

ATTACHMENT F

Los Osos Creek Vegetation Management and Debris Removal PC-01-01



Figure 1. Typical debris to be cleared.



Figure 2. The CCC hard at work clearing.



Figure 3. Typical brush to be cleared.



Figure 4. Typical trimming of branches.

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F
[Los Osos Creek Sediment Removal Project PC-01-02](#)



Figure 5. Scraper removing sediment.



Figure 6. Many cuts were over five feet down.



Figure 7. Cut stakes were placed to direct scraper.



Figure 8. View of scraper path.

Project: Sediment removal pictures.

ATTACHMENT F
[Los Osos Creek Bank Stabilization Project PC-01-03](#)



Figure 9. Willow stakes planted along bank.



Figure 10. CCC crew planting willow stakes.



Figure 11. Log that was secured.



Figure 12. Note cable securing log.

Project: The RCD funded a CCC crew to install bank stabilization devices along an eroding bank bend of Loss Osos Creek.

ATTACHMENT F
[Pennington Creek Bank Stabilization Project PC-01-06](#)



Figure 13. Willow stakes planted along bank.



Figure 14. Willow growth.

Project: The RCD funded the County grading permit fee for bank stabilization work being done on Pennington Creek by the CCC; the grading plan was done by the engineering firm, RRM Design Group .

ATTACHMENT F

Two Appraisals for Agricultural Conservation Easements PC-01-11 A & B



Figure 15. The 410 acre appraised parcel within the Los Osos Creek watershed.



Figure 16. The 320 acre appraised parcel within the Chorro Creek watershed.

Project: The RCD obtained appraisals for agricultural conservation easements on two properties totaling 860 acres.

ATTACHMENT F

Warden Creek Fencing and Water Development PC-02-01 A & B



Figure 17. Trough installation



Figure 18. Trough and fence (in background) installation.

Project: To improve the water quality of Warden Creek and the grazing management of the ranch, the RCD designed an off creek water supply system and installed 11,560 feet of cross fencing enclosing 480 acres.

ATTACHMENT F

Warden Creek Fencing and Water Development PC-02-01 A & B



Figure 19. Cross fence with trough in distance.



Figure 20. Tank installation.

Project: To improve the water quality of Warden Creek and the grazing management of the ranch, the RCD designed an off creek water supply system and installed 11,560 feet of cross fencing enclosing 480 acres..

ATTACHMENT F
[Hollister Peak Ranch Water Development Project PC-02-02](#)



Figure 21. Cattle drinking from a trough



Figure 22. Wildlife ramp in trough.

Project: To improve the water quality of Los Osos Creek and the grazing management of the ranch, the RCD designed an off creek water supply system.

ATTACHMENT F
[Gulley Repair Camp San Luis Obispo PC-02-03](#)



Figure 23. Top of gulley



Figure 24. Looking upstream at check dams



Figure 25. Straw bale and sand bag check dam



Figure 26. Brush check dam

Project: The RCD provided the materials to repair approximately 1,500 feet of steep to moderate gulley erosion caused by stormwater runoff from a 0.7 acre roof of a water storage reservoir.

ATTACHMENT F
[San Luisito Cross Fencing and Water Development PC-02-04](#)



Figure 27. Riparian pasture fencing



Figure 28. Riparian pasture fencing

Project: RCD designed an off creek water supply system and installed 600 feet of riparian fence along San Luisito Creek.

ATTACHMENT F
San Luisito Cross Fencing and Water Development PC-02-04



Figure 29. Tanks hold water collected from springs and horizontal well.



Figure 30. Riparian pasture fencing with trough location shown by arrow

Project: RCD designed an off creek water supply system and installed 600 feet of riparian fence along San Luisito Creek.

ATTACHMENT F
[Emergency Vegetation Management PC-02-07 A](#)



Fig 31. Before vegetation management



Fig 32. Before vegetation management



Fig. 33. CCC crew during vegetation management



Fig. 34. CCC crew during vegetation management

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F

Chorro Creek Stream Crossing and Debris Removal Project PC-02-08 A & D



Figure 35. Existing Arizona stream crossing that was removed.



Figure 36. Partially completed abutments.



Figure 37. View of failing Arizona crossing.

Pre project: Pictures of existing conditions prior to installation of bridge and removal of Arizona crossing.

ATTACHMENT F

Chorro Creek Stream Crossing and Debris Removal Project PC-02-08 A & D



Figure 38. Completed bridge and bank stabilization.



Figure 39. Cheryl Zelus admiring the completed bridge.



Figure 40. Concrete debris before removal.



Figure 41. Reach of Chorro Creek after debris removal and vegetation management

Project Completion: Pictures of completed bridge crossing.

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Warden Creek Vegetation Management and Debris Removal PC-02-10



Figure 42. Tree pruning in Warden Creek.



Figure 43. Taking the pruned vegetation to chipper.



Figure 44. Channel partially pruned.



Figure 45. Channel 8 months later, note canopy maintained.

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F
Warden Creek Tributary Bank Stabilization Project PC-02-11

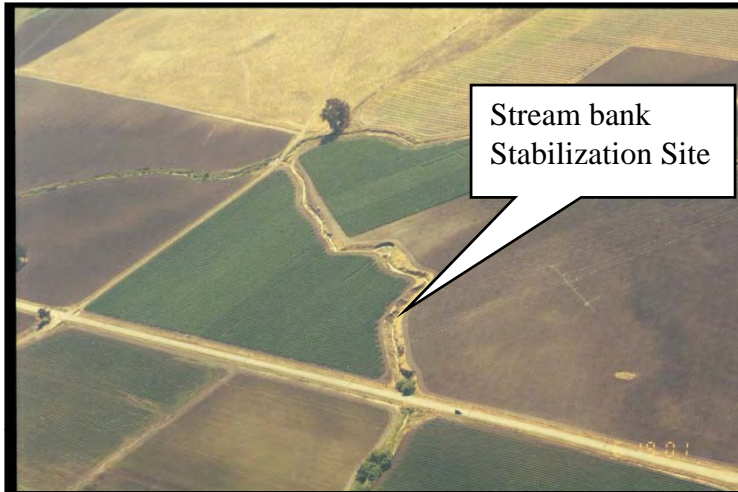


Figure 46. Plan view map showing location.



