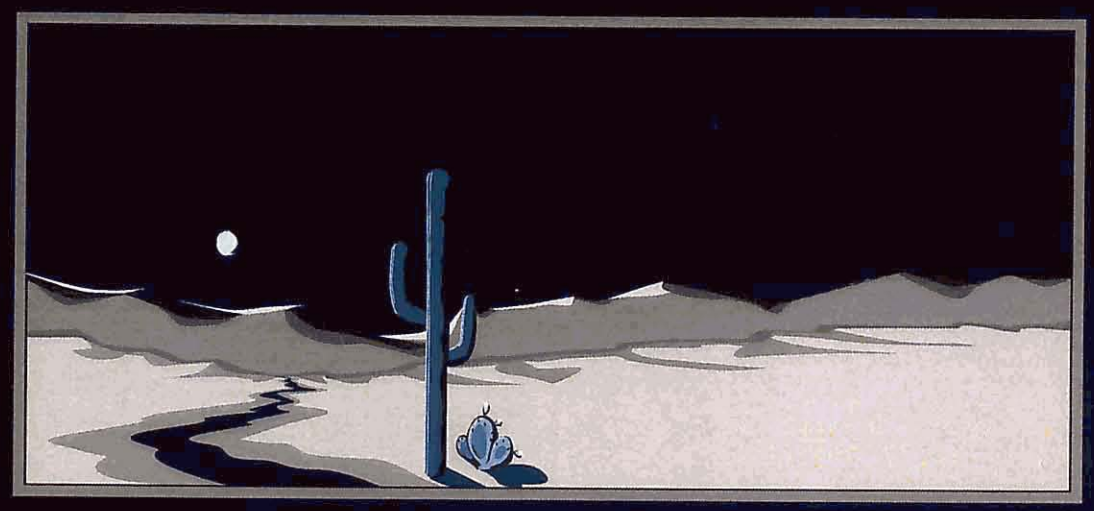
UPPER CAVE CREEK/APACHE WASH



Watercourse Master Plan

Attachment 5:Lateral Stability Assessment Report

Appendices

Flood Control District of Maricopa County

April 2001

Appendix A: Geomorphic Soils Records

- **Geomorphic Soil Unit Descriptions**
- **Soil Pit Logs**

The geomorphic surfaces observed in the study area were divided into the following six landform-based classifications, with a total of eight subunits:

- High Relict *Alluvial fan* Terraces – Map units Q_{m1} and Q_{m2}
- Intermediate Terraces – Map units Q_{l1} and Q_{l2}
- Moderately Low Terraces – Map units Q_{y1} and Q_{y1}
- Historical Floodplains and Low Terraces – Map unit Q_{y2}
- Active Channels – Map unit Q_{yc}
- Disturbed Areas

Areas extensively modified by historical human activities were also mapped, and are shown as disturbed areas on Exhibit 2. The descriptions of the mapped soil units presented in the paragraphs below are based on field observations, as well as on text modified from Leighty et. al. (1997), Holloway and Leighty (1998), and Leighty and Holloway (1998).

High Relict Alluvial Fan Terraces. Two relict alluvial fan terrace units were mapped in the study area, Q_{m1} and Q_{m2}. Q_{m1} surfaces were distinguished from Q_{m2} surfaces based primarily on the following characteristics:

- Height above the active channel
- Strength of *argillic* and calcic horizon development
- Degree of *desert pavement* and varnish development

Q_{m1} – 400,000 to 700,000 years old. The soil profile associated with the older of the two alluvial fan terrace units, a relict middle Pleistocene alluvial-fan complex, is characterized by white cemented carbonate horizons overlain by structurally-developed reddish accumulations of clay. The relict fan surface is typically more than 20 feet above the active channel. A typical soil profile in a high terrace surface consists of a thin A horizon with moderately developed platy structure and a reddened color. The B horizon can frequently be broken into the zone of clay accumulation and the zone of carbonate accumulation. The clay-rich horizon, about 20 to 50 inches thick, is commonly red and shows moderately to well developed columnar or prismatic structure, although angular blocky structure is also observed. At a depth of 40 to 60 inches, a typical high terrace contains a well-cemented carbonate horizon. The oldest high terraces may show laminations in the upper portion of the cemented carbonate zone. Well-developed calcic or *petrocalcic* horizons are also common (Stage III-V). Q_{m1} terrace soils are classified as Calciortids, Paleorthids, and Paleargids. The Q_{m1} unit is roughly equivalent to the Mesquite Tank terrace of Doorn and Pewe (1991) and the Mesa terrace of the Salt and Verde Rivers (Pewe, 1978).

Surficial characteristics of the Q_{m1} surface include a moderately developed desert pavement which is developed locally on the surfaces of the high relict alluvial fan complex. Disturbances of the ground by animals (e.g., burrowing or grazing) and plants (e.g., plant heave when a plant falls over) probably hinder the pavement development in some areas. *Desert varnish* is moderately to well developed, commonly with a shiny

black *patina* on the tops and red varnish on the bottoms of surface clasts. Hohokam lithic flakes were found around one soil pit on this very old surface.

Q_{m2} – 250,000 to 400,000 years old. The profile for the younger of the two relict *alluvial fan* units, a more dissected Middle Pleistocene alluvial fan terrace, consists of moderately to strongly developed soils, with surfaces ranging in color from strong brown to reddish brown. The Q_{m2} terraces are typically about 15 to 25 feet above the active channel. Soil material is composed of sandy to loamy layers, with sand- to boulder-sized clasts. The soil profile typically contains reddened *argillic* (B) horizons that are moderately to strongly enriched in *pedogenic clay*. *Argillic* horizons are moderately developed where alluvial surfaces are well preserved; on the eroded valley slopes, argillic horizons are weak due to erosion. Calcic horizon development is typically fairly strong (Stage II-IV), but Q_{m2} soils generally do not have cemented *petrocalcic* horizons (*caliche*). These soils are classified as Calciorthids and Haplargids. Q_{m2} surfaces are not prone to flooding, except within the limits of small tributary washes which dissect the surface.

Desert pavement and rock varnish development is moderate to strong on stable surfaces, but variable to weak on surfaces that have been significantly dissected. A dull black *desert varnish* has accumulated on some of the surface clasts. Q_{m2} surfaces have typically been eroded into shallow valleys and low ridges; original depositional surfaces may be preserved along ridge crests. A ground stone and a pot sherd were found on one surface of moderate height.

Intermediate Terraces. Three intermediate terrace units were mapped in the study area, Q_{I1}, Q_{I2}, and Q_{yl}. The three surfaces were distinguished from each other based primarily on the following characteristics:

- Height above the active channel
- Height relative to the other intermediate terraces
- Slight differences in the strength of *argillic* and calcic horizon development

Q_{I1} – 50,000 to 250,000 years old. The oldest of the three mapped intermediate terraces is of late Pleistocene age and is comprised of former *alluvial fan* surfaces and river terraces. The soil materials consist of moderately to poorly sorted, subrounded to rounded sand- and gravel-sized clasts in a sandy to silty matrix. Q_{I1} soils have moderately clay-rich, tan to red-brown argillic horizons that are weakly to moderately strongly developed; these soils contain moderate amounts of *pedogenic clay* and some calcium carbonate, resulting in relatively low infiltration rates. Thus, these surfaces favor plants that draw moisture from near the surface. Q_{I1} soils typically have Stage II-III calcium carbonate development. Q_{I1} soils are more strongly developed than Q_y soils. Q_{I1} soils are classified as Haplargids, Camborthids, and Calciorthids.

Q_{I1} terrace surfaces range from about 6 to 15 feet above the modern channel. Q_{I1} surfaces typically are moderately *incised* by stream channels, but still contain constructional, relatively flat, interfluvial surfaces, with some subdued bar and *swale* topography. Desert pavement and rock varnish development ranges from nonexistent to moderate. Surface colors are slightly more red (light brown to reddish yellow) than Q_y surfaces. Q_I surfaces

are generally not prone to flooding, except immediately adjacent to active washes. This surface is roughly equivalent to the Cahava Ranch terrace of Doorn and Pewe (1991).

Q_{l2} – 10,000 to 50,000 years old. The Q_{l2} surface consists of stream terraces, estimated at latest Pleistocene age, and are characterized by weak structure and thin, continuous carbonate coatings on clasts. Surfaces of this age have not had time to accumulate and translocate much clay, and they show weak subangular blocky structure. Typically, at a depth of 30 to 60 inches, the zone of maximum carbonate accumulation commonly shows clasts with thin (<1 mm thick) coatings of calcium carbonate that are continuous around the clast.

Desert pavement development on the Q_{l2} surface is typically poor to moderate on surfaces of intermediate height. A thin, dull black varnish on occasional surface gravels is representative of the middle terraces. Hohokam pot *sherds* and possible fire-cracked rocks were found on late Pleistocene terrace surfaces, although this surface was not used for irrigated agriculture by the Hohokam.

Q_{yl} – 1,000 to 50,000 years old. The youngest of the intermediate terrace surfaces is of latest Pleistocene or *Holocene* age, and bears characteristics of both the Q_{y1} and Q_{l2} surfaces. Q_{yl} soils are minimally developed, but typically contain slight texturally or structurally modified B (cambic) horizons, weak calcic horizons (Stage II or less), and are noticeably reddened. Some of the older soils may contain weakly developed *argillic* horizons. Surface colors are light brown to yellowish brown, with a slight reddening with depth due to oxidation. Q_{yl} soils are classified as *Torrifluvents*, Torriorthents, Camborthids, and Calciorthids. Because surface soils are not indurated with clay or calcium carbonate, Q_y surfaces have relatively high permeability and porosity. All areas mapped as Q_{11} may be subject to inundation during very large floods.

The Q_{yl} surface lacks desert pavement or significant desert varnish, although varnish was observed on some of the larger boulders. Portions of the Q_{yl} surface along Cave Creek were extensively occupied by the Hohokam, and are immediately adjacent to the Q_{y1} surfaces used for irrigated agriculture, but tend to be somewhat coarser.

Moderately Low Terraces: Q_{yl} – 700 to 10,000 years old. Low terraces, estimated to be *Holocene* in age (700 to 10,000 yrs old), were distinguished by their weak structural development and thin to very thin, discontinuous carbonate coatings on clasts. The soils of the moderately low terraces exhibit similar structural development to the intermediate terraces, primarily weak subangular blocks. However, the low terraces contain clasts with thin, discontinuous carbonate coatings, usually coating only the bottoms of clasts. Along Cave Creek, the typical soil profile is capped by finer-grained sand and silt units deposited prior to the regional channel incision responsible for formation of the terrace.

Desert pavement has typically not formed on the low terraces. A minimal concentration of gravel at the surface of open areas is sometimes observed. A slight black tint to the tops of surface gravels is the only suggestion of desert varnish development. Hohokam

pot sherds and rock alignments are relatively common on the low surfaces, indicating that the surfaces were already formed at the time that the Hohokam people lived in the area.

Historic Floodplains and Low Terraces: Q_{y2} – 100 to 700 years old. Historical floodplains and low terrace deposits are composed of unconsolidated, moderately to poorly sorted, sub-rounded to rounded sand- and gravel-sized clasts in a sandy to silty matrix. Landforms typically are low terraces less than eight feet above the modern channel, but minor channels are common locally. Primary *fluvial* bedforms (gravel bars, fine-grained *swales*) near the surface are absent or weakly expressed due to *bioturbation*. These deposits have weakly developed soils that are light brown to yellowish brown on the surface, with a slight reddening with depth. There is typically organic accumulation in the uppermost soil horizons, with slightly oxidized horizons at deeper levels. Weak calcic horizons (<Stage 1) are present in Middle and Early Holocene soils. Q_{y2} terrace soils are *Torrifluvents* and Camborthids. Because surface soils are not indurated with clay or calcium carbonate, Q_{y2} surfaces have relatively high permeability and porosity. Portions of Q_{y2} surfaces have been inundated during historical floods, and lateral bank erosion is also a hazard. The surface is equivalent to the Hidden View terrace of Doorn and Pewe (1991).

Q_{y2} soils were distinguished from Q_{yc} soils primarily on the bases of topography (higher) and frequency of inundation (less frequent). Q_{y2} surfaces were distinguished from Q_{y1} surfaces primarily by the degree of soil development (less), grain size (coarser), and elevation (lower). Historical channel incision due to sand and gravel mining or other human impacts have perched some of the Q_{y2} surfaces above the 100-year floodplain.

Hohokam artifacts were not observed on the surfaces. A metal can, with crimped edges of the kind made roughly 50 years ago, was found at a depth of about 15 inches in one soil pit (Figure 4-46). The presence of the buried historical can indicates that the terrace was flooded historically, and the top ~15 inches of material was deposited in the past 50 years. The lack of Hohokam artifacts on the low terraces suggests that the maximum age is after the Hohokam abandoned the area, or less than 700 years old.

Active Channels: Q_{yc} – 0 to 100 years old. The active channels in the study area were also mapped. Tan to gray channel materials vary from silt to boulders, with sand and gravelly sand most common. The active channel deposits of Cave Creek typically are somewhat coarser that the channel material in its tributaries. Individual clasts are sub- to well-rounded. The lithologies of the alluvial material vary substantially. Distributary channel patterns are common. Most of the channel surfaces are modern in age, but some vegetated bars may range up to several hundred years old. The channel materials have been deposited during historical time and are likely reworked in each sizable flow event. Thus they do not show soil, pavement, or varnish development. Exceptions occur where buried soils are exposed below the loose channel material. Buried soils result from incision into a previously formed terrace followed by subsequent sediment deposition from the wash. Q_{yc} soils are typically classified as *Torrifluvents* or Torriorthents. Q_{yc} surfaces are prone to flooding and are subject to lateral erosion and *scour*.

