

ATTACHMENT A

List of References

Morro Bay National Estuary Program (2000). “The Comprehensive Conservation and Management Plan for Morro Bay (CCMP)”. Published by the Morro Bay National Estuary Program and the Central Coast Regional Water Quality Control Board (CCRWQCB). Online at <http://www.mbnep.org/publications/#ccmp>.

Natural Resources Conservation Service (NRCS) Field Office Technical Guide. Accessible via internet at <http://www.nrcs.usda.gov/technical/efotg/>.

Pennsylvania State University. “Horse Stable Manure Management” by Eileen Wheeler and Jennifer Smith Zajackowski. Accessible via internet at <http://panutrientmgmt.cas.psu.edu/pdf/G97.pdf>.

University of California Cooperative Extension (UCCE) Rangeland Watershed Fact Sheet No. 25: “Manure Loading Into Streams from Direct Fecal Deposits.” Accessible via internet at <http://danr.ucop.edu/ucce/r/h25.htm>.

U.S. Department of Agriculture Soil Conservation Service (1989). “Erosion and Sediment Study of the Morro Bay Watershed”.

ATTACHMENT B

DELIVERABLES PROVIDED

FOR EXHIBIT A “SCOPE OF WORK”		
Subtask	Deliverable	Date Submitted
1.0	PROJECT ASSESSMENT AND EVALUATION PLAN, MONITORING PLAN, QUALITY ASSURANCE PROJECT PLAN	
1.2	Project Assessment and Evaluation Plan (PAEP)	1/11/07
1.3	Monitoring Plan (MP)	N/A
1.4	Quality Assurance Project Plan (QAPP)	N/A
2.0	WORK TO BE PERFORMED BY GRANTEE	
2.1	Involvement of Stakeholder and Public Outreach	
	2.1.1 Copies of each press release, article, or newsletter written:	
	<ul style="list-style-type: none"> • State of the Bay Presentation 	1/20/07
	<ul style="list-style-type: none"> • CSLRCD Technical and Financial Assistance Information Sheet submitted with this report. 	4/20/07
	<ul style="list-style-type: none"> • 2006 SLO and Santa Barbara Counties Water Quality Continuing Education ETC Schedule submitted with this report. 	4/20/07
	<ul style="list-style-type: none"> • “Conservation Success Story” published in the NRCS California September newsletter 	10/20/07
	<ul style="list-style-type: none"> • California Beef Cattle Improvement Association – October newsletter. An article on Cal Poly’s Escuela Ranch riparian corridor improvement project 	10/20/07
	<ul style="list-style-type: none"> • NRCS Area 2 News – Profitable Central Coast Ranch Maintains Conservation Tradition –Winter 2008. 	7/20/08
	<ul style="list-style-type: none"> • Irrigation and Nutrient Management Workshop 9/9/08 “ How to Improve Your Crop Yields, save Money, and Improve Water Quality – flyer distributed throughout SLO County and Santa Barbara County. 	10/20/08
	<ul style="list-style-type: none"> • Conservation Partnership: assistance for Landowners information flyer 9/9/08. 	10/20/08
	2.1.2 Tour agendas; minutes of meetings, total number of attendees, type of agricultural operation, and a total number of Morro Bay Watershed attendees:	
	<ul style="list-style-type: none"> • Managed Grazing System Tour Agenda 	1/20/07
	<ul style="list-style-type: none"> • EPA Watershed Tour Agenda 	1/20/07
	<ul style="list-style-type: none"> • Farm Water Quality Workshop Agenda 	1/20/07
	<ul style="list-style-type: none"> • Coordinated and participated in Promoting Coordinated Management of Water Quality Protection and Food Safety Initiatives in California Vegetable Production – 4/24/07. Meeting agenda and participant list submitted with this report 	7/20/07
	<ul style="list-style-type: none"> • MBNEP Implementation Committee meeting 	10/20/07
	<ul style="list-style-type: none"> • Central Coast Steelhead Coalition meeting on 9/6/07 	10/20/07
	<ul style="list-style-type: none"> • SLOSEA Advisory Committee meeting 9/12/07 	10/20/07
	<ul style="list-style-type: none"> • Central Coast Watersheds Program, Planning & Conservation 	10/20/07

			League Foundation 9/14/07	
			<ul style="list-style-type: none"> Walter Creek Restoration Project Tour PC-07-07. Project pictures. This project is a joint project with the MBNEP The CSLRCD Engineer has designed and overseen the installation of the project irrigation and water supply system. The MBNEP has planted over one million plants at the site. This project was not funded by the MB 319h grant. 	7/20/08
		2.1.3	Meeting agendas and minutes:	
			<ul style="list-style-type: none"> MBNEP IC Meeting Agenda and Meeting Minutes 	1/20/07
			<ul style="list-style-type: none"> SLOSEA Meeting Agenda and information 	1/20/07
			<ul style="list-style-type: none"> MBNEP Joint EC, IC, and Bay Foundation Meeting Agenda (3/19/07). – Setting Estuary Program Priorities for 2008-2011 submitted with this report 	4/20/07
			<ul style="list-style-type: none"> MBNEP IC Meeting Agenda (2/6/07) and attachments for discussion and consideration submitted with this report 	4/20/07
			<ul style="list-style-type: none"> MBNEP IC Meeting Attachment Project Clearwater Quarterly Grant Report 7/1/06 to 9/30/06 submitted with this report. 	4/20/07
			<ul style="list-style-type: none"> MBNEP Technical Advisory Committee 4/26/07 agenda submitted with this report. 	7/20/07
			<ul style="list-style-type: none"> MBNEP Implementation Committee meeting 5/3/07. Meeting agenda, handouts, and draft minutes from 2/6/07 meeting submitted with this report. 	7/20/07
			<ul style="list-style-type: none"> MBNEP co-sponsored field tour for the USFWS Ventura Office staff and agency partners 5/8/07. Meeting agenda, tour site map, and participant list submitted with this report. 	7/20/07
			<ul style="list-style-type: none"> SLOSEA meeting 5/23/07. Meeting agenda submitted with this report. 	7/20/07
			<ul style="list-style-type: none"> “Do Your Ranch Roads Have Ruts?” flyer. 	1/20/08
			<ul style="list-style-type: none"> Central Coast Magazine January/February 2008 article Morro Bay Watershed Enhancement Project, San Luis Obispo County. 	1/20/08
			<ul style="list-style-type: none"> Resource Legacy Fund Foundation meeting thank you email for attendance. 	1/20/08
			<ul style="list-style-type: none"> SLOSEA Advisory Committee Meeting Minutes for 9/12/07 meeting. 	1/20/08
			<ul style="list-style-type: none"> SLOSEA Advisory Committee Meeting Agenda for the 12/6/07 meeting 	1/20/08
			<ul style="list-style-type: none"> SLOSEA Advisory Committee Meeting Minutes for 12/6/07 meeting. 	1/20/08
			<ul style="list-style-type: none"> CORRT (Coast Oceans Regional Round Table) : <ul style="list-style-type: none"> Coordinating committee meeting agenda 1/25/08. Coordinating committee meeting agenda 2/22/08. CORRT Talking Points 2/11/08 CORRT Speakers and participants update 2/11/08 CORRT Break Out Session Group Leaders 2/11/08. CORRT Stakeholders List – Draft 2/11/08. CORRT Speakers list – Draft 2/21/08 CORRT watershed group and coastal interest group representatives meeting agenda 3/12/08. CORRT Speakers list 	4/20/08

