Appendix G

Delineation of Waters of the United States, State Route 32 Widening Project

DELINEATION OF WATERS OF THE UNITED STATES

State Route 32 Widening Project
City of Chico
Butte County, California

December 2005

Prepared for:

City of Chico
Community Services Department, Engineering Division
411 Main Street
Chico, CA 95928
Contact: Clif Sellers
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Prepared by:

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DELINEATION OF WATERS OF THE UNITED STATES

State Route 32 Widening Project
Chico, Butte County, California
October 2005

Introduction and Project Location

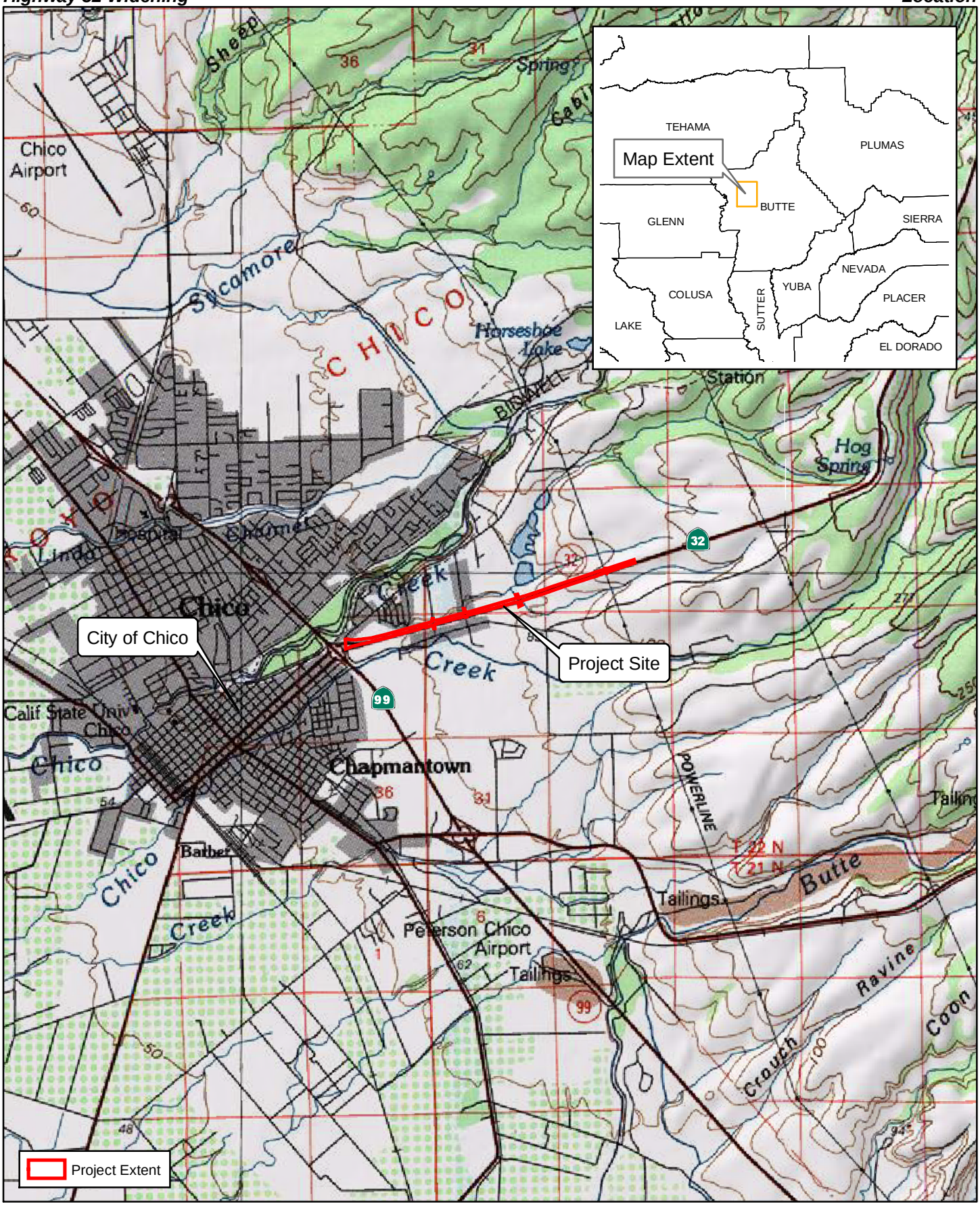
As requested by our client, Gallaway Consulting, Inc. performed a delineation of waters of the United States within the proposed State Route 32 Widening Project survey area (Project Site) located in Chico, Butte County, CA (**Figure 1**). The Project Site is located along State Route 32 (SR 32), roughly between Fir Street to1700 feet east of Yosemite Drive. The Project Area covers the California Department of Transportation (Caltrans) right-of-way for SR 32 (approximately 180 feet wide). A preliminary wetland delineation for this project was performed for the City of Chico in 2004. At that time the project ended on the east at the intersection of SR 32 and Yosemite Drive. Due to project expansion beyond Yosemite Drive additional surveys were performed and information from these surveys was added to the original document for the purpose of drafting this wetland delineation. The project area is within Section 25, T22N, R1E and Sections 19, 20, and 30, T22N R2E of the Chico 7.5 Minute USGS Quadrangle. The field surveys were performed on 14 and 19 April 2004 by Mary Bailey, consulting botanist, and Lyna Black, environmental scientist; and also on 19 September 2005 by Christy Dawson, biologist, and Shirley Innecken, botanist. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the U.S. Army Corps of Engineers (COE) Wetlands Delineation Manual (1987).

This report addresses the nature, jurisdictional status, and landscape position of the wetlands on site; it does not provide information suitable for structural analysis of soils for construction purposes, floodplain delineation, or other purposes not expressly stated. Wetland acreages presented in this report should be considered preliminary, subject to review and modification by the COE during the wetland delineation verification process.

Site Conditions

The Project Site is located in Chico, which is situated, in the northern Sacramento Valley (**Figure 1**). The survey area occurs within the SR 32 Caltrans right-of-way. Habitat within the proposed project area is generally characterized as valley foothill grasslands with elevation ranging from approximately 380 feet above mean sea level near the eastern project limits to 223 feet near the western end. Topography slopes in a westerly, southwesterly direction with localized drainage occurring in many areas from road slopes and adjacent properties. Soils within the Project Site include Doemill-Jokerst Complex 3 to 8 percent slopes, Vina fine sandy loam, 0-1% slopes, Redtough-Redswale Complex 0

Highway 32 Widening ***Location***



City of Chico, Butte County, CA.
Map Date: Nov. 11, 2005.

0 0.5 1 Miles

GALLAWAY CONSULTING, INC.