Pit #:	11ROB1	Relative Age: M1			Pearthree Age: >1 ka				Artifacts found: rock alignments			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
1.5	c,w	10YR4/2	10YR6/3	2,m,pl	10	ss,ps	sh	fSL	few	e2		so
7	c,w	10YR4/3	10YR5/3	1,f-m,sbk	10	ss,ps	so-sh	fSC	few	e2, vf fil		so
23.5	c,w	10YR4/2	10YR5/3	1,f-m,sbk	10	ss,ps	so-sh	mSL	v few	e2,vf fil, tn con		so
29	c,w	10YR4/4	10YR5/3	1,f-m,sbk	25-50	so,ps	so-sh	L	v few	e2, vf fil, vtn con		so
54	c,i	10YR4/3	10YR6/3	1,m,sbk	25	so,po	so-sh	LfS	v few	e2, com fil, sparse vtn dis		so
66.5	c,w	10YR4/3	10YR6/4	sg	50	so,po	so-sh	LS	none	e3, com fil, vtn con, I+/II		mh
72		10YR4/3	10YR5/3	sg	75	so,po	lo	LcS	none	e2,f fil	gypsum rinds	so

Pit #:	12LOB1	Relative Age: O1			Pearthree Age: several 100s of k.yrs.				Artifacts found: none			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
2.5	c.w	7.5YR4/2	10YR6/4	2,f-m,pl	10	ss,ps-p	Sh	SiCL	com	e0		lo
9	c.w	7.5YR5/4	7.5YR5/4	2,c.sbk	<10	ss,ps-p	H	CL	few-com	e1, f fil, sparse vtn dis		so
29	c,i	7.5YR4/3	7.5YR6/4	c,abk	25	s,p	sh-h	SiCL	abund	e2, com fil, vtn dis		mh
38.5	c.w	7.5YR5/4	7.5YR5/4	2,m,abk	<10	ss,ps-p	H	CL	com	e2, com fil, vtn dis	gypsum rinds	mh
47.5	c.w	7.5YR5/4	7.5YR6/4	1,f,abk	50	s,p	so-sh	mSC	few	e3, abun fil, tn con		h
57	c.w	7.5YR6/3	7.5YR7/2	m to 1,f,sbk	25	ss,ps-p	Eh	SL	v few	e3, strongly cem, III		vh
71		7.5YR6/4	7.5YR7/3	1,vf,sbk	25-50	ss,ps-p	Sh	mSCL	few	e2, moderately cem		h

Pit #:	12ROB1	Relative Age: M2/Y			Pearthree Age: <1300 yrs, probably <700 yrs (sherd in pit)				Artifacts found: sherd in pit, 15" down			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
2	c,w	7.5YR4/2	10YR6/3	2,f-m,pl	<10	so,ps	so	SiL	v few	e0-1		lo
14	c,w	7.5YR4/2	10YR6/3	1-2,m,sbk	10	so,ps	so	SiL	v few	e2,vf fil, sparse vtn dis		so

43	c,i	7.5YR4/2	10YR6/3	1,gr	25	so,ps	so	SiL	v few	e2,vf fil, sparse vtn dis		so
69		7.5YR4/2	10YR6/3	sg	75	so,ps	lo	fSL	none	e2,vf fil, sparse vtn dis		so

Pit #:	12ROB2	Relative Age: M1/M2			Pearthree Age: maybe mid-late Holocene soil over latest Pleistocene soil (?)				Artifacts found: none			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
1.5	c,w	10YR4/3	10YR5/4	2,f-m,pl	10	ss,ps	so-sh	SiL	com	e0		so
4	c,w	10YR4/3	10YR6/4	m-c,sbk	<10	ss,ps	sh-h	SiL	few	e0		so
13	c,w	10YR4/3	10YR6/3	1,c,sbk	10	ss,ps	h	SiL	few	e1		so
28.5	c,w	10YR4/3	10YR6/3	1,m,sbk	10	ss,ps	sh-h	SiL	v few	e1, f fil, sparse vtn dis		so
40	c,w	7.5YR4/3	10YR6/3	1,f,sbk	10	ss,ps	so-sh	SiL	few-com	e2, f fil, vtn dis, I		so
51	g,w	10YR4/3	10YR5/4	2,f,sbk	50	ss,ps	sh	SiL	com-abun	e2,com fil, tn con, II	gypsum, buried soil	so-mh
65		7.5YR4/4	7.5YR5/4	2,c,abk	50		eh	SCL	abun	e2,com fil,vtn dis		mh

Pit #:	12ROB3	Relative Age: 01			Pearthree Age: none				Artifacts found: none			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
1.5	c,w	7.5YR4/2	10YR5/4	2,m,pl	10	ss,ps	so-sh	SiCL	few-com	e0		so
7	c,w	7.5YR4/4	7.5YR4/4	2,c,sbk	<10	s,p	h	SiC		e0		mh
20.5	c,w	7.5YR4/4	7.5YR5/3	3,c,cpr	<10	vs,vp	h	SiC	abun	e1,f fil,vtn dis		mh
27	a,i	7.5YR4/4	7.5YR4/2	2,c,abk	25	ss,ps	vh	SiL	com	e2,com fil,tn dis, I		mh
42.5	c,w	5YR5/6	5YR5/6	2,f,sbk	50	s,p	sh	mSC	abun	e2,tn dis, I	gypsum	mh
62	c,w	7.5YR4/4	7.5YR5/4	1,f,sbk	75	ss,ps	sh	L	com	e1,sparse vtn dis	gypsum	h
68		7.5YR4/4	7.5YR5/4	1,f,sbk	75	so,po	so	LS		e0-1, few fil	indurated	h

Pit #:	13ISLAN	Relative Age: Y			Pearthree Age: none				Artifacts found: none, suface flooded recently – flood-related debris			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test

2	c,w	10YR4/2	10YR6/2	m	10	so,po	so	LfS	none	e1	silt laminations	lo
63		7.5YR5/1	7.5YR7/2	sg	75	so,po	lo	LS	none	e1	thin alternat-ing c, f beds	so

Pit #:	13ROB1	**Relative Age: M2**			**Pearthree Age: none**				**Artifacts found: sherds, rock alignments, high density of artifacts**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					
1.5	c,w	10YR4/2	10YR6/4	2,vc,abk	<10	ss,ps	so-sh	SiL	v few	e1		lo
5	c,w	10YR4/2	10YR6/3	f,sbk	<10	ss,ps	so	SiL	v few	e1,vf fil		so
9	c,w	10YR4/2	10YR6/3	2,f,abk	<10	ss,ps	sh	SiL	few	e1,vf fil		so
24.5	c,w	10YR4/3	10YR5/3	2,c,sbk	<10	ss,p	so	CL	few	e1,vf fil		so
51	a,w	10YR4/3	10YR5/3	1,f-m,sbk	<10	so,ps	sh	L	none	e1,com fil		so
81		10YR4/3	10YR7/2	1,f,sbk	75	so,po	so	S	v few	e1,tn con, tk bot, I+/II-		so

Pit #:	14ROB1	**Relative Age: Y**			**Pearthree Age: none**				**Artifacts found: historical metal can in pit, ~15 in depth**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					
1.5	c,w	10YR4/2	10YR5/2	sg	<10	so,po	lo	fSL	none	e1		lo
11	c,w	10YR4/3	10YR5/3	1,f-m,sbk	<10	so,po	so	mSL	none	e1		so
29.5	a,w	10YR4/2	10YR5/2	1,f-m,sbk	50	so,po	so	mSL	none	e1, few fil, vtn dis		so
35	c,w	10YR4/3	10YR5/3	2,m-c,abk	<10	so,po	so-sh	L	none	e1-e2, com fil		so
70		10YR3/2	10YR5/3	sg	75	so,po	lo	LcS	none	e2, few fil, sparse vtn dis, I		so

Pit #:	14ROB2	**Relative Age: M2**			**Pearthree Age: Holocene, maybe slightly older than other similar surfaces' pits**				**Artifacts found: sherds, agricultural area**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					
1.5	c,w	10YR4/2	10YR6/4	2,m,pl	25	so,po	so-sh	fSL	v few	e0-e1		lo
4	c,w	10YR3/2	7.5YR5/3	2,m,sbk	<10	so,po	so	fSL	none	e0-e1, rare vtn dis		so
9.5		10YR4/3	10YR6/3	1,c,abk	10	so,po	sh	fSL		e1,sparse tn dis		so
36	c,w	10YR4/2	10YR6/3	1,m,sbk	25	so,po	so	mSL	none	e2, vtn dis, I		so

66		10YR3/2	10YR5/3	1,f,sbk	75	so,po	so	mSL	none	e2, vf fil, sparse tn dis	gypsum	so

Pit #:	14ROB3	Relative Age: 01			Pearthree Age: >300 ka				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
2	c,w	7.5YR4/3	7.5YR5/4	2,c,sbk	10	ss,ps	sh-h	fSL	few	e0		lo
8	c,w	7.5YR5/4	7.5YR4/4	2,m-c,sbk	10	s,p	sh-h	SCL	few	e0		so
19.5	c,i	7.5YR5/4	7.5YR5/3	3,c,pr	25	s,p	h	SiC	abun	e1, f fil, vtn dis		so
26.5	c,w	7.5YR5/4	7.5YR5/4	2,f-m,sbk	75	ss,ps	sh-h	SiCL	com	e2, abun fil, vtn dis		so
30.5	c,i	7.5YR5/4	7.5YR5/4	1,f,sbk	50	s,p	sh	cSC	few	e1, f fil, vtn dis		mh

Pit #:	15ROB1	Relative Age: M2			Pearthree Age: late Holocene				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
2.5	c,w	10YR3/4	10YR5/4	2,m,pl	<10	so,po	sh	fSL	v few	e1		so
4.5	c,i	7.5YR4/4	10YR5/4	1,f-m,sbk	25	so,po	so	mSL	few	e1		so
9.5	c,w	7.5YR4/4	7.5YR5/3	1,f,gr	50	so,po	so	mLS	v few	e1		mh
23.5	c,w	7.5YR5/3	7.5YR5/3	1,f,gr	75	so,po	so	LcS	v few	e1, abun fil, vtn dis, I		so
32	c,w	10YR3/3	7.5YR5/3	sg	>75	so,po	lo	S	none	e1, com fil, vtn dis		so
40.5	c,w	10YR3/2	10YR5/2	sg	>75	so,po	lo	LcS	none	e1, f fil, vtn dis		so
52	a,w	10YR4/4	10YR6/3	sg	>75	so,po	lo	S	none	e1,f fil, vtn dis		so
63	a,i	7.5YR4/6	10YR5/4	1,m,sbk	<10	so,po	so	LS	none	e1, com fil, vtn dis		so
66		10YR4/4	10YR6/4	sg	<10	so,po	so	LS	none	e2, f fil, tn dis		mh

Pit #:	16ROB1	Relative Age: M2			Pearthree Age: none				Artifacts found: sherds, cores, rock alignments, lithics			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
3	c,w	10YR3/4	10YR5/4	1,m,sbk	<10	ss,ps	so	SL	none	e0		so
12	c,w	10YR3/4	10YR5/4	m,sbk	<10	ss,po	so	LfS	none	e2, vf fil,vtn dis		so
21.5	c,w	10YR3/3	7.5YR5/4	1,f-m,sbk	25	so,po	so	LcS	v few	e2, f fil,vtn dis		so
34.5	c,w	7.5YR4/6	7.5YR5/4	1,f-m,gr	50	so,po	so	SL	v few	e2,f fil, tn dis		so-lo

44.5	c,w	7.5YR4/6	7.5YR5/4	1,f,gr	50	so,po	so	LcS	none	e2, f fil,tn dis		so-lo
58	c,w	7.5YR3/4	7.5YR6/4	2,c,sbk	50	so,po	sh-h	LS	few-com	e2-3, vf fil, tn dis, I		mh
67		7.5YR4/4	7.5YR5/3	1,f,sbk	75	so,po	so	LmS	few	e2-e3, f fil, vtn dis		mh

Pit #:	16ROB2	Relative Age: M1			Pearthree Age: none				Artifacts found: sherds, fire-cracked rock			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
3.5	c,w	7.5YR4/6	10YR5/4	2,m,sbk	10	vss,vps	sh	fSL	v few	e1,vf fil, sparse vtn dis		so-lo
7.5	c,w	7.5YR4/4	7.5YR5/4	1,f-m,sbk	10	so,po	so	fSL	v few	e2, f fil, vtn dis		so
13	c,w	10YR4/3	10YR5/4	1,f,sbk	10	so,po	so-sh	fSC	v few	e2, f fil, vtn dis		so
21	c,w	7.5YR4/4	10YR5/4	1,f-m,sbk	10	vss,vps	so	L	v few	e2, f fil, sparse vtn dis		so
30	c,w	7.5YR4/4	7.5YR5/4	1,f-m,sbk	25	so,po	so	fSL	v few	e2,f fil, com tn con		so-lo
46	g,i	7.5YR4/4	7.5YR5/4	2,m,sbk	<10	so,po	so	SL	none	e2, f fil, com tn con		so
70		7.5YR4/6	7.5YR5/4	3,c,abk	25-50	s,p	vh	SCL	abun	e2, com fil, tn con,		mh

Pit #:	16ROB3	Relative Age: 01			Pearthree Age: mid Pleist at least, maybe 500 ka				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
2.5	c,w	7.5YR4/6	7.5YR5/8	2,f-m,pl	25	s,p	sh-h	CL	com	e0		so-lo
5	c,w	7.5YR4/6	7.5YR4/8	2,c,abk	25	s,p	sh-h	CL	com	e0		so
19	g,w	5YR4/8	5YR4/8	3,c-vc,pr	10	vs,p	vh	SiCL	abun	e0-1,f fil,vtn dis		so
31	g,i	5YR4/6	7.5YR5/6	2,m,sbk	75	s,ps	h	SCL	com	e2, vtn con, patchy moderate cem		mh
56	c,w	5YR5/3	5YR7/3	2,m,sbk	50	ss,po	vh	SL	none	e3, laminated, IV		eh
68	c,w	7.5YR3/2	7.5YR6/3	sg	75	ss,po	lo	SL	none	e2, abun fil,vtn dis,patchy cem		so
78		7.5YR3/3	7.5YR6/3	1,f,gr	50	ss,po	sh	SL	none	gypsum, e1, com fil, vtn dis		so

