

**EXHIBIT A**  
Browns Valley Road PM 3.4 Culvert Retrofit  
**STATEMENT OF WORK**

Under direction of the Department of Fish and Game, and under the following conditions and terms, the Grantee will:

1. The goal of this project is to re-establish fish passage for steelhead trout in Browns Creek tributary to Corralitos Creek in Santa Cruz County. The objective is to provide access to 2.3 miles of habitat, to increase spawning habitat for adult salmonids and rearing habitat for juvenile salmonids.
2. Conduct work on Browns Creek approximately 350 feet upstream from the confluence of Redwood Creek Creek. The project is located in Township 10S, Range 2E, Section 32 of the Loma Prieta 7.5 Minute U.S.G.S. Quadrangle, as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. Passage for adult and juvenile steelhead will be improved at a county-maintained concrete box culvert as depicted in Exhibit D, Plan View Diagram, which is attached and made part of this agreement by this reference. The middle one-third of the culvert floor will be removed and a new floor 4 feet lower will be constructed. The new channel will eliminate the jump at the outlet (downstream side) of the culvert during both low and high flows. Weirs will be added inside the new channel to catch natural substrate. A new cutoff wall will be constructed at the inlet (upstream side) of the culvert to protect the new channel. The project includes the repair of the culvert under the culvert at the outlet.

Construction steps are as follows: (1) temporary erosion control measures will be installed; (2) a dewatering system will be installed; the dewatering system has not been designed, but may include the use of a porta-dam in the downstream pool; (3) a temporary shoring system will be installed inside the culvert; (4) sections of the culvert floor will be removed and the new floor will be formed and poured; (5) the scour under the culvert will be repaired; (6) flashboards will be installed into the new channel to catch natural substrate; (7) shoring and dewatering system will be dismantled; (8) permanent erosion control will be installed.

4. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured.
5. The Grantee shall notify the Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
  - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
  - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
  - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, *Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act*, June 2000.
  - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.

- Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
6. The culvert design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by NOAA Fisheries and the California Department of Fish and Game, for adult and juvenile salmonid fish passage.
  7. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and DFG criteria for fish passage as described in the Third Edition, Volume II, Part IX, February 2003, of the *California Salmonid Stream Habitat Restoration Manual*. Culvert replacement or modification designs shall be visually reviewed and authorized by NOAA Fisheries (or CDFG) engineers prior to commencement of work.
  8. All habitat improvements will be in accordance with techniques described in the Third Edition, January 1998, of the *California Salmonid Stream Habitat Restoration Manual*.
  9. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game.
  10. The Grantee will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.
  11. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, *Microsoft Word* compatible, copy on 3.5 inch floppy disk(s) or CD. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than December 31 and again each year until completed. The report shall include, but not necessarily be limited to the following information:
    - Grant number
    - Project name
    - Geographic area (e.g., watershed name)
    - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
    - Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
    - Project start and end dates and the number of person hours expended
    - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
    - Expected benefits to anadromous salmonids from the project
    - Labeled before and after photographs of any restoration activities and techniques
    - Specific project access using public and private roads and trails, with landowner name and address
    - Complete as built project description
    - Report measurable metrics for the project by responding to the restoration project metrics listed below.

**Habitat Protection and Restoration Projects– Reporting Metrics (HB)** (Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.

- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
  - Design spec achieved
  - Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Fish Passage Improvement Projects (HB):

- Number of blockages removed or made passable.
- Number of miles made accessible to salmonids.

Riparian Habitat Projects (HR):

