PLANNING COMMISSION
COUNTY OF MONTEREY, STATE OF CALIFORNIA

RESOLUTION NO. 06063

A. P. # 243-301-013-000, 243-321-011-000, 243-321-009-000, 243-321-007-000, 243-321-008-000, 418-071-042-000, 418-071-067-000, 418-071-035-000, 418-071-026-000, 417-021-043-000, 417-021-035-000, 243-311-011-000, 417-021-030-000, 418-041-005-000, 418-071-085-000, 418-051-012-000, 418-051-006-000, 243-321-012-000.

FINDINGS AND DECISION

In the matter of the application of
Garappata Creek Watershed (PLN050445)

WHEREAS: The Planning Commission, pursuant to regulations established by local ordinance and state law, has considered, at public hearing, a Combined Development Permit to allow salmonid habitat restoration and site specific roadway treatments along 12.5 miles of the Garrapata Creek Watershed to aid erosion control and alleviate exacerbated sedimentation. The project includes the maintenance and enhancement of 25 stream crossings, decommissioning of six stream crossings, excavation of 24 unstable road fill sites, outsloping of 3,300 feet of roadway, the installation of 96 rolling dips, as well as the excavation and on-site relocation of approximately 7,545 cubic yards of fill material; the project further includes a Coastal Development permit to allow development within 100 feet of environmentally sensitive habitat, and a Coastal Development permit to allow development on slopes greater than 30%. The project is located at Garrapata Creek Watershed, Big Sur Area, Coastal Zone, and came on regularly for hearing before the Planning Commission on December 20, 2006.

WHEREAS: Said Planning Commission, having considered the application and the evidence presented relating thereto,

FINDINGS OF FACT

1. **FINDING:** **CONSISTENCY** – The project, as described in Condition No. 1 and as conditioned, conforms to the policies, requirements, and standards of the Monterey County General Plan, the Big Sur Coast Land Use Plan, the Monterey County Coastal Implementation Plan (Part 3), and the Monterey County Zoning Ordinance (Title 20), which designates this area as appropriate for development.

EVIDENCE: (a) The text, policies, and regulations in the above referenced documents have been evaluated during the course of review of applications. 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 properties are located within the Garrapata Creek Watershed (Assessor's Parcel Numbers 243-301-013-000, 243-321-011-000, 243-321-009-000, 243-321-007-000, 243-321-008-000, 418-071-042-000, 418-071-067-000, 418-071-035-000, 418-071-026-000,

417-021-043-000, 417-021-035-000, 243-311-011-000, 417-021-030-000, 418-041-005-000, 418-071-085-000, 418-051-012-000, 418-051-006-000, 243-321-012-000), Big Sur Land Use Plan. The parcels are zoned Watershed and Scenic Conservation district, forty acres per unit, Design control overlay and Rural Density Residential, forty acres per unit, Design control overlay ("WSC/40-D" and "RDR/40-D"). The subject properties comply with all the rules and regulations pertaining to zoning uses and any other applicable provisions of Title 20, and are therefore suitable for the proposed development.

(c) The project planner conducted a site inspection on September 25, 2006 to verify that the project on the subject parcel conforms to the plans listed above.

(d) The project includes the restoration and enhancement of the Garrapata Creek Watershed, portions of which are on slopes greater than 30%. Development on these portions is necessary to the implementation of the project. Therefore, there is no feasible alternative which would allow development on slopes of less than 30%.

(e) Development will occur within 100-feet of environmentally sensitive habitat areas including riparian corridors, wetlands, redwood forest, and stands of Seacliff buckwheat. As concluded by the site specific biological assessment (LIB060494) the project, as conditioned and mitigated, will not negatively impact the long-term maintenance of these habitat areas.

(f) Development is not proposed within the Critical Viewshed.

(g) The proposed watershed restoration techniques were designed by the California Department of Fish and Game in order to protect and enhance the terrestrial and aquatic environment.

(h) The project was referred to the Big Sur Land Use Advisory Committee (LUAC) for review. On October 24, 2006, the LUAC recommended approval of the project (7-0) with the following comments: support intention to do work in a manner to minimize spread of exotics, and applaud the collaborative private/public effort exemplified by the ongoing watershed project.

(i) 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 PLN050445.

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, California Department of Forestry Coastal District, California Coastal Commission, Public Works, Environmental Health Division, 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) Technical reports by outside biological and archaeological consultants indicated that there are not physical or environmental constraints that would indicate that the site is not suitable for the use proposed. County staff concurs. The following site specific reports have been prepared:

1) "Biological Assessment of Proposed Road Treatment Areas Garrapata Creek Watershed," (LIB060494) prepared by Nicole Nedeff, Carmel Valley, CA, December 2005.

2) "Garrapata Creek Watershed Restoration Project Sensitive Plant Survey Report," (LIB060637) prepared by Sunny Bennett, Humboldt, CA, January 2005.

3) "A Cultural Resources Investigation of the Garrapata Creek Watershed Restoration Implementation Project, located in Monterey County, California," (LIB060636) prepared by Amanda Cannon and James Roscoe, Arcata, CA, January 2005.

(c) "Preliminary Archaeological Reconnaissance of Assessor's Parcel Numbers 243-321-007-000, 243-321-008-000, 243-321-009-000, 243-321-011-000," (LIB060635) prepared by Mary Doane and Trudy Haversat, Salinas, CA, October 1998.
(d) Staff conducted a site inspection on September 25, 2006 to verify that the site is suitable for this use.
(e) Materials in Project File PLN050445.

3. **FINDING:** **CEQA (Mitigated Negative Declaration)**- The project is subject to environmental review pursuant to the requirements of the California Environmental Quality Act (CEQA). The California Department of Fish and Game is considered the Lead Agency completing and distributing a Mitigated Negative Declaration for The 2004 Fisheries Restoration Grant Program. As the Lead Agency, the Department of Fish and Game determined that impacts associated with specific projects proposed under the grant program can be mitigated to a less than significant level. As per CEQA Article 4, Section 15050, the Planning Commission, as the decision-making body of a Responsible Agency, hereby certifies that it reviewed and considered the information contained in the Lead Agency's Mitigated Negative Declaration prior to acting upon or approving the project.

EVIDENCE: (a) The following documents are on file in the RMA-Planning Department office located at 168 West Alisal, Salinas, CA, and are hereby incorporated by reference (PLN050445, Garrapata Creek Watershed):
- Notice of Determination and Mitigated Negative Declaration, "The 2004 Fisheries Restoration Grant Program," Bob Coey and Gary Flosi Department of Fish and Game, July 7, 2004.
- California Salmonid Stream Habitat Restoration Manual, California Department of Fish and Game, 2002.

(b) All projects will adhere to guidelines contained in the Department of Fish and Game California Salmonid Stream Habitat Restoration Manual.
(c) The grant program was required to receive a Regional General Permit from the Army Corps of Engineers prior to implementation. This permit contains further conditions including restoration, enhancement and avoidance to ensure the protection of the environment.
(d) The Department of Fish and Game issued the applicant a Lake and Streambed Alteration Agreement (1602) which includes measures designed to avoid potential impacts to Seacliff buckwheat and steelhead trout.
(e) Biological Assessment (LIB060494) prepared for the project concluded that implementation of the project in conjunction with the proposed conditions and mitigation measures will reduce potential impacts to biological resources to a less than significant level.
(f) Cultural Resources Investigation (LIB060636) prepared for the project concluded that impacts to potential cultural or historic resources can be avoided.
(g) There are no changes in the project or unusual circumstances that exist which would necessitate additional environmental review by the County of Monterey.
(h) No adverse environmental effects were identified during staff review of the development application or during a site visit on September 25, 2006.
(i) There is no evidence in the record as a whole that the proposed project as conditioned and mitigated will cause a significant environmental impact.
(j) See preceding and following findings and supporting evidence.

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. Zoning violation abatement costs, if any, have been paid.

EVIDENCE: Staff reviewed Monterey County RMA - Planning Department and Building Services Department records and is not aware of any violations existing on subject property.

5. **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: Preceding findings and supporting evidence.

6. **FINDING:** **PUBLIC ACCESS**- The project is in conformance with the public access and public recreation policies of the Coastal Act and the Local Coastal Program, and does not interfere with any form of historic public use or trust rights. No access is required as part of the project and no substantial adverse impacts on access, either individually or cumulatively, as described in Section 20.70.050.B.4.c of the Monterey County Coastal Implementation Plan, can be demonstrated

EVIDENCE: (a) The project includes the implementation of salmonid habitat restoration techniques and erosion control measures on public and private roads within the Garrapata Creek Watershed located on the easterly side of Highway 1.

(b) No evidence or documentation has been submitted or found showing the existence of historic public use or trust rights over this property.

(c) Staff site visit on September 25, 2006.

7. **FINDING:** **ENVIRONMENTALLY SENSITIVE HABITAT**- The project as designed, mitigated and conditioned is consistent with policies of the Big Sur Land Use Plan concerning ESHA (Chapter 3).

EVIDENCE: (a) The project includes the restoration and enhancement of the Garrapata Creek Watershed, an area containing significant amounts of environmentally sensitive habitat including riparian corridors, wetlands, redwood forest, and Seacliff buckwheat.

(b) Implementation of the project will ensure the long-term maintenance of the habitat by decreasing the amount of sedimentation and erosion that enters the watershed.

(c) All habitat improvements will be carried out in accordance with techniques described in the Department of Fish and Game's California Salmonid Stream Habitat Restoration Manual.

(d) As the Lead Agency, the Department of Fish and Game has determined potential impacts to environmentally sensitive habitat can be mitigated to a less than significant level.

(e) Army Corps of Engineer General Permit No. 12 and the Department of Fish and Game 1602 Permit include measures to protect, enhance and restore environmentally sensitive habitat areas within the project site.

(f) Staff site visit on September 25, 2006.

8. **FINDING:** **APPEALABILITY** - The decision on this project is appealable to the Board of Supervisors and the California Coastal Commission.

EVIDENCE: Section 20.86.030 and Section 20.86.080 Monterey County Zoning Ordinance (Title 20).

DECISION

THEREFORE, it is the decision of the Planning Commission of the County of Monterey that the Mitigated Negative Declaration and Program for Monitoring and/or Reporting on Conditions of Approval be adopted and said application for a Combined Development Permit be granted as shown on the attached sketch and subject to the attached conditions.

PASSED AND ADOPTED this 20th day of December, 2006, by the following vote:

AYES: Brown, Isakson, Vandevere, Padilla, Sanchez, Rochester, Ottone
NOES: None
ABSENT: Errea, Salazar
RECUSED: Diehl

MIKE NOVO, SECRETARY

A COPY OF THIS DECISION WAS MAILED TO THE APPLICANT ON JAN 1 0 2007

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 OF THE BOARD OF SUPERVISORS ALONG WITH THE APPROPRIATE FILING FEE ON OR BEFORE JAN 2 0 2007

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 will 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 and Building Inspection Department office in Salinas.

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

RMA-PLANNING DEPARTMENT Condition Compliance and/or Mitigation Monitoring Reporting Plan	**Project Name:** Garrapata Creek Watershed **File No:** PLN050445 **APNs:** 243-301-013-000, 243-321-011-000, 243-321-009-000, 243-321-007-000, 243-321-008-000, 418-071-042-000, 418-071-067-000, 418-071-035-000, 418-071-026-000, 417-021-043-000, 417-021-035-000, 243-311-011-000, 417-021-030-000, 418-041-005-000, 418-071-085-000, 418-051-012-000, 418-051-006-000, 243-321-012-000 **Approved by:** Planning Commission **Date:** December 13, 2006

**Monitoring or Reporting refers to projects with an EIR or adopted Mitigated Negative Declaration per Section 21081.6 of the Public Resources Code.*

Permit Cond. Number	*Mitig. Number*	*Conditions of Approval and/or Mitigation Measures and Responsible Land Use Department*	*Compliance or Monitoring Actions to be performed. Where applicable, a certified professional is required for action to be accepted.*	*Responsible Party for Compliance*	*Timing*	*Verification of Compliance (name/date).*
1		**PBD029 - SPECIFIC USES ONLY** This Combined Development permit (PLN050445) allows salmonid habitat restoration and site specific roadway treatments along 12.5 miles of the Garrapata Creek Watershed to aid erosion control and alleviate exacerbated sedimentation. There are 90 identified sites scheduled for treatment; 25 stream crossings, 24 potential road related landslides and fill failures, and 41 other sites including ditch relief culverts and gullies. The project includes the maintenance and enhancement of 25 stream crossings, decommissioning of six stream crossings, excavation of 24 unstable road fill sites, replacement of 12 stream crossing culverts, outsloping of 3,300 feet of roadway, the installation of 96 rolling dips, as well as the excavation and on-site relocation of approximately 7,545 cubic yards of fill material; the project further includes a Coastal Development permit to allow development within 100 feet of environmentally sensitive habitat, and a Coastal Development permit to allow development on slopes greater than 30%. The properties are located within the Garrapata Creek Watershed (Assessor's Parcel Numbers : 243-301-013-000, 243-321-011-000, 243-321-009-000, 243-321-007-000, 243-321-008-000, 418-071-042-000,	Adhere to conditions and uses specified in the permit.	Owner/ Applicant	Ongoing unless otherwise stated	

		418-071-067-000, 418-071-035-000, 418-071-026-000, 417-021-043-000, 417-021-035-000, 243-311-011-000, 417-021-030-000, 418-041-005-000, 418-071-085-000, 418-051-012-000, 418-051-006-000, 243-321-012-000), Big Sur Land Use Plan. This permit was approved in accordance with County ordinances and land use regulations subject to the following terms and conditions. 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 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. **[Resource Management Agency (RMA) - Planning Department]**				
2		**PBD025 - NOTICE-PERMIT APPROVAL** The applicant shall record a notice which states: "A permit **(Resolution No. 06063)** was approved by the Planning Commission for Assessor's Parcel Numbers : 243-301-013-000, 243-321-011-000, 243-321-009-000, 243-321-007-000, 243-321-008-000, 418-071-042-000, 418-071-067-000, 418-071-035-000, 418-071-026-000, 417-021-043-000, 417-021-035-000, 243-311-011-000, 417-021-030-000, 418-041-005-000, 418-071-085-000, 418-051-012-000, 418-051-006-000, 243-321-012-000, on December 13, 2006. The permit was granted subject to **11** 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 RMA - Planning Department prior to issuance of building permits or commencement of the use. **(RMA - Planning Department)**	Proof of recordation of this notice shall be furnished to RMA – Planning Department.	Owner/ Applicant	Prior to issuance of grading and building permits or start of use.	