			<ul style="list-style-type: none"> • MBNEP TWG (Technical Working Group) meeting agenda 1/17/08. 	4/20/08
			<ul style="list-style-type: none"> • MBNEP IC (Implementation Committee) meeting agenda 2/6/08. 	4/20/08
			<ul style="list-style-type: none"> • MBNEP IC (Implementation Committee) meeting minutes 2/6/08. 	4/20/08
			<ul style="list-style-type: none"> • SLOSEA advisory committee meeting agenda 2/19/08. 	4/20/08
			<ul style="list-style-type: none"> • MBNEP Implementation Committee Meeting 4/25/08 meeting agenda 	7/20/08
			<ul style="list-style-type: none"> • PEG Video Planning Meeting 4/25/08 video outline 	7/20/08
			<ul style="list-style-type: none"> • SLOSEA Strategic Planning Meeting 6/3/08 to 6/4/08 and SLOSEA Advisory Committee Meeting 6/5/08. Meeting agenda and handouts. 	7/20/08
			<ul style="list-style-type: none"> • PEG Video Planning Meeting 6/11/08. DFG interview questions and internet resources. 	7/20/08
			<ul style="list-style-type: none"> • SUSCON Permit Coordination meeting 6/13/08 Species Habitat Matrix handout. 	7/20/08
			<ul style="list-style-type: none"> • SLOSEA Project evaluation meeting conducted by the Packard Foundation (7/16/08) 	10/20/08
			<ul style="list-style-type: none"> • MBNEP IC (Implementation Committee) meeting 8/6/08 agenda, 4/08 IC draft meeting minutes, grant requests. 	10/20/08
			<ul style="list-style-type: none"> • CORRT planning meeting for a the 10/23/08 stakeholders meeting draft agenda and invitation list (9/4/08) 	10/20/08
	2.2	Conduct Educational Workshops		
		2.2.1	Workshop agenda, summarize progress achieved on ranch plan development, total number of attendees, their type of agriculture operation, and a total number of Morro Bay Watershed attendees	
			<ul style="list-style-type: none"> • Range Water Quality Workshop Agenda 	1/20/07
			<ul style="list-style-type: none"> • Range Water Quality Workshop (1/31/07) meeting summary 	4/20/07
			<ul style="list-style-type: none"> • Range Water Quality Landowner follow-up letter (1/31/07) 	4/20/07
		2.2.2	Tailgate meeting agendas, minutes of meetings, total number of attendees, their type of agricultural operation, a total number of Morro Bay Watershed attendees	
			<ul style="list-style-type: none"> • Tailgate meeting planning session with NRCS staff 6/20/07. Meeting agenda 	7/20/07
			<ul style="list-style-type: none"> • Tailgate flyer for Creek Maintenance meeting 9/27/07 	10/20/07
		2.2.3	Workshop agenda, summarize progress achieved on ranch plan development, total number of attendees, their type of agriculture operation, and a total number of Morro Bay Watershed attendees	
			<ul style="list-style-type: none"> • Roads Workshop flyer 9/30/07 	10/20/07
		2.2.4	Workshop agenda, summarize progress achieved on ranch plan development, total number of attendees, their type of agriculture operation, and a total number of Morro Bay Watershed attendees	
			<ul style="list-style-type: none"> • Ranch Roads Workshop design concepts handout for participants. 	1/20/08
			<ul style="list-style-type: none"> • Ranch Roads Workshop certificate of completion issued to participants. 	1/20/08

			<ul style="list-style-type: none"> Streams Workshop 6/6/08. Documentation provided: workshop flyer, pictures from field tour, attendance list, CSLRCD Brochure, NRCS EQIP Brochure, CSLRCD Technical and Financial assistance information sheet, NRCS Geologists presentation handout, NRCS Area Engineer presentation handout. CSLRCD Watershed Coordinator presentation handout. 	7/20/08																
			<ul style="list-style-type: none"> Irrigation and Nutrient Management Workshop held at the Morro Bay Veterans Hall and field demonstrations held at Turri Ranch in Los Osos on 9/9/08. The following were provided with the 8th quarterly report: <ul style="list-style-type: none"> Meeting agenda Copies of speakers presentations Photos of the field demonstrations CSLRCD Watershed Coordinator presentation 	10/20/08																
	2.3	Design Conservation Plans and Implement BMPs																		
		2.3.1	A minimum of two (2) summaries of ranch/farm conservation plans and BMP designs will be available at the RCD office for Grant Manager review																	
			Summaries of ranch/farm conservation plans and BMP designs are available at the RCD for the following projects: PC-04-10 PC-05-15 PC-06-08 PC-07-02 PC-07-04 PC-08-06 PC-08-07	12/31/08																
	2.4	Implement Conservation Plans and BMPs																		
		2.4.2	Submit landowner Access Agreements and Conduct Site Visits to verify Implementation for at least 5 BMP's																	
			<ul style="list-style-type: none"> Landowner access agreements have been submitted to Grant Manager for the following projects: <table border="0" style="margin-left: 40px;"> <thead> <tr> <th>Project Number</th> <th>Date submitted</th> </tr> </thead> <tbody> <tr> <td>PC-04-10</td> <td>2/6/09</td> </tr> <tr> <td>PC-05-15</td> <td>10/11/07</td> </tr> <tr> <td>PC-06-08</td> <td>9/30/08</td> </tr> <tr> <td>PC-07-02</td> <td>3/25/08</td> </tr> <tr> <td>PC-07-04</td> <td>8/23/07</td> </tr> <tr> <td>PC-08-06</td> <td>2/6/09</td> </tr> <tr> <td>PC-08-07</td> <td>2/6/09</td> </tr> </tbody> </table> 	Project Number	Date submitted	PC-04-10	2/6/09	PC-05-15	10/11/07	PC-06-08	9/30/08	PC-07-02	3/25/08	PC-07-04	8/23/07	PC-08-06	2/6/09	PC-08-07	2/6/09	8/23/07 and subsequent
Project Number	Date submitted																			
PC-04-10	2/6/09																			
PC-05-15	10/11/07																			
PC-06-08	9/30/08																			
PC-07-02	3/25/08																			
PC-07-04	8/23/07																			
PC-08-06	2/6/09																			
PC-08-07	2/6/09																			

			<ul style="list-style-type: none"> Site visits were conducted to verify implementation of 74 BMPs for the following projects: <table border="0" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;">Project Number</th> <th style="text-align: left;">Date of Site Visit</th> </tr> </thead> <tbody> <tr> <td>PC-04-10</td> <td>2/6/09</td> </tr> <tr> <td>PC-05-15</td> <td>12/1/08</td> </tr> <tr> <td>PC-06-08</td> <td>12/1/08</td> </tr> <tr> <td>PC-07-02</td> <td>12/1/08</td> </tr> <tr> <td>PC-07-04</td> <td>12/1/08</td> </tr> <tr> <td>PC-08-06</td> <td>12/1/08</td> </tr> <tr> <td>PC-08-07</td> <td>12/1/08</td> </tr> </tbody> </table>	Project Number	Date of Site Visit	PC-04-10	2/6/09	PC-05-15	12/1/08	PC-06-08	12/1/08	PC-07-02	12/1/08	PC-07-04	12/1/08	PC-08-06	12/1/08	PC-08-07	12/1/08	12/1/08 and 2/5/09
Project Number	Date of Site Visit																			
PC-04-10	2/6/09																			
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PC-07-02	12/1/08																			
PC-07-04	12/1/08																			
PC-08-06	12/1/08																			
PC-08-07	12/1/08																			
	2.5	Monitor Program and BMP Effectiveness																		
		2.5.1	Submit data assessing BMP effectiveness																	
			<ul style="list-style-type: none"> Pre-Project and Project Installation Photo-monitoring Report for PC-07-04 	10/20/07																
			<ul style="list-style-type: none"> Pre-Project Photo-monitoring Report for PC-05-15 – Grade Stabilization 	10/20/07																
			<ul style="list-style-type: none"> PC-04-07 Frog Trough during project installation photos 	1/20/08																
			<ul style="list-style-type: none"> PC-05-15 Grade Stabilization Turri Road Ranch House photos 11/9/07 	1/20/08																
			<ul style="list-style-type: none"> PC-05-15 Grade Stabilization Turri Road Ranch House photos 11/15/07 	1/20/08																
			<ul style="list-style-type: none"> PC-05-15 Grade Stabilization Turri Road Ranch House PowerPoint presentation for pre, during, and post project implementation. 	1/20/08																
			<ul style="list-style-type: none"> PC-07-04 Frog-trough Cal Poly- Upper Walters Creek Ranch. Post project photo monitoring. 	7/20/08																
			<ul style="list-style-type: none"> PC-05-15 Grade Stabilization Turri Road Ranch House. Post project photo-monitoring. 	7/20/08																
			<ul style="list-style-type: none"> PC-07-02 Chorro Valley Camp SLO Managed Grazing System. Pre-project implementation photos taken in 9/08. 	10/20/08																
			<ul style="list-style-type: none"> PC-07-02 Chorro Valley Camp SLO Managed Grazing System. Project installation photos taken in 9/08 	10/20/08																
			<ul style="list-style-type: none"> Photo-monitoring is provided for all projects in Attachment E to this report. This monitoring shows before, during and after photos. 	12/31/08																