Figure 1.

to 2 percent slopes, and Almendra Loam 0 to 2 percent slopes. Soil characteristics include gravelly and very cobbly loams with frequent flooding and ponding and duripan layer within 4 inches of the surface toward the eastern portion of the survey area. Soils in the central portion of the survey area are loams and gravelly loams with frequent ponding and a duripan layer between 7 to 14 inches of the surface. The western soils are described as loams forming from alluvial parent material with rare flooding for brief periods from December through March. Localized precipitation runoff and shallow mudflow duripan support five (5) vernal pools, three (3) vernal swale and five (5) seasonal wetland areas with soils that are saturated or ponded for a long enough duration to support hydrophytic plants.

Survey Methodology

Many of the terms used throughout this report have specific meanings relating to the federal wetland delineation process. Term definitions are based on the COE 1987 delineation manual (Environmental Laboratory 1987). The terms defined below have specific meaning relating to the delineation of waters of the United States as prescribed by Section 404 of the Clean Water Act (CWA).

Terminology

Atypical situation (significantly disturbed). In an atypical (significantly disturbed) situation, recent human activities or natural events have created conditions where positive indicators for hydrophytic vegetation, hydric soil, or wetland hydrology are not present or observable.

Ephemeral Stream. An ephemeral stream has flowing water only during and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Growing season. The growing season is the portion of the year when soil temperatures are above biologic zero (41^{o} F) as defined by soil taxonomy.

Hydric soil. Soil is hydric that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic (oxygen-depleted) conditions in its upper part (i.e., within the shallow rooting zone of herbaceous plants).

Intermittent Stream. An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Jurisdictional wetland. Sites that meet the definition of wetland provided below and that fall under COE regulations pursuant to Section 404 of the CWA are considered jurisdictional wetlands.

Man-induced Wetlands. A man-induced wetland is an area that has developed at least some characteristics of naturally occurring wetlands due to either intentional or incidental human activities.

Normal Circumstances. This term refers to the soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed.

Other waters of the United States (other waters). Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4).

Plant indicator status categories:

Obligate wetland plants (OBL) – plants that occur almost always (estimated probability 99%) in wetlands under normal conditions, but which may also occur rarely (estimated probability 1%) in non-wetlands.

Facultative wetland plants (FACW) - plants that usually occur (estimated probability 67% to 99%) in wetlands under normal conditions, but also occur (estimated probability 1% to 33%) in non-wetlands.

Facultative plants (FAC) – Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands.

Facultative upland plants (FACU) – Plants that occur sometimes (estimated probability1% to 33%) in wetlands, but occur more often (estimated probability 67% to 99%) in non-wetlands.

Obligate upland plants (UPL) – Plants that occur rarely (estimated probability 1%) in wetlands, but occur almost always (estimated probability 99%) in non-wetlands under natural conditions.

Ponded. Ponding is a condition in which free water covers the soil surface (e.g., in a closed depression) and is removed only by percolation, evaporation, or transpiration.

Problem area. Problem areas are those where one or more wetland parameters may be lacking because of normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events.

Waters of the United States. This is the encompassing term for areas under federal jurisdiction pursuant to Section 404 of the CWA. Waters of the United States are divided into "wetlands" and "other waters of the United States".

Wetland. Wetlands are defined as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 [b], 40 CFR 230.3). To be considered under federal jurisdiction, a wetland must support positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology.

Determination of Hydrophytic Vegetation

The presence of hydrophytic vegetation was determined using the methods outlined in the COE 1989 manual (Federal Interagency Committee for Wetland Delineation 1989), a method approved by the COE for use in conjunction with the 1987 manual. Under this method, areas are considered to have positive indicators of hydrophytic vegetation if 50% or more of the dominant plant species are present (defined as plants that comprise 20% or more of the cover value observed at a site include FAC, FACW, or OBL species) (Reed 1988).

Determination of Hydric Soils

Soil survey information was reviewed for the Project Site and representatives from Natural Resources Conservation Service (NRCS) in Chico, California were consulted on the local soil conditions. Field samples were evaluated using the Munsell soil color chart, hand texturing, and assessment of soil features (e.g. oxidized root channels, evidence of hardpan, Mn and Fe concretions). Information regarding local soil and series descriptions and mapping are provided in **Appendix A**.

Determination of Wetland Hydrology

Wetland hydrology was determined to be present if a site supported one or more of the following characteristics:

- Landscape position and surface topography (e.g., position of the site relative to an up-slope water source, location within a distinct wetland drainage pattern, and concave surface topography),
- Inundation or saturation for a long duration either inferred based on field indicators or observed during repeated site visits, and
- Residual evidence of ponding or flooding resulting in field indicators such as scour marks, sediment deposits, algal matting, and drift lines.

The presence of water or saturated soil for approximately 12% of the growing season typically creates anaerobic conditions in the soil, and these conditions affect the types of plants that can grow and the types of soils that develop (Wetland Training Institute 1995).

Jurisdictional Boundary Determination and Acreage Calculation

The wetland-upland boundary was determined based on the presence or inference of positive indicators of all mandatory criteria. Soil samples were taken within wetland and upland areas. When boundary identification between wetland and upland could not be made visually using vegetative community boundaries, additional soil sampling was performed to further define the boundary between wetland (hydric soils) and upland communities. The site was traversed on foot to identify wetlands and pin-flags were placed along the wetland boundaries. Standard data sheets (**Appendix B**) were used to describe plants, soils, and hydrological characteristics. Gallaway Consulting, Inc. performed the field delineation, map, and acreage calculations (**Attachment A**, which is located in the back pocket of this report). The spatial data obtained during the preparation of this wetland delineation was collected using a Trimble GeoXT GPS Receiver on 14 and 19 April 2004 and 19 September 2005. The maximum PDOP (position dilution of precision) during data collection was 7.5. No readings were taken with fewer than 5 satellites. Point data locations were recorded for 25 seconds at a rate of 1 position per second. Area and line data was recorded at a rate of 1 position per second while walking at a slow pace. All GPS data was differentially corrected for maximum accuracy using the National Geodetic Survey's Chico CORS Station.

Results

Sites qualifying as wetlands and Other Waters of the United States (OW) are described below. There were a total of 0.694 acres of jurisdictional features delineated onsite including 0.301 acres of jurisdictional wetlands (i.e., seasonal wetlands and vernal pools), 0.273 acres of riparian, and 0.1 acres of OW (**Table 1**). Several potential wetlands, which appeared to be swales on aerial photographs, were surveyed east of Yosemite Drive and data was collected at points within, and adjacent to these features. There were no positive indicators for hydrophytes or hydric soils. These features likely convey water as sheet flow during precipitation events but do not pond water for sufficient periods of time to support hydrophytic conditions.