Figure 47. Source of head cut; 15 foot drop off.



Figure 48. Sloughing bank.



Figure 49. Eroding banks.

Resource concern: The head cut at the culvert and sloughing bank contribute to sediment loading into this tributary to Warden Creek.

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Warden Creek Bank Stabilization Project PC-02-11

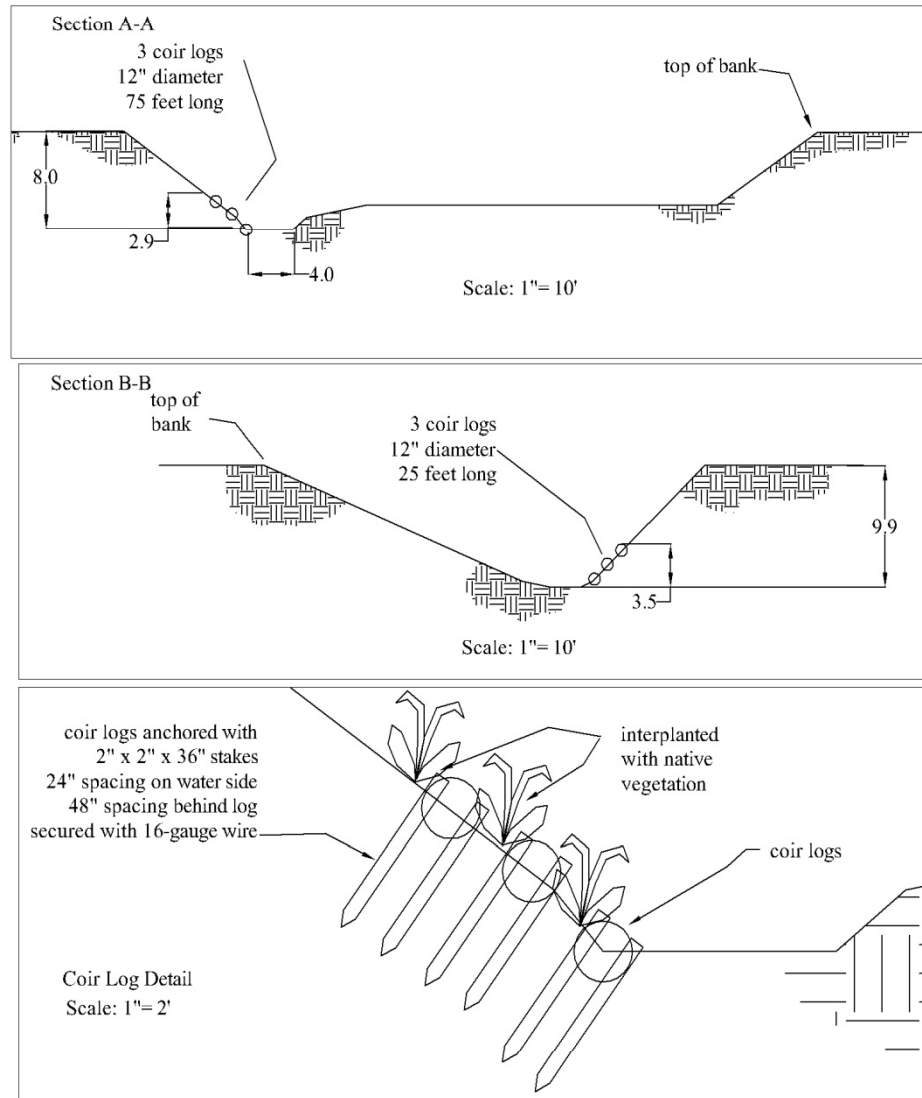


Figure 50. Design drawing for coir logs

Solution: Installed coir logs to stabilize bank.

ATTACHMENT F
[Warden Creek Bank Stabilization Project PC-02-11](#)



Figure 51. Installed coir logs.



Figure 52. Installing coir logs.



Figure 53. CCC crew working hard.

Construction: The CCC crew installing coir logs.

ATTACHMENT F
[Warden Creek Bank Stabilization Project PC-02-11](#)



Figure 54. Grasses on bank behind coir logs.



Figure 55. Bank erosion behind anchored coir logs.

Post Completed project: This project had some success and some failure as can be seen above.

ATTACHMENT F
Los Osos Creek Stream Improvement PC-03-01



Figure 56. Meredith Hardy, CCC & Los Osos Creek debris jam



Figure 57. Phillip LaFollette, CCC & Los Osos Creek debris jam



Figure 58. Same debris jam as above after CCC crews cleared it.



Figure 59. Channel opened up after CCC crews cleared debris

Project: Typical photos of a creek in need of vegetation management and debris removal.

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[Los Osos Creek Vegetation Management and Debris Removal PC-03-01](#)



Figure 60. Debris jam in Los Osos Creek



Figure 61. Debris jam in Los Osos Creek



Figure 62. Debris jam in Los Osos Creek after CCC clearing



Figure 63. Debris jam in Los Osos Creek after CCC clearing

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F
Los Osos Creek WRP Stream Corridor Improvement PC-03-02