3		**PBD014 - GRADING-WINTER RESTRICTION** No land clearing or grading shall occur on the subject parcel between October 15 and April 15 unless authorized by the Director of the RMA-Planning Department. **(RMA-Planning Department)**	None	Owner/ Applicant	Ongoing	
4		**PBDSP-001 TAKE PERMIT** As identified in the project specific Biological Assessment (LIB060494), a take may occur as a result of the project. Therefore, the applicant shall apply for and secure a take permit from the appropriate agency prior to commencement of the project. **(RMA-Planning Department)**	Submit copy of the take permit to the Director of the RMA-Planning Department for review.	Owner/ Applicant	Prior to issuance of grading permit.	
5		**PBDSP-002 IMPLEMENTATION OF PROPOSED MITIGATION MEASURES** As the Lead Agency the Department of Fish and Game adopted and certified a Mitigated Negative Declaration for the 2004 Fisheries Restoration Grant Program. The proposed project is included among this program and therefore shall adhere to the Mitigation Measures and Monitoring and Reporting Program as outlined in Appendix B of the Mitigated Negative Declaration. **(RMA-Planning Department)**	Submit all monitoring reports to the Director of the RMA-Planning Department for review.	Owner/ Applicant	Ongoing	
6		**PBDSP-003 ADHERENCE TO PERMIT CONDITIONS** The 2004 Fisheries Grant Program received a Regional General Permit No. 12 from the Army Corps of Engineers. This permit included 13 general conditions. Because the proposed project is included among the grant program, the project shall adhere to the general conditions as described within the Regional General Permit. **(RMA-Planning Department)**	Submit evidence of condition compliance to the Director of the RMA-Planning Department for review.	Owner/ Applicant	Ongoing	
7		**PBDSP-004 1602 LAKE AND STREAMBED ALTERATION AGREEMENT** The project was granted a 1602 Lake and Streambed Alteration Agreement from the Department of Fish and Game on August 10, 2005. The agreement includes mitigation measures designed to avoid significant impacts to sensitive species. The project shall adhere to all	Submit all monitoring reports to the Director of the RMA-Planning Department for review.	Owner/ Applicant	Ongoing	

		measures as identified within the 1602 permit. **(RMA-Planning Department)**				
8		**FIRE008 - GATES** All gates providing access from a road to a driveway shall be located at least 30 feet from the roadway and shall open to allow a vehicle to stop without obstructing traffic on the road. Gate entrances shall be at least the width of the traffic lane but in no case less than 12 feet wide. Where a one-way road with a single traffic lane provides access to a gated entrance, a 40-foot turning radius shall be used. Where gates are to be locked, the installation of a key box or other acceptable means for immediate access by emergency equipment may be required. **(California Department of Forestry)**	Applicant shall incorporate specification into design and enumerate as "Fire Dept. Notes" on plans. Applicant shall schedule fire department clearance inspection.	Owner/ Applicant Owner/ Applicant	Prior to issuance of grading and/or building permit. Prior to final inspection	
9		**FIRE011 - ADDRESSES FOR BUILDINGS** All buildings shall be issued an address in accordance with Monterey County Ordinance No. 1241. Each occupancy, except accessory buildings, shall have its own permanently posted address. When multiple occupancies exist within a single building, each individual occupancy shall be separately identified by its own address. Letters, numbers and symbols for addresses shall be a minimum of 4-inch height, 1/2-inch stroke, contrasting with the background color of the sign, and shall be Arabic. The sign and numbers shall be reflective and made of a noncombustible material. Address signs shall be placed at each driveway entrance and at each driveway split. Address signs shall be and visible from both directions of travel along the road. In all cases, the address shall be posted at the beginning of construction and shall be maintained thereafter. Address signs along one-way roads shall be visible from both directions of travel. Where multiple addresses are required at a single driveway, they shall be mounted on a single sign. Where a roadway provides access solely to a single commercial occupancy, the address sign shall be	Applicant shall incorporate specification into design and enumerate as "Fire Dept. Notes" on plans. Applicant shall schedule fire dept. clearance inspection	Owner/ Applicant Owner/ Applicant	Prior to issuance of grading permit. Prior to final inspection	

		placed at the nearest road intersection providing access to that site. Permanent address numbers shall be posted prior to requesting final clearance. **(California Department of Forestry)**				
10		**ROAD DRAINAGE AND IMPROVEMENT PLAN** Prior to issuance of any grading or building permits, a road drainage and improvement plan shall be prepared by a registered civil engineer. **(Water Resources Agency)**	Submit 3 copies of the drainage plan to the Water Resources Agency for review and approval.	Owner/ Applicant	Prior to issuance of Demolition Grading and/or Building Permits.	
11		**ENCROACHMENT PERMIT (NON STANDARD)** Prior to any work within the Garrapatos Road right-of-way, the applicant shall submit plans to and obtain an encroachment permit from the Department of Public Works. **(Public Works Department)**	Submit plans and application for encroachment permit to the Public works department for approval.	Owner/ Applicant	Prior to any work within the Garrapatos right-of-way.	

END OF CONDITIONS

Index Map, Garrapata Implementation Phase I Area

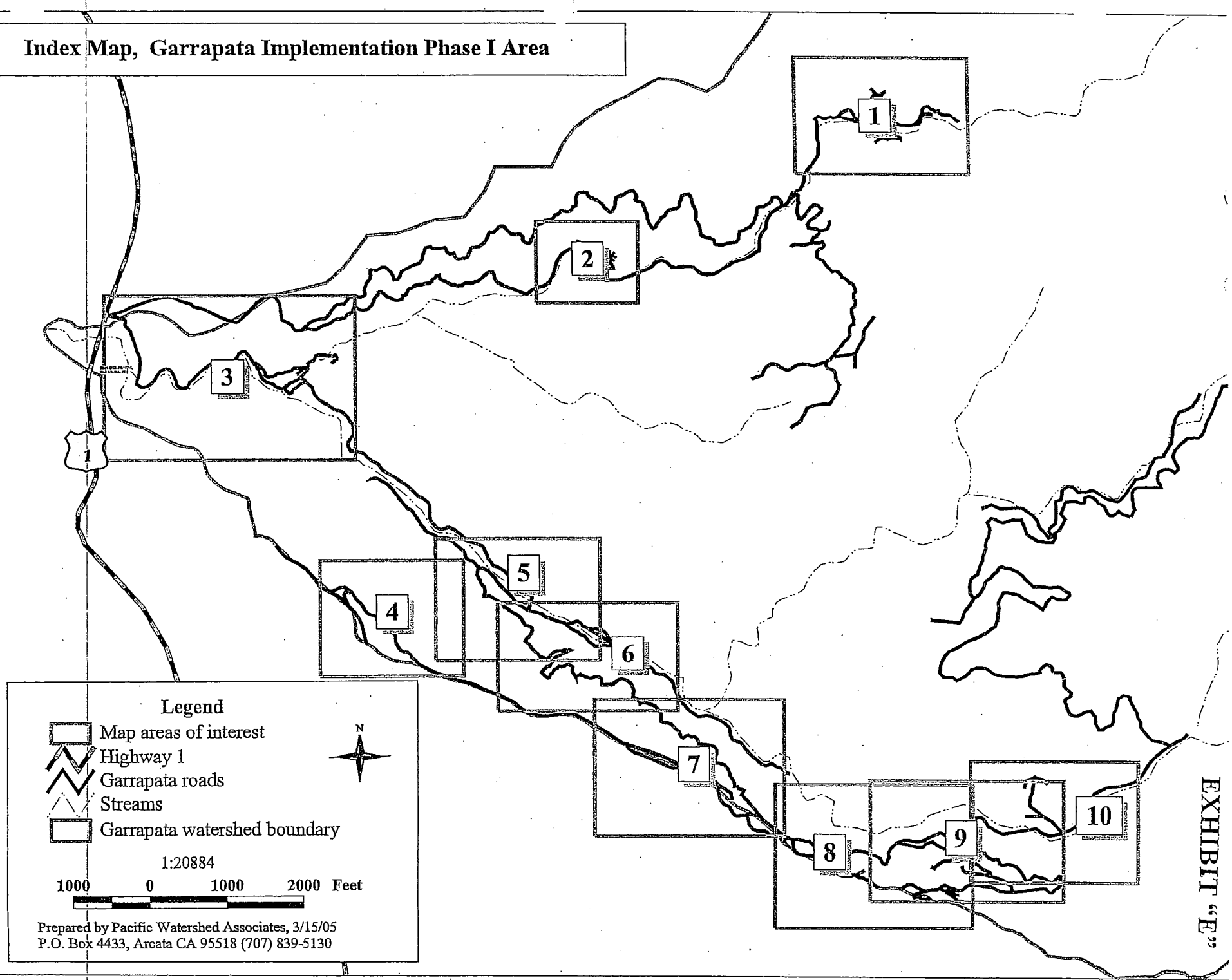
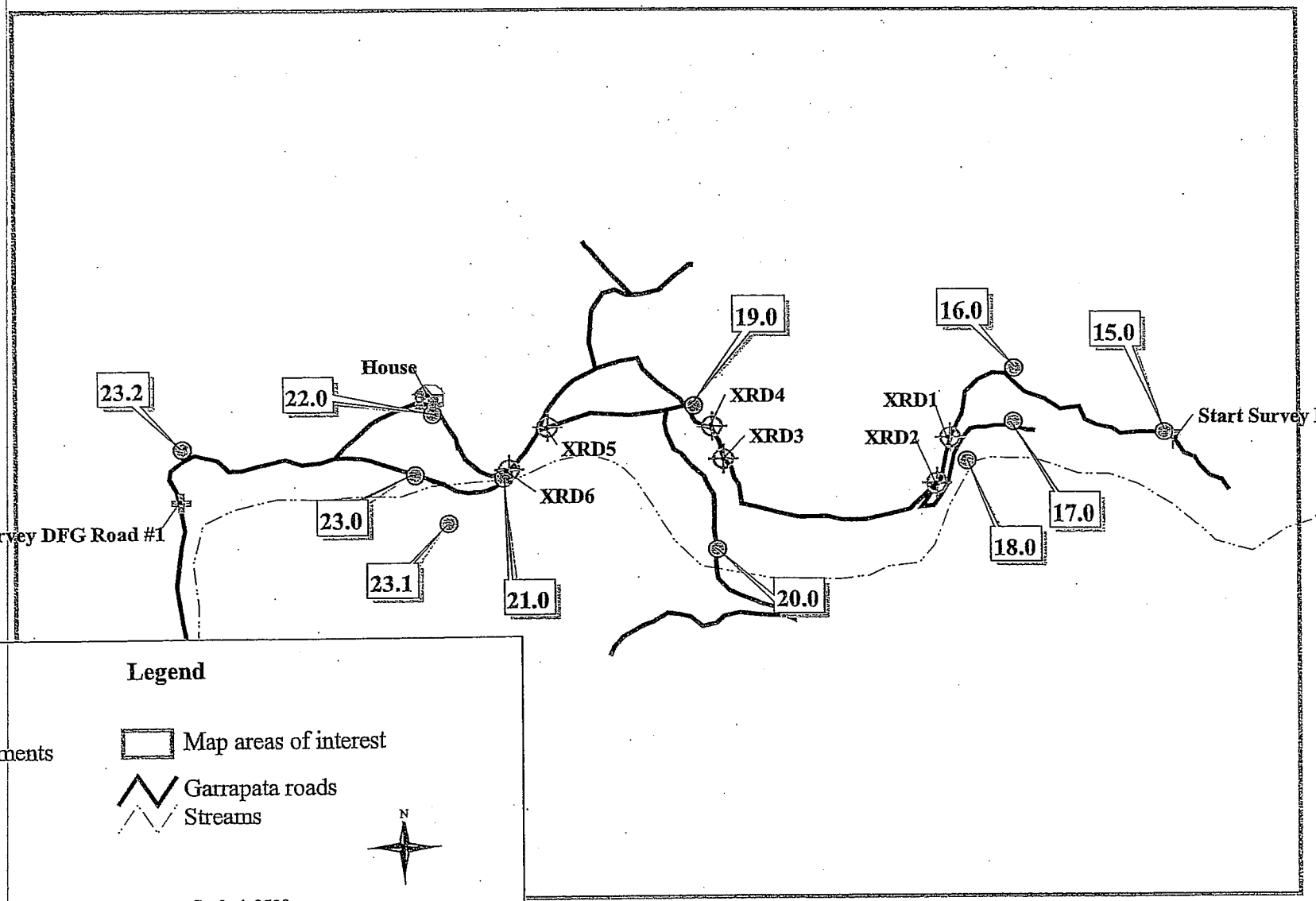


EXHIBIT "E"

Map 1: Garrapata Implementation Phase I,
DGF Property Road Layout



Legend

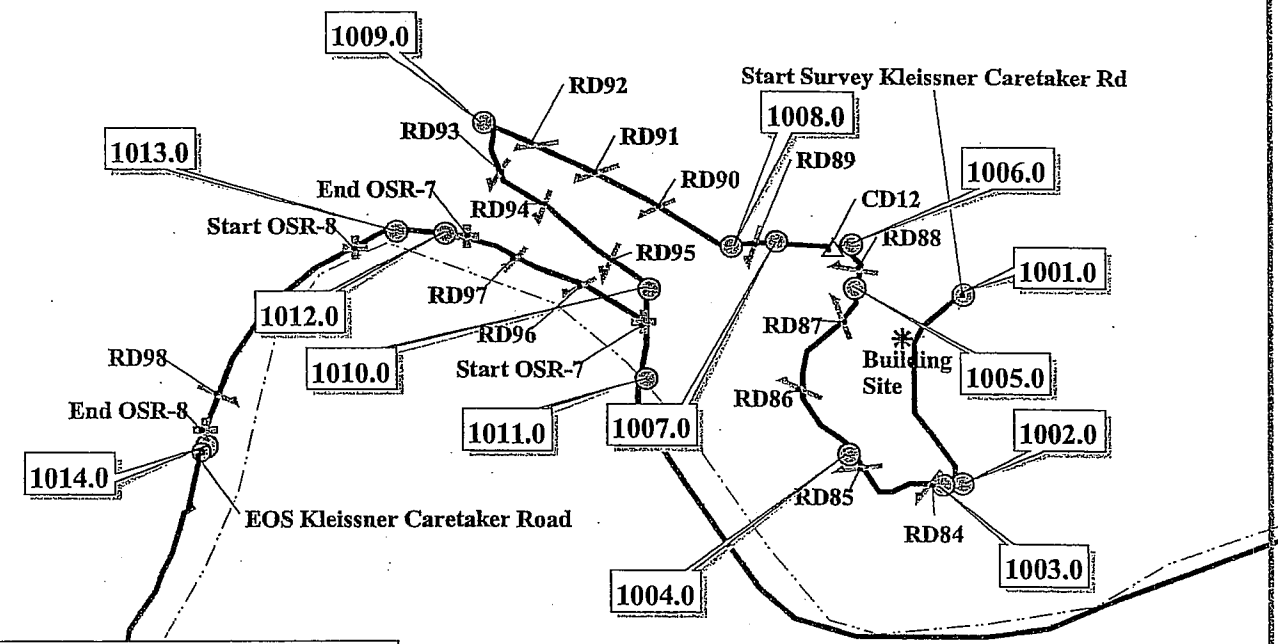
- Sites
- Road Treatments
  - CD
  - DRC
  - Ditch
  - EOS
  - Gate
  - SE
  - SS
  - XRD
  - RD
- Map areas of interest
- Garrapata roads
- Streams

