

A REPORT OF FINDINGS OF MECHANICAL SUBSURFACE PRESENCE ABSENCE
TESTING FOR CULTURAL RESOURCES AT THE COUNTY CROSSINGS
PROJECT, ANTIOCH, CONTRA COSTA COUNTY, CALIFORNIA

PRESENTED TO:

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INTRODUCTION

From September 15th through the 18th, Holman & Associates conducted a program of mechanical subsurface presence/absence trenching at the proposed 156 acre County Crossings project area located in eastern Antioch, Contra Costa County to search for potentially buried prehistoric archaeological resources. A recommendation to conduct subsurface testing had been made in the August 8th, 2007 archaeological survey report for the larger 265 acre parcel then under consideration, based upon archival research and a visual survey of the property.

No evidence of prehistoric archaeological deposits were found inside any of the property accessible in September. This report contains a summary of findings based upon the original survey and the more recent backhoe testing.

ENVIRONMENTAL SETTING

The project area (see enclosed project area map) is bordered to the south and east by State Route 4, to the north by Oakley Road, to the northwest by PG&E overhead transmission lines and to the west by Hillcrest venue. The eastern portion of the project area is bisected diagonally from the southeast to the northwest by a branch of East Antioch Creek, which supports a variety of riparian zones and wetland areas within the project boundary. The parcel is located at the margins of two ecological zones; the interior valley (oak savannah) and the delta, characterized by alluvial and aeolian sand deposits, tall grasses and the confluence of the Sacramento and San Joaquin Rivers. The project area occupies a 156+/- acre oblong and disjointed parcel measuring approximately 2000 feet north-south by 4000 feet east-west. The present condition of the eastern project area is that of a disused orchard/ranch which has been overgrown with "trees of heaven", containing scattered piles of debris. The project area slopes at about 4 degrees to the south from Oakley Road to East Antioch Creek and then rises approximately 6-7 degrees southward to the toe of the hills.

ARCHAEOLOGICAL BACKGROUND

An archaeological literature review and visual inspection of the then 265 acre project area was conducted by Holman & Associates in late July and early August, 2007. While no prehistoric cultural resources were recorded either during the literature review or the field inspection, four areas containing potentially significant historic resources were noted. Recommendations were made to complete archaeological site forms for these resources, a task which has been completed as part of this study.

The literature review did uncover evidence of previous archaeological research near or within the project borders. Of particular interest was a study done by Carper and Tremaine in 2005, which speculated on the possibility that the property might contain buried prehistoric resources. The following excerpt was quoted in the 2007 report and will be repeated here:

"Prehistoric expectations for this project are based upon the project's geographical location in the Central California Delta/Bay regions, its physical location adjacent to East Antioch Creek, and the geomorphology as expressed by the presence of alluvial sands and the potential for sand dune remnants in the area. These expectations include the potential for open-air campsites or other occupation-type areas along the creek, possibly eroding from the bank. Based upon our understanding of the Meganos Aspect and its associated burial practices, potential exists for possible burials in any intact remnant of sand dunes." (Carper and Tremaine, 2005:15 in Holman 2008).

The 2007 report contained an expanded discussion of the findings of this author and others subsequent to 2005 in the Oakley and Bethel Island area, where construction activities and/or testing for archaeological resources in advance of construction has added much to our understanding of Native American use of the sand dunes found south of the Carquinez and on Bethel Island. The 2007 report went on to point out that based upon the Carper and Tremaine study and our inspection of the ground surface, the project area contained similar soil and sand formations to those found several miles to the east where a combination of burial-specific mound structures and actual multiple use habitation sites have been found over the past 3 years. The 2007 report speculated that the current project area could contain similar archaeological deposits: dune areas containing human burial concentrations and little else, more use-specific prehistoric archaeological sites where foods (such as shellfish, fish and birds) were processed, and more general use seasonal village sites, easily identifiable by their dark soils, containing the remains of organic materials, evidence of fires and the typical faunal and artifactual materials associated with this type of use through time.

These findings led to the recommendation that the general project area be mechanically tested for buried prehistoric archaeological deposits, in particular in the vicinity of Antioch Creek, which transects the project area from the southeast to the northwest.

FIELD METHODS

From September 15th through September 18th, 2008, Holman & Associates archaeologists Ian Alexander and Juan Cervantes performed subsurface exploratory trenching for cultural resources on the 156 acre parcel currently being considered for development. The testing was performed using a rubber tracked Komatsu 45R backhoe equipped with a 23" toothed bucket. Trenches were excavated on north/south transects to depths varying from 2-2.5 meters in depth below the existing ground surface (see trench map and log). A total of 54 trenches with average lengths of 7 feet were spaced from 20-60 meters (66-197 feet) apart within the project area. Trenching was limited to areas 50-100 feet outside of any easement and/or sensitive ecological zone which included the Union Pacific Railroad, overhead transmission lines, subsurface high pressure gas lines, subsurface fiber optic/phone lines and the riparian/wetland areas associated with East Antioch Creek.

