

# **INFORMATIONAL HANDOUT**

## **MATERIALS INFORMATION**

FOUNDATION REPORT

Dated March 22, 2012

EXISTING SOIL NAIL WALL INFORMATION

Certificate of Compliance , Description of Material and Copy of Mill Certificate

SOIL NAIL WALL AS-BUILTS

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United States Department of the Interior Fish and Wildlife Service

Programmatic Biological Opinion

Dated December 16, 2011 and July 2, 2008

County of Monterey

Coastal Development Permit

# Memorandum

*Flex your power!  
Be energy efficient!*

**To:** FRITZ HOFFMAN  
Senior Bridge Engineer  
Office of Bridge Design Central  
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN

**Date:** March 22, 2012  
**File:** 05-Mon-001-59.9  
Rocky Creek Viaduct  
EA 05-1A6901  
Project ID 0512000008

**Attn:** Hernan Perez

**From:** DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES  
GEOTECHNICAL SERVICES

**Subject:** Foundation Report

## Scope of Work

A Foundation Report (FR) is provided for the above referenced project. The purpose of this report is to document geotechnical conditions and provide foundation recommendations for the proposed Rocky Creek Viaduct and Soldier Pile Wall, on State Highway 1 in Monterey County. This report supercedes the Preliminary Foundation Report (August, 2011).

## Pertinent Reports and Investigations

The following publications were used to assist in the assessment of site conditions:

1. *Big Sur Coast Highway Management Plan*. California Department of Transportation, District 5; March 2004.
2. Manson M.W. *Reconnaissance Engineering Geologic Assessment of Bixby Creek Landslide Complex, Highway 1, P.M. 59.5/60.1 MON*. California Geological Survey, March 2004.
3. Turner Keith A., Schuster Robert L. *Landslides Investigation and Mitigation*. Transportation Research Board Special Report 247. 1996.
4. Wills C.J., Manson M.W., Brown K.D., Davenport C.W., Domrose C.J. *Landslides in the Highway 1 Corridor: Geology and Slope Stability along the Coast Between Point Lobos and San Carporforo Creek, Monterey and San Luis Obispo Counties, California*. California Department of Conservation, Division of Mines and Geology. August 2001.

## Project Description

State Highway 1 within the project extents was constructed as a two-lane highway on a side-hill cut and fill. The existing roadway consists of 10 to 12-foot lanes with variable width, 2 to 6-foot, paved and unpaved shoulders. Steep cut slopes of exposed rock parallel the northbound lane on the uphill side. Reinforced concrete crib walls constructed in the 1960's and 1998 support the

southbound lane and shoulder on the downhill side of the highway between steep rock slopes. Below and adjacent to the reinforced concrete crib walls, steep rock outcrops forming ridges and depressions plunge toward the ocean. Steeply incised valleys and depressions between rock slopes on both sides of the highway have been infilled with debris flow deposits consisting primarily of granular material from sand to cobble size. Dune deposits consisting of fine to medium sands were also encountered in the vicinity of the slope failure at and below the roadway elevation during construction of the temporary stabilizing structure described in the following paragraphs.

Rains and high groundwater in the winter of 2010-2011 activated landsliding below the roadway and caused migration of a near vertical scarp across the southbound lane of Highway 1. On March 16, 2011 the slope catastrophically failed, translating from the highway to the beach, approximately 200 feet below the roadway. The failure plane was located beneath of the base of the reinforced concrete crib walls, causing global failure of the slope behind and beneath the crib walls and toppling failure of the crib walls as they moved within the sliding mass. The landslide event left a vertical scarp approximately 20 feet high, extending for approximately 170 feet along the centerline, from approximately Station 106+60 to 108+30. A subsurface investigation was immediately initiated and began with drilling three vertical borings adjacent to the headscarp to determine the geotechnical conditions behind and below the slide plane.

An emergency contract was let in the days following the failure to construct a temporary soil nail wall at the exposed headscarp of the landslide to maintain the existing edge of roadway and prevent further migration of the headscarp into the remaining roadway. In addition to four rows of traditional sub-horizontal nails, vertical soil nails were installed on 30-inch centers along the headscarp in an effort to further stabilize the headscarp during the wall construction.

The remaining roadway consists of one 12-foot wide paved lane with a traffic signal at either end to provide temporary one-way traffic control. The soil-nailed headscarp of the landslide roughly follows the centerline of Highway 1 and extends for a length of approximately 180 feet, from approximately Station 106+50 to 108+30. The south end of the soil nail wall terminates above the northern limit of the remaining crib wall. Approximately 150 feet of the estimated 260 feet of the 1960's reinforced concrete crib wall remains. Upper wall members at the northern end of the remaining reinforced concrete crib wall were removed to allow for the soil nail wall to taper back up to the roadway elevation. The top of the remaining reinforced concrete crib wall and bench of retained soil behind the crib wall were faced with shotcrete to prevent infiltration of surface water and provide stabilization.

### **Field Investigation and Testing Program**

An investigation including field reconnaissance and geologic mapping, review of historic and recent aerial oblique photography, groundwater level monitoring, and subsurface sampling was performed for this project. Ten mud-rotary borings were drilled at the site to determine the subsurface conditions for foundation design throughout the site. A Slope Incliner casing was installed behind the existing landslide headscarp to monitor any future movement.

## Laboratory Testing Program

Unconfined compressive strength (UCS) and point load testing were performed at the Headquarters Geotechnical Laboratory on rock cores collected during the subsurface investigation. Test results are summarized in Table 1. UCS values are not representative of the entire geologic unit; only the hardest and least fractured blocks were suitable for testing. Test results are provided to inform contractors of the potential strength of the rock and ensure that excavation equipment and methods are suitable for the rock conditions.

**Table 1. Rock Unconfined Compressive Strength**

<i>Boring</i>	<i>Depth (ft)</i>	<i>Elevation (ft)</i>	<i>UCS (pounds per square inch)</i>
RC-11-004	65	134.2	1674
RC-11-004	96	103.2	2556
RC-11-005	86	133.8	10090
RC-11-006	52	163.6	2808
RC-11-006	59	156.6	7870
RC-11-007	23	202.1	8641
RC-11-007	25	200.1	2887
RC-11-009	23	211.3	4454
RC-11-010	10	219.5	9243
RC-11-010	39	190.5	7105

## Physical Setting

The project area is located within the Northern Santa Lucia Mountain Range in the Coast Range Geomorphic Province. The area is characterized by northwest trending mountains with rounded ridges and steep-sided narrow canyons. Rocky Creek and Bixby Creek are major drainages flowing year round that pass under the highway to the north and south of the project limits under tall arch bridges constructed in the 1930's. Bixby Creek and Rocky Creek are separated by Division Knoll, a 320-foot tall rounded hill composed of Sur Complex rocks to the south and the Cretaceous-aged tonalite to the north, which comprises the rocky slopes within the project limits. The climate is mild, with average summer temperatures in the 60's (Fahrenheit) and average winter temperatures in the 50's. Heavy rains, typically falling in the winter months, of 30 to 40 inches are recorded annually.

## Site Geology and Subsurface Conditions

### *Geology*

Geologic mapping and review of published geologic maps and reports were used to characterize the site geology as it pertains to the construction of a structure. Exposed rock slopes above and below the highway are comprised of Cretaceous-aged tonalite, a white and grey to dark greenish gray, coarsely crystalline, slightly to highly foliated igneous rock, composed predominantly of plagioclase, hornblende, actinolite, and chlorite with lesser quartz and biotite (Manson, 2004). Rock cores recovered during the subsurface investigation indicate a wide variation in the degree of weathering and fracture intensity within the rock mass. Fracture orientation generally tends to

dip steeply down-slope to near vertical orientation. The predominant fracture orientation leads to toppling and block sliding type failures along weakened planes, as was observed in the major landslide event. Degree of weathering ranged from fresh to decomposed, with drastic changes often occurring in very short core run intervals. Groundwater seepage through preferential flow paths in intensely fractured zones has weathered parent rock to residual soils, while less fractured rock zones have stayed relatively fresh and intact.

Tonalite is overlain by colluvium and older debris flow deposits consisting of angular gravel and cobbles of weathered tonalite in a matrix of reddish-brown, fine to coarse sands with little silt and clay. The debris flow deposits can be observed in the rounded basins between rocky ridges above and below the road. Shallow surficial failures in the debris flow deposits have left scarp features exposed above the road and occasional debris flow type failures have been observed to occur during heavy rains. The debris flow deposits were also used in combination with excavated and blasted tonalite as fill material to build the road out from the cut slope during the original highway construction and the later crib wall construction. The fill material was observed to overlie the tonalite beneath the roadway surface with increasing thickness from the cut slope to the southbound outside shoulder.

Poorly-graded sand likely deposited in a dune environment was encountered during construction of the soil nail wall. It consists of fine to medium sands with trace or no fines and is relatively dense. The moist sand unit was observed to stand vertically during excavations for the soil nail wall, but began to ravel as it dried and lost strength from apparent cohesion. The sand unit begins approximately 5 to 10 feet above the road elevation and was encountered to the bottom of the soil nail wall, approximately 25 feet below the road elevation. The horizontal limits appear to be only in the vicinity of the soil nail wall.

### *Subsurface Conditions*

Foundations for the structure will be founded in the tonalite. The degree of weathering varies from fresh to decomposed, and from hard intact rock to soft soil-like material weathered to silt, sand, clay and gravel. Rock quality generally improves at depth, although weathered zones were encountered at depths up to 125 feet below the roadway elevation. Excavation for the foundations will also extend through the debris flow deposits and fill material generated from upslope cuts during the original highway construction. Fill and debris flow material is highly variable and consists of silts, clays, sands, gravel, and cobble to boulder sized rocks. The thickness of the fill encountered in the borings varied from approximately 15 feet to only 1.5 feet from the roadway section to the contact with the tonalite.

### *Groundwater*

Open observation wells were installed in three borings in an effort to characterize the groundwater regime. Groundwater was determined not to reside at a static level; water is moving through fractures in the tonalite toward the ocean from higher to lower elevation. Water could be seen and heard rushing into the open bore holes during the subsurface investigation. Oxidation on fracture surfaces recovered during drilling supports the assumption that water is moving through preferential flow paths in fractures bounded by lower permeability intact rock.

## Corrosion Evaluation

Caltrans considers a site to be corrosive to foundation elements if one or more of the following conditions exist for the representative soil and/or water samples taken at the site: pH of less than 5.5, resistivity of 1000 ohm-cm or less, chloride content greater than 500 ppm, or sulphate content greater than 2000 ppm. Material samples were obtained from representative depths and borings and sent to the District 5 Geotechnical Laboratory for corrosion potential evaluation. Based on the results of the corrosion testing, the samples are not considered corrosive. However, due to the proximity of the Pacific Ocean, protection of the exposed portions of the structure is recommended. Refer to the following table for corrosion testing results.

**Table 2. Corrosion Testing Summary**

<i>Boring</i>	<i>Depth (ft)</i>	<i>pH</i>	<i>Resistivity ohm-cm</i>	<i>Chloride ppm</i>	<i>Sulphate ppm</i>	<i>Corrosive</i>
RC-11-006	0.0-5.0	7.9	3900	-	-	NO
RC-11-015	12.0-14.0	8.1	6150	-	-	NO
RC-11-015	42.0-43.5	8.0	2650	-	-	NO
RC-11-015	57.0-60.0	8.3	5710	-	-	NO

## Seismic Recommendations

Based on the *Caltrans Seismic Design Procedure*, the following active or potentially active fault is located within the vicinity of the project site. The Caltrans ARS Online Tool was used to develop ARS curves for deterministic and probabilistic seismic prediction models. An average shear wave velocity of 2494 ft/sec (760 m/s) for the upper 100 feet of rock was estimated using correlations to known rock properties and used to generate the ARS curves. The corresponding design envelope ARS curve is presented in figure 1. A basin factor of 1.0 was assumed for this location and a near fault factor was applied due to the proximity of the fault zone. Tabular data results are presented in Attachment 5.

**Table 3. Active and Potentially Active Faults**

<i>Fault Name</i>	<i>Fault Type</i>	<i>Moment magnitude of maximum credible earthquake</i>	<i>Distance from fault to project site (miles)</i>	<i>Peak ground acceleration (gravity)</i>
San Gregorio Fault Zone	RLSS	7.2	0.44	0.70

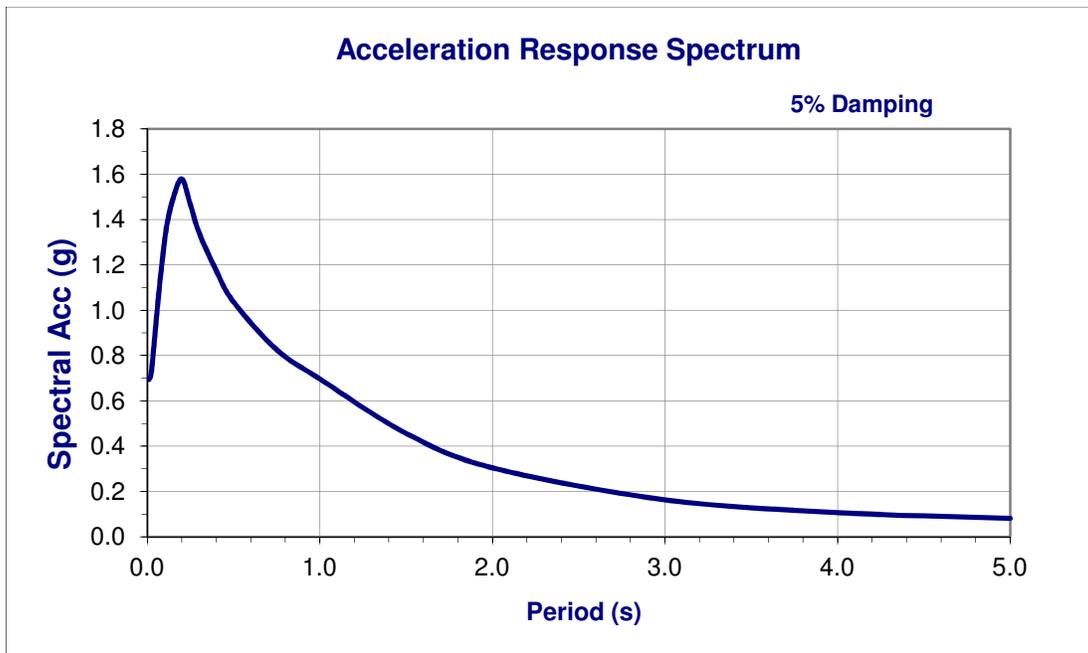


Figure 1. Design ARS Curve

### As-Built Foundation Data

As-built plans were available for the reinforced concrete crib wall constructed in 1960 in the vicinity of the landslide. The limits of the reinforced concrete crib wall in the as-built appear to have been extended to the north since the original 1960 construction. No as-built information was available for the extension and the time of construction is unknown, although the extension appears to be of similar age to the original structure. Another extension to the north was constructed in 1998 in response to a slope failure below the highway. No as-built design information was available for the reinforced concrete crib wall extension constructed in 1998, although photographs taken during construction indicate that it was built in a similar manner to the original wall. Photographs of the temporary excavation to the base of the crib wall indicate that the wall was founded in the fill material at or near the contact with the tonalite. The 1998 reinforced concrete crib wall was filled with imported gravel and backfilled with the fill material excavated for the construction. RSP was also placed in front of and below the 1998 crib wall to rebuild the failed slope below the crib wall. As-built plans are also available for the temporary soil nail wall, and are included in the Information Handout.

### Slope Stability

Continued reading of the Slope Inclinator near the center of the headscarp of the landslide has shown no movement, indicating that the temporary soil nail wall has stabilized the over-steepened headscarp caused by the landslide. Further landsliding and migration of the headscarp inland at the same location is not anticipated to occur while the temporary soil nail wall is in place during construction of the viaduct and soldier pile wall structures.

The stability of a portion of the remaining reinforced concrete crib wall to the south of the landslide is marginal. The bases of the eight cribs at the north end of the remaining portion of the structure have been undermined by the landslide. However, future movement of the reinforced concrete crib wall is not anticipated to affect the viaduct columns or foundations and it is recommended to leave the crib wall in place.

Another area susceptible to future slope instability was identified and has been visually monitored during the subsurface investigation and subsequent site visits. From approximately Station 104+20 to 104+75, the southbound shoulder on the outside of the guardrail has dropped vertically approximately 3 feet and left the base of several guardrail posts suspended in the air. Near vertical cracks in the rock face below the dropping shoulder can be observed and appear to be opening.

Further investigation of the near vertical cracking in the rock slope below the road indicates that the failure mechanism is toppling and wedge type failures of long narrow blocks of rock, approximately 3-10 feet in thickness. Measurements of strike and dip of the predominant discontinuities in the vicinity of the observed cracking were taken and used to construct a stereonet model to determine the location of potential day-lighting discontinuities relative to the existing roadway and potential foundation locations. Observations indicate that identified potential failure surfaces are very steeply dipping and will not daylight within the roadway. The vertical offset and slumping of the soil behind the shoulder has likely been caused by loss of lateral support at the outside edge of the shoulder fill, due to toppling and wedge type failures in the rock slope approximately 50 feet from the edge of shoulder. Future slope instabilities from approximately Station 104+20 to 104+75 are not expected to catastrophically fail across the roadway prior to or during construction of the structure, or to threaten the stability or structural integrity of the final structure foundations.

### **Foundation Recommendations**

Construction of a viaduct and soldier pile retaining wall is recommended to restore the roadway. The viaduct is proposed to be founded on single column bents with 66" diameter CIDH (Cast-In-Drilled-Hole) permanently cased piles with 54" diameter uncased rock socket portions below the permanent casing. The permanent casing will also serve as the column form inside of 90" diameter isolation casing at bent locations where the required column free length extends below finished grade. Abutments are to be supported on a pile cap with (7) 24" diameter uncased CIDH piles. Pile settlements of less than 1" are expected.

Pile axial and lateral resistances were calculated using the methods presented in the 2007 *AASHTO LRFD Bridge Design Specifications, FHWA Drilled Shafts: Construction Procedures and LRFD Design Methods* and *NCHRP Synthesis 360: Rock Socketed Shafts for Highway Structure Foundations, 2006*. Structure axial load effects on the piles were determined by Structure Design and presented to Geotechnical Design in Foundation Design Data Tables. Piles are assumed to obtain their axial and lateral resistance through base and side resistance in the uncased rock socket portion. Geotechnical resistance of the permanent casing is not included in the axial or lateral design, due to possible disturbance of the rock mass from casing installation methods. Recommended pile tip elevations are provided in following tables.

Abutment Foundations Design Recommendations								
Support Location	Pile Type	Cut-off Elevation (ft)	LRFD Service-I Limit State Load (kips) per Support		LRFD Service-I Limit State Total Load (kips) per Pile (Compression)	Required Nominal Resistance (kips)	Design Tip Elevations (ft)	Specified Tip Elevation (ft)
			Total	Permanent				
Abut. 1	24" CIDH	229.75	650	350	160	320	214(a), 214(c)	214.00
Abut. 9	24" CIDH	194.75	650	350	160	320	174(a), 174(c)	174.00

*Notes:*

- 1) Design tip elevations are controlled by: (a) Compression, and (c) Settlement
- 2) The specified tip elevation shall not be raised above the design tip elevations for tension, lateral, and tolerable settlement.

Bent Foundation Design Recommendations											
Support Location	Pile Type	Isolation Casing Specified Tip (ft)	Service-I Limit State Load per Support (kips)	Total Permissible Support Settlement (inches)	Required Nominal Resistance (kips)				Design Tip Elevations (ft)	Rock Socket Specified Tip Elevation (ft)	Permanent Casing Specified Tip Elevation (ft)
					Strength Limit		Extreme Event				
					Comp. $\phi=0.55$	Tension $\phi=0.40$	Comp. $\phi=1.0$	Tension $\phi=1.0$			
Bent 2	66" CIDH w/ 54" Rock Socket	210.42	1620	1	3910	N/A	1150	N/A	175 ( a-I) 190 ( a-II), 175 (c)	175.00	200.65
Bent 3	66" CIDH w/ 54" Rock Socket	206.92	1620	1	3910	N/A	1150	N/A	171 ( a-I) 186 ( a-II), 171 (c)	171.00	197.18
Bent 4	66" CIDH w/ 54" Rock Socket	202.25	1620	1	3910	N/A	1150	N/A	161 ( a-I) 181 ( a-II), 161 (c)	161.00	192.53
Bent 5	66" CIDH w/ 54" Rock Socket	196.50	1620	1	3910	N/A	1150	N/A	161 ( a-I) 176 ( a-II), 161 (c)	161.00	186.78
Bent 6	66" CIDH w/ 54" Rock Socket	190.75	1620	1	3910	N/A	1150	N/A	156 ( a-I) 171 ( a-II), 156 (c)	156.00	180.97
Bent 7	66" CIDH w/ 54" Rock Socket	186.00	1620	1	3910	N/A	1150	N/A	146 ( a-I) 176 ( a-II), 146 (c)	146.00	176.15
Bent 8	66" CIDH w/ 54" Rock Socket	181.00	1620	1	3910	N/A	1150	N/A	146 ( a-I) 161 ( a-II), 146 (c)	146.00	171.34

*Notes:*

- 1) Design tip elevations are controlled by: (a-I) Compression (Strength Limit), (a-II) Compression (Extreme Event), and (c) Settlement.
- 2) The specified tip elevation shall not be raised above the design tip elevations for tension, lateral, and tolerable settlement.

Pile Data Table						
Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Permanent Steel Casing Specified Tip Elevation (ft)
		Compression	Tension			
Abut. 1	24" CIDH	765	N/A	214(a), 214(c)	214.00	N/A
Bent 2	66" CIDH w/ 54" Rock Socket	4218	N/A	175( a-I) 190( a-II), 175 (c)	175.00	200.65
Bent 3	66" CIDH w/ 54" Rock Socket	4218	N/A	171 ( a-I) 186( a-II), 171 (c)	171.00	197.18
Bent 4	66" CIDH w/ 54" Rock Socket	4218	N/A	161 ( a-I) 181( a-II), 161 (c)	161.00	192.53
Bent 5	66" CIDH w/ 54" Rock Socket	4218	N/A	161( a-I) 176( a-II), 161 (c)	161.00	186.78
Bent 6	66" CIDH w/ 54" Rock Socket	4218	N/A	156 ( a-I) 171( a-II), 156 (c)	156.00	180.97
Bent 7	66" CIDH w/ 54" Rock Socket	4218	N/A	146 ( a-I) 176( a-II), 146 (c)	146.00	176.15
Bent 8	66" CIDH w/ 54" Rock Socket	4218	N/A	146 ( a-I) 161( a-II), 146 (c)	146.00	171.34
Abut. 9	24" CIDH	1148	N/A	174(a), 174(c)	174.00	N/A

*Notes:*

- 1) *Design tip elevations for Abutments are controlled by: (a) Compression and (c) Settlement.*
- 2) *Design tip elevations for Bents are controlled by: (a-I) Compression (Strength Limit), (a-II) Compression (Extreme Event), and (c) Settlement.*
- 3) *The specified tip elevation shall not be raised above the design tip elevations for tension load, lateral load, and tolerable settlement.*

Rock strength parameters recommended for the lateral analyses of the piles in L-Pile are as follows:

$$q_u = 500 \text{ psi}, E_{ir} = 150,000 \text{ psi}, \text{ and } k_{rm} = 0.0004.$$

Construction of a timber-lagged cantilevered soldier pile wall adjacent to the inside edge of the viaduct deck is recommended to serve two purposes: to act as temporary shoring for the excavation required to form and construct the viaduct bent caps and place girders, and to provide permanent retention of the soil used to fill between the existing cut slope and the edge of the viaduct deck. The maximum retained height of the wall will be approximately 13.5 feet at the bent cap excavations, decreasing to approximately 7.5 feet between bent cap excavations. The following material properties for the retained and resisting masses are recommended for design:

$$\begin{aligned} \Phi' &= 34^\circ & \text{Cohesion} &= 0 \text{ psf} & \text{Total Unit Weight} &= 135 \text{ pcf} \\ & & \text{Active Pressure Coefficient } K_A &= 0.28 \\ & & \text{Passive Pressure Coefficient } K_P &= 3.54 \end{aligned}$$

Lagging should be buried a minimum of 2-feet below finished grade. Soldier piles will consist of steel H-sections embedded in 30" diameter CIDH piles. Refer to the pile data table in the construction documents for design pile tip elevations. Cut slopes required for construction of the retaining wall and bent caps excavations shall be constructed at maximum slopes of 1.5:1.

### **Construction Considerations**

Difficult soil and rock drilling conditions were encountered in the subsurface investigation borings and can be expected during the foundation excavations for the viaduct and retaining wall. Cobbles and boulders were encountered in the fill overlying the rock. Rock encountered beneath the fill consisted of very intensely to slightly fractured rock, varying from hard to very soft, and from fresh to decomposed. Near vertical fracture orientation and weak, decomposed layers may cause caving into uncased portions of the drilled holes.

High groundwater levels and transient flow of groundwater into foundation excavations are expected. If groundwater flow into CIDH excavations exceeds 12 inches per hour and/or more than 3 inches of water accumulates in the base of the excavation prior to concrete placement, the contractor shall propose and utilize a construction method that prevents development of an inward hydraulic gradient into the foundation excavation. One method of preventing inward hydraulic gradient is to maintain an offsetting higher hydrostatic pressure in the excavation with a drilling fluid. Inward hydraulic gradient results in inward seepage forces that disturb the rock mass and can lead to caving and opening of fractures, decreasing the quality and degrading the available side and base resistance of the completed foundation.

Intermittent loss of drilling fluid circulation into the formation was experienced during the subsurface exploration. Grout loss into the formation during installation of soil nails was also observed, indicating that the rock mass is fractured, and loss of drilling fluid into the formation may occur if drilling fluids are used to control groundwater or caving.

Permanent and isolation casing at Bents 2-8 are for constructability purposes and are not included in the structural or geotechnical design resistance. Permanent and isolation casing shall be installed by placement in a drilled hole. Use of corrugated metal pipe (CMP) as casing is not permitted.