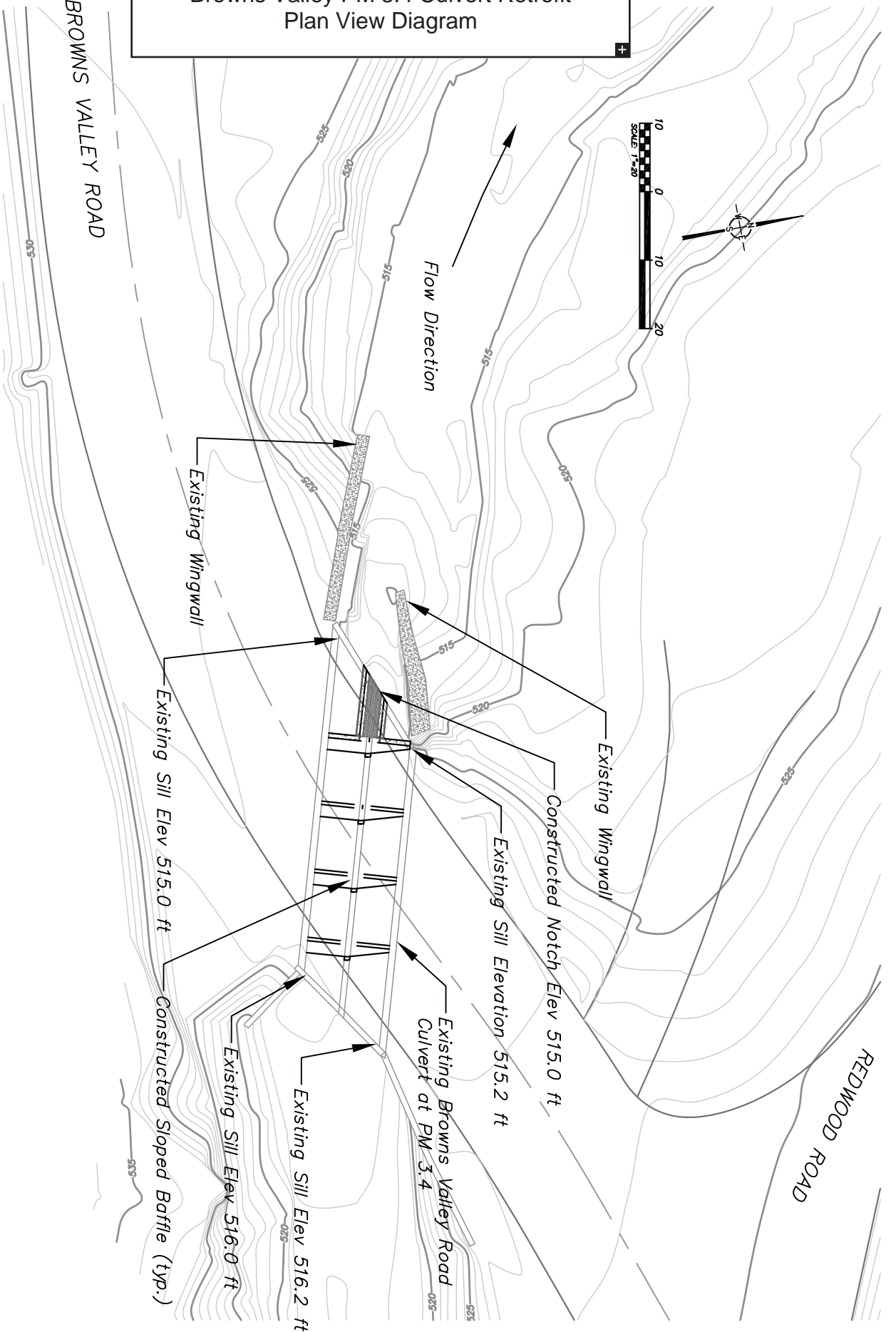
- Number of miles treated (e.g., fenced)
- Number of acres treated (e.g., planted)
- Number of acres and type of invasive species controlled
- Species and size of trees planted
- Number of trees/density of plantings
- Number of feet of stream bank stabilized and treatments used.

Water Quality Projects:

- Water quality limitations addressed by the project (e.g. 303(d), TMDL)

12. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the Browns Valley Road PM 3.4 Culvert Retrofit project.

Exhibit D  
Browns Valley PM 3.4 Culvert Retrofit  
Plan View Diagram



Low Flow Channel/Baffle Design

Browns Valley Road Culvert at PM 3.4

California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name

POSSIBLE SPECIES WITHIN THE LOMA PRIETA AND SURROUNDING QUADS FOR:  
BROWNS VALLEY ROAD PM 3.4 CULVERT RETROFIT  
T10S, R2E, SEC 32; SANTA CRUZ COUNTY