Pit #:	18LOB1	Relative Age: M2			Pearthree Age: Holocene – latest Pleistocene				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test

1.5	c,w	7.5YR4/4	7.5YR5/4	1,f-m,sbk	25	so,po	so	mSL	v few	e0-1		so-lo
4.5	c,w	7.5YR4/4	7.5YR5/6	1,f,gr	25	so,po	so	mSL	v few	e1,vf fil		so
11	g,i	7.5YR4/6	7.5YR5/6	1,f-m,gr	25	so,ps	so	L	v few	e1,vf fil, vtn dis		so
69		7.5YR4/4	7.5YR6/4	1,f,gr	50	so,ps	so	SL	v few	e2,vf fil, vtn dis, I-II		so

Pit #:	18LOB2	Relative Age: 02			Pearthree Age: ~100 ka, late Pleistocene				Artifacts found: ground stones, sherds			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
2	c,w	7.5YR4/6	7.5YR6/6	1,f-m,sbk	10	ss,ps	so	SCL	v few	e1		so-lo
9	g,w	7.5YR4/6	7.5YR5/6	1,f-m,gr	25	ss,p	so	mSC	few	e0		so-lo
21.5	g,w	7.5YR5/6	7.5YR5/6	2,m,pr	25	ss,vp	sh-h	C with fS	com	e0		so
34.5	g,w	7.5YR5/4	7.5YR5/6	2,f-m,sbk	25	ss,ps	h	L	abun	e2,com fil,tn dis		h
47	g,w	7.5YR5/6	7.5YR5/6	1,f,gr	50	ss,ps	sh-h	L	com	e2,com fil,vtn dis		h
55.5	c,i	7.5YR4/6	7.5YR6/4	1,f,gr	75	ss,ps	sh-h	L	few	e1,f fil,vtn dis		mh
63		7.5YR5/6	7.5YR7/2	m	75	so,po	h	LS	v few	e3, strongly? cem, III		h

Pit #:	18LOB3	Relative Age: 01			Pearthree Age: ~500 ka				Artifacts found: lithics			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
1.5	c,w	7.5YR5/6	7.5YR6/4	1,f,sbk	25	ss,ps	so	SiCL	few	e1		so
3.5	c,w	7.5YR4/6	5YR6/4	2,f-m,sbk	<10	ss,ps	sh	SiCL	com	e1		so
7.5	c,i	7.5YR4/6	7.5YR6/6	2,m,gr	25	ss,ps	so-sh	cSCL	few	e2,vtn dis		so
32.5	c,w	7.5YR8/2	2.5YR8/1	1,f-m,sbk, m	50	so,po	eh	CcSL	none	e3,stongly cem, IV		h
50.5	g,w	7.5YR7/3	7.5YR8/2	sg - m	50-75	so,po	eh	LcS	none	e3,stongly cem		h
57.5	c,w	7.5YR4/4	7.5YR6/3	sg	75	so,po	lo	LcS	none	e2,tk dis	gypsum	so
65		10YR3/2	10YR4/2	sg	>75	so,po	lo	LcS	none	e0		lo

Pit #:	18ROB1	Relative Age: Y			Pearthree Age: late Holocene				Artifacts found: none			
Depth (in)	Boundary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
1.5	a,w	7.5YR4/3	7.5YR5/3	1,f-m,pl	<10	so,po	so-sh	LfS	none	e1		lo

5	c,w	7.5YR3/3	10YR5/3	1,m,sbk	<10	so,po	so	fSL	none	e1		so
9.5	c,w	7.5YR4/3	7.5YR5/3	1,m,sbk	10	so,po	so	LmS	v few	e1,com fil,vtn dis		so
19	c,i	7.5YR4/3	7.5YR5/3	1,f-m,sbk	10	so,po	so	fSL	none	e1,f fil,vtn dis		lo
30	g,i	7.5YR4/4	7.5YR5/3	1,f-m,gr	75	so,po	so	LcS	v few	e2,com fil,tn dis	gypsum	mh
51	g,w	7.5YR3/3	7.5YR5/2	sg	>75	so,po	lo	LmS	none	e2,f fil,vtn dis	gypsum	mh
67		7.5YR4/4	7.5YR5/4	sg	75	so,po	lo	LcS	none	e1,f fil,vtn dis	gypsum	so

Pit #:	18ROB2	**Relative Age: M2**			**Pearthree Age: none**				**Artifacts found: none**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					
1.5	c,w	10YR3/4	10YR5/3	1,m-c,pl	10	so,po	so	SL	v few	e0		so
7	c,w	10YR3/4	10YR5/3	1,f,sbk	10-25	ss,ps	so	LfS	v few	e0-1, sparse vtn dis		so
21.5	c,w	7.5YR3/3	7.5YR5/3	1,f,sbk	75	ss,po	so	SL	none	e1, vf fil,vtn dis		lo
42		7.5YR3/3	7.5YR5/2	sg	50	so,po	lo	LS	none	e1,vf fil, sparse vtn dis		lo

Pit #:	19LOB1	**Relative Age: M2/Y**			**Pearthree Age: late Pleistocene + poss. '78 flood deposit**				**Artifacts found: possible old backhoe blade-made boulder alignments**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					
1	a,s-w	7.5YR4/4	10YR4/4	sg	25	ss,ps	lo	mSCL	v few	e0	75%wood-flood debris	lo
3	c,w	7.5YR4/6	7.5YR6/4	1-2,f-m,pl	50	ss,ps	so-sh	mSCL	few	e2,com fil, vtn dis		so
5	c,w	7.5YR4/6	7.5YR5/6	1,f-m,sbk	25	ss,ps	sh	SCL	com	e2,com fil, vtn dis		so
8.25	c-g,i	7.5YR4/6	7.5YR4/6	1,f-m,sbk	75	so,ps	h	SCL	com	e2,com fil, tn dis		mh
25.5	g,i	7.5YR4/4	7.5YR8/1	1,f-m,sbk	75	ss,po	vh	LcS	v few	e2,tn dis, weakly cem, III		h
38.5	g,w	7.5YR4/4	7.5YR5/4	2,f-m,sbk	>75	so,po	h	LcS	v few	e2,vtn dis, weakly cem		h
57		7.5YR4/6	5YR6/4	1,f-m,sbk	75	so,po	so	LS	v few	e1,com fil, vtn dis		

Pit #:	19LOB2	**Relative Age: 02**			**Pearthree Age: mid Pleistocene**				**Artifacts found: none**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					

2	c,w	7.5YR4/4	7.5YR5/6	1,f-m,sbk	<10	ss,p	so-sh	mSCL	v few	e1		lo
4.5	c,w	7.5YR4/4	7.5YR6/4	1,m-c,sbk	<10	so,ps	so-sh	SCL	few	e1		so
15	c,w	7.5YR4/6	7.5YR5/4	2,m-c,gr	10	ss,ps	h	SCL	abun	e0		so
24	g,w	7.5YR4/6	7.5YR5/6	2,f-m,gr	0	s,p	h	CL	abun	e1,abun fil		mh
36.5	c,w	7.5YR4/6	7.5YR5/6	2,f-m,sbk	0	ss,ps	h	SCL	com	e1,f fil		mh
50	g,w	7.5YR6/4	7.5YR7/2	2,m,sbk - m	0	ss,ps	sh	mSL	few	e2-3,cem,III		h
56	c,w	7.5YR4/4	7.5YR7/3	2,c,sbk	0	so,ps	vh	SL	v few	e2,weakly cem		h
60.5	c,w	7.5YR5/3	7.5YR6/3	2,m-c,sbk	50	ss,ps	so-sh	mSL	v few	e2,vtn dis		mh
66.5		7.5YR4/4	7.5YR5/4	sg	50	so,po	lo	LcS	none	e1,com fil, vtn dis		mh

Pit #:	20ROB1	**Relative Age: Y**			**Pearthree Age: none**				**Artifacts found: possible ground stone tools, possibly fire cracked rocks**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					
1.25	a,s	10YR4/3	10YR7/3	1,f-m,pl	0	s,p	sh-h	SiC	none	e2		
4.5	a,w	10YR4/3	10YR7/3	2,m-c,pl	0	ss,ps	sh-h	SiCL	none	e2		
7.25	a,s	10YR6/3	10YR7/3	1,f-m,sbk	0		sh	SiC	few	e2		
8.25	a,s	10YR3/4	10YR6/3	1,f,pl	0	s,p	sh	SiC	few	e2		
10	a,s	10YR3/4	10YR6/4	1,f-m,sbk	0	ss,ps	so	SiCL	none	e2		
12.75	c,w	10YR4/3	10YR6/4	1,f-m,sbk	0	ss,ps	sh	SiCL	none	e2		
15	a,s	10YR3/3	10YR5/4	1,f,pl	0	so,po	sh-h	Si	none	e1	micaceous, x-beds	
17.25	a,s	10YR3/4	10YR6/4	1,f-m,pl	0	so,po	h-vh	Si	few	e2	less micaceous	
22	a,w	10YR4/3	10YR7/3 clasts, 10YR6/4 matrix	m	0	ss,ps	h-vh	SiCL	none	e2	35% clay rip-up clasts	
28	a,w	10YR3/4	10YR6/4	m	0	ss,ps	sh-h	SiCL	none	e2	5-10% clay rip-up clasts	
36	a,s	10YR3/4	10YR5/3 sand, 10YR6/4 silt	m	0	ss,ps	sh-h	cS-SiCL	none	e2	laminated cS grades to Si	
41.5	a,s	10YR4/3	10YR6/2 sand, 10YR7/3 silt	m	0	ss,ps	sh-h	cS-SiCL	none	e2	laminated cS grades to Si	
50.5	a,s	10YR4/3	10YR5/4	1,vf-f,sbk	0	s,p	sh-h	SiC	none	e2		

68.5	a,w	10YR6/4	10YR7/3	1,f,sbk	0	so,po	so-sh	fSL	none	e2	micaceous	
82.5	a,w	10YR4/4	10YR5/4 silt, 7.5YR4/3 gravel	m	0	ss,sp	sh	cS-SiCL	none	e2	micaceous	
89		10YR3/3	10YR5/4	m	0	so,po		fSL-cS	none	e2	Si cap over cS and gravel	

Pit #:	AW1LOB1	Relative Age: none			Pearthree Age: none				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
0.6	a,s	7.5YR 4/3	7.5YR 6/4	1,m,pl	<10	so-po, vfr	lo	LS	none	no CO3, slight eff.		soft
3.6	c,w	7.5YR 4/6	7.5YR 6/4	3,m,c,sbk	<10	so-ps, fr	so	SL	none	ves.,no CO3,slight eff		soft
7.2	a,I	7.5YR 5/4	7.5YR 6/4	2,m,sbk	<10	so-ps, fr	so	L	none	isolated CO3 flecks, strong eff.		soft
15.6	c,I	7.5YR 5/4	7.5YR 8/2	2,m,sbk	25	so-po, vfr	h	SL	1,f	ves., CO3 nod., violently eff.		hard
12	c,w	7.5YR 5/4	7.5YR 7/2	1,vf,sbk	50	so-po, vfr	vh	LS	v1	ves., thck/cont. rind, viol eff.		hard-extr.
43.2	none	7.5YR 6/4	7.5YR 7/2	sg,vf	75	so-po, vfr	sh	LS	v1,f	strong eff., CO3 in matrix but horiz. not indurated		hard-extr.

Pit #:	AW2LOB1	Relative Age: none			Pearthree Age: none				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
1.2	a,s	7.5YR 5/6	7.5YR 5/6	2,f,pl	10	s-fi	so	SiCL	none	eff.		none
22.8	c,w	7.5YR 5/6	7.5YR 5/4	2,m,sbk	<10	ss,p-fr	vh	SiCL	1,2,f	strong eff.		soft
33.6	c,s	7.5YR 5/6	7.5YR 5/4	2,m,abk	<10	s,p-fr	vh	SiC	v1,f	flecks, nodules, thin, discont., strong eff.		hard
53.4	c,w	7.5YR 6/4	7.5YR 6/4	2,f,abk	<10	ss,p-fr	sh	SiL	v1,f	thin/discont. CO3 w/ nod., viol. eff.		hard
78	none	7.5YR 6/4	7.5YR 7/2	2,m,sbk	<10	ss,p-fr	sh	SiL	v1,f	thin/disc/small nod., slight vesic., viol eff.		hard

Pit #:	AW2ROB1	Relative Age: none			Pearthree Age: none				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
1	c,w	10YR 4/6	7.5YR 6/4	2,m,pl	10	ss,ps-fr	so	L	none	ves., no CO3, no eff.		none
9	a,I	7.5YR 5/6	7.5YR 6/6	2,m,abk	25	ss,p-fr	sh	L	none	no CO3, no eff.		soft
25	a,s	7.5YR 6/6	7.5YR 5/6	f,sbk	50	ss,p-fr	sh	SL	2,f	CO3 fila. In finer matrix, thin/disc CO3, clasts, strong eff.	clay film increase with depth and locally	soft
66+	none	7.5YR 7/4	7.5YR 8/2	m,sbk	50,25	so,po-vfr	h,sh	LS	1,f,none	ves., CO3 in matrix, thin/disc coat, viol eff., mod laminations		very hard

Pit #:	AW2ROB2	Relative Age: none			Pearthree Age: none				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
0.7874	a,s	7.5YR 4/4	7.5YR 5/4	f,pl	<10	s,p-fr	sh	SiCL/SiL	v1	none	surface gravels scattered as part of pavement	none
7.874	sharp,w	10YR 4/4	7.5YR 5/6	2,m,sbk	25	ss,vp-fr	h	SiCL	1,f	none	few clay films	none
26.772	a,w	7.5YR 4/6	7.5YR 5/6	2,c,abk	10,25	ss,vp-fi	vh	SiCL	1,f	none	few clay films	mod. Hard
39.764	a,w	10 YR 4/4	10YR 4/6	c,abk	10	s,vp-fi,vfi	vh	SiC	1,f	few CF, eff.		hard
47.244	a,w	7.5 YR 4/6	7.5YR 5/6	2,f,sbk	50	s/vs,vp-fi	so	SiC	2,d	many CF, thin/disc CO3 on clasts, strong eff.		hard
55.118	c,w	7.5YR 6/6	7.5YR 6/6	m	50	ss,vp-fi	h/vh	SCL	2,f	common CF, disc. CO3 on clasts, matrix, viol eff.		hard
70.866+	c,s	7.5YR 6/4	7.5YR 6/8	m	50,75	ss,vp-fi	vh/eh	SCL	1,f	CO3 cementing agent, disc. Coatings on clasts, violent eff.		extr. Hard