Scale 1:3500

100 0 100 200 300 400 Feet

Prepared by Pacific Watershed Associates, 3/15/05
P.O. Box 4433, Arcata CA 95518 (707) 839-5130

Map 2: Garrapata Implementation Phase I, Kleissner-Caretaker Area Road Layout



Legend

- Sites

Road Treatments
- CD
- DRC
- Ditch
- EOS
- Gate
- SE
- SS
- XRD
- RD

- Map areas of interest
- Garrapata roads
- Streams

N

Scale 1:2500

100 0 100 200 Feet

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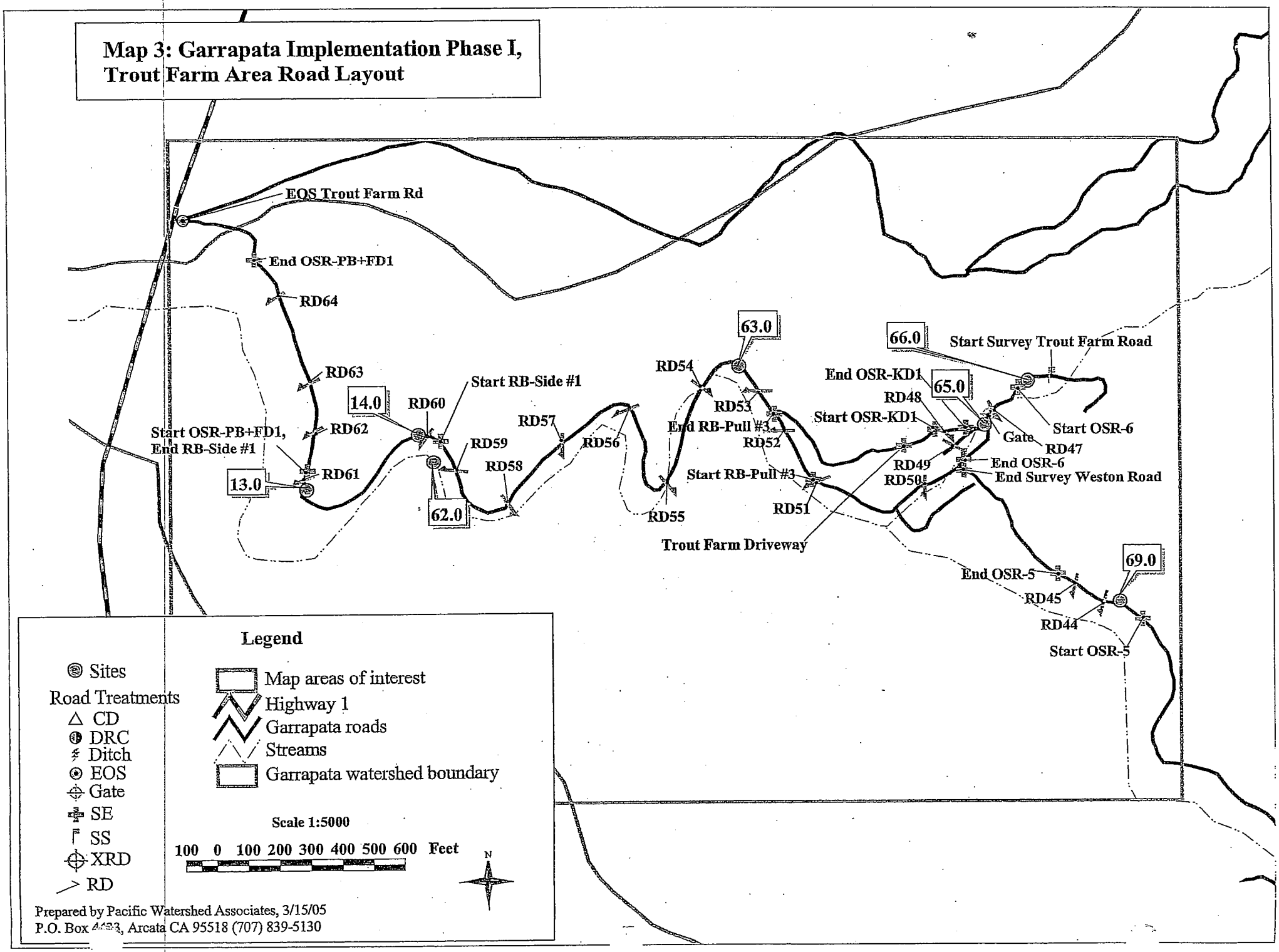
Map 3: Garrapata Implementation Phase I, Trout Farm Area Road Layout



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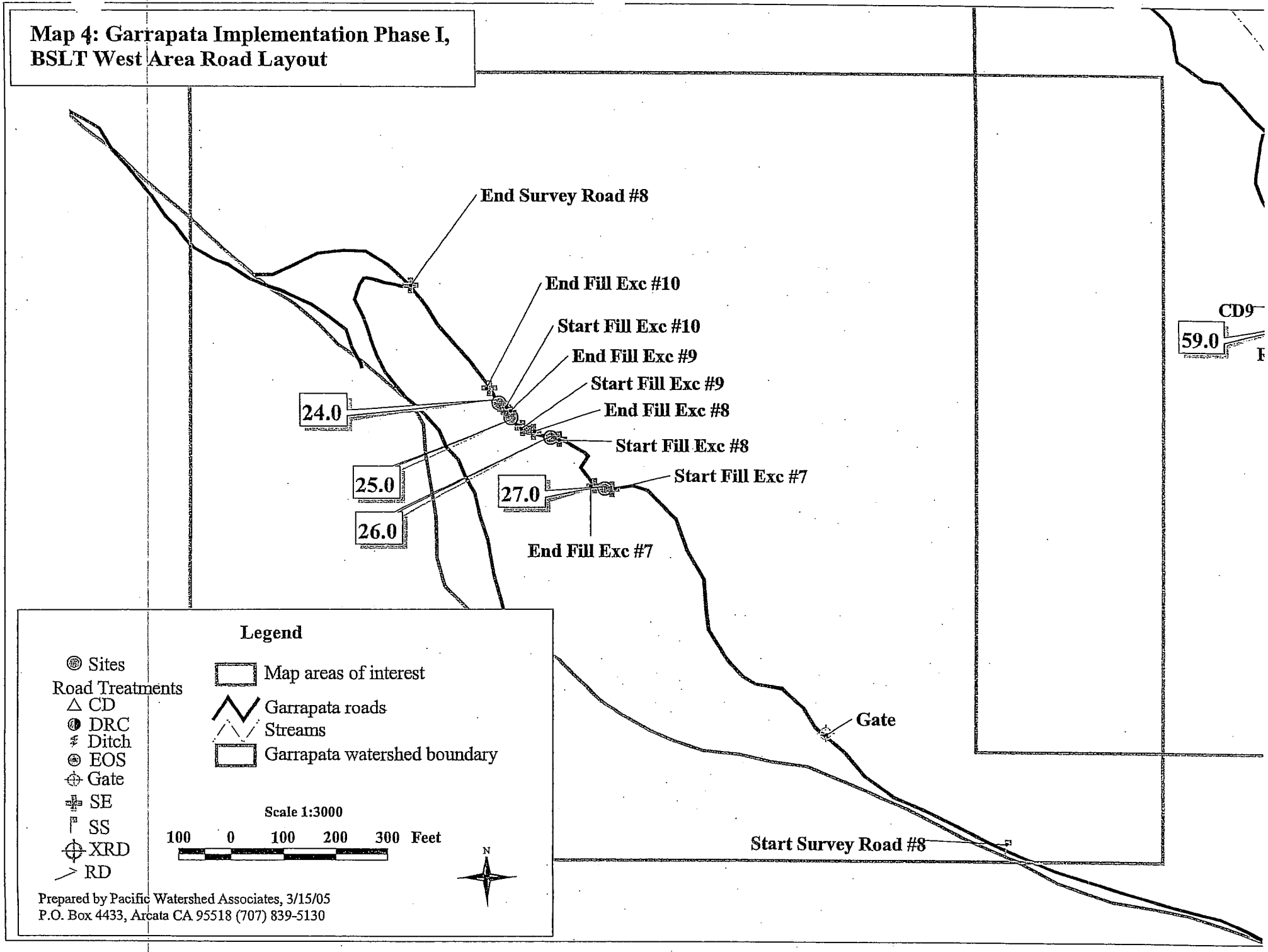
Map 4: Garrapata Implementation Phase I, BSLT West Area Road Layout



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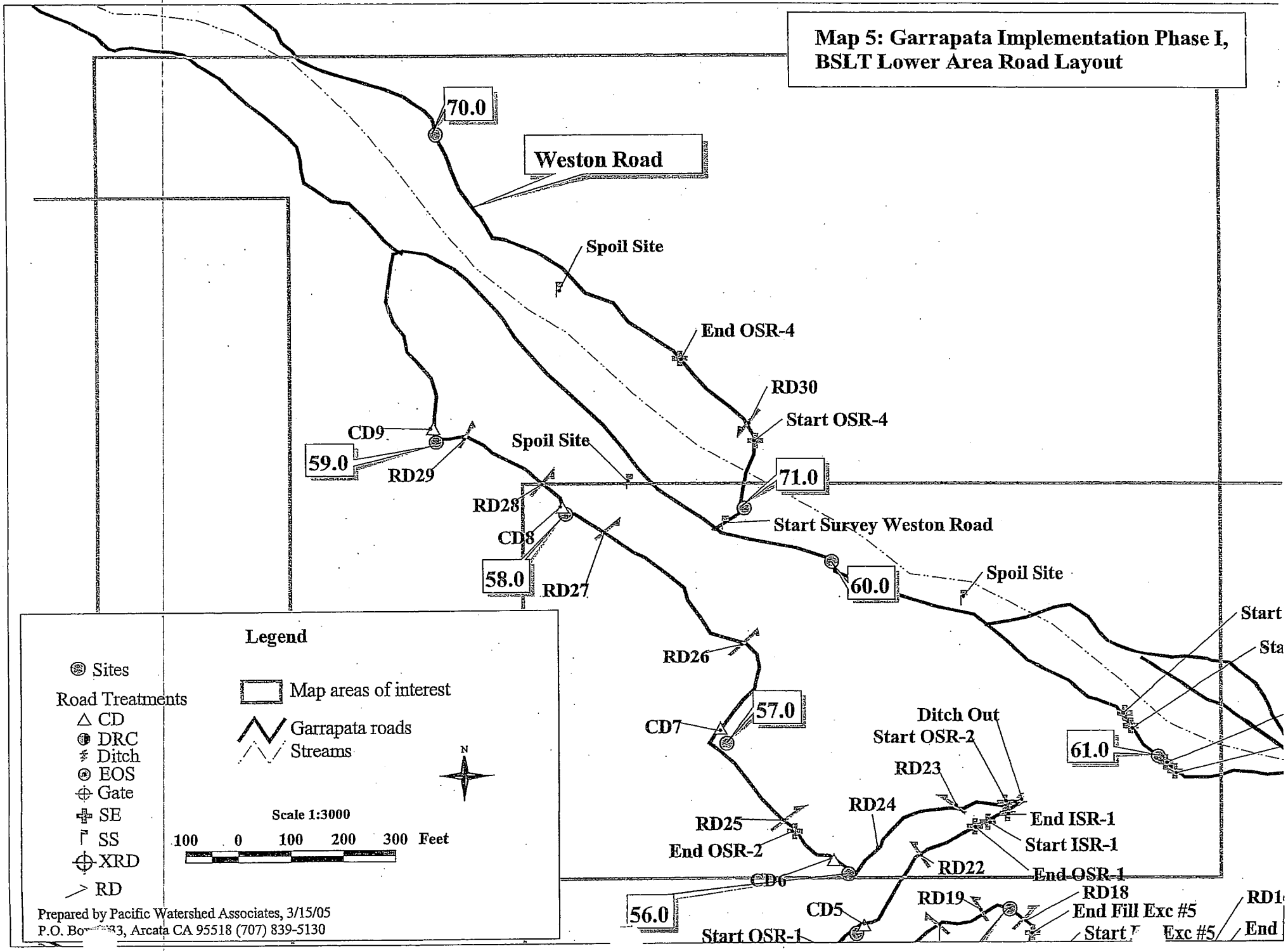
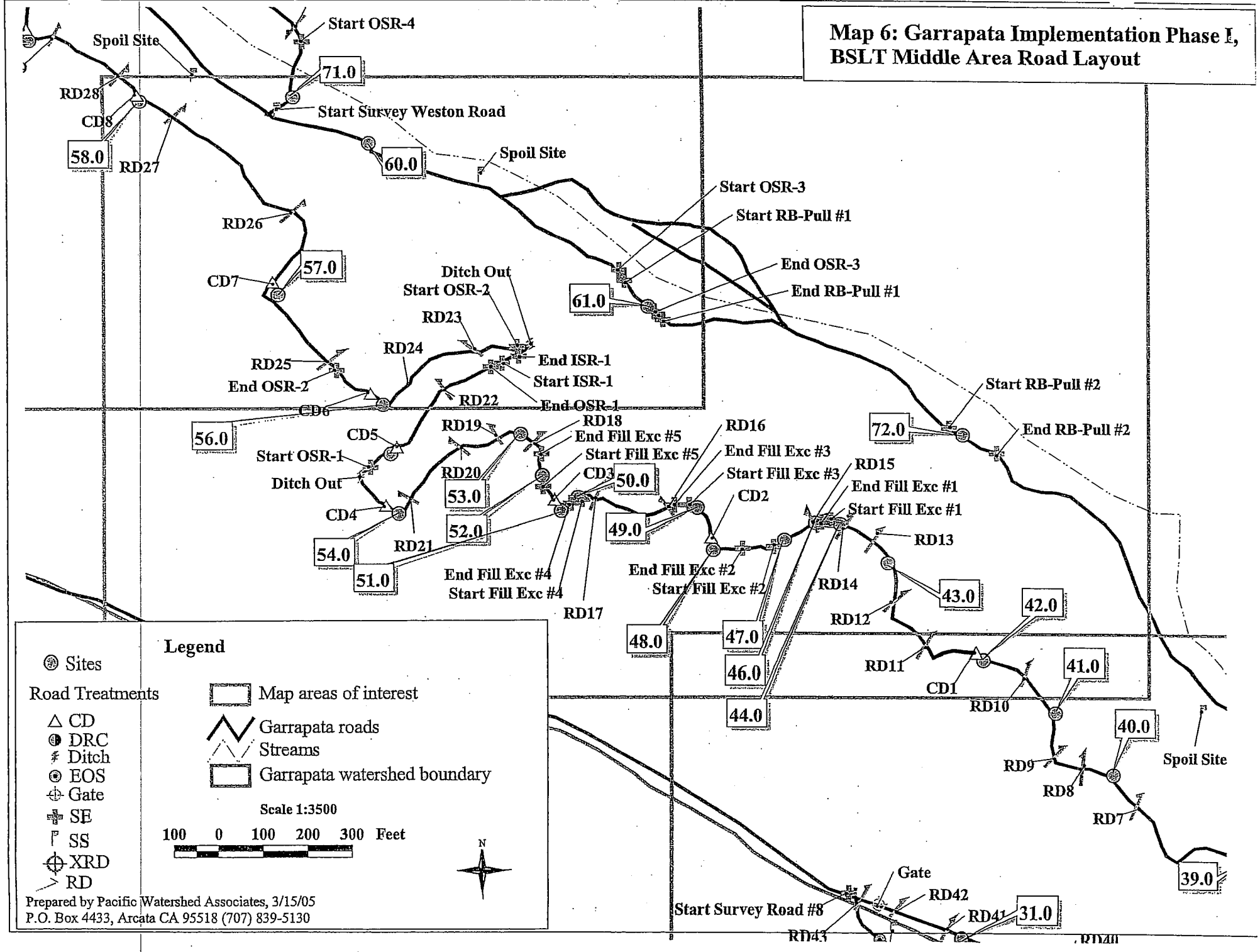