			<p>Effectiveness assessments in Final Report: In addition to photo-monitoring submitted with previous quarterly reports on 9/30/07, 1/20/08, 7/20/08, and 10/20/08, the Final Report for this grant agreement, submitted with this report, includes the following:</p> <ul style="list-style-type: none"> • Appendix E includes photo-monitoring for all implemented projects. • Appendix F provides a Pollution Load Reduction Report and estimated Cumulative Impacts of all BMPs implemented through this grant. • Appendix G provides total feet of streambank protected and total feet of stream channel stabilized/restored. 	2/6/09
		2.5.2	Post implementation photos after one (1) year installation	
			Post implementation photos are provided in Attachment E for projects PC-04-10 and PC-05-15. The other projects were completed less than 1 year before end of grant period.	2/6/09
		2.5.3	Report that assesses the cumulative benefits of all implemented BMPs	
			A report assessing the cumulative benefits of all implemented BMPs is provided in Attachment F to this report.	2/6/09
	2.6	Draft and Final Project Reports		
		2.6.1	Draft Project Report	12/11/08
		2.6.2	Final Project Report	2/6/09
EXHIBIT B “INVOICING, BUDGET DETAIL AND REPORTING PROVISIONS”				
	1.1	Invoice		Submitted quarterly
5.0	REPORTS			
	5.1	Progress Reports by the twentieth (20th) of the month following the end of the calendar quarter (March, June, September, and December)		Submitted quarterly
		5.1.1	Pollution Load Reduction Report	
			Estimates of pollutant load reductions are provided in Attachment F to this report.	2/6/09
		5.1.2	Protection/Restoration/Creation of Streams, Shorelines, or Wetlands Report	
			An accounting of wetlands restored/protected through this project is provided in Attachment G to this report.	2/6/09
		5.1.3	Stream Reach Codes Report	
			A report of stream segments benefitting from this project is provided in Attachment H to this report.	2/6/09
	5.3	Grant Summary Form		1/11/07

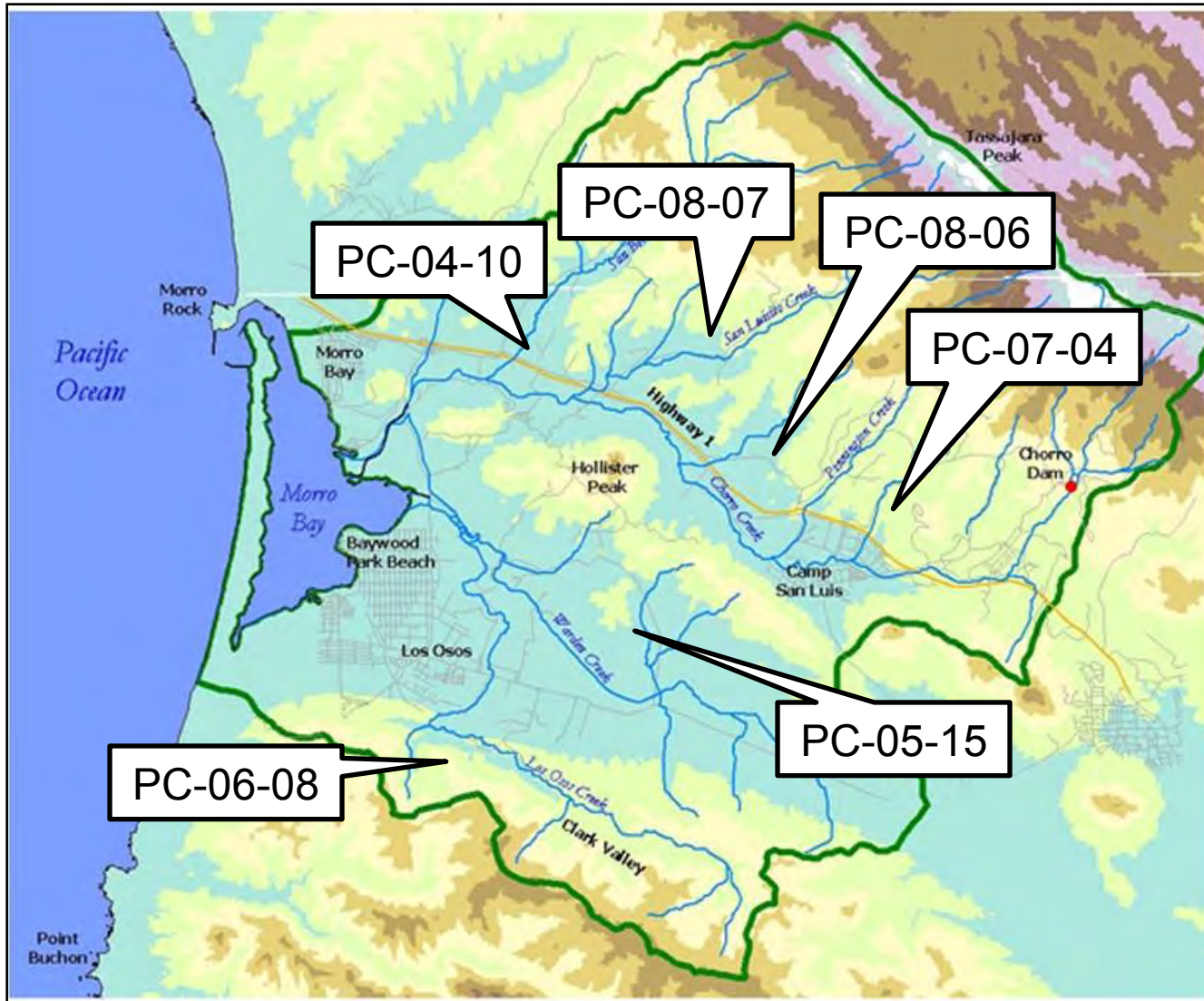
	5.4	Natural Resource Projects Inventory (NRPI) Project Survey Form	2/6/09 Attachment J to Final Report
EXHIBIT C “SWRCB GENERAL CONDITIONS”			
6	Copy of final CEQA/NEPA documentation		N/A
21	Signed cover sheets for all permits		N/A
EXHIBIT D – GRANT PROGRAM TERMS AND CONDITIONS			
1	Lobbying Certification		2/6/09
2	MBE/WBE Documentation		Submitted with each quarterly report

ATTACHMENT C

Summary of 319h Projects and Practices Implemented through Grant No. 06-128-553-0 "Project Clearwater"

Project Contact No. (PC)	Project Title	Resource Issue	Solution	Implemented BMP's	NRCS Conservation Practice Standard (BMP)			
					Practice Name	Component	Spec. No.	
PC-04-10	San Bernardo Creek Managed Grazing Project	Water quality issues and impacted riparian vegetation associated with cattle in creek	Install off creek watering system and riparian fencing	10	Watering Facility	Trough	614	
				4	Watering Facility	Water Tank	614	
				1	Water Well	< 200 ft	642	
				1	Fence: installed 14,700 ft	Barbed wire	382	
				1	Pipeline: installed 13,000 ft	Pipeline plastic	516	
				1	Pumping plant	Pump submersible 1-20 hp	533	
PC-05-15	Grade Stabilization Turri Road Ranch House	Sediment loading into Warden Creek due to head cut and bank destabilization	Eliminate head cut with drop structure	1	Grade Stabilization	Structure	410	
				1	Critical Area Planting: installed 0.5 Ac	Seed, Straw Mulch	342	
PC-06-08	Los Osos Valley Horse Manure Composting Project	Waste management problems associated with a horse boarding facility	Comprehensive Conservation Plan to be implemented in three phases; implementation of phase one	1	Compost Facility		317	
				1	Waste Storage Facility		313	
				1	Filter strip		393	
				1	Border Strip		386	
				(BMPs to right to be completed in Phases 2 and 3)	1	Access Road: installed 2,000 ft		560
					2	Vertical Drains		630
					1	Wastewater Treatment Strip	Bioretention cell	635
					1	Riparian Herbaceous Cover		390
					1	Diversion		362
					1	Roof Runoff Structure	Collect runoff from arena	558
1	Structure for Water Control	Basin	587					
1	Critical Area Planting	Seed, Straw Mulch	342					
PC-07-02	Chorro Valley Camp SLO Managed Grazing System	Water quality issues and impacted riparian vegetation associated with cattle in creek	Designed off creek watering system	10	Watering Facility	Trough	614	
				3	Watering Facility	Water Tank	614	
				1	Pipeline: installed 3,528 ft	Pipeline plastic	516	
				3	Spring Development	< 5 gpm	574	
				1	Critical Area Planting: installed 1 Ac	Seed, Straw Mulch	342	
PC-07-04	Cal Poly Frog Troughs - Upper Walters and Chumash Creeks in	Access to critical habitat	Designed Red Legged frog troughs along riparian fence	2	Watering Facility	Trough	614	
				1	Critical Area Planting: installed 100 sq ft	Seed, Straw Mulch	342	
PC-08-06	Cal Poly Road Improvement Project – Walters Creek Ranch	Sediment loading into Walter's Creek due to soil erosion from access roads	Out slope roads and install rolling dips	1	Access Road: installed 3,972 ft	Out slope	560	
				5	Structure for Water Control	Rolling dips	587	
PC-08-07	San Luisito Creek Managed Grazing Project	Water quality issues and impacted riparian vegetation associated with cattle in creek	Designed off creek watering system and installed riparian fencing	12	Watering Facility	Trough	614	
				5	Watering Facility	Water Tank	614	
				2	Water Well	< 200 ft	642	
				1	Fence: installed 18,832 ft (includes portion of fence paid for by MBNEP)	Barbed wire	382	
				2	Pumping plant	Solar powered system>501 watts	533	
1	Pipeline: installed 18,470 ft	Pipeline plastic	516					
Total =				74				