Jurisdictional features were mapped at a 1":200' scale and are presented in **Attachment A**. Wetland acreages presented in this report should be considered preliminary, subject to review and modification by the COE during the wetland delineation verification process. A description of the wetlands, the data collected and methods of interpretation used to delineate their jurisdictional boundaries, are described below.

Table 1. Type, identification and area of jurisdictional features delineated within the State Route 32 Widening Project Site, Chico, Butte County, CA.

Features	Label	Length (ft.)	Average Width (ft.)	Area (sq.ft.)	Acres
OWOTUS	OW01	204.422	12	2453.067	0.056
OWOTUS	OW02	41.362	1	41.362	0.001
OWOTUS	OW04	179.496	1	179.496	0.004
OWOTUS	OW05	55.373	2	110.746	0.003
OWOTUS	OW06	62.632	3	187.896	0.004
OWOTUS	OW07	168.893	7.5	1266.694	0.029
OWOTUS	OW08	60.718	0.5	30.359	0.001
OWOTUS	OW09	47.616	2	95.231	0.002
Other Waters Totals =		**820.512**		**4364.852**	**0.100**
Culvert	C01	80.588	3	241.763	0.006
Culvert	C02	58.100	3	174.299	0.004
Culvert	C04	73.923	3	221.769	0.005
Culvert	C05	121.611	2	243.222	0.006
Culvert Totals =		**334.222**		**881.054**	**0.020**
Seasonal	WF01	n/a	n/a	1129.078	0.026
Seasonal	WF02	n/a	n/a	330.814	0.008
Seasonal	WF03	n/a	n/a	362.011	0.008
Vernal Swale	WF04	n/a	n/a	144.490	0.003
Vernal Swale	WF05	n/a	n/a	52.957	0.001
Seasonal	WF06	n/a	n/a	61.447	0.001
Vernal Pool	WF07	n/a	n/a	5315.939	0.122
Vernal Pool	WF08	n/a	n/a	2434.319	0.056
Vernal Pool	WF09	n/a	n/a	283.331	0.007
Seasonal	WF10	n/a	n/a	1446.142	0.033
Vernal Pool	WF11	n/a	n/a	315.411	0.007
Vernal Pool	WF12	n/a	n/a	308.440	0.007
Vernal Swale	WF14	n/a	n/a	157.288	0.004
FEW	WF15	n/a	n/a	779.959	0.018
Wetland Features Totals =				**13121.627**	**0.301**
Riparian	R01	n/a	n/a	2375.329	0.055
Riparian	R02	n/a	n/a	9501.990	0.218
Riparian Totals =				**11877.319**	**0.273**
Totals of All Features =		**1154.734**		**30244.851**	**0.694**

Jurisdictional Wetlands

Localized precipitation runoff and the presence of shallow mudflow duripan support five (5) vernal pools and three (3) vernal swales. Five (5) seasonal wetlands are supported by localized runoff and drainages with soils that are saturated or ponded for long enough duration to support hydrophytic plants. A small riparian area functioning as a wetland was observed east of Bruce Road in the southern portion of the survey area. Within this riparian area a small emergent wetland is present. Vegetation and soil samples within the wetlands suggest that water ponds for sufficient periods of time to support hydrophytes. This area is supported by a seasonal drainage that conveys water in a northerly direction via a 6 foot by 10 foot box culvert under SR 32. Riparian habitat was also present along Dead Horse Slough.

Seasonal Wetlands

Vegetation and soil samples within the seasonal wetlands suggest that water ponds for sufficient periods of time to support hydrophytes however they do not contain a predominance of plants associated with vernal pools and they lack a shallow duripan necessary for supporting vernal pools. Occasionally vernal pool associated wetland species were observed within the seasonal wetlands. Distinction between seasonal wetland and vernal pools was based on hydrology, lack of a well defined duripan layer that was observed in the vernal pool features, shallow topography, and relatively fewer densities of wetland plants.

Vernal Pools and Vernal Swales

In addition to supporting positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology, vernal pools and swales exhibit unique characteristics. Vernal pools exist when there is a soil layer below or at the surface that is impermeable or nearly impermeable (USFWS 2002). Precipitation and surface runoff become trapped or "perched" above this layer. Vernal pools typically occur in landscapes that, at a broad scale, are shallowly sloping or nearly level, but on a finer scale may be quite bumpy or uneven as is the case within the survey area. The drainage from the road cut with a shallow duripan causing undrained depressions has formed vernal pools onsite. Vernal pools may remain inundated until spring or early summer, sometimes filling and emptying numerous times during the wet season. Vernal pools gradually dry down during the spring, often forming a unique "bathtub ring" of flowers from endemic vernal pool plants blooming profusely at the pool margins, which was also observed during the survey.

There are five (5) identifiable vernal pools and three (3) vernal swales located within the survey area. Vernal pool determination was made by the hydrology (saturation), shallow topography, duripan layer, and relatively higher densities of vernal pool associated wetland species. Vernal pool plant genera endemic to California vernal pools occurring in the vernal pool features include *Eryngium*, *Plagiobothrys,* and *Psilocarpus* .

Riparian

Valley foothill riparian forest occurs adjacent to stream and river channels in the Central Valley. Established riparian habitat was observed within the project area. Dominant canopy species include valley oak (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*) and willow (*Salix* sp.). The subcanopy is composed of willows (*Salix* sp.), tree-of-heaven (*Ailanthus altissima*) and ornamental pistachio (*Pistacia chinensis*). Red bud (*Cercis occidentalis*), live oak (*Quercus wislizeni* var. *wislizeni*), willow scrub, tree-of-heaven and Himalayan blackberry (*Rubus discolor*) comprise the understory. There is also a significant ground cover/liana layer of California grape (*Vitis californica*). Herbaceous plants consist primarily of non-native annual grasses and forbs.

Other Waters of the United States

Within the SR 32 Widening Project location, eight (8) Other Water of the US features were delineated. Other Waters of the US are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). We applied the above definition when delineating all Other Waters of the US. The drainages exhibited ordinary high water marks and contained bed, bank, and scour morphology.

Soils

Soils within the survey area include Doemill-Jokerst Complex 3 to 8 percent slopes, Redtough-Redswale Complex 0 to 2 percent slopes, Vina fine sandy loam, 0-1% slopes and Almendra Loam 0 to 2 percent slopes (**Table 2**). Soil characteristics include gravelly and very cobbly loams with frequent flooding and ponding and duripan layer within 4 inches of the surface toward the eastern portion of the survey area. Soils in the central portion of the survey area are loams and gravelly loams with frequent ponding and a duripan layer between 7 to 14 inches of the surface. The western soils are described as loams forming from alluvial parent material with rare flooding for brief periods from December through March. Soil series descriptions and a soils map are presented in **Appendix A** and soil-sampling results are presented in **Appendix B**.