Excavations for column foundations and installation of casing at Bents 5 and 6 may intersect existing reinforced concrete crib wall members. If reinforced concrete crib members are intersected, the contractor shall propose and utilize a method to cut through the concrete and reinforcing steel of the crib wall members that prevents excessive damage to the crib wall beyond the diameter of the foundation. Caving of the crib backfill into the excavation may occur.

Removal of the upper portions of the reinforced concrete crib wall will be required to accommodate the bent cap and provide adequate clearance for the girders. Removal of crib members shall be performed in a manner that does not damage crib members designated to remain in place. Refer to the plans for the vertical and horizontal limits of reinforced concrete crib wall removal.

The temporary soil nail wall parallels the existing centerline from approximately Station 106+50 to 108+30. If the foundation locations at Bents 7 and 8 cannot be accessed from the existing highway elevation, construction of a temporary access structure to complete foundation work below the temporary soil nail wall may be required. Excavations for the column foundations at Bents 7 and 8 may intersect soil nails and the reinforced shotcrete wall facing of the temporary soil nail wall. The contractor shall propose and utilize a method to core through the shotcrete and reinforcing steel that prevents excessive damage to the soil nail wall beyond the diameter of the foundation.

Soldier pile excavations behind the existing temporary soil nail wall may intersect soil nails. The contractor shall propose and utilize a method to remove portions of the soil nails that are intercepted by the drilled excavations at depth.

CIDH piles are designed including contributions from end bearing and side resistance. Care shall be taken to ensure proper construction and cleanout of the drilled excavation bases. Bases of completed foundation excavations shall be level and free of loose material to provide a firm bearing foundation for the rock sockets. The Engineer will use the Department's Shaft Inspection Device (SID) to inspect the bases of drilled holes when CIDH piles at Bents 2-8 are constructed under slurry. The SID will be used to inspect the bottom of the hole after completion of the drilling and clean out. The SID will also be used to inspect the bottom of the hole after placement of the pile reinforcement. After placing reinforcement and before placing concrete in the drilled hole, if drill cuttings settle out of the slurry, the bottom of the drilled hole shall be cleaned. All drilled holes shall be approved by the Engineer prior to placing concrete.

The Contractor shall verify that the bottoms of all drilled holes are clean. A minimum of 50 percent of the base of each shaft shall have less than 1/4 inch of sediment and the maximum depth of sediment or any debris at any place on the base of the shaft shall not exceed one inch. The Engineer will verify that the preceding criteria are met prior to approving the placement of concrete.

The contractor shall notify the Engineer 14 calendar days prior to the start of drilling/coring for the foundations at Bents 2-8. The Engineer or Engineer's representative shall be present during all CIDH concrete piling operations and casing installations. The Engineer will notify Geotechnical personnel and Foundation Testing Branch personnel of the planned schedule of operations.

## **Project Information**

Standard Special Provision S5-280, "Project Information", discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the Information Handout will be provided in Acrobat (.pdf) format to the Addressee of this report via electronic mail.

Data and information attached with the project plans are:

- A. Log of Test Borings.

Data and information included in the Information Handout provided to the Bidders and Contractors are:

- A. Foundation Report dated March 22, 2012.
- B. Temporary soil nail wall as-builts.

Data and Information available for inspection at the District Office:

- A. Borehole core samples.

The District Office is located at 50 Higuera Street, San Luis Obispo, California, 93401. Contact Ryan Turner at (805) 549-3750 to arrange inspection of the borehole core samples.

If you have any questions or comments, please contact Ryan Turner at (805) 549-3750 or Michael Finegan at (805) 549-3194.



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Steve Wyatt/ Design  
Brian Fuller/ Design  
Andrew Tan / PCE  
Douglas Lambert / DME

## **LIST OF ATTACHMENTS**

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STATE OF CALIFORNIA  
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 PROJECT PLANS FOR CONSTRUCTION ON  
 STATE HIGHWAY  
 IN MONTEREY COUNTY  
 FROM 0.2 MILE SOUTH OF BIXBY BRIDGE  
 TO 0.5 MILE NORTH OF ROCKY CREEK BRIDGE

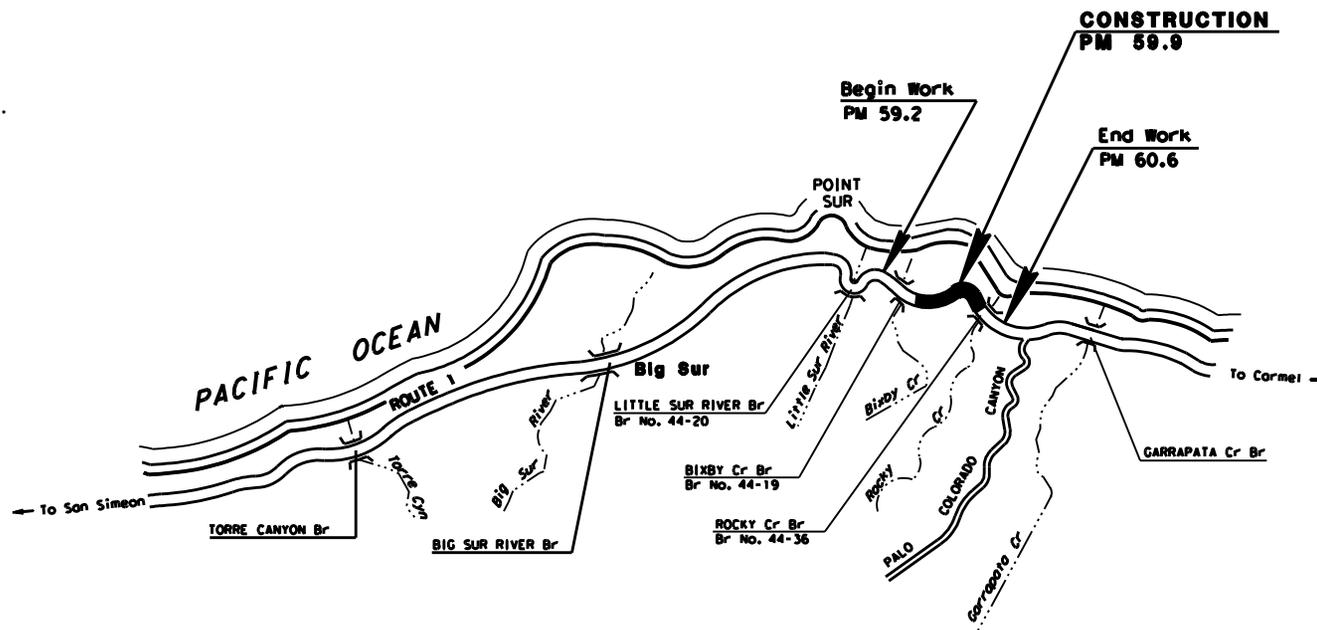
TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	59.9		

**LOCATION MAP**



NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

PROJECT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_  
 REGISTERED CIVIL ENGINEER

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.

CONTRACT No.	<b>05-1A6900</b>
PROJECT ID	<b>051200008</b>

PROJECT MANAGER  
 KEVIN DOSTALEK  
 DESIGN ENGINEER  
 STEVE WYATT

BORDER LAST REVISED 7/2/2010 CALTRANS WEB SITE IS: [HTTP://WWW.DOT.CA.GOV/](http://www.dot.ca.gov/)

RELATIVE BORDER SCALE 0 1 2 3 INCHES  
 USERNAME => USER  
 DGN FILE => REQUEST

UNIT 1450 PROJECT NUMBER & PHASE 051200008

DATE PLOTTED 11-01-11 11:12:11 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	MON	001	59.9	1	1

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

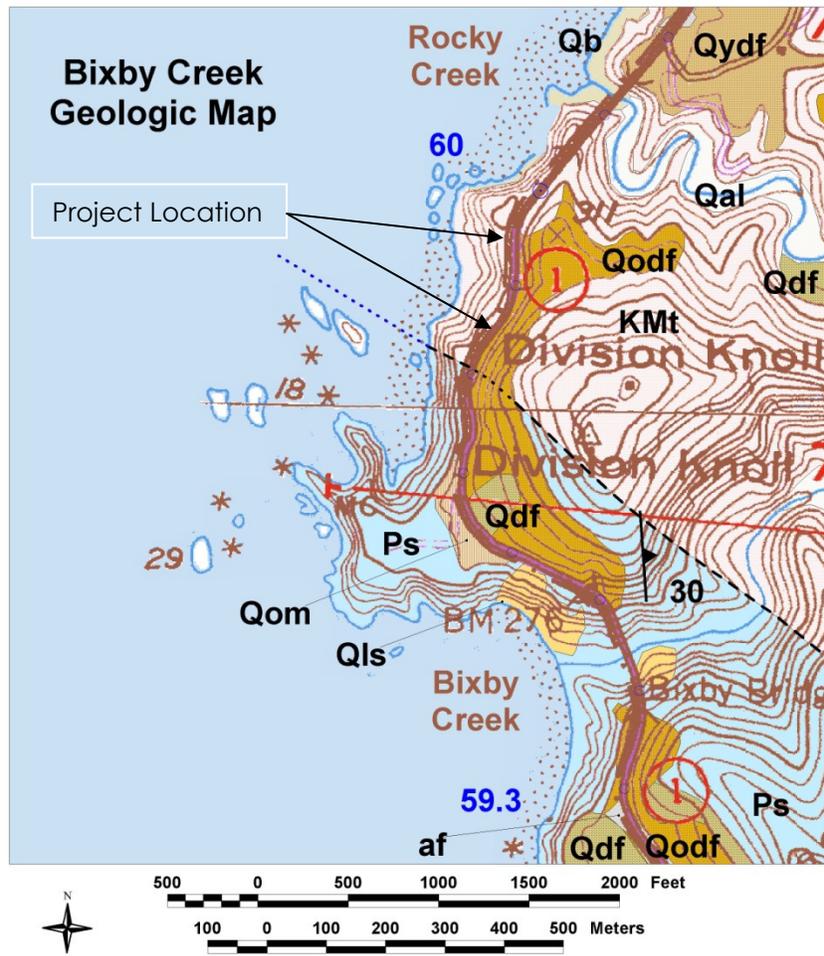


THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
		CHECKED BY	REVISOR	DATE



## Attachment 2 BORING LOCATIONS

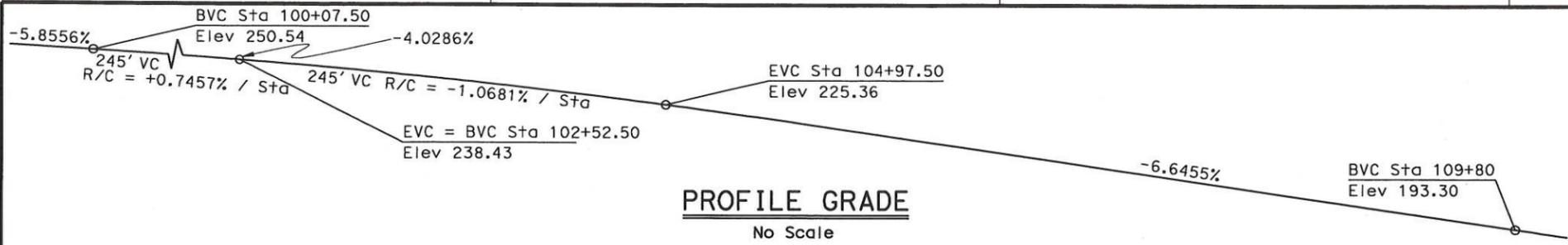


**Geologic Units**

af	Artificial Fill
Qal	Alluvium
Qb	Beach deposit
Qdf	Youngest (active) debris fans
Qls	Landslide deposits
Qydf	Young debris fans
Qodf	Older Debris fan
Qom	Marine terrace deposit, undifferentiated
KMt	Charnockitic tonalite equivalent?
Ps	Sur complex undifferentiated

**Structural Symbols**

---	Fault, approximately located
.....	Fault, concealed
30	Inclined Foliation



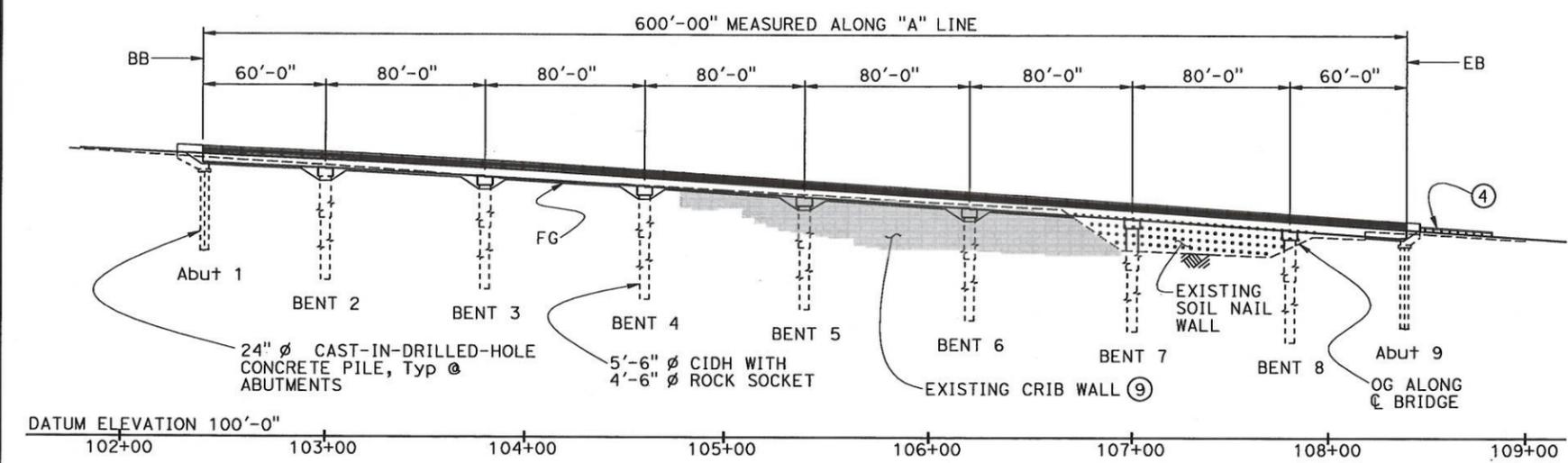
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1			

REGISTERED CIVIL ENGINEER X DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

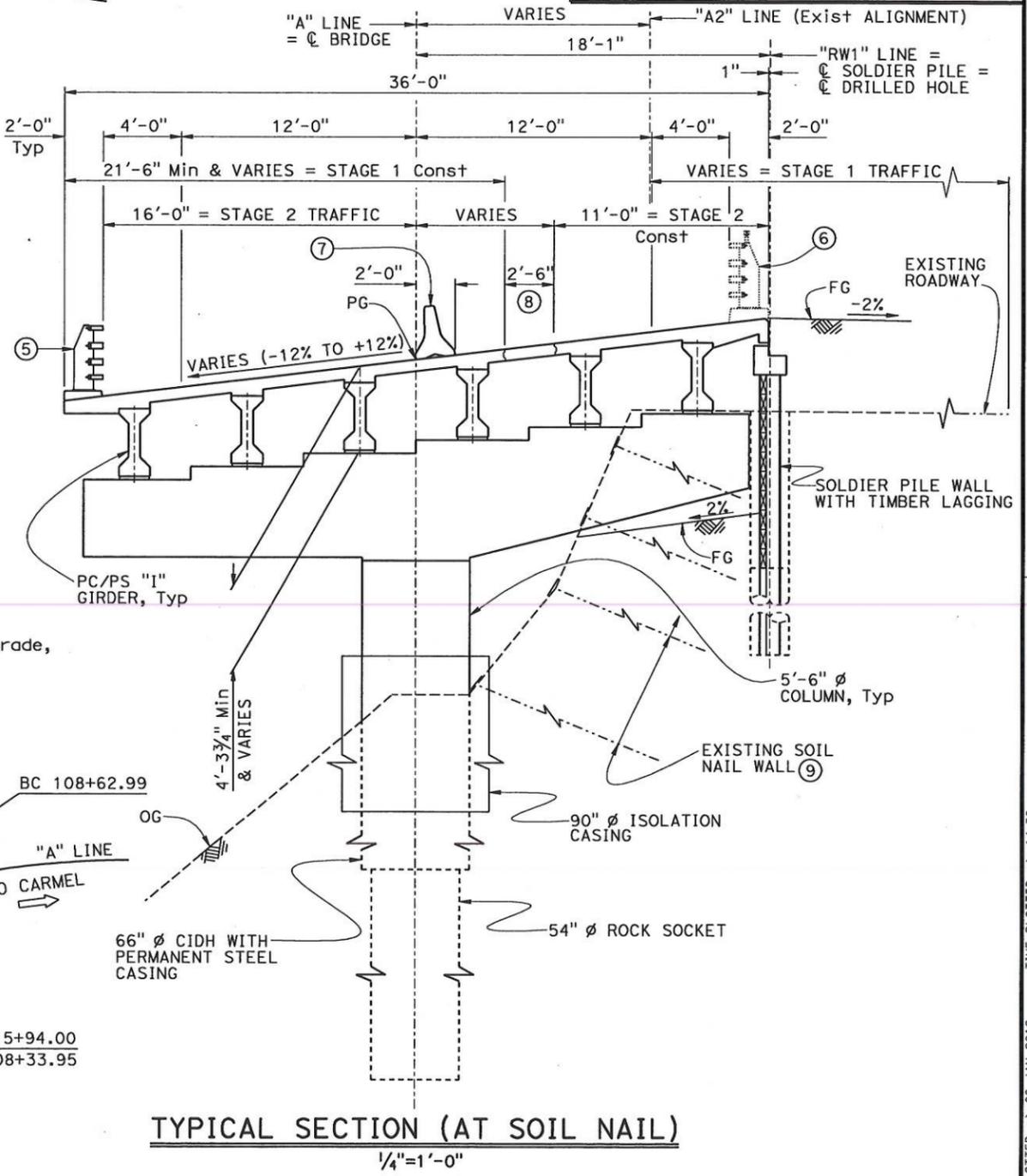
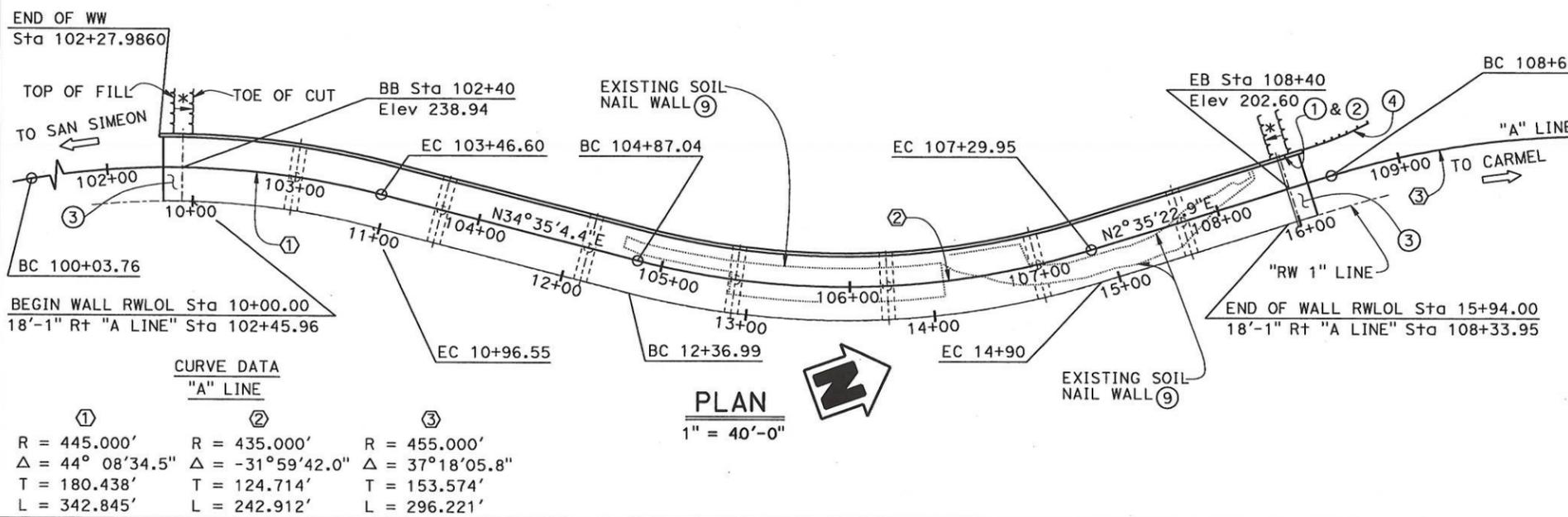
HERNAN PEREZ  
No. C60993  
Exp. 12/31/12  
CIVIL  
STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



- NOTES:
- ① Paint "Rocky Creek Viaduct"
  - ② Paint "Br No. 44-0295"
  - ③ Structure Approach Type EQ(10)
  - ④ Metal Beam Guard Rail, see "Road Plans"
  - ⑤ California ST-70 Bridge Rail
  - ⑥ Future Construction (if needed)
  - ⑦ Temporary Railing (Type K) during stage 2 Traffic, see "Road Plans"
  - ⑧ Closure Pour
  - ⑨ Existing Crib Wall and Soil Nail Wall to remain, except for portion to be removed as shown on the "STRUCTURE EXCAVATION AND BACKFILL" sheet

- LEGEND:
- New Construction
  - Direction of Traffic
  - - - Existing Soil Nail Wall
  - \* For abutment Finish grade, see "Road Plans"



Attachment 4

DESIGN ENGINEER	DESIGN BY H. PEREZ	CHECKED R. MELKO	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL 93 W/ "LOW-BOY" PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO. 44-0295	ROCKY CREEK VIADUCT GENERAL PLAN
	DETAILS BY K. CHONKRIA	CHECKED H. PEREZ	LAYOUT BY K. CHONKRIA	PLANS AND SPECS COMPARED BY H. PEREZ			POST MILE 59.9	
	QUANTITIES BY A. SALIMI / G. REYES	CHECKED R. WASHINGTON	SPECIFICATIONS BY X	PLANS AND SPECS COMPARED BY X				

UNIT: 3591 PROJECT NUMBER & PHASE: 0512000008 CONTRACT NO.: 05-1A6901

REVISION DATES: 08-05-11, 12-29-11, 12-28-11

SHEET 1 OF 43

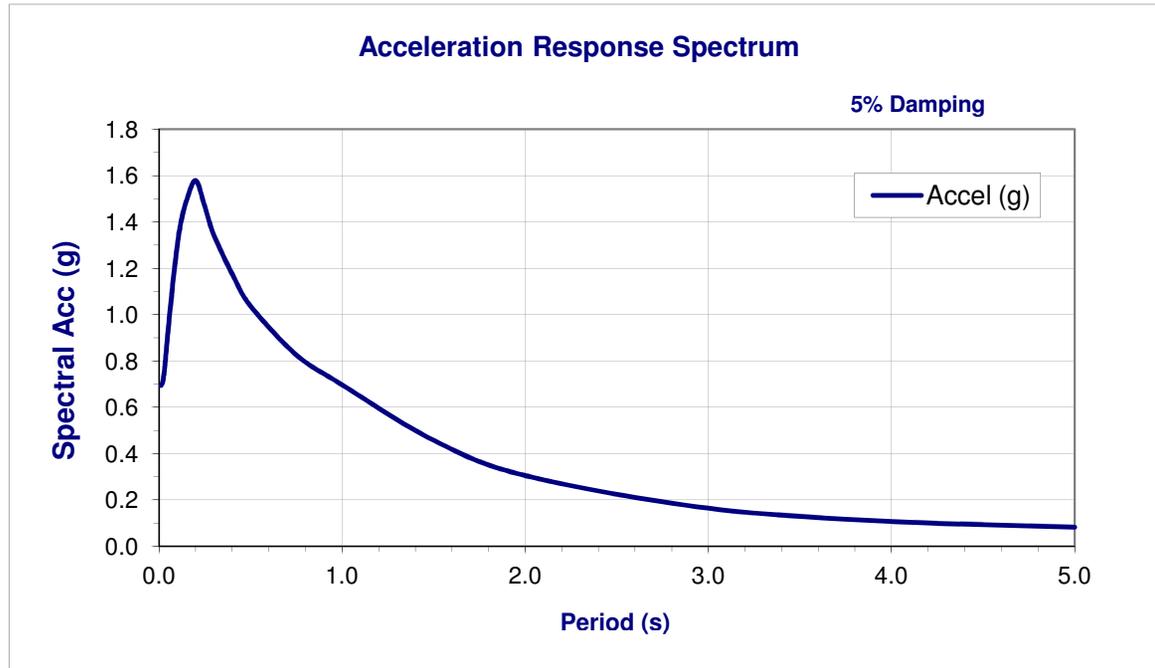
FILE => 05-0000-a-qd01.dgn

# Rocky Creek Viaduct

Bridge No. 44-0295

SDC Controlling Procedure : Deterministic

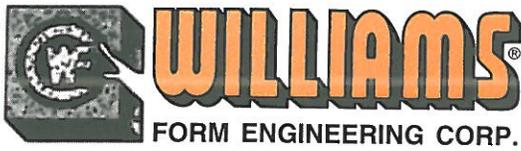
Period (s)	Accel (g)
0.010	0.694
0.020	0.709
0.030	0.766
0.050	0.936
0.075	1.133
0.100	1.301
0.120	1.400
0.150	1.493
0.200	1.579
0.250	1.466
0.300	1.343
0.400	1.175
0.500	1.037
0.750	0.826
1.000	0.697
1.500	0.457
2.000	0.305
3.000	0.164
4.000	0.107
5.000	0.082



## Deterministic Procedure Data

**Fault** San Gregorio  
**Fault ID** 41  
**Style** RLSS  
**Mmax** 7.2  
**Dip** 70 deg  
**Z<sub>TOR</sub>** 0 km

**R<sub>rup</sub>** 0.72 km  
**R<sub>jb</sub>** 0.00 km  
**R<sub>x</sub>** 0.77 km  
**V<sub>S30</sub>** 760.00 m/s  
**Z<sub>1.0</sub>** 24 m  
**Z<sub>2.5</sub>** 2.00 km