Map 1. Locations of Project Clearwater Implementation Projects in Morro Bay Estuary Watershed



ATTACHMENT E
[San Bernardo Creek Managed Grazing Project PC-04-10](#)



Figure 1. Cattle in creek



Figure 2. No fence or barrier to cattle access to creek.

Resource concern: impaired water quality and riparian vegetation due to cattle in creek; water quality parameters of concern include pathogens.

ATTACHMENT E

San Bernardo Creek Managed Grazing Project PC-04-10

Solution: Develop a Comprehensive Conservation Plan that includes riparian fencing and an off - creek watering system for cattle.



Figure 3. As-built off-creek watering system and riparian fencing plan for San Bernardo Creek Managed Grazing Project.

ATTACHMENT E

San Bernardo Creek Managed Grazing Project PC-04-10 - Construction



Figure 4. Rip shank and pipe feeder.



Figure 5. Close-up of cat ripping pipe into ground.



Figure 6. Distant view of cat ripping in pipe – note spool of pipe on right side of cat.



Figure 7. After pipe installation – minimal soil impact.

Construction: Views of caterpillar installing pipe into ground, and minimal impact after ditch is refilled by dozer following cat. Over 13,000 feet of pipeline were installed in this off-creek watering project.

ATTACHMENT E

San Bernardo Creek Managed Grazing Project PC-04-10 – Completed Project



Figure 8. Front view of typical trough.



Figure 9. Side view of trough with waiting customers.



Figure 10. Well and generator.



Figure 11. Installed fence along San Bernardo Creek.



Figure 12. Installed fence along tributary.



Figure 13. Four 5,000-gallon water tanks to supply troughs.

Completed project: The project was completed in 2006. 14,700 feet of riparian fencing were installed to protect the riparian area. Ten watering troughs were supplied by one well and four 5,000-gallon tanks.

ATTACHMENT E

San Bernardo Creek Managed Grazing Project PC-04-10 – Completed Project



Figure 13a. Well and generator (Feb 2009).



Figure 13b. Cattle watering trough.



Figure 13c. Riparian fencing protecting San Bernardo Creek (Feb. 2009)

Post-implementation photos: A site visit conducted February 6, 2009 found the riparian fencing and off-creek watering system in excellent condition.

ATTACHMENT E
Grade Stabilization Turri Road Ranch House PC-05-15



Figure 14. View of headcut, looking from left bank to right bank.



Figure 15. Looking downstream at entrance of existing rock culvert.



Figure 16. Another view of headcut.



Figure 17. Sloughing bank.

Resource concern: The head cut and a sloughing bank contribute to sediment loading into Warden Creek.

ATTACHMENT E
Grade Stabilization Turri Road Ranch House PC-05-15

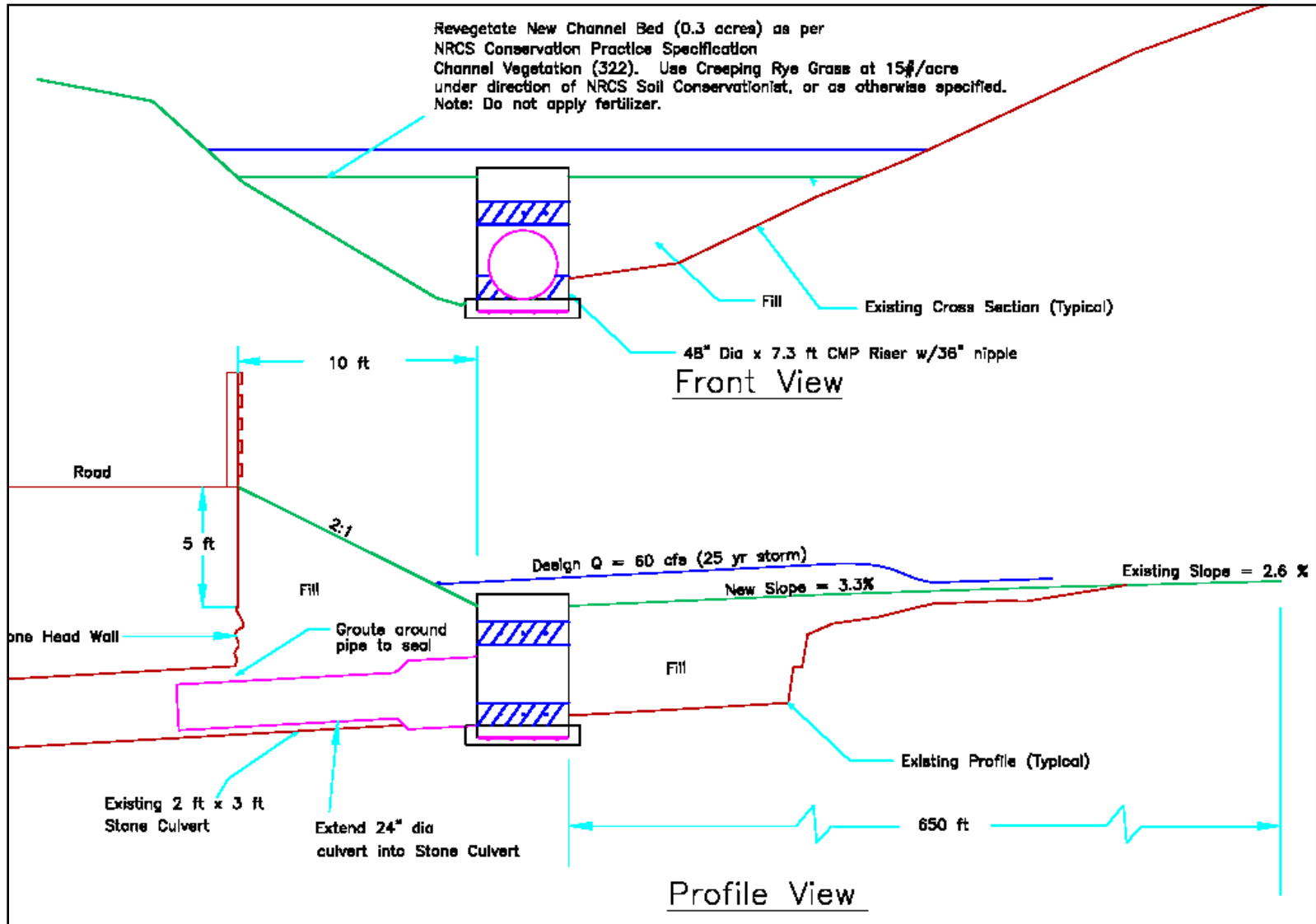


Figure 18. Diagram of drop structure and treatment of headcut.

Solution: Install drop structure to eliminate head cut; backfill around drop structure; fill in head cut to support sloughing bank.

ATTACHMENT E
Grade Stabilization Turri Road Ranch House PC-05-15



Figure 19. Drop structure prior to placement.



Figure 20. Placed drop structure.



Figure 21. Looking downstream at riprap around drop.



Figure 22. Headcut backfilled.

Construction: A large drop structure was installed to channel flow under the historic stone bridge without erosion.

ATTACHMENT E
Grade Stabilization Turri Road Ranch House PC-05-15



Figure 23. Installed drop structure and grate.



Figure 24. Looking upstream at outlet under stone bridge. Revegetated slopes are sprouting.