Table 2. Summary of soil types occurring within the State Route 32 widening project area, Chico, Butte County, CA.

Map Symbol	Soil Unit Name	Hydric Soil	Hydric Inclusions Present	Hydric Criteria*	Hydric Landforms
302	Redtough-Redswale complex, 0-2% slopes	N	Y	3,4	Vernal pools, swales on fan terraces
418	Almendra loam, 0-2% slopes	N	N		
615	Doemill-Jokerst Complex, 3-8% slopes	N	Y	3	Vernal pool on foothills
425	Vina fine sandy loam, 0-1% slopes	N	N		

* 3. Soils that are frequently ponded for long duration or very long duration during the growing season.
4. Soils that are frequently flooded for long duration or very long duration during the growing season.

Vegetation

Wetland vegetation present within the seasonal, vernal pool, and fresh emergent wetland features includes *Eryngium vaseyi* (FACW), *Mimulus guttatus* (OBL), *Rumex crispus* (FACW-), *Eleocharis* sp. (OBL), *Lolium multiflorum* (FAC), *Lasthenia fremontii* (OBL), *Deschampsia danthonioides* (FACW), *Plagiobothrys stipitatus* (OBL), *Navarretia leucocephala* (OBL). Upland and wetland boundaries were moderately to easily distinguishable. Copies of field data sheets are presented in **Appendix B**.

Hydrology

Hydrology on the site consists of localized runoff from precipitation events. Slight mima or *mound-swale* topography exists onsite with project elevation ranging from approximately 223-380 feet above sea level, sloping slightly in a westerly direction. Copies of field data sheets are presented in **Appendix B**. For further explanation of field notes please contact Christy Dawson at (530) 343-8327.

Site Photos

Other Waters 04

Other Waters 05

Other Waters 06

Wetland Feature 01

Wetland Feature 01 & Other Waters 02

Vernal Pool 07

Vernal Pool 08

Vernal Pool 08 (2)

Vernal Pool 09 (dry)

Vernal Pool 09 (wet)

Seasonal Wetland 10

References

Environmental Laboratory. 1987. U.S. Army Corps of Engineers wetlands delineation manual. (Technical Report Y-87-1). U.S. Army Waterways Experiment Station. Vicksburg, MS.

Federal Interagency Committee for Wetland Delineation. 1989. Federal manual for identifying and delineating jurisdictional wetlands. (Cooperative Technical Publication). U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Soil Conservation Service. Washington, DC.

Reed, P.B., Jr. 1987. National list of plant species that occur in wetlands: California (Region 0). U.S. Fish and Wildlife Service Biol. Rep. 88(26.10) 135pp.

Wetland Training Institute. 1995. Field guide for wetland delineation: 1987 Corps of Engineers manual. (WTI 95-3). Poolsville, MD.

Appendix A
Soil Descriptions

Available only in hard copy.

Appendix B
Field Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	9/19/2005
Application/Owner:				County:	Butte
Investigator:	S. Innecken, C. Dawson			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	RP 4-10
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Navarettia sp.*	herb	UPL	9.			
2.	*Centaurium solstitialis*	herb	UPL	10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: This data sheet represents several data points which were taken east of the intersection of Yosemite Drive. Swale-like features were present however they did not support hydrophytic conditions.

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-3”	A	7.5YR 3/3	NA	NA	Silty clay

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks: Dried moss layer on surface, hardpan at 3”, sheet flows, no hydric soils. Areas outside of these swales were slightly deeper before reaching hardpan but soils were identical in structure and color.

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present x Yes - No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Vernal Swale
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF09
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Plagiobothrys stipitatus (100)*	herb	OBL	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: 4 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
Yes Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
Yes Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Redtough-Redswale Complex, 0 to 2 % slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic, shallow Typic Durixeralfs; Loamy-skeletal, mixed, active, thermic, shallow Typic Durixeralfs

Field Observations Confirm Mapped Type? X Yes __ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	O	NA	NA	NA	Organic layer
2-4”	A	2.5YR 2.5/4	NA	NA	Cobbly, gravelly loam
4-12”	B	2.5YR 3/4	NA	NA	Cobbly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
_X_ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 12 inches (and at surface)

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Vernal swale

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U09
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taeniatherum caput medusae*	herb	UPL	9.			
2.	*Vicia* sp	herb	UPL	10.			
3.	*Bromus mollis*	herb	UPL	11.			
4.	*Trifolium hirtum*	herb	UPL	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name (Series and Phase): Redtough-Redswale Complex, 0 to 2 % slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic, shallow Typic Durixeralfs; Loamy-skeletal, mixed, active, thermic, shallow Typic Durixeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-14”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Vernal Pool
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF08
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Navarretia leucocephala (60)*	herb	OBL	9.			
2.	*Plagiobothrys stipitatus (25)*	herb	OB L	10.			
3.	*Eryngium vaseyi (15)*	herb	OBL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:

Depth of Water Surface:	NA (in.)
Depth of Free Water in Pit:	NA (in.)
Depth to Saturated Soil:	4 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

No	Inundated (nearby)
Yes	Saturated in Upper 12 inches
Yes	Water Marks
No	Drift Lines
Yes	Sediment Deposits
Yes	Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

No	Oxidized Root Channels in Upper 12 inches
No	Water-Stained Leaves
No	Local Soil Survey Data
Yes	FAC-Neutral Test
___	Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? _X_ Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	O	NA	NA	NA	Organic layer
2-4”	A	2.5YR 2.5/4	NA	NA	Cobbly, gravelly loam
4-12”	B	7.5YR 3/1	7.5 YR 5/6	Few/ distinct	Cobbly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
_X_ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
_X_ Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 12 inches (and at surface)
Concretions visible at duripan + 2”

Wetland Determination

Hydrophytic Vegetation Present _X_ Yes __ No
Wetland Hydrology Present _X_ Yes __ No
Hydric Soils Present _X_ Yes __ No

Is this Sampling Point Within a Wetland? _X_ Yes __No

Remarks:
Vernal pool

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U08
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Vicia* sp	herb	UPL	9.			
2.	*Bromus mollis*	herb	UPL	10.			
3.	*Taeniatherum caput medusae*	herb	UPL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-14”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Vernal Pool
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF07
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Navarretia leucocephala (35)*	herb	OBL	9.			
2.	*Eleocharis* sp *(30)*	herb	OB L	10.			
3.	*Plagiobothrys stipitatus(35)*	herb	OBL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: 4 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
Yes Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
Yes Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? _X_ Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	O	NA	NA	NA	Organic layer
2-4”	A	2.5YR 2.5/4	NA	NA	Cobbly, gravelly loam
4-12”	B	7.5YR 3/1	7.5 YR 5/6	Few / distinct	Cobbly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
_X_ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
_X_ Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 12 inches (and at surface)
Concreations visable at duripan + 2”