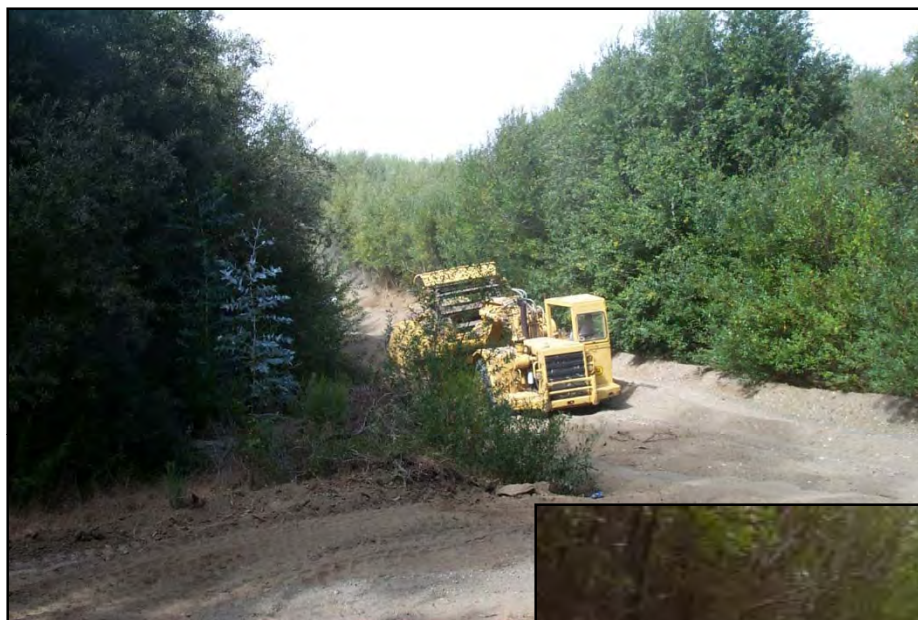


Figure 64. Sediment removal for WRP reach of Los Osos Creek.



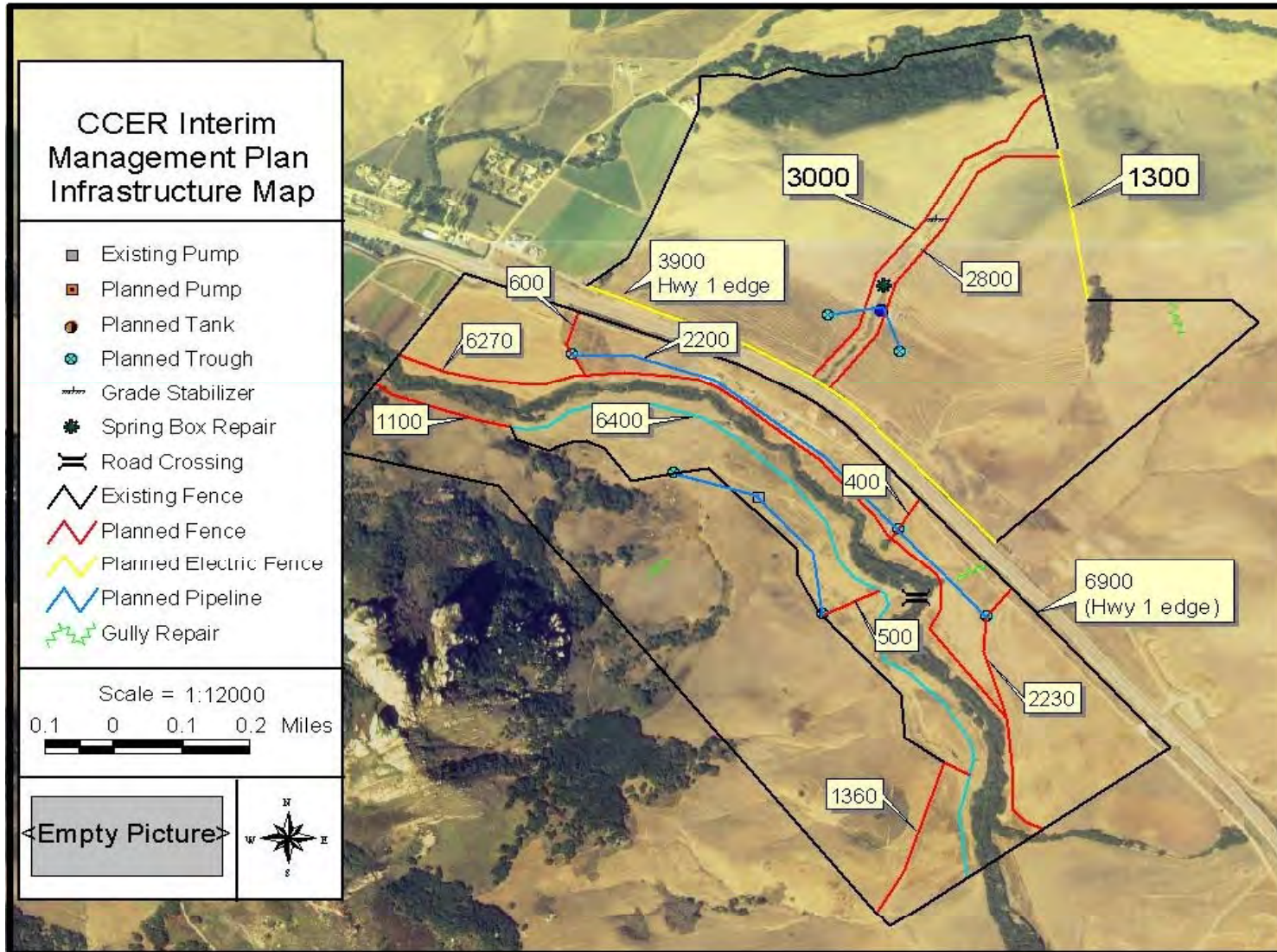
Figure 65. Photo above shows this reach of Los Osos Creek before project.



Figure 66. Photo to the left shows the reach after the project.

Project: Mechanical sediment removal.

ATTACHMENT F
[Chorro Creek Ecological reserve Fence Project PC-03-03 A & C](#)



Project: As part of the Interim Management Plan of the Chorro Creek Ecological Reserve (CCER), the RCD purchased the materials to install 18,200 feet of fence.

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Chorro Creek Ecological Reserve Fence Project PC-03-03 A & C



Figure 68. Corps crew installing perimeter fence



Figure 69. Corps crew installing holes for posts.

Project: CCC crew installing fence along highway 1.

ATTACHMENT F
[Chorro Creek Bank Stabilization Project PC-03-05 A & C](#)



Figure 70. Eroding stream bank.



Figure 71. CCC hand digging and jack-hammering rock & soil out of site .



Figure 72. Corps hauling rock & soil out of site by hand.



Figure 73. Corps hauling rock & soil out all the way up the hill!

Project: The RCD funded the CCC's to install 60 feet of stream bank restoration downstream of Canet Road on Chorro Creek.

ATTACHMENT F
[Chorro Creek Bank Stabilization Project PC-03-05 A & C](#)



Figure 74. Boulders were craned in and guided into place by CCC.