DATE: 03/25/11

PDX 5913

**CUSTOMER:**

Condon Johnson & Associates  
480 Roland Way, Suite 500  
Oakland, CA 94621

**SHIP TO:**

Condon Johnson  
Hwy 1 @ MP 59.7  
Monterey, CA 93940

**CUSTOMERS PURCHASE ORDER#: 1115**  
**WILLIAMS FORM ENGR. PACKING LIST #: 143809**  
**WILLIAMS FORM ENGR. ORDER NUMBER: CO 185992**  
Project Name: Hwy 1 Emergency Slide Repair

**CERTIFICATE OF CONFORMANCE**

This is to certify that material supplied meets the requirements for the specifications as stated. We further certify that all materials supplied were manufactured in the United States and that all work performed was done in accordance with Williams Form Engineering Corp. manufacturing and quality control standards. Deviations of material to be stated in description of material if any and Identified by an asterisk \*\*

**DESCRIPTION OF MATERIAL**

60 Ea GR 75 ATB #10 x 40'0"

HT# NF10202812 / NF10101852

Conform to ASTM A-615 and to Williams Form Engineering Manufacturing Specifications

**COPY OF MILL CERTIFICATIONS ATTACHED**  
**WILLIAMS FORM ENGINEERING CORP**

  
Larry Hinsz  
Quality Control  
Western Division

WT#



# SHIPPER

PK

Shipper: 13643  
 COM Pck#: 143809  
 Page: 1



3/24/2011  
 15:35:38

**Sold To**  
 CONDON JOHNSON & ASSOCIATES INC  
 HWY 1 EMERGENCY SLIDE REPAIR  
 480 ROLAND WAY, SUITE 500  
 OAKLAND, CA 94621

**Ship To**  
 CONDON JOHNSON  
 MIKE POWELL 510-772-5915  
 HWY 1 @ MP 59.7  
 MONTEREY, CA 93940

Contact:

Carrier: BEST BESTWAY	Order#: 1-CO 185992	Cust PO#: 1115	
Instructions PPD/C&M/SAN	Cust# 50700507	Request 3/24/11	Schedule 3/24/11
Part	Description	Quantity Ordered	Quantity Shipped

Warehouse: L GOLDEN, CO

R611048000 GR 75 ATB #10 X 40'0" 60  
 Line#: 100 Ship Date: 3/24/11  
 HT# R61 - Gr 75 All-Thread Rebar # 10 x 40' Left  
 Hand Thread \*Plain

Control#	Heat#	Quantity
196287	NF10202812 NONE	20.000
196291	NF10202812 NONE	20.000
196382	NF10101852 NONE	20.000
<b>Total Shipped =====&gt;</b>		<b>60.000</b>

Sold To: WILLIAMS FORM ENG CORP  
 8165 GRAPHIC DR  
 BELMONT, MI 49306-0000  
 (519) 859-9444  
 Fax: (402) 371-3022

Ship To: WILLIAMS FORM ENG  
 17730 W COLFAX AVE  
 GOLDEN, CO 80401-0000  
 (303) 216-9300  
 Fax: (616) 886-1810

Customer P.O.	19265	Sales Order	111267.1
Product Group	Merchant Bar Quality	Part Number	30001250600T630
Grade	ASTM A815-07 Grade 75	Lot ID	NF1020281252
Size	1-1/4" (1.2500) Round	Heat ID	NF10202812
Product	1-1/4" (1.2500) Round 50' A615GR75	B.L. Number	N1-182119
Description	A815GR75	Load Number	N1-131589
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

\* - Test outside scope of L-A-B accreditation

C	Mn	V	Si	S	P	Cu	Cr	Ni	Mo	Al	Cb
0.47%	0.76%	0.087%	0.22%	0.037%	0.021%	0.26%	0.12%	0.09%	0.02%	0.001%	0.001%
Pb	Sn	Ca									
0.000%	0.011%	0.0001%									

\*Yield 1: 83,290psi (574MPa)

\*Tensile 1: 118,354psi (816MPa)

\*Elongation 14% in 8"(% in 203.3mm)

\*Bend OK

\*Reduction Ratio 36 : 1

- All manufacturing processes of the steel materials in this product, including melting, have been performed in the United States.
- All products produced are weld free.
- Mercury, in any form, has not been used in the production or testing of this material.
- L.A.B Accredited, Chemical Testing, Certificate L-2232 Expires 12-16-2012
- Test conform to ASTM A29-05, ASTM E415 and ASTM E1019-resulphurized grades or applicable customer requirements.

Williams Form Engineering Corp.  
 This Quality Assurance document has been  
 received and deemed acceptable as noted:

WFEC SIZE  
 DESIGNATION # 10

by: [Signature] on 8/10  
 Quality Assurance Mgr (date)

checked by: \_\_\_\_\_



[Signature]  
 Jim Hill  
 Division Metallurgist

Sold To: **WILLIAMS FORM ENG CORP**  
 8165 GRAPHIC DR  
 BELMONT, MI 49308-0000  
 (616) 866-8444  
 Fax: (402) 371-3022

Ship To: **WILLIAMS FORM ENG CORP**  
 5501 RUSHE DR  
 COMSTOCK PK, MI 49321-0000  
 (616) 866-0815  
 Fax: (616) 866-1810

Customer P.O.	19222	Sales Order	109800.1
Product Group	Merchant Bar Quality	Part Number	30001250582T830
Grade	ASTM A815-07 Grade 75	Lot ID	NF1010186251
Size	1-1/4" (1.2500) Round	Heat ID	NF10101852
Product	1-1/4" (1.2500) Round 48' 6" A815GR75	B.L. Number	N1-175044
Description	A815GR75	Load Number	N1-125093
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it entitles those requirements.

\* - Test outside scope of L-A-B accreditation

C	Mn	V	Si	S	P	Cu	Cr	Ni	Mo	Al	Cb
0.47%	0.76%	0.088%	0.23%	0.027%	0.020%	0.24%	0.13%	0.08%	0.02%	0.001%	0.000%
Pb	Sn	Ca									
0.001%	0.011%	0.0002%									

\*Yield 1: 87,312psi (602MPa)

\*Tensile 1: 124,567psi (859MPa)

\*Elongation 15% in 8" (% in 203.3mm)

\*Bend OK

\*Reduction Ratio 36 :1

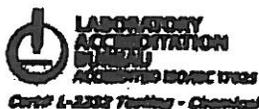
- All manufacturing processes of the steel materials in this product, including melting, have been performed in the United States.
- All products produced are weld free.
- Mercury, in any form, has not been used in the production or testing of this material.
- L.A.B Accredited, Chemical Testing, Certificate L-2232 Expires 12-16-2012
- Test conform to ASTM A29-05, ASTM E415 and ASTM E1019-re-sulfurized grades or applicable customer requirements.

Williams Form Engineering Corp.  
 This Quality Assurance document has been  
 received and deemed acceptable as noted:

WFEC SIZE  
 DESIGNATION # 10

by: [Signature] on 6/10  
 Quality Assurance Mgr. (date)

checked by: \_\_\_\_\_



[Signature]

Jim Hill  
 Division Metallurgist



DATE: 03/28/11

PDX 5919

**CUSTOMER:**

Condon Johnson & Associates Inc  
480 Roland Way, Suite 500  
Oakland, CA 94621

**SHIP TO:**

Condon Johnson  
Hwy 1 @ MP 59.7  
Monterey, CA 93940

**CUSTOMERS PURCHASE ORDER#: 1115**

**WILLIAMS FORM ENGR. PACKING LIST #: 143838**

**WILLIAMS FORM ENGR. ORDER NUMBER: CO 185992**

**Project Name: Hwy 1 Emergency Slide Repair**

**CERTIFICATE OF CONFORMANCE**

This is to certify that material supplied meets the requirements for the specifications as stated. We further certify that all materials supplied were manufactured in the United States and that all work performed was done in accordance with Williams Form Engineering Corp. manufacturing and quality control standards. Deviations of material to be stated in description of material if any and Identified by an asterisk \*\*

**DESCRIPTION OF MATERIAL**

60 Ea GR 75 ATB #10 x 40'0"

HT# 750714 / NF09201208

Conform to ASTM A-615 and to Williams Form Engineering Manufacturing Specifications

50 Ea GR 75 ATB Coupling #10

HT# 10C6D

120 Ea GR 75 ATB Hex Nut #10

HT# 10J6D

Conform to Williams Form Engineering Manufacturing Specifications for ASTM A-615 GR 75 All-Thread Bar

120 Ea Plate Washer 3/4" x 8" x 8" with 1-1/2" Round Hole

HT# PL1010132901

Conform to ASTM A-36 and to Williams Form Engineering Manufacturing Specifications

**COPY OF MILL CERTIFICATIONS ATTACHED**

**WILLIAMS FORM ENGINEERING CORP**

A handwritten signature in blue ink, appearing to read 'Tony Kasparek', is written over a horizontal line.

Tony Kasparek  
Vice President  
Western Division

WT#

3/24/11 14:16:36

Pick list 143838

SJ

Page 1  
S102MFVM MM

Original

Company . . . : 1 WILLIAMS FORM  
 Customer . . . : 50700507 CONDON JOHNSON & ASSOCIATES INC  
 Order no. . . : CO 185992 PO no. . . : 1115  
 Accepts backorders? . . : Yes Request Schedule Order  
 Accepts partial ship? . . : Yes 3/24/11 3/24/11 3/23/11  
 Accepts substitute? . . : Yes Carrier: BESTWAY  
 Advance ship notice? . . : No

Ship to . . . : HWY 1

Trns Terms : FPD/SHIPPOINT

Instructions . : FPD/BESTWAY/SHIPPOINT

CONDON JOHNSON

Address MIKE POWELL 510-772-5915  
 HWY 1 @ MP 59.7  
 MONTEREY CA 93940  
 USA

Order Comments: C/0#2 3/24/2011 DUE TO THE DELETION OF PICK  
 LIST #143831 "S" TO ADD IN CENTRALIZERS.  
 \*MILL CERTS AND COC REQUIRED\*  
 -- PER JO

NET PRICES

Quote#: 81-11-223  
 Author: Jeff Ohlson (G)

COMPLETED

DE: Sherry Rakestraw

Warehouse . . : S SAN DIEGO

Item number/ Location	Description/ Config	Serial#	Pack	Line item Ship date	Rls/ U/M	Pick qty/ Qty picked
CEN1042	PVCCEN OVR 1-1/4" (#10)	5-1/4DH		700 3/24/11	00001 EA	<u>420</u> 420.000
R611048000	GR 75 ATB #10 X 40'0"	N		200 3/24/11	00001 EA	<u>60</u> 60.000
HT# 750714, NF 09201208						
R61	Gr 75 All-Thread Rebar # 10 x 40' Left Hand Thread *Plain					
R6210	GR 75 ATB COUPLING #10	N		600 3/24/11	00001 EA	<u>50</u> 50.000
Heat# 10C60						
R6310	GR 75 ATB <input type="checkbox"/> HEX NUT <input checked="" type="checkbox"/> COMPLETE # <input checked="" type="checkbox"/> PARTIAL	N		300 3/24/11	00001 EA	<u>120</u> 120.000
HEAT# 10J60						

WGT \_\_\_\_\_ BUNDLES \_\_\_\_\_ NO OF DRUMS \_\_\_\_\_ NO OF PALLETS \_\_\_\_\_ NO OF PAIL/BAGS \_\_\_\_\_ PACKER \_\_\_\_\_ DATE \_\_\_\_\_



5501 RUSCHE DR • COMSTOCK PARK, MI 49321  
 2600 VULCAN DR • LITHIA SPRINGS, GA 30122  
 7601 NORTH COLUMBIA BLVD • PORTLAND, OR 97203  
 251 ROONEY ROAD • GOLDEN, CO 80401

PRODUCTION  
ORDER

Pick list 143838

3/24/11 14:16:36  
Original  
Order No. CO 185992  
R63 - Hex Nut for Grade 75 All-Thread Rebar # 10 LeftHand \*Plain

SJ

Page 2  
S102MFVM MM

CONDON JOHNSON & ASSOCIATES, INC

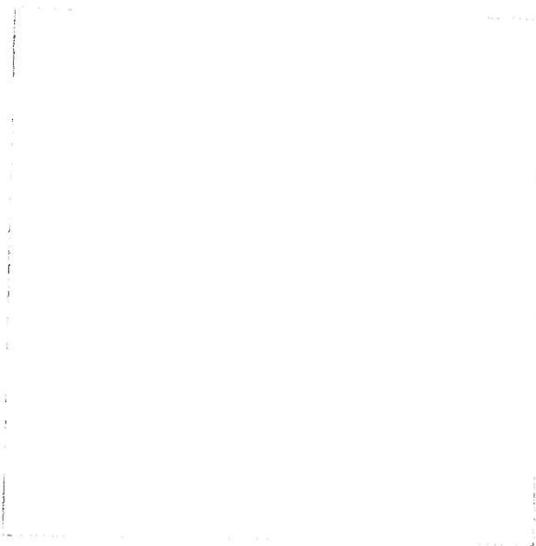
Item number/ Location	Description/ Config	Serial#	Pack	Line item Ship date	Ris/ U/M	Pick qty/ Qty picked
R8M12S	BEVELED WSHR F/#10 15DEG			400 3/24/11	00001 EA	120.000 <u>120</u>
R8M - Beveled Washer for # 10 Gr 75, 15 degree *Plain						

S1K06080812R	PLT WSH 3/4" X 8" X 8", 1-1/2RH			500 3/24/11	00001 EA	120.000 <u>120</u>
W/1-1/2"DIA *ROUND HOLE						

HT# PL101.0132901

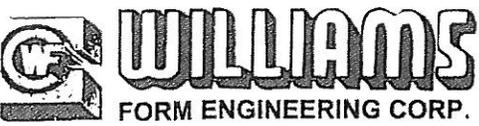
\*Plain 3/4" x 8" x 8" Plate w/ 1-1/2" Diameter Round Hole . \*Plate  
Material: A36

\*\* END OF REPORT \*\*



COMPLETE  PARTIAL

WGT 12,178 BUNDLES 4 NO OF DRUMS 0 NO OF PALLETS 3 NO OF PAIL/BAGS 0 PACKER MD DATE 3-24-11



5501 RUSCHE DR • COMSTOCK PARK, MI 49321  
2600 VULCAN DR • LITHIA SPRINGS, GA 30122  
7601 NORTH COLUMBIA BLVD • PORTLAND, OR 97203  
251 ROONEY ROAD • GOLDEN, CO 80401

PRODUCTION  
ORDER

Date: 3/19/09

# Nucor Corporation

Heat Number: 750714

Nucor Steel Division  
Post Office Box 309 Norfolk, Nebraska 68702 Phone (402) 644-0200  
Mill Certification



Chemical Testing  
Certificate: 0780-01\*Chemical Analysis  
Expires: 11/30/10

Test conform to ASTM A29-05, ASTM E415 and ASTM E1019-resulphurized grades  
Spec: A615GR75    ASTM A615-07    Size: 1 1/4 Rounds  
GRADE 75    1.2500

C	.47	P	.03	Mo	.02
Mn	.78	Cu	.26	V	.084
Si	.23	Cr	.14	Nb	.001
S	.03	Ni	.11		

### Physical Properties

	Imperial			Metric	
Yield	85,440	-----	psi	589	-----
Tensile	120,506		psi	831	
% Elongation	12		% in 8"	12	
	Strand Cast		Bend Test #1	PASS	% in 203.3 mm
			Reduction Ratio:	36:1	

WFEC SIZE  
DESIGNATION # 10

WILLIAMS FORM ENG CORP  
8165 GRAPHIC DRIVE  
BELMONT, MI 49306

Williams Form Engineering Corp.  
This Quality Assurance document has been  
reviewed and deemed acceptable as noted:

*Kevin Ralston* on 3/19/09  
Quality Assurance Mgr (date)

checked by: \_\_\_\_\_

*Jim Hill*  
Jim Hill Division Metallurgist

All Manufacturing processes, including melting have been performed in the U.S.A. Mercury, in any form, has not been used in the production or testing of this material. Welding or weld repair was not performed on this material. This material conforms to the specifications described on this document and may not be reproduced except in full, without written approval of Nucor Corporation. This product is NAFTA certified under Paragraph "B" of the NAFTA rules of origin.  
Form 10F002                      \*Within Our A2LA Accreditation Scope                      HT3000R

Sold To: **WILLIAMS FORM ENG CORP**  
 8165 GRAPHIC DR  
 BELMONT, MI 49306-0000  
 (519) 659-9444  
 Fax: (402) 371-3022

Ship To: **WILLIAMS FORM ENG CORP**  
 5501 RUSHE DR  
 COMSTOCK PK, MI 49321-0000  
 (616) 866-0815  
 Fax: (616) 866-1810

Customer P.O.	19131	Sales Order	106833.1
Product Group	Merchant Bar Quality	Part Number	30001250600T630
Grade	ASTM A615-07 Grade 75	Lot ID	NF0920120852
Size	1-1/4" (1.2500) Round	Heat ID	NF09201208
Product	1-1/4" (1.2500) Round 50' A615GR75	B.L. Number	N1-165413
Description	A615GR75	Load Number	N1-115927
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

C	Mn	V	Si	S	P	Cu	Cr	Ni	Mo	Al	Cb
0.48%	0.79%	0.088%	0.22%	0.031%	0.020%	0.30%	0.11%	0.09%	0.02%	0.002%	0.000%
Pb	Sn	Ca									
0.000%	0.011%	0.0002%									

Yield 1: 95,895psi (661MPa)

Tensile 1: 131,926psi (910MPa)

Elongation 14% in 8"(% in 203.3mm)

Bend OK

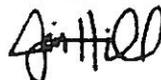
Reduction Ratio 36 :1

1. All manufacturing processes of the steel materials in this product, including melting, have been performed in the United States.
2. All products produced are weld free.
3. Mercury, in any form, has not been used in the production or testing of this material.
4. Test conform to ASTM A29-05, ASTM E415 and ASTM E1019-resulphurized grades

WFEC SIZE  
 DESIGNATION # 10

Williams Form Engineering Corp.  
 This Quality Assurance document has been received and deemed acceptable as noted:

by: Ken Rusk on 01/10  
 Quality Assurance Mgr (date)  
 checked by: \_\_\_\_\_



Jim Hill

Division Metallurgist

**Certificate Of Analysis 321719**

Issued By: MITTAL STEEL USA

Batch No.: Heat 897220

10060

Chemistry	Description	Value	Units
C	Carbon	0.06000	PWGT
Mn	Manganese	1.03000	PWGT
P	Phosphorus	0.05000	PWGT
S	Sulfur	0.30000	PWGT
Si	Silicon	0.02000	PWGT
Ni	Nickel	0.06000	PWGT
Cr	Chromium	0.05000	PWGT
Mo	Molybdenum	0.02000	PWGT
Al	Aluminum	0.00200	PWGT
Cu	Copper	0.15000	PWGT
V	Vanadium	0.00300	PWGT
Cb	Columbium	0.00200	PWGT
N	Nitrogen	0.01000	PWGT
Geometry	Description	Value	Units
DIAMETER	Diameter	2.0625	IN
Cleanliness	Description	Value	Units
MACRO ETCH	Report macro etch results.		
Structure	Description	Value	Units
RPT GRAIN SIZE	Reported Grain Size		
ASTM Standard	Description	Value	Units
A576-95	Steel Bars, Carbon, Hot Roll SBQ	CONFORMS	
Mill Processing	Description	Value	Units
MELT COUNTRY	Melted in Country	USA	
ROLLED COUNTRY	Rolled in Country	USA	
RED RATIO	Reduction Ratio	14.70	RED

Bundle Tags
001-440946
001-440950
001-440954

BOL 60347 for WILLIAMS FORM ENGINEERING CORP

Customer PO	Item	Item Description	Customer Item
19960	41223 Rev 002	2 CD RD 1215 12R CGP	

We hereby certify that all cold finished carbon steel bars meet the requirements for ASTM A108-03 and all cold finished alloy steel bars meet the requirements for ASTM A331-95  
 The sizes stated on the certifications are from the original hot roll used to make the cold finished material. The actual cold finished size is shown in the item description.

We hereby certify the above to be a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 18 June 2008  
 Thomas Snabes, Corporate Metallurgist

**EATON STEEL BAR COMPANY**

Williams Form Engineering Corp.  
 1541 ...  
 Quality Assurance Dept.  
 01/09

RXS

# MATERIAL CERTIFICATION

REV DATE: AUG 15, 2008

P.O. Box 12100 - Detroit, MI 48212-0100  
1-313-368-5000 1-800-462-1950  
(FAX 1-800-292-3878)

P.O. Box 1154 - Milwaukee, WI 53201-1154  
1-414-481-5000 1-800-521-8031  
(FAX 1-800-292-6459)

## Central Steel & Wire Company

P.O. Box 5100 - Chicago, IL 60680-5100  
1-773-471-3800 1-800-621-8510  
(FAX 1-773-471-3962)

P.O. Box 14148 - Cincinnati, OH 45250-0148  
1-800-541-7190  
(FAX 1-800-232-9279)

P.O. Box 22015 - Greensboro, NC 27420-2015  
1-336-333-2332 1-800-621-8510  
(FAX 1-800-232-9279)

**SOLD TO:** WILLIAMS FORM ENGINEERING CORP  
8165 GRAPHIC DR NE  
BELMONT MI 49306-9448

**DATE(ORG):** AUG 15, 2008  
**CSW ORDER:** 562083  
**CUSTOMER PO:** 19902

07415

ITEM 001 2" HEX CF 1215---12 FT

10J5D

45356#

### CHEMICAL COMPOSITION (%)

MILL: NELSEN STEEL COMPANY    HEAT NO: 691541    SYM: Z

C	MN	P	S	SI	NI	CR	MO	CU
.06	.97	.05	.29	.019	.04	.04	.017	.07

### CHEMICAL COMPOSITION (%)

MILL: NELSEN STEEL COMPANY    HEAT NO: 692222    SYM: A

10J6D

C	MN	P	S	SI	NI	CR	MO	CU
.06	.97	.05	.28	.023	.04	.05	.018	.08

Williams Form Engineering Corp.  
This Quality Assurance document has been  
received and deemed acceptable as noted:

WE CERTIFY THAT THE ABOVE MATERIALS FURNISHED BY US WILL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OUTLINED  
Certifications furnished to the buyer by the seller describe the materials and/or services furnished, as indicated by the seller's records.  
Results of mill tests implied in such certifications are based on standard mill practices and do not indicate each piece has been tested.

*[Signature]* 8/08  
on (date)

WE HEREBY CERTIFY THAT THE FOREGOING DATA IS A TRUE  
REPRESENTATION OF THE DATA FURNISHED TO US BY THE PRODUCING MILL

Richard Serra

METALLURGICAL REPRESENTATIVE

Central Steel & Wire Company

SOLD \*C & M MFG  
 10215 BUENA VISTA AVE  
 TO: SANTEE, CA 92071

**NUCOR**  
 NUCOR CORPORATION  
 NUCOR STEEL UTAH

**CERTIFIED MILL TEST REPORT**  
 NUCOR - PLYMOUTH IS AN ISO 9001 AND AN A B S CERTIFIED MILL  
 Ship from

Page 1

SHIP \*C & M MFG  
 10215 BUENA VISTA AVE  
 TO: SANTEE, CA 92071

*Stock*  
*Perud 3/1/11*

Nucor Steel - Utah  
 W Cemetery Road  
 PLYMOUTH, UT 84330  
 435-458-2300

Date: 29-Mar-2010  
 B L Number 344460  
 Load Number 164569

Material Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative

NSM&G 08 March 29, 2009

HEAT NUM *	DESCRIPTION	PHYSICAL TESTS				CHEMICAL TESTS												
		YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	BEND	WT% DEF	C	Mn	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.	
PO# => 36039																		
PL1010132901	Nucor Steel - Utah 3/4"x8" Flat 20' A36/A44W CSA G40 21-04 44W/ASTM A36/A36M-08 ASIM A709/A709M-08 GR 36 [250] ASME SA36-2007 EDITION ASTM A36/A36M-08, A709/A709M-07 GR36, ASME SA36-07	49,412	73,701	35.0%			20	.78	.16	.014	.014	.030	.005	.26	.26	.26	.39	
CMI R COMPLIES WITH DIN EN 10204 - 3 1 B																		

IF PRINTY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION  
 ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELDABLE. MERCURY IN ANY FORM HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

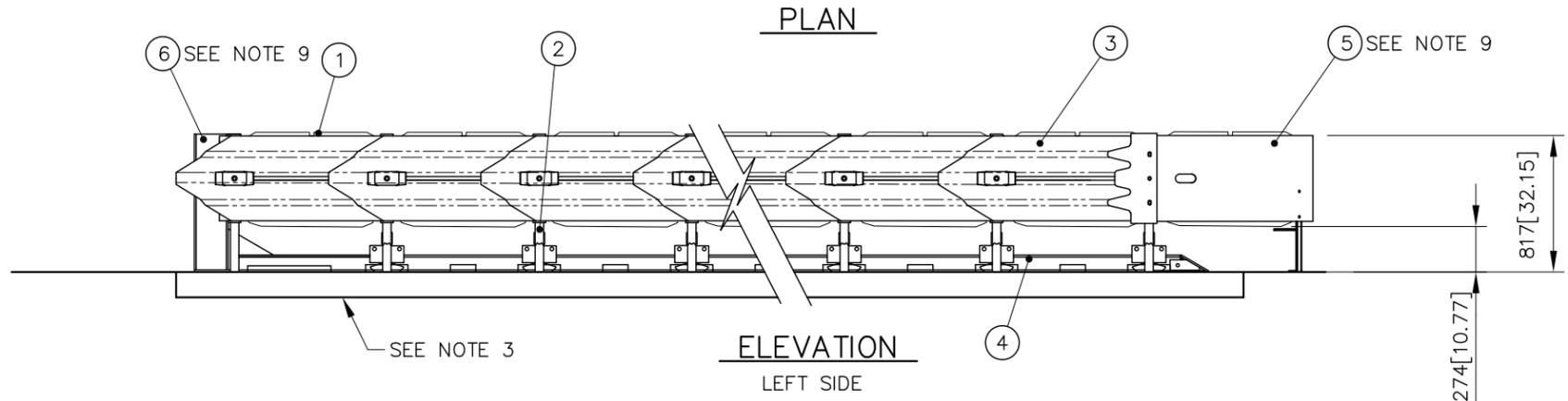
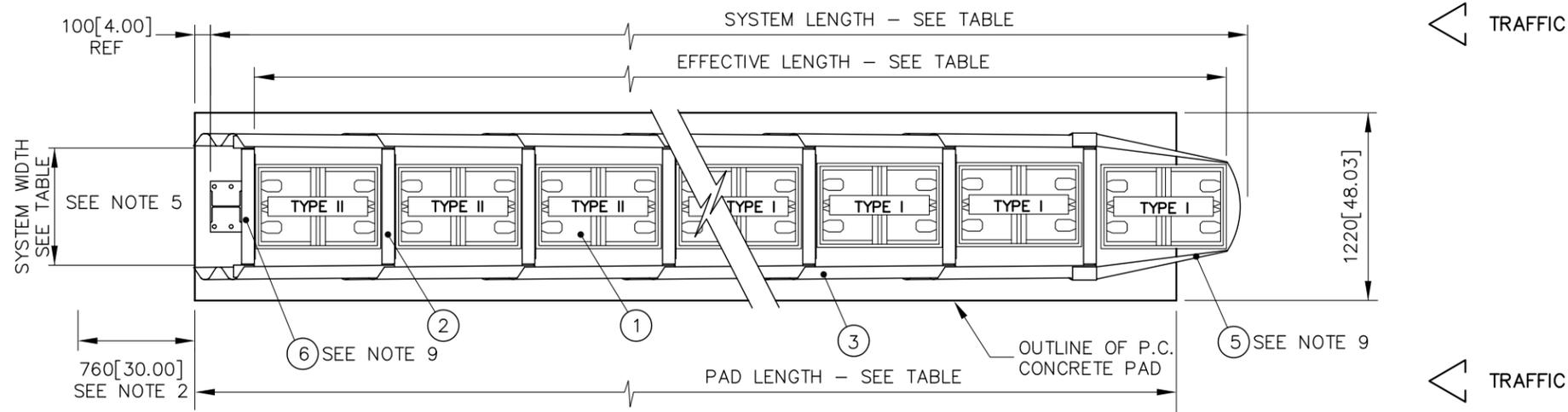
QUALITY ASSURANCE