Figure 25. Looking upstream at drop structure and restored headcut during storm.

Completed project. looking downstream towards drop and grate, looking upstream at drop and grate during large storm, looking upstream at outlet of existing rock culvert during storm.

ATTACHMENT E
Grade Stabilization Turri Road Ranch House PC-05-15



Figure 25a. Looking upstream at drop structure and restored headcut, over a year after installation



Figure 25b. Looking upstream at outlet and recontoured/revegetated banks.

Post-implementation photos: A site visit conducted December 1, 2008 found the stabilized headcut and drop structure on the upstream side of the rock bridge in good condition and functioning well, and the recontoured and revegetated banks on the downstream site stable with no signs of scour or downcutting.

ATTACHMENT E

[Los Osos Valley Horse Manure Composting Project PC-06-08](#)



Figure 26. Aerial view of equestrian facility adjacent to tributary to Los Osos Creek.

Resource concern: To minimize waste management problems associated with a 50 horse capacity boarding facility that borders a blue line stream.

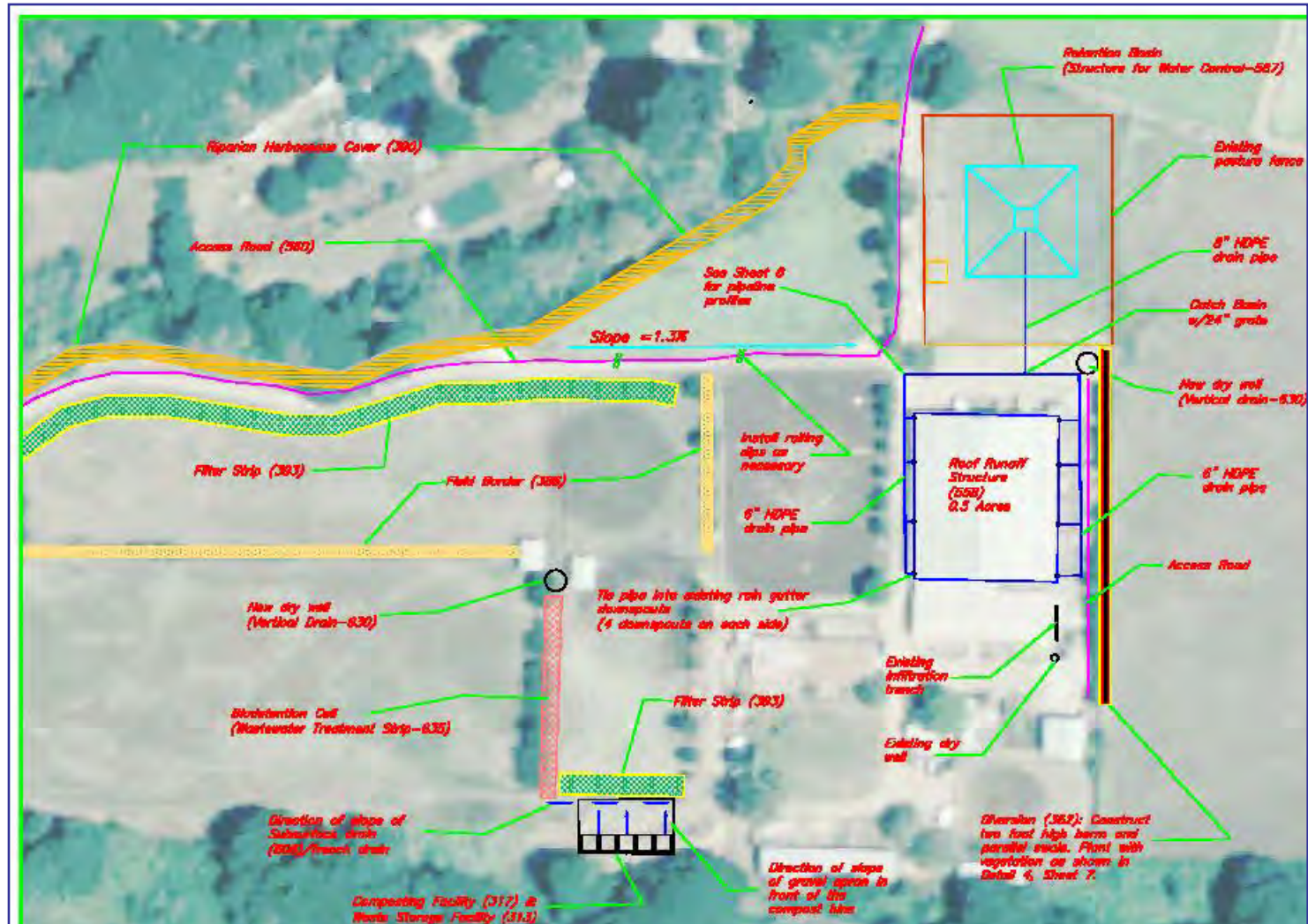


Figure 27. Layout of three-phase conservation plan.

Solution: Develop a Comprehensive Conservation Plan composed of three phases; as consistent with Phase 1, the compost facility, filter strip and field borders were installed in 2008.

ATTACHMENT E
Los Osos Valley Horse Manure Composting Project PC-06-08



Figure 28. Contractor tying steel for pad.



Figure 29. Pouring concrete.



Figure 30. Inter-lock blocks off-loaded from truck, prior to placement on pad.



Figure 31. Finished pad.

Construction: A concrete pad was poured to provide an impermeable surface on which to compost manure.

ATTACHMENT E

Los Osos Valley Horse Manure Composting Project PC-06-08



Figure 32. Blocks creating 5-bin compost facility.



Figure 33. View of one 15' x 15' x 5' bin.



Figure 34. The first bin beginning to be filled with manure.



Figure 35. Closer view of 4 of 5 bins.

Completed project. The landowners began storing manure in the bins for composting as soon as facility was completed.

ATTACHMENT E

Chorro Valley Camp San Luis Obispo Managed Grazing Project PC-07-02



Figure 40. Site shown is just below development site of the upper spring in pasture 1. Note the hoof prints in the mud.



Figure 41. An existing non-functional water trough under scores the lack of an available off-creek water supply for cattle.

Resource concern: Impaired water quality and riparian vegetation due to cattle in creek (parameters of concern include pathogens) and limited cattle access to an off-creek water supply.

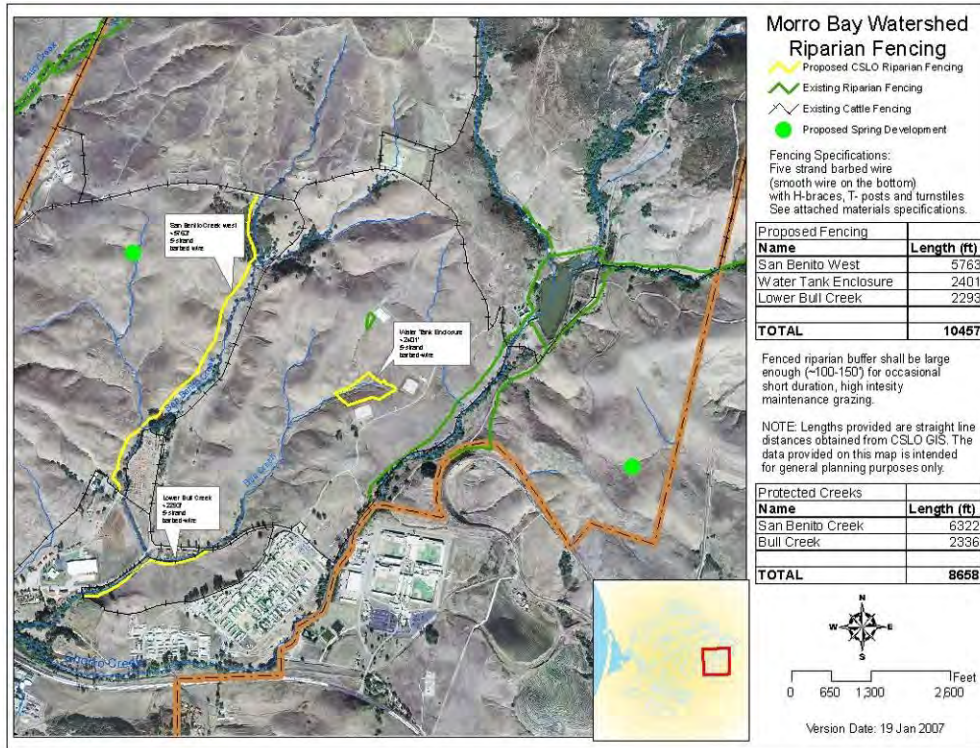


Figure 42. Layout for riparian fencing.

