. Per LRFD guidelines Section 10.5.5.3.3 (amended December 2008) the resistance factor for Extreme event conditions for tension and compression was taken as 1.0. Both rows of piles were evaluated for tension, compression and lateral loads, with lateral load conditions controlling the design pile length. A discussion of the lateral pile analysis is provided below.

The lateral loading per pile as provided by Structure Design is about 5.4 kips per pile using a resistance factor of 1.0 per Section 10.5.5.2.4 of the LRFD Manual. Using this loading, the pile length was determined based on lateral load capacity using the computer program LPILE, Version 5 by Ensoft. Results of the analysis are summarized in the Tables below.

Pile lateral load-deflection behavior is significantly dependent on the pile head connection to the pile cap. The Pinned-head condition was analyzed for the proposed 24-inch piles. The pile properties are presented in the Table No. 5 below.

Table No. 5 – Pile Properties

Pile Head Condition	Pinned-Head
Pile Type	24-inch CIDH
Moment of Inertia	16286 in ⁴
Modulus of Elasticity ¹	3.8 X 10 ⁶ psi
Cross Sectional Area	452 in ²

Note: 1. Based on typical concrete values of 150 pcf (unit weight) and a 28-day compressive strength of 4000 psi, per Standard Plans for CIDH Piles

Table 6 below summarizes the results of the lateral bearing capacity analysis for the barrier slab piles. Pile depth, head deflection, maximum shear force, and maximum bending moment are summarized in the table.

Table No. 6 – Summary of Maximum Shear Force and Maximum Bending Moment

Depth of Pile, ft (1)	Deflection at Pile Head, in	Maximum Shear Force, kips	Maximum Bending Moment, ft-kips	Depth of Maximum Bending Moment below top of pile, ft
10	0.01	5.4	20.5	5.2

Note:

1. Measured from 1.5 feet below roadway elevation (top of proposed pile).

The slab will rest on granular embankment fill material. The exposed subsurface should scarified and reworked to a depth of 14-inches below proposed bottom of slab grade. The backfill material should be compacted to 95 percent relative compaction per the Latest Standard Specifications (Section 19-5.03B). On-site material may be used for backfill purposes. Additional backfill material may need to be brought in from an offsite/nearby source. The material should be predominantly granular with an expansion index less than 50. Section 19-6 of the latest Standard Specifications should be followed for additional guidance on embankment construction.

9.2 Soldier Pile Wall – Postmile 21.97

The design of the soldier pile wall, including design height, was based on the worst case slope geometry at postmile 21.97. The design height and embedment depth of the wall was also based on an offset of 4 feet from the edge of travel way. The design height and embedment depth was also based on surveyed cross sections and field observations of the steepest part of the site. The Stations used for design were 27+25 for Station 21.97. The Section location is shown on Figures 3 for postmiles 21.97. The earth pressure diagrams based on this section is shown on Figure 4. 30-inch diameter drilled holes are recommended as foundation support for the Soldier Pile Wall. The Soldier Pile wall may be built as a cantilever type with maximum height of 12 feet. The pile spacing would be 8 feet on centers with a total length of soldier pile wall of about 104 feet (see District 7 Layout Plan). The lagging may be composed of reinforced concrete. Wall height will vary with topography of the slope face, with the design height given as the maximum. The total length of piles should not vary with the height of the walls. The Pile Summary Table 7 provides design parameters for the soldier pile wall. Pile embedment is based on the three LRFD limit states, Service I, Strength I and Extreme Event I. The Traffic live load is 280 psf, which includes the barrier impact load. The seismic load is based on a horizontal earthquake coefficient of 0.3 which is derived from the PGA of 0.65g.

Table 7 – Soldier Pile Wall Foundation Design Pile Data Summary

Wall Location	Max Wall Height, ft	Earth Pressure Diagram Reference (1)	Slope Angle, β , degrees (2)	Pile Embedment Depth, ft			Design Pile Embedment, ft
				Service Limit State I	Strength Limit State	Extreme Event State	
PM 21.97	12	Figure 3.11.5.6-1	40	12	15	20	20

Notes: (1) Per the AASHTO LRFD Bridge Design Specifications 4th Ed.

(2) Measured slope angle to the horizontal plane in front of the proposed wall.

The earth pressure diagram used is based on those found in the AASHTO Bridge Design Specifications, Figure 3.11.5.6-1 for postmile 21.97. The diagram specifically used for this project, including earth pressure coefficients, is shown in Figure 4 of this Report. The passive earth pressure was reduced to 2.7 based on 40 degree slope, see Figure 4. Finally, for seismic conditions an inverted triangular earth pressure diagram may be used acting on the wall portion of the soldier pile system.