Scott Laurent

*Scott Laurent*

NUCOR \* 2/20/10





PLAN

ELEVATION

LEFT SIDE

NOTES:

1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR FENDER PANELS TO SLIDE REARWARD UPON IMPACT 760 [30.00] MIN.
3. CAUTION: THE QUADGUARD C.Z. MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT PERFORMANCE.  
ATTACH SYSTEM USING ONE OF THE FOLLOWING:  
— 7" STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa[4000 PSI] MIN. P.C. CONCRETE PER THE FOLLOWING MINIMUMS:\*\*  
a) 150[6.00] NON REINFORCED ROADWAY OR PAD  
b) 200[8.00] REINFORCED **PORTABLE** PAD PER THE REFERENCE DETAIL  
c) 180[7.00] DECK STRUCTURE  
— 18" THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.\*\*  
\*\*REFER TO THE QUADGUARD CZ MP-3 ANCHORING SYSTEM INSTALLATION INSTRUCTIONS FOR SPECIFICATIONS.
4. SEE THE "QUADGUARD SYSTEM PRODUCT MANUAL", FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY A TRANSITION FROM THE QUADGUARD SYSTEM TO THE OBJECT BEING SHIELDED.
6. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
7. THE NUMBER OF BAYS INDICATED IN THE TABLE IS BASED ON CALCULATED VALUES TO ENSURE ADEQUATE SYSTEM CAPACITY TO DISSIPATE THE LONGITUDINAL IMPACT ENERGY OF A 2000 kg VEHICLE TRAVELING AT THE SPEED INDICATED.
8. THE SIX BAY SYSTEM HAS BEEN FULLY TESTED AT 100 km/h UNDER THE FULL 8 TEST MATRIX OF NCHRP 350 TL-3. SYSTEMS LONGER THAN SIX BAYS SHALL ALSO BE CAPABLE OF MEETING THE OCCUPANT RISK CRITERIA AS RECOMMENDED IN NCHRP 350 FOR VEHICLES WEIGHING 2000 kg IMPACTING HEAD ON AT THE SPEED INDICATED IN THE TABLE.
9. NOSE ASSEMBLY NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.

\* G = GREY or Y = YELLOW

BAYS	610[24] WIDTH	762[30] WIDTH	914[36] WIDTH	SYSTEM LENGTH		EFFECTIVE LENGTH		PAD LENGTH		MAX DESIGN SPEED	# OF CARTRIDGES	
	MODEL#	MODEL#	MODEL#	m	ft-in	m	ft-in	m	ft-in		km/h [MPH]	TYPE I
3	QZ2403*	QZ3003*	QZ3603*	4.00	[13'-1"]	3.56	[11'-8"]	4.57	[15'-0"]	70 [44]	3	1
4	QZ2404*	QZ3004*	QZ3604*	4.90	[16'-1"]	4.47	[14'-8"]	4.57	[15'-0"]	80 [50]	3	2
5	QZ2405*	QZ3005*	QZ3605*	5.82	[19'-1"]	5.38	[17'-8"]	5.49	[18'-0"]	90 [56]	4	2
6	QZ2406*	QZ3006*	QZ3606*	6.74	[22'-1"]	6.30	[20'-8"]	6.40	[21'-0"]	100 [62]	4	3
7	QZ2407*	QZ3007*	QZ3607*	7.65	[25'-1"]	7.21	[23'-8"]	7.32	[24'-0"]	Δ 105 [65]	4	4
8	QZ2408*	QZ3008*	QZ3608*	8.56	[28'-1"]	8.13	[26'-8"]	8.23	[27'-0"]	Δ 110 [68]	4	5
9	QZ2409*	QZ3009*	QZ3609*	9.48	[31'-1"]	9.04	[29'-8"]	9.14	[30'-0"]	Δ 115 [71]	4	6

UNIDIRECTIONAL

KEY	① QUADGUARD CARTRIDGE	④ MONORAIL			
	② DIAPHRAGM	⑤ NOSE ASSEMBLY			
	③ FENDER PANEL	⑥ C.Z. BACKUP			
Revisions	Date	Rev.	By	Ckd.	App.
ITEM 5 "DOT" WAS IN WRONG PLACE	7/25/00	N	STT	KM	BB
REVISED TO SHOW NOSE BELT	5/14/99	L	DLS	BB	SPT
ADDED NOTES 8 AND 9.	12/3/99	M	DK	DO	SPT

REFERENCES	
SERIAL#	PORTABLE CONCRETE PAD 35-40-10
SALES ORDER#	DIAPHRAGM ASSY. 607113
EH PROJECT#	NOSE ASSY. 35-40-05Z
DESIGN SPEED	FENDER PANEL ASSY. 608236
NOSE COLOR	RAIL ASSY. 35-40-06
NUMBER OF UNITS	C.Z. BACKUP ASSY. 35-40-16
	C.Z. KIT 35-40-24
	TRANSITION PANEL ASSY. N/A
	PORTABLE BARRIER ANCHOR 612006

DRAWN:	S. TRAGESER	DATE:	06/14/96
DESIGNED:	JVM/MHO	DATE:	03/01/96
CHECKED:	KRM	DATE:	06/17/96
APPROVED:	J. MACHADO	DATE:	06/17/96
CAD FILE:	QSCZCVR-U.dwg		



**ENERGY ABSORPTION SYSTEMS, INC.**  
ENGINEERING AND RESEARCH DEPARTMENT

**QUADGUARD® c.z. SYSTEM**  
FOR CONSTRUCTION ZONES

SCALE	DWG.	SHEET	REV
1=40	QSCZCVR-U	1 OF 1	N

# ACZ-350™

PORTABLE  
TL-2 & TL-3  
END  
TREATMENT



## OVERVIEW

The ACZ-350 System combines ease of use and NCHRP 350, gating, non-redirective TL-2 and TL-3 crash cushion performance for work zone protection. This partially reusable crash cushion can be easily transported, and installed with No Roadway Anchors.

## SUPERIOR IMPACT PERFORMANCE

The unique design of the ACZ-350 systems protects errant drivers from impacting concrete barrier ends, and also contains the errant vehicle from vaulting into the workzone.

## NON-REDIRECTIVE, GATING CRASH CUSHION SYSTEM

All Crash Cushions defined as Non-redirective and Gating require a clear zone. Clear Zones are areas behind the crash cushion that NO workers, machinery, obstructions or other debris could interfere with an errant vehicle. This area should also remain relatively flat. If there are any questions or concerns, please contact your local Energy Absorption Systems, Inc. representative.

## FEATURES AND BENEFITS

- No Vaulting
- Safely contains errant vehicle
- Accommodates impacts up to 2,000 kg, (4,500 lbs) traveling at speeds up to 100 km/h (62 mph)
- Simple and Fast Installation
- Protects Permanent or Temporary, Steel or Concrete Barrier
- Ideal for Work Zones
- No Foundation or Anchoring

**EASY CLEAN-UP**  
**NARROW PROFILE**  
**MINIMUM INTRUSION**  
**LOW COST/ AFFORDABLE**  
**QUICK/EASY TO MOVE**

ACZ-350™



ENERGY ABSORPTION  
SYSTEMS, INC.

SAVING LIVES BY DESIGN®

[www.energyabsorption.com](http://www.energyabsorption.com)

## EASY DEPLOYMENT AND REMOVAL

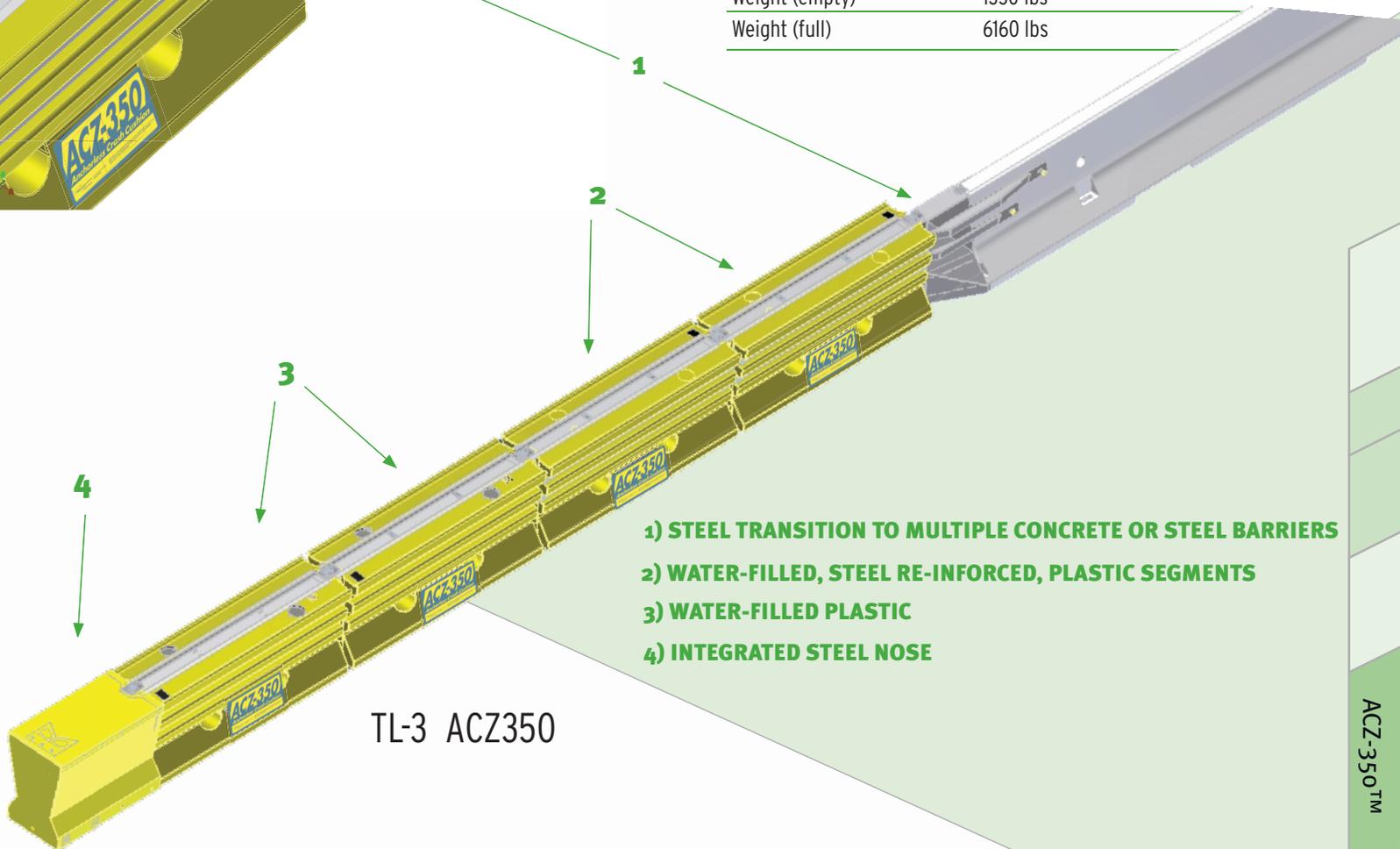
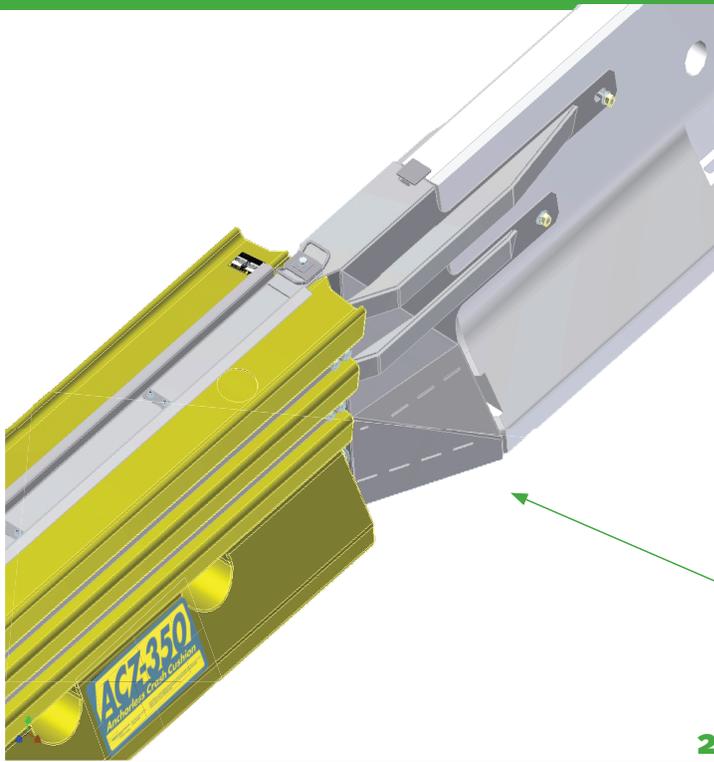
The ACZ-350 System can be easily unloaded and positioned without cranes or heavy equipment. Deployment involves three simple steps:

1. Unload
2. Position and pin barrier sections.
3. Fill Segments with water

## SPECIFICATIONS

### TL-3

Length	31'-7" (9.6 m)
Width	1'-10" (.6m)
Height	2' 9" (.8m)
Weight (empty)	1350 lbs
Weight (full)	6160 lbs



- 1) STEEL TRANSITION TO MULTIPLE CONCRETE OR STEEL BARRIERS
- 2) WATER-FILLED, STEEL RE-INFORCED, PLASTIC SEGMENTS
- 3) WATER-FILLED PLASTIC
- 4) INTEGRATED STEEL NOSE

TL-3 ACZ350

DISTRIBUTED BY:

Bent / Abutment Station "A23"	(FT)	
	Distance From "A23" to Rt EP	Distance From "A23" to CL Stage 1 K-Rail
102+41.50 BB	17+-	5+-
103+00 B2	20.9+-	8.9+-
103+80 B3	22.5+-	10.5+-
104+60 B4	21.1+-	9.1+-
105+40 B5	20.8+-	8.8+-
106+20 B6	22.7+-	10.7+-
107+00 B7	37.9+-	21.9+-
107+80 B8	31.1+-	17.9+-
108+38.50 EB	16.6+-	5+-



05-1A6904 ROCK CREEK VIADUCT  
 MON-1-58.3, 59.9  
 INFORMATION HANDOUT AERIAL  
 NOT TO SCALE

DEPARTMENT OF INDUSTRIAL RELATIONS  
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH  
MINING AND TUNNELING UNIT  
2211 Park Towne Circle, Suite 2  
Sacramento, California 95825



Telephone (916) 574-2540  
FAX (916) 574-2542

April 2, 2012

Department of Transportation, District 5  
50 Higuera Street  
San Luis Obispo, California 93401-5415

Attention: Steven M. Wyatt, PE (via e-mail: [steve\\_wyatt@dot.ca.gov](mailto:steve_wyatt@dot.ca.gov))

Subject: Underground Classification #: C114-053-12T

Rocky Creek Viaduct

Mr. Wyatt:

The information provided to this office relative to the above project has been reviewed. On the basis of this analysis, Underground Classification of "Potentially Gassy with Special Conditions" has been assigned to the shaft(s) identified on your submittal. Please retain the original Classification for your records and deliver a true and correct copy of the Classification to the shaft contractor(s) for posting at the job site.

When the contractor who will be performing the work is selected, please advise them to notify this office to determine if a mandated Prejob Conference with the Division is required prior to commencing any activity associated with drilling of the shaft(s).

Should you have another bore under construction that is not required to have an Underground Classification (i.e.: less than 30 inches in diameter), please contact the Mining and Tunneling Unit prior to any employee entry of such a space.

If you have any questions on this subject, please contact this office at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas Patterson".

Douglas Patterson  
Senior Engineer

A handwritten signature in black ink, appearing to read "N McDougald".

cc: N McDougald  
File



State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH  
MINING AND TUNNELING UNIT

# Underground Classification

C114-053-12T

DEPARTMENT OF TRANSPORTATION, District 5

NAME OF TUNNEL OR MINE AND COMPANY NAME

of 50 Higuera Street, San Luis Obispo, California 93401-5415

MAILING ADDRESS

at ROCKY CREEK VIADUCT

LOCATION

has been classified as **\*\*\*POTENTIALLY GASSY with Special Conditions\*\*\***

CLASSIFICATION

as required by the California Labor Code § 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

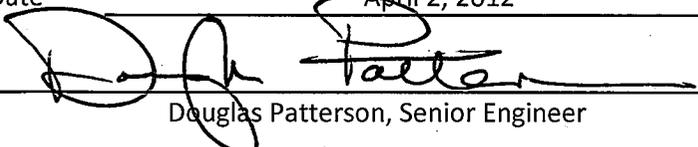
### \*\*\*SPECIAL CONDITIONS\*\*\*

1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.
2. Mechanical ventilation shall provide for continuous exhaust of fumes and air at any time an employee is working in the underground environment. The primary ventilation fans must be located outside of the underground environment and shall be reversible by a single switch near the fan location.
3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

Seven 90-inch diameter by 25-foot deep shafts and Seventy Six 30-inch diameter shafts with various depths of 20-25 feet, along Hwy 1, 12.5 miles South of Carmel, Monterey County

This classification shall be conspicuously posted at the place of employment.

Date April 2, 2012

  
 \_\_\_\_\_  
 Douglas Patterson, Senior Engineer



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ventura Fish and Wildlife Office  
2493 Portola Road, Suite B  
Ventura, California 93003



IN REPLY REFER TO:  
81440-2011-FE-0238

December 16, 2011

Morgan Robertson  
Associate Environmental Planner  
California Department of Transportation  
50 Higuera Street  
San Luis Obispo, California 93401-5415

Subject: Applicability of the Programmatic Biological Opinion for Highway 1 Management Activities that Affect Smith's Blue Butterfly (1-8-07-F-68) to the Highway 1 Rocky Creek Slide Emergency Restoration Project, Monterey County, California

Dear Ms. Robertson:

We have reviewed your request, dated October 19, 2011, and received in our office on October 20, 2011, for our concurrence with your determination that the programmatic biological opinion for Highway 1 management activities that affect the federally endangered Smith's blue butterfly (*Euphilotes enoptes smithi*) (1-8-07-F-68) is appropriate to use for the subject project. The subject project includes emergency work that was completed to temporarily stabilize a landslide that damaged Highway 1 at Rocky Creek and proposed work that would permanently stabilize the same slide area.

On July 2, 2008, the U.S. Fish and Wildlife Service (Service) issued the programmatic biological opinion to the California Department of Transportation (Caltrans) for Highway 1 management activities that affect Smith's blue butterfly. The programmatic biological opinion addressed the effects of Caltrans maintenance and repair projects along Highway 1 in Monterey County and San Luis Obispo County, California.

The project includes two components, one of which was completed using emergency consultation procedures (beginning in March of this year), and another that is currently proposed. Both components occurred/would occur along Highway 1 in Monterey County at post mile 59.9. The project area provides habitat for seacliff buckwheat (*Eriogonum parvifolium*), a host plant for the Smith's blue butterfly. Surveys conducted this summer did not detect any Smith's blue butterflies within the project area, but Caltrans has chosen to assume that the species is present due to the presence of suitable habitat.

Beginning in March of this year, Caltrans constructed a temporary soil nail wall to maintain the existing edge of the roadway. This allowed one lane of the highway to be re-opened with signal

controlled traffic. This work required the removal of 67 seacliff buckwheat plants from the work area.

Caltrans currently proposes to construct a single column bent viaduct, which is intended to permanently stabilize a 180-foot section of Highway 1 and restore two-way traffic through the slide area. A 4-foot-wide unpaved rockfall catchment area is proposed for the inside shoulder and a see-through rail is proposed on the outside. This work would require the removal of 208 additional seacliff buckwheat plants.

Adverse effects of the project included/would include disturbance to the habitat directly adjacent to the road. The seacliff buckwheat plants removed may be occupied by Smith's blue butterflies, which could be directly killed or injured or adversely affected by the loss of the host plants. However, Caltrans will implement all of the minimization measures described in the programmatic biological opinion, including hand removal and relocation of the seacliff buckwheat plants out of the project area and replacement of the removed plants with seedlings at a 2:1 (seedlings planted : plants removed) ratio.

To include a project under the programmatic biological opinion, Caltrans must ensure the project satisfies six suitability criteria. These criteria are:

**Criterion 1:** Actions must be limited in scope such that they do not contribute to a permanent decline of the species in the programmatic action area.

**Criterion 2:** Measures to reduce or avoid adverse effects to Smith's blue butterflies provided in the programmatic biological opinion must be implemented.

**Criterion 3:** The project must be a single and complete project and not part of larger actions or associated with other developments, such as housing subdivisions or golf courses.

**Criterion 4:** The project must not, in the Service's view, take place in areas where populations of Smith's blue butterflies are so isolated that even the small effects described in the programmatic biological opinion may have substantial impacts.

**Criterion 5:** Individual actions could directly or indirectly remove up to 2 acres of habitat containing seacliff buckwheat plants, or up to a maximum of 300 individual seacliff buckwheat plants per activity, but no action shall remove more than 75 percent of all plants in the project and project buffer areas. The buffer area would extend 230 feet from the individual project area.

**Criterion 6:** Cumulative projects conducted under the provisions of the programmatic biological opinion will not exceed 100 acres of seacliff buckwheat habitat permanently lost in total, or 15,000 individual seacliff buckwheat plants permanently removed.

In your September 11, 2008, letter, you detailed how the proposed project meets each of the six criteria for inclusion under the programmatic biological opinion. Consistent with Criterion 1, the emergency and proposed phases of the project occur along the existing alignment and would affect only a small area of habitat immediately adjacent to the roadway. Consistent with Criterion 2, all of the minimization measures in the programmatic biological opinion have been and will be implemented. Consistent with Criterion 3, the proposed project is a single and complete project (although implemented in two phases) not associated with other developments. Consistent with Criterion 4, the project area is surrounded by moderately dense habitat and is located within approximately 0.4 mile of a known Smith's blue butterfly locality. Consistent with Criterion 5, a total of 275 seacliff buckwheat plants are likely to be impacted by the project, which constitute less than 20 percent of the host plants within the project and surrounding buffer areas. Consistent with Criterion 6, fewer than 100 acres of seacliff buckwheat habitat and 15,000 seacliff buckwheat plants have been affected in total.

We concur that the programmatic biological opinion is appropriate to use for this project because the project meets the six criteria for inclusion and effects to the Smith's blue butterfly would be within the scope of effects analyzed in the programmatic biological opinion. Based on this, our biological opinion is that the proposed action is not likely to jeopardize the continued existence of the Smith's blue butterfly. Caltrans must condition its project implementation to include all measures from the programmatic biological opinion.

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR 402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

If you have any questions, please contact Jacob Martin of my staff at (831) 768-6953.

Sincerely,

  
for Diane K. Noda  
Field Supervisor



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Ventura Fish and Wildlife Office  
2493 Portola Road, Suite B  
Ventura, California 93003

IN REPLY REFER TO:  
81440-2007-F-0260

July 2, 2008

Gary Ruggerone  
Senior Environmental Planner  
California Department of Transportation  
50 Higuera Street  
San Luis Obispo, California 93401-5415

Subject: Programmatic Biological Opinion for Highway 1 Management Activities that Affect the Smith's Blue Butterfly, Monterey and San Luis Obispo Counties, California (1-8-07-F-68)

Dear Mr. Ruggerone:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the California Department of Transportation's (Caltrans) maintenance and repair projects along California Highway 1 that are likely to adversely affect the federally endangered Smith's blue butterfly (*Euphilotes enoptes smithi*). This biological opinion, which has been prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act), evaluates the effects of certain activities, authorized and/or funded by the Federal Highways Administration (FHWA) and carried out by Caltrans, on the Smith's blue butterfly along the Big Sur coastal portion of California Highway 1 in Monterey and San Luis Obispo Counties, California. The FHWA submitted the request for formal consultation on December 20, 2004. The request was received in our office on December 23, 2004.

Since the initiation of formal consultation, FHWA assigned and Caltrans assumed responsibilities for consultation and coordination with resource agencies for most transportation projects within the State of California. The delegation of authority stipulates that correspondence regarding consultations be addressed to Caltrans, even if FHWA initiated the consultation. Consequently, we have addressed this biological opinion to Caltrans in accordance with this direction.