Pit #:	AW3 ROB1	Relative Age: none			Pearthree Age: none				Artifacts found: none			
Depth	Bound-	Munsell Color		Soil	Gravel	Consistence		Texture	Clay	Carbonate	Other	Hammer

(in)	ary	Moist	Dry	Structure	%	Wet	Dry		Films			Test
9.6	c,w	7.5YR 4/4	7.5YR 5/4	sg	25-50	so/ss, po	lo	LS	none	str. eff., no visible CO3		soft
13.2	c,w	7.5YR 4/3	7.5YR 6/4	m,*	<10	ss,ps-fr	sh	LS	none	eff., occ v. thin/disc. CO3	breaks to 1 m sbk	soft
24	g,w	7.5YR 4/3	7.5YR 6/4	m,*	<10	ss,po	sh	SL	none	str. eff. thin/disc CO3	*breaks to 2 med sbk	mod hard
49.2	d,I	7.5YR 5/4	7.5YR 6/4	m,*	<10	so,po	so	LS	none	str. eff., thin/disc CO3	breaks to 1m sbk	soft-mod hard
82.8	none	7.5YR 4/4	7.5YR 5/4	m	50	so,po	so	LS	none	viol. eff., thin/disc. CO3		mod hard

Pit #:	AW5 ROB1	Relative Age: none			Pearthree Age: none				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
2.4	a,w	7.5YR 3/4	7.5YR 5/4	1,c,sbk	25-50	ss,ps	h	L	none	no eff., no carb.		ex soft
14.4	c,w	7.5YR 4/4	7.5YR 5/6	1,c/m,sbk	36458	ss,ps	sh	L	1,f	no eff., no carb.		soft
28.8	a,w	7.5YR 4/4	7.5YR 4/4	1,m,sbk	25	s,p	so	CL	1,f	eff., thin/disc on pebbles		soft
33.6	a,w	10YR 8/4	10YR 8/2	m	10	none	sh,eh	none	none	viol eff., ~95% CO3		hard
48	c,I	10YR 4/4	10YR 6/3	2,m,sbk	36458	ss,ps	sh,vh	SL	none	strong eff., CO3 whitens matrix, nod. and vert. concret. several cm across		hard
64.8	c,w	7.5YR 4/6	7.5YR 5/6	1,m,sbk	25	ss,ps	so,sh	L	none	strong eff., disc. CO3 fims on peb.		mod. Hard
76.8	none	7.5YR 4/6	7.5YR 5/3	m	75	so,po	lo	LS	none	viol eff., many clasts w/ cont. CO3 (local), some with well-dev'd pendnts		hard to ex.

Pit #:	DHW ROB1	Relative Age: none			Pearthree Age: none				Artifacts found: none			
Depth (in)	Bound-ary	Munsell Color Moist	Munsell Color Dry	Soil Structure	Gravel %	Consistence Wet	Consistence Dry	Texture	Clay Films	Carbonate	Other	Hammer Test
11.5	a,s	7.5YR 4/6	7.5YR 5/6	1,c,pl/sbk	<10	ss,ps-fr	so	L	none	No vis CO3, slight to strong eff.		soft

23.5	a,w	10YR 4/6	10YR 5/8	1,m,sbk	10	ss,p-fr	sh	SCL	none	very thin/disc CO3 coat on clasts, strong eff.		soft
53.5	a,w	7.5YR 5/6	7.5YR 6/6	1,c,sbk	<10	s,p-fr	sh	SiCL	v1,f	disc. Flecks , very thin CO3 coat on clasts, strong eff.		soft
76.5	none	7.5YR 5/6	7.5YR 5/6	sg,vf	50	so,po-vfr	lo	LS	2,f	some disc. Films, viol eff.		very soft

Pit #:	PWLOB1	**Relative Age: none**			**Pearthree Age: none**				**Artifacts found: none**			
Depth (in)	**Bound-ary**	**Munsell Color**		**Soil Structure**	**Gravel %**	**Consistence**		**Texture**	**Clay Films**	**Carbonate**	**Other**	**Hammer Test**
		Moist	**Dry**			**Wet**	**Dry**					
11	a,I	7.5YR 4/4	7.5YR 6/6	1,c,sbk	25	so,po-vfr	sh	SiCL	v1,f	no eff.		soft
27	a,w	7.5YR 4/6	7.5YR 5/6	1,vf,sbk	50	so,po-vfr	h	LS	v1,f	thin/disc, strong eff.		soft/mod har
55	g,w	7.5YR 5/6	7.5YR 6/4	2/sg,f,abk	75	ss,ps-vfr	lo	L	v1,f	viol eff., disc to nearly cont./thin coat on clasts	sg structure some more fg	hard
75	none	5YR 4/8	5YR 5/6	2/sg, f,sbk	75	ss,ps-vfr	lo	LS	2,d	none to thin/disc., strong eff.	clay binds gravel	hard

Appendix B: Field Documentation

- **Channel Descriptions & Photographs**
  - **Cave Creek**
  - **Apache Wash**
  - **Paradise Wash**
  - **Desert Hills Wash**

- **Soil Pit Descriptions & Photographs**
  - **Cave Creek**
  - **Apache Wash**
  - **Paradise Wash**
  - **Desert Hills Wash**

Note: *Field photographs that accompany the channel descriptions and soil pit descriptions are too voluminous for mass reproduction. Photographs that depict typical channel and soil conditions were provided within the text of the lateral stability assessment report. Original photographs are on file at JE Fuller/ Hydrology & Geomorphology, Inc. Scanned digital images are available from the Flood Control District of Maricopa County.*

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P2 6000 d/s CARRETERA HWY

DATE: 5/20/98 | TIME: (BEGIN/END)

FIELD CREW: JF MD MVB

RECORDS CHECK BY: (NAME, DATE) JF 8/25/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Roll 9	Right side island
LOOKING DIRECTLY AT BANK	P12	P8
LOOKING UPSTREAM ALONG BANK	P14	P10
LOOKING DOWNSTREAM ALONG BANK	P13	P9
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		Left side island (R chl)
LOOKING DIRECTLY AT BANK	P1	P5
LOOKING UPSTREAM ALONG BANK	P3	P6
LOOKING DOWNSTREAM ALONG BANK	P2	P7
RIGHT BANK BLOW COUNT		✓
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P4 - R CHL R to L	P4 - L CHL L to R
NOTABLE FEATURES: (LIST)		

Scour hole @ trash on RB
RB lowered by pushed @ rock

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 5 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

along thalweg
at the margin

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION	LB	RB	☐ PHOTOGRAPH
TYPE	TX & PV	100% TAMX	
ROOT MAT	OK	INSIGNIF.	
CANOPY (HEIGHT, DENSITY)	< 15 FT	< 5 FT	
PERCENT OF BANK COVER	70% - TX & PV	10%	
APPROXIMATE AGE	< 10 yrs	1-2 YRS	

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

active chls clear, island covered by TAMX

☐ ARMORING POTENTIAL

R chl: Low - GRAVEL w/ SCATTERED COBBLES

☐ VISUAL ESTIMATE OF D50 2" (5) 2 FT (12) ☐ PHOTOGRAPH

R chl D90 4" D10 F. GRAVEL

L chl 2' 1/4"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB-CHL	RB-CHL		
CUT BANKS	NO	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS (2' still)	NO	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	NO	YES / perched	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	YES - lines base	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	large veg. island w/		☐ PHOTOGRAPH	☐ PLOT LOCATION

L-chl no located at the [illegible] banks at the margin

☐ CHANNEL PATTERN - Area historically disturbed (overflow betw. chls w/ sig rilling & B construction) ☐ PHOTOGRAPH

multiple braided chl

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

NO

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

L-CHL → 2' (42)

R-CHL → 2' (120')

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q -

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

recent flow @ +1-2 FT - soil still wet (last sunday gage?)

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? NO ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) possible @ bridge - large rock dumped in B section ☐ PHOTOGRAPH

NO -

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

R: low amplitude (4") long λ (15-20')

L: sand dunes over cobble base (locally)

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

NO

OBSTRUCT FLOW?

–

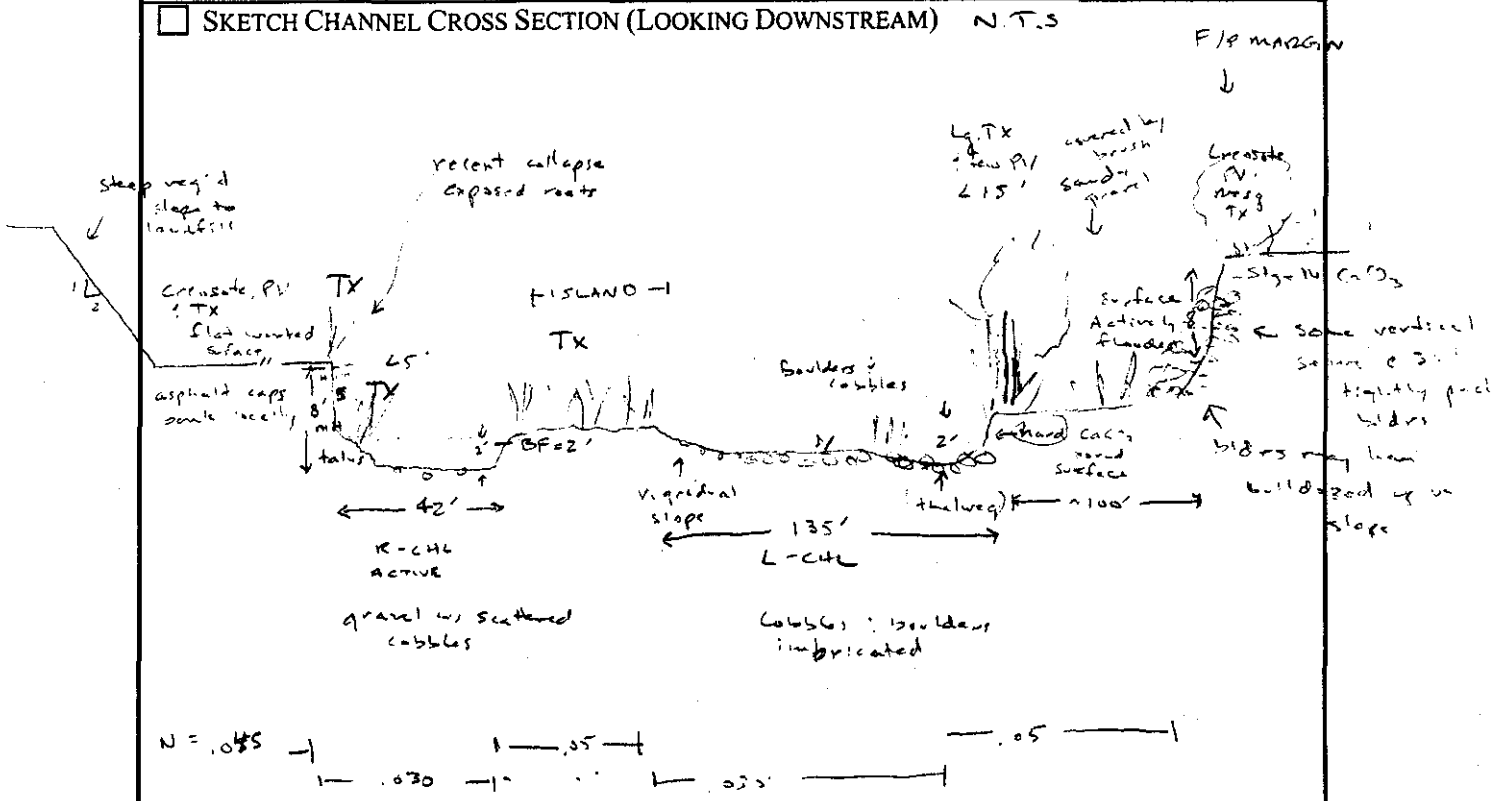
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)~~			☐ PHOTOGRAPH
HEADCUTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	PROBABLE		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	HISTORICAL (NOT SIGNIFICANT NOW)	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

BRIDGE ; S & G MINING

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) N.T.S



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

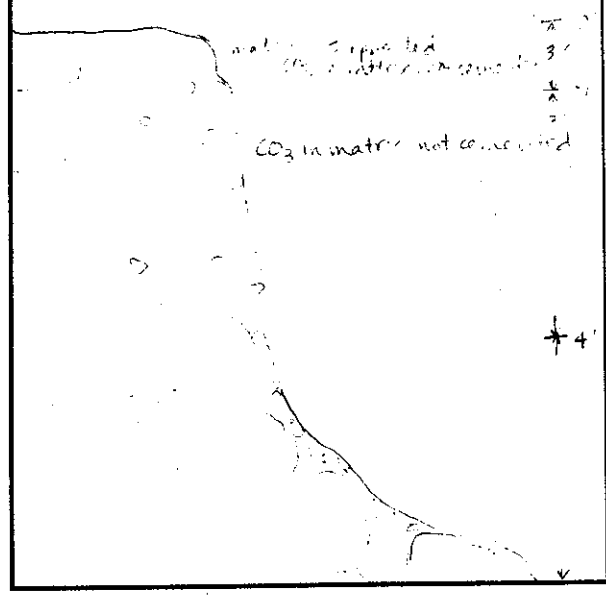
3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