The soldier pile wall should be covered by a finished grade slope. The slope should be at a 1.5:1 (Horizontal to Vertical) grade with a 2 foot cover over the top of the pile embedment and a 2-4 foot wide bench in front of the wall.

10.0 CONSTRUCTION ISSUES

- Hard to very hard granitic bedrock will be encountered during drilling for drilled holes at postmile 21.67. Hard granitic cobbles and boulders with sand and hard granitic bedrock should be expected to be encountered for drilling holes at postmile 21.97.
- Bedrock at postmile 21.67 is intensely fractured in specific zones throughout the drilled depth of the borings, therefore a method to control the flow of drill fluid from undermining adjacent areas should be devised (such as the use of temporary casing).
- Caving is anticipated at postmile 21.97, therefore the contractor should devise a method to keep the drilled holes open, such as using temporary casing, at this location.
- Temporary back-cuts behind the proposed soldier pile wall should be at a 1:1 grade at postmile 21.97. However, the final back-cut slope may be determined in the field by the engineer based on encountered material type. If compaction of backfill material cannot be performed due to space constraints, a granular self-compacting free draining backfill material such as pea gravel may be used for any gap between the soldier pile wall and highway embankment or back-cut.
- A filter fabric should be placed behind the soldier pile wall lagging height to prevent fine grained material from flowing in between the laggings.
- At postmile 21.67, a 24 -inch diameter drain crosses near Station 27+80. This line and inlet should be surveyed. If these are in conflict with the drilled hole construction, our office should be contacted immediately.
- At postmile 21.97, the slope face has a combination of granitic rock and sandy material with rock fragments. Hard granitic rock and bedrock should be expected to be encountered when preparing a level bottom for the base of lagging.
- It is highly recommended that draft construction plans and specifications be submitted to this office for review before finalization.

Mr. Matt Holm
May 28, 2013
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Embankment Repair
Route 39
07-3X8201

If you have any questions, please contact Sam Sukiasian at (213) 620-2135 or Christopher Harris at (213) 620-2147.

Prepared by:

Date: 5/28/13

Reviewed By:

Date: 5/28/13



SAM SUKIASIAN, G.E.
Senior Transportation Engineer
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For;

CHI-TSENG LIU, PhD, G.E.
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cc. John K Lee, District 7 Design
Oji Kalu, District 7 Design
Rahel Adera, District 7 Design
Andrew Ponzi, Structure Construction
GS Fileroom
GS Corporate, Shira Rajendra
District 7 Material Engineer



Attachments:

Figures 1-4

Mr. Matt Holm
May 28, 2013
Page 11

Embankment Repair
Route 39
07-3X8201

Figures



Figure 1 - Site Vicinity Map

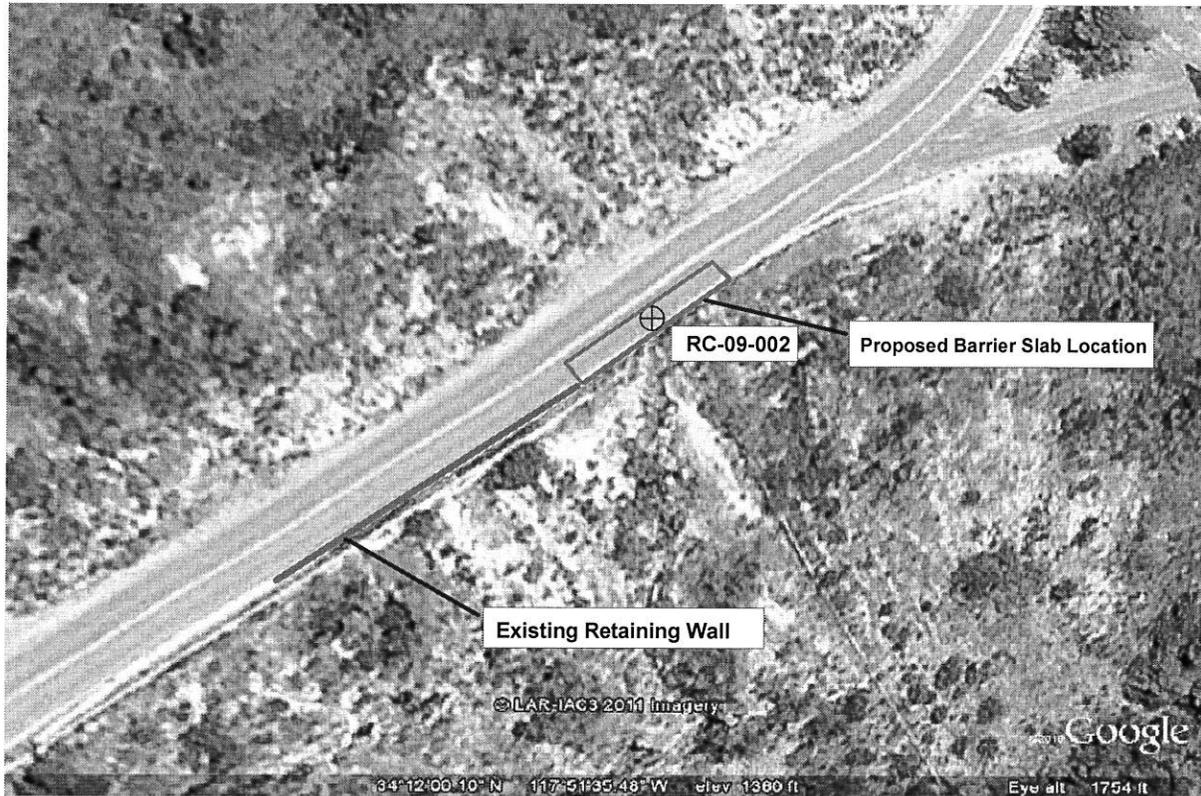


Figure 2 - PM 21.67 Boring Location Plan

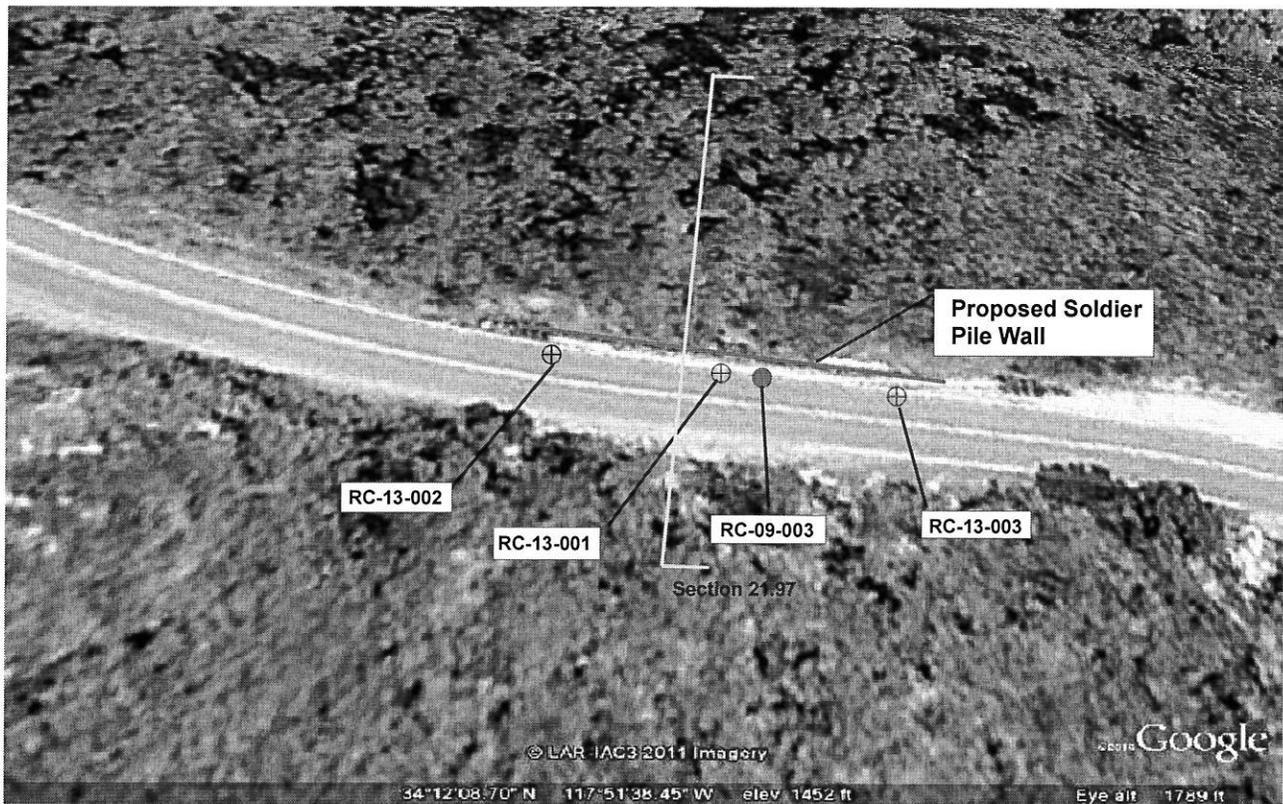
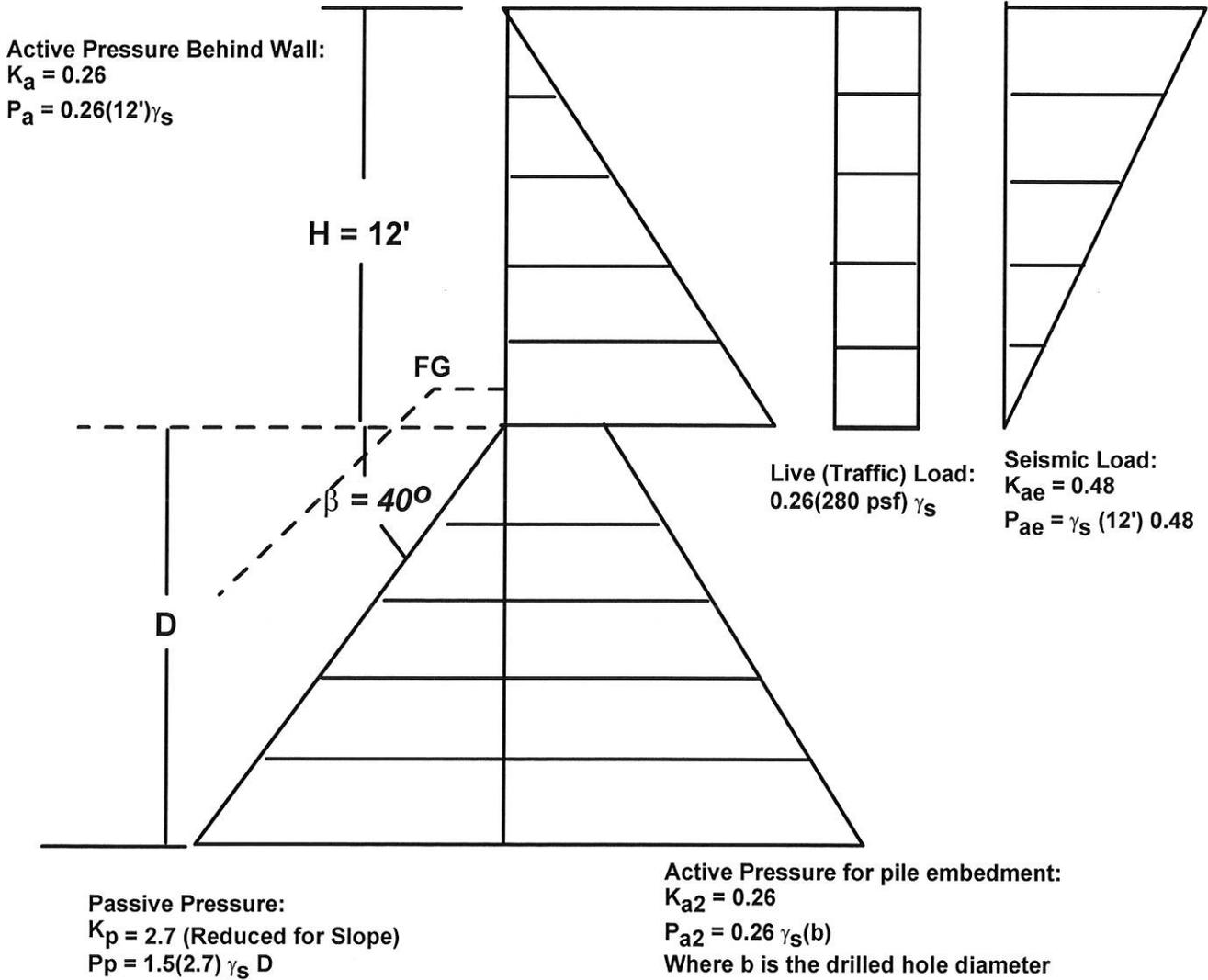


Figure 3 - PM 21.97 Boring Location Plan

Legend:

- Boring drilled in September 2009
- ⊕ Boring drilled March 2013

PM 21.97 Section, Earth Pressure Diagram Station 27+25



Notes:

- (1) Diagram based on Figure 3.11.5.6-1 of the AASHTO LRFD 4th Ed 2007
- (2) 2' Cover for Finish Grade