This biological opinion was prepared primarily with information provided by Caltrans, including the Biological Assessment Programmatic Evaluation of Highway 1 Management Activities that May Affect the Smith's Blue Butterfly (2004), the Big Sur Coast Highway Management Plan Corridor Intrinsic Qualities Inventory (2001), the Big Sur Coast Highway Management Plan Site Restoration Guidelines (2002), the Big Sur Coast Highway Management Plan Guidelines for Vegetation Management (2004), and other information available in our files. A complete administrative record of this consultation is available at the Ventura Fish and Wildlife Office.

## CONSULTATION HISTORY

At the time of your request for formal consultation, it was not clear that there was a sufficient Federal nexus for the activities described in your biological assessment. This issue was not rectified until FHWA delegated its discretionary authority for consultation and coordination with resource agencies in California to Caltrans on July 1, 2007. In addition, there was continuing dialogue between our offices on details of the proposed project to better understand the potential effects to the Smith's blue butterfly.

In an electronic mail, dated February 6, 2007, Douglass Cooper, of my staff, submitted a detailed request for additional information regarding many activities proposed to be covered in the programmatic biological opinion, including details regarding the potential areas of impact, weed control methodology, revegetation plans for areas of disturbance, individual and programmatic scale thresholds for project inclusion under the biological opinion, and issues related to a Federal nexus for projects that would not receive Federal funding. In a telephone conversation between Douglass Cooper, Tom Edell (of your staff), and yourself, on April 11, 2007, Caltrans provided a portion of the information requested in the February 6, 2007, electronic correspondence. The outstanding issues remaining after this call were revegetation plans for areas of disturbance, including use of local seed, individual and programmatic scale thresholds for project inclusion under the biological opinion, and issues related to a Federal nexus for projects that would not receive Federal funding.

In a conference call involving me, Douglass Cooper, Jacob Martin, Tom Edell, and you, on August 7, 2007, the Service and Caltrans agreed to revised thresholds for the inclusion of projects under the biological opinion at both an individual project and programmatic scale. Caltrans also agreed to develop revised language pertaining to the use of native seeds for revegetation of disturbed areas. The Service agreed to pursue guidance from CNO (Regional Office) regarding a Federal nexus for maintenance activities that would not receive Federal funding. In an electronic mail, dated August 8, 2007, Tom Edell provided the revised language pertaining to the use of native seeds for revegetation of disturbed areas.

In an electronic mail, dated September 20, 2007, Douglass Cooper requested the qualifications of biologists that Caltrans proposed to act as biological monitors for activities covered under the biological opinion. In an electronic mail, dated October 4, 2007, Caltrans provided the qualifications for Tom Edell, Dave Hacker, and Mitch Dallas, for approval as qualified biologists.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

#### **Project Description**

Activities addressed under this biological opinion would be conducted along a 75-mile stretch of Highway 1 between post miles (PM) 0.0 and 72.3 in Monterey County and PM 71.4 and 74.3 in San Luis Obispo County. The State highway right-of-way typically extends up to 40-feet from the centerline on both sides of the highway. Activities addressed under this biological opinion would

only be implemented within the State highway right-of-way and easements granted for construction or maintenance of facilities. An area extending 200-feet from the centerline on both sides of the highway has been surveyed for possible impacts. Typical maintenance activities are not expected to exceed these areas, but would be addressed on a project-by-project basis when impacts go beyond the highway right-of-way.

Caltrans performs maintenance, repair, and improvement activities on Highway 1, which they have determined may result in adverse effects to Smith's blue butterflies. A list of these activities is presented in Table 1. The primary activities proposed for evaluation under this biological opinion are vegetation control along the roadsides and maintenance and repair activities along the highway right-of-way.

Table 1. Highway Management Activities along the Big Sur Coast.

Category of Improvement	Description
Highway reconstruction and preservation	<ul style="list-style-type: none"> <li>• Roadway rehabilitation, including grading, blading, and repaving the roadbed</li> <li>• Reconstruction of embankment or cut slopes, retaining walls, and rockfall protection systems</li> <li>• Culvert repair and rehabilitation</li> <li>• Pavement preservation</li> <li>• Operational and transportation management</li> </ul>
Roadside reconstruction and preservation	<ul style="list-style-type: none"> <li>• Shoulders, turnouts, parking areas, and other unpaved areas</li> <li>• Fences</li> <li>• Debris removal and disposal</li> <li>• Debris stockpiling</li> <li>• Detours</li> <li>• Temporary access roads</li> </ul>
Traffic and safety	<ul style="list-style-type: none"> <li>• Guardrails, markers, and crash attenuators</li> <li>• Signs for warning, regulating, or guiding traffic</li> <li>• Lighting or other electrical facilities</li> <li>• Debris barriers such as fencing, walls, cribbing, dikes, and rockfall nets</li> <li>• Sight distance improvements</li> </ul>
Drainage and erosion control	<ul style="list-style-type: none"> <li>• Drainage facilities such as culverts and ditches</li> <li>• Temporary stream flow or runoff diversions</li> <li>• Storm water mitigation</li> <li>• Erosion control measures</li> <li>• Bank and slope protection</li> <li>• Site restoration, including slope stabilization and revegetation</li> </ul>

(Table 1 Continued)

Category of Improvement	Description
Facilities	<ul style="list-style-type: none"> <li>• Public facilities, including safety roadside rest areas and vista points</li> <li>• Buildings and other facilities such as those for equipment, storage, and maintenance</li> </ul>
Vegetation management	<ul style="list-style-type: none"> <li>• Includes chemical, mechanical, and manual control</li> <li>• Invasive weed control</li> <li>• Special-status species protection</li> </ul>
Emergency and storm damage repair	<ul style="list-style-type: none"> <li>• Emergency road opening</li> <li>• Hazardous substances removal</li> <li>• Accident removal and repair</li> </ul>

Vegetation would be reduced along road edges to improve sight lines for safety and aesthetic purposes. The vegetation control area is defined as a 10-foot buffer of the road edges. A variety of methods would be used to conduct vegetation control, including mechanical (e.g., mowing and scraping), manual (e.g., using chainsaws, trimmers, hand hoeing, grubbing, pruning, and hand pulling), and chemical (i.e., herbicides).

Maintenance and repair activities would typically occur along the paved surfaces, road-side edges (including the vegetation control area), and out to the edge of the highway right-of-way, which extends 40-feet from the centerline on both sides of the road. Emergency repairs or major maintenance and repair activities may also extend beyond the highway right-of-way up to the threshold criteria limits defined in this biological opinion.

Caltrans has proposed mitigation measures involving replanting seacliff buckwheat for impacts outside of the vegetation control area where adverse effects to Smith's blue butterflies will occur due to the removal of seacliff buckwheat. The replanting will occur in locations conducive to the establishment and long-term survival of buckwheat plants and Smith's blue butterflies, such as south-facing slopes with good sun exposure and wind shelter. Replanting will occur as close as possible to the original site of buckwheat removal, but outside of the vegetation control area or other areas where repeated disturbance or future activities are anticipated. Buckwheat will be replanted from seed or individual seedlings, at the discretion of the Service-approved biologist. If seedlings are used, a total of two seedlings will be planted for every one plant removed (2:1 replacement ratio by number of plants). Establishment is defined as survival to the end of the 5-year monitoring period. If buckwheat is replanted from seed, the total area occupied by buckwheat at the end of the 5-year monitoring period will be the same as the area of buckwheat plants removed (1:1 replacement ratio by area).

Caltrans will monitor revegetated areas and the immediate vicinity for invasive weed species every 6 months for the first year and annually thereafter for a total of 5 years. Any invasive weed species present, including seedlings, will be removed without damaging seacliff buckwheat plants. If the

replacement ratios or weed free conditions are not met at the end of the monitoring period, then corrective measures will be developed and implemented subject to approval by the Service.

Caltrans will also conduct revegetation efforts in all other disturbed areas that are outside of those impacted by buckwheat removal. Caltrans will reseed these disturbed areas with a native seed mix that includes seacliff buckwheat seed. Caltrans will monitor these disturbed areas and the immediate vicinity for invasive weed species every 6 months for the first year and annually thereafter for a total of 5 years. Any invasive weed species present, including seedlings, will be removed without damaging seacliff buckwheat plants.

Caltrans (2002) proposed site restoration guidelines as part of the Coast Highway Management Plan. The guidelines would help direct Caltrans operations in the areas of erosion control, revegetation, and site management at locations identified for restoration work. Every site would have its own restoration plan, specifically addressing the site's unique issues and concerns, incorporating a context sensitive solution, which can range from doing nothing and allowing natural regeneration to collecting local seed for later planting. The guidelines lay out a methodical approach to site restoration, developed with input from agencies including the California Coastal Commission, California Department of Parks and Recreation, U.S. Army Corps of Engineers, U.S. Forest Service, and the County of Monterey. The objectives of the guidelines would be: (1) to control soil erosion and prevent water pollution; (2) to preserve intact wildlife habitat along the Big Sur coast; to restore disturbed sites to encourage a cover of self-sustaining native vegetation; and (3) to manage disturbed sites to promote natural succession and limit the spread of noxious weeds. Where reseeding and replanting is necessary, Caltrans would utilize locally collected seeds from undisturbed areas adjacent to the restoration sites whenever feasible. A completed Site Restoration/Erosion Control Guidelines Checklist would be submitted to the Service with each request to use the programmatic biological opinion.

Caltrans will provide an annual written report to the Service documenting the type and location of activities that they conducted under this programmatic biological opinion. The report would provide information on the number of seacliff buckwheat plants and area of habitat adversely affected each year.

### **Suitability Criteria**

To conduct a project under this programmatic biological opinion, Caltrans must ensure that the project satisfies the following criteria:

**Criterion 1:** Actions covered under this biological opinion may adversely affect Smith's blue butterflies through mortality or injury of individuals, temporary disturbance or permanent loss of seacliff buckwheat (*Eriogonum parvifolium*) host plants, or both. However, these actions must be limited in scope such that they do not contribute to a permanent decline of the species in the programmatic action area. Caltrans, FHWA, and the Service have previously consulted on numerous projects that have met these criteria. These projects include: retrofitting of bridges to reduce damage that may be caused by earthquakes; repair, widening, and replacement of bridges; repair of bank protection; replacement of low-flow stream crossings with bridges; small-scale

stabilization of stream slopes; minor improvement of drainage; replacement of culverts; rehabilitation of highway surfaces; and improvement of the safety and operation of highways.

**Criterion 2:** To qualify for use of the programmatic biological opinion, the measures to reduce or avoid adverse effects to Smith's blue butterflies provided in this biological opinion must be implemented; these measures may be modified on a project-specific basis upon the agreement of Caltrans and the Service.

**Criterion 3:** The projects must be single and complete projects and not part of larger actions or associated with other developments, such as housing subdivisions or golf courses.

**Criterion 4:** The projects must not, in the Service's view, take place in areas where populations of Smith's blue butterflies are so isolated that even the small effects described in this biological opinion may have substantial impacts.

**Criterion 5:** Individual actions covered under this biological opinion could directly or indirectly remove up to 2 acres of habitat containing seacliff buckwheat plants, or up to a maximum of 300 individual seacliff plants per activity, but no action shall remove more than 75 percent of all plants in the project and project buffer areas. The buffer area would extend 230 feet from the individual project area. An assessment describing the habitat and estimated number of plants within the buffer area will be provided with each request to use this programmatic biological opinion.

**Criterion 6:** Caltrans will reinstate consultation when, as a result of the cumulative projects conducted under the provisions of this biological opinion, either 100 acres of seacliff buckwheat habitat have been permanently lost in total, or 15,000 individual seacliff buckwheat plants have been permanently removed.

If Caltrans determines that a project satisfies criteria one through five, and if the thresholds in criterion six have not been reached, it will request from the Service concurrence on this determination. The request for concurrence will include at a minimum a brief project description and an assessment of how the project fits this programmatic biological opinion. The Service will respond to Caltrans' requests within 30 days. Caltrans is required to initiate formal consultation with the Service for all projects that do not meet these six criteria.

### **Minimization of Adverse Effects**

Caltrans will ensure that projects being implemented in accordance with this programmatic biological opinion will be designed to avoid or reduce adverse effects to Smith's blue butterflies and their habitat. At a minimum, the following measures will be taken to reduce adverse effects to Smith's blue butterflies and their habitat:

1. Caltrans will ensure that all construction activities follow well-defined procedures to avoid effects to the Smith's blue butterfly.

2. Caltrans will prohibit mowing and broadcast spraying of herbicide in stands of buckwheat. Within areas that contain buckwheat, control of invasive weeds, which is beneficial to buckwheat, will be achieved by spot spraying of herbicide and/or hand clearing.
3. Caltrans will ensure that only Service-approved biologists will participate in capture, handling, and monitoring of the Smith's blue butterfly, in all of its life stages, and the handling of buckwheat plants.
4. Caltrans will ensure that ground disturbance for maintenance or project activities will not begin within stands of buckwheat until a Service-approved biologist is on site.
5. Service-approved biologists will verify that the proposed work activity within stands of buckwheat meets all criteria established for use of this biological opinion.
6. For maintenance work or project activity within stands of buckwheat, a Service-approved biologist will survey the work site no more than 30 days before the onset of ground disturbance. If any life stage of the Smith's blue butterfly or its host plant, seacliff buckwheat, is found and is likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to relocate seacliff buckwheat plants, duff, and/or soil, from the site before work activities begin. The seacliff buckwheat plants, duff, and/or soil will be hand removed and placed as close as possible to, but not on, living seacliff buckwheat plants. The Service-approved biologist will relocate the seacliff buckwheat plants, duff, and/or soil the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the proposed project. The Service-approved biologist will maintain detailed records of the number of seacliff buckwheat plants that are moved.
7. Before any maintenance or project activity work begins within stands of buckwheat, a Service-approved biologist will provide training to all field personnel. At a minimum, the training will include a description of the Smith's blue butterfly and its habitat, the specific measures that are being implemented to conserve the Smith's blue butterfly, and boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
8. A Service-approved biologist will be present at the work site for maintenance or project activity within stands of buckwheat until all Smith's blue butterflies and seacliff buckwheat plants that are at risk due to project activities have been removed, workers have been instructed, and disturbance to habitat has been completed. After this time, Caltrans will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that this monitor receives the training outlined in measure 7 and in the identification of the Smith's blue butterfly and its host plant, seacliff buckwheat. If the monitor or the Service-approved biologist recommends that work be stopped because the Smith's blue butterfly or seacliff buckwheat would be affected to a degree that exceeds the levels anticipated by Caltrans and the Service during review of the

proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the unanticipated effect(s) immediately, or require that all actions causing these effects be halted. If work is stopped, the Service will be notified as soon as is reasonably possible.

9. An assemblage of native species will be used for revegetation of project sites. Seacliff buckwheat seed or plants will only be placed outside the vegetation control areas. The spread of invasive weeds during revegetation efforts will be controlled according to the Vegetation Management Guidelines (California Department of Transportation 2002) developed as part of the Big Sur Coast Highway Management Plan (California Department of Transportation 2004).
10. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Environmentally Sensitive Areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to Smith's blue butterfly and seacliff buckwheat.
11. Caltrans will ensure that best management practices are implemented according to the most current approved guidelines to control erosion and sedimentation during and after project implementation. Under the California Interagency Noxious Weed Free Forage and Mulch Program (<http://pi.cdfa.gov/weed/wff>), California is taking steps to make noxious weed-free hay and straw widely available. Under this program, weed-free hay and straw bales would be used for erosion control measures when they become available.

#### STATUS OF THE SPECIES

The Smith's blue butterfly was listed as endangered by the Service on June 1, 1976. A recovery plan was published in 1984 (Service 1984). Critical habitat has not been designated. Detailed information regarding the biology of the Smith's blue butterfly can be found in Arnold (1978, 1980, 1983), Mattoni (1954, 1977), and Langston (1975).

The Smith's blue butterfly is dependent upon its host plant species, seacliff buckwheat and coast buckwheat (*Eriogonum latifolium*), during all life stages, except that adults may also feed on nectar from naked buckwheat (*E. nudum*). Smith's blue butterflies co-occur with coast and seacliff buckwheat plants that grow in coastal dune, cliffside chaparral, coastal scrub, and coastal grassland communities from the mouth of the Salinas River in Monterey County to San Carpoforo Creek in northern San Luis Obispo County. Smith's blue butterflies are notably absent from the Monterey Peninsula, although, historically, they have been observed just to the north at the Naval Postgraduate School and the south at Point Lobos State Reserve. Long-term monitoring has not occurred for any population of the Smith's blue butterfly. Most of our knowledge of the distribution of the Smith's blue butterfly is the result of singular observations made in the past 30 years. Therefore, the number, size, and persistence of colonies throughout the range of the species are poorly understood.

Synchronous with peak flowering of its buckwheat hosts, adult Smith's blue butterflies emerge from their pupal cases for a single flight season extending from mid-June to early September. Individual adults live for about 1 week, during which time they locate mates, court, and copulate. Females oviposit singly in individual flower heads. Larvae hatch 4 to 8 days after oviposition and feed on buckwheat flowers as they grow and molt through five instars. Between mid-August and early September, larvae pupate. The location where pupation occurs has not been adequately documented. Researchers have surmised that pupation occurs in the heads of flowers, adjacent to leaf or stem axils, in the duff, or several inches below the soil surface (Arnold 1980, Shields 1975). Larvae overwinter as pupae and emerge as adults the following flight season.

Like many other lycaenid butterflies, Smith's blue butterfly larvae are tended by ants during the third through fifth instars. The larvae produce a sugary secretion upon which the ants feed. In return, the ants are presumed to provide the larvae with protection from predation or parasitism. The importance of such ant associations to the Smith's blue butterfly is currently unknown.

Vegetation within the range of the Smith's blue butterfly is very dynamic, especially where stands of seacliff buckwheat occur. Seacliff buckwheat seedlings depend upon disturbances such as landslides and other erosional features for the development of site conditions favorable for germination and establishment. Landslides and mass wasting are common along the Monterey County coast and provide the disturbances required by seacliff buckwheat; conversely, these geologic activities can also destroy existing stands of seacliff buckwheat. The Smith's blue butterfly may benefit from some human disturbances when they mimic natural processes. The quality of habitat likely changes over relatively brief periods due to natural successional processes and, increasingly, due to the invasion of non-native plants. Over time, especially when disturbances are rare, stands of seacliff buckwheat are likely to be displaced by larger native shrubs on all but the harshest sites.

The role of dynamic processes in creating and maintaining habitat for the Smith's blue butterfly is poorly understood. Most likely, Smith's blue butterflies abandon areas where seacliff buckwheat is replaced by other vegetation. Adults would be expected to disperse and colonize new areas that contain adequate patches of host buckwheat plants. Arnold (1991) found that the density and age class distribution of seacliff buckwheat and coast buckwheat appear to be important determinants for the establishment and persistence of Smith's blue butterfly populations in some locations. Adult Smith's blue butterflies are neither strong nor active fliers; therefore colonies may become isolated if suitable habitat is not available nearby for dispersal and colonization.

The decline of the Smith's blue butterfly is attributed to degradation and loss of habitat as a result of urban development, recreational activities in dune habitats, sand mining, military activities, fire suppression in chaparral habitat, and encroachment of exotic plant species. Aggressive, disturbance-oriented invader species such as kikuyu grass (*Pennisetum clandestinum*), pampas grass (*Cortaderia jubata*), Cape ivy (*Delairea odorata*), and French broom (*Genista monspessulana*) are found on sites otherwise suitable for seacliff buckwheat and the Smith's blue butterfly. In sand dunes along Monterey Bay, non-native iceplant (*Carpobrotus* spp.) has covered hundreds of acres of formerly suitable habitat for the Smith's blue butterfly. The low vagility of adults, coupled with fragmentation of suitable habitat, reduce the probabilities of colonization events and migratory

exchange between populations. Due to the lack of long-term monitoring, the status of the Smith's blue butterfly must be assessed largely based on the status of habitat for the species.

In the northern portion of their range, Smith's blue butterflies currently occur at the Salinas River National Wildlife Refuge, in the Marina area (including Marina State Beach), on Fort Ord, and in Sand City (Service 2006). In the southern portion of their range, Smith's blue butterflies currently occur in Carmel Valley (including occupied sites at Garland Ranch Regional Park, the Santa Lucia Preserve, and Palo Corona Regional Park) (Service 2006) and along the Big Sur coast, including at least 69 sites between Cooper Point (in Monterey County near the border of Andrew Molera and Pfeiffer Big Sur State Parks) and San Carpoforo Creek (in northern coastal San Luis Obispo County) (Arnold 2002).

Several colonies of Smith's blue butterflies and some potential habitat are currently protected from at least some of the threats which led to listing. For example, large amounts of land that have supported known colonies of the Smith's blue butterfly are owned and managed by resource agencies. Along the Monterey Bay, these areas include the Salinas River National Wildlife Refuge, Monterey State Beach, Marina State Beach, and the coastal portion of the former Fort Ord. Further south, several occupied localities and at least 574 acres of habitat (Norman 1994, 1999, 2000; Service 2003) have been confirmed on the LPNF.

However, threats to the Smith's blue butterfly still exist, even at many of the sites that are protected from development pressures. Much of the species' habitat has been invaded and, in some cases, overtaken by invasive plants. At least 70 non-native plant species introduced during the past 200 years threaten habitat for the Smith's blue butterfly in both protected and unprotected areas throughout the sub-species' range.

Urban development, recreational activities, and other activities continue to result in habitat loss and degradation. Urban development, introduction of invasive plant species and recreational use have fragmented and continue to fragment habitat for the Smith's blue butterfly. This fragmentation has several ramifications for the Smith's blue butterfly. The quality of the remaining suitable habitat is reduced, the distance dispersing adults must travel to reach the next island of suitable habitat is increased, the entire metapopulation structure is potentially disrupted, and genetic diversity is reduced. Overall, groups of Smith's blue butterflies occupying smaller, more isolated stands of suitable habitat are more likely to be extirpated by stochastic or anthropogenic factors.

## ENVIRONMENTAL BASELINE

### **Definition of Action Area**

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action [50 Code of Federal Regulations (CFR) 402.02]. For the purposes of this biological opinion, we consider the action area to include all areas where people and equipment would be working. Based on the information provided to us, we identify the action area as areas adjacent to California State Highway 1 between post PM 0.0 and 72.3 in Monterey County and PM 71.4 and

74.3 in San Luis Obispo County. The state highway right-of-way typically extends 40-feet from the centerline on both sides of the highway. The action area would include this highway right-of-way as well as an additional buffer area extending 230 feet beyond the highway right-of-way. The majority of the land adjacent to this 75-mile stretch of highway is managed by the U.S. Forest Service, the California Department of Parks and Recreation, the University of California Natural Reserve System, the El Sur Ranch, and the Packard Family.

### **Smith's blue butterfly**

The action area is located within the range of the Smith's blue butterfly and includes suitable habitat, including seacliff buckwheat plants. Caltrans conducted habitat assessments for the Smith's blue butterfly, and its host plant, seacliff buckwheat, along the entire length of the Highway 1 corridor (Caltrans 2004). The locations of buckwheat stands of medium or high relative density were most often in central coastal scrub communities and along roadcuts; however, they were also found in coastal sage-chaparral scrub communities, and ruderal/disturbed areas. Small stands of buckwheat with a low relative density comprised the majority of the observations. Although these smaller stands may not be capable of supporting viable populations of the Smith's blue butterfly, they may be capable of providing necessary resources for dispersing butterflies (Kellner 1989, Arnold 1991).

Along the 75-mile stretch of highway along the Big Sur Coast that comprises the project area, Caltrans has estimated the proposed vegetation control area, which is defined as a 10-foot wide buffer beyond the edge of the paved roadway, is a maximum of approximately 188 acres. Of this total area, approximately 112 acres either contain or are adjacent to areas that are known to contain buckwheat; approximately 76 acres are along areas where buckwheat has been documented as absent. The entire action area includes a buffer extending 230 feet beyond the highway right-of-way. Excluding paved roadway, which averages 24 feet wide, the buffer plus the highway right-of-way totals 4,691 acres.

The California Natural Diversity Database (California Department of Fish and Game 2007) includes thirty-eight records of Smith's blue butterfly within the action area vicinity. During a 1989 survey for Smith's blue butterfly along the Big Sur coast in Monterey County, 39 individual butterflies were observed at 23 localities (Kellner 1989).

### **EFFECTS OF THE ACTION**

Activities that are evaluated under this biological opinion are those that would not cause ecosystem-scale changes and are not likely to contribute to the decline of the Smith's blue butterfly. Direct and indirect impacts to the Smith's blue butterfly of projects covered by this biological opinion could include mortality and injury of adults, pupae, and larvae, as well as mortality and injury to Smith's blue butterfly host plants.

Smith's blue butterfly adults may be crushed by vehicles and heavy equipment if they fly into the project area during construction activities. Road improvement and maintenance generates dust that could drift on to seacliff buckwheat plants. The presence of dust may affect Smith's blue butterfly

adults and may cause them to leave the area. Deposition of dust on seacliff buckwheat plants may reduce the palatability of those plants for feeding larvae.

Seacliff buckwheat plants may be removed during the proposed road repair. If those plants are occupied, Smith's blue butterflies could be crushed, buried, or otherwise killed during their removal. Smith's blue butterflies may also be adversely affected through a loss of foraging habitat and increase in habitat fragmentation due to removal of host plants. We expect that cutting and moving the affected seacliff buckwheat plants will reduce these effects; however, individual Smith's blue butterflies may be killed during the relocation of cut seacliff buckwheat plants. Removal of seacliff buckwheat plants could also result in the death of pupae of the Smith's blue butterfly if those plants are occupied. Moving entire plants and placing them adjacent to live seacliff buckwheat and collecting and moving all duff from translocated plants should minimize mortality of pupae and emerging adults.

Ground disturbance due to construction could facilitate the spread of invasive plants, which could compete with seacliff buckwheat and thereby degrade habitat for the Smith's blue butterfly. However, the proposed vegetation management is designed to control invasive plants.

Up to 100 acres of Smith's blue butterfly habitat could be disturbed by project activities. Removal of the host plant for the Smith's blue butterfly, seacliff buckwheat, would result in lost breeding, foraging, and dispersal habitat. These habitat losses would be temporary in nature, because Caltrans will revegetate all disturbed areas with buckwheat plants, seedlings, or seed. Caltrans will also include buckwheat seeds in revegetation areas that did not suffer buckwheat removal, which could lead to increased habitat availability for the Smith's blue butterfly.

## CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the Act. We are not aware of any non-Federal actions that are reasonably certain to occur in the action area.

## CONCLUSION

After reviewing the current status of the Smith's blue butterfly, the environmental baseline, the effects of the projects that could be conducted under the provisions of the proposed programmatic consultation, and the cumulative effects, it is the Service's biological opinion that the projects that could be proposed by Caltrans are not likely to jeopardize the continued existence of the Smith's blue butterfly.

We have reached this conclusion because:

1. Caltrans has proposed measures to reduce the adverse effects of the proposed activities on the Smith's blue butterfly; and,

2. In comparison with the amount of habitat available to the Smith's blue butterfly in Monterey and San Luis Obispo Counties, a relatively small amount of habitat is likely to be permanently lost or temporarily disturbed.

#### INCIDENTAL TAKE STATEMENT

Section 9 of the Act prohibits any taking (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of listed species without special exemption. Harm is further defined to include significant habitat modification or degradation that results in the death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act, provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by Caltrans for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans fails to implement the terms and conditions of the incidental take statement, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

We anticipate that incidental take of the Smith's blue butterfly may occur as a result of the following activities that are evaluated in this biological opinion: removal or destruction of important habitat features, soil excavation and grading, burial, trampling or crushing from equipment and foot traffic, limited removal of vegetation, or use of equipment. If the amount of anticipated incidental take (as discussed below) is exceeded, the exemption from the prohibition against take provided by this biological opinion may lapse.

The number of individual Smith's blue butterflies that could be killed is unknown because the timing, location, duration, and number of actions covered by this biological opinion are unknown at this time. However, we anticipate that incidental take may occur. Based on the limits on host plant removal proposed by Caltrans and described in the Description of the Proposed Action section of this biological opinion, we anticipate the following levels of incidental take may occur as a result of the implementation of Caltrans' proposed action.

1. Individual actions evaluated under this biological opinion could result in harm, injury, or mortality of all Smith's blue butterflies associated with the removal of up to 2 acres of habitat containing seacliff buckwheat plants, or up to a maximum of 300 individual seacliff buckwheat plants, per activity.

2. The cumulative impact for all projects tiered under this biological opinion could result in harm, injury, or mortality of all Smith's blue butterflies associated with the removal of up to either 100 acres of seacliff buckwheat habitat permanently lost, or 15,000 individual seacliff buckwheat plants permanently removed.

As proposed by Caltrans, if the maximum limit of take is reached over the life of the program, all projects that include habitat for the species in question would stop and formal consultation between Caltrans and the Service would be re-initiated for that species. Consultation should be reinitiated when take has reached a level of 10 percent short of the maximum cumulative limit, to allow for continuation of individual projects.

#### REASONABLE AND PRUDENT MEASURES

We believe the following reasonable and prudent measures are necessary and appropriate to minimize take of Smith's blue butterflies during the proposed operation, repair, and maintenance activities conducted by Caltrans within the Highway 1 corridor:

1. Caltrans must use well-defined operational procedures, education programs, and qualified personnel to minimize the incidental take of Smith's blue butterflies during the ongoing maintenance, and repair of roads.
2. Caltrans must ensure that the level of incidental take that occurs during project implementation is commensurate with the analysis contained herein.

Our evaluation of the effects of the proposed action includes consideration of the measures to reduce the adverse effects of the proposed action on the Smith's blue butterfly that were developed by Caltrans and outlined in the Description of the Proposed Action section of this biological opinion. Any subsequent changes in the measures proposed by Caltrans may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures that were proposed by Caltrans as part of the proposed action.

#### TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, Caltrans must comply with or ensure that any contractors comply with the following terms and conditions, which implement the reasonable and prudent measures described above and the reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The following term and condition implements reasonable and prudent measure 1.

Only qualified individuals authorized under this biological opinion may survey for seacliff buckwheat, remove seacliff buckwheat plants, and collect and place duff. Tom Edell, Dave Hacker, and Mitch Dallas are hereby authorized to conduct these activities. Caltrans must supply the credentials of any additional proposed qualified individuals to the Service for our

review and approval at least 15 days prior to the onset of the activities for which authorization is being sought.

2. The following term and condition implements reasonable and prudent measure 2.

If more than three (3) Smith's blue butterflies are found dead or injured, Caltrans must notify the Ventura Fish and Wildlife Office immediately. We will then review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by Caltrans and the terms and conditions of this biological opinion have been, and continue to be, implemented.

#### REPORTING REQUIREMENTS

For each year this biological opinion is in effect, Caltrans must provide a written annual report to us by January 31 of the following year. The report must contain information on the following: 1) the type of activities that occurred in the action area (e.g., maintenance and construction activities, mitigation, monitoring, etc.); 2) the location of these activities; 3) a description of the habitat in which these activities occurred; 4) steps taken to avoid or minimize effects; 5) the area and number of individuals of seacliff buckwheat that were affected; and, 6) universal transverse mercator (UTM) coordinates for any listed species encountered. The first report will be due the first January after the initiation of activities.

#### DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead Smith's blue butterfly, initial notification within 3 working days of its finding must be made in writing to the Service's Division of Law Enforcement (370 Amapola Avenue, Suite 114, Torrance, California 90501) and by telephone and writing to the Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California, 93003, (805) 644-1766). The report must include the date, time, location of the specimen, cause of death, if known and any other pertinent information.

Care must be taken in handling dead specimens to preserve biological material in the best possible state. Caltrans must endeavor to place the remains of Smith's blue butterflies with educational or research institutions holding the appropriate State and Federal permits. Arrangements regarding proper disposition of potential museum specimens must be made between Caltrans and the institution as soon as possible after receipt of this biological opinion.

#### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service has the following conservation recommendations:

1. Caltrans should require or encourage contractors and agencies conducting work on highways to protect other sensitive species during the implementation of these projects.
2. Caltrans should participate in any regional planning efforts for the Smith's blue butterfly to attempt to recognize, at an early stage of planning, where conflicts between conservation of the Smith's blue butterfly and future transportation planning may arise.

The Service requests notification of the implementation of any conservation recommendations, so we may be kept informed of actions that minimize or avoid adverse effects to or benefit the Smith's blue butterfly and its habitat.

#### REINITIATION NOTICE

This concludes formal consultation on Caltrans operation, repair, and maintenance projects on California Highway 1 that are likely to adversely affect the federally threatened Smith's blue butterfly. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law), and if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat is designated that may be affected by the action.

If you have any questions, please contact Douglass Cooper of my staff at (805) 644-1766, extension 272.

Sincerely,



David M. Pereksta  
Assistant Field Supervisor

cc: Gene K. Fong, Division Administrator, FHWA  
Tom Edell, Associate Biologist, Caltrans District 5

## LITERATURE CITED

- Arnold, R.A. 1978. Status of six endangered California butterflies. Report to California Department of Fish and Game, Nongame Wildlife Investigations, Endangered Species Program, Sacramento.
- Arnold, R.A. 1980. Ecological studies of six endangered butterflies: Island biogeography, patch dynamics and the design of nature preserves. Ph.D. dissertation, University of California, Berkeley. University of California Publications Extension 99:1-161.
- Arnold, R.A. 1983. Conservation and management of the endangered Smith's blue butterfly. *Journal of Research on the Lepidoptera* 22:135-153.
- Arnold, R.A. 1991. Status surveys and habitat assessment for the endangered Smith's blue butterfly at the Garland Ranch Regional Park in Carmel Valley, California. Pleasant Hill, California.
- Arnold, R.A. 2002. Survey protocol for presence-absence surveys of the endangered Smith's blue butterfly in the Los Padres National Forest in Monterey and northern San Luis Obispo Counties, California. Prepared for the U.S. Forest Service. Entomological Consulting Services, Inc., Pleasant Hill, California. 30 pp. and figures.
- California Department of Fish and Game. 2007. Rarefind: A database application for the California Department of Fish and Game, Natural Heritage Division data, California Natural Diversity Data Base, Sacramento.
- California Department of Transportation. 2001. Big Sur Coast Highway Management Plan Corridor Intrinsic Qualities Inventory. 117 pp. and appendices.
- California Department of Transportation. 2002. Big Sur Coast Highway Management Plan Site Restoration Guidelines: Highway 1 in Monterey and San Luis Obispo Counties. 11 pp. and appendices.
- California Department of Transportation. 2004. Big Sur Coast Highway Management Plan Guidelines for Vegetation Management. 43 pp. and appendices.
- California Department of Transportation. 2004. Biological assessment: Programmatic evaluation of Highway 1 management activities that may affect the Smith's blue butterfly. 25 pp. and appendices.
- Kellner, C. 1989. Survey for Smith's blue butterfly along the Big Sur Coast, Monterey County, California. LSA Associates Inc., Point Richmond, California.
- Langston, R.L. 1975. Extended flight periods of coastal and dune butterflies in California. *Journal of Research on the Lepidoptera* 13:83-98.

- Mattoni, R.H.T. 1954. Notes on the genus *Philotes*: I. Descriptions of three new subspecies and a synoptic list. *Bulletin of the Southern California Academy of Science* 53:157-165.
- Mattoni, R.H.T. 1977. The Scolitantidini. Part 1. Two new genera and generic rearrangement (Lycaenidae). *Journal of Research on the Lepidoptera* 16:223-242.
- Norman, J. 1994. Habitat Survey for the endangered Smith's blue butterfly (*Euphilotes enoptes smithi*) on the Monterey Ranger District, Los Padres National Forest, Monterey County, California. Final Report submitted in fulfillment of a Challenge Cost-share Agreement between the California Native Plant Society and the Los Padres National Forest.
- Norman, J. 1999. Mapping of seacliff buckwheat (*Eriogonum parvifolium*) on grazing allotments and areas on the Monterey Ranger District, Los Padres National Forest. Maps provided by the U.S. Forest Service to the U.S. Fish and Wildlife Service. Seven maps and field notes.
- Norman, J. 2000. Letter to S. Diane Pratt, U.S. Fish and Wildlife Service, dated August 26, 2000. Mapping of seacliff buckwheat (*Eriogonum parvifolium*) on the Gorda Allotment, Big Sur Coast, for Monterey Ranger District, Los Padres National Forest. 2 pp. and maps.
- Pratt, G.F. 1988. The evolution and biology of *Euphilotes* biotypes. Ph.D. dissertation, University of California, Riverside.
- Pratt, G.F. and J.F. Emmel. 1998. Revision of the *Euphilotes enoptes* and *E. battoides* complexes (Lepidoptera: Lycaenidae). In: *Systematics of Western North American Butterflies*. Mariposa Press. Gainesville, Florida.
- Shields, O. 1975. Studies on North American Philotes (Lycaenidae). IV. Taxonomic and biological notes, and new subspecies. *Bulletin of the Allyn Museum* 28: 1-30.
- U.S. Fish and Wildlife Service. 1984. Recovery plan for the Smith's blue butterfly. Portland, Oregon.
- U.S. Fish and Wildlife Service. 2003. Smith's Blue Butterfly Status Review. Report to U.S. Forest Service under interagency agreement number 03-IA-11050700-024. Ventura, California.
- U.S. Fish and Wildlife Service. 2006. Smith's blue butterfly (*Euphilotes enoptes smithi*) 5-year review: summary and evaluation. Sacramento, California. 26 pp.

**Before the Planning Commission in and for the  
County of Monterey, State of California**

In the matter of the application of:

**CALTRANS (PLN110552)**

**RESOLUTION NO. 11-047**

Resolution by the Monterey County Hearing Body:

- 1) Finding the project Statutorily Exempt per CEQA Guidelines Section 15269; and
- 2) Approving a Combined Development Permit consisting of: 1) a Coastal Development Permit and Design Approval for the construction of a 600 linear foot viaduct, including the demolition of the existing roadbed; 2) a Coastal Development Permit to allow development on slopes exceeding 30 percent; 3) a Coastal Development Permit to allow development within the Big Sur Critical Viewshed; 4) a Coastal Development Permit to allow development within 100 feet of environmentally sensitive habitat (seacliff buckwheat); and 5) a Coastal Development Permit to allow development on a coastal bluff. Related to PLN110124/Caltrans (Emergency Coastal Development Permit).

[PLN110552, Caltrans, Post-Mile 59.9, Highway 1, Big Sur Coast Land Use Plan (APN: 000-000-000-000)]

**The Caltrans application (PLN110552) came on for public hearing before the Monterey County Planning Commission on December 14, 2011. Having considered all the written and documentary evidence, the administrative record, the staff report, oral testimony, and other evidence presented, the Planning Commission finds and decides as follows:**

**FINDINGS**

1. **FINDING:** **CONSISTENCY** – The Project, as conditioned, is consistent with the applicable plans and policies which designate this area as appropriate for development.  
**EVIDENCE:**
  - a) During the course of review of this application, the project has been reviewed for consistency with the text, policies, and regulations in:
    - the 1982 Monterey County General Plan;
    - Big Sur Coast Land Use Plan;
    - Monterey County Coastal Implementation Plan Part 3; and
    - Monterey County Zoning Ordinance (Title 20);No conflicts were found to exist. No communications were received during the course of review of the project indicating any inconsistencies with the text, policies, and regulations in these documents.
  - b) The project site is located at approximately post-mile 59.9, Highway 1, Big Sur (Assessor's Parcel Number 000-000-000-000), Big Sur Coast Land Use Plan, Coastal Zone. The proposed construction is located

within the Caltrans right-of-way, and the zoning is unclassified. Post-mile 59.9 is located adjacent to Assessor's Parcel Number 418-121-001-000, and the surrounding property is zoned Watershed and Scenic Conservation, 40 acres per unit, with a Design Control Overlay, Coastal Zone [WSC/40-D (CZ). The proposed project would restore the section of highway to its pre-landslide level of capacity and use. Therefore, the project is an allowed land use for this site.

- c) Staff conducted a site inspection on March 18, 2011, to verify that the project on the subject parcel conforms to the plans listed above.
- d) Development on slope exceeding 30%: Development on slopes that exceed 30% is prohibited unless there is no feasible alternative that would allow development to occur on slopes of less than 30%, or the proposed development better achieves the goals, policies and objectives of the Monterey County General Plan and applicable land use plan than other development alternatives. See Finding No. 7.
- e) Environmentally Sensitive Habitat Areas: The project includes a Coastal Development Permit to allow development within 100 feet of environmentally sensitive habitat area (ESHA). Policies in Chapter 3.3 of the Big Sur Coast LUP are directed at maintaining, protecting, and where possible enhancing sensitive habitats. As designed and conditioned, the project minimizes impact on ESHA in accordance with the applicable goals and policies of the applicable land use plan and zoning codes. See Finding No. 8.
- f) Big Sur Critical Viewshed: The project includes a Coastal Development Permit to allow development within the Big Sur Critical Viewshed. The Big Sur Coast Land Use Plan (LUP), Section 3.2.3.A.7, allows an exception for replacement of structures destroyed by natural disaster. The project will restore an essential public road for the Big Sur area. The County finds that this project meets the intent of the applicable policies regarding visual resources. The subject project minimizes development within the viewshed in accordance with the applicable goals and policies of the applicable land use plan and zoning codes. See Finding No. 9.
- g) Policies in Chapter 4 of the Big Sur Coast Land Use Plan (LUP) are directed at maintaining and enhancing the aesthetic beauty of Highway 1, and to protect its primary function as a recreational route. The LUP also promotes improvements for safety. The project, as proposed, is an improvement required to assure the continued use of the highway for recreational and emergency access; therefore, it is consistent with applicable policies.
- h) Archaeological Resources: County records identify that the project site is within an area of high sensitivity for prehistoric cultural resources. An archaeological survey prepared for the project site concluded that there is no surface evidence of potentially significant archaeological resources.
- i) The project was referred to the Big Sur Land Use Advisory Committee (LUAC) for review. Based on the LUAC Procedure guidelines adopted by the Monterey County Board of Supervisors per Resolution No. 08-

338, this application did warrant referral to the LUAC because it involves development requiring a Design Approval subject to review by the Planning Commission. The Big Sur LUAC reviewed the project referral on December 13, 2011, and the LUAC's comments and recommendation were submitted to the Planning Commission by the project planner at the public hearing.

- j) The application, project plans, and related support materials submitted by the project applicant to the Monterey County RMA - Planning Department for the proposed development found in Project File PLN110552.

2. **FINDING:** **SITE SUITABILITY** – The site is physically suitable for the use proposed.

**EVIDENCE:** a) The project has been reviewed for site suitability by the following departments and agencies: RMA - Planning Department, CALFIRE – Big Sur (Fire Protection District), RMA - Public Works Department, Environmental Health Bureau, and Water Resources Agency. There has been no indication from these departments/agencies that the site is not suitable for the proposed development. Conditions recommended have been incorporated.

- b) Staff identified potential impacts to Archaeological Resources, Biological Resources, Soil/Slope Stability, and Visual Resources. The project is consistent with applicable policies/regulations. Technical reports prepared by Caltrans indicated that there are no physical or environmental constraints that would indicate that the site is not suitable for the use proposed. County staff independently reviewed these reports and concurs with their conclusions. The following reports have been prepared:

- "Preliminary Foundation Report" (LIB110441) prepared by Caltrans, San Luis Obispo, California, August 12, 2011.
- "Rocky Creek Landslide Slope Stability" (LIB110442) prepared by Caltrans, San Luis Obispo, California, October 6, 2011.
- "Water Quality Assessment Report" (LIB110443) prepared by Caltrans, San Luis Obispo, California, August 15, 2011.
- "Revised Response to Request for Technical Studies Received July 25, 2011/Initial Site Assessment" (LIB110444) prepared by Caltrans, San Luis Obispo, California, September 26, 2011.
- "Air and Noise Quality Studies" (LIB110445) prepared by Caltrans, San Luis Obispo, California, July 27, 2011.
- "Scenic Resource Evaluation and Visual Analysis" (LIB110446) prepared by Caltrans, San Luis Obispo, California, October 13, 2011.
- "Natural Environment Study" (LIB110447) prepared by Caltrans, San Luis Obispo, California, September 2011.
- "Paleontology Review" (LIB110448) prepared by Caltrans, San Luis Obispo, California, October 14, 2011.
- "Section 106 Compliance" (Archeological Report) (LIB110449) prepared by Caltrans, San Luis Obispo, California, July 22, 2011.
- "Rocky Creek Landslide Management Strategies" (LIB110450)

prepared by Caltrans, San Luis Obispo, California, July 25, 2011.

- c) Staff conducted a site inspection on March 18, 2011, to verify that the site is suitable for this use.
- d) The application, project plans, and related support materials submitted by the project applicant to the Monterey County RMA - Planning Department for the proposed development found in Project File PLN110552.

3. **FINDING:** **HEALTH AND SAFETY** - The establishment, maintenance, or operation of the project applied for will not under the circumstances of this particular case be detrimental to the health, safety, peace, morals, comfort, and general welfare of persons residing or working in the neighborhood of such proposed use, or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

- EVIDENCE:**
- a) The project was reviewed by RMA - Planning Department, CALFIRE – Big Sur (Fire Protection District), RMA - Public Works Department, Environmental Health Bureau, and Water Resources Agency. The respective departments/agencies have recommended conditions, where appropriate, to ensure that the project will not have an adverse effect on the health, safety, and welfare of persons either residing or working in the neighborhood.
  - b) The project will restore two travel lanes, stabilize the 180-foot section of Highway 1 that slid in March 2011, and address further instabilities north and south of the slide area. The project is necessary to maintain service essential to the public health, safety, and welfare.
  - c) Finding Nos. 1 and 2, and supporting evidence for PLN110552.

4. **FINDING:** **NO VIOLATIONS** - The subject property is in compliance with all rules and regulations pertaining to zoning uses, subdivision, and any other applicable provisions of the County's zoning ordinance. No violations exist on the property.

- EVIDENCE:**
- a) Staff reviewed Monterey County RMA - Planning Department and Building Services Department records and is not aware of any violations existing on subject property.
  - b) Staff conducted a site inspection on March 18, 2011, and researched County records to assess if any violation exists on the subject property.
  - c) There are no known violations on the subject parcel.
  - d) The application, plans and supporting materials submitted by the project applicant to the Monterey County Planning Department for the proposed development are found in Project File PLN110552.

5. **FINDING:** **CEQA (Exempt):** The project is statutorily exempt from environmental review and no unusual circumstances were identified to exist for the proposed project.

- EVIDENCE:**
- a) California Environmental Quality Act (CEQA) Guidelines Section 15269, statutorily exempts emergency repairs to publicly or privately owned service facilities necessary to maintain service essential to the public health, safety, or welfare; or specific actions necessary to prevent

or mitigate an emergency. Section 15269 also statutorily exempts project to maintain, repair, restore, demolish, or replace property or facilities damaged or destroyed as a result of a disaster in a disaster stricken area in which a state of emergency has been proclaimed by the Governor pursuant to the California Emergency Services Act.

- b) The project will prevent full failure of the roadway. The stability of the remaining crib wall to the south of the landslide has been compromised by the landslide and threatens the remaining two-lane portion of the highway adjacent to the temporary soil nail wall. The base of the cribs at the north end of the remaining structure has been undermined by the landslide which has reduced the bearing or load carrying capacity of the rock beneath the cribs. This reduced load carrying capacity increases the likelihood of failure. Expedited response is necessary to ensure continued access through this portion of the roadway. In addition, on April 15, 2011, Governor Jerry Brown issued an emergency proclamation, which included Monterey County, to address road and highway closure caused by severe storms between March 15 and 27, 2011. This proclamation included provision for continuing emergency response, including significant repair and reconstruction work. Therefore, this project is consistent with the requirements of CEQA Guidelines Section 15269.
- c) No adverse environmental effects were identified during staff review of the development application during a site visit on March 18, 2011.
- d) Caltrans, as Lead Agency, applied the statutory exemption to the project. The County is serving as a Responsible Agency for this project. The County, in its independent judgment, has determined that the project is statutorily exempt. As a Responsible Agency for permitting, the County has conditioned the project whereas Caltrans must provide evidence that restoration measures required for Seacliff Buckwheat are implemented (Condition No. 4).
- e) The Planning Commission considered the Statutory Exemption at a duly noticed public hearing held on December 14, 2011. The materials upon which the County's decision is based are located in the Planning Department, 168 W. Alisal Street, 2<sup>nd</sup> Floor, Salinas, CA.
- f) See preceding and following findings and supporting evidence.

6. **FINDING:** **PUBLIC ACCESS** – The project is in conformance with the public access and recreation policies of the Coastal Act (specifically Chapter 3 of the Coastal Act of 1976, commencing with Section 30200 of the Public Resources Code) and Local Coastal Program, and does not interfere with any form of historic public use or trust rights.

- EVIDENCE:**
- a) No additional access is required as part of the project as no substantial adverse impact on access, either individually or cumulatively, as described in Section 20.145.150 of the Monterey County Coastal Implementation Plan can be demonstrated.
  - b) The subject property is described as an area where the Local Coastal Program requires public access (Figure 3, Trails Plan, in the Big Sur Coast Land Use Plan). Not approving the project would limit public access to the Big Sur coast.

- c) No evidence or documentation has been submitted or found showing the existence of historic public use or trust rights over this property.
- d) The application, plans and supporting materials submitted by the project applicant to the Monterey County Planning Department for the proposed development are found in Project File PLN110552.
- e) Staff conducted a site inspection on March 18, 2011.
- f) Caltrans met with the Big Sur Coastal Trail Working Group, sponsored by Assemblymember Monning, on July 15, 2011, to discuss the project. The group is tasked with establishing a process for developing a Master Plan for the Big Sur portion of the California Coastal Trail (CCT). Currently, there is no set alignment for the CCT through the project limits; ultimately the trail could be established inland of the project or on the highway through the project limits. Therefore, the group recommended that standard improvements be made to the highway shoulder for cost effectiveness and to allow for the future accommodation of the CCT. The 4-foot shoulders will allow improved access along this portion of roadway compared to the previous 1 to 4-foot shoulder area.
- g) On November 21, 2011, Coastal Commission staff submitted an email outlining concerns related to the project. One concern addressed the public access requirements of the Big Sur Coast Land Use Plan (LUP), and the opinion that the project did not satisfy these requirements. The County has reviewed the policies of the Big Sur Coast LUP, and finds the project consistent with the requirements of applicable policies. Specifically, LUP Policy 4.1.3A.1 directs that the width of Highway 1 be upgraded to a standard of 12-foot lanes and 2 – 4-foot shoulders where physically practical and consistent with the preservation of other coastal resources. The project will result in 12-foot lanes and 4-foot shoulders. Further expansion of the roadway width to accommodate a separated coastal trail would result in expanded impacts to biological resources, visual resources, and slopes exceeding 30%. In addition, an expanded viaduct would significantly increase project cost. The Coastal Commission staff also suggested Caltrans undertake a public access program that would result in safe, through connection for bicyclists and hikers along this difficult section of the Big Sur Coast Highway. The County finds no nexus to require Caltrans to implement such a program in conjunction with this project. The project, as proposed, addresses an emergency slide situation which further jeopardizes approximately 600 feet of Highway 1 and affords Caltrans the opportunity to provide 600 feet of 4-foot wide shoulders within the 3,200-foot long segment of Highway 1 between Bixby and Rocky Creek bridges.

7. **FINDING:** **DEVELOPMENT ON SLOPE** – There is no feasible alternative which would allow development to occur on slopes of less than 30%.

- EVIDENCE:**
- a) In accordance with the applicable policies of the Big Sur Coast Land Use Plan and the Monterey County Zoning Ordinance (Title 20), a Coastal Development Permit is required and the authority to grant said permit has been met.
  - b) The project includes application for development on slopes exceeding

30%. The existing Highway 1 roadway in the project area is constructed on a steep slope along the edge of a coastal bluff, and there are no feasible alternative building sites. The existing slope area of the project site has been previously disturbed by roadway development, including crib (retaining) walls and miscellaneous site improvements. The proposed development will not increase the area or coverage previously disturbed. The project, as proposed, minimizes development impacts on slope exceeding 30% because the applicant proposes to use the existing disturbed roadway area.