Figure 75. Corps members installing craned in root wad.



Figure 76. Corps members installing cabled boulders and root wad.



Figure 77. View of bio logs and laid back slope.

Project: The RCD funded the CCC's to install 60 feet of stream bank restoration downstream of Canet Road on Chorro Creek.

ATTACHMENT F
[Chorro Creek Bank Stabilization Project PC-03-05 A & C](#)



Figure 78. Willow stakes and facines being installed by CCC.



Figure 79. Straw applied for erosion protection being secured by CCC crews.

Project: The RCD funded the CCC's to install 60 feet of stream bank restoration downstream of Canet Road on Chorro Creek.

ATTACHMENT F

Warden Creek Vegetation Management and Debris Removal Project PC-03-06



Figure 80. Small Willow growing so close that all of the middle portion are dead trees. Debris was found 10 feet high in the trees.



Figure 81. After pruning of willow in the center of the channel. Re-vegetation planting took place the following winter on the north side of channel.

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F

Warden Creek Vegetation Management and Debris Removal Project PC-03-06



Figure 82. Small willow thinned and large willow in the center of the channel were pruned up for canopy.



Figure 83. Reach after pruning and winter storms.

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F

Warden Creek Vegetation Management and Debris Removal Project PC-04-03



Figure 84. This reach included pruning willow in the center of the channel and pruning up larger willow for canopy.



Figure 85. CCC working on this reach of Warden Creek.

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F
[Pennington Creek Baffle Retrofit Project PC-04-05](#)



Figure 86. Dysfunctional baffles.



Figure 87. Modified baffles, note they are half as tall as before.



Figure 88. CCC crew member removing baffles.

Project: The RCD designed a modification to the existing Pennington Creek fish ladder to improve fish passage and reduce maintenance.

ATTACHMENT F
Warden Creek Stream Crossing Project PC-04-06



Figure 89. Looking downstream at Warden Creek crossing.



Figure 90. Looking upstream at Warden Creek crossing design.

Project: The RCD designed a creek crossing to replace an Arizona type crossing that regularly washes out in winter storms.

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Warden Creek Stream Crossing Project PC-04-06

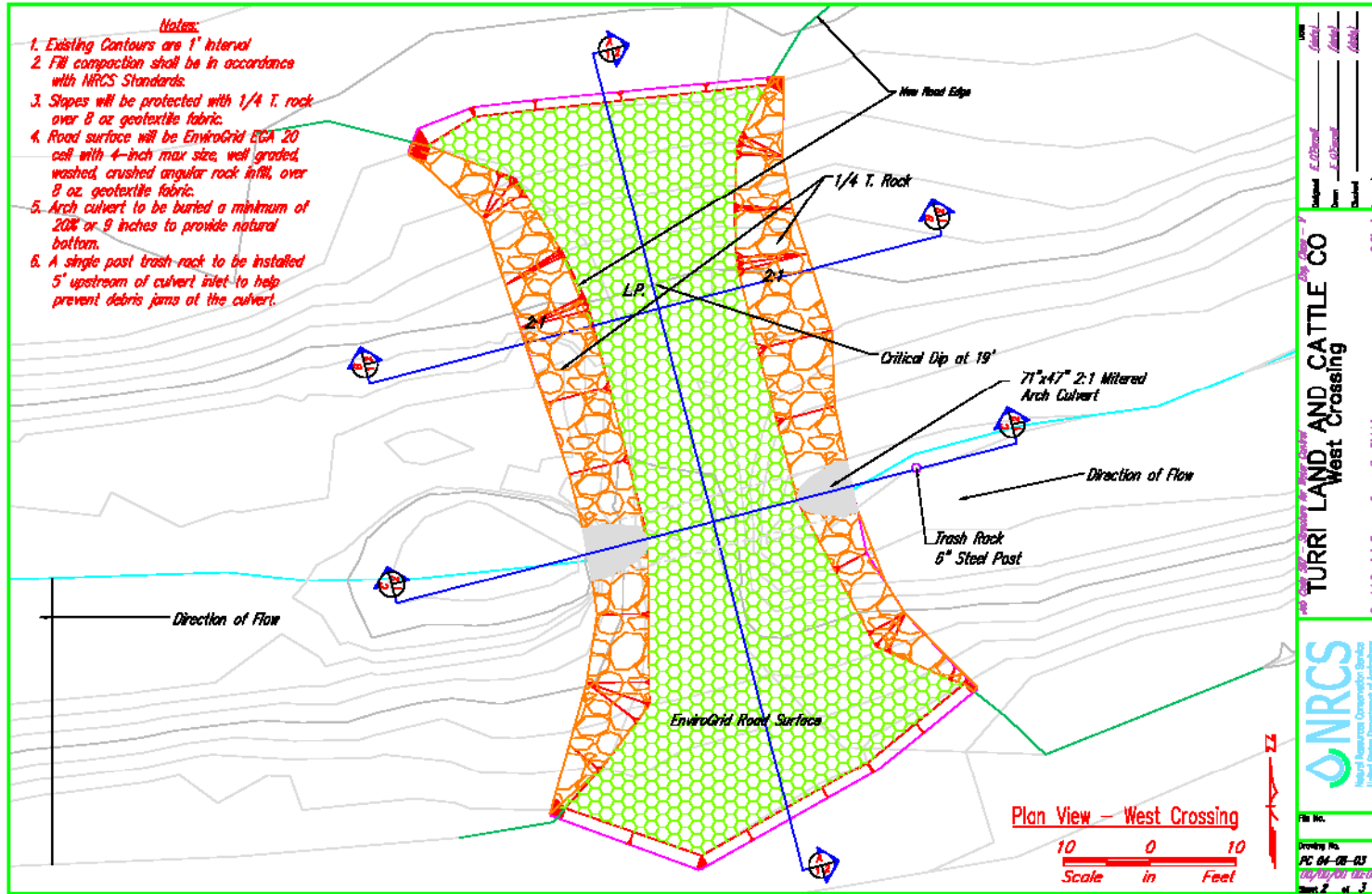
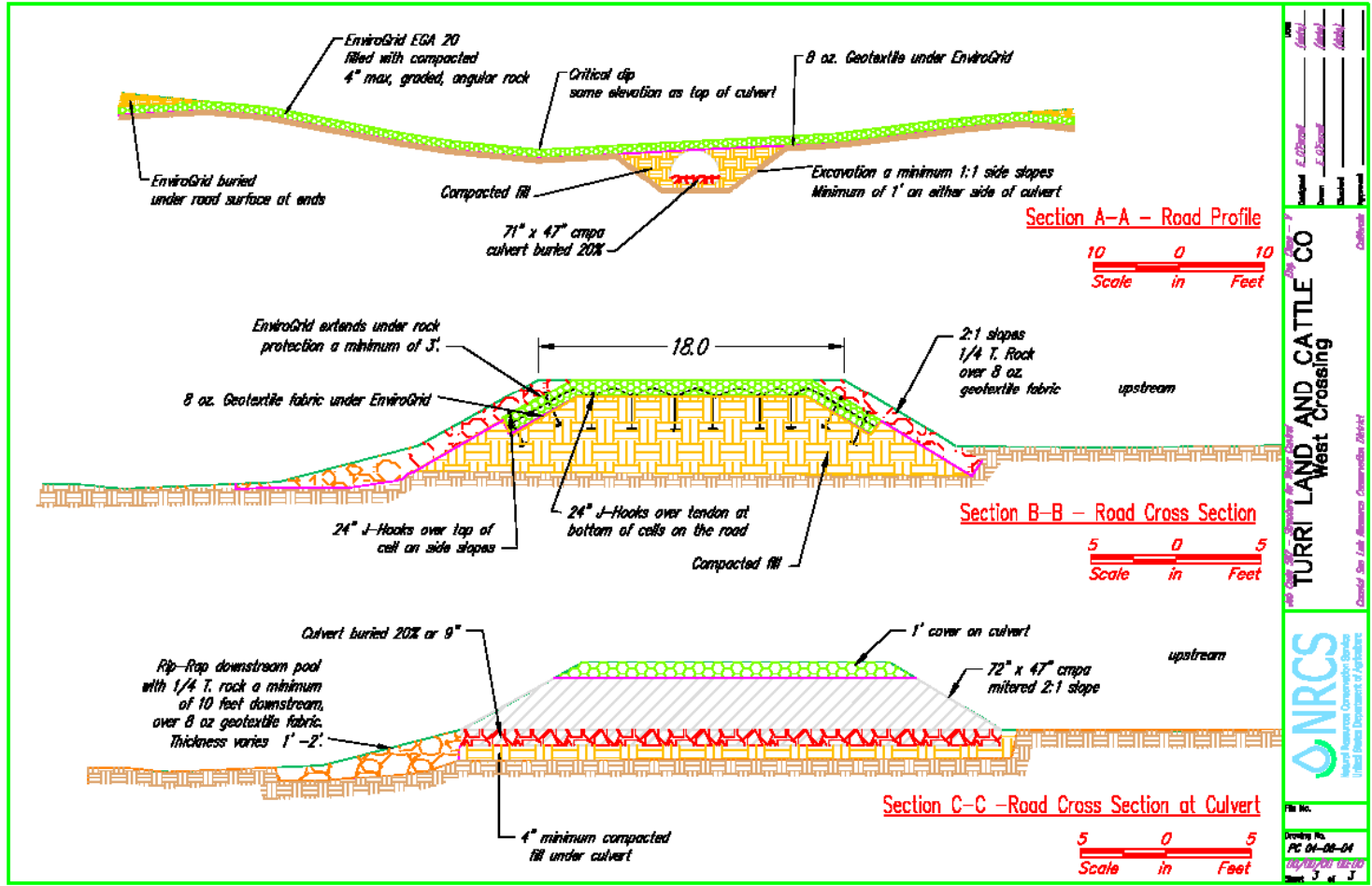