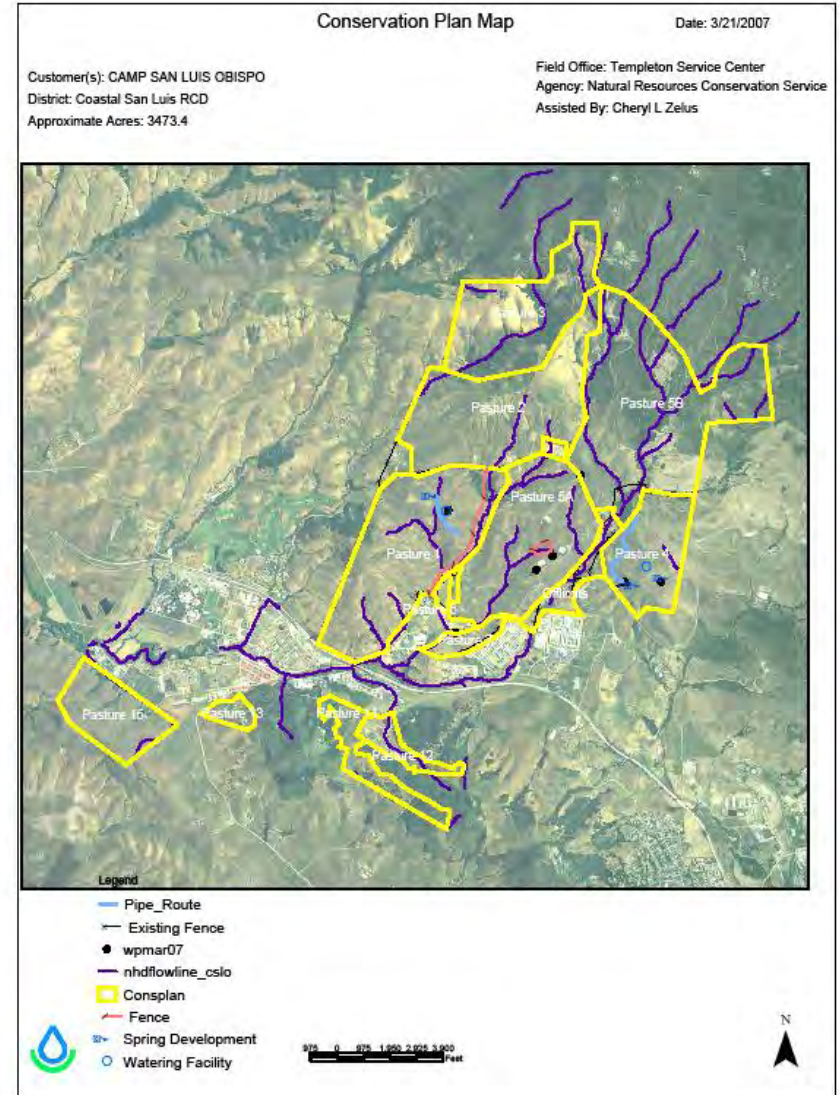


Figure 43. Off-creek watering plan.

Solution: In association with the Morro Bay National Estuary Program’s plan to install riparian fencing, a Comprehensive Conservation Plan was developed that provides off creek watering for cattle.

ATTACHMENT E

Chorro Valley Camp San Luis Obispo Managed Grazing Project PC-07-02



Figure 44. Development of upper spring in pasture 1.



Figure 45. Ripping pipe in from upper spring in pasture 1 to trough.



Figure 46. Development of lower spring in pasture 1.



Figure 47. Installation of trough in pasture 5A.



Figure 48. Installation of storage tank just below lower spring in pasture 1.



Figure 49. Installation of storage tank and pipeline to troughs in pasture 4.

Construction: The project included installing over 3500 feet of pipeline and 3 tanks to supply 10 watering troughs.

ATTACHMENT E

[Chorro Valley Camp San Luis Obispo Managed Grazing Project PC-07-02](#)



Figure 50. Trough supplied from lower fire hydrant in field 5A.



Figure 51. Trough from upper spring in pasture 1 shown in the distance.



Figure 52. SWRCB project tour group shown at completed lower spring in pasture 1, with storage tank downhill.



Figure 53. Trough from lower spring in pasture 1.

Completed project: Figures 50 through 53 show installed components of off-creek watering system at Camp San Luis.

ATTACHMENT E

Cal Poly Frog Troughs-Upper Walter's and Chumash Creeks PC-07-04



Figure 54. Typical habitat at Walter's Creek.



Figure 55. Comparison: adult bullfrog on left, and adult red-legged frog on right (photos downloaded from internet).

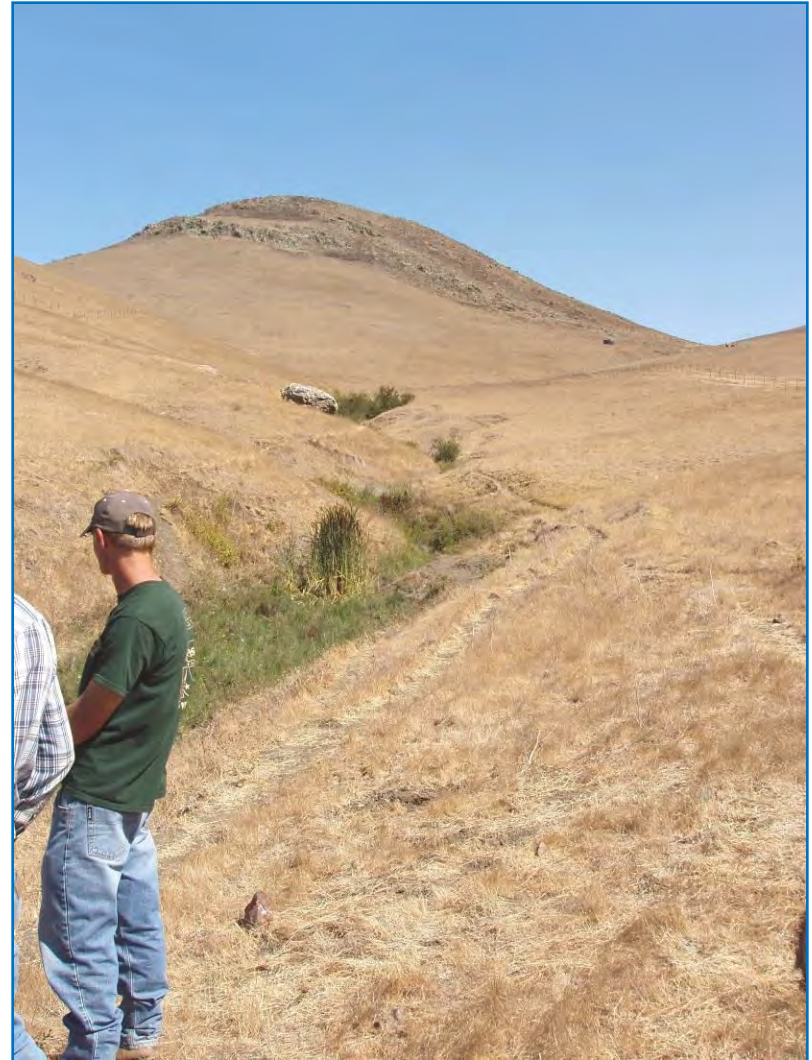
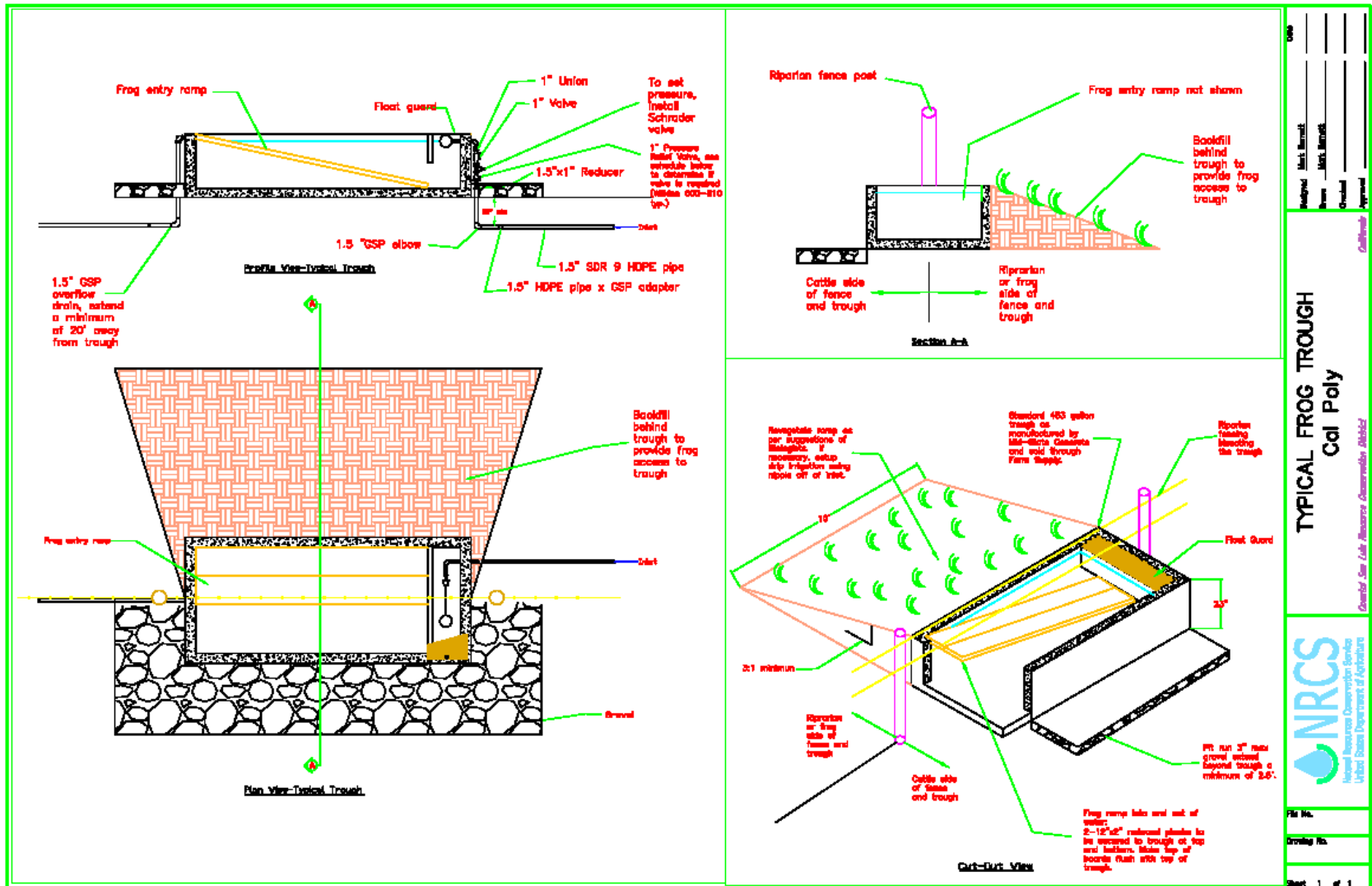