Wetland Determination

Hydrophytic Vegetation Present _X_ Yes __ No
Wetland Hydrology Present _X_ Yes __ No
Hydric Soils Present _X_ Yes __ No

Is this Sampling Point Within a Wetland? _X_ Yes __No

Remarks:
Vernal pool

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U07
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Centaurium solstitialis*	herb	UPL	9.			
2.	*Taeniatherum caput medusae*	herb	UPL	10.			
3.	*Bromus mollis*	herb	UPL	11.			
4.	*Vicia* sp	herb	UPL	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-14”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Seasonal Drain
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF06
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Eleocharis* sp *(40)*	herb	OBL	9.			
2.	*Rumex crispus (40)*	herb	FACW-	10.			
3.	*Lolium multiflorum (20)*	herb	FAC	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
No Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? _X_ Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-4”	A	2.5YR 2.5/4	NA	NA	Sandy gravel w/cobbles duripan to surface in places

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
_X_ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
_X_ Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 4-5 inches (and at surface)
Concretions at duripan.

Wetland Determination

Hydrophytic Vegetation Present _X_ Yes __ No
Wetland Hydrology Present _X_ Yes __ No
Hydric Soils Present _X_ Yes __ No

Is this Sampling Point Within a Wetland? _X_ Yes __No

Remarks:
Small seasonal wetland area around culvert
Duripan at surface but does not display strong vernal pool indicators

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U06
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taeniatherum caput medusae*	herb	UPL	9.			
2.	*Centaurium solstitialis*	herb	UPL	10.			
3.	*Vicia* sp	herb	UPL	11.			
4.	*Bromus mollis*	herb	UPL	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-8”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point
Shallow duripan layer

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Vernal Swale
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF05
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Navarretia leucocephala (60)*	herb	OBL	9.			
2.	*Deschampsia danthonioides (25)*	herb	FAC	10.			
3.	*Plagiobothrys stipitatus (15)*	herb	FACW	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
Yes Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: algal mats

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-4”	A	2.5YR 2.5/4	NA	NA	Sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
_X_ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 4-5 inches. Duripan exposed in portion of swales.

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Vernal swale

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U05
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taeniatherum caput medusae*	herb	UPL	9.			
2.	*Bromus mollis*	herb	UPL	10.			
3.	*Vicia* sp	herb	UPL	11.			
4.	*Centaurium solstitialis*	herb	UPL	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-12”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Vernal Swale
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF04
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Navarretia leucocephala (40)*	herb	OBL	9.			
2.	*Lasthenia fremontii (15)*	herb	OBL	10.			
3.	*Plagiobothrys stipitatus (35)*	herb	FACW	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
Yes Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-4”	A	2.5YR 2.5/4	NA	NA	Sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 4-5 inches
Topography allows for “deeper” ponding of water

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Vernal swale

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U04
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taeniatherum caput medusae*	herb	UPL	9.			
2.	*Vicia* sp	herb	UPL	10.			
3.	*Bromus mollis*	herb	UPL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-10”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point
Duripan beyond 10 inches

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Seasonal Wetland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF03
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Lolium multiflorum (60)*	herb	FAC	9.			
2.	*Plagiobothrys stipitatus(30)*	herb	OBL	10.			
3.	*Eryngium vaseyi (10)*	herb	FACW	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
No Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
Yes Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Drainage from off site wetlands located on southern property to culvert, flow to the north

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-4”	A	2.5YR 3/4	NA	NA	Cobbly gravel
4-8”	A	2.5YR 3/4	NA	NA	Gravelly, sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
X High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Obvious that soils are frequently saturated for a long enough duration to support hydrophytic vegetation
Cobbles and gravels very dense past 6 inches, duripan at 8 inches

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Seasonal wetland – drainage from southern adjacent wetlands to culvert under road

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U03
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Centaurium solstitialis*	herb	UPL	9.			
2.	*Vicia* sp	herb	UPL	10.			
3.	*Taeniatherum caput medusae*	herb	UPL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-10”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point
Dense cobble, gravel layer at and below 10 inches

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Seasonal Wetland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF02
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Plagiobothrys stipitatus (60)*	herb	OBL	9.			
2.	*Deschampsia danthonioides (5)*	herb	FAC	10.			
3.	*Navarretia leucocephala (10)*	herb	OBL	11.			
4.	*Eryngium vaseyi (10)*	herb	FACW	12.			
5.	*Eleocharis* sp *(15)*	herb	OBL	13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
Yes Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
No Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
Yes Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Drainage from off site wetlands located on southern property

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	O	Organic	NA	NA	Organic layer
2-6”	A	2.5YR 3/4	NA	NA	Gravelly, sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
X High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Obvious that soils are frequently saturated for a long enough duration to support hydrophytic vegetation
Cobbles and gravels very dense past 6 inches

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Vegetation and landscape position indicate vernal pool.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U02
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taeniatherum caput medusae*	herb	UPL	9.			
2.	*Centaurium solstitialis*	herb	UPL	10.			
3.	*Bromus mollis*	herb	FACU-	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly gravel
2-10”	A	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point
Dense cobble, gravel layer at and below 6 inches

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Seasonal Wetland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF01
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Lolium multiflorum (50)*	herb	FAC	9.			
2.	*Mimulus guttatus (10)*	herb	OBL	10.			
3.	*Eryngium vaseyi (40)*	herb	FACW	11.			
4.	*Rumex crispus (100)*	Shrub	FACW	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: 5 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
Yes Saturated in Upper 12 inches
Yes Water Marks
Yes Drift Lines
No Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly gravel
2-6”	A	2.5YR 3/4	NA	NA	Gravelly, sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
_X_ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Obvious that soils are frequently saturated for a long enough duration to support hydrophytic vegetation

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
FEW associated with Other Waters drainage

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U01
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Taeniatherum caput medusae*	herb	UPL	9.			
2.	*Vicia* sp	herb	UPL	10.			
3.	*Centaurium solstitialis*	herb	UPL	11.			
4.	*Bromus mollis*	herb	FACU-	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly gravel
2-6”	A	2.5YR 3/3	NA	NA	Gravelly, sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Riparian
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF13-16
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Salix lasiolepis (100)*	Canopy	NL	9.			
2.	*Salix laevigata (50)*	understory	FACW	10.			
3.	*Salix exigua (50)*	understory	FACW	11.			
4.	*Vitis californica (100)*	vine	FACW	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
Yes Drift Lines
No Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
Yes Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Riparian zone associated with Other Waters

SOILS

Map Unit Name
(Series and Phase): Almendra, 0 to 2 percent slopes

Drainage class: Well drained

Taxonomy (Subgroup): Fine-loamy, mixed, superactive, thermic Pachic Haploxerolls

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-4”	A	10 YR 3/1	NA	NA	Fine loam
5-8”	A	10 YR 3/2	NA	NA	Clay loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
_X_ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Obvious that soils are frequently saturated for a long enough duration to support hydrophytic vegetation