Map 5: Garrapata Implementation Phase I, BSLT Lower Area Road Layout
70.0
Weston Road
Spoil Site
End OSR-4
RD30
Start OSR-4
CD9
59.0
RD29
Spoil Site
71.0
RD28
CD8
58.0
RD27
Start Survey Weston Road
60.0
Spoil Site
Start
Sta
RD26
57.0
CD7
Ditch Out
Start OSR-2
61.0
RD23
RD24
End ISR-1
RD25
End OSR-2
Start ISR-1
RD22
End OSR-1
CD6
56.0
RD19
RD18
CD5
End Fill Exc #5
Start OSR-1
Start
Exc #5
End
RD1
Legend
Sites
Road Treatments
CD
DRC
Ditch
EOS
Gate
SE
SS
XRD
RD
Map areas of interest
Garrapata roads
Streams
N
Scale 1:3000
100 0 100 200 300 Feet
Prepared by Pacific Watershed Associates, 3/15/05
P.O. Box 3, Arcata CA 95518 (707) 839-5130


Map 6: Garrapata Implementation Phase I, BSLT Middle Area Road Layout
Spoil Site
Start OSR-4
71.0
RD28
CD8
58.0
RD27
Start Survey Weston Road
60.0
Spoil Site
Start OSR-3
Start RB-Pull #1
End OSR-3
End RB-Pull #1
61.0
RD26
57.0
CD7
Ditch Out
Start OSR-2
RD23
RD24
End ISR-1
Start ISR-1
End OSR-1
RD25
End OSR-2
CD6
RD22
56.0
CD5
RD19
RD18
End Fill Exc #5
Start Fill Exc #5
RD16
End Fill Exc #3
Start Fill Exc #3
RD15
End Fill Exc #1
Start Fill Exc #1
RD13
RD14
43.0
42.0
RD12
RD11
CD1
41.0
RD10
40.0
RD9
RD8
RD7
39.0
Spoil Site
72.0
Start RB-Pull #2
End RB-Pull #2
Start OSR-1
Ditch Out
CD4
RD21
54.0
51.0
RD20
53.0
52.0
CD3
50.0
49.0
CD2
RD17
End Fill Exc #4
Start Fill Exc #4
End Fill Exc #2
Start Fill Exc #2
48.0
47.0
46.0
44.0
Gate
RD42
RD41
31.0
RD43
Start Survey Road #8
Legend
Sites
Road Treatments
CD
DRC
Ditch
EOS
Gate
SE
SS
XRD
RD
Map areas of interest
Garrapata roads
Streams
Garrapata watershed boundary
Scale 1:3500
100 0 100 200 300 Feet
N
Prepared by Pacific Watershed Associates, 3/15/05
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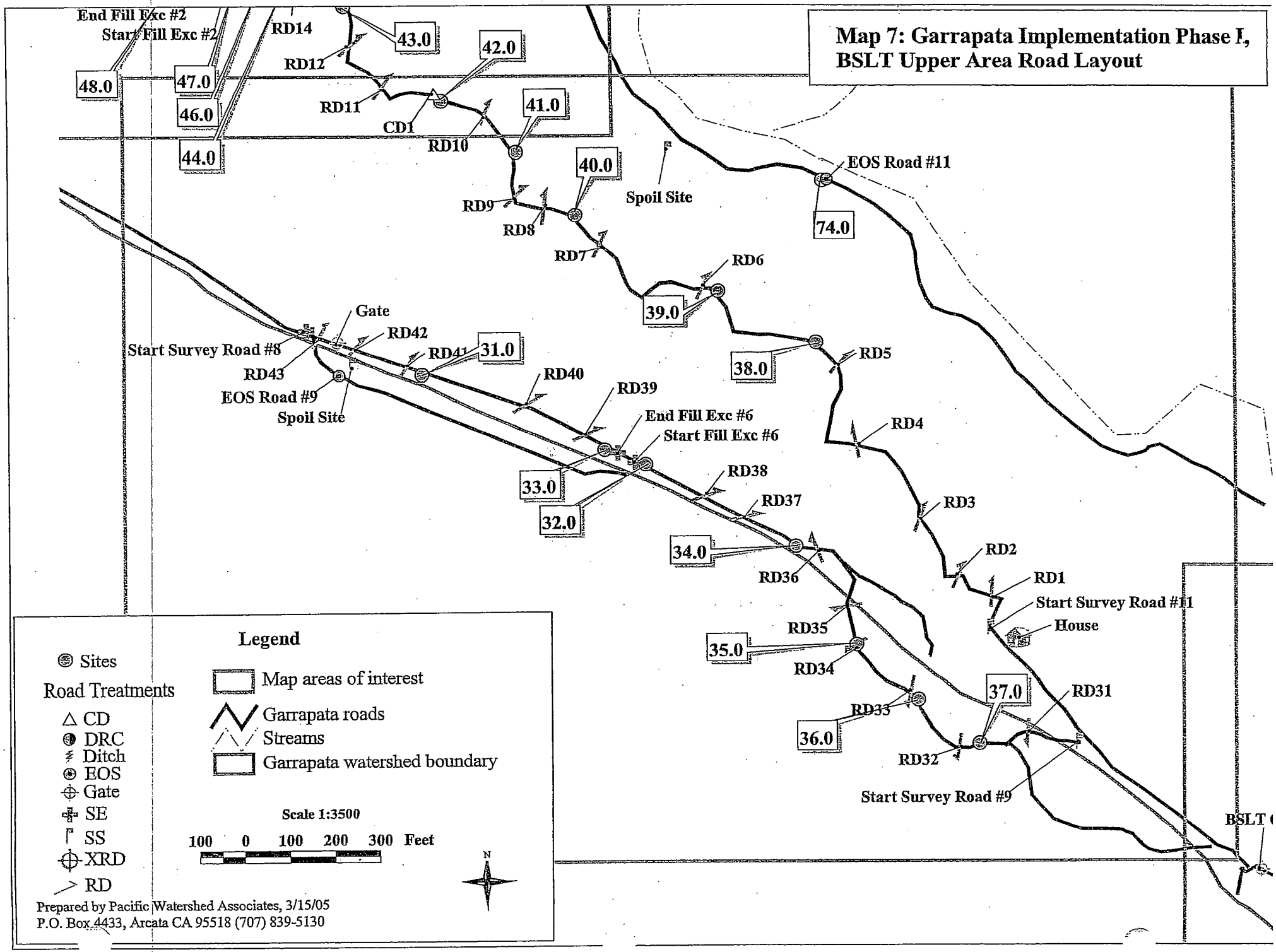
Map 7: Garrapata Implementation Phase I, BSLT Upper Area Road Layout
End Fill Exc #2
Start Fill Exc #2
RD14
43.0
42.0
RD12
48.0
47.0
46.0
44.0
RD11
CD1
RD10
41.0
40.0
RD9
RD8
RD7
Spoil Site
EOS Road #11
74.0
RD6
39.0
38.0
RD5
RD4
RD3
RD2
RD1
Start Survey Road #11
House
Gate
RD42
Start Survey Road #8
RD41
31.0
RD43
EOS Road #9
Spoil Site
RD40
RD39
End Fill Exc #6
Start Fill Exc #6
33.0
32.0
RD38
RD37
34.0
RD36
RD35
35.0
RD34
37.0
RD31
RD33
36.0
RD32
Start Survey Road #9
BSLT
Legend
Sites
Road Treatments
CD
DRC
Ditch
EOS
Gate
SE
SS
XRD
RD
Map areas of interest
Garrapata roads
Streams
Garrapata watershed boundary
Scale 1:3500
100 0 100 200 300 Feet
N
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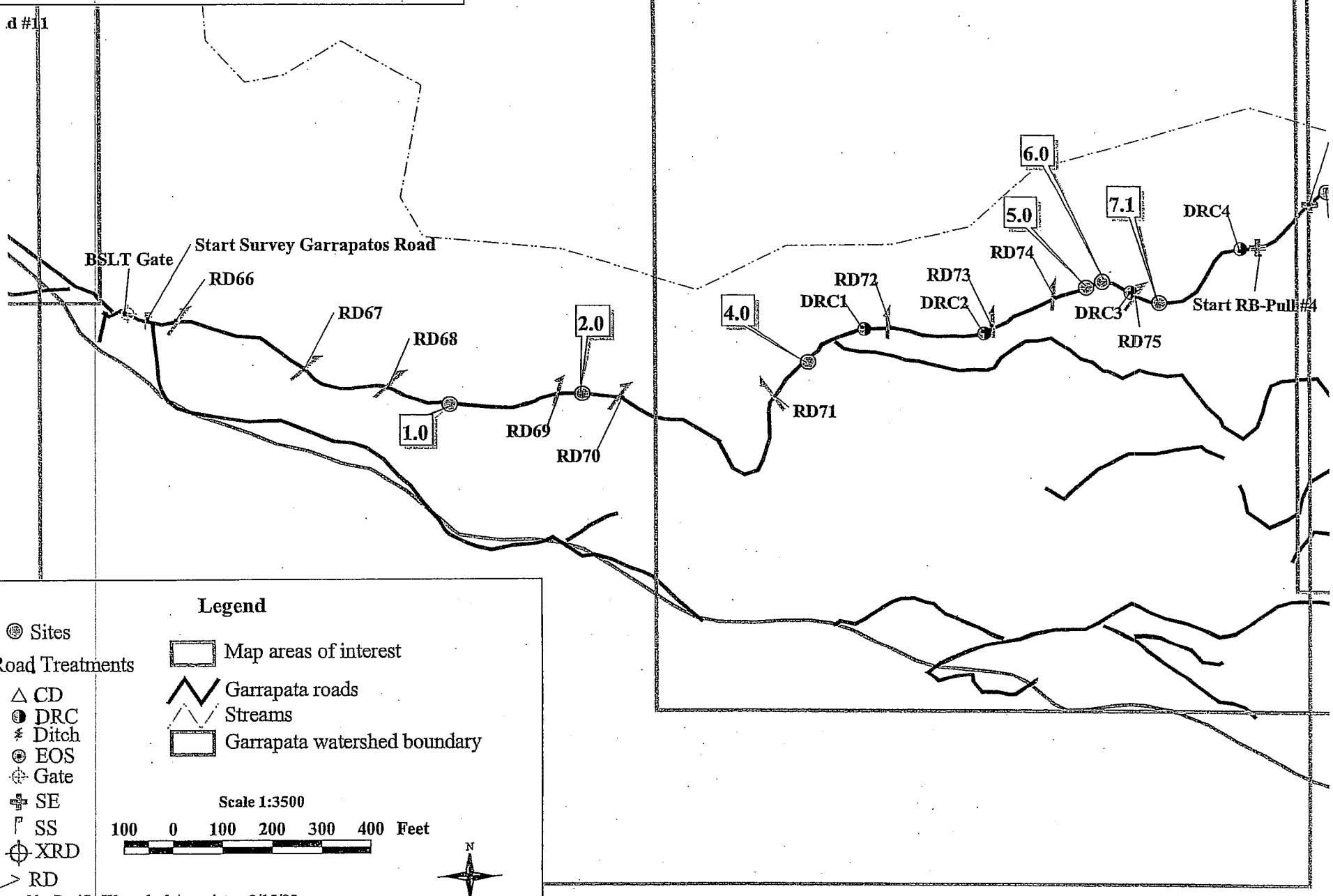
Map 8: Garrapata Implementation Phase I, Garrapatos West Area Road Layout



Legend

- Sites
- Road Treatments
  - CD
  - DRC
  - Ditch
  - EOS
  - Gate
  - SE
  - SS
  - XRD
  - RD
- Map areas of interest
- Garrapata roads
- Streams
- Garrapata watershed boundary