Figure 4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

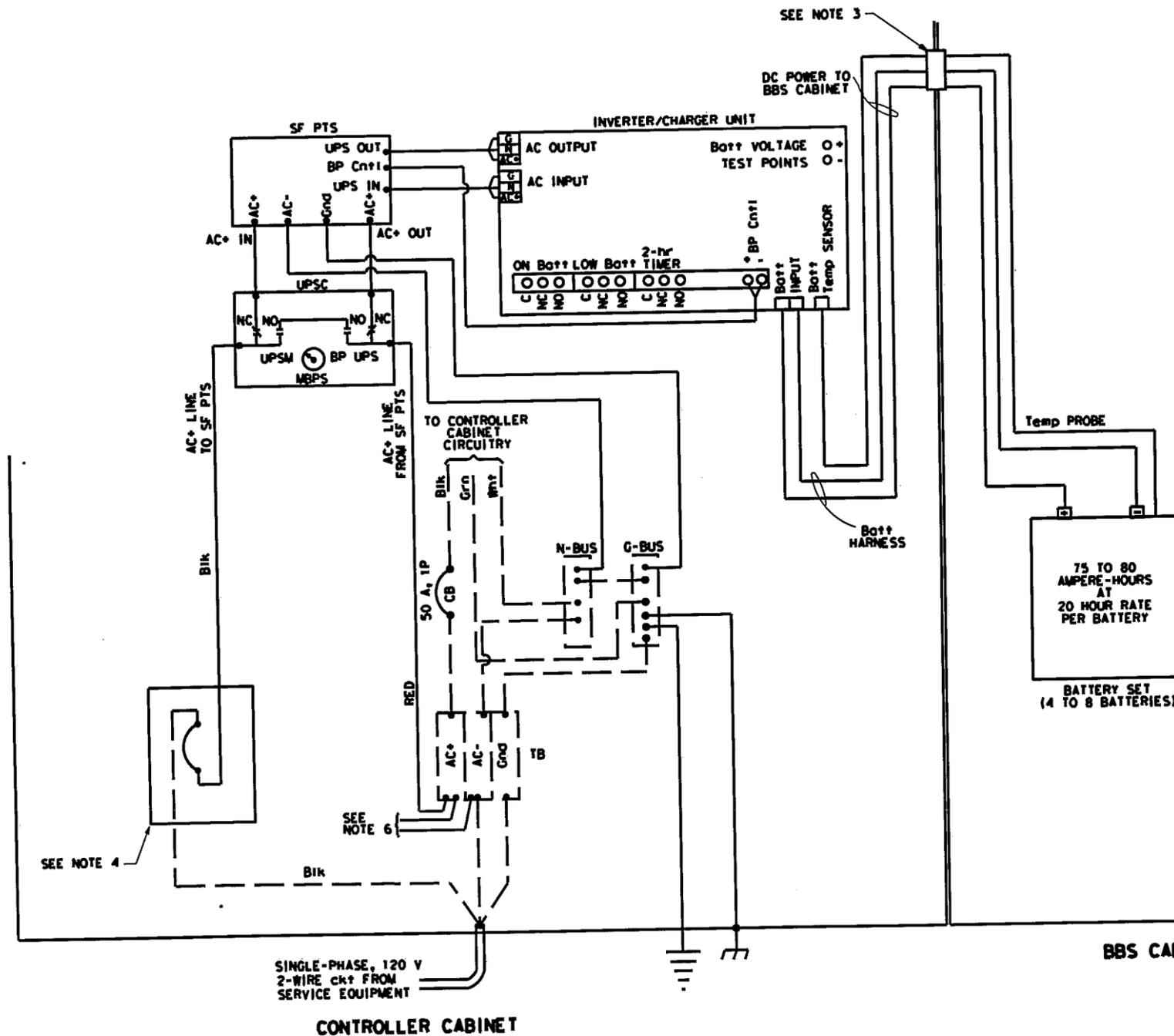
REVISOR BY DATE REVISION
 CALCULATED BY DESIGNED BY
 CHECKED BY

BORDER LAST REVISED 4/11/2008

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Thomas Gabriel
 REGISTERED ELECTRICAL ENGINEER DATE 12-20-07
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Thomas Gabriel
 No. E15129
 Exp. 6-30-14
 ELECT
 STATE OF CALIFORNIA



ABBREVIATIONS: (THIS SHEET ONLY)

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- BiK = BLACK
- Wht = WHITE
- SF = DEPARTMENT-FURNISHED
- Batt = BATTERY
- Temp = TEMPERATURE
- TB = TERMINAL BOARD
- Cntrl = CONTROL
- Gnd = GROUND

NOTES: (THIS SHEET ONLY)

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-2 REFERS TO THE SITUATION WHEN ONLY THE BATTERIES ARE INSTALLED IN THE BBS CABINET. THE REMAINING EQUIPMENT IS PLACED IN THE CONTROLLER CABINET.
3. THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR MUST FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 1/2 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE MUST BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET MUST BE TAPPED FROM THE BOTTOM OF THE TB IN THE CONTROLLER CABINET.
7. THE CONTRACTOR MUST PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS MUST BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.