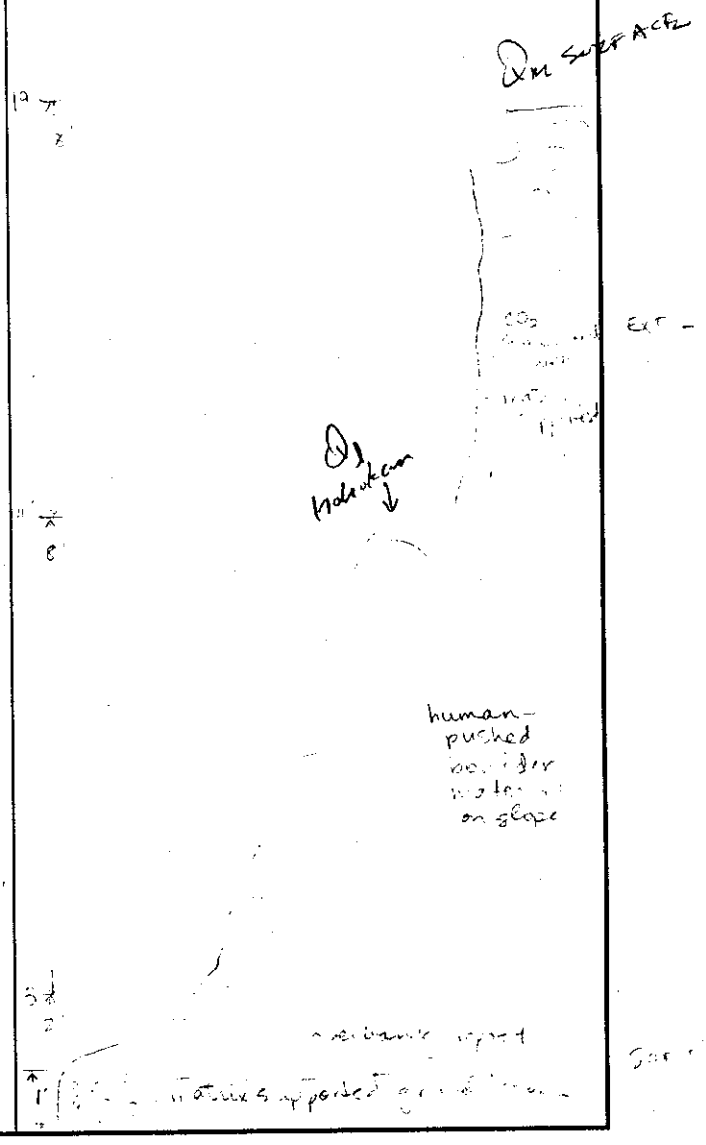
NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY [illegible]	☐ PHOTOGRAPH
GRAIN SIZE [illegible]	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



N.T.S. Laboratory

8-20-95

P+6000' Boulder Count

DIST FROM LB (FT)	INT. AXIS (IN)				
0	s/c	14	1/16	36	s/c
2	s/c	20	2.5	38	s/c
4	1/16	22	1/32	40	s/c
6	1/16	24	1/4	42	11
8	1/16	26	s/c		
10	1/8	28	s/c		
12	1/8	30	12		
14	s/c	32	s/c		
16	1.5	34	s/c		

LEFT CHANNEL

P+6000'

DIST FROM RB (FT)	AXIS (IN)				
0	s/c	50	s/c	100	1/8
5	s/c	55	s/c	105	1/32
10	2	60	s/c	110	3/4
15	1	65	1	115	1/32
20	1/2	70	s/c	120	s/c
25	1	75	3/4	125	s/c
30	1/32	80	1	130	s/c
35	2	85	3/4	135	s/c
40	3	90	s/c		
45	s/c	95	1/8		

RIGHT CHANNEL

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P+ 5000 [illegible]

DATE: 5-19-98 | TIME: (BEGIN/END) 3 pm

FIELD CREW: JF MWB [illegible]

RECORDS CHECK BY: (NAME, DATE) JF 8/25/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE Roll #8	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	9	
LOOKING DIRECTLY AT BANK	10	
LOOKING UPSTREAM ALONG BANK	11	
LOOKING DOWNSTREAM ALONG BANK		
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P12 - Roll 8	
LOOKING UPSTREAM ALONG BANK	P13	
LOOKING DOWNSTREAM ALONG BANK	P14	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P15	
NOTABLE FEATURES: (LIST)		

No these are right bank JF 8/99

REVERSED

P16,17 look dis to ℄ in L side floodplain man made features - overflow paths
P18 look K look K island @ flatwater on [illegible] and toward L end fall stages
P19 look u/s in middle chl - current flow toward B
P20 big conc. structure in ℄ L B
P21 big graded dirt pile mid chl near LB chl
P22 look dis in L chl

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION ☐ PHOTOGRAPH

	LB	RB
TYPE	TX & small PV	clean TX @ base, PV @ top
ROOT MAT		
CANOPY (HEIGHT, DENSITY)		< 10 ft
PERCENT OF BANK COVER	10%	< 5%
APPROXIMATE AGE	< 10 yrs	Sycamore > 70 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

tx & brush < 5 ft main chl & < 5% mid chl overflows are > 40%

☐ ARMORING POTENTIAL Probable in main chl
R chl is armored by 2.5' unimbricated boulders

☐ VISUAL ESTIMATE OF D50 12" (L) (R) ☐ PHOTOGRAPH

L CHL D90 25 FT D10 5mm
R CHL

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS		Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS		Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS		Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS		Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS		talus	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		large island	☐ PHOTOGRAPH	☐ PLOT LOCATION

chl heavily disturbed by historic mining in chl

☐ CHANNEL PATTERN braided: multiple chl w/ overflow island - L to R sp. ☐ PHOTOGRAPH
more frequent than d/s aerial
R CHL - boulders imbricated (up to 3' diam)

☐ TRIBUTARIES NEARBY? No ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
R chl TW: 45' d: 3' See aerial & estimate - too many flow paths to be meaningful

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET) least trees on islands
PLOTSAM SLACKWATER EROSION SCAR ~~TREE SCAR~~ GRUS LINE OTHER
on top of island + 3 ft

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) No ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
in RoB ⊥ & // to chl

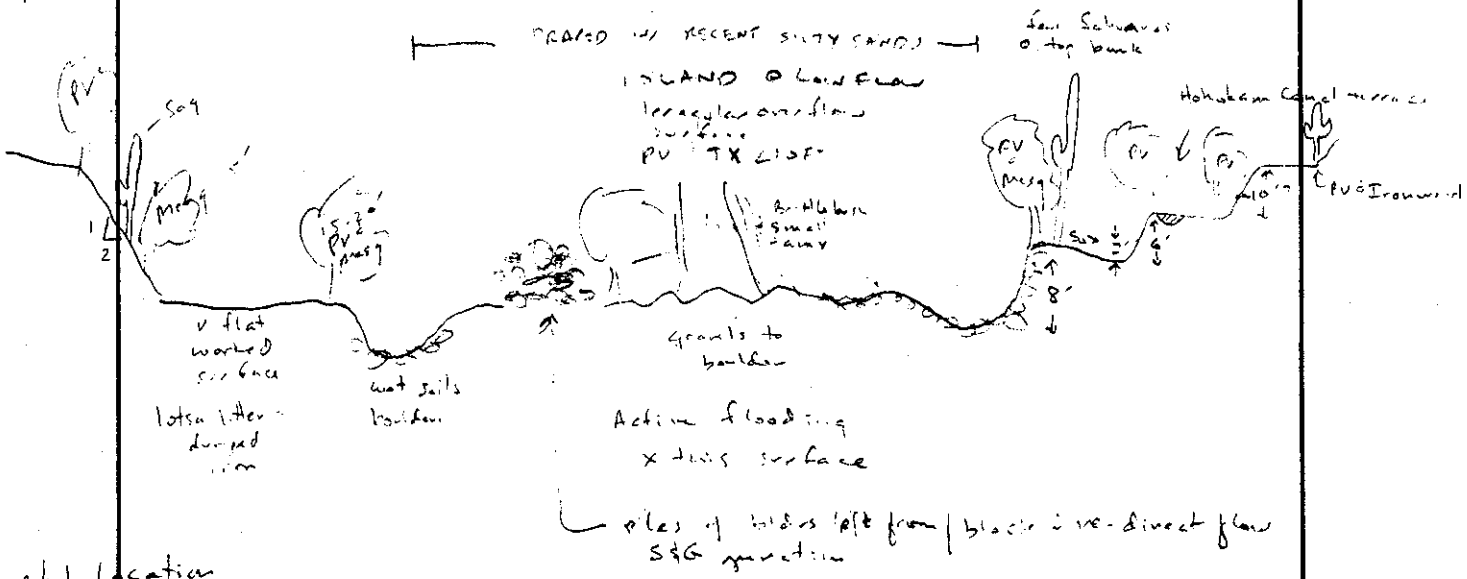
OBSTRUCT FLOW? No

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES – hanging Hohokam canal	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES yes several	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA (PIER~~ CAPS, ABUTMENTS, ETC)	☐ PHOTOGRAPH	
HEADCUTS R chl v. steep	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS ↗	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION possible 2-4' recent, 44' – to Hohokam can.	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT) Hist. – exh	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
Gravel mining, grading of chl, dumping of materials in rwc

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



Do chl location comparison

* This reach is highly impacted by man & is not representative of natural stream pattern

SHOW THE FOLLOWING:

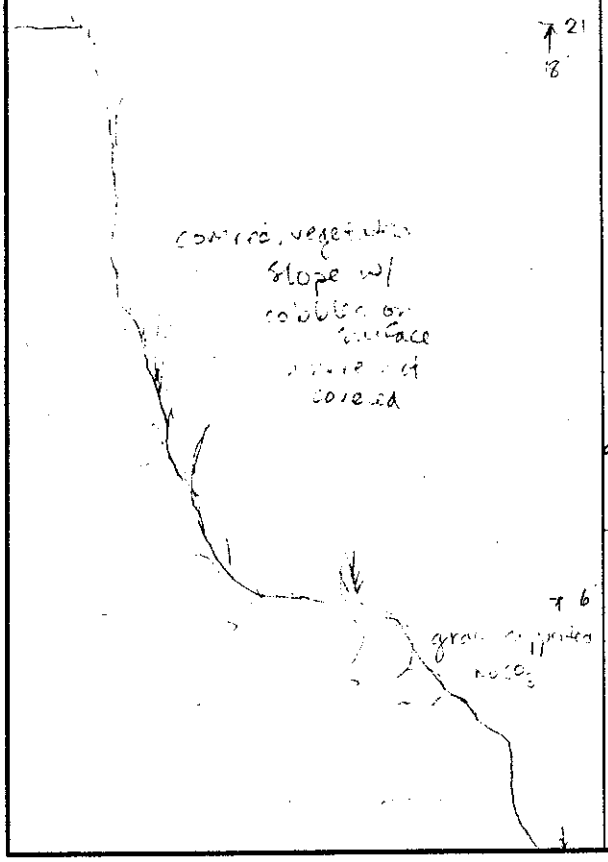
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

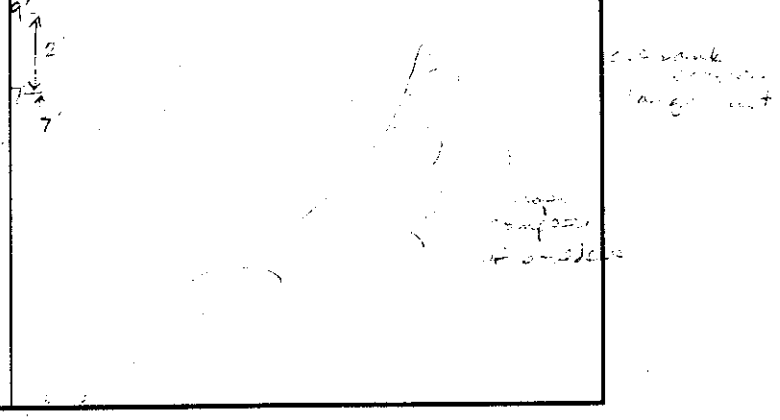
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



5000' Boulder Count

ft from LB	int axis (in)				
0	9	22	11	44	7
2	9	24	0.5	46	2
4	11	26	6	48	s/c
6	4	28	23	50	7
8	5	30	9.5		
10	5	32	7		
12	7	34	1.5		
14	11	36	s/c		
16	4	38	s/c		
18	12	40	veg		
20	5	42	17		

RIGHT CHANNEL

ft from LB (ft)					
0	s/c	22	s/c	44	1
2	s/c	24	14	46	s/c
4	s/c	26	0.5	48	s/c
6	s/c	28	2	50	s/c
8	s/c	30	0.5	52	s/c
10	0.5	32	0.5	54	s/c
12	0.25	34	1.5	56	s/c
14	s/c	36	s/c		
16	6	38	0.5		
18	7	40	1		
20	0.25	42	0.5		

LEFT CHANNEL

P.5000' MIDDLE CHANNEL

0	s/c	24	veg	48	5.5	74	fine sand
2	10	26	s/c	50	1	76	1/4
4	s/c	28	s/c	52	1		
6	8	30	1.5	54	s/c		
8	12	32	s/c	56	s/c		
10	9	34	s/c	58	s/c		
12	.5	36	.25	60	s/c		
14	2.5	38	1	62	2.5		
16	2	40	.5	64	7		
18	9	42	1.5	66	1/4		
20	.25	44	s/c	68	fine sand		
22	s/c	46	.5	70	" "		
				72	" "		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P + 4000 4000 ft U/S [illegible]

DATE: 8-9-98

TIME: (BEGIN/END) [illegible]

FIELD CREW: JF HS [illegible]

RECORDS CHECK BY: (NAME, DATE) JF 6/25/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		Roll 8
LOOKING DIRECTLY AT BANK	P23	P1 - Right side island
LOOKING UPSTREAM ALONG BANK	~~P24~~ P25	P3 " "
LOOKING DOWNSTREAM ALONG BANK	P24 (End Roll 7)	P2 " "
LEFT BANK BLOW COUNT	✓	✓
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P9	P5 Left side island
LOOKING UPSTREAM ALONG BANK	P10	P7 "
LOOKING DOWNSTREAM ALONG BANK	P11	P6 " "
RIGHT BANK BLOW COUNT	✓	✓
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL		P4 (L CHL)
NOTABLE FEATURES: (LIST)		P8 (R CHL)
Island & 2 ble chl		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — LB: Mesq., Pk. Tamr — RB: ☐ PHOTOGRAPH