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Riparian associated with Other Waters drainage

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF13-16
Is the area a potential Problem Area?		No		Plot ID:	U15

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Quercus lobata*	Dom. Canopy	UPL	9.			
2.	*Quercus wislizenii var. wislizenii*	Understory	UPL	10.			
3.	*Ailanthus altissima*	Understory	FACU	11.			
4.	*Auena fatua*	Herb	UPL	12.			
5.	*Andropogon virginicus*	Herb	UPL	13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks:
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name (Series and Phase): Redtough-Redswale Complex, 0 to 2 % slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic, shallow Typic Durixeralfs; Loamy-skeletal, mixed, active, thermic, shallow Typic Durixeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-14”	B	2.5YR 2.5/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Vernal Swale
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF14
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Navarretia leucocephala (50)*	herb	OBL	9.			
2.	*Lasthenia fremontii (10)*	herb	OBL	10.			
3.	*Plagiobothrys stipitatus (40)*	herb	FACW	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
Yes Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-4”	A	2.5YR 2.5/4	NA	NA	Sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 4-5 inches

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Vernal swale

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U03
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Centaurium solstitialis*	herb	UPL	9.			
2.	*Vicia* sp	herb	UPL	10.			
3.	*Taeniatherum caput medusae*	herb	UPL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-10”	B	2.5YR 3/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point
Dense cobble, gravel layer at and below 10 inches

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Fresh Emergent Wetland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF12
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Eleocharis acicularis (50)*	herb	OBL	9.			
2.	*Eleocharis obtuse (10)*	herb	OBL	10.			
3.	*Cypems sp.*	herb	OBL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: 2 (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
Yes Inundated (nearby)
Yes Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly gravel
2-6”	A	2.5YR 3/4	NA	NA	Gravelly, sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
_X_ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Obvious that soils are frequently saturated for a long enough duration to support hydrophytic vegetation

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
FEW associated with Other Waters drainage

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Riparian
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF12
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Populus fremontii (100)*	Canopy	FACW	9.			
2.	*Salix lasiolepis (100)*	understory	NL	10.			
3.	*Salix laevigata (100)*	shrub	FACW	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
Yes Drift Lines
No Sediment Deposits
Yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Riparian zone associated with Other Waters and FEW.

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly gravel
2-6”	A	2.5YR 3/4	NA	NA	Gravelly, sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
_X_ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Obvious that soils are frequently saturated for a long enough duration to support hydrophytic vegetation

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Riparian associated with Other Waters drainage

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U12
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Aira caryophyllea*	herb	FACU	9.			
2.	*Auena fatua*	herb	UPL	10.			
3.	*Centaurium solstitialis*	herb	UPL	11.			
4.	*Lolium multiform*	Herb	UPL	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks:
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name (Series and Phase): Redtough-Redswale Complex, 0 to 2 % slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic, shallow Typic Durixeralfs; Loamy-skeletal, mixed, active, thermic, shallow Typic Durixeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-14”	B	2.5YR 2.5/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Vernal Swale
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	WF11
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Navarretia leucocephala (60)*	herb	OBL	9.			
2.	*Lasthenia fremontii (25)*	herb	OBL	10.			
3.	*Plagiobothrys stipitatus (15)*	herb	FACW	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
Yes Water Marks
Yes Drift Lines
yes Sediment Deposits
yes Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
Yes Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: algal mats

SOILS

Map Unit Name
(Series and Phase): Doemill-Jokerst Complex, 3 to 8% slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic Lithic Haploxeralfs; loamy, mixed, active, thermic Lithic Haploxeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-4”	A	2.5YR 2.5/4	NA	NA	Sandy loam w/cobbles

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Duripan at and below approximately 4-5 inches. Duripan exposed in portion of swales.

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Vernal swale

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U11
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Bromus mollis*	herb	UPL	9.			
2.	*Taeniatherum caput medusae*	herb	UPL	10.			
3.	*Centaurium solstitialis*	herb	UPL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks:
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name (Series and Phase): Redtough-Redswale Complex, 0 to 2 % slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic, shallow Typic Durixeralfs; Loamy-skeletal, mixed, active, thermic, shallow Typic Durixeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-14”	B	2.5YR 2.5/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?			Yes	Community ID:	Seasonal
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	W10
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Lolium multiflorum (60)*	herb	FAC	9.			
2.	*Rumex crispus (40)*	herb	FACW-	10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 100%

Remarks: Percent dominance listed in parentheses

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
Yes Saturated in Upper 12 inches
No Water Marks
No Drift Lines
Yes Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
Yes FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Culvert drains from south side of road into this seasonally wet area

SOILS

Map Unit Name (Series and Phase): Redtough-Redswale Complex, 0 to 2 % slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic, shallow Typic Durixeralfs; Loamy-skeletal, mixed, active, thermic, shallow Typic Durixeralfs

Field Observations Confirm Mapped Type? X Yes __ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-1”	A	2.5YR 3/4	NA	NA	Gravelly loam
2-12”	A	2.5YR 2.5/4	NA	NA	Cobbly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Hydric soils indicators slight, does to support a predominance of hydrophytes

Wetland Determination

Hydrophytic Vegetation Present X Yes __ No
Wetland Hydrology Present X Yes __ No
Hydric Soils Present X Yes __ No

Is this Sampling Point Within a Wetland? X Yes __No

Remarks:
Seasonal wetland associated with culvert

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	State Highway Route 32			Date:	14 April 2004
Application/Owner:	City of Chico			County:	Butte
Investigator:	M. Bailey, L. Black			State:	California
Do Normal Circumstances exist on the site?		No	Yes	Community ID:	Upland
Is the site significantly disturbed (Atypical Situation)?		No		Transect ID:	U10
Is the area a potential Problem Area?		No		Plot ID:	

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	*Bromus mollis*	herb	UPL	9.			
2.	*Taeniatherum caput medusae*	herb	UPL	10.			
3.	*Trifolium hirtum*	herb	UPL	11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -). 0%

Remarks: Percent dominance listed in parentheses
Upland sample point

HYDROLOGY

__ Recorded Data (Describe in Remarks):
Stream, Lake or Tide Gauge
Aerial Photographs
Other (Soil Survey)
X No Recorded Data Available

Field Observations:
Depth of Water Surface: NA (in.)
Depth of Free Water in Pit: NA (in.)
Depth to Saturated Soil: NA (in.)