**ELECTRICAL SYSTEMS
 (BBS POWER CONNECTION DIAGRAM,
 TYPE A, CASE-2)**

NO SCALE

RELATIVE BORDER SCALE
 IS IN INCHES



USERNAME ==> USER
 DGN FILE ==> REQUEST

CU 00000

EA 00000

DATE PLOTTED ==> DATE
 03-14-14 THE PLOTTED ==> 03:11:14

Dist	COUNTY	LOCATION CODE	POST OFFICE TOTAL PROJECT	SHEET TOTAL
				No. SHEETS
Theresa Gabriel		12-20-07	REGISTERED ELECTRICAL ENGINEER DATE	
Theresa Gabriel		E15129	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE		Emd-30-14	ELECT	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.				

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

REVISIONS:

REVISION NO.	DATE	BY	REASON

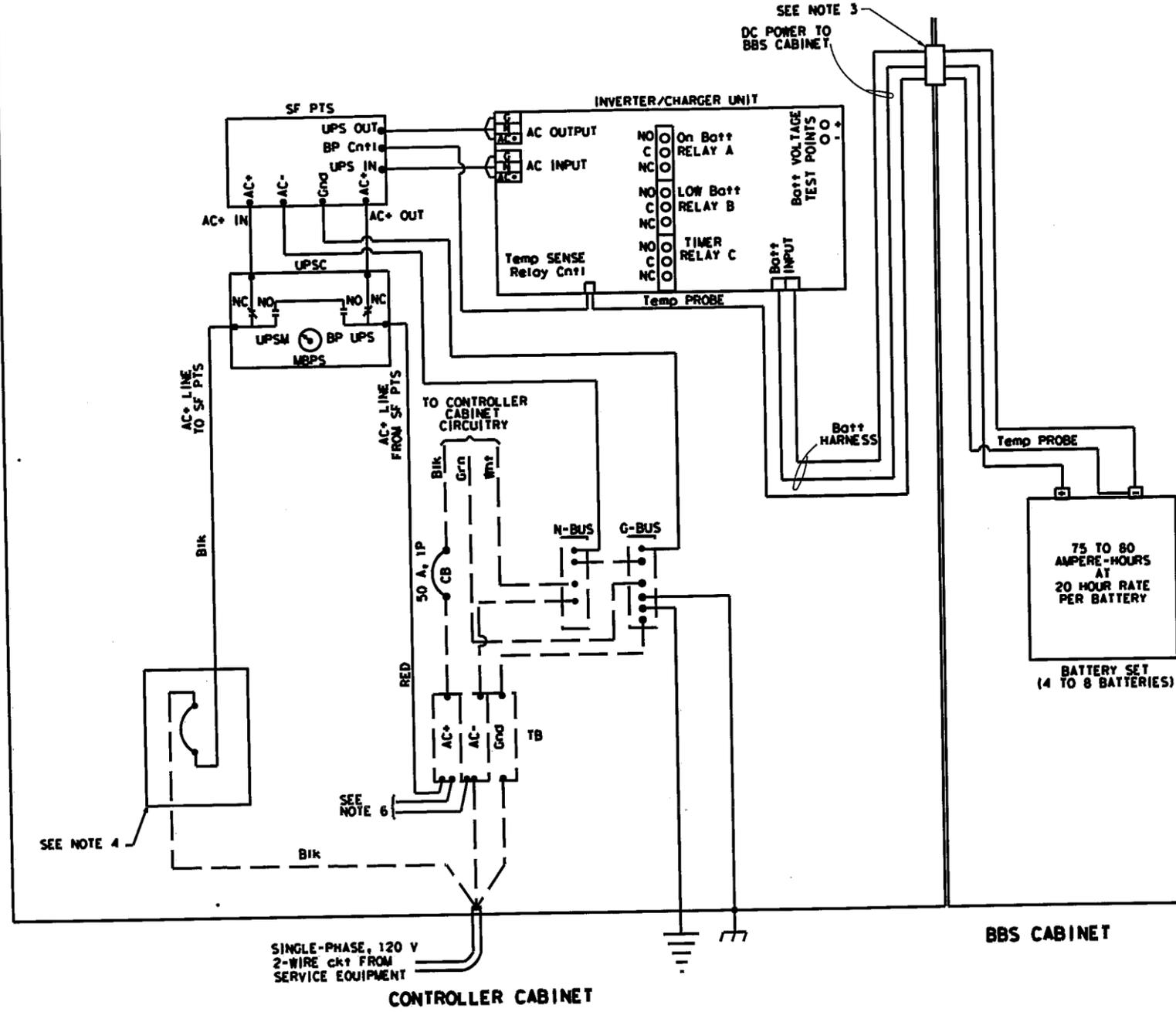
FUNCTIONAL SUPERVISOR: _____

DESIGNED BY: _____

CHECKED BY: _____

REVISOR: _____

DATE REVISOR: _____



ABBREVIATIONS: (THIS SHEET ONLY)