	LB	RB
ROOT MAT	thick, fines	None
CANOPY (HEIGHT, DENSITY)	15'	N/A
PERCENT OF BANK COVER	80% - 60% bare	0%
APPROXIMATE AGE	> 20 yrs	-

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

R: 3-4' TAMY (30%)

☐ ARMORING POTENTIAL

LIGHT CHL - ARMORED NOW FOR LOW FLOW; NOT FOR BIGGER

☐ VISUAL ESTIMATE OF D50 3" (R) 6" (L) ☐ PHOTOGRAPH

R CHL D90 1 FT D10 C. SAND / F GRAVEL

L CHL 2 FT M GRAVEL

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	No - above flow line	Yes - recent	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	@ old layers Yes - of high surface	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes > 2' 4' Lost by erosion	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS		Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No Pyrgrass L	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT ~~BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	Yes!	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)			☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ↳ Yes ☐ PHOTOGRAPH

Multiple chl

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

Same elev'n R & L, diff. depth - see sketch ↳ 42' (L)

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET) - 3/s

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

↳ on island & LB L CHL - No HW

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

weakly developed gravel bars

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

YES - d/s Xn 200-300 FT - Barbed wire [illegible]

OBSTRUCT FLOW? ② [illegible] above

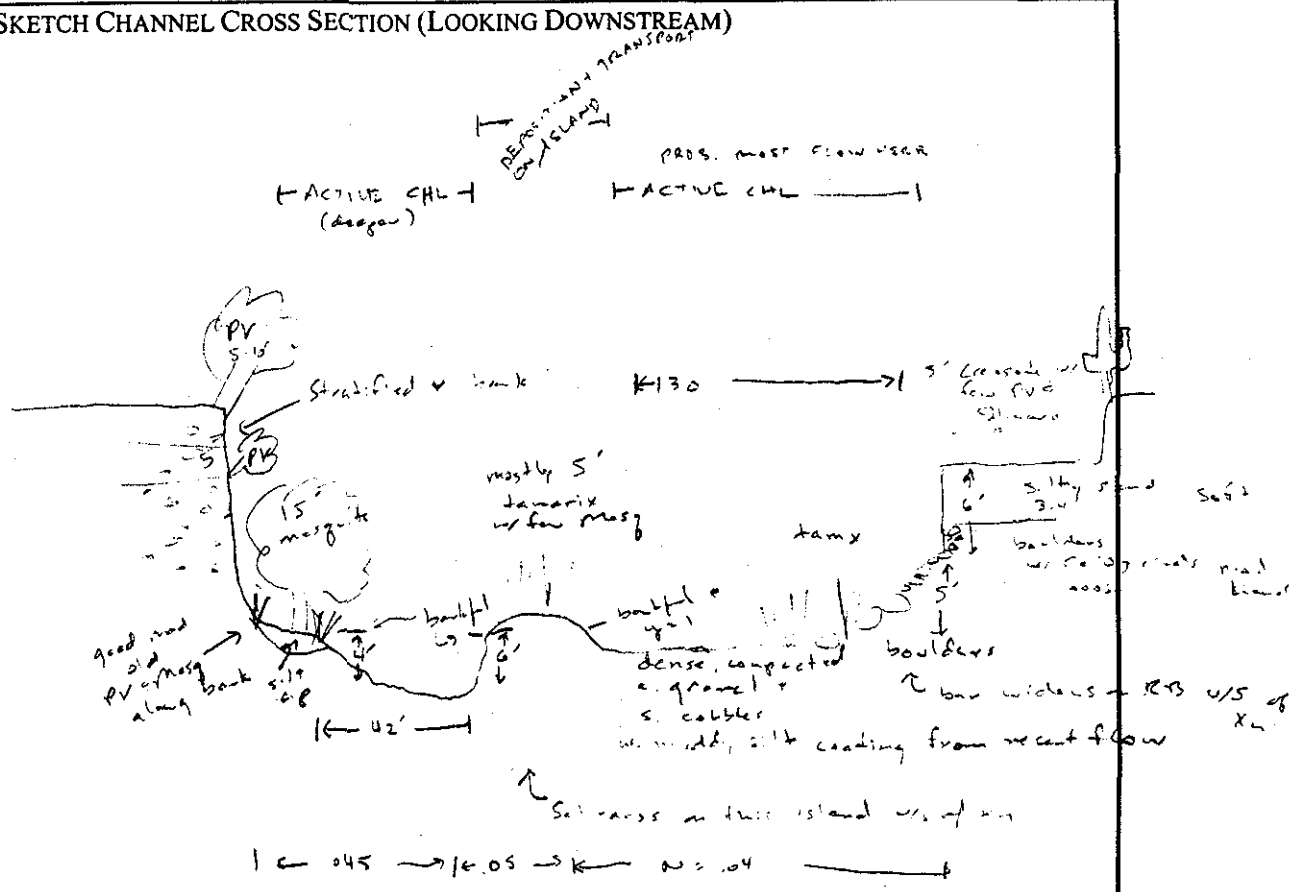
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes [illegible]	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE ~~DATA~~ (PIER CAPS, ABUTMENTS, ETC)		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	[illegible] d/s [illegible] check [illegible]	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	[illegible] in L chl - 2-4 ft	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	Some	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

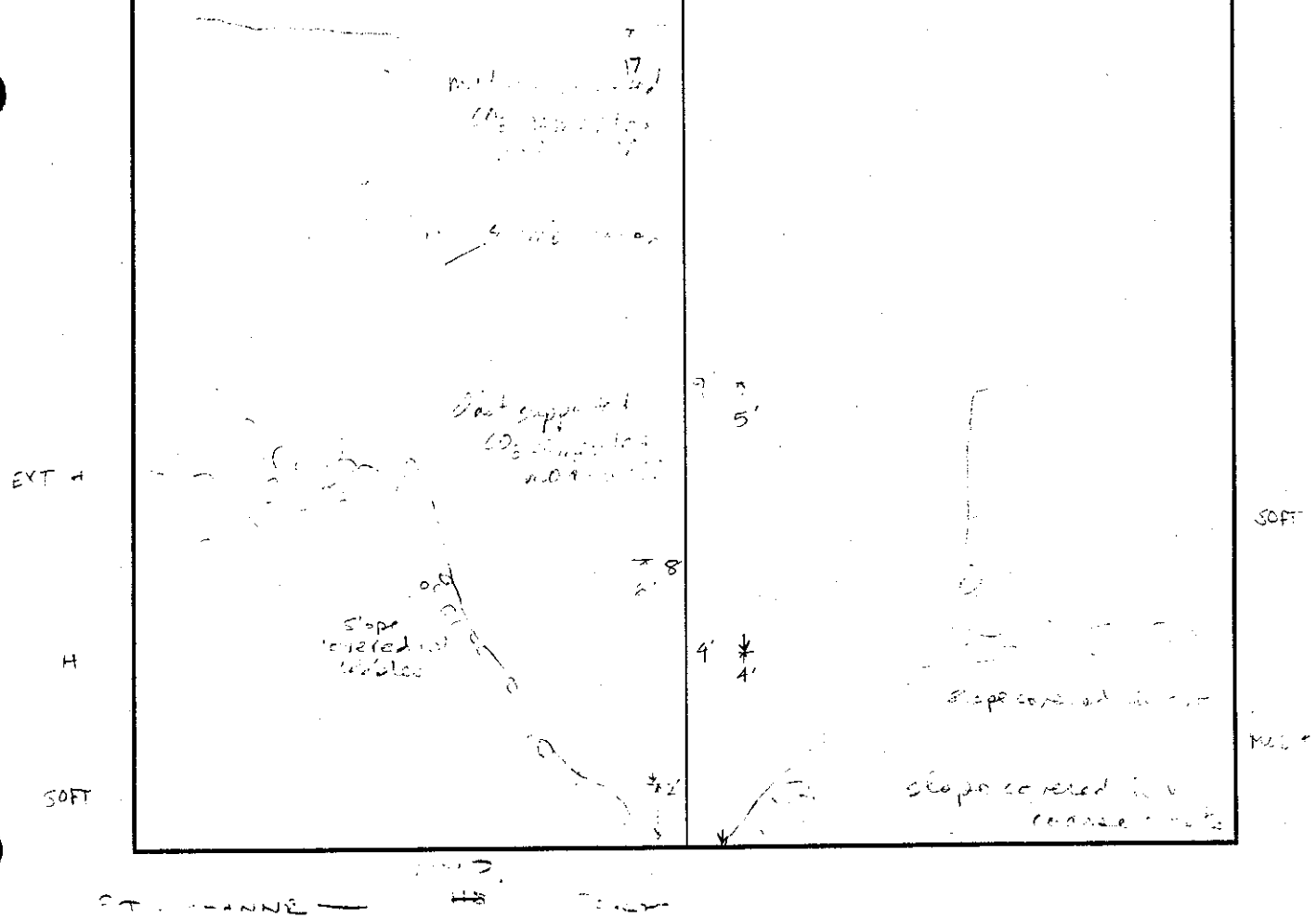
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ O~~VERFLOW CHA~~NNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS - d/s tail + 4' above [illegible]

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK | **RIGHT BANK**



8-19-98 P+3000' (Powerline + 3000')

DIST FROM LB (FT)	INT. AXIS (IN)				
0	0.25	22	0.25	44	silt/clay
2	silt/clay	24	0.25	46	"
4	10	26	0.25	48	13
6	1/32	28	0.25	50	silt/clay
8	0.5	30	silt/clay		
10	0.75	32	10		
12	0.5	34	1.5		
14	1/8	36	16		
16	0.5	38	4		
18	0.25	40	5		
20	1/8	42	8		

T 1000'

DIST FROM LB (FEET)	(IN) INT. AXIS		
0	silt/clay	24	0.5
2	F sand	26	1/32
4	silt/clay	28	6
6	5	30	0.5
8	1.5	32	0.25
10	5.5	34	2
12	22	36	2
14	26	38	5.5
16	silt/clay	40	silt/clay
18	"	42	1
20	"		
22	1		

↑ = left channel of 2

DIST FROM LB (FT)	AXIS (IN)				
0	1.5	60	13	120	debris
5	silt/clay	65	8	125	11
10	"	70	0.5	130	23
15	1	75	2		
20	1	80	s/c		
25	silt/clay	85	veg.		
30	0.25	90	veg.		
35	silt/clay	95	9.5		
40	1	100	1		
45	1	105	0.5		
50	1.5	110	4		
55	1	115	20		

↑ = right channel of 2

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: Pt 3000

DATE: 8.19 98 | TIME: (BEGIN/END)

FIELD CREW:

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Roll 7	
LOOKING DIRECTLY AT BANK	P12	
LOOKING UPSTREAM ALONG BANK	P14	
LOOKING DOWNSTREAM ALONG BANK	P13	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P15	
LOOKING UPSTREAM ALONG BANK	P16	
LOOKING DOWNSTREAM ALONG BANK	P17	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	P21 w/ scale	
BED MATERIAL - ENTIRE CHANNEL	P18 (R to L)	
NOTABLE FEATURES: (LIST) Scour hole immed. u/s Xn - P19 look d/s @ hole - protruding [illegible] of [illegible] ↳ w/ scale P20 - look @ RB terrace (former ch bed?) P21 2nd scour hole u/s Xn 300'		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

dug 1/1 C.14 v. green

hole v. flat
questionable
unit boundaries between units

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION LB RB ☐ PHOTOGRAPH

ROOT MAT	N/A	
CANOPY (HEIGHT, DENSITY)	[illegible]	
PERCENT OF BANK COVER	[illegible]	
APPROXIMATE AGE	[illegible]	

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

[illegible]

☐ ARMORING POTENTIAL

Not [illegible] can be [illegible] U/S & D/S

☐ VISUAL ESTIMATE OF D50 [illegible] ☐ PHOTOGRAPH

D90 [illegible] D10 silt

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	Yes - [illegible] undercut e base	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	Yes - [illegible]	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	Yes - [illegible]	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	None	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	- [illegible]	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No - [illegible]	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Straight single chl | chl is narrow [illegible] ☐ PHOTOGRAPH

[illegible] bed bldr ripples U/S & D/S

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

↳ 4'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET) → d/s solids @ [illegible]

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

→ base PV & Mesquite [illegible] terrace

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No - [illegible] pit description

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

poorly formed dunes & [illegible]

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW?