Close visual and manual inspection was conducted within trenches which were less than

4 feet in depth. Work was documented by recording sediment texture, color (Munsell 2000 revised), constituents, presence or absence of cultural materials, thickness of strata and maximum depth on field forms. Trench locations were plotted on a project map using a handheld GPS unit (see trench log and map for specific locations) and all trenches were backfilled following excavation. All excavation work was monitored and archaeologists examined the ground, trench walls, trench floor and spoils for historic and prehistoric artifacts, features and soil layers indicative of former ground surfaces or midden. A portion of the trench spoils were passed through a 1/8inch screen in an attempt to recover ecofactual and artifactual materials.

FINDINGS/RECOMMENDATIONS

No prehistoric archaeological resources were identified during the subsurface testing. Various fragmentary construction materials such as concrete, red bricks, lead pipe, slag and aggregate were found during the testing. most of these items occurred from 0 to 50 centimeters below the existing ground surface, the zone of historically reworked fill in a number of areas inside the project borders.

Based on available archaeological information for the Antioch/Oakley/Bethel Island area, the most archaeologically sensitive areas appear to be the alluvial/aeolian sand deposits found on the northern portion of the current project area, north of East Antioch Creek: habitation and/or special use sites (once described as burial mounds) in a similar sand matrix have been found at a number of locations inside the Hotchkiss Tract in east Oakley and on Bethel Island itself. In prehistoric times these sand mounds were favored because they were the only areas elevated sufficiently above the annual flood plain to permit habitation or other uses on a seasonal or perhaps year around basis. They were obviously attractive because of their close proximity to the animal, fish, shellfish and bird resources of the delta, and because their sand matrix was easily dug to construct house and/or burial pits. To date similar habitation sites haven't been located in the adjacent clay soils at the lower elevations where flooding would have restricted habitation to the summer months.

The County Crossings project area contains both soil types, differing from the Oakley/Bethel Island area in one important way: none of this property, with perhaps the exception of the wetlands directly adjacent to East Antioch Creek, would have been uninhabitable throughout the year because of flooding. The sand deposits might have been more attractive if only because they were easier to dig, but they shared the same environmental setting as the adjacent clay soils.

It is the conclusion of this report that there is at best a low to moderate possibility that construction related earthmoving will affect buried prehistoric archaeological resources. This report does not recommend additional mechanical subsurface presence/absence testing, and does not recommend archaeological monitoring of earthmoving activities inside the 156 acre development parcel.

There remains some potential that earthmoving north of the creek bank in the sand matrix may turn up isolated groups of human burials: recent unpublished findings of archaeological monitoring of the massive removal of sand dunes for the Delta Coves project on Bethel Island presented a clearer picture of how the dunes were utilized by the Native Americans. Previous archaeological excavations combined with mechanical removal of sand at Cco-1 and 135 left archaeologists confused—were these mounds habitation sites, or simply "burial mounds"? Mr. Andy Galvan, Native American monitor for the recent mass grading operations, observed several groupings of human burials at random locations, not associated with otherwise culturally modified soils (midden) and did not observe other areas of obvious midden. While it is difficult to identify anything more than human burials when following an excavator, it appears that initial impressions of these "burial mounds" were essentially correct—midden soils will not necessarily be found in association with burials if they are encountered in the future (personal communication with Andy Galvan, 2007).

It is the recommendation of this report that all construction personnel involved with earthmoving activities be given instruction in the identification of human remains before work commences. In addition they should be presented with a protocol to follow in the event that any bone is found: work should be stopped in proximity of the discovery until a qualified osteo-archaeologist has been retained to inspect the materials.

If the project archaeologist identifies the bone as Native American, the project sponsor will be responsible for notification of the County Coroner's Office and the Native American Heritage Commission (NAHC). The NAHC has the responsibility to assign a Most Likely Descendant to the project (MLD) to advise the project sponsor regarding the method of exposure, recording, removal and reburial of the human remains and any associated grave goods.

If the project archaeologist identifies bone material and/or any other materials retrieved by construction personnel as Native American in origin, it will be the responsibility of the project archaeologist to insure that work is stopped inside a designated zone of archaeological sensitivity until a plan for the evaluation of the resource as required by CEQA guidelines has been submitted to the City of Antioch for approval. Evaluation normally takes the form of hand excavation to retrieve materials and information which could demonstrate that the archaeological site is eligible for inclusion on the California Register of Historic Resources (CRHR).

If evaluation demonstrates that further construction will damage a resource eligible for inclusion on the CRHR, a plan for mitigation of impacts to the resource should be submitted to the City of Antioch for approval before work is allowed to recommence inside the designated archaeologically sensitive zone. Mitigation can take the form of additional hand excavation to retrieve archaeological data, combined with monitoring of all additional soils removal to insure that significant archaeological materials and information are retrieved for analysis. At the completion of all monitoring activities, a report of findings should be submitted to the City of Antioch detailing the findings of all evaluation and mitigation work.