Wetland Hydrology Indicators:

Primary Indicators:
No Inundated (nearby)
No Saturated in Upper 12 inches
No Water Marks
No Drift Lines
No Sediment Deposits
No Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
No Oxidized Root Channels in Upper 12 inches
No Water-Stained Leaves
No Local Soil Survey Data
No FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Upland sample point

SOILS

Map Unit Name (Series and Phase): Redtough-Redswale Complex, 0 to 2 % slopes

Drainage class: Somewhat poorly drained to poorly drained

Taxonomy (Subgroup): Loamy, mixed, active, thermic, shallow Typic Durixeralfs; Loamy-skeletal, mixed, active, thermic, shallow Typic Durixeralfs

Field Observations Confirm Mapped Type? X Yes ___ No

Profile Description:

Depth (inches)	**Horizon**	**Matrix Color** (Munsell Moist)	**Mottle Colors** (Munsell Moist)	**Mottle** Abundance/Contrast	**Texture, Concretions** Structures, etc.
0-2”	A	2.5YR 3/4	NA	NA	Cobbly loam
2-14”	B	2.5YR 2.5/4	NA	NA	Cobbly, gravelly loam

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low-Chroma Colors
__ Concretions
__ High Organic Content in Surface layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
X Other (Explain in Remarks)

Remarks:
Upland sample point

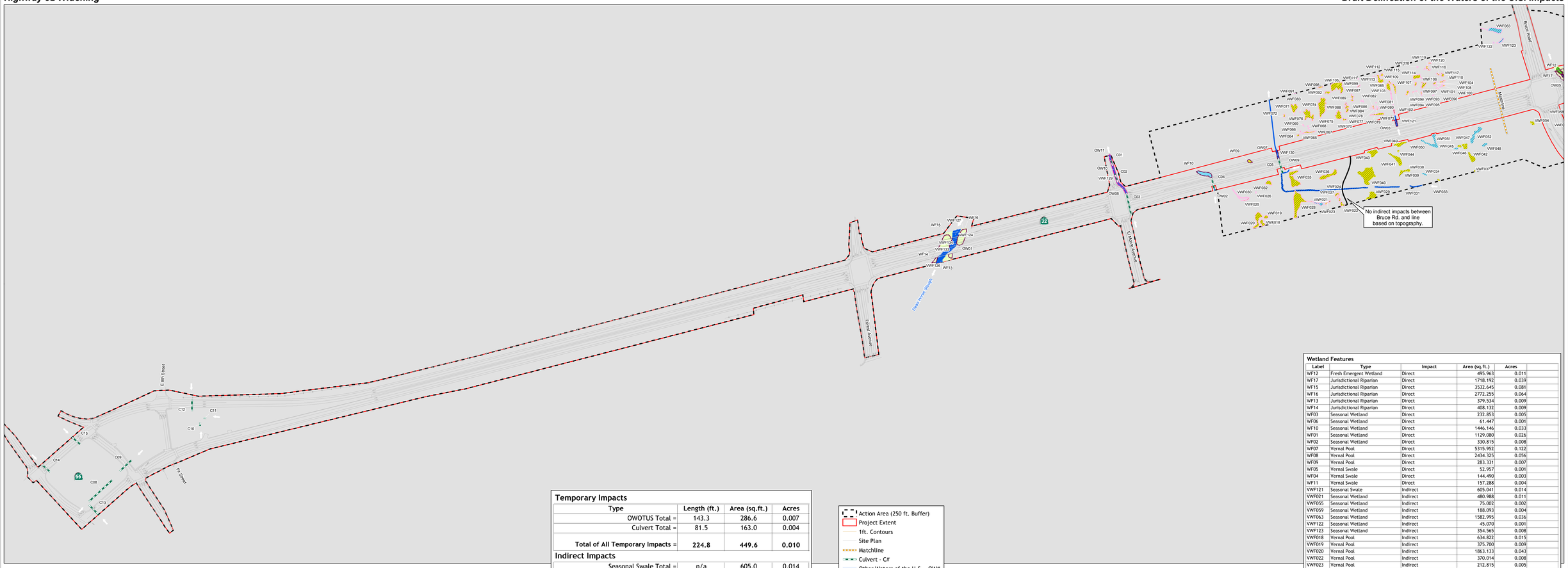
Wetland Determination

Hydrophytic Vegetation Present __ Yes X No
Wetland Hydrology Present __ Yes X No
Hydric Soils Present __ Yes X No

Is this Sampling Point Within a Wetland? __ Yes X No

Remarks:
Upland

Attachment A
Wetland Delineation Map



Temporary Impacts

Type	Length (ft.)	Area (sq.ft.)	Acres
OWOTUS Total =	143.3	286.6	0.007
Culvert Total =	81.5	163.0	0.004
Total of All Temporary Impacts =	**224.8**	**449.6**	**0.010**

Indirect Impacts

Seasonal Swale Total =	n/a	605.0	0.014
Seasonal Wetland Total =	n/a	2726.7	0.063
Vernal Pool Total =	n/a	35639.0	0.818
Vernal Swale Total =	n/a	511.5	0.012
Total of All Indirect Impacts =	n/a	**39482.3**	**0.906**

Direct Impacts

FEW Total =	n/a	496.0	0.011
Riparian Total =	n/a	8810.8	0.202
Seasonal Wetland Total =	n/a	3200.3	0.073
Vernal Pool Total =	n/a	8033.6	0.184
Vernal Swale Total =	n/a	354.7	0.008
* OWOTUS Total =	277.3	558.9	0.013
Total of All Direct Impacts =	**277.3**	**21454.3**	**0.493**

* includes bridge pilings on Dead Horse Slough

- Action Area (250 ft. Buffer)
- Project Extent
- 1ft. Contours
- Site Plan
- Matchline
- Culvert - C#
- Other Waters of the U.S. - OW#

Impacts

- Direct
- Indirect
- Temporary

Wetland Features - WF#

- Fresh Emergent Wetland
- Riparian
- Seasonal Swale
- Seasonal Wetland
- Vernal Pool
- Vernal Swale
- Previously Verified Features