Figure 56. Upper Walter's Creek.

Resource concern: California's Red legged frog's limited access to critical habitat and predation of juvenile California Red Legged frogs by Bull frogs.

ATTACHMENT E

Cal Poly Frog Troughs-Upper Walter's and Chumash Creeks PC-07-04



Checked	Approved
Created	Checked
Revised	Revised
Analysed	Mark Bennett
Drawn	Mark Bennett
Scale	
Sheet	1 of 1

TYPICAL FROG TROUGH
 Cal Poly
 Council: See Lake Resource Coordinator's Website
 NRCNS
 Natural Resource Conservation Service
 United States Department of Agriculture

Figure 57. Design for water troughs that facilitate access by red-legged frogs.

Solution: Design a water trough that allow frogs easy access into and out of the trough as well as providing protection from bullfrogs.

ATTACHMENT E

Cal Poly Frog Troughs-Upper Walter's and Chumash Creeks PC-07-04



Figure 58. Trough in place in Walters Creek.



Figure 59. Trough set in place at Chumash Creek.

Construction: Two of the pre-formed water troughs after being set in place.

ATTACHMENT E

Cal Poly Frog Troughs-Upper Walter's and Chumash Creeks PC-07-04



Figure 60. Completed red-legged frog-friendly water trough in Walters Creek watershed, bisected by fence so as to be accessible by cattle from either pasture.



Figure 61. Completed "frog trough" in the Chumash Creek watershed.

Completed project: The two completed "frog troughs" on Cal Poly land allow off-creek water access to cattle from two pastures.

ATTACHMENT E

Cal Poly Road Improvement Project – Walter's Creek Ranch PC-08-06

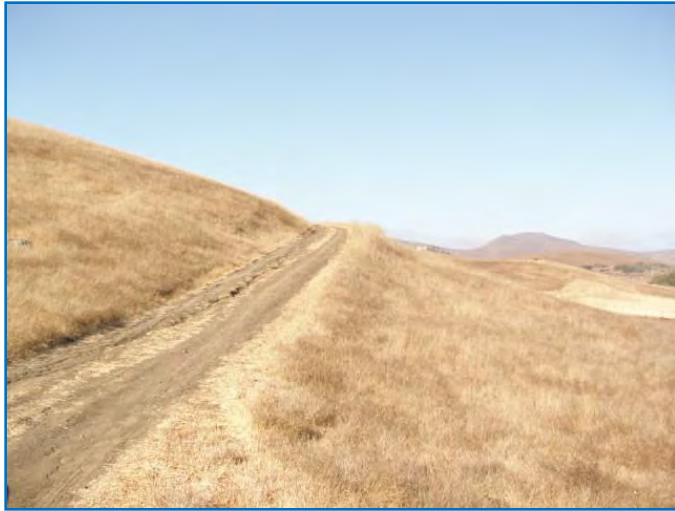


Figure 62. Erosion in middle of road.



Figure 63. Developing gully in road.



Figure 64. Another site of soil erosion.



Figure 65. Rilling evident on unvegetated portions of road.

Resource concern: Views of inadequately designed dirt roads on Cal Poly's Walter's Creek Ranch, showing evidence of soil erosion in the form of rilling and incipient gullies.