Figure 91. Plan view of proposed crossing.

Project: For Erosion control, one quarter ton rock and the product EnviroGrid with compacted rock fill was to be used to prevent the loss of soil covering the installed culvert

ATTACHMENT F

Warden Creek Stream Crossing Project PC-04-06



TURRI LAND AND CATTLE CO
 West Crossing
 Project No. PC 04-06-04
 Date 3/11/06
 Scale 3" = 3'

Figure 92. Profile view of proposed crossing.

Project: The proposed design consisted of a 71" x 47" arch culvert installed at grade. The invert was to be buried 20%, leaving 37 inches clearance, by 71" wide. The culvert was to be 32' long, with the side slopes of 2:1.

ATTACHMENT F

Riparian Fencing, Off-Creek Stock Water System and Ranch Improvements PC-04-07



Figure 93. Installed water tanks.



Figure 94. Installed fence.



Figure 95. Installed fence.



Figure 96. Installed fence.



Figure 97. Low impact installation of pipeline.



Figure 98. Typical trough.

Project: A comprehensive Conservation Plan was developed to improve cattle grazing management as well as protect the water quality of San Luisito and San Bernardo Creeks.

ATTACHMENT F

Riparian Fencing, Off-Creek Stock Water System and Ranch Improvements PC-04-07

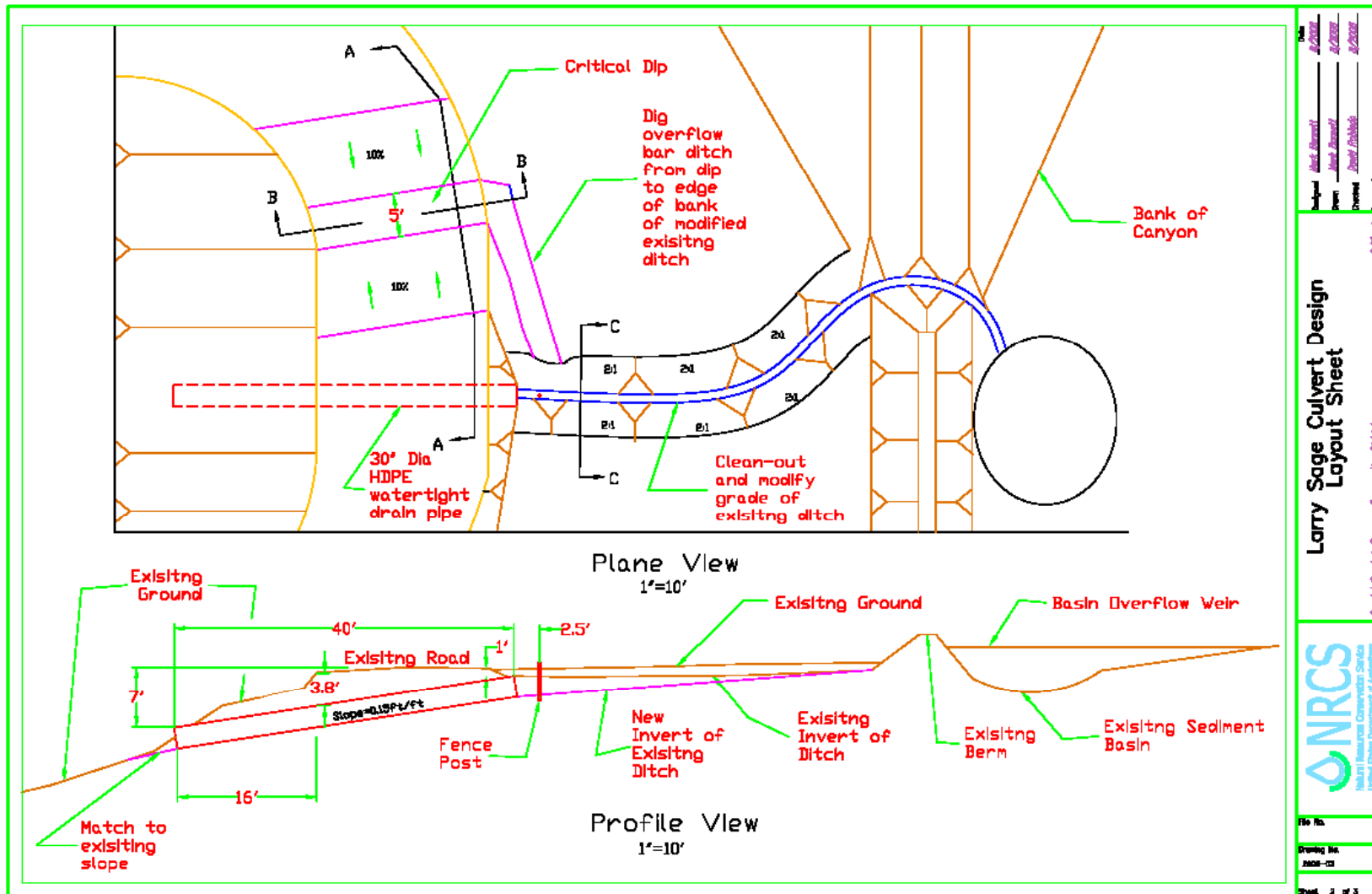


Figure 99. Layout of the culvert designed but not implemented.

Project: The landowner decided not to install the above culvert implementation project.

ATTACHMENT F

[Escuela Ranch Stream Crossing Improvement, Road Improvement and Riparian Fencing PC-04-08](#)



Figure 100. Sloughing bank due to seep.



Figure 103. Water running down road.



Figure 101. Failed culvert was replaced



Figure 102. View of a seep in the road.



Figure 104. View of another seep.



Figure 105. Typical berm along road.

Project: At the request of Cal Poly, the RCD designed and funded a series of road improvement projects along an access road paralleling Pennington Creek as well as removed a failed stream crossing and installed 3,000 feet of riparian fencing.

ATTACHMENT F

Escuela Ranch Stream Crossing Improvement, Road Improvement and Riparian Fencing PC-04-08



Figure 106 & 107. Views of clogged culvert before it was replaced



Figure 108. View of culvert after it was replaced with armored crossing.



Project: At the request of Cal Poly, the RCD designed and funded a series of road improvement projects along an access road paralleling Pennington Creek as well as removed a failed stream crossing and installed 3,000 feet of riparian fencing.

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



Figure 109. Cattle in creek



Figure 110. 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 F
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 111. Off creek watering system and riparian fencing plan for San Bernardo Creek Managed Grazing Project.

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



Figure 112. Rip shank and pipe feeder.



Figure 113. Close-up of cat ripping pipe into ground.



Figure 114. Distant view of cat ripping in pipe – note spool of pipe on right side of cat.



Figure 115. 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.

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



Figure 116. Front view of typical trough.



Figure 117. Side view of trough with waiting customers.



Figure 118. Well and generator.



Figure 119. Installed fence along San Bernardo Creek.



Figure 120. Installed fence along tributary.



Figure 121. Four 5,000-gallon water tanks to supply 10 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 F

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



Figure 122. Well and generator (Feb 2009).



Figure 123. Cattle watering trough.



Figure 124. 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 F

Los Osos Creek Vegetation Management and Debris Removal PC-04-15



Figure 125. Broken limbs and downed trees are bucked up and removed.



Figure 126 This is the kind of damage downed trees can cause in a high flow storm.



Figure 127. Downed cottonwoods need to be bucked up and removed before storm season.



Figure 128 Broken limbs and downed trees often catch large trash debris (part of a sofa).

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F

[Los Osos Creek WRP Vegetation Management and Debris Removal PC-04-17](#)



Figure 129. Debris jams cleared for fish passage and erosion reduction



Figure 130. Channel after debris jams are cleared.

Project: Typical photos of a creek in need of vegetation management and debris removal.