- c) Caltrans reviewed potential alternatives, and concluded that a viaduct (bridge) was the best option to separate the roadway from the landslide and restore two lanes of traffic. Other alternatives were considered and discarded as not feasible, more disruptive to the public and/or surrounding environment, or cost prohibitive.
- d) The Planning Commission shall require such conditions of approval and changes in the development as it may deem necessary to assure compliance with MCC Section 20.64.230.E.1. No special conditions are necessary for this project.
- e) The application, plans and supporting materials submitted by the project applicant to the Monterey County Planning Department for the proposed development are found in Project File PLN110552.
- f) Staff conducted a site inspection on March 18, 2011.
- g) The subject project minimizes development on slopes exceeding 30% in accordance with the applicable goals and policies of the applicable land use plan and zoning codes.

8. **FINDING:**

**ESHA** – The subject project minimizes impact on environmentally sensitive habitat areas in accordance with the applicable goals and policies of the applicable area plan and zoning codes.

**EVIDENCE:**

- a) The project includes application for development within 100 feet of environmentally sensitive habitat areas (ESHA). In accordance with the applicable policies of the Big Sur Coast Land Use Plan (LUP) and the Monterey County Zoning Ordinance (Title 20), a Coastal Development Permit is required and the authority to grant said permit has been met.
- b) Policies in Chapter 3.3 of the Big Sur Coast LUP are directed at maintaining, protecting, and where possible enhancing sensitive habitats. As designed and conditioned, the project is consistent with applicable policies regarding restoration and enhancement of habitat.
- c) No rare plants were found during field surveys, and no special-status animal species were observed within or adjacent to the project limits. However, the project area is within the known range of the Smith's blue butterfly, and the project area supports seacliff buckwheat, which are the sole host plant for the Smith's blue butterfly along this portion of the California coast. Therefore, Caltrans completed a biological report to assess the potential impacts.
- d) Per the Caltrans Natural Environment Study (biological report), this project meets the criteria for the U.S. Fish and Wildlife Service's Programmatic Biological Opinion for Highway 1 Management Activities that Affect the Smith's blue butterfly, Monterey and San Luis

Obispo Counties, California (1-8-07-F-68).

- e) Although no Smith's blue butterflies were observed within or adjacent to the project limits on July 6 and July 29, 2011, presence of Smith's blue butterfly was inferred based on presence and relative abundance of potential host plants in the project area. Avoidance and minimization measures from the USFWS programmatic biological opinion will be incorporated into the project to avoid impacts to this species.
- f) The project will require the removal of 208 seacliff buckwheat plants. This would be in addition to the 67 seacliff buckwheat plants that were moved by Caltrans on March 22, 2011 during the soil nail wall emergency project, resulting in a total of 275 plants affected. This species is the exclusive host plant for Smith's blue butterfly, which is listed as endangered. An area adjacent to the highway has been located near the southern end of the project, within Caltrans right of way, to do replacement planting for butterfly habitat restoration. Replacement planting will be done at a 2:1 ratio, so approximately 400 locally-collected Buckwheat plants will be planted and irrigated. This work is covered under the USFWS programmatic biological opinion for Smith's blue butterfly.
- g) Staff conducted a site inspection on March 18, 2011, to verify ESHA locations and potential project impacts to ESHA.
- h) The application, plans and supporting materials submitted by the project applicant to the Monterey County Planning Department for the proposed development are found in Project File PLN110552.

9. **FINDING:** **VIEWSHED** – The subject project minimizes development within the viewshed in accordance with the applicable goals and policies of the applicable area plan and zoning codes.

- EVIDENCE:**
- a) The project includes application for development within the Big Sur Critical Viewshed. In accordance with the applicable policies of the Big Sur Coast Land Use Plan (LUP) and the Monterey County Zoning Ordinance (Title 20), a Coastal Development Permit is required and the authority to grant said permit has been met.
  - b) LUP Policy 3.2.5.C.1 allows exceptions to the Scenic Resources Key Policy involving safety improvements to Highway 1 facilities, provided they are consistent with LUP Sections 4.1.1, 4.1.2., and 4.1.3. Key Policy 4.1.1 states that the County's objective is to maintain and enhance the highway's aesthetic beauty and to protect its primary function as a recreational route. General Policy 4.1.2.1 directs that improvements to Highway 1 shall be undertaken in order to increase its service capacity and safety, consistent with its retention as a scenic two-lane road. The project is an emergency safety improvement that, as proposed, will restore the damaged portion of roadway. The barrier and railing will use colors to blend with the surrounding environment.
  - c) Although the coastline in this area is visually dynamic, with dramatic cliffs and nearby views of the two historic bridges, overall visual quality at the viaduct location is only moderately high. From the highway a driver or cyclist has mid-ground and horizon line views of the ocean, but not beach views. The traffic signal system for the alternating single

lane is unattractive and so is the soil nail wall constructed after the landslide, although its visibility is minimal due to the line of concrete k-rail at road's edge. The k-rail and irregular temporary pavement also lower visual quality. The steep slope above the highway is densely vegetated with coastal native species and will be protected from disturbance.

- d) Community input was received on this project through multiple meetings. Presentations at Big Sur Multi-Agency Advisory Committee meetings were made and comments received on July 15 and October 21, 2011. Comment on the appearance of the finished roadway was also made. Caltrans also met with the Big Sur Coastal Trail Working Group, sponsored by Assemblymember Monning, on July 15, 2011, to discuss the project.
- e) Caltrans also formed an Aesthetics Design Advisory Committee, consisting of fifteen members of the community, representatives of elected officials and local advisory committees. The committee met twice, on August 10 and September 27, 2011. The committee was formed to advise Caltrans on the aesthetic design of the viaduct and associated built features. The ADAC preferred some type of see through barrier versus a solid concrete barrier so ocean views would not be limited. Tubular steel railings are considered to be the most "see through" type of structure safety device and will be an improvement over the existing k-rail in terms of ocean views. There are four existing metal bridge railings on the Big Sur coast and more than a dozen concrete barriers with metal railings on top, so the project's proposed materials are consistent with other structures in the general area.
- f) LUP Policy 3.2.3.A.7 directs that replacement or enlargement of structures within the Critical Viewshed not increase the visibility of the structure. The proposed viaduct does not increase the mass or bulk visible within the Critical Viewshed. Widening the highway for the length of the viaduct will not have a large effect on the scale or character of Route 1. The most visible element of the project will be the tubular steel railing since the viaduct itself is not visible from a motorist's perspective. There are small, informal turnouts at each end of the viaduct from which it will be visible, but there are no views from any formal public use areas. Distant views to the project are blocked by intervening topography. Furthermore, the viaduct will not be visible from any of the special viewing locations identified in the critical viewshed policies. The project as proposed and conditioned is consistent with policies of the Big Sur Coast Land Use Plan dealing with visual resources and will have no significant impact on the Critical Viewshed.
- g) The project as proposed, conditioned, and mitigated is consistent with policies of the Big Sur Land Use Plan dealing with visual resources and will have no significant impact on the critical viewshed. The County finds that the project would not result in significant adverse visual impacts to viewers on or off the highway. The project features would be consistent with viewers' expectations along this travel corridor.
- h) The application, plans and supporting materials submitted by the project

applicant to the Monterey County Planning Department for the proposed development are found in Project File PLN110552.

- i) Staff conducted a site inspection on March 18, 2011, to verify that the project minimizes development within the viewshed or to identify methods to minimize the development.

10. **FINDING:** **APPEALABILITY** - The decision on this project may be appealed to the Board of Supervisors and the California Coastal Commission.
- EVIDENCE:**
- a) Board of Supervisors: Section 20.86.030 of the Monterey County Zoning Ordinance allows an appeal to be made to the Board of Supervisors by any public agency or person aggrieved by a decision of an Appropriate Authority other than the Board of Supervisors.
  - b) Coastal Commission: Section 20.86.080.A.1, A.2, and A.3 of the Monterey County Zoning Ordinance (Title 20). The project is subject to appeal by/to the California Coastal Commission because approved projects between the sea and the first through public road paralleling the sea, approved projects within 300 feet of the top of the seaward face of any coastal bluff, and approved projects involving development in the underlying zone as a conditional use, are appealable to the Coastal Commission.

### DECISION

**NOW, THEREFORE**, based on the above findings and evidence, the Planning Commission does hereby:

1. Find the project statutorily exempt per CEQA Guidelines Section 15269; and
2. Approve a Combined Development Permit consisting of: 1) a Coastal Development Permit and Design Approval for the construction of a 600 linear foot viaduct, including the demolition of the existing roadbed; 2) a Coastal Development Permit to allow development on slopes exceeding 30 percent; 3) a Coastal Development Permit to allow development within the Big Sur Critical Viewshed; 4) a Coastal Development Permit to allow development within 100 feet of environmentally sensitive habitat (seacliff buckwheat); and 5) a Coastal Development Permit to allow development on a coastal bluff; in general conformance with the attached sketch and subject to the attached conditions, all being attached hereto and incorporated herein by reference.

**PASSED AND ADOPTED** this 14<sup>th</sup> day of December, 2011, upon motion of Commissioner Diehl, seconded by Commissioner Vandevere, by the following vote:

AYES: Brown, Vandevere, Roberts, Rochester, Salazar, Getzelman, Mendez, Diehl, Padilla, Hert  
NOES: None  
ABSENT: None  
ABSTAIN: None

  
Mike Novo, Secretary

COPY OF THIS DECISION MAILED TO APPLICANT ON **DEC 23 2011**

THIS APPLICATION IS APPEALABLE TO THE BOARD OF SUPERVISORS.

IF ANYONE WISHES TO APPEAL THIS DECISION, AN APPEAL FORM MUST BE COMPLETED AND SUBMITTED TO THE CLERK TO THE BOARD ALONG WITH THE APPROPRIATE FILING FEE ON OR BEFORE

**JAN 03 2012**

THIS PROJECT IS LOCATED IN THE COASTAL ZONE AND IS APPEALABLE TO THE COASTAL COMMISSION. UPON RECEIPT OF NOTIFICATION OF THE FINAL LOCAL ACTION NOTICE (FLAN) STATING THE DECISION BY THE FINAL DECISION MAKING BODY, THE COMMISSION ESTABLISHES A 10 WORKING DAY APPEAL PERIOD. AN APPEAL FORM MUST BE FILED WITH THE COASTAL COMMISSION. FOR FURTHER INFORMATION, CONTACT THE COASTAL COMMISSION AT (831) 427-4863 OR AT 725 FRONT STREET, SUITE 300, SANTA CRUZ, CA.

This decision, if this is the final administrative decision, is subject to judicial review pursuant to California Code of Civil Procedure Sections 1094.5 and 1094.6. Any Petition for Writ of Mandate must be filed with the Court no later than the 90th day following the date on which this decision becomes final.

#### NOTES

1. You may need a building permit and must comply with the Monterey County Building Ordinance in every respect.

Additionally, the Zoning Ordinance provides that no building permit shall be issued, nor any use conducted, otherwise than in accordance with the conditions and terms of the permit granted or until ten days after the mailing of notice of the granting of the permit by the appropriate authority, or after granting of the permit by the Board of Supervisors in the event of appeal.

Do not start any construction or occupy any building until you have obtained the necessary permits and use clearances from the Monterey County Planning Department and Building Services Department office in Salinas.

2. This permit expires 3 years after the above date of granting thereof unless construction or use is started within this period.

**Monterey County Planning Department**  
**Conditions of Approval/Mitigation Monitoring Reporting Plan**  
PLN110552

**1. PD001 - SPECIFIC USES ONLY**

**Responsible Department:** Planning Department

**Condition/Mitigation Monitoring Measure:** This Combined Development Permit allows a Coastal Development Permit and Design Approval for the construction of a 600 linear foot viaduct, including the demolition of the existing roadbed, a Coastal Development Permit to allow development on slopes exceeding 30 percent a Coastal Development Permit to allow development within the Big Sur Critical Viewshed, a Coastal Development Permit to allow development within 100 feet of environmentally sensitive habitat (seacliff buckwheat), and a Coastal Development Permit to allow development on a coastal bluff. The project site is located at and near post-mile 59.9, Highway 1, Big Sur, within the Caltrans right-of-way (Assessor's Parcel Number 000-000-000-000). Big Sur Coast Land Use Plan. This permit was approved in accordance with County ordinances and land use regulations subject to the terms and conditions described in the project file. Neither the uses nor the construction allowed by this permit shall commence unless and until all of the conditions of this permit are met to the satisfaction of the Director of the RMA - Planning Department. Any use or construction not in substantial conformance with the terms and conditions of this permit is a violation of County regulations and may result in modification or revocation of this permit and subsequent legal action. No use or construction other than that specified by this permit is allowed unless additional permits are approved by the appropriate authorities. To the extent that the County has delegated any condition compliance or mitigation monitoring to the Monterey County Water Resources Agency, the Water Resources Agency shall provide all information requested by the County and the County shall bear ultimate responsibility to ensure that conditions and mitigation measures are properly fulfilled.  
(RMA - Planning Department)

**Compliance or Monitoring Action to be Performed:** The Owner/Applicant shall adhere to conditions and uses specified in the permit on an ongoing basis unless otherwise stated.

**2. PD002 - NOTICE PERMIT APPROVAL**

**Responsible Department:** Planning Department

**Condition/Mitigation Monitoring Measure:** The applicant shall record a Permit Approval Notice which states: "A permit (Resolution No. 11-047) was approved by the Planning Commission for Assessor's Parcel Number 000-000-000-000 on December 14, 2011. The permit was granted subject to five (5) conditions of approval which run with the land. A copy of the permit is on file with the Monterey County RMA - Planning Department."

Proof of recordation of this notice shall be furnished to the Director of the RMA - Planning Department prior to issuance of building permits or commencement of the use.  
(RMA - Planning Department)

**Compliance or Monitoring Action to be Performed:** Prior to the commencement of use, the Owner/Applicant shall provide proof of recordation of this notice to the RMA - Planning Department.

### 3. PD032(A) - PERMIT EXPIRATION

**Responsible Department:** Planning Department

**Condition/Mitigation Monitoring Measure:** The permit shall be granted for a time period of three (3) years, to expire on December 14, 2014, unless use of the property or actual construction has begun within this period. (RMA-Planning Department)

**Compliance or Monitoring Action to be Performed:** Prior to the expiration date stated in the condition, the Owner/Applicant shall commence the authorized construction/use to the satisfaction of the Director of Planning. Any request for extension must be received by the Planning Department at least 30 days prior to the expiration date.

### 4. PDSP001 - COMPLIANCE CERTIFICATION

**Responsible Department:** Planning Department

**Condition/Mitigation Monitoring Measure:** PDSP001 - COMPLIANCE CERTIFICATION  
The applicant shall submit certification from a qualified Caltrans biologist that all development has been completed in accordance with the Natural Environment Study (NES) completed for this project (LIB#110447), including the attached USFWS Biological Opinion for Highway 1 Management Activities that Affect the Smith's blue butterfly, Monterey and San Luis Obispo Counties, California (1-8-07-F-68). (RMA - Planning Department)

**Compliance or Monitoring Action to be Performed:** Within 30 days after completion of work, submit certification by a qualified Caltrans biologist to the RMA - Planning Department showing project compliance with the NES USFWS Biological Opinion.

### 5. PDSP002 - PUBLIC ACCESS (NON-STANDARD)

**Responsible Department:** Planning Department

**Condition/Mitigation Monitoring Measure:** Caltrans shall continue to work closely with the community through the planning process to provide for multi-modal public access through the project area. (RMA-Planning Department)

**Compliance or Monitoring Action to be Performed:** On an ongoing basis, Caltrans shall continue to work closely with the community through the planning process to provide for multi-modal public access through the project area.

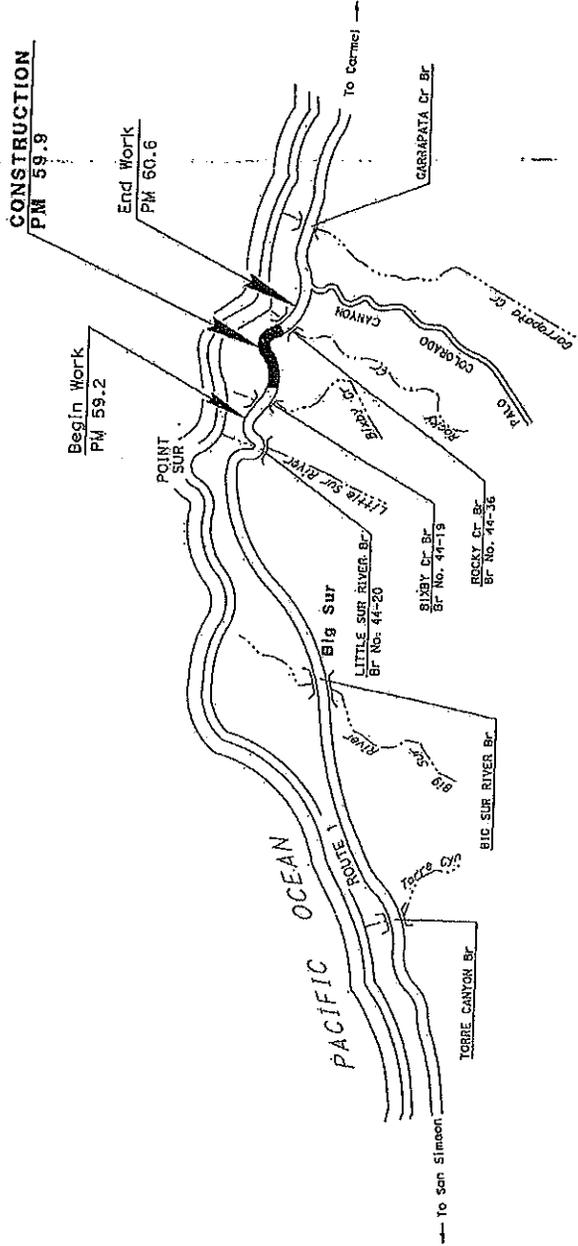
INDEX OF PLANS

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 PROJECT PLANS FOR CONSTRUCTION ON  
 STATE HIGHWAY  
 IN MONTEREY COUNTY  
 FROM 0.2 MILE SOUTH OF BIXBY BRIDGE  
 TO 0.5 MILE NORTH OF ROCKY CREEK BRIDGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	Mon	1	59.9		

LOCATION MAP



ESTIM. ENGINEER	STEVE MYATT
PROJECT MANAGER	KEA OOSTLEK

THE CONTRACTOR SHALL POSSESS THE CLASSES (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

60808 LAST REVISED 7/2/2010 CALTRANS WEB SITE IS: [HTTP://WWW.DOT.CA.GOV/](http://www.dot.ca.gov/)

NO SCALE

RELATIVE BORDER SCALE 0 1 2 3 INCHES TO 1 FOOT

PROJECT ENGINEER  
 REGISTERED CIVIL ENGINEER

DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

DATE OF CONSTRUCTION \_\_\_\_\_

DATE OF COMPLETION \_\_\_\_\_

DATE OF CLOSURE \_\_\_\_\_

DATE OF REMOVAL \_\_\_\_\_

CONTRACT NO. **05-1A7900**

PROJECT ID **0512000023**

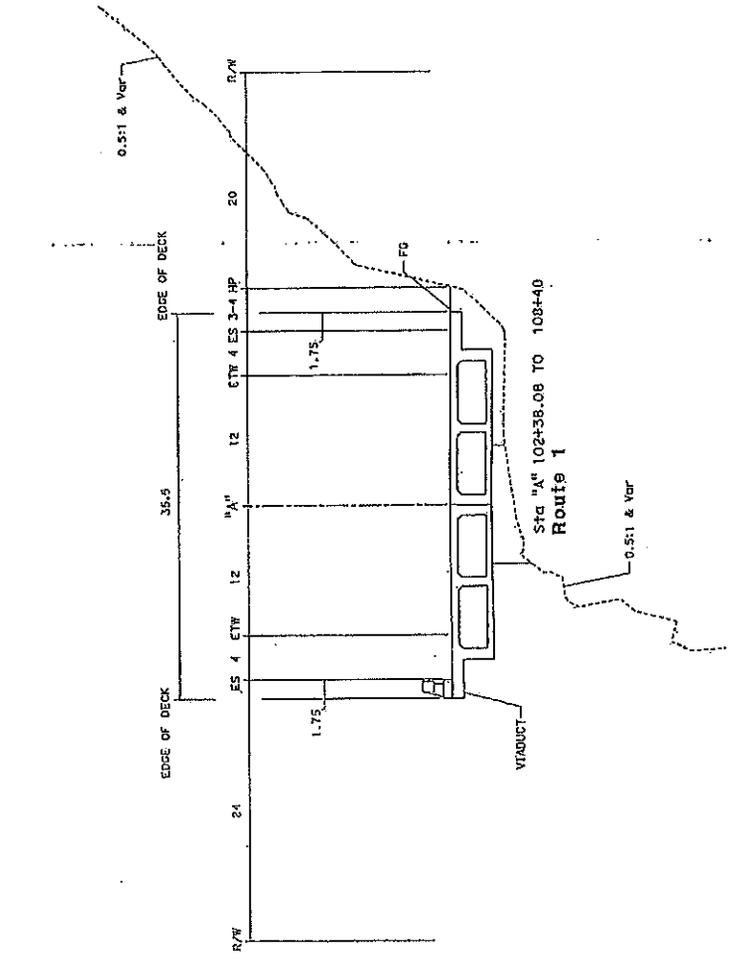
DATE PLOTTED 03/22/06 DATE PLOTTED 03/22/06

DRAFT



DATE	1	5/13
BY	Mon	
REGISTERED CIVIL ENGINEER DATE		
PLANS APPROVAL DATE		
IN THE STATE OF CALIFORNIA		
I, _____, COUNTY CLERK		
DO hereby certify that the above is a true and correct copy of the original as filed in my office.		

NOTES:  
 1. REFER TO STRUCTURES PLANS FOR SECTIONS WITHIN STRUCTURE AND APPROACH SLAB LIMITS (102+08.08 TO 108+10)



**PROJECT**

**TYPICAL CROSS SECTION  
 ROCKY CREEK SLIDE**

PROJECT NUMBER & PHASE 05-1A1500

UNIT 1450

RELATIVE BORDER SCALE 1/8" = 1'

USERNAME: s1131702  
 DGN FILE: s1131702.dgn

BORDER LAST REVISED 7/2/2013

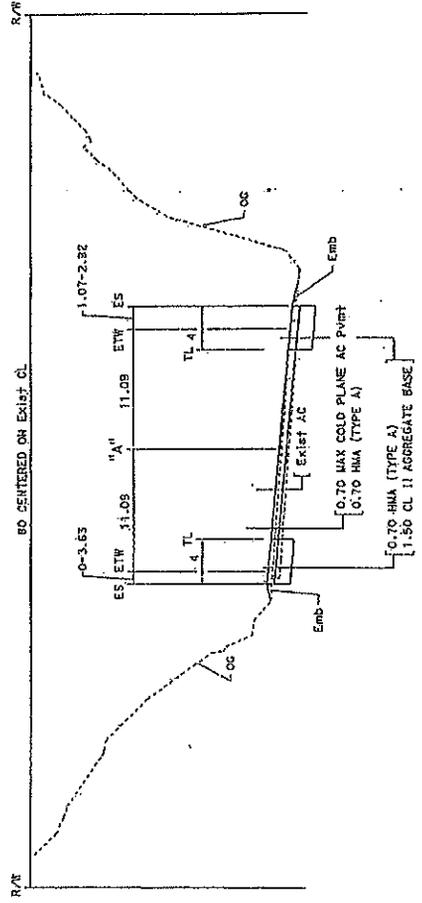
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	DESIGNED BY
CALCULATED BY	REVISOR BY
CHECKED BY	DATE REVISED

DATE	CHART	LOCATION	SCALE	TOTAL PROJECT	NO. SHEETS
05	100	1	58.3		

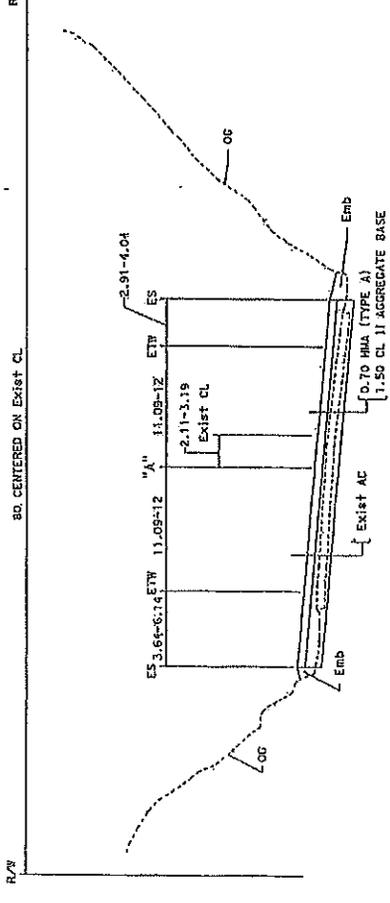
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL ONLY  
 NO FIELD CHANGES TO BE MADE  
 OR ANY CHANGES MADE TO BE APPROVED BY  
 THE ENGINEER OF RECORD FOR THE PROJECT  
 UNDER THE PLAN SHEET

NOTES:  
 1- REFER TO STRUCTURES PLANS FOR SECTIONS WITHIN STRUCTURE AND APPROACH SLAB LIMITS (102+08.08 TO 108+70)



Sta "A" 110+50 TO 111+30.55



Sta "A" 108+70 TO 110+50

DRAFT

TYPICAL CROSS SECTION  
 ROCKY CREEK SLIDE

PROJECT NUMBER & PHASE

UNIT 1450

RELATIVE HORIZONTAL SCALE  
 1" = 10' HORIZONTAL

USCGMAHC 20132000  
 DWG FILE: 21072500.DWG

3000000 LIST REVISED 1/27/2010

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISION	CHECKED BY
RESIGNED BY	DATE REVISED
REVISIONS	NO.