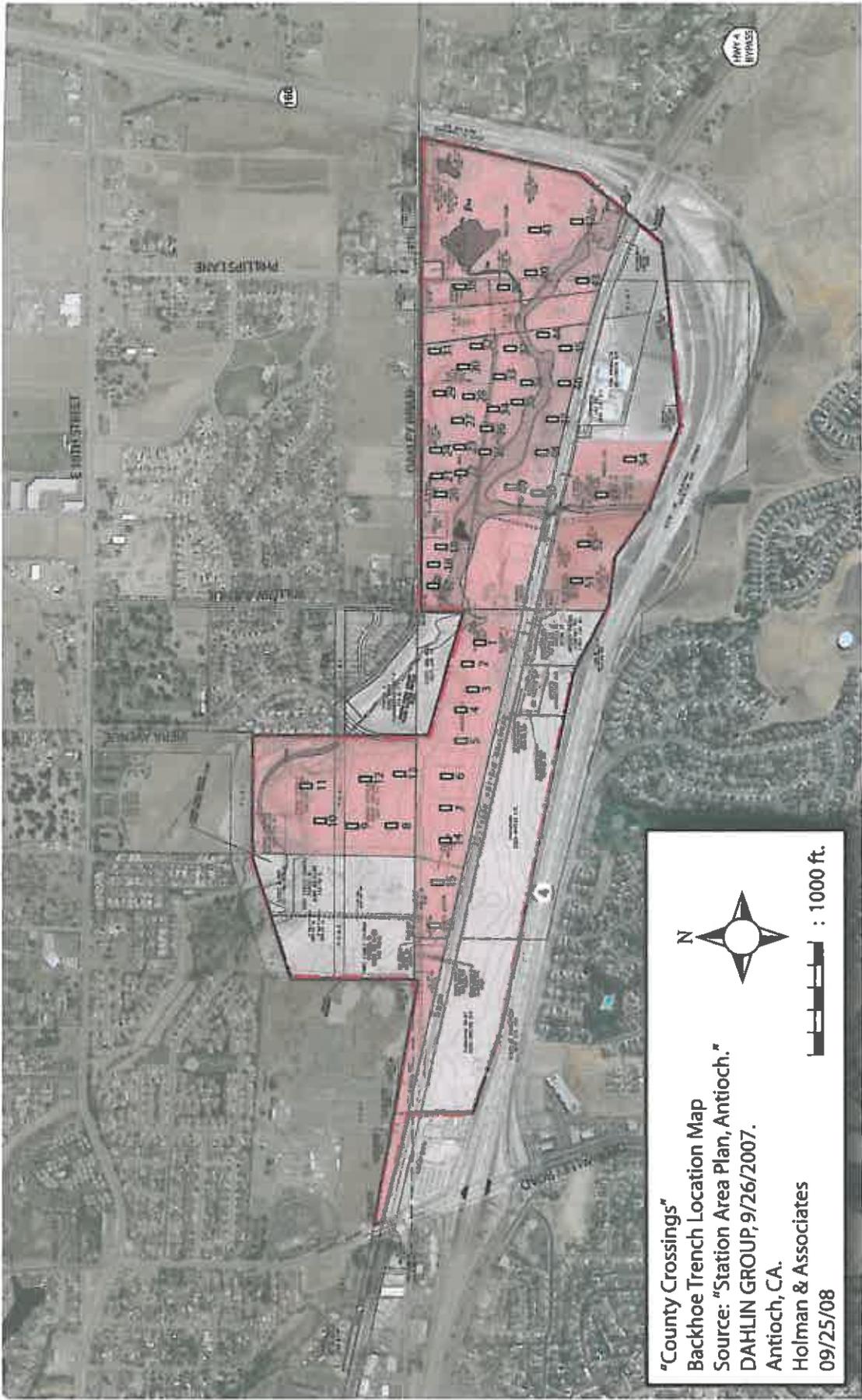
REFERENCES CITED

Galvan, Andrew
2007

Personal communication regarding monitoring activities at the Delta Coves project area, Bethel Island.

Holman, Miley
2007

CULTURAL RESOURCES FIELD INSPECTION OF THE COUNTY CROSSINGS PROJECT, ANTIOCH, CONTRA COSTA COUNTY, CALIFORNIA. Report submitted to Brosamer and Wall, LLP.