Scale 1:3500

100 0 100 200 300 400 Feet

N

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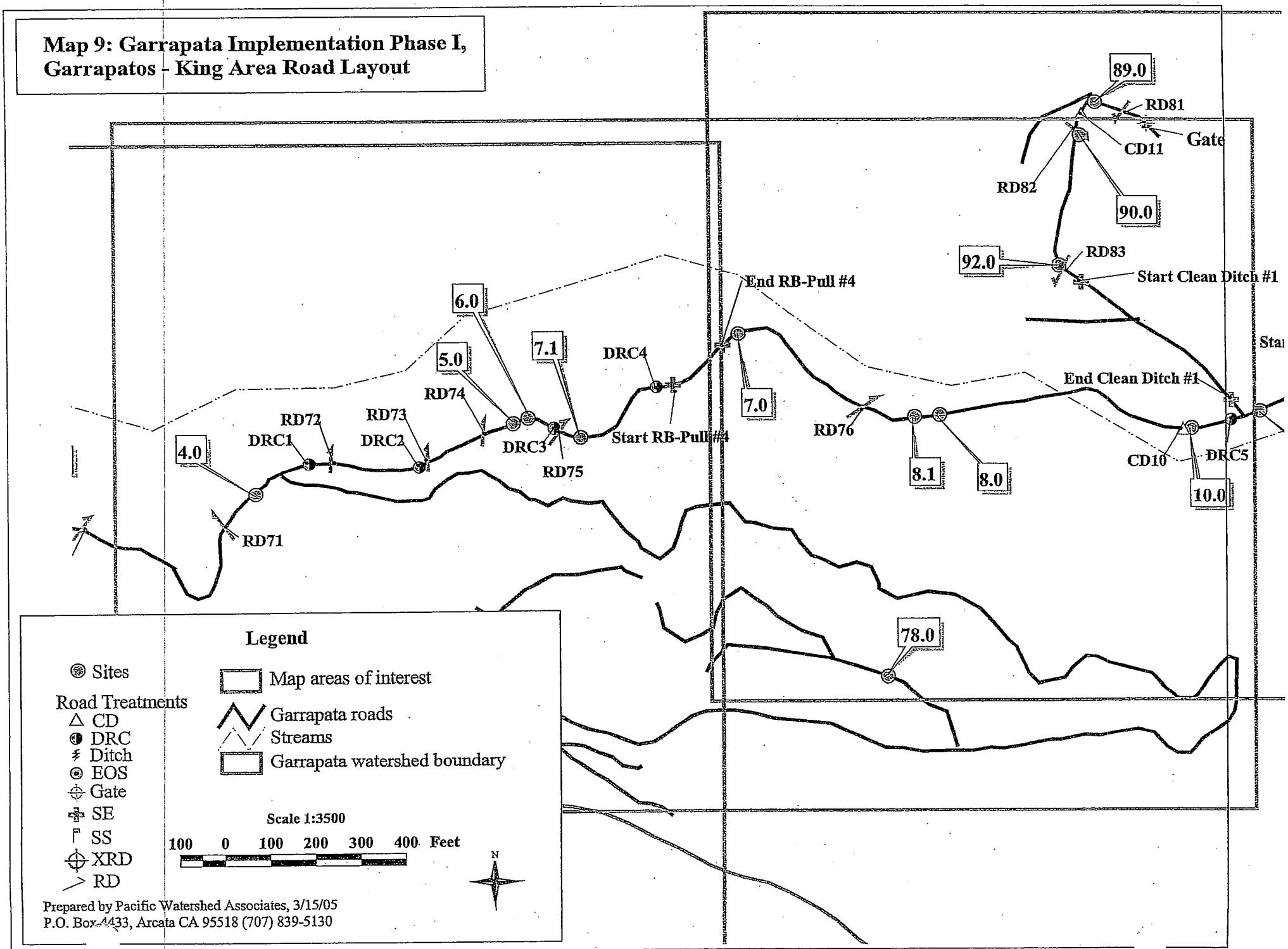
Map 9: Garrapata Implementation Phase I, Garrapatos - King Area Road Layout



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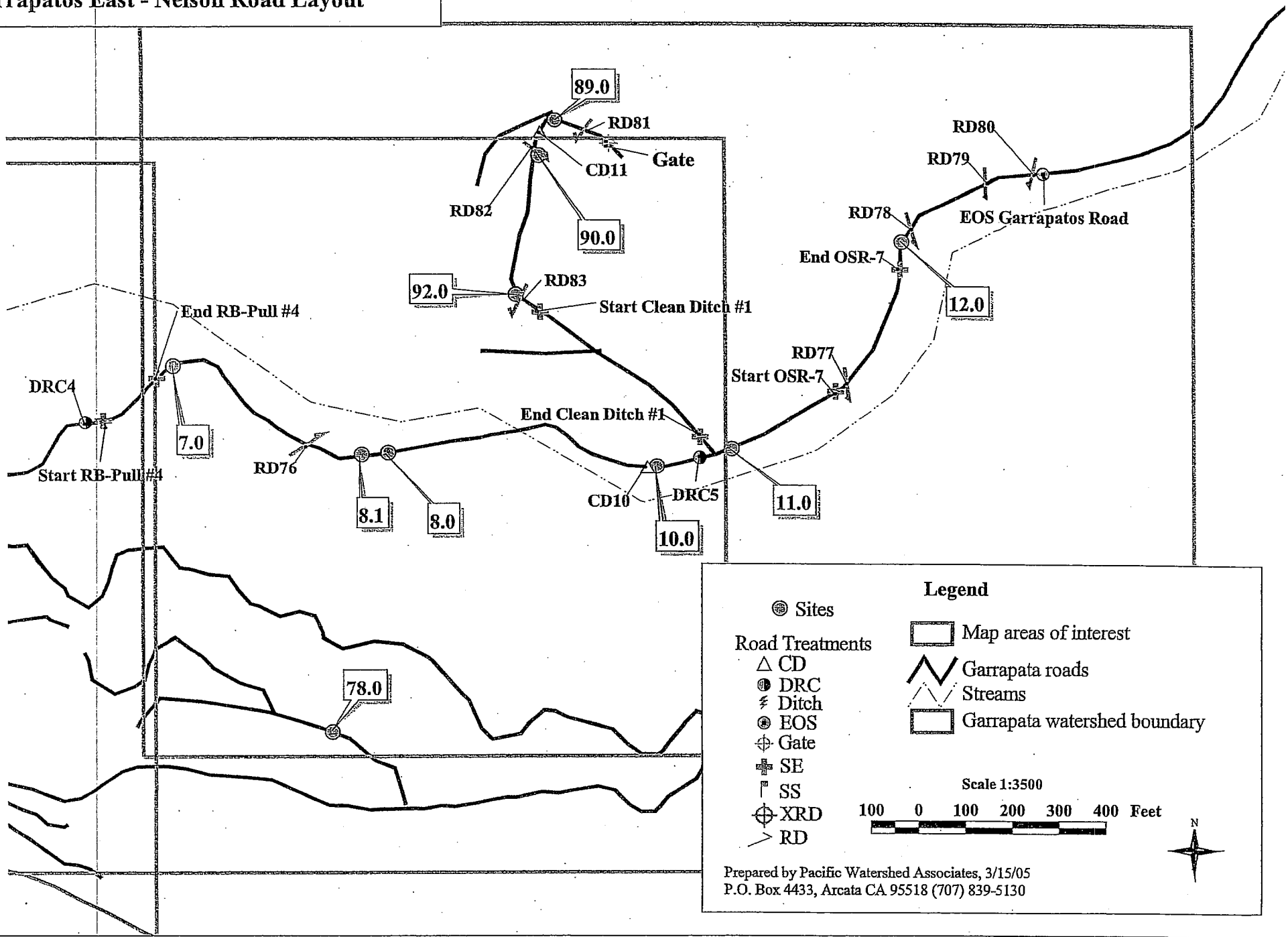
Map 10: Garrapata Implementation Phase I, Garrapatos East - Nelson Road Layout



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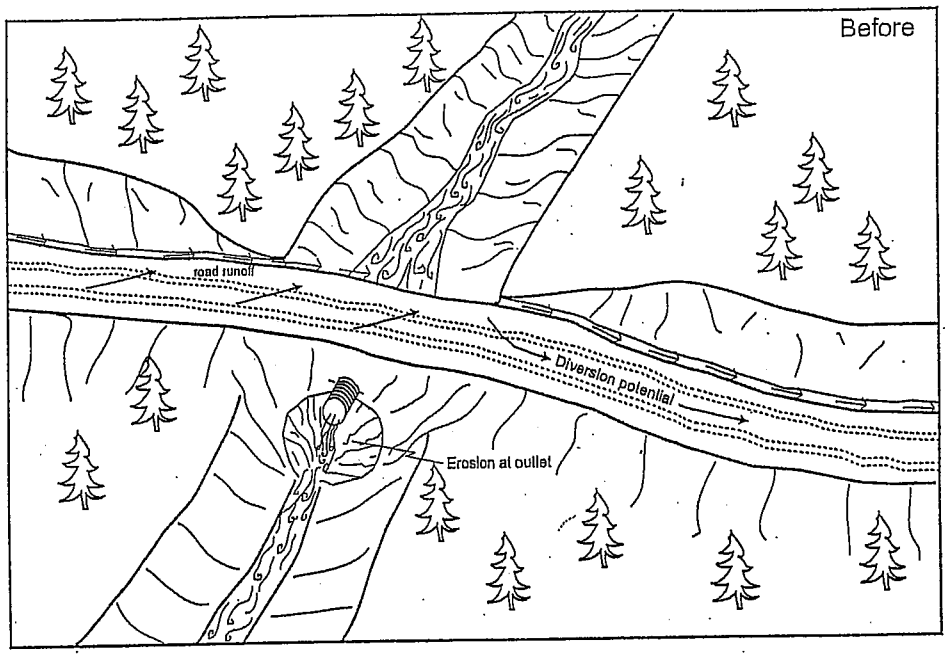
Typical stream crossing decommissioning

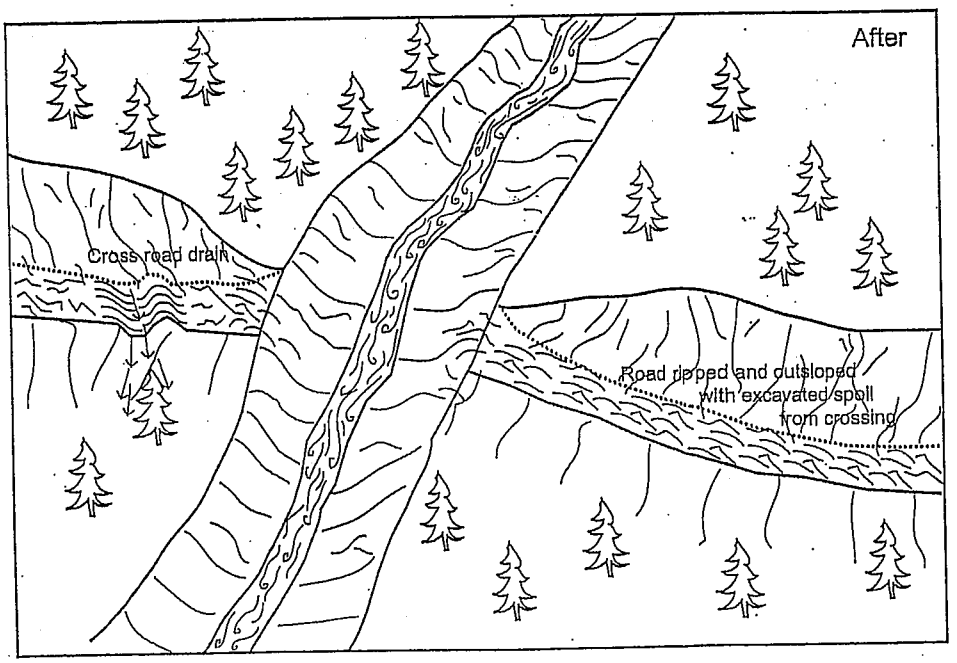
Condition

- Diversion potential
- Road surface and ditch flows drain to stream
- Undersized culvert high in fill with outlet erosion



Treatment

- Road surface decompacted
- Cross road drains on old road
- Stream crossing fill completely excavated
- Excavated spoil used to outslope adjacent road



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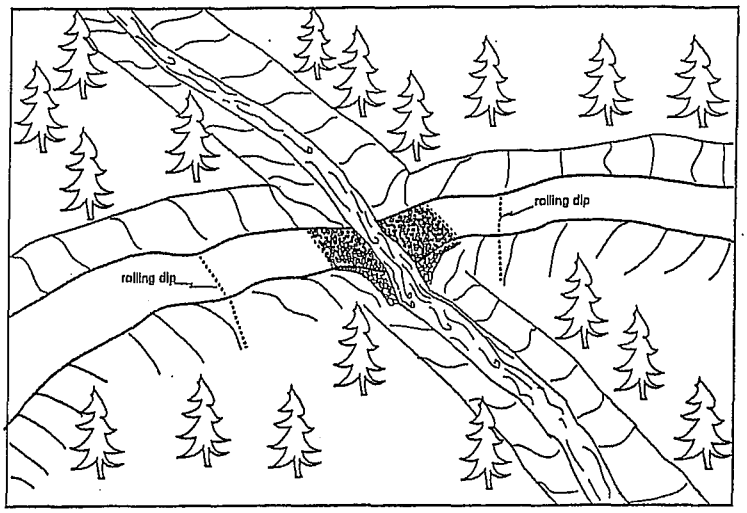
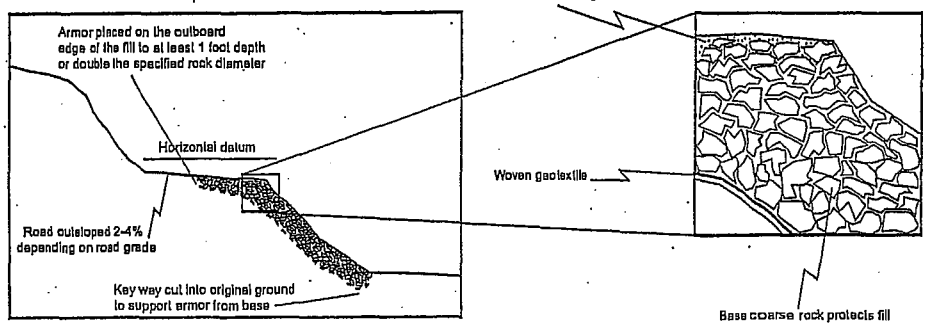
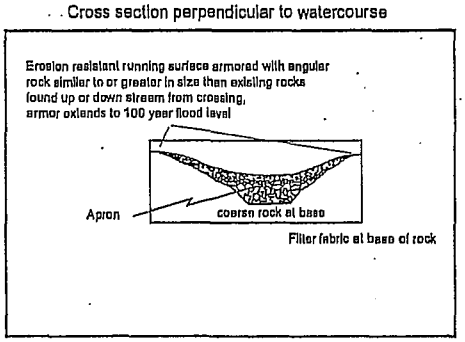
Typical armored fill crossing installation