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wht = WHITE
- SF = DEPARTMENT-FURNISHED
- Batt = BATTERY
- Temp = TEMPERATURE
- TB = TERMINAL BOARD
- Cntrl = CONTROL
- Gnd = GROUND

NOTES: (THIS SHEET ONLY)

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-2 REFERS TO THE SITUATION WHEN ONLY THE BATTERIES ARE INSTALLED IN THE BBS CABINET. THE REMAINING EQUIPMENT IS PLACED IN THE CONTROLLER CABINET.
3. THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR MUST FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 1/2 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE MUST BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET MUST BE TAPPED FROM THE BOTTOM OF THE TB IN THE CONTROLLER CABINET.
7. THE CONTRACTOR MUST PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS MUST BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.

ELECTRICAL SYSTEM
(BBS POWER CONNECTION DIAGRAM, TYPE B, CASE-2)

RELATIVE BORDER SCALE IS IN INCHES

USERNAME ==> USER
 DGN FILE ==> REQUEST

CU 00000 EA 000000

BORDER LAST REVISED 4/11/2008

DATE PLOTTED ==> DATE
 3-11-09
 TIME PLOTTED ==> TIME

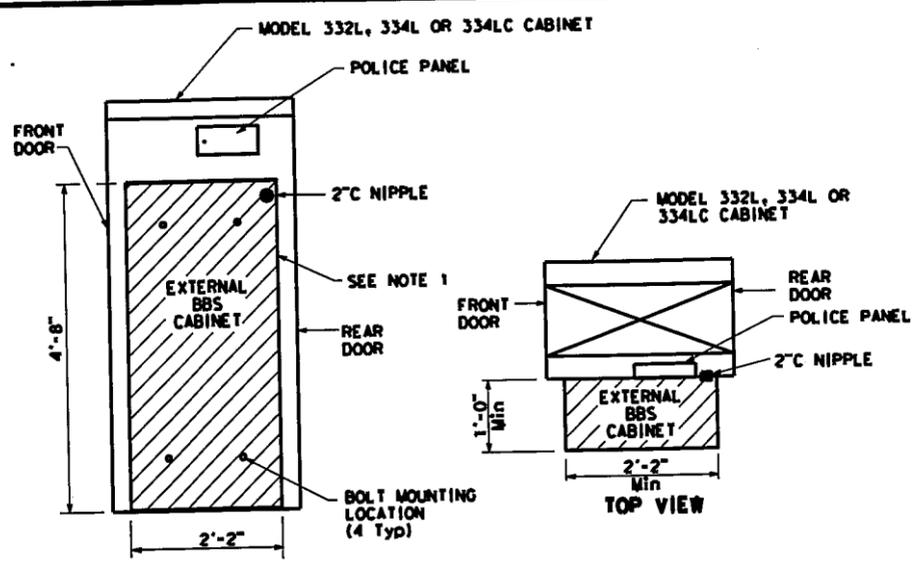
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REVISOR: *Theresa Cabral*

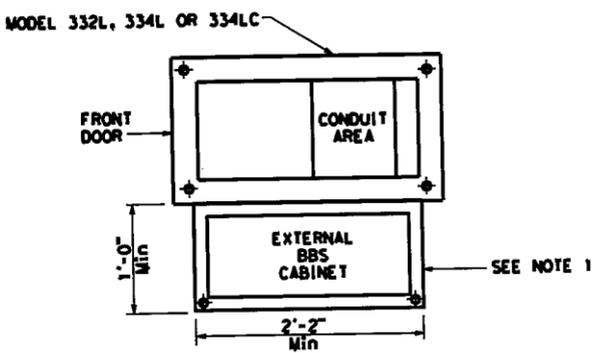
DESIGNED BY: _____

CHECKED BY: _____

FUNCTIONAL SUPERVISOR: _____



EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332L, 334L OR 334LC CABINET