**"County Crossings"
Backhoe Trench Location Map**
Source: "Station Area Plan, Antioch."
DAHLIN GROUP, 9/26/2007.
Antioch, CA.
Holman & Associates
09/25/08

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-15-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
1	0-20	10YR 5/2 dry silty clay, plow zone; 608109, 4205949	no
1	20-50	10YR 3/2 moist very compact silty clay	no
1	50-100	10YR 3/2 moist compact silty clay loam, blocky	no
1	100-190	10YR 4/3 moist compact silty clay loam, blocky; calcium carbonate increasing with depth	no
1	190-200+	10YR 4/3 moist compact clay loam, less developed and softer than 100-190.	no
2	0-20	10YR 5/2 dry silty clay, plow zone; 608034, 4205965	no
2	20-40	10YR 3/2 moist compact silty clay loam, blocky	Redwood fragment
2	40-190	10YR 4/3 moist compact clay loam	no
2	190-220	10YR 4/4 moist compact silt loam, blocky, harder with depth.	no
2	-	9:17 AM Project personnel soils engineer Simon told operator Tony to dig as deep as he could go, 10 minute delay	-
2	220-240	10YR 4/4 unconsolidated moist silt loam	no
2	240-250+	10YR 3/3 silt loam moist blocky	no
3	0-20	10YR 5/2 dry silty clay, plow zone; 608015, 4205975	no
3	20-60	10YR 4/3 silty clay, homogenous, plastic, compact; grades to silty clay loam	no
3	60-115	10YR 5/4 silty clay loam, compact, homogenous	no
3	115-210+	10YR 4/4 moist compact silt loam, blocky, calcium carbonate in small striations increasing with depth	no
4	0-20	10YR 5/2 dry clay, plow zone; 607910, 4206020	no
4	20-50	10YR 3/2 loosely compact clay, disturbed, some mottling with lower stratum at 50-90 cm	no
4	50-90	10YR 5/4 silty clay loam, compact, disturbed, homogeneous, some mottling-krotovinas.	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-15-08
Recorder(s): I. Alexander, J. Cervantes			Trench Size: <u> 2' </u> W by <u> 7' </u> L
Location: Antioch CA			Screen Size: 1/8"
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
4	90-200+	10YR 4/4 moist compact silt loam blocky with calcium carbonate.	no
5	0-20	10YR 5/2 dry clay, plow zone; 607822, 4206033	no
5	20-60	10YR 3/2 moist loosley compact clay	no
5	60-120	10YR 5/4 moist compact homogeneous silty clay loam	no
5	120-200	10YR 4/4 moist compact blocky silt loam	no
5	200-220+	10YR 4/3 fine sandy loam, blocky	no
6	0-20	10YR 5/2 dry clay, plow zone; 607756, 4206047	no
6	20-55	10YR 3/2 moist loosley compact clay	no
6	55-180	10YR 5/4 moist compact homogeneous silty clay	no
6	180-225+	10YR 4/4 moist compact blocky silt loam	no
7	0-20	10YR 5/2 dry clay, plow zone; 607606, 4206045; approx. 350' east of storm drain	no
7	20-60	10YR 3/2 moist loosley compact clay	no
7	60-180	10YR 5/4 silty clay, homogenous, moist, compact; some krotovinas	no
7	180-245	10YR 4/4 moist compact blocky silt loam	no
7	245-280+	10YR 4/3 almost dry compact sandy loam, blocky, trace iron oxide stains, and trace pebbles < 4 mm	no
8	0-20	10YR 5/2 dry silty clay, plow zone; 607610, 4206109	no
8	20-50	10YR 3/2 ~dry compact clay, tree roots present	no
8	50-85	10YR 3/3 ~dry compact clay	no
8	85-140	10YR 3/3 ~dry clay, less compact than at 50-85 cm, becomes blocky near 140 cm	no
8	140-210+	10YR 4/3 silt loam to clay loam blocky and variable within stratum	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-15, 9-16-08
Recorder(s): I. Alexander, J. Cervantes			Trench Size: <u> 2' </u> W by <u> 7' </u> L
Location: Antioch CA			Screen Size: 1/8"
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
9	0-30	10YR 5/2 dry clay, plow zone; 607633, 4206212	no
9	30-70	10YR 3/2 ~dry compact clay	no
9	70-100	10YR 3/3 dry compact clay	no
9	100-140	10YR 3/3 clay less compact than 70-100 cm	no
9	140-200+	10YR 5/2 silt loam to clay loam blocky and slightly variable within stratum	no
10	0-30	10YR 5/2 silty clay, plow zone; 607638, 4206280	no
10	30-50	10YR 3/4 silty clay loam, homogeneous, compact	no
10	50-180	10YR 3/4 silty clay loam, homogeneous, grades to silt loam, not as compact as 30-50 cm	no