ATTACHMENT E

Cal Poly Road Improvement Project – Walter’s Creek Ranch PC-08-06

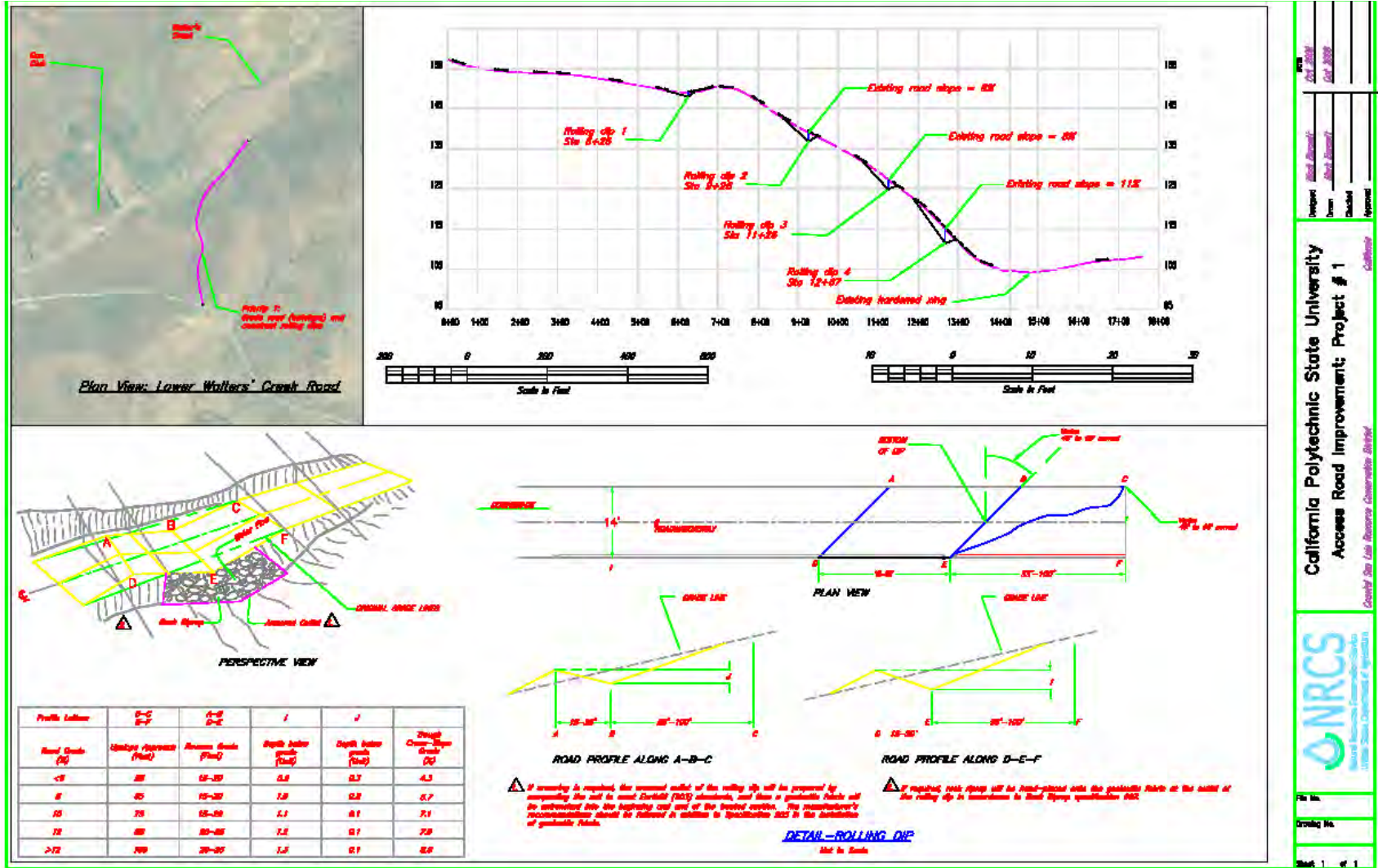


Figure 66. Design for outsloped road at Walters Creek Ranch.

Solution: Outslope access roads and install rolling dips where appropriate.

ATTACHMENT E

Cal Poly Road Improvement Project – Walter's Creek Ranch PC-08-06



Figure 67. Outsloped road 1.



Figure 68. Outsloped road 2.



Figure 69. Outsloped road 3.



Figure 70. Outsloped road 4.

Completed project pictures of out-sloped access roads and rolling dips.

ATTACHMENT E
[San Luisito Creek Managed Grazing System PC-08-07](#)



Figure 71. Cattle heading toward creek.



Figure 72. Coming out of the creek.



Figure 73. Bull browsing tree in riparian area.



Figure 74. In the creek.

Resource concern: Impaired water quality and riparian vegetation due to cattle in creek; water quality parameters of concern include pathogens.

ATTACHMENT E

San Luisito Creek Managed Grazing System PC-08-07

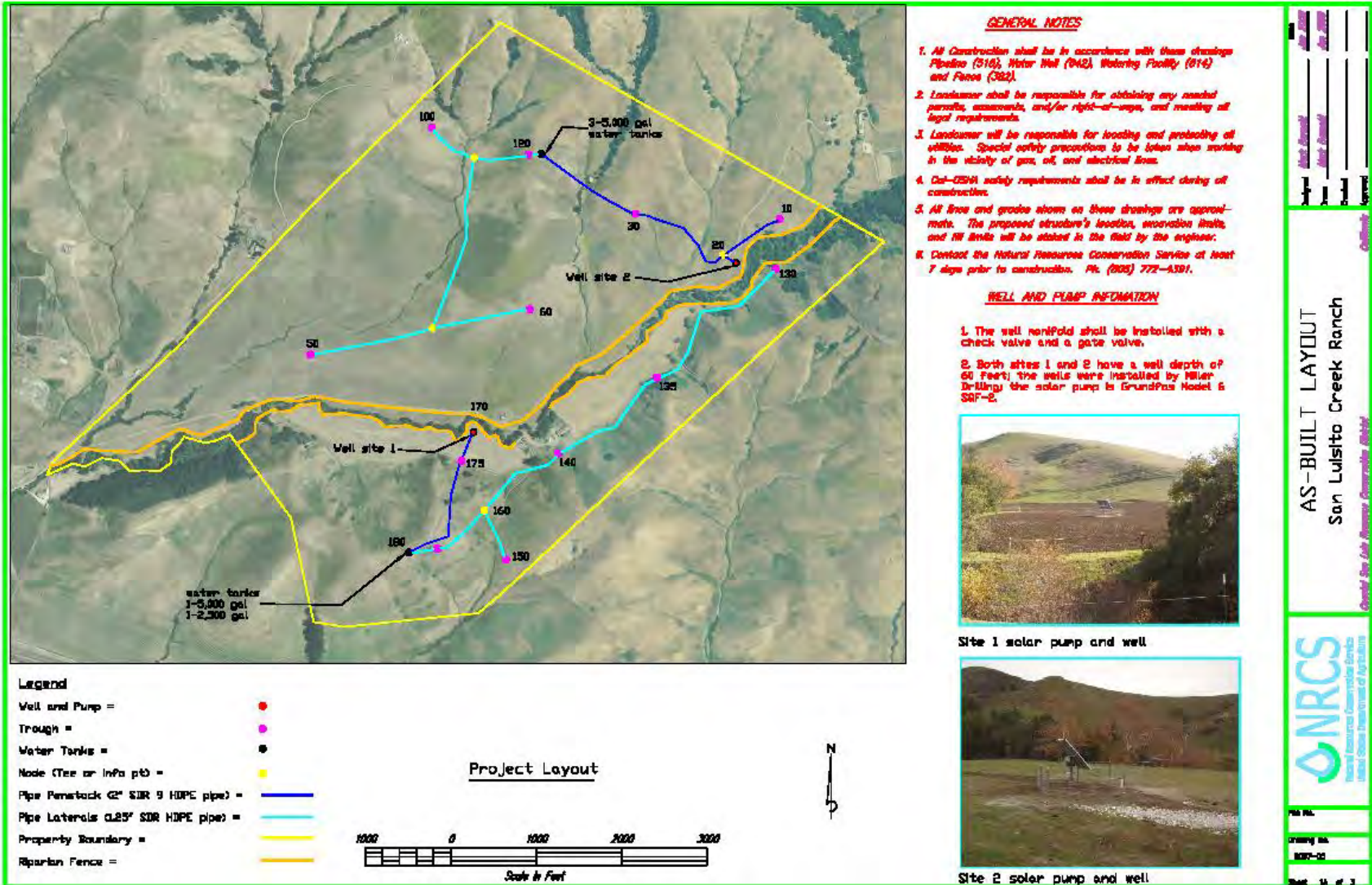


Figure 75. Layout of wells, pipeline, troughs and riparian fencing at San Luisito Creek ranch.

Solution: Prevent cattle access to creek with riparian fencing and off creek watering system.

ATTACHMENT E
San Luisito Creek Managed Grazing System PC-08-07



Figure 76. Cat and spool system used to rip in pipe.



Figure 77. Ripping in pipe.



Figure 78. Backhoe used to install pipe in hayfield in order to get 48" depth.



Figure 79. Installing tee to trough #30 with fusion welder.



Figure 80. Site 1 well installation.



Figure 81. Tank install on south side of creek.

Construction. Various stages of construction, including pipe, well and tank installation.

ATTACHMENT E
San Luisito Creek Managed Grazing System PC-08-07



Figure 82. Solar panel and pump manifold at well site #2.



Figure 83. Three 4,500-gallon water tanks on north side of creek.



Figure 84. Water trough #10.



Figure 85. Riparian fencing

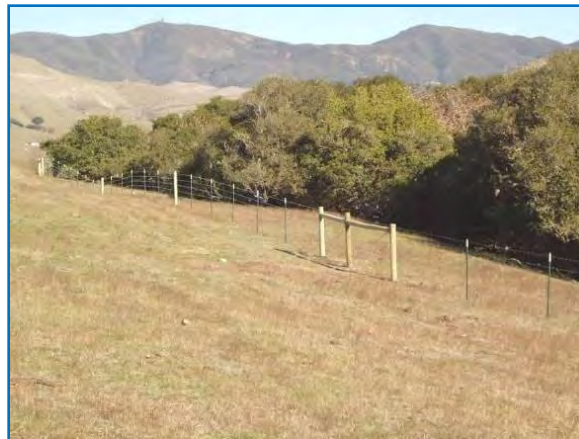


Figure 86. More riparian fencing.



Figure 87 . Water trough #60.

Completed project. Two solar powered pumping plants were installed to send water from the wells to storage tanks, and then to troughs. Over 8,000 feet of riparian fencing were installed to protect the creek,