Cross section parallel to watercourse



Cross section perpendicular to watercourse



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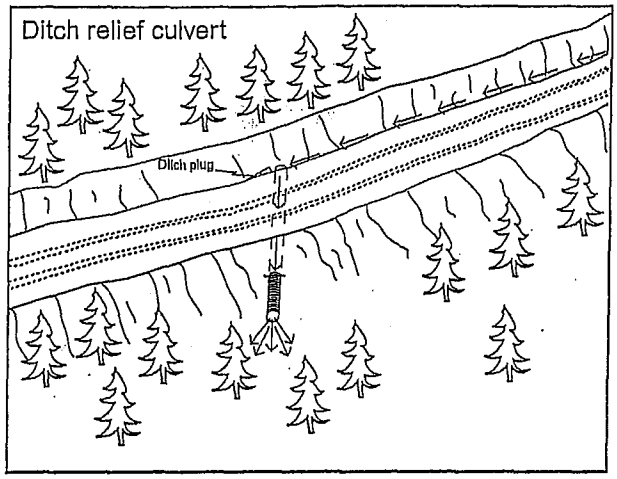
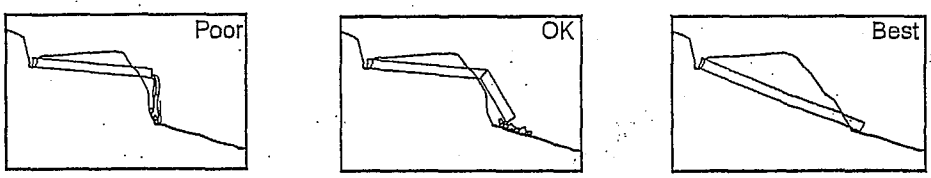
Typical ditch relief culvert installation



Cross sections of typical installations



Ditch relief culvert installation

1) The same basic steps followed for stream crossing installation shall be employed.
2) Culverts shall be installed at a 30 degree angle to the ditch to lessen the chance of inlet erosion and plugging.
3) Culverts shall be seated on the natural slope or at a minimum depth of 5 feet at the outside edge of the road, whichever is less.
4) At a minimum culverts shall be installed at a slope of 2 to 4 percent steeper than the approaching ditch grade, or at least 5 inches every 10 feet.
5) Backfill shall be compacted from the bed to a depth of 1 foot or 1/3 of the culvert diameter, whichever is greater, over the top of the culvert.
6) Culvert outlets shall extend beyond the base of the road fill (or a flume downspout will be used).Culverts will be seated on the natural slope or at a depth of 5 feet at the outside edge of the road, whichever is less.

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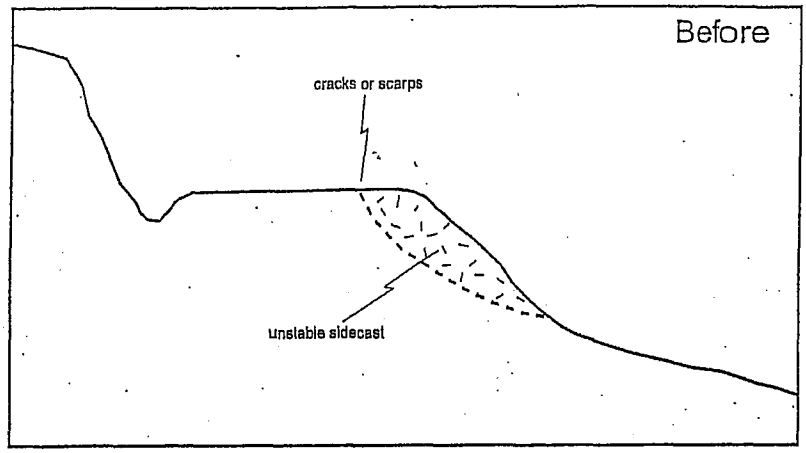
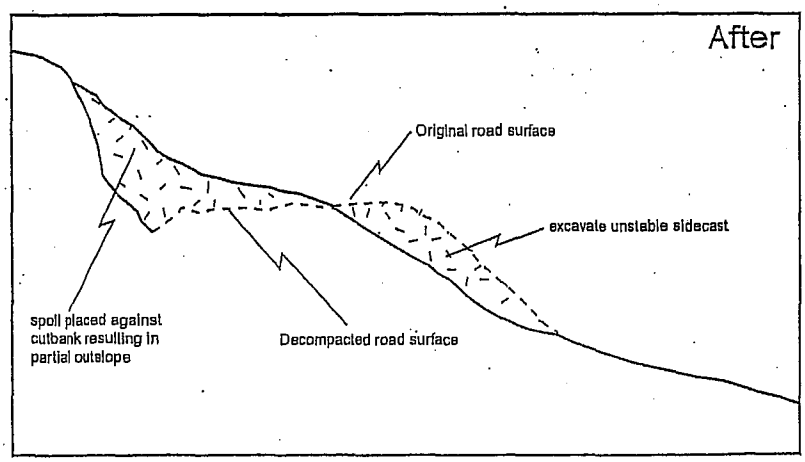
Excavation of unstable fill slope on decommissioned road





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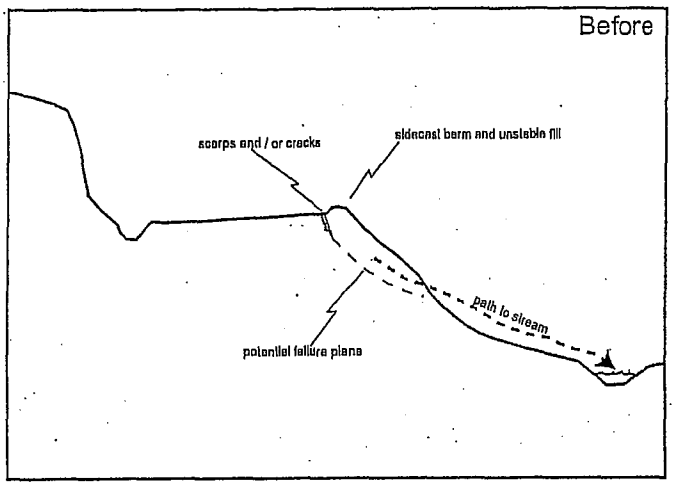
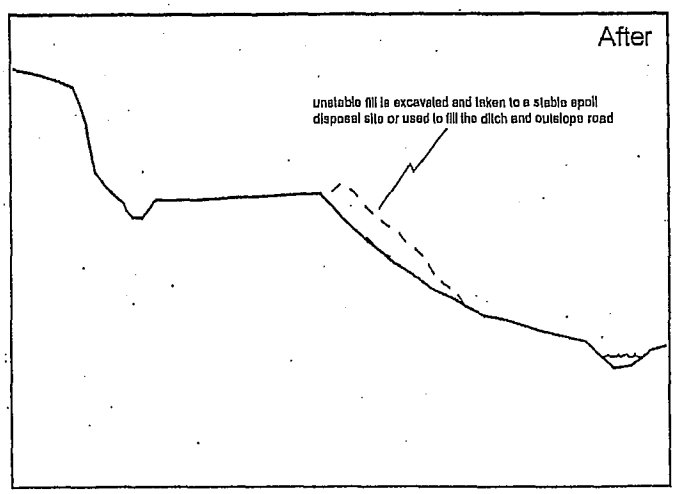
Excavating unstable fill slope on maintained road





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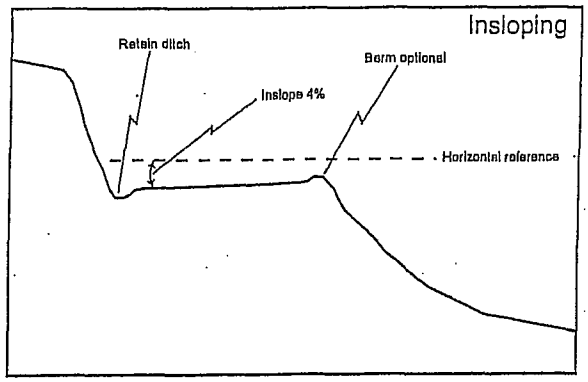
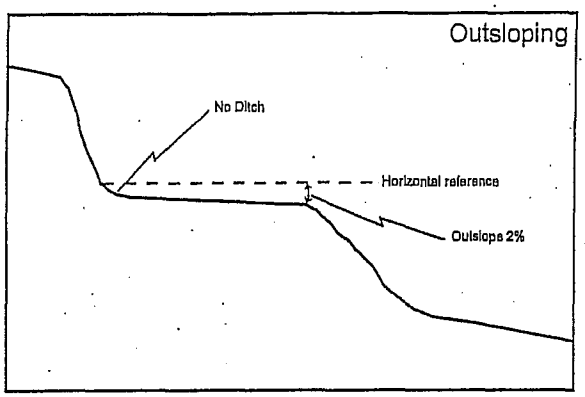
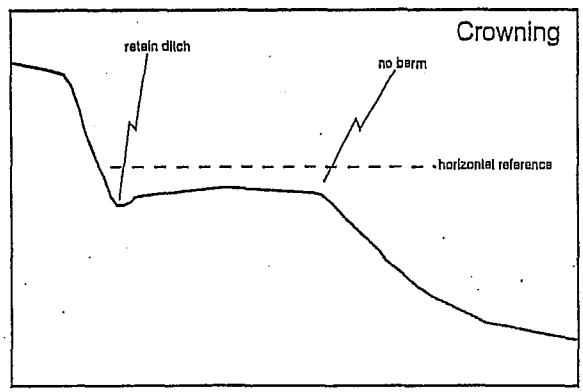
Using road shape to control road runoff







Outsloping pitch for roads up to 8% grade		
Road grade	Outslope pitch for unsurfaced roads	Outslope pitch for surfaced roads
4%, or less	3/8" per foot	1/2" per foot
5%	1/2" per foot	5/8" per foot
6%	5/8" per foot	3/4" per foot
7%	3/4" per foot	7/8" per foot
8%, or more	1" per foot	1 1/4" per foot

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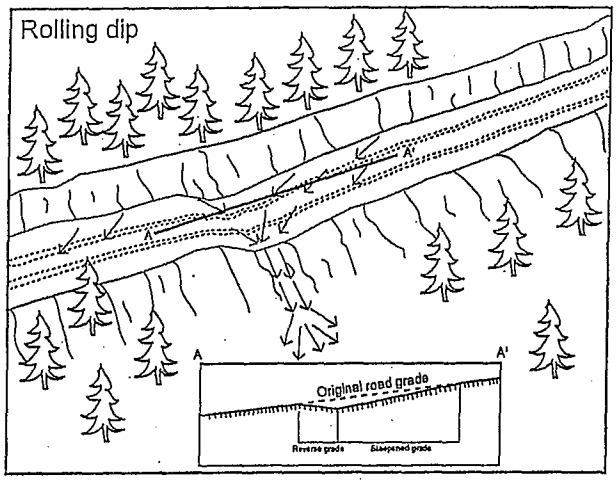
Road surface drainage by rolling dips



Rolling dip installation:

1) Rolling dips will be installed in the road bed as needed to drain the road surface.
2) Rolling dips will be sloped either into the ditch or to the outside of the road edge as required to properly drain the road.
3) Rolling dips are usually built at 30-45 degree angles to the road alignment with cross grade of at least 1 percent greater than the grade of the road.
4) Excavation for the dips will be done with a medium size bulldozer or similar equipment.
5) Excavation of the dips will begin 50 to 100 feet up-road from where the axis of the dip is planned per guidelines established in the rolling dip dimensions table.
6) Material will be progressively excavated from the road bed, steepening the grade until the axis is reached.
7) The depth of the dip will be determined by the grade of the road (see table).
8) On the down-road side of the rolling dip axis a grade change will be installed to prevent the runoff from continuing down the road (see figure).
9) The rise in grade will be carried for about 10 to 20 feet then it will fall to the original slope.
10) The transition from axis to bottom, through rising grade to falling grade will be in a road-distance of at least 15 to 30 feet.

Table of rolling dip dimensions

Road grade	Upslope approach (distance from up-road start of rolling dip to trough) (ft)	Reverse grade (Distance from trough to crest)	Depth below average road grade at discharge end of trough. (ft)	Depth below average road grade at upslope end of trough. (ft)
<6	55	15-20	0.9	0.3
8	65	15-20	1.0	0.2
10	75	15-20	1.1	.01
12	85	20-25	1.2	.01
>12	100	20-25	1.3	.01

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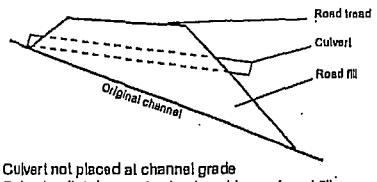
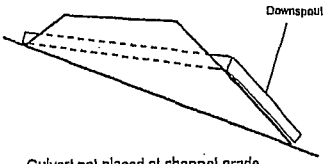
Typical design of non-fish bearing culverted stream crossings

Existing



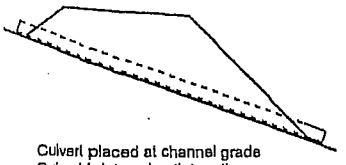
Culvert not placed at channel grade
Culvert outlet does not extend past base of road fill

Upgraded



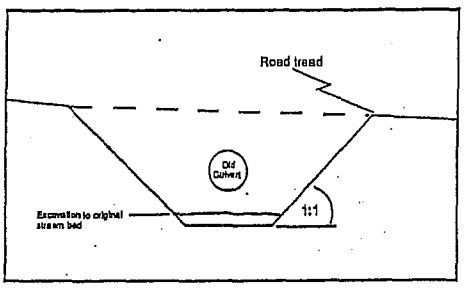
Culvert not placed at channel grade
Downspout added to extend outlet past road fill

Upgraded (preferred design option)

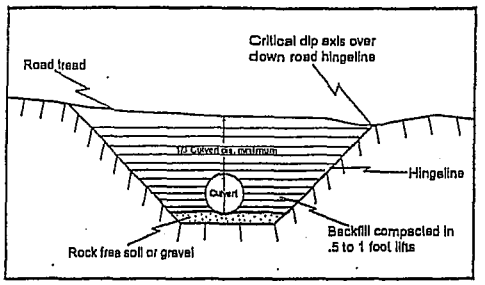


Culvert placed at channel grade
Culvert inlet and outlet resting on or partially in the original stream bed

Excavation in preparation for upgrading culverted stream crossing



Upgraded stream crossing culvert installation



Typical installation of non-fish bearing culverted stream crossings

Road upgrading tasks typically include upgrading stream crossings by installing larger culverts and inlet protection (trash barriers) to prevent plugging. Culvert sizing for the 100 year flood flow should be determined by both field observation and calculations using a procedure such as the Rational Formula.