—

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

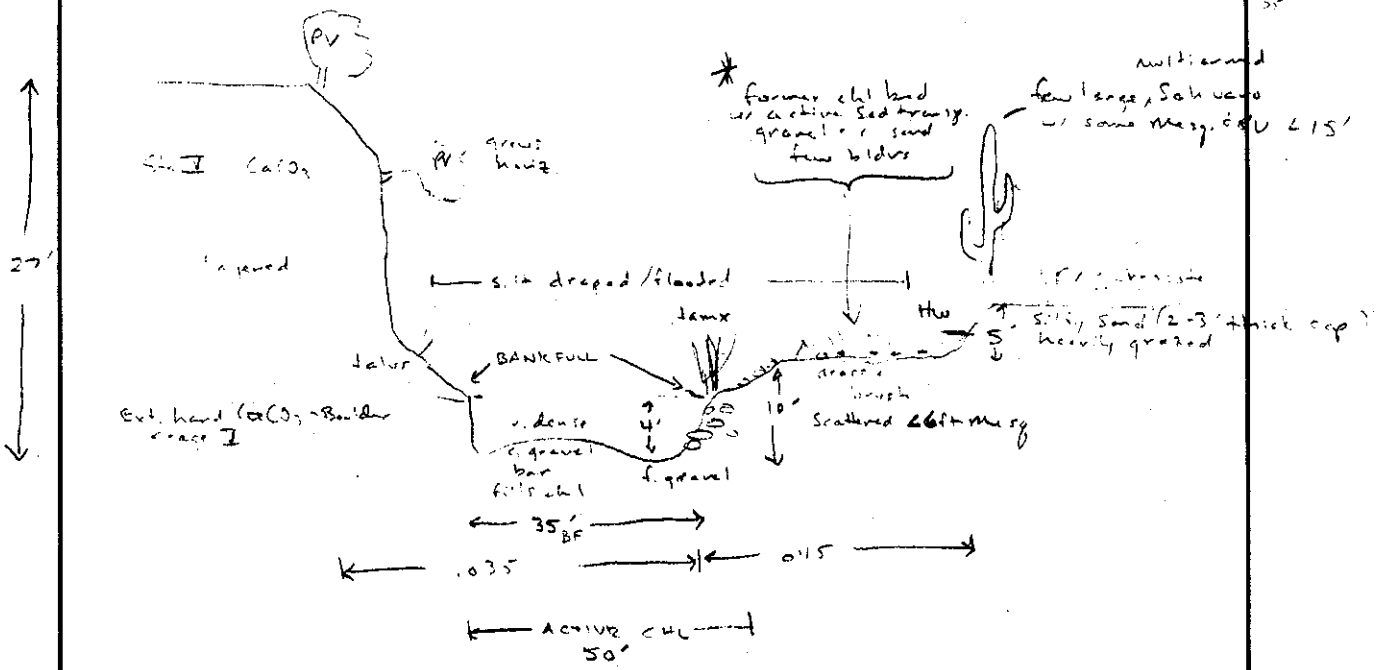
Former chl bed on R C + 9 ft

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA~~ (PIER CAPS, ABUTMENTS, ETC)	☐ PHOTOGRAPH	
~~HEADCUTS~~ No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) N.T.S.



SHOW THE FOLLOWING:

- ☐ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☐ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

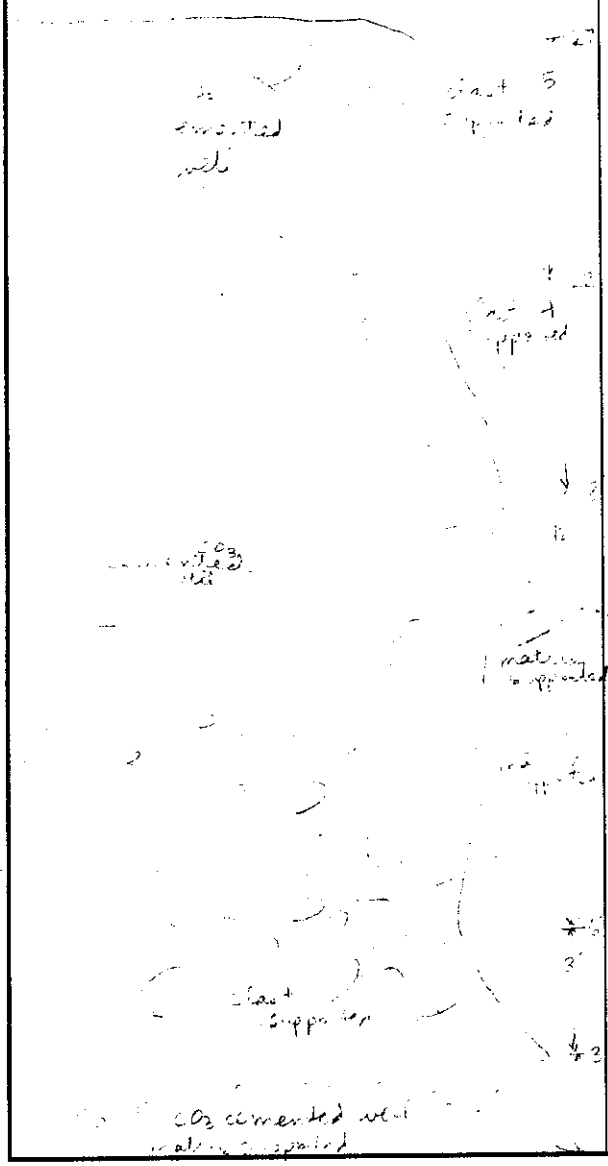
3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY [illegible]	☐ PHOTOGRAPH
GRAIN SIZE [illegible]	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK

8-19-98 P+3000' (Powerline - 3000')

DIST FROM LB (FT)	INT. AXIS (IN)				
0	0.25	22	0.25	44	silt/clay
2	silt/clay	24	0.25	46	"
4	"	26	0.25	48	.13
6	1/32	28	0.25	50	silt/clay
8	0.5	30	silt/clay		
10	0.75	32	10		
12	0.5	34	1.5		
14	1/8	36	16		
16	0.5	38	4		
18	0.25	40	5		
20	1/8	42	8		

P-1000'

DIST FROM LB (FEET)	(IN) INT AXIS			DIST FROM LB (FT)	AXIS (IN)				
0	silt/clay	24	0.5	0	1.5	60	13	120	debris
2	F sand	26	1/32	5	silt/clay	65	8	125	11
4	silt/clay	28	6	10	"	70	0.5	130	23
6	5	30	0.5	15	1	75	2		
8	1.5	32	0.25	20	1	80	s/c		
10	5.5	34	2	25	silt/clay	85	veg.		
12	22	36	2	30	0.25	90	veg.		
14	26	38	5.5	35	silt/clay	95	9.5		
16	silt/clay	40	silt/clay	40	1	100	1		
18	"	42	1	45	1	105	0.5		
20	"			50	1.5	110	6		
22	1			55	1	115	20		

↑ = left channel of 2

↑ = right channel of 2

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P + 2000 [illegible]

DATE: [illegible] | TIME: (BEGIN/END)

FIELD CREW: [illegible]

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	P 4	
LOOKING DIRECTLY AT BANK	P 5	
LOOKING UPSTREAM ALONG BANK	P 7 } from main ch	
LOOKING DOWNSTREAM ALONG BANK	P 6	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P 8	
LOOKING UPSTREAM ALONG BANK	P 9	
LOOKING DOWNSTREAM ALONG BANK	P 10	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P 11 (R to L)	
NOTABLE FEATURES: (LIST)		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — LB RB — ☐ PHOTOGRAPH

TYPE — [illegible] Mesic [illegible]

ROOT MAT — [illegible]

CANOPY (HEIGHT, DENSITY) — <10 [illegible]

PERCENT OF BANK COVER — 65% — 30% [illegible]

APPROXIMATE AGE — <10 yrs — <20 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) — ☐ PHOTOGRAPH

2' [illegible] <5%

☐ ARMORING POTENTIAL

Not armoring, [illegible] scour

☐ VISUAL ESTIMATE OF D50 1" — Bimodal — ☐ PHOTOGRAPH

D90 2 FT — D10 F. gravel

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS Not from collapse talus on LB	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UND~~ER BRIDGE~~	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN straight, meandering - bends u/s — ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No — ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) - 115' Active channel — ☐ PHOTOGRAPH

banks poorly defined - incision less obvious, w/ >70'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) — ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) — ☐ PHOTOGRAPH

Flotsam - falls canyon + 6-8 FT

TYPE AND STAGE (FEET)

FLOTSAM — SLACKWATER — EROSION SCAR — TREE SCAR — GRUS LINE — OTHER

6 in / @ base [illegible] on edge of chl / terrace stage

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No — ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) — ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) — ☐ PHOTOGRAPH

Boulder - long dunes near bldgs [illegible] d/s

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW?

—

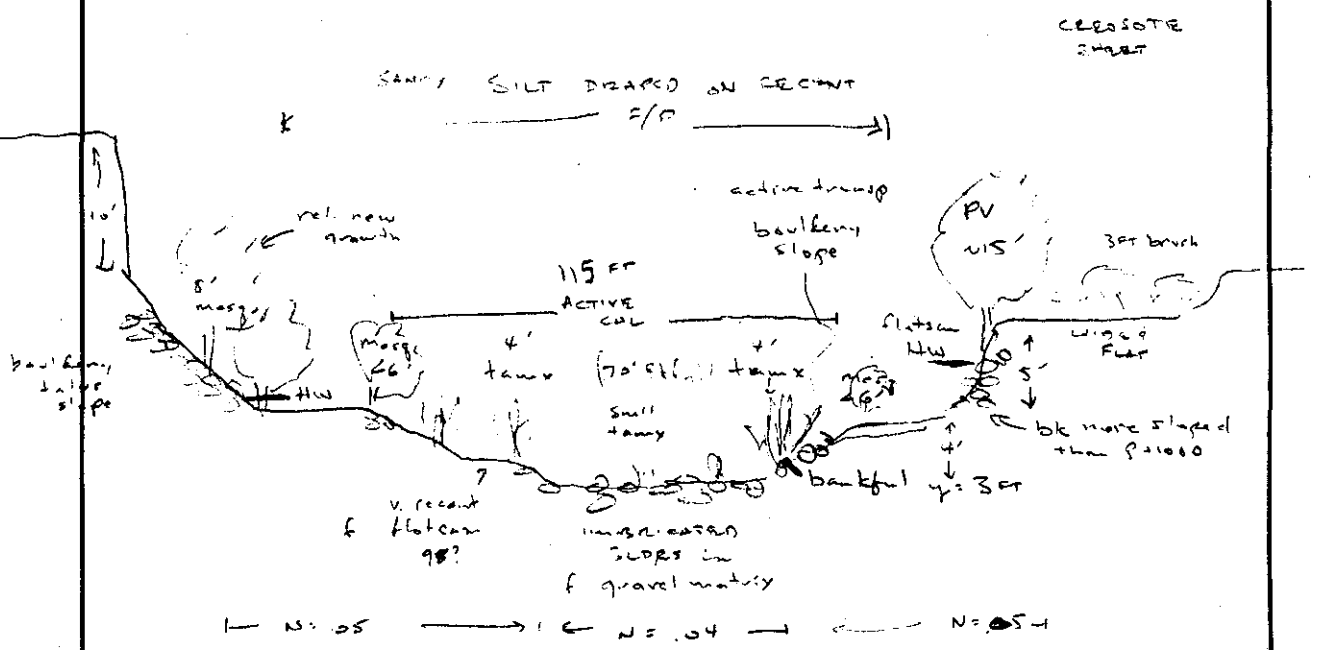
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES Yes; [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA~~ (PIER CAPS, ABUTMENTS, ETC)	☐ PHOTOGRAPH	
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION [illegible] ~ 4'	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT) [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

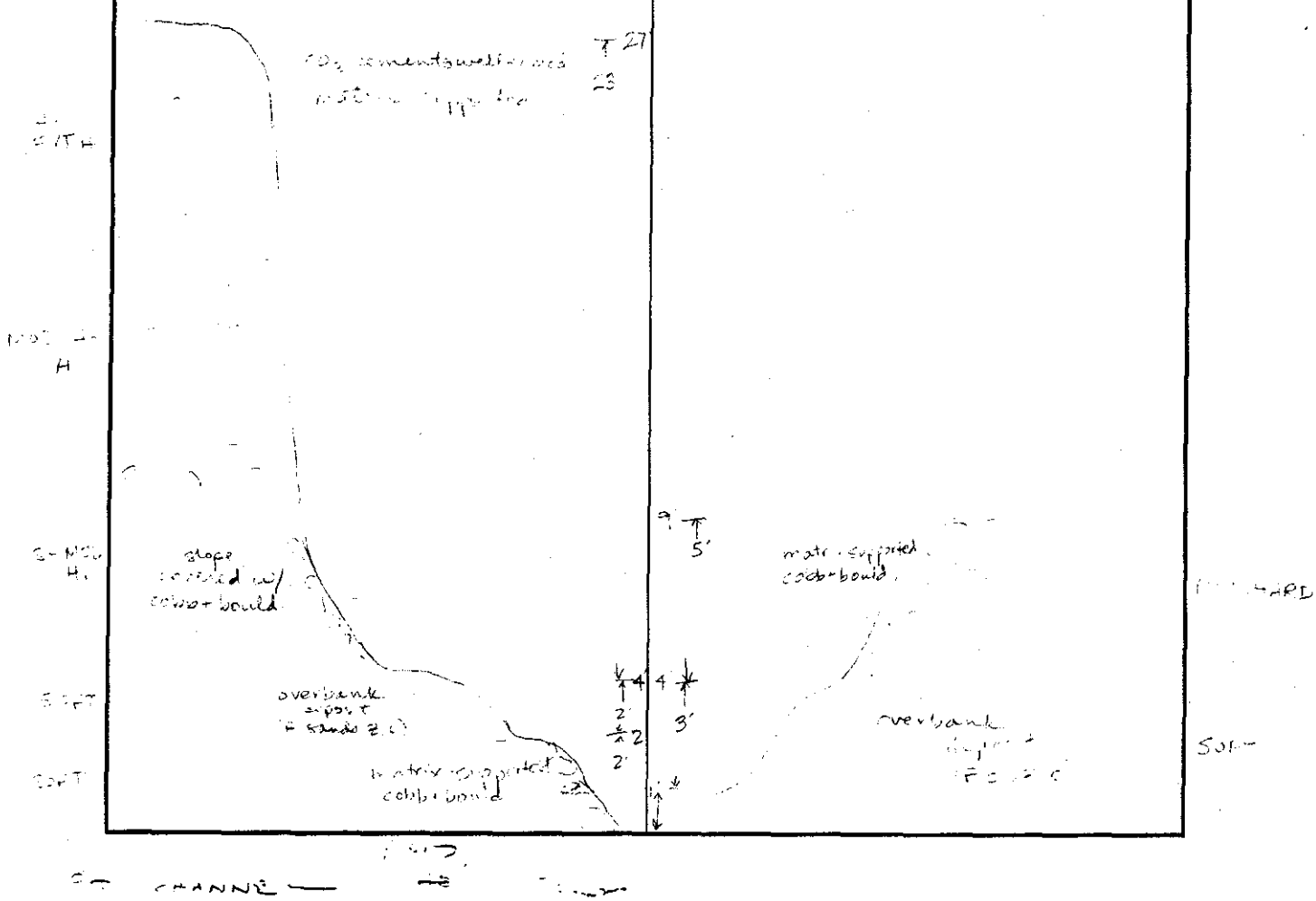
- ☐ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☐ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS No