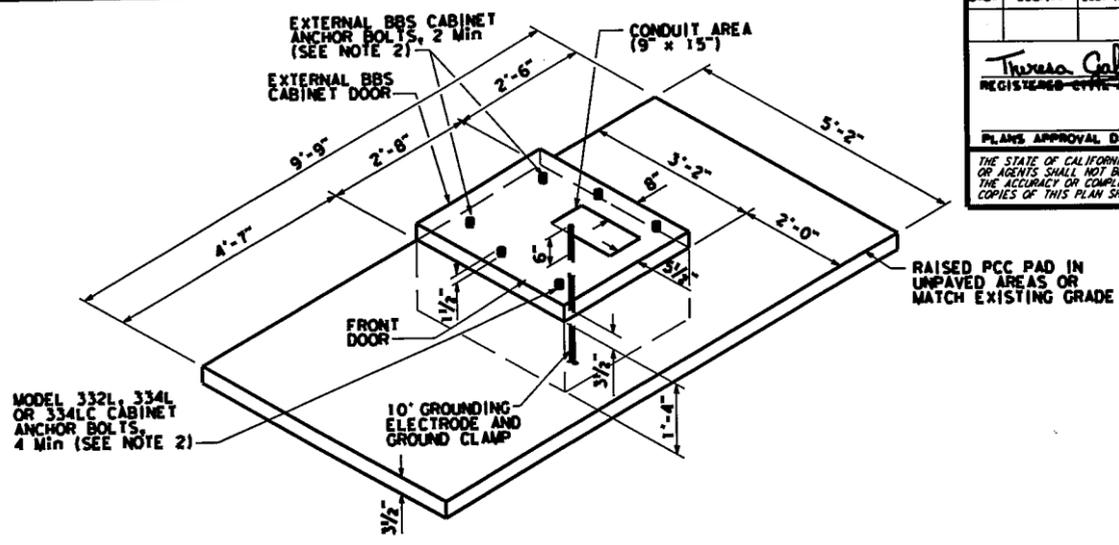


BASE PLAN FOR BBS MOUNTED TO THE MODEL 332L, 334L OR 334LC CABINET

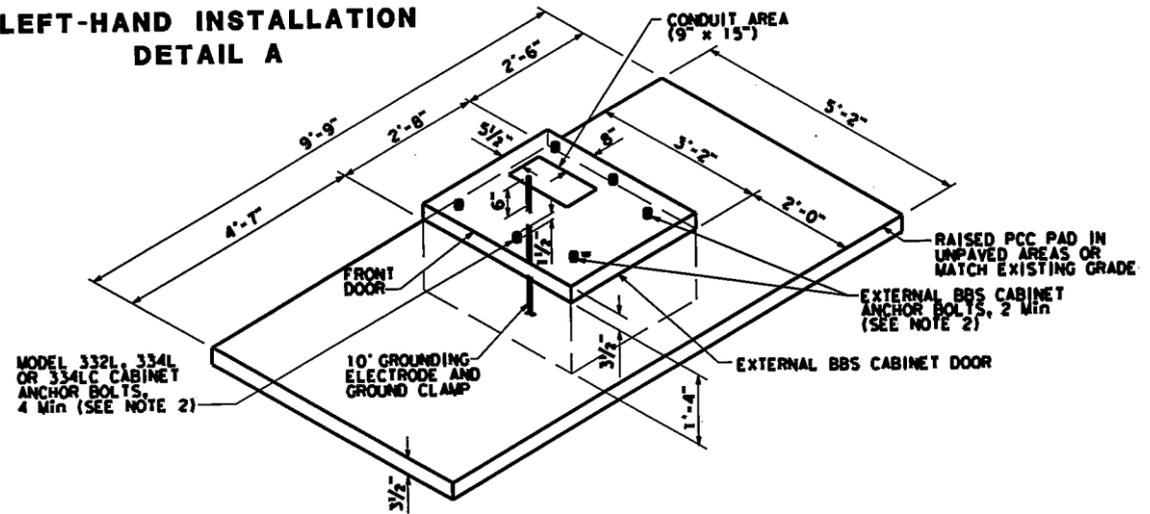
(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

NOTES (THIS SHEET ONLY)

1. THE EXTERNAL BBS CABINET MUST BE MOUNTED TO THE MODEL 332L, 334L OR 334LC CABINET WITH FOUR 18-8 STAINLESS STEEL Hex HEAD, FULLY-THREADED, 3/8"-16 x 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR 3/8" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A Hex-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS MUST BE 3/4" Dia x 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION MUST DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR MUST VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE STD MODEL 332L, 334L OR 334LC CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.



LEFT-HAND INSTALLATION DETAIL A



RIGHT-HAND INSTALLATION DETAIL B

MODIFIED MODEL 332L, 334L OR 334LC CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)
(FOR ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332L, 334L OR 334LC CABINETS)

DATE	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Theresa Cabral
REGISTERED CIVIL ENGINEER
DATE 12-20-07

PLANS APPROVAL DATE

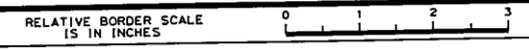
REGISTERED PROFESSIONAL ENGINEER
Theresa Cabral
No. E15129
Exp. 6-30-14
ELECT
STATE OF CALIFORNIA

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ELECTRICAL SYSTEMS (BATTERY BACKUP SYSTEM FOUNDATION DETAILS)

NO SCALE

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2-2-09