10	180-210+	10YR 4/3 silty clay loam, blocky, harder with depth	no
11	0-30	10YR 5/2 dry clay, plow zone; 607667, 4206371	no
11	30-70	10YR 3/4 silty clay loam, compact, krotovina	no
11	70-150	10YR 3/4 silty clay loam homogeneous	no
11	150-200+	10YR 4/3 silty clay loam, blocky	no
12	0-30	10YR 5/2 silty clay, plow zone; 607736, 4206368	no
12	30-60	10YR 3/4 silty clay loam, compact	no
12	60-120	10YR 3/4 silty clay loam	no
12	120-220	10YR 3/3 clay blocky; abundant calcium carbonate stains-striations from 120-180 cm	no
13	0-30	10YR 5/2 silty clay, plow zone; 607767, 4206124	no
13	30-60	10YR 3/2 very compact clay, tree roots present	no
13	60-170+	10YR 4/4 silty clay, compact and slightly blocky at depth	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-16-08
Recorder(s): I. Alexander, J. Cervantes			Trench Size: <u> 2' </u> W by <u> 7' </u> L
Location: Antioch CA			Screen Size: 1/8"
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
13	170-220	10YR 4/4 silt loam, moderately compact unconsolidated	no
13	220-225+	10YR 3/3 silt loam, hard and blocky	no
14	0-20	10YR 5/2 sandy clay loam disturbed surface; 607750, 4206222	no
14	20-85	10YR 3/2 dry compact clay becomes less compact with depth	no
14	85-200	10YR 4/4 silt loam moderately compact	no
14	200-215+	10YR 3/3 silt loam, hard, blocky, calcium carbonate root stains	no
15	0-15	10YR 5/2 dry clay, plow zone; 607468, 4206048	no
15	-	9:15 AM Steve from CCO Water District (925) 525-2494 said it was ok to dig Trench 16 south of the 6 th pole (#110121096) west of Viera Road dead end	-
15	15-60	10YR 3/2 moist loosely compact clay with a mottled contact with stratum below	no
15	60-180	10YR 5/4 silty clay, moist compact homogeneous	no
15	180-200+	10YR 3/3 silt loam, moist compact blocky	no
16	0-20	10YR 5/2 dry silty clay, plow zone; 607358, 4206041	no
16	20-60	10YR 3/2 moist silty clay loosely compact grades into stratum below	no
16	60-180	10YR 5/4 moist compact homogeneous soft silty clay: slightly blocky at 120 cm increases with depth.	no
16	180-200+	10YR 3/4 silt loam, moist compact blocky and hard	no
17	0-10	10YR 5/3 slightly organic unconsolidated sandy loam to loamy sand, plow zone, 5-10 percent slope; 608222, 4206052	no
17	10-30	10YR 4/4 slightly organic sandy loam indurated very compact	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-16-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
17	30-50	10YR 4/4 same as 10-30 cm (slightly organic sandy loam) though less compact and not indurated	no
17	50-235+	10YR 4/4 sandy loam grades to silt loam, varying degrees of blocky structure within stratum	no
18	0-10	10YR 5/3 dry same as Trench 17, 0-10 cm slightly organic unconsolidated sandy loam to loamy sand, plow zone, ~5 percent slope; 608275, 4206046	no
18	10-30	10YR 4/4 same as Trench 17, 10-30 cm slightly organic sandy loam indurated very compact	no
18	30-60	10YR 4/4 same as Trench 17, 30-50 cm, (slightly organic sandy loam) though less compact and not indurated	no
18	60-230+	10YR 4/6 loamy fine sand, massive unconsolidated easy digging	no
19	0-10	10YR 5/3 slightly organic loose sandy loam to loamy sand, plow zone, 2 percent slope 608320, 4206044	no
19	10-40	10YR 4/4 slightly organic sandy loam indurated very compact	no
19	40-80	10YR 4/4 sandy loam less compact not indurated	no
19	80-180	10YR 4/6 loamy fine sand, unconsolidated easy digging	-
19	180-210+	10YR 4/6 loamy fine to medium sand, unconsolidated easy digging	no
20	0-20	10YR 5/3 slightly organic unconsolidated sandy loam to loamy sand, dry loose plow zone, 608421, 4206040	no
20	20-55	10YR 4/4 slightly organic sandy loam compact indurated in top half, less compact and not indurated in bottom half	no
20	55-70+	10YR 3/3 loamy fine sand, massive and moist	no
20	65	12:50 PM 2" I.D. black PVC pipe clear water gently flowing from east, not pressurized? Abandoned? 65 cm (25.5") top of pipe, oriented 75 degrees magnetic	Modern utility