Stream crossing culvert installation

1) Culverts shall be aligned with natural stream channels to ensure proper function, prevent bank erosion and debris plugging problems.
2) Culverts shall be placed at the base of the fill and at the grade of the original streambed or downspouted past the base of the fill.
3) Culverts shall be set slightly below the original stream grade so that the water drops several inches as it enters the pipe.
4) Culvert beds shall be composed of rock free soil or gravel, evenly distributed under the length of the pipe.
5) To allow for sagging after burial, a camber shall be between 1.5 to 3 inches per 10 feet culvert pipe length.
6) Backfill material shall be free of rocks, limbs or other debris that could dent or puncture the pipe or allow water to seep around pipe.
7) One end of the culvert pipe shall be covered then the other end. Once the ends have been secured, the center will be covered.
8) Backfill material shall be tamped and compacted throughout the entire process.
   -Base and side wall material will be compacted before the pipe is placed in its bed.
   -Backfill compacting will be done in 0.5- 1 ft lifts until 1/3 of the diameter of the culvert has been covered. A gas powered tamper can be used for this work.
9) Inlets and outlets shall be armored with rock or mulched and seeded with grass as needed.
10) Trash protectors shall be installed just upstream from the culvert where there is a hazard of floating debris plugging the culvert.
11) Layers of fill will be pushed over the crossing until the final, design road grade is achieved, at a minimum of 1/3 to 1/2 the culvert diameter.

Erosion control measures for culvert replacement

Both mechanical and vegetative measures will be employed to minimize accelerated erosion from stream crossing and ditch relief culvert upgrading. Erosion control measures that are implemented will be evaluated on a site by site basis. Erosion control measures that may be employed include but are not limited to:
1) Minimizing soil exposure by limiting excavation areas and heavy equipment disturbance.
2) Installing filter windrows of slash at the base of the road fill to minimize the movement of eroded soil to downslope areas and stream channels.
3) Retaining rooted trees and shrubs at the base of the fill as "anchor" for the fill and filter windrows.
4) Bare slopes created by construction operations will be protected until vegetation can stabilize the surface. Surface erosion on exposed cuts and fills will be minimized by mulching, seeding, planting, compacting, armoring and/or benching prior to the first fall rains.
5) Extra or unusable soil will be stored in long term spoils disposal locations that are not limited by factors such as excessive moisture, steep slopes greater than 10%, archeology potential or proximity to a watercoarse.
6) On running streams water will be pumped or diverted past the crossing and into the down stream channel during the construction process.
7) Straw bales and/or silt fencing will be employed where neccessary to control runoff within the construction zone.

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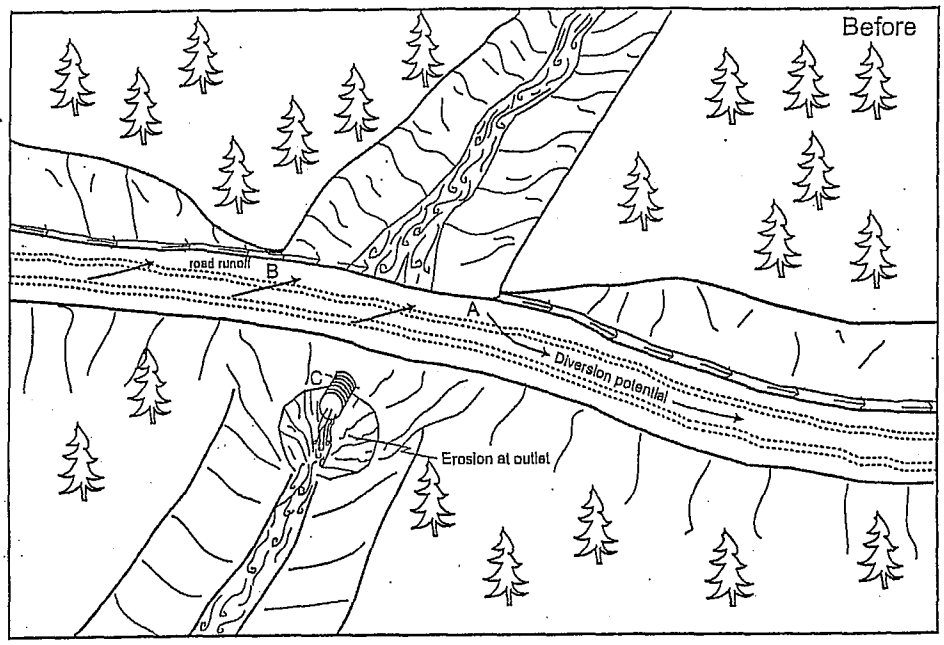
Typical Schematic
Components of an upgraded stream crossing

Common problems

A - Diversion potential

B - Road surface and ditch drains to stream

C - Undersized culvert high in fill with outlet erosion

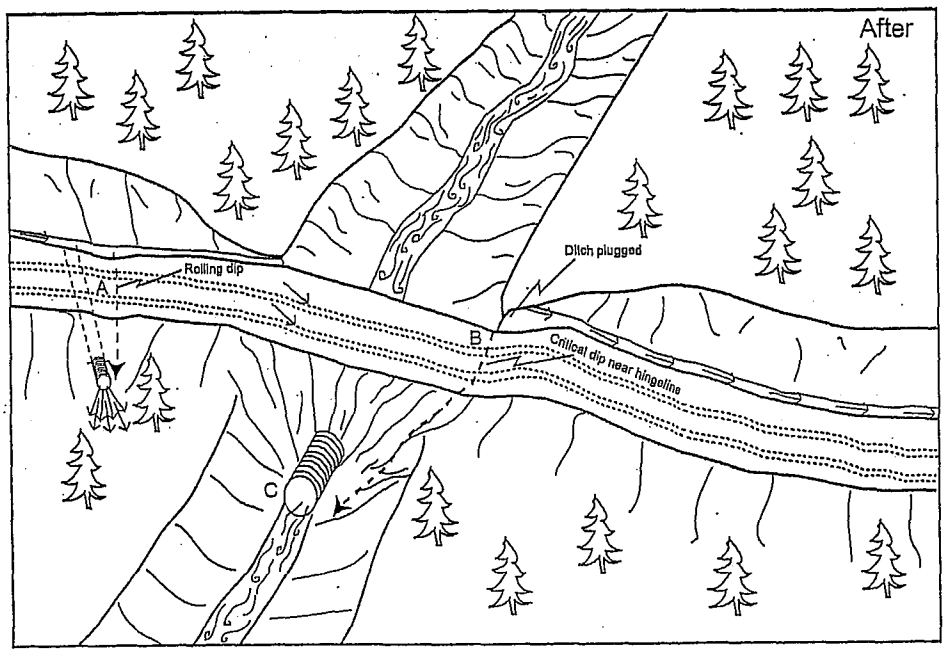


General Standards

A - Road surface and ditch "disconnected" from stream

B - No diversion potential

C - 100 year culvert set at base of fill



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Road Log of Treatments for DFG Roads #1, 2, 5 (Map #1)					
Miles	**Site #**	**Road Tmt** [1]	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
1) DRC = Install ditch relief culvert; ISR# = Inslope road with 3% grade; OSR# = Outslope road with 3% grade; OSR-KD# = Outslope road and keep ditch; OSR- PB and FD = Outslope road by pulling berm and filling ditch; RB-Side# = Remove berm and sidecast; RB-Pull = Remove berm by pulling fill onto the road and outsloping the road or hauling to a stable spoil location; RD# = Install rolling dip;					
			NOTE: All roads in this area are outsloped and receive no traffic. These roads show little or no sign of flow along road, and revegetation is proceeding well naturally. Treatments should be light – most road surfaces do not need to be ripped, and little need for cross-road drains. Large downed redwood log at boundary of DFG property must be removed for equipment access. Old cars may also have to be moved, and barrels possibly containing waste oil should be disposed of.		
		SOS	Start survey at site 15.		
	15		Not treat. Minimal future erosion, access problematic.		
	16		Decommission stream crossing by excavating from TOP to BOT with a broad 5' bottom and laying back slopes to 2:1. BOT is at top of large boulders. Spoil on flat to left. Pay special attention to vertical fill face on left approach and lay it back to 2:1.		
			Rip road surface from site 16 to site 19.		
		XRD 1	Install cross-road drain.		
		XRD 2	Install cross-road drain.		
			Intersection with DFG Road #2.		
		XRD 3	Install cross-road drain.		
		XRD 4	Install cross-road drain.		
			Intersection with DFG Road #3.		
	19		Decommission triple stream crossing at intersection with DFG Roads #3 and 4 by constructing broad dips in upper, middle and lower crossings. Align dips with traces of channel around large redwoods. Flags are hung at TOP and on centerline of channel on lower crossing. Lower crossing should be dipped to BOT flag. If possible, remove duff layer on lower crossing, dip road and replace.		
			Intersection with DFG Road #4.		
		XRD 5	Install cross-road drain.		
		XRD 6	Install cross-road drain.		
	21		Excavate stream crossing to decommission. Give the channel a broad 5' bottom and lay back side slopes to 2:1. Remove duff layer before excavation and replace after if possible. BOT is at mainstem channel.		
	23		Decommission stream crossing by excavating from TOP to BOT. Give the channel a broad 5' bottom and lay back the side slopes to a 2:1 gradient or to the natural hillslope gradient. This is mostly bank excavation.		

Road Log of Treatments for Kleissner Caretaker Road (Map #2)					
Miles	**Site #**	**Road Tmt** [1]	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
1) DRC = Install ditch relief culvert; ISR# = Inslope road with 3% grade; OSR# = Outslope road with 3% grade; OSR-KD# = Outslope road and keep ditch; OSR- PB and FD = Outslope road by pulling berm and filling ditch; RB-Side# = Remove berm and sidecast; RB-Pull = Remove berm by pulling fill onto the road and outsloping the road or hauling to a stable spoil location; RD# = Install rolling dip;					
	1001	FILL EXC #11	1. Excavate 80' wide x 3' deep x 30' downslope = 265 yds^3. Endhaul soil to landing and build up height of landing.		
	1002	FILL EXC #12	1. Excavate 60' x 3' x 30' = 200 yds^3. Spoil on landing to right or to road prism to left and outslope stable portions of the road bed.		
		RD 84	Install rolling dip to drain road and ditch.		
	1003	FILL EXC #13	1. Excavate 60' x 3' x 25' = 170 yds^3. Endhaul spoil and use some to improve rolling dips if necessary.		
		RD 85	Install rolling dip to drain road and ditch.		
	1004	FILL EXC #14	1. Excavate 80' x 3' x 25' = 222 yds^3. Endhaul spoils approx 5,000' to a stable location.		
		RD 86	Install rolling dip to drain road and ditch.		
		RD 87	Install rolling dip to drain road and ditch.		
	1005	FILL EXC #15	1. Excavate 90' x 3' x 30' = 300 yds^3 of unstable fill. Endhaul spoil to a stable location to the right.		
		RD 88	Install rolling dip to drain road and ditch.		
	1006		1. Excavate 35' x 3.5' x 7' from left bank of stilling basin above CMP inlet and lay back side slope to the natural hillslope gradient.		
		CD 12	Install a critical dip on the right hinge line of site #1006. Outlet of dip should be uphill from oak tree.		
	1007	FILL EXC #16	Excavate 100' x 30' x 25' = 280 yds^3 of unstable fill and endhaul to a stable site to the right.		
		RD 89	Install rolling dip to drain road and ditch.		
	1008	FILL EXC #17	Excavate 50' x 3' x 25' = 139 yds^3 of unstable fill. Endhaul spoils to a stable location to the right.		
		RD 90	Install rolling dip to drain road and ditch.		
		RD 91	Install rolling dip to drain road and ditch.		
		RD 92	Install rolling dip to drain road and ditch.		

Road Log of Treatments for Kleissner Caretaker Road (Map #2)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
		RD 98	Install rolling dip to drain road and ditch.		
		END OSR-8	End outslope road #8.		
	1014		No treat at DRC site.		
		EOS	End of survey for Kleissner Caretaker Road at gate..		

Road Log of Treatments for Trout Farm Road (Map #3)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
1) DRC = Install ditch relief culvert; ISR# = Inslope road with 3% grade; OSR# = Outslope road with 3% grade; OSR-KD# = Outslope road and keep ditch; OSR- PB and FD = Outslope road by pulling berm and filling ditch; RB-Side# = Remove berm and sidecast; RB-Pull = Remove berm by pulling fill onto the road and outsloping the road or hauling to a stable spoil location; RD# = Install rolling dip;					
0.000		SOS	Start survey at corner of shed.		
0.006	66	RD 48	Install an armored rolling dip at this site. Excavate outboard edge of road fill and lay back outboard fill face to 2:1. This will necessitate moving the outboard edge of the fill in by 5', and excavation of approximately 40 cubic yards. Use spoil material to build up section of road below gate. Armor the rolling dip with 20 cubic yards of 3-6" rock, keying largest armor into outboard edge of road fill.		20 cy 3-6" rock
0.023		START OSR-6	Start 4% outslope of the road by pulling berm and using material as well as spoil fro site #66 to build up inside of road.		
0.036		RD 47	Install rolling dip to drain road and ditch.		
0.040			Gate – From gate to intersection w/ Weston Road there is a lot of berm material. Raise the level of this section of road in addition to outsloping it using berm and spoil material from site #66. It is vital that this section of road be very well-compacted. Re-rock this section of road with 1.5"-.		30 cy 1.5"-
0.049	65		Replace DRC w/18" x 60' CMP. Set inlet 1' deeper if possible, and set outlet as low as possible above high water channel of Joshua Creek to encourage culvert self-cleaning. Culvert slope should be 10% if possible. Outlet is at old concrete sluice gate.	18" x 60', 2 couplers	
0.053			Intersection with Trout Farm driveway.		
0.078		END OSR-6	End road outslope #6 at intersection with Weston Road.		

Road Log of Treatments for Trout Farm Road (Map #3)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
0.630		START OSR-PB&FD #1	Start outslope road by pulling berm, lowering outboard edge of road and using material to fill ditch and raise inboard edge of road. Rock this section with 1.5"-		90 cy 1.5"-
0.661		RD 62	Install rolling dip to drain road and ditch. Install berm drain at dip outlet with 12" flared inlet and 12" x 30' flex pipe to drain to below base of fill.	12" x 30' flex pipe, 12" flared inlet.	
0.701		RD 63	Install rolling dip to drain road and ditch. Install berm drain at dip outlet with 12" flared inlet and 12" x 30' flex pipe to drain to below base of fill.	12" x 30' flex pipe, 12" flared inlet.	
0.739		RD 64	Install rolling dip to drain road and ditch. Install berm drain at dip outlet with 12" flared inlet and 12" x 30' flex pipe to drain to below base of fill.	12" x 30' flex pipe, 12" flared inlet.	
0.752		END OSR-PB&FD #1	End road outslope at bottom of through-cut section of road.		
0.815		EOS	End survey at gate at Highway 1.		
			Trout Farm Driveway treatments		
			These short driveways intersect Trout Farm Road at site #65.		
		START OSR-KD 1	Start outslope road at 3% and retain ditch at post approximately 150' up upper driveway from intersection.		
		RD 49	Install rolling dip on lower driveway to drain flow from upper and lower roads. This dip should be placed to drain away from well head.		20 cy 1.5"-
		END OSR-KD 1	End outslope of upper driveway at pines at intersection.		