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Calasellus californicus</i>	ICMAL34010			G2G3	S2S3	
2 American badger <i>Taxidea taxus</i>	AMAJF04010			G5	S4	SC
3 Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	IILEPK4055	Threatened		G5T1	S1	
4 Ben Lomond spineflower <i>Chorizanthe pungens var. hartwegiana</i>	PDPGN040M1	Endangered		G2T1	S1.1	1B.1
5 Bonny Doon manzanita <i>Arctostaphylos silvicola</i>	PDERI041F0			G2	S2.1	1B.2
6 California linderiella <i>Linderiella occidentalis</i>	ICBRA06010			G3	S2S3	
7 California red-legged frog <i>Rana aurora draytonii</i>	AAABH01022	Threatened		G4T2T3	S2S3	SC
8 California tiger salamander <i>Ambystoma californiense</i>	AAAAA01180	Threatened		G2G3	S2S3	SC
9 Central Dune Scrub	CTT21320CA			G2	S2.2	
10 Choris' popcorn-flower <i>Plagiobothrys chorisianus var. chorisianus</i>	PDBOR0V061			G3T2Q	S2.2	1B.2
11 Coastal and Valley Freshwater Marsh	CTT52410CA			G3	S2.1	
12 Coho salmon - central California esu <i>Oncorhynchus kisutch</i>	AFCHA02034	Threatened	Endangered	G4	S2?	
13 Congdon's tarplant <i>Centromadia parryi ssp. congdonii</i>	PDAST4R0P1			G4T3	S3.2	1B.2
14 Coyote ceanothus <i>Ceanothus ferrisiae</i>	PDRHA040C0	Endangered		G1	S1.1	1B.1
15 Dudley's lousewort <i>Pedicularis dudleyi</i>	PDSCR1K0D0		Rare	G2	S2.2	1B.2
16 Hall's bush mallow <i>Malacothamnus hallii</i>	PDMAL0Q0F0			G1Q	S1.2	1B.2
17 Hom's micro-blind harvestman <i>Microcina homi</i>	ILARA47020			G1	S1	
18 Hooker's manzanita <i>Arctostaphylos hookeri ssp. hookeri</i>	PDERI040J1			G3T2?	S2?	1B.2
19 Kellogg's horkelia <i>Horkelia cuneata ssp. sericea</i>	PDROS0W043			G4T1	S1.1	1B.1
20 Kings Mountain manzanita <i>Arctostaphylos regismontana</i>	PDERI041C0			G2	S2.2	1B.2
21 Loma Prieta hoita <i>Hoita strobilina</i>	PDFAB5Z030			G2	S2.1	1B.1
22 Metcalf Canyon jewel-flower <i>Streptanthus albidus ssp. albidus</i>	PDBRA2G011	Endangered		G2T1	S1.1	1B.1
23 Monterey spineflower <i>Chorizanthe pungens var. pungens</i>	PDPGN040M2	Threatened		G2T2	S2.2	1B.2

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Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24 Mt. Hamilton thistle <i>Cirsium fontinale</i> var. <i>campylon</i>	PDAST2E0F0			G2T2	S2.2	1B.2
25 North Central Coast Drainage Sacramento Sucker/Roach River	CARA2623CA			G?	S?	
26 Northern Maritime Chaparral	CTT37C10CA			G1	S1.2	
27 Ohlone tiger beetle <i>Cicindela ohlone</i>	IICOL026L0	Endangered		G1	S1	
28 Opler's longhorn moth <i>Adela oplerella</i>	IILEE0G040			G2G3	S2S3	
29 Pajaro manzanita <i>Arctostaphylos pajaroensis</i>	PDERI04100			G2	S2.1	1B.1
30 San Francisco popcorn-flower <i>Plagiobothrys diffusus</i>	PDBOR0V080		Endangered	G1Q	S1.1	1B.1
31 San Joaquin kit fox <i>Vulpes macrotis mutica</i>	AMAJA03041	Endangered	Threatened	G4T2T3	S2S3	
32 Santa Clara Valley dudleya <i>Dudleya setchellii</i>	PDCRA040AC	Endangered		G1	S1.1	1B.1
33 Santa Cruz Mountains beardtongue <i>Penstemon rattanii</i> var. <i>kleei</i>	PDSCR1L5B1			G4T2	S2.2	1B.2
34 Santa Cruz clover <i>Trifolium buckwestiorum</i>	PDFAB402W0			G1	S1.1	1B.1
35 Santa Cruz kangaroo rat <i>Dipodomys venustus venustus</i>	AMAFD03042			G4T1	S1	
36 Santa Cruz long-toed salamander <i>Ambystoma macrodactylum croceum</i>	AAAAA01082	Endangered	Endangered	G5T1	S1	
37 Santa Cruz manzanita <i>Arctostaphylos andersonii</i>	PDERI04030			G2	S2?	1B.2
38 Santa Cruz tarplant <i>Holocarpha macradenia</i>	PDAST4X020	Threatened	Endangered	G1	S1.1	1B.1
39 Santa Cruz wallflower <i>Erysimum teretifolium</i>	PDBRA160N0	Endangered	Endangered	G2	S2.1	1B.1
40 Scotts Valley polygonum <i>Polygonum hickmanii</i>	PDPGN0L310	Endangered	Endangered	G1	S1.1	1B.1
41 Scotts Valley spineflower <i>Chorizanthe robusta</i> var. <i>hartwegii</i>	PDPGN040Q1	Endangered		G2T1	S1.1	1B.1
42 Serpentine Bunchgrass	CTT42130CA			G2	S2.2	
43 Sycamore Alluvial Woodland	CTT62100CA			G1	S1.1	
44 Tiburon Indian paintbrush <i>Castilleja affinis</i> ssp. <i>neglecta</i>	PDSCR0D260	Endangered	Threatened	G4G5T1	S1.2	1B.2
45 Yuma myotis <i>Myotis yumanensis</i>	AMACC01020			G5	S4?	
46 Zayante band-winged grasshopper <i>Trimerotropis infantilis</i>	IIORT36030	Endangered		G1	S1	