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-16-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
21	0-15	10YR 5/3 slightly organic sandy loam to loamy sand, dry loose plow zone, 608454, 4206047; note a hard spot in south end was avoided	no
21	15-35	10YR 4/4 slightly organic sandy loam indurated very compact	no
21	35-125	10YR 3/3 compact sandy loam unconsolidated variable breaks into peds at 160 cm	no
21	125-205+	10YR 3/6 loamy fine sand	no
22	0-5	10YR 5/3 slightly organic sandy loam to loamy sand, dry loose A Horizon, 5-10 percent slope, 608464, 4206020	no
22	5-25	10YR 4/4 slightly organic sandy loam indurated very compact large tabular blocks up to 40 cm long, hard digging	no
22	25-60	10YR 4/4 compact sandy loam harder than previous strata at this depth for Trenches 17-21	no
22	60-195	10YR 4/6 loamy fine sand massive compact cohesive	no
22	195-220	10YR 4/6 fine to medium sand	no
23	0-10	10YR 5/3 slightly organic loose sandy loam to loamy sand, 5 percent slope, 608513, 4206050 easy digging	no
23	10-30	10YR 4/4 loosely compact loamy fine sand structureless	no
23	30-45	10YR 3/3 compact slightly organic sandy loam not indurated, easy digging	no
23	45-225+	10YR 4/4 loosely compact sandy loam <5 percent mottles, krotovina; grades to 10YR 5/6 loamy fine sand easy digging	no
24	0-10	10YR 5/3 slightly organic loose loamy sand, 608509, 4205999	no
24	10-35	10YR 4/4 slightly organic sandy loam indurated very compact blocky	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-16, 9-17-08
Recorder(s): I. Alexander, J. Cervantes			Trench Size: <u> 2' </u> W by <u> 7' </u> L
Location: Antioch CA			Screen Size: 1/8"
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
24	35-50	10YR 4/4 sandy loam less compact than above not indurated	no
24	50-70	10YR 6/2 fine to medium sand with clayey 10YR 6/2 lenses (beds <5 cm thick)	no
24	70-210+	10YR 5/4 "dune sand" loamy fine to medium sand with occasional dark brown laminations (~1 cm thick); grades to fine to medium sand	no
			no
25	0-10	10YR 5/3 slightly organic loose loamy sand, 608514, 4205963	
25	10-25	10YR 4/4 slightly organic very compact sandy loam indurated large blocky up to 30-40 cm	Whiteware frag., Bud Light can, charcoal frag.
25	25-40	10YR 5/6 dry indurated massive loamy sand compact krotovina	R.R. tie frag. (7" w x 4" h) w/ circular cross cut
25	40-160	10YR 5/6 dry compact loamy sand massive	no
25	160-250+	10YR 5/6 moist loose loamy fine to medium sand structureless	no
26	0-35	10YR 5/3 slightly organic disturbed loose loamy sand, 5-10 percent slope 608513, 4205944	no
26	35-155	10YR 5/6 dry (weak blocky) compact loamy sand softer and more moist below 80 cm	no
26	155-230+	10YR 5/6 moist loose loamy fine to medium sand structureless, tree roots at 150 cm	no
27	0-7	10YR 5/3 slightly organic loose loamy sand, 608494, 4205975	no
27	7-40	10YR 4/4 slightly organic very compact sandy loam indurated blocky	no
27	40-65	10YR 4/6 compact loamy sand	no
27	65-230	10YR 5/6 compact loamy fine to medium sand structureless	no
28	0-10	10YR 5/3 slightly organic loose loamy sand, 608529, 4206030	no