Road Log of Treatments for Road #11, BSLT (Maps #5, 6 and 7)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
1) DRC = Install ditch relief culvert; ISR# = Inslope road with 3% grade; OSR# = Outslope road with 3% grade; OSR-KD# = Outslope road and keep ditch; OSR- PB and FD = Outslope road by pulling berm and filling ditch; RB-Side# = Remove berm and sidecast; RB-Pull = Remove berm by pulling fill onto the road and outsloping the road or hauling to a stable spoil location; RD# = Install rolling dip;					
0.00		SOS	Start survey at "Canyon Access" sign at corner of main house.		
0.021		RD 1	Install rolling dip to drain road and ditch.		
0.046		RD 2	Enhance existing rolling dip to drain road and ditch.		
0.068		RD 3	Install rolling dip to drain road and ditch.		
0.090		RD 4	Enhance existing rolling dip to drain road and ditch.		
0.123		RD 5	Enhance existing rolling dip to drain road and ditch.		
	38		No treat at site		
	39	RD 6	Enhance existing rolling dip to drain road and ditch.		
		RD 7	Install rolling dip to drain road and ditch.		
	40		No treat at site		
		RD 8	Enhance existing rolling dip to drain road and ditch.		
		RD 9	Install rolling dip with 10% outslope through the dip to capture emergent flow from swale.		
	41		No treat at site		
		RD 10	Enhance existing rolling dip to drain road and ditch.		
	42		Excavate crossing from TOP to 23' down outboard fill face. Replace existing culvert with 24" x 40' CMP set at the base of the fill, aligned with the natural channel. Attach a 24" x 20' downspout to the culvert outlet to outlet in bedrock channel. TOP and BOT flags are hung. Armor OB fill face with 1' rock (35 cy).	24" x 60', 3 couplers, 1-20° elbow	35 cy 1' riprap
		CD 1	Install critical dip on left hinge line.		
		RD 11	Enhance existing rolling dip to drain road and ditch..		
		RD 12	Install rolling dip with 10% outslope through the dip to capture emergent flow from swale.		
	43		No treat at site.		
		RD 13	Install rolling dip at head of past landslide.		
	44	RD 14	Enhance existing rolling dip to drain road and ditch.		
	45	START FILL EXC #1	Excavate sidecast fill material along 75' of road, down outboard slope an average of 12' for 2' into road. Work around clumps of shrubs and small trees. Endhaul spoils to spoil storage site at pond at the bottom of the road. This fill excavation (and the others on the road) will require two dump trucks for endhauling.		

Road Log of Treatments for Road #11, BSLT (Maps #5, 6 and 7)					
Miles	**Site #**	**Road Tmt** [1]	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
		RD 19	Enhance existing rolling dip to drain road and ditch.		
		RD 20	Install rolling dip to drain road and ditch.		
		RD 21	Install rolling dip to drain road and ditch.		
	54		Excavate crossing from TOP to BOT: Install a 36" x 60' CMP at the base of the fill in the axis of the natural channel. Align the pipe to meet the top of the new culvert at site 55. Install a 36" flared inlet. Attach a 36" x 15' downspout to the culvert outlet with a 15° elbow. Armor the lower ¼ of the outboard fill slope with 1-2' rock (5 cubic yards).	36" x 75', 4 couplers, 1-15° elbow	5 cy 1-2' riprap
		CD 4	Install a critical dip on the left hinge line.		
		DITCH OUT #1	Slightly inslope the road above the right hairpin and ditch out road runoff if possible.		
			Clear the outside of the right hairpin for use as a dump truck turnaround. Improve the curve radius if necessary for trucks to make the turn.		
		START OSR 1	Outslope road at 4% by lowering outboard edge of the road and using material to raise inboard edge. No ditch.		
	55		Excavate stream crossing from TOP to BOT. Install a 36" x 70' CMP with inlet aligned with culvert outlet of site #54 on the road above. Set pipe inlet as deep as possible. It may be necessary to build the road up to achieve adequate fill depth above pipe. Armor the lower ¼ of the outboard fill face with 1-2' rock (2 cy).	36" x 70', 3 couplers	2 cy 1-2' riprap
		CD 5	Install critical dip on right hinge line.		
		RD 22	Install rolling dip to drain road and ditch.		
		END OSR 1	End road outslope.		
		START ISR 1	Inslope road at 4%. Leave cutbank slide debris in place.		
		END ISR 1	End road inslope #1 at left hairpin turn.		
		DITCH OUT #2	Improve existing ditch out to ensure that road drains at hairpin turn.		
		START OSR 2	Outslope the road at 4% by lowering outboard edge of road and using material to build up inboard edge. No ditch.		
		RD 23	Install rolling dip to drain road and ditch.		
		RD 24	Install rolling dip to drain road and ditch.		

Road Log of Treatments for Road #11, BSLT (Maps #5, 6 and 7)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
	61		Leave existing channels intact and undisturbed if possible.		
		END RB-PULL #1	End berm removal #1.		
		END OSR 3	End road outslope #3.		
	72	START RB-PULL #2	Remove berm along 40' of road and store spoils locally.		
		END RB-PULL #2	End berm removal #2.		
1.750			Wells		
1.750		START DECOMM	Decommission road from wells to end of road by ripping road surface.		
	74	START FILL EXC #5.5	Excavate unstable fill material along 125' of road for 25' down outboard fill face, an average of 3' deep into road (~350 cubic yards). Spoil locally on ripped road surface and at local designated spoil storage areas.		
		EOS	End survey at end of the road.		

Road Log of Treatments for Road #9, BSLT (Map #7)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
1) DRC = Install ditch relief culvert; ISR# = Inslope road with 3% grade; OSR# = Outslope road with 3% grade; OSR-KD# = Outslope road and keep ditch; OSR- PB and FD = Outslope road by pulling berm and filling ditch; RB-Side# = Remove berm and sidecast; RB-Pull = Remove berm by pulling fill onto the road and outsloping the road or hauling to a stable spoil location; RD# = Install rolling dip;					
0.000		SOS	Start survey at intersection w/main paved BSLT access road.		
0.005		RD 31	Install rolling dip to drain road and ditch just uphill of big Eucalyptus tree, as close to main road as possible. Not flagged.		15 cy 1.5
0.034	37		No treat at site. Not flagged.		
0.063		RD 32	Install rolling dip to drain road and ditch at satellite dish.		
0.087	36	RD 33	Install rolling dip to drain road only at ditch relief culvert to prevent flow from bypassing culvert.		
0.114	35	RD 34	Install rolling dip to drain road only at ditch relief culvert to prevent flow from bypassing culvert.		
0.146		RD 35	Install rolling dip to drain road and ditch.		

Road Log of Treatments for Road #8, BSLT (Map #4)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
0.507			Yet another gate		
			NOTE: Headwall swales throughout this entire road segment have been loaded up with sidecast road fill. BSLT should consider decommissioning this road, as there is potential for many slides and/or debris flows originating in this area due to road fill failure. All four identified sites have partially failed in the past.		
0.637	27	START FILL EXC #7	Start excavation of unstable outboard fill. Excavation measures 75' along road, an average of 20' down fillslope, and 3' deep into road. Lay back outboard fill slope to 2:1 if possible. Endhaul spoils to stable site on ridgetop approximately 400' to right.		
0.652		END FILL EXC #7	End fill excavation #7.		
0.657	26	START FILL EXC #8	Start excavation of unstable outboard fill. Excavation measures 50' along road, an average of 15' down fillslope, and 3' deep into road. Lay back outboard fill slope to 2:1 if possible. Endhaul spoils to stable site on ridgetop approximately 450' to right.		
0.666		END FILL EXC #8	End fill excavation #8.		
0.672	25	START FILL EXC #9	Start excavation of unstable outboard fill. Excavation measures 70' along road, an average of 20' down fillslope, and 4' deep into road. Lay back outboard fill slope to 2:1 if possible. Endhaul spoils to stable site on ridgetop approximately 500' to right.		
0.685		END FILL EXC #9	End fill excavation #9.		
0.688	24	START FILL EXC #10	Start excavation of unstable outboard fill. Excavation measures 50' along road, an average of 20' down fillslope, and 3' deep into road. Lay back outboard fill slope to 2:1 if possible. Endhaul spoils to stable site on ridgetop approximately 600' to right.		
0.698		END FILL EXC #10	End fill excavation #10.		
0.773		EOS	End Road #8 survey at intersection with Road #7.		

Road Log of Treatments for Garrapatos Road (Maps #8, 9 and 10)						
Miles	**Station**	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
0.389	23+71		DRC 2	Install 18" x 40' ditch relief culvert and 18" x 40' downspout with outlet in redwoods. Plug ditch at DRC.	18" x 80', 4 couplers, 1-30° elbow	10 cy 1.5"-
0.392	23+60		RD 73	Install rolling dip to drain road only. Install berm drain at dip outlet with 12" flared inlet and 12" x 20' flex pipe to drain to below base of fill.	12" x 20' flex pipe, 12" flared inlet	20 cy 1.5"-
0.415	22+41	5	FILL EXC #19	Excavate unstable fill for 78' along outboard edge of road, down slope 35', 3' deep into road. Endhaul spoil to a stable site.		
0.415	22+41		RD 74	Install rolling dip to drain road and ditch. Install berm drain at dip outlet with 12" flared inlet and 12" x 30' flex pipe to drain to below base of fill.	12" x 30' flex, 12" flared inlet	20 cy 1.5"-
0.422	21+98	6	FILL EXC #20	Excavate unstable fill along 50' of road, down fillslope 25', 4' deep into road. Endhaul spoil to a stable site. Work around the trees and be careful of the power lines and pole.		
0.466	19+42		DRC 3	Install 18" x 40' ditch relief culvert, draining to base of fill.	18" x 40', 1 coupler	10 cy 1.5"-
0.466	19+42		RD 75	Install rolling dip to drain road only. Install berm drain at dip outlet with 12" flared inlet and 12" x 20' flex pipe to drain to below base of fill.		10 cy 1.5"-
0.471	19+15	7.1		No treat at site.		
0.505	17+04		DRC 4	Install 18" x 40' ditch relief culvert with outlet just beyond fill retaining wall. Attach an 18" x 40' downspout. Set downspout outlet to drain to clump of redwoods. Plug ditch at DRC.	18" x 80', 4 couplers, 1-30° elbow	10 cy 1.5"-
0.505	17+04		START RB-PULL #4	Remove berm on inside curve and use spoils to increase the outslope of the road by raising the inside of the road.		15 cy 1.5"-
0.517	16+53		END RB-PULL #4	End berm removal.		
0.523	16+32	7	DRC 4.5	Replace ditch relief culvert with an 18" x 30' CMP with outlet at the base of the road fill. Attach a 60' downspout to the outlet of the DRC.	18" x 90', 5 couplers	
0.568	13+73		RD 76	Install rolling dip to drain road and ditch.		20 cy 1.5"-
0.580	13+17	8.1	FILL EXC #21	Excavate fill behind leaning retaining wall. Endhaul spoils to stable site (to be located). A new engineered retaining wall can be installed at this site if fill is to be replaced, but is not necessary if the fill is removed, and is not a part of this plan.		

Road Log of Treatments for Fletcher Road (Map #10 (labeled Nelson Rd.))					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
1) DRC = Install ditch relief culvert; ISR# = Inslope road with 3% grade; OSR# = Outslope road with 3% grade; OSR-KD# = Outslope road and keep ditch; OSR- PB and FD = Outslope road by pulling berm and filling ditch; RB-Side# = Remove berm and sidecast; RB-Pull = Remove berm by pulling fill onto the road and outsloping the road or hauling to a stable spoil location; RD# = Install rolling dip;					
0.000		SOS	Start survey at Carlen gate.		
0.012		RD 81	Install rolling dip to drain road and ditch.		
0.023	89		Excavate crossing from TOP to BOT and replace existing culvert with a 36" x 50' CMP. Install a 36" flared inlet on the new culvert. Reconstruct berm across top of hairpin. Set culvert as deep as possible. It will be difficult to set a 36" pipe deep enough at this site.	36" x 50', 2 couplers, 36" FI	40 cy 1.5"-
0.035		CD 11	Construct critical dip by outsloping road from inside corner of driveway intersection to CD flag. Construct dip at flag to drain to stream. Rock road from hairpin to dip.		10 cy 1.5"-
0.053		RD 82	Enhance existing rolling dip. Drain to left.		15 cy 1.5"-
0.057	90		No treat at site.		
0.093	92	RD 83	Clean ditch and culvert inlet. Construct rolling dip to drain to right in event of culvert plugging by building up road over culvert and breaching berm.		15 cy 1.5"-
0.105		START CLEAN DITCH #1	Define ditch from this point to bottom of road. No opportunities to drain road below this point due to structures and landings.		
0.150		END CLEAN DITCH #1	End define ditch #1.		
0.153		EOS	End of survey at intersection with Garrapatos Road.		

Road Log of Treatments for Axelson Driveway (Map #9)					
Miles	**Site #**	**Road Tmt [1]**	**Comments/Treatment**	**CMP Needs**	**Rock Needs**
1) DRC = Install ditch relief culvert; ISR# = Inslope road with 3% grade; OSR# = Outslope road with 3% grade; OSR-KD# = Outslope road and keep ditch; OSR- PB and FD = Outslope road by pulling berm and filling ditch; RB-Side# = Remove berm and sidecast; RB-Pull = Remove berm by pulling fill onto the road and outsloping the road or hauling to a stable spoil location; RD# = Install rolling dip;					
0.000		SOS	Start survey at intersection with King Road		
	78	FILL EXC #22	Excavate unstable fill for 80' along road, down fillslope for 25' and 4' into road. Start excavation at pine tree on curve, end at retaining wall. ENDHAUL spoils 1500' to stable site on ridgetop. Site has been planted – owner's decision on whether to implement.		
		EOS	End survey at retaining wall.		