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47 arcuate bush mallow <i>Malacothamnus arcuatus</i>	PDMAL0Q0E0			G2Q	S2.2	1B.2
48 bent-flowered fiddleneck <i>Amsinckia lunaris</i>	PDBOR01070			G2	S2.2	1B.2
49 black legless lizard <i>Anniella pulchra nigra</i>	ARACC01011			G3G4T2T3 Q	S2	SC
50 black swift <i>Cypseloides niger</i>	ABNUA01010			G4	S2	SC
51 bristly sedge <i>Carex comosa</i>	PMCYP032Y0			G5	S2?	2.1
52 burrowing owl <i>Athene cunicularia</i>	ABNSB10010			G4	S2	SC
53 caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	PDBRA2R010			G1	S1.1	1B.1
54 coast wallflower <i>Erysimum ammophilum</i>	PDBRA16010			G2	S2.2	1B.2
55 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
56 fragrant fritillary <i>Fritillaria liliacea</i>	PMLILOV0C0			G2	S2.2	1B.2
57 golden eagle <i>Aquila chrysaetos</i>	ABNKC22010			G5	S3	SC
58 great blue heron <i>Ardea herodias</i>	ABNGA04010			G5	S4	
59 hairless popcorn-flower <i>Plagiobothrys glaber</i>	PDBOR0V0B0			GH	SH	1A
60 mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	IMGASJ7040			G2G3	S2S3	
61 monarch butterfly <i>Danaus plexippus</i>	IILEPP2010			G5	S3	
62 most beautiful jewel-flower <i>Streptanthus albidus ssp. peramoenus</i>	PDBRA2G012			G2T2	S2.2	1B.2
63 osprey <i>Pandion haliaetus</i>	ABNKC01010			G5	S3	SC
64 pallid bat <i>Antrozous pallidus</i>	AMACC10010			G5	S3	SC
65 robust monardella <i>Monardella villosa ssp. globosa</i>	PDLAM180P7			G5T2	S2.2	1B.2
66 robust spineflower <i>Chorizanthe robusta var. robusta</i>	PDPGN040Q2	Endangered		G2T1	S1.1	1B.1
67 sand gilia <i>Gilia tenuiflora ssp. arenaria</i>	PDPLM041P2	Endangered	Threatened	G3G4T2	S2.2	1B.2
68 smooth lessingia <i>Lessingia micradenia var. glabrata</i>	PDAST5S062			G2T1	S1.2	1B.2

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Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
69 southwestern pond turtle <i>Emys (=Clemmys) marmorata pallida</i>	ARAAD02032			G3G4T2T3 Q	S2	SC
70 steelhead - south/central California coast esu <i>Oncorhynchus mykiss irideus</i>	AFCHA0209H	Threatened		G5T2Q	S2	
71 steelhead-central California coast esu <i>Oncorhynchus mykiss irideus</i>	AFCHA0209G	Threatened		G5T2Q	S2	
72 tidewater goby <i>Eucyclogobius newberryi</i>	AFCQN04010	Endangered		G3	S2S3	SC
73 tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020			G2G3	S2	SC
74 western pond turtle <i>Emys (=Clemmys) marmorata</i>	ARAAD02030			G3G4	S3	SC
75 western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened		G4T3	S2	SC