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				2

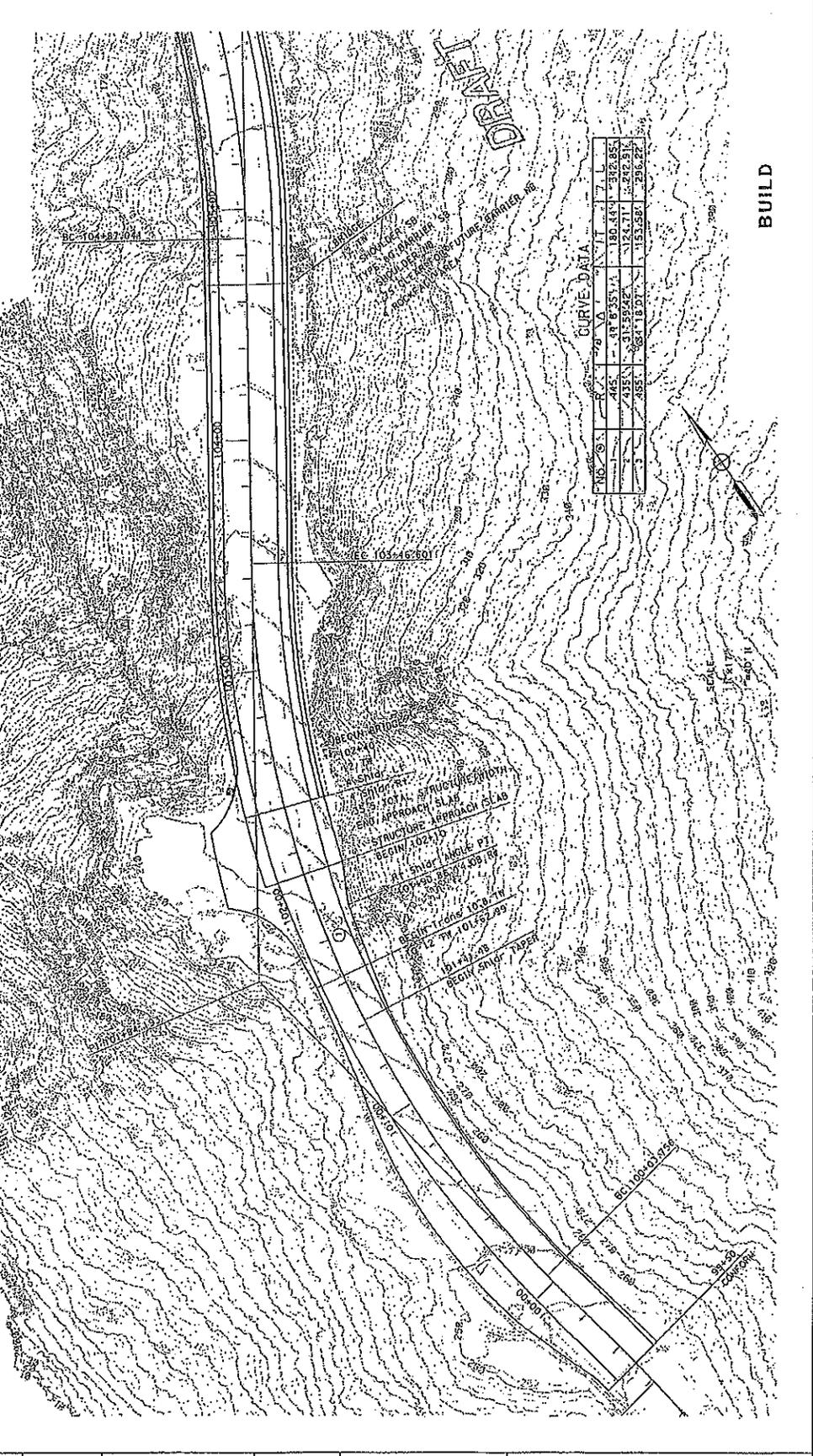
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

FOR THE COUNTY OF SAN DIEGO

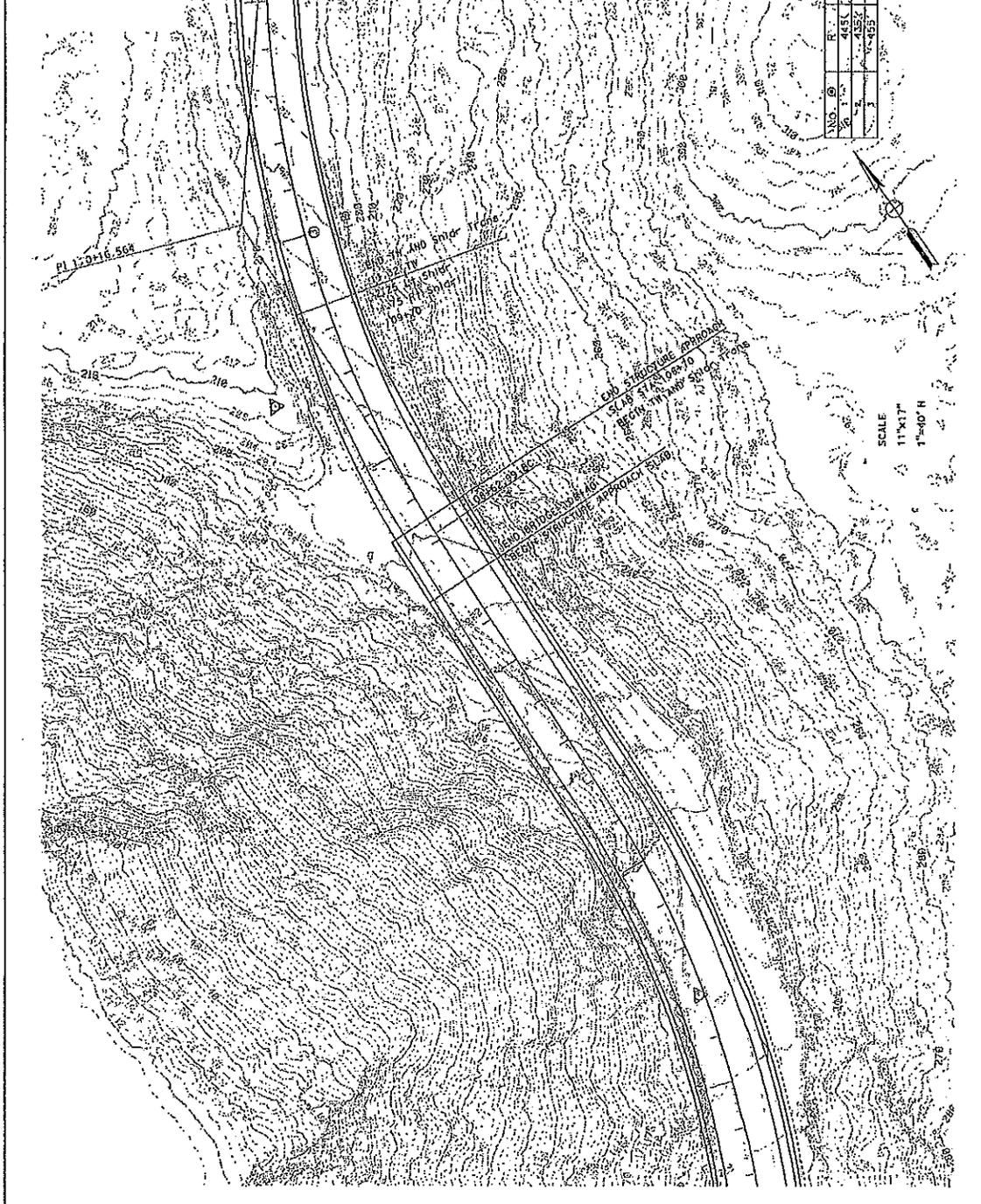
FOR THE PROJECT OF

FOR THE PROJECT OF



SHEET NO. 05  
 COUNTY: Mono  
 SECTION: 1  
 PROJECT: 59.3  
 DATE: 1/20/16  
 REGISTERED CIVIL ENGINEER: [Name]  
 DATE: [Date]

PLAN APPROVAL DATE: [Date]  
 SEAL OF CALIFORNIA REGISTERED CIVIL ENGINEER  
 [Name]  
 LICENSE NO. [Number]  
 EXPIRES [Date]



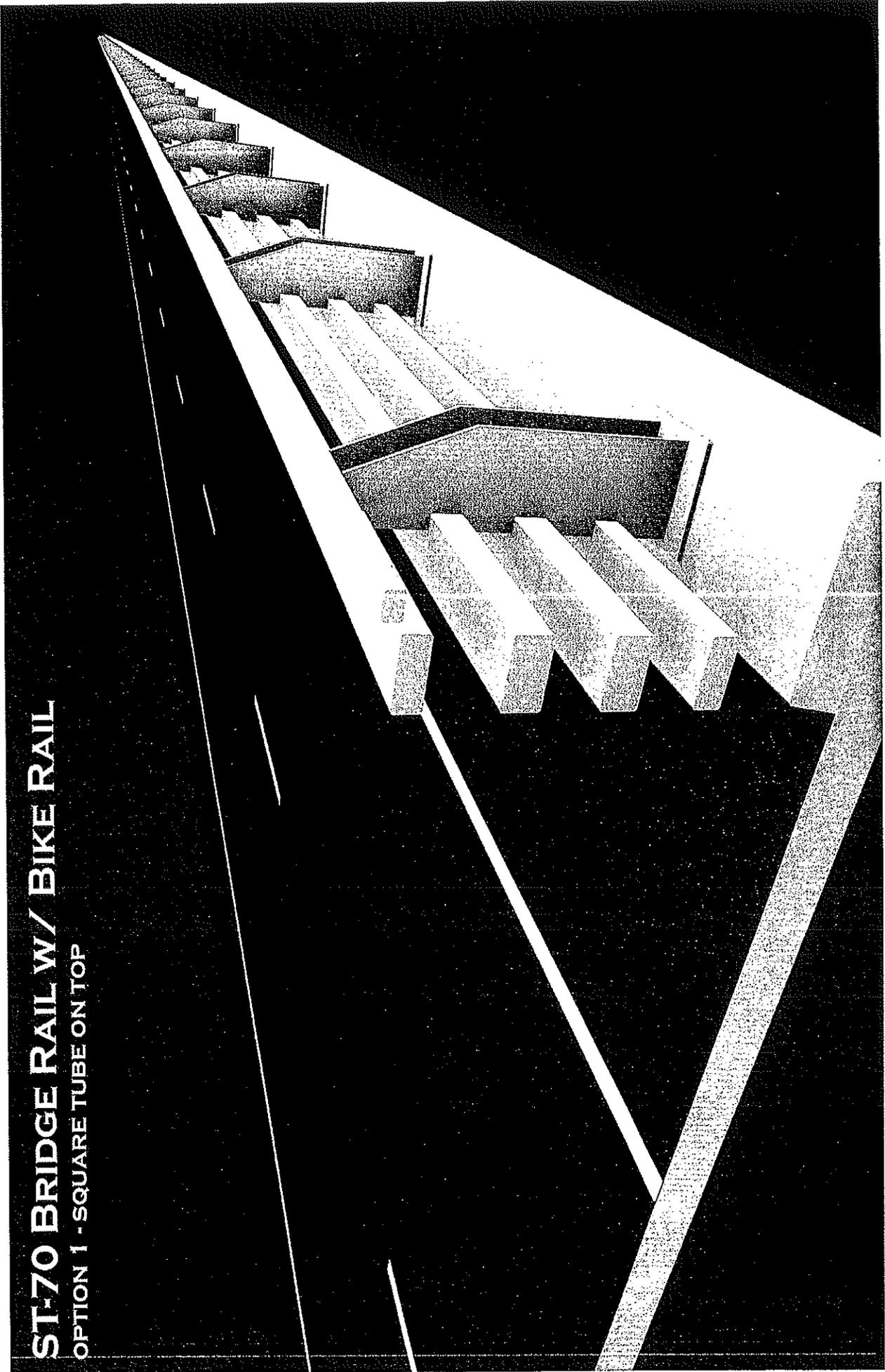
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<b>RT-Trans</b>					
DESIGN					
BORDER LAST REVISED 7/2/2016					

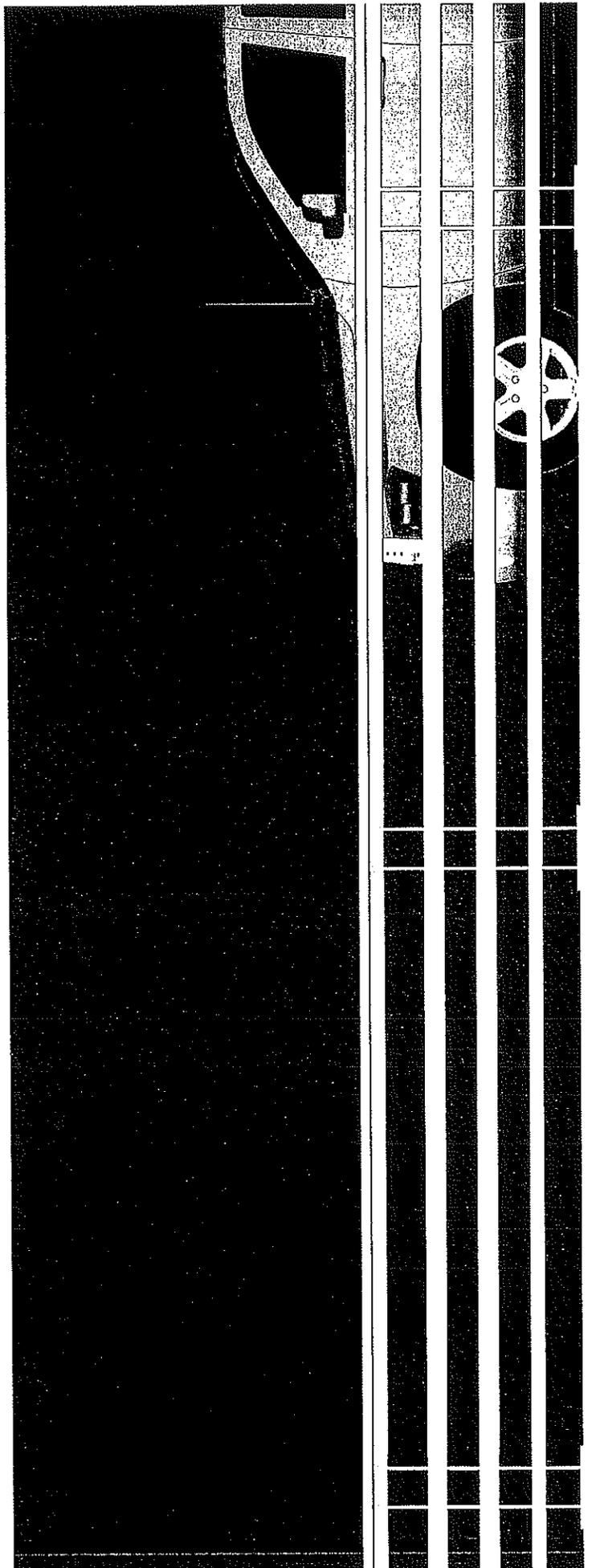
BUREAU: 1133706  
 DON FILE: 1133706-001

RELATIVE HORIZONTAL SCALE: 1" = 40' H  
 UNIT: 1450  
 PROJECT NUMBER & PHASE: 05-1A7900

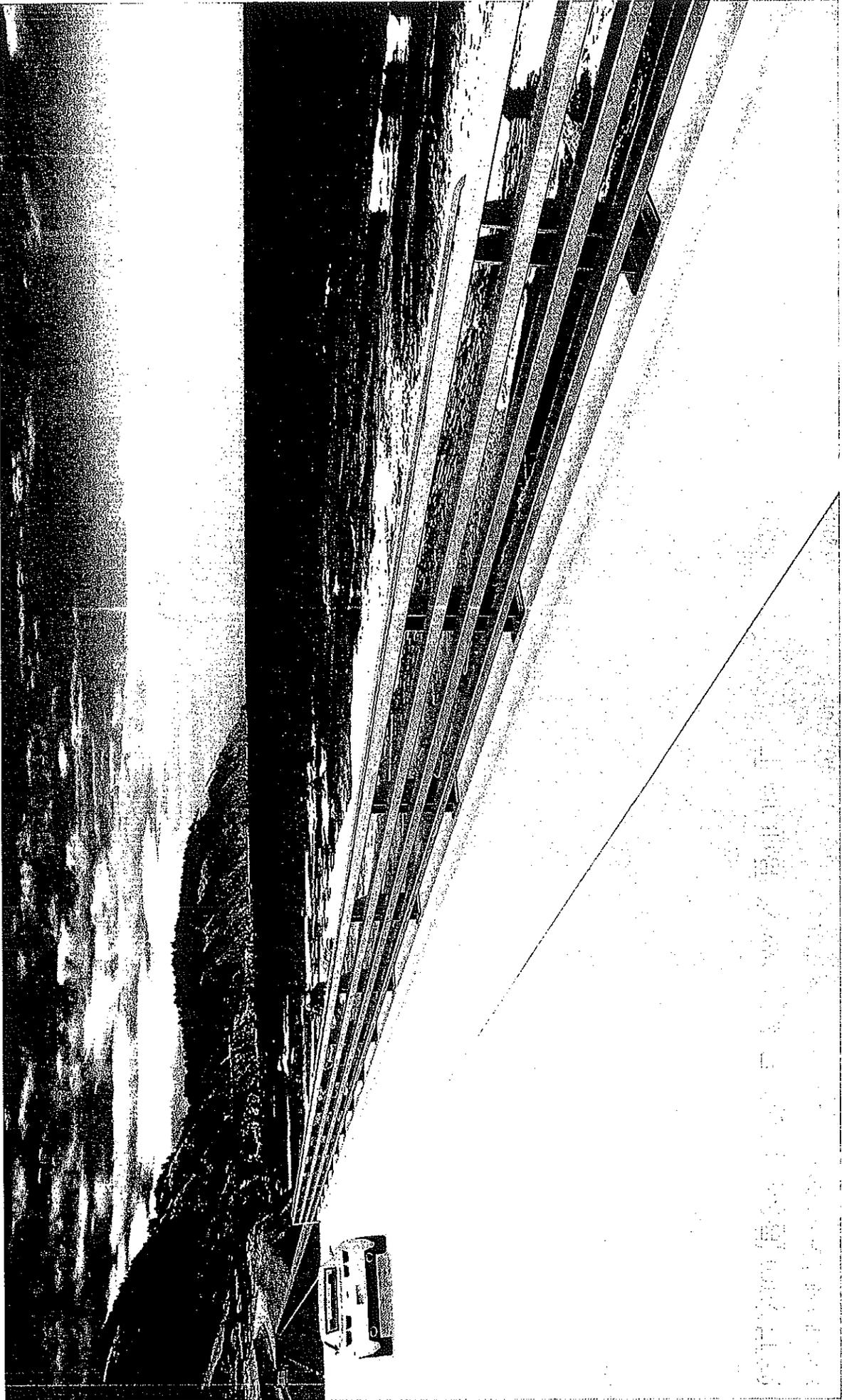
05-1A7900 PROJECT NUMBER & PHASE  
 UNIT: 1450  
 RELATIVE HORIZONTAL SCALE: 1" = 40' H  
 BUREAU: 1133706  
 DON FILE: 1133706-001

**ST-70 BRIDGE RAIL W/ BIKE RAIL**  
**OPTION 1 - SQUARE TUBE ON TOP**





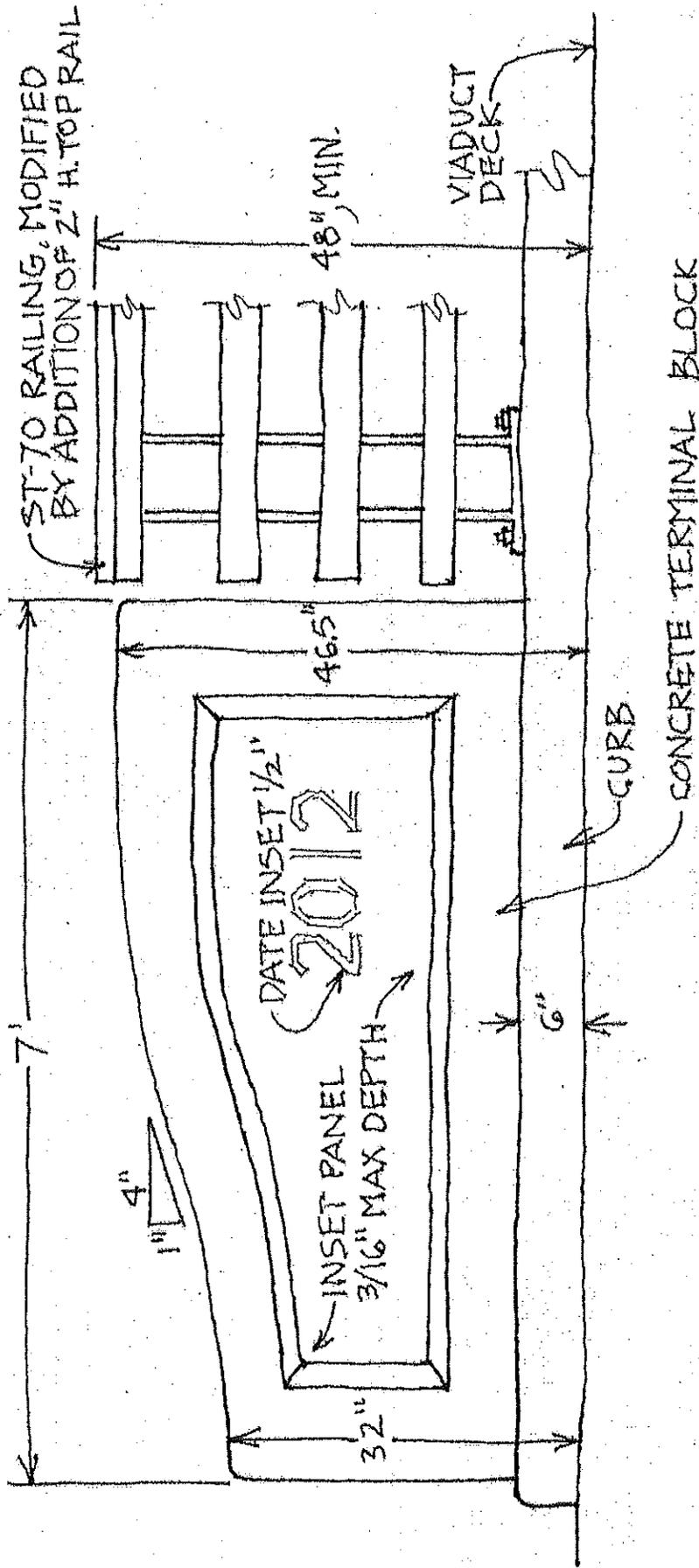
**ST-70 BRIDGE RAIL W/ BIKE RAIL**  
**OPTION 1 - SQUARE TUBE ON TOP**



© 1997 by [unreadable] / [unreadable]

# Rocky Creek Sidehill Viaduct

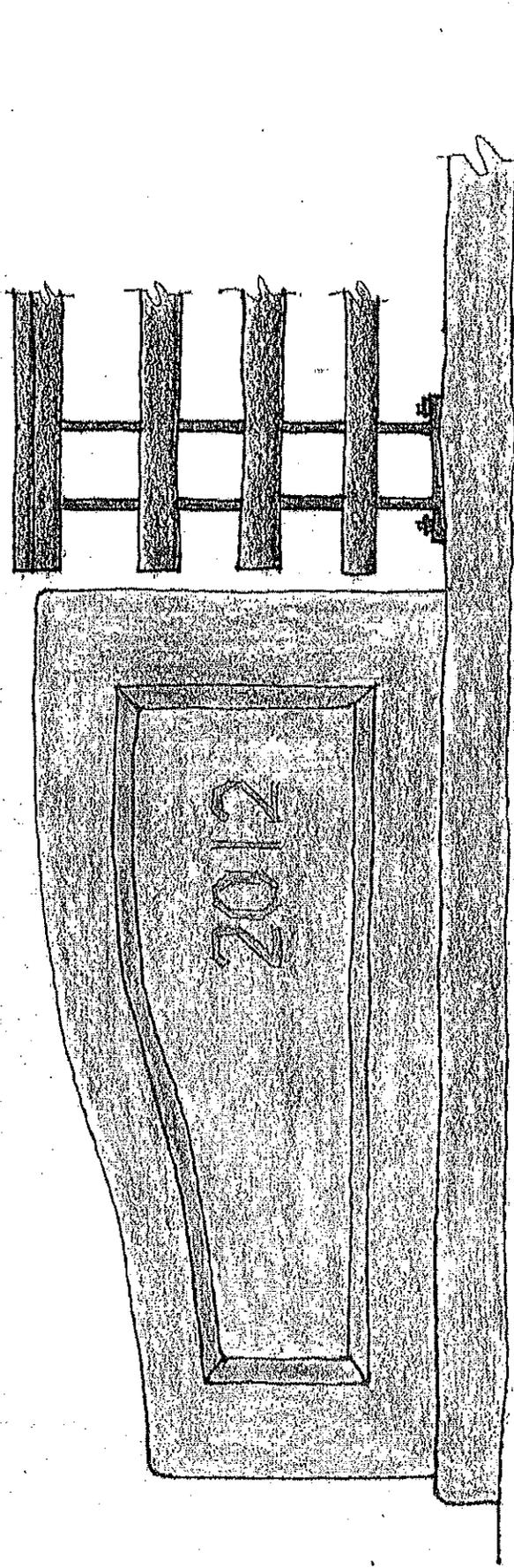
## Concept Sketches for ADAC Review



All of the proposed aesthetic treatments are consistent with state and federal safety standards including the highest level of vehicle and bicycle crash test ratings. The dimensions and tolerances given in this image reflect the minimums and maximums necessary to comply with current structure design safety standards.

# Rocky Creek Sidehill Viaduct

## Concept Sketches for ADAC Review



This image shows the structure aesthetic treatments recommended by the Aesthetics Design Advisory Committee (ADAC) and Caltrans for implementation on the Rocky Creek Viaduct. The ST-70 bridge railing was selected for maximum transparency to preserve ocean views from the highway. Proposed aesthetic measures include:

- All visible galvanized steel railing materials will be treated to darken and dull the metal's surface, providing the effect of age.
- The concrete terminal blocks have been modified from the standard to incorporate a curved top line that mimics the design of arch bridges adjacent to the viaduct.
- Terminal blocks will use integrally colored concrete to match the arch bridges and have a heavy sandblasted finish.
- The 6" concrete curb will be colored to match the terminal blocks.
- The construction year is shown incised into the face of the beveled inset panel, consistent with the arch bridges.
- Although the terminal blocks on the arch bridges have a curved horizontal flare to complement the curved top line, the Rocky Creek Viaduct cannot include a horizontal flare due to current highway safety standards.