ATTACHMENT F
[Irrigation System Improvement PC-04-19](#)

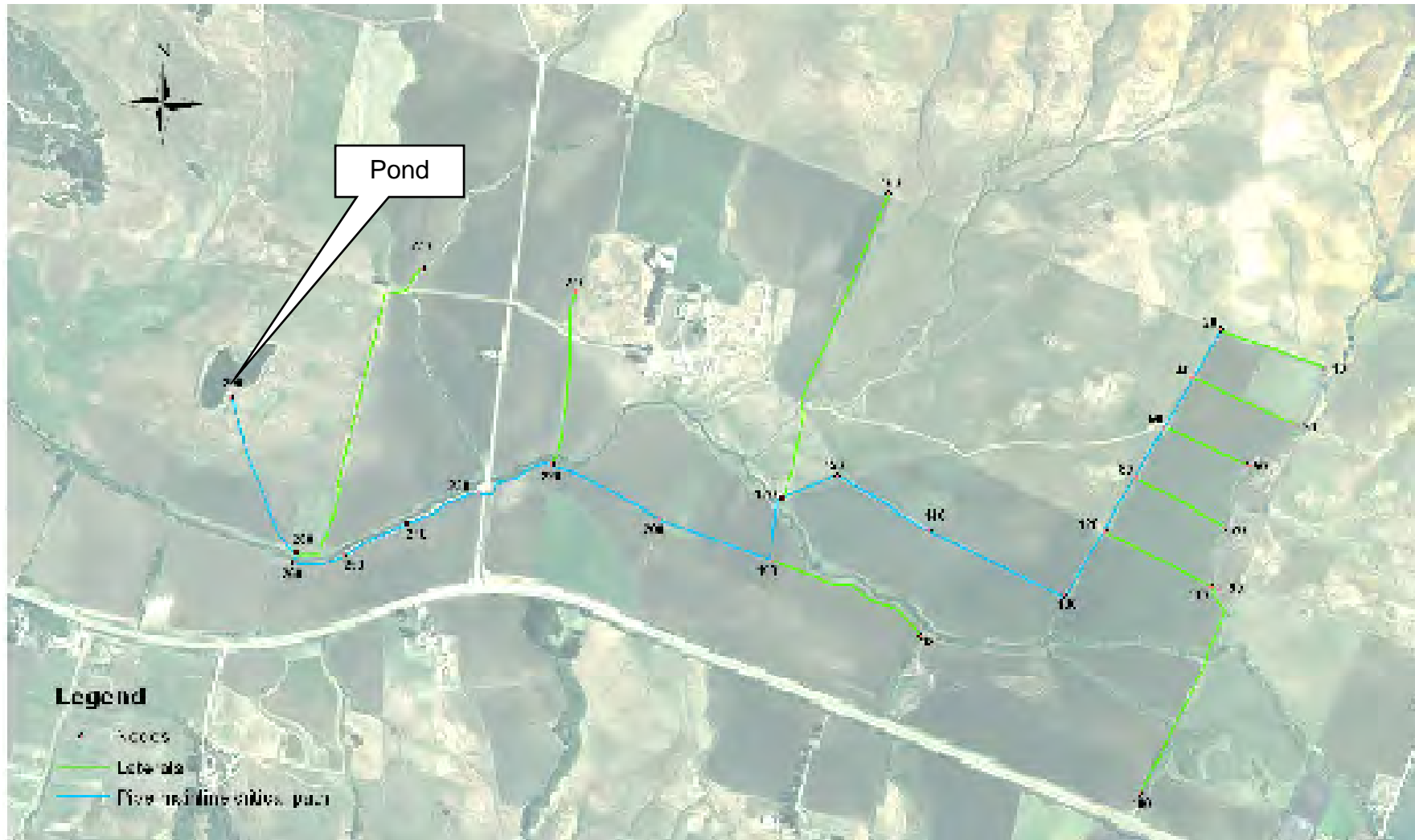


Figure 131. Layout of node map.

Project: In response to the landowners' frustration in the poor performance of an existing irrigation system, a complete analysis of the irrigation system was performed.