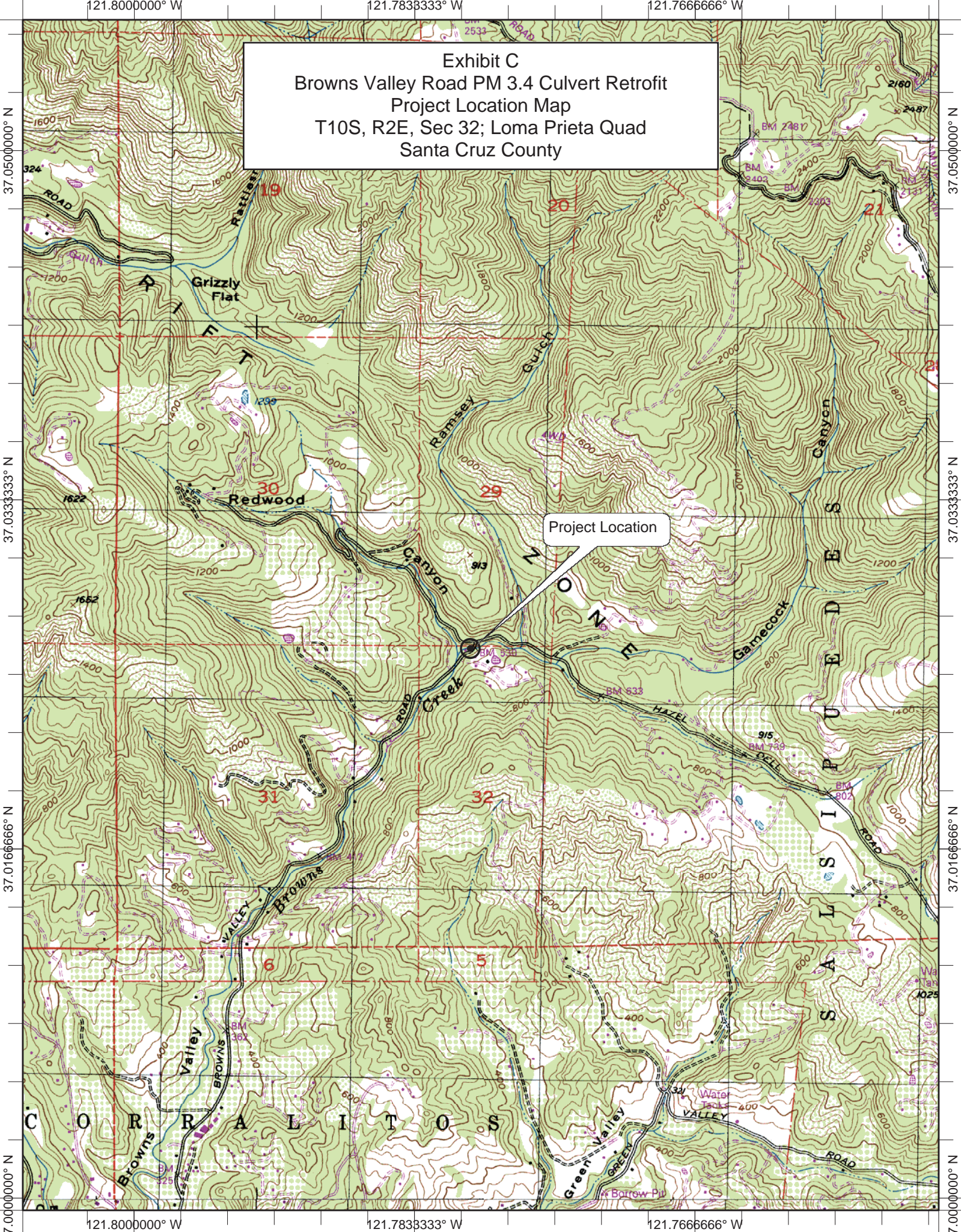


121.800000° W

121.783333° W

121.766666° W

Exhibit C  
 Browns Valley Road PM 3.4 Culvert Retrofit  
 Project Location Map  
 T10S, R2E, Sec 32; Loma Prieta Quad  
 Santa Cruz County



37.050000° N

37.050000° N

37.033333° N

37.033333° N

37.016666° N

37.016666° N

37.000000° N

37.000000° N

121.800000° W

121.783333° W

121.766666° W