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Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
28	10-30	10YR 4/4 slightly organic very compact sandy loam tabular blocky up to 40 cm long	no
28	30-40	Grades to stratum below	no
28	40-90	10YR 4/6 loamy sand very compact structureless	no
28	90-230+	10YR 5/6 loose loamy sand structureless	no
29	0-20	10YR 5/3 slightly organic loose loamy sand, 608582, 4206034	no
29	20-70	10YR 4/4 slightly organic very compact sandy loam indurated large blocky	no
29	70-140	10YR 4/4 massive compact loamy sand	no
29	140-300+	10YR 4/6 loose loamy fine sand structureless	no
30	0-13	10YR 5/4 slightly organic loose loamy sand, on edge of "small borrow pit" 608629, 4206027	no
30	13-40	10YR 4/4 slightly organic very compact sandy loam indurated blocky	no
30	40-63	10YR 4/4 massive compact sandy loam	no
30	63-160	10YR 4/4 same as 40-63 cm massive sandy loam, except not as compact	no
30	160-290+	10YR 4/6 very fine to fine loamy sand compact breaks into peds	no
31	0-4	10YR 5/3 dry silt loam, new A Horizon, in "small borrow pit" 608691, 4206022	Level pad or landing?
31	4-45	10YR 6/4 dry variable local fill sandy loam; and blocky silt loam peds with calcium carbonate, <10 percent water worn aggregate	Fill
31	45-80	10YR 6/3 dry (average color) lenses of fine to coarse sand with thin (<1 cm) dark brown laminations; native undisturbed profile?	no
31	80-250+	10YR 4/4 moist (average color) structureless fine to medium sand	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-17-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
32	0-4	10YR 5/3 dry silt loam, thin new A Horizon, 608687, 4205982	no
32	4-20	10YR 4/4 very compact sandy loam indurated blocky	no
32	20-40	10YR 4/4 extremely hard massive sandy loam, layer breaks into cohesive peds,	no
32	40-60	10YR 4/4 same as 20-40 cm extremely hard massive compact indurated sandy loam, layer breaks into cohesive peds, except less compact and not indurated	no
32	60-240+	10YR 4/6 compact very fine loamy sand breaks into peds	no
33	0-4	10YR 5/3 dry silt loam thin new A Horizon 608691, 4205930	Fill
33	4-80	10YR 4/3 (average color) variable probably local fill clayey, sandy loam, part of upper wall collapsed, water worn aggregate ~15 percent, trace angular rock	Fill
33	80-95	10YR 4/4 dry compact sandy loam	no
33	95-250+	10YR 4/3 moist very fine loamy sand structureless, loosely compact easy to dig, less compact with depth	no
34	0-5	10YR 5/3 silt loam 608648, 4205861	no
34	5-55	10YR 5/4 dry very compact very fine sandy loam slightly organic and blocky	no
34	55-160	10YR 4/4 compact very fine sandy loam massive	no
34	160-205+	10YR 4/6 slightly moist very fine loamy sand structureless, loosely compact	no
34	205-220+	10YR 4/4 compact silt loam blocky structure similar to trenches west of willow so far at this depth	no
35	0-10	10YR 3/3 very fine sandy loam 608658, 4205912	no
35	10-50	10YR 4/4 fine to medium loamy sand compact cohesive massive	no
35	50-230+	10YR 4/6 very fine loamy sand structureless	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-17-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA			Screen Size: 1/8"
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
36	0-5	10YR 5/3 dry silt loam, new A Horizon, fill 608658, 4205962	Fill
36	5-35	10YR 3/2 clayey blocky, organic? Angular crushed rock and AC chunk present	Fill
36	35-50	10YR 4/4 slightly organic very compact sandy loam indurated large blocky	no
36	50-130	10YR 4/4 massive cohesive compact loamy sand grades to stratum below	no
36	130-230+	10YR 4/6 structureless very fine loamy sand	no
37	0-5	10YR 5/3 slightly organic fine to medium loamy sand disturbance east wall 608747, 4205889	no
37	5-45	10YR 4/4 slightly organic very compact loamy sand blocky tabular to 50 cm long, disturbance east wall	no
37	45-70	10YR 4/4 massive compact loamy sand slightly organic cohesive	no
37	70-130	10YR 4/4 massive loosely compact very fine loamy sand moist cohesive	no
37	130-200	10YR 4/6 massive loosely compact very fine loamy sand moist cohesive; less compact and cohesive than above	no
37	200-210	10YR 6/6 dry very fine to fine loamy sand "blocky" peds	no
37	210-230+	10YR 4/6 massive loosely compact very fine sandy loam moist cohesive	no
38	0-20	10YR 5/4 dry loose flowing very fine to fine sand slightly organic 608748, 4205889	no
38	20-35	10YR 4/4 slightly organic dry very fine loamy sand compact	no
38	35-90	10YR 4/4 massive compact loamy sand cohesive krotovina	no
38	90-190	10YR 4/6 very fine loamy sand massive cohesive breaks into peds less compact with depth	no
38	190-210	10YR 4/6 similar to 90-190 cm (very fine loamy sand massive) except more cohesive and compact; similar to Trench 37, 200-210 cm	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-17, 9-18-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
38	210-250+	10YR 4/6 very fine to fine sand structureless loose	no
39	0-20	10YR 5/4 very fine loamy sand 608743, 4205845	no
39	20-90	10YR 4/4 very fine to fine loamy sand compact cohesive massive	no
39	90-210+	10YR 4/6 very fine loamy sand massive slightly cohesive	95 cm, ceramic earthenware frag.
40	0-2	10YR 5/3 dry silt loam, thin new A Horizon, uneven surface southwest edge of sand pit 608996, 4205857	no
40	2-20	10YR 6/4 loosely compact loamy fine sand	no
40	20-60	10YR 6/4 fine very compact loamy sand blocky	no
40	40	8:15 AM 40 cm (16") top of pipe, steel 2-3/4" O.D. asphalt coated with remnants of wood conduit, oriented 180 degrees magnetic, heads north towards substation, abandoned, terminates south half of trench	Utility, angle iron and pins
40	60-80	10YR 5/4 very fine to medium sand compact structureless moist- does not collapse	no
40	80-200+	10YR 5/4 very fine to medium sand as above except with few very fine sandy loam mottles	no
41	0-40	10YR 5/3 compact fill variable clayey with 15 percent aggregate 609030, 4205796	no
41	40-100	10YR 6/4 loamy compact fine sand hard to dig	no
41	100-130+	10YR 4/6 compact blocky very fine sandy loam	no
42	0-30	10YR 5/4 very fine to medium loamy sand, surface disked, ~20 percent aggregate; modern debris 609120, 4205705	Concrete, cut wood, bottle glass, plastics,
42	30-85	10YR 5/6 very fine sandy loam some light mottles	no
42	85-140	10YR 4/4 very fine loamy sand very compact calcium carbonate root stains similar to Trench 41, 100 cm but more developed and harder	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-18-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
42	140-200+	10YR 4/4 as above (very fine loamy sand calcium carbonate root stains) except not as hard, less compact and developed	no
43	0-2	10YR 4/3 dry silty very thin organic horizon 608998, 4205689	no
43	2-45	10YR 4/3 very compact blocky clay loam	no
43	45-80	10YR 4/4 compact massive clay loam less developed than above	no
43	80-120	10YR 5/4 compact massive clay loam less developed and less compact than above	no
43	120-200	10YR 5/4 as above (compact massive clay loam less developed and less compact than above) except slightly blocky with increasing blocky structure with depth	no
43	200+	10YR 7/4 fine very sandy loam massive	no
44	0-25	10YR 4/3 dry silt loam A Horizon well aerated 608860, 4205739	no
44	25-55	10YR 4/3 dry very compact blocky clay loam	no
44	55-85	10YR 5/4 compact massive clay loam	no
44	85-180	10YR 4/4 compact massive clay loam less developed than above	no
44	180-215+	10YR 4/6 loamy clay	no
45	0-20	10YR 4/3 dry silt loam 608678, 4205752	no
45	20-120	10YR 4/4 massive loamy clay compact easy digging krotovina charcoal present	no
45	120-135	10YR 4/6 moist clay more plasticity	no
45	135-165+	10YR 3/3 sandy clay loam very compact blocky	no
46	0-20	10YR 4/3 dry silt loam 10-15 percent slope 608595, 4205766	no