ATTACHMENT F

Irrigation System Improvement PC-04-19

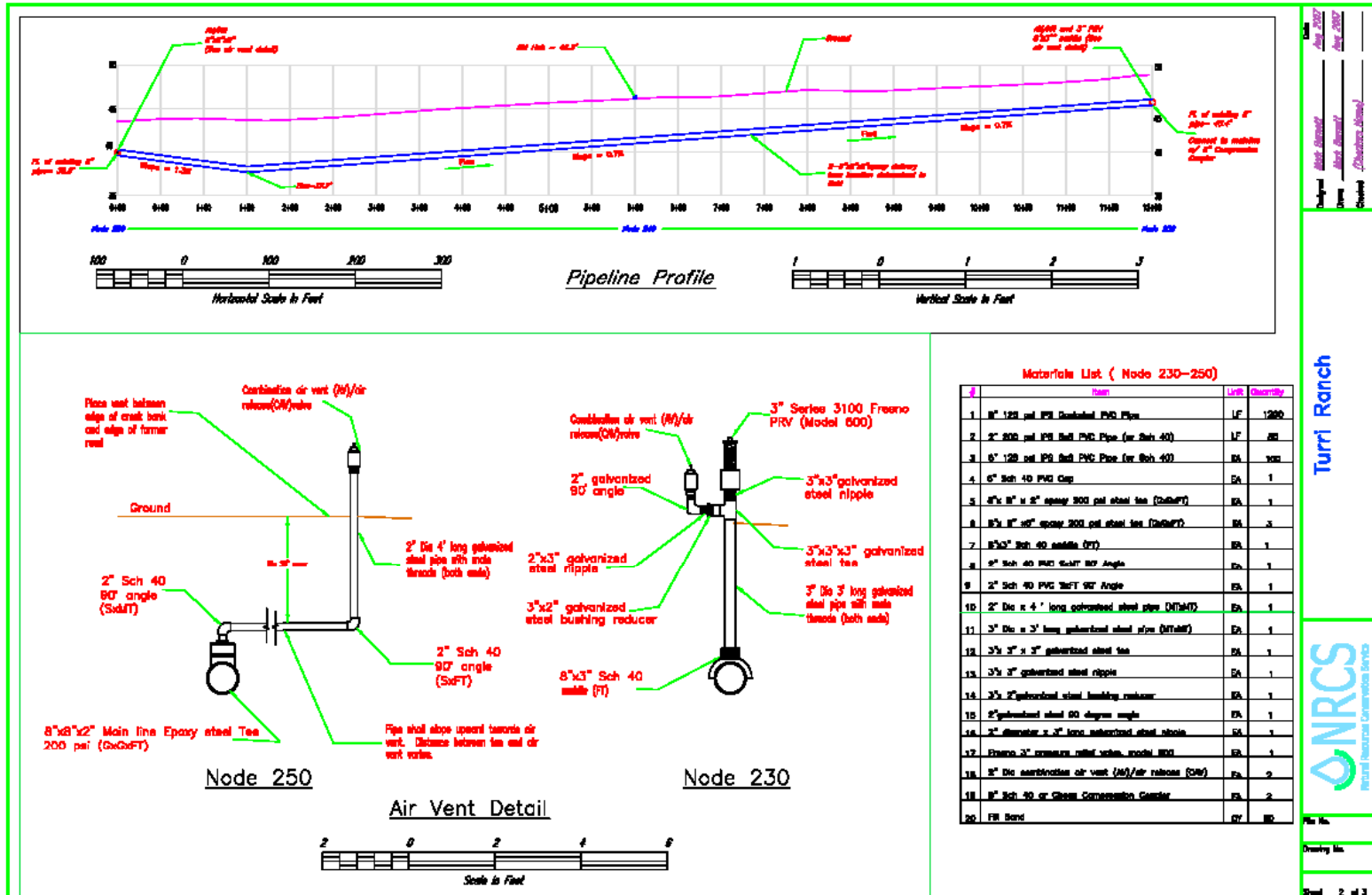


Figure 132. Profile drawing of pipeline installation.

Project: Replaced 1,200 feet of leaky 6" pipe with a new 8" line.

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Irrigation System Improvement PC-04-19

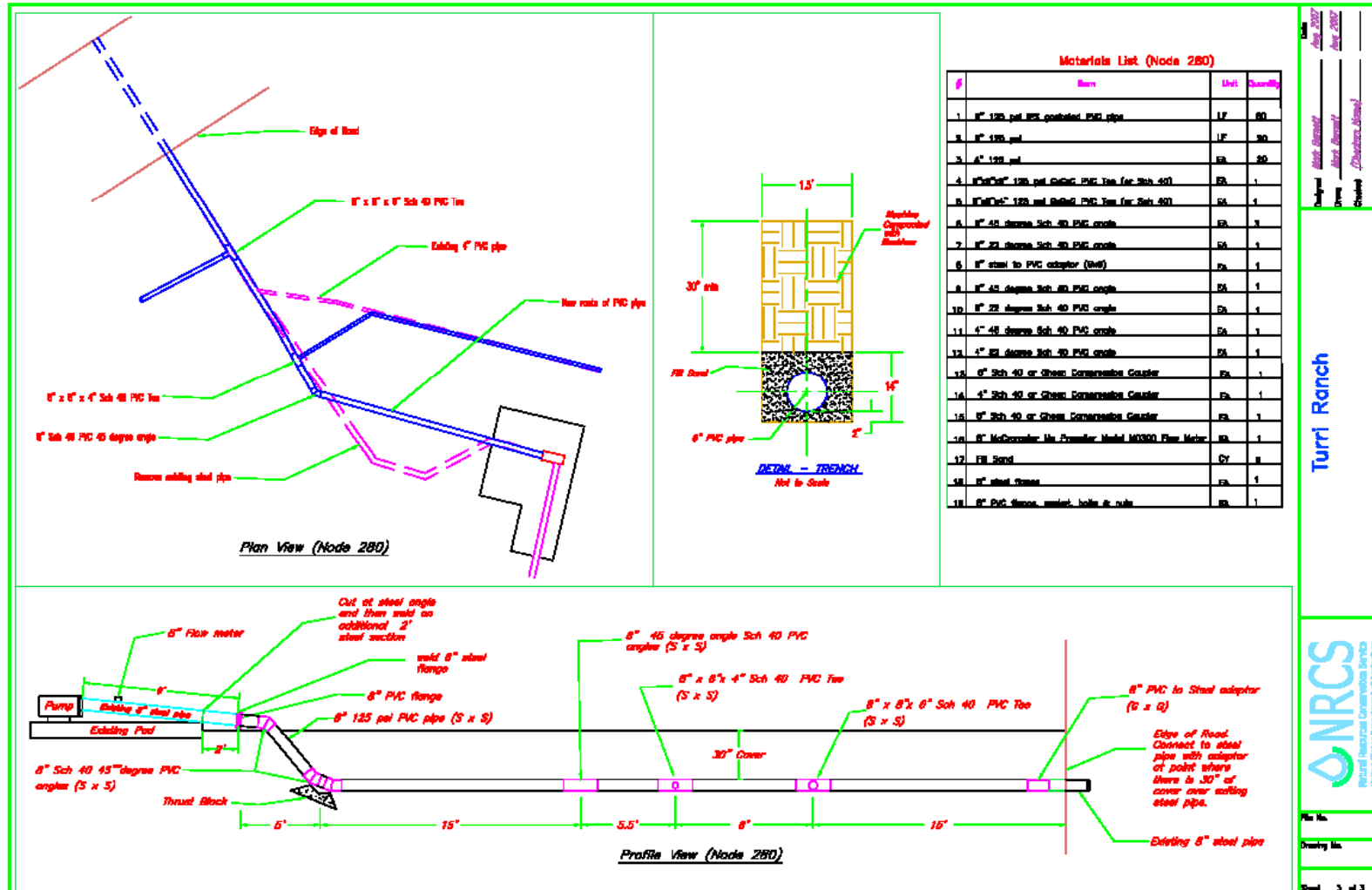


Figure 133. Detail of new discharge line connection to pumping plant.

Project: The next high priority project will be adding a separate discharge line from the reservoir.

ATTACHMENT F
Irrigation System Improvement PC-04-19



Figure 134. Leaky pipeline.



Figure 135. Leaky pipeline.



Figure 136. Installation by excavator.



Figure 137. The pipeline was surveyed.



Figure 138. Connected to an existing line.



Figure 139. New combination air vent/Air release valve and a pressure relief valve.

Project: Pictures before, during and after implementation.

ATTACHMENT F
[Access Road Grading PC-04-20](#)



Figure 140. Compacted fill.



Figure 141. Implemented recommendations.



Figure 142. Hay bales were used to minimize erosion.

Project: A landowner located in the Los Osos Creek watershed was referred to the NRCS and RCD to seek technical assistance to mitigate an unpermitted grading project.