Wetland Features

Label	Type	Impact	Area (sq.ft.)	Acres
WF12	Fresh Emergent Wetland	Direct	495.963	0.011
WF17	Jurisdictional Riparian	Direct	1718.192	0.039
WF15	Jurisdictional Riparian	Direct	3532.645	0.081
WF16	Jurisdictional Riparian	Direct	2772.255	0.064
WF13	Jurisdictional Riparian	Direct	379.534	0.009
WF14	Jurisdictional Riparian	Direct	408.132	0.009
WF03	Seasonal Wetland	Direct	232.853	0.005
WF06	Seasonal Wetland	Direct	61.447	0.001
WF10	Seasonal Wetland	Direct	1446.146	0.033
WF01	Seasonal Wetland	Direct	1129.080	0.026
WF02	Seasonal Wetland	Direct	330.815	0.008
WF07	Vernal Pool	Direct	5315.952	0.122
WF08	Vernal Pool	Direct	2434.325	0.056
WF09	Vernal Pool	Direct	283.331	0.007
WF05	Vernal Swale	Direct	52.957	0.001
WF04	Vernal Swale	Direct	144.490	0.003
WF11	Vernal Swale	Direct	157.288	0.004
VWF121	Seasonal Swale	Indirect	605.041	0.014
VWF021	Seasonal Wetland	Indirect	480.988	0.011
VWF055	Seasonal Wetland	Indirect	75.002	0.002
VWF059	Seasonal Wetland	Indirect	188.093	0.004
VWF063	Seasonal Wetland	Indirect	1582.995	0.036
VWF122	Seasonal Wetland	Indirect	45.070	0.001
VWF123	Seasonal Wetland	Indirect	354.565	0.008
VWF018	Vernal Pool	Indirect	634.822	0.015
VWF019	Vernal Pool	Indirect	375.700	0.009
VWF020	Vernal Pool	Indirect	1863.133	0.043
VWF022	Vernal Pool	Indirect	370.014	0.008
VWF023	Vernal Pool	Indirect	212.815	0.005
VWF024	Vernal Pool	Indirect	192.214	0.004
VWF026	Vernal Pool	Indirect	26.910	0.001
VWF027	Vernal Pool	Indirect	414.789	0.010
VWF028	Vernal Pool	Indirect	4682.486	0.107
VWF032	Vernal Pool	Indirect	608.750	0.014
VWF035	Vernal Pool	Indirect	2945.551	0.068
VWF036	Vernal Pool	Indirect	1974.778	0.045
VWF056	Vernal Pool	Indirect	472.647	0.011
VWF058	Vernal Pool	Indirect	319.789	0.007
VWF060	Vernal Pool	Indirect	93.969	0.002
VWF061	Vernal Pool	Indirect	450.694	0.010
VWF064	Vernal Pool	Indirect	161.264	0.004
VWF065	Vernal Pool	Indirect	419.924	0.010
VWF066	Vernal Pool	Indirect	52.002	0.001
VWF067	Vernal Pool	Indirect	30.751	0.001
VWF068	Vernal Pool	Indirect	29.302	0.001
VWF069	Vernal Pool	Indirect	43.002	0.001
VWF070	Vernal Pool	Indirect	187.096	0.004
VWF071	Vernal Pool	Indirect	17.867	0.000
VWF072	Vernal Pool	Indirect	149.023	0.003
VWF073	Vernal Pool	Indirect	697.401	0.016
VWF074	Vernal Pool	Indirect	34.159	0.001
VWF075	Vernal Pool	Indirect	1125.941	0.026
VWF076	Vernal Pool	Indirect	1891.796	0.043
VWF077	Vernal Pool	Indirect	30.295	0.001
VWF078	Vernal Pool	Indirect	15.075	0.000
VWF079	Vernal Pool	Indirect	60.946	0.001
VWF080	Vernal Pool	Indirect	10.741	0.000
VWF081	Vernal Pool	Indirect	29.598	0.001
VWF082	Vernal Pool	Indirect	146.418	0.003
VWF083	Vernal Pool	Indirect	1186.203	0.027
VWF084	Vernal Pool	Indirect	684.793	0.016
VWF085	Vernal Pool	Indirect	17.634	0.000
VWF086	Vernal Pool	Indirect	17.534	0.000
VWF087	Vernal Pool	Indirect	44.756	0.001
VWF088	Vernal Pool	Indirect	3024.963	0.069
VWF089	Vernal Pool	Indirect	331.954	0.008
VWF090	Vernal Pool	Indirect	24.426	0.001
VWF091	Vernal Pool	Indirect	14.899	0.000
VWF092	Vernal Pool	Indirect	371.603	0.009
VWF093	Vernal Pool	Indirect	110.086	0.003
VWF094	Vernal Pool	Indirect	48.021	0.001
VWF095	Vernal Pool	Indirect	34.705	0.001
VWF096	Vernal Pool	Indirect	301.293	0.007
VWF097	Vernal Pool	Indirect	38.655	0.001
VWF098	Vernal Pool	Indirect	189.619	0.004
VWF099	Vernal Pool	Indirect	92.633	0.002
VWF100	Vernal Pool	Indirect	137.776	0.003
VWF101	Vernal Pool	Indirect	24.066	0.001
VWF102	Vernal Pool	Indirect	550.433	0.013
VWF103	Vernal Pool	Indirect	726.559	0.017
VWF104	Vernal Pool	Indirect	37.431	0.001
VWF105	Vernal Pool	Indirect	2617.336	0.060
VWF106	Vernal Pool	Indirect	586.353	0.013
VWF107	Vernal Pool	Indirect	243.832	0.006
VWF108	Vernal Pool	Indirect	216.501	0.005
VWF109	Vernal Pool	Indirect	177.175	0.004
VWF110	Vernal Pool	Indirect	235.049	0.005
VWF111	Vernal Pool	Indirect	19.536	0.000
VWF112	Vernal Pool	Indirect	17.564	0.000
VWF113	Vernal Pool	Indirect	811.059	0.019
VWF114	Vernal Pool	Indirect	852.577	0.020
VWF115	Vernal Pool	Indirect	199.898	0.005
VWF116	Vernal Pool	Indirect	136.457	0.003
VWF117	Vernal Pool	Indirect	246.975	0.006
VWF118	Vernal Pool	Indirect	39.775	0.001
VWF119	Vernal Pool	Indirect	356.557	0.008
VWF120	Vernal Pool	Indirect	100.649	0.002
VWF025	Vernal Swale	Indirect	337.193	0.008
VWF030	Vernal Swale	Indirect	174.309	0.004

Other Waters of the U.S.

Label	Type	Impact	Avg. Width (ft.)	Length (ft.)	Area (sq.ft.)
OW03	OWOTUS	Direct	2	30.34185178	60.68370356
OW04	OWOTUS	Direct	1	179.4979304	179.4979304
OW05	OWOTUS	Direct	7.5	25.87676692	194.0757519
OW07	OWOTUS	Direct	3	41.54275621	124.6282686
OW08	OWOTUS	Temporary	2	75.00634342	150.0126868
OW10	OWOTUS	Temporary	2	43.36840133	86.73680267
OW11	OWOTUS	Temporary	2	24.91747295	49.8349459
C02	culvert	Temporary	2	49.48	98.96
C01	culvert	Temporary	2	32.03	64.06

The information contained in this figure shall be considered preliminary until written verification by the USACE.
Project Extent derived from MTCO CAD, Butte County parcel right of way & proposed avoidance.
Map Date: Marchg 24, 2009

0 200 400 Feet

GALLAWAY CONSULTING
A DIVISION OF NORTHSTAR ENGINEERING