TRENCHING RECORD

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Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
46	20-45	10YR 4/3 compact blocky very fine sandy loam	no
46	45-95	10YR 4/3 compact massive cohesive clay loam, tree root present	no
46	95-140	10YR 4/4 clay with white calcium carbonate stains cohesive and blocky	no
46	140-165+	10YR 4/6 sandy loam compact varying amounts of calcium carbonate blocky	no
47	0-20	10YR 4/3 dry silt loam ~5 percent slope 608544, 4205772	no
47	20-45	10YR 4/3 very compact dry fine sandy loam blocky	no
47	45-65	10YR 4/4 compact loamy clay	no
47	65-150	10YR 4/6 sandy clay loam	no
47	150-170	10YR 4/6 loamy clay with weak blocky structure	no
47	170-210+	10YR 4/6 sandy clay loam compact blocky	no
48	0-15	10YR 5/3 dry silt loam loose powdery 608497, 4205813	no
48	15-40	10YR 4/3 dry very compact blocky fine sandy loam	no
48	40-100	10YR 4/3 compact cohesive sandy loam	no
48	100-140	10YR 5/4 compact cohesive sandy clay loam	no
48	140-190	10YR 5/4 very fine loamy sand	no
48	190-200+	10YR 4/6 compact blocky sandy clay loam	no
49	0-25	10YR 5/3 silt loam loose A Horizon 608473, 4205854	no
49	25-50	10YR 4/3 blocky hard to massive and soft sandy loam to compact sandy clay with calcium carbonate variable layer possibly disturbed?	no
49	50-150	10YR 4/4 massive loosely compact loam soft!	no
49	150-190	10YR 6/3 mottled clay loam mixed up? Soft!	no
49	190-205+	10YR 4/4 blocky compact very fine sandy loam	no

TRENCHING RECORD

Project/Site No.: County Crossings			Date: 9-18-08
Recorder(s): I. Alexander, J. Cervantes		Trench Size: <u> 2' </u> W by <u> 7' </u> L	
Location: Antioch CA		Screen Size: 1/8"	
Trench	Depth(cm)	Soil/Sediment Description	Cultural Materials
50	0-20	10YR 5/3 loose very fine loamy sand A Horizon 608455, 4205810	no
50	20-55	10YR 3/3 very compact blocky very fine sandy loam	no
50	55-105	10YR 4/3 compact massive very fine sandy loam grades to stratum below	no
50	105-150	10YR 5/4 silt loam compact massive	no
50	150-205+	10YR 5/4 starts becoming blocky then grades to a 10YR 4/4 very fine to fine sandy loam blocky compact with increasing calcium carbonate at depth	no
51	0-10	10YR 4/3 organic loam indurated extremely hard 10- 15 percent slope 608245, 4205737	no
51	10-70	10YR 5/4 loam indurated extremely hard; at 30-70 cm grades to stratum below	no
51	70-100	10YR 4/6 massive clay loam	no
51	100-110	10YR 3/4 loamy very fine sand very compact developed blocky	no
51	110-120+	10YR 3/3 very hard compact "mineralized" silt loam	no
52	0-70	10YR 3/2 hard blocky organic sandy clay 15-20 percent slope 608341, 4205732	no
52	70-140+	10YR 4/4 very hard compact silt loam and loamy fine sand with varying degrees of development	no
53	0-70	10YR 4/3 hard blocky organic clay loam 608471, 4205691	no
53	70-110	10YR 5/4 very hard compact silt loam varying degrees of development, minor disturbance- previously dug?	no
53	110+	10YR 5/4 very fine sandy loam with river cobbles	no
54	0-60	10YR 4/3 hard blocky compact organic clay loam disturbed 608532, 4205682	no
54	60-140+	10YR 5/4 compact silt loam with weak blocky structure, soft	no