3. BANK PROFILE

☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY see below	☐ PHOTOGRAPH
GRAIN SIZE [illegible] deposits	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK | **RIGHT BANK**



8-19-98

1000' (Powerline Crossing + 1000' North)

Boulder Count:

DIST FROM LEFT BANK (FEET)	INT. AXIS (IN.)				
0	silt/clay	45	1	90	8
5	2.5	50	3.5	95	vegetation
10	13	55	1.5	100	3.5
15	1.5	60	2.5	105	9.5
20	4	65	1/8	110	7.5
25	2	70	1/8	115	1.5
30	silt/clay	75	4	120	1/2
35	silt/clay	80	5	125	silt/clay
40	1	85	silt/clay		

000' (Powerline + 2000' North)

DIST FROM LB (FEET)	GRAIN INT. AXIS		
0	silt/clay	60	20
5	"	65	2.5
10	"	70	silt/clay
15	"	75	12
20	7	80	2.5
25	1	85	silt/clay
30	silt/clay	90	"
35	"	95	25
40	1/8	100	silt/clay
45	5.5	105	debris
50	0.5	110	silt/clay
55	1/8	115	0.5
		120	2.5

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P + 1000'

DATE: 8-19-98

TIME: (BEGIN/END) 8:30

FIELD CREW: JF HS MVB

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P22 - Roll 6	
LOOKING UPSTREAM ALONG BANK	P23	
LOOKING DOWNSTREAM ALONG BANK	P24	
LEFT BANK BLOW COUNT	✓	
RIGHT BANK (SURVEY ROD FOR SCALE)	Roll 7,	
LOOKING DIRECTLY AT BANK	P1	
LOOKING UPSTREAM ALONG BANK	P2	
LOOKING DOWNSTREAM ALONG BANK	P3	
RIGHT BANK BLOW COUNT	✓	
INTERMEDIATE BANKS	N/A	
INTERMEDIATE BANKS	"	
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P25 (end Roll 6)	
NOTABLE FEATURES: (LIST)		
P4 - look d/s L o Incised [illegible] - trend [illegible]		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH Image 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION LB RB ☐ PHOTOGRAPH

TYPE [illegible] / mesq, RV, tamx, [illegible]

ROOT MAT [illegible] sparse → loose [illegible]

CANOPY (HEIGHT, DENSITY) [illegible] 6-10' [illegible]

PERCENT OF BANK COVER [illegible] trees [illegible] grass [illegible]

APPROXIMATE AGE [illegible] < 10yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

→ [illegible] (5% [illegible]) < 3'

☐ ARMORING POTENTIAL Possible - about 60% [illegible]

☐ VISUAL ESTIMATE OF D50 - 8' BIMODAL ☐ PHOTOGRAPH

D90 2' D10 4"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

→ [illegible] LB RB

CUT BANKS	Not [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Not [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No -	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No -	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~		☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Straight [illegible] and riffle sequence ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

D= +2' [illegible]

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

Not flowing

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ EROSION SCAR ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

→ +6-8'

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No - control of slope by [illegible]

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

[illegible]

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW?

—

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

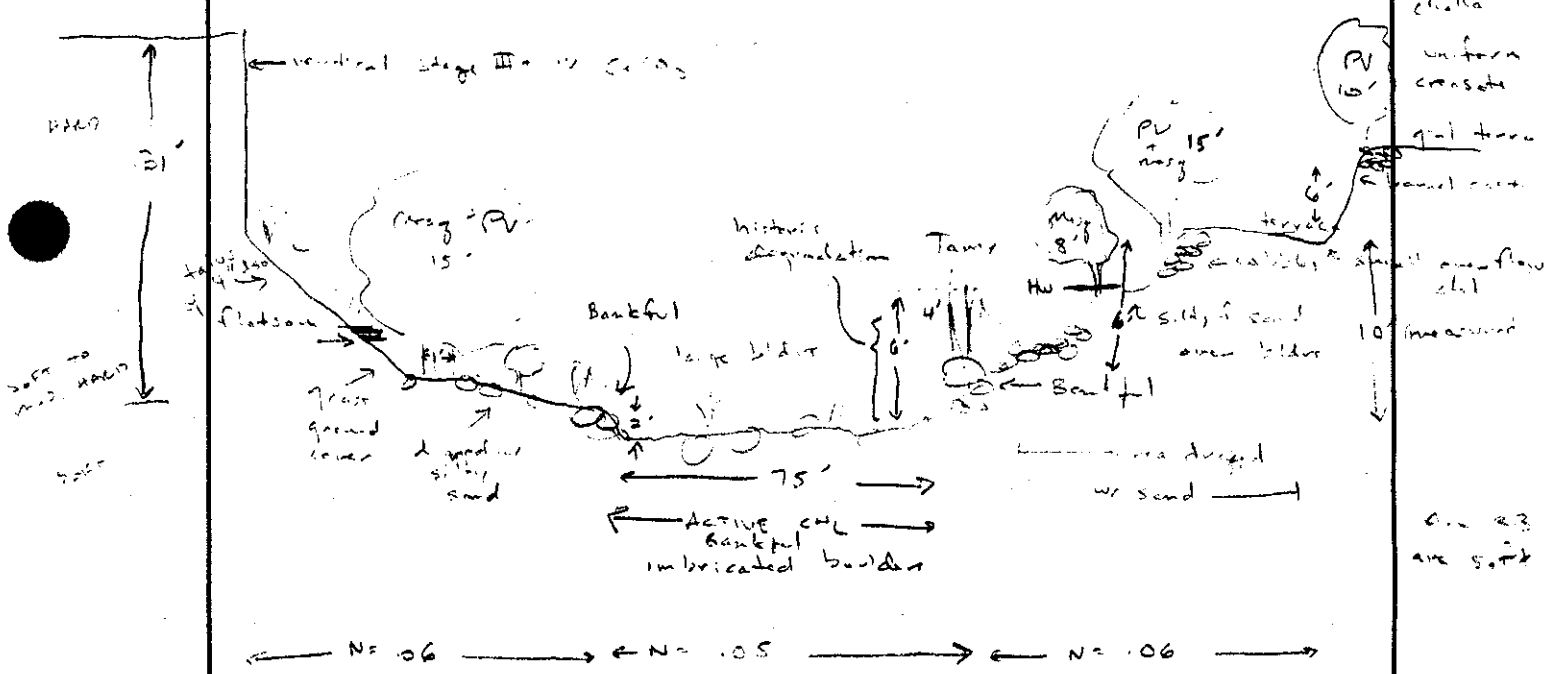
+ fit recent (< 30 yrs) up to 10-12' in last 1000 yrs

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES Yes - [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE ~~DATA (PIER CAPS, ABUTMENTS, ETC)~~	☐ PHOTOGRAPH	
HEADCUTS S ↑ [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS ↗	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION Yes 2-4'	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT) [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) N.T.S



SHOW THE FOLLOWING:

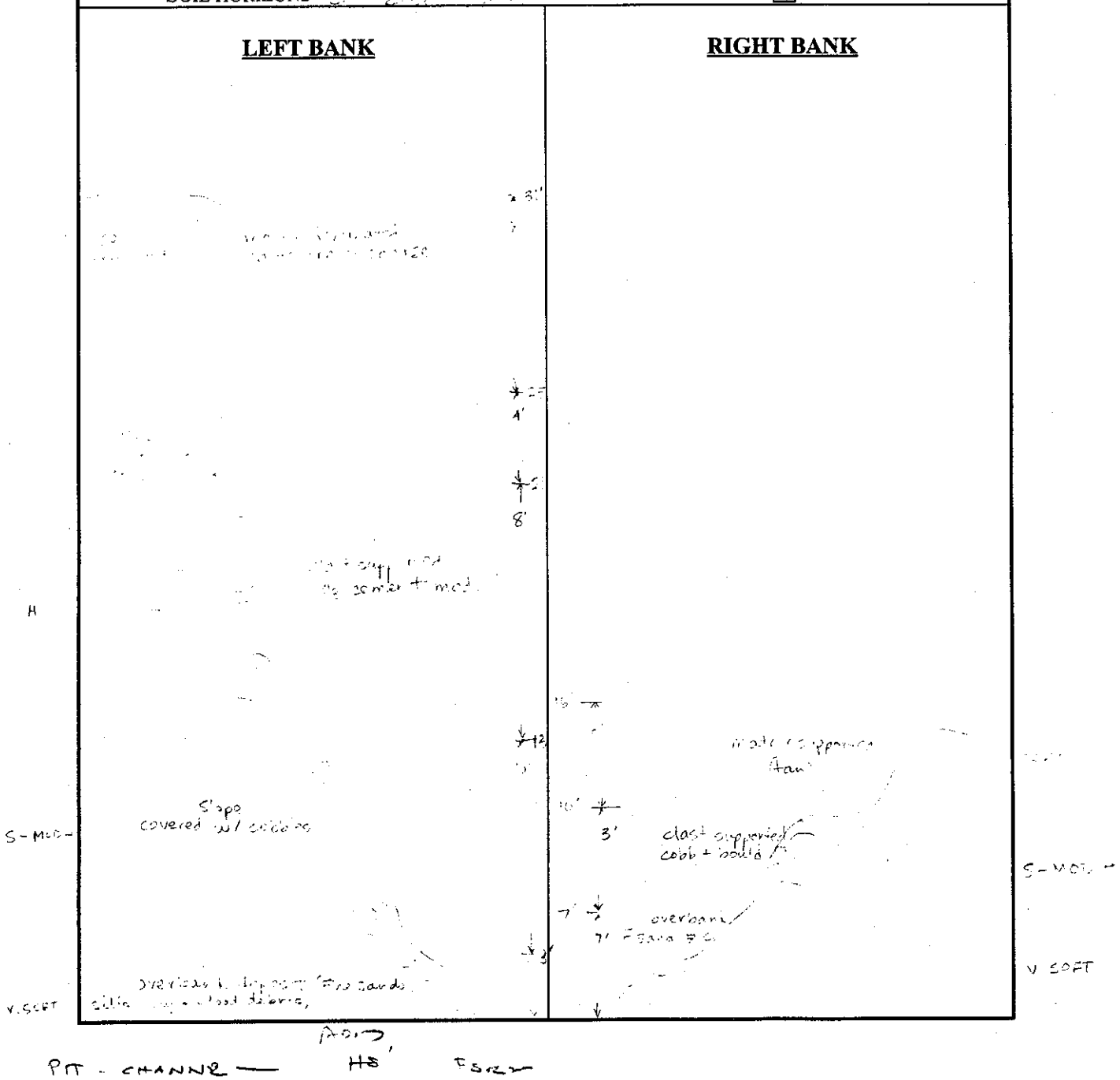
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS N/A
- ☑ FLOODPLAIN/ TERRACES
  L - 2 terraces
  R - 4 terraces
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS N

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY [illegible]	☐ PHOTOGRAPH
GRAIN SIZE [illegible]	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS [illegible]	☐ PHOTOGRAPH

LEFT BANK | **RIGHT BANK**



[illegible]-98

[illegible] + 1000' (Powerline Crossing + 1000' North)

DIST FROM LEFT BANK (FEET)	INT. AXIS (IN)
0	silt/clay
[illegible]	[illegible]
10	13
15	1.5
20	4
25	2
30	silt/clay
35	silt/clay
40	[illegible]
45	1
50	3.5
55	1.5
60	2.5
65	1/8
70	1/8
75	4
80	5
85	silt/clay

Boulder Count:

90	8
95	vegetation
100	[illegible]
105	[illegible]
110	7.5
115	1.5
120	1/2
125	silt/clay

2000' (Powerline + 2000' North)

DIST FROM LB. (FEET)	MAIN INT AXIS
0	silt/clay
5	"
10	"
15	"
20	7
25	1
30	silt/clay
35	"
40	1/8
45	5.5
50	0.5
55	1/8
60	20
65	2.5
70	silt/clay
75	12
80	2.5
85	silt/clay
90	"
95	25
100	silt/clay
105	debris
110	silt/clay
115	0.5
120	2.5

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: POWERLINE Y-ING @ FCDMC GAGE

DATE: 8-19 | TIME: (BEGIN/END) 7:30

FIELD CREW: JF HS MB

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	Roll #6, P11	
LOOKING UPSTREAM ALONG BANK	P13	
LOOKING DOWNSTREAM ALONG BANK	P12	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P15 - [illegible]	
LOOKING UPSTREAM ALONG BANK	P16	
LOOKING DOWNSTREAM ALONG BANK	P17	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P14 Look L to R	
NOTABLE FEATURES: (LIST)		

P19 - Scour hole 1.5' deep along RB u/s X-[illegible]
P20 - Riffle/boulder 500' u/s Power[illegible]
P21 - LB undercut [illegible] 45' u/s

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH SHEET 5 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

	LB	RB
☐ BANK VEGETATION	LB	RB ☑ PHOTOGRAPH
ROOT MAT	shallow	shallow for grass - deeper [illegible]
CANOPY (HEIGHT, DENSITY)	< 6'	shrubs to 6' trees to 15'
PERCENT OF BANK COVER	~10% - [illegible]	[illegible] = 25% [illegible] = 60% TOTAL = 85%
APPROXIMATE AGE	< 10 yrs	> 10 yrs
☐ CHANNEL VEGETATION (TYPE & PERCENT COVER)	tamarix, Mesq., jojoba, PV	PV, Mesquite, tamarix ☐ PHOTOGRAPH
☐ ARMORING POTENTIAL	possible - not armored now	
☐ VISUAL ESTIMATE OF D50	3.5"	☐ PHOTOGRAPH
D90	1.5	D10 ½"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS -	Yes	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	- near vert on L, No on R	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	No.	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	Yes on RB ; No LB	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No, swept clean	☐ PHOTOGRAPH ☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~		☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	No.	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	v. small longitudinal on LB - few mostly single chl	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
Single, straight, boulders

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
No.

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
Sine = +1 ft entire chl bottom - bottom defined by [illegible]

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
Not flowing

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
+8 ft

P18 - RR [illegible]

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER
→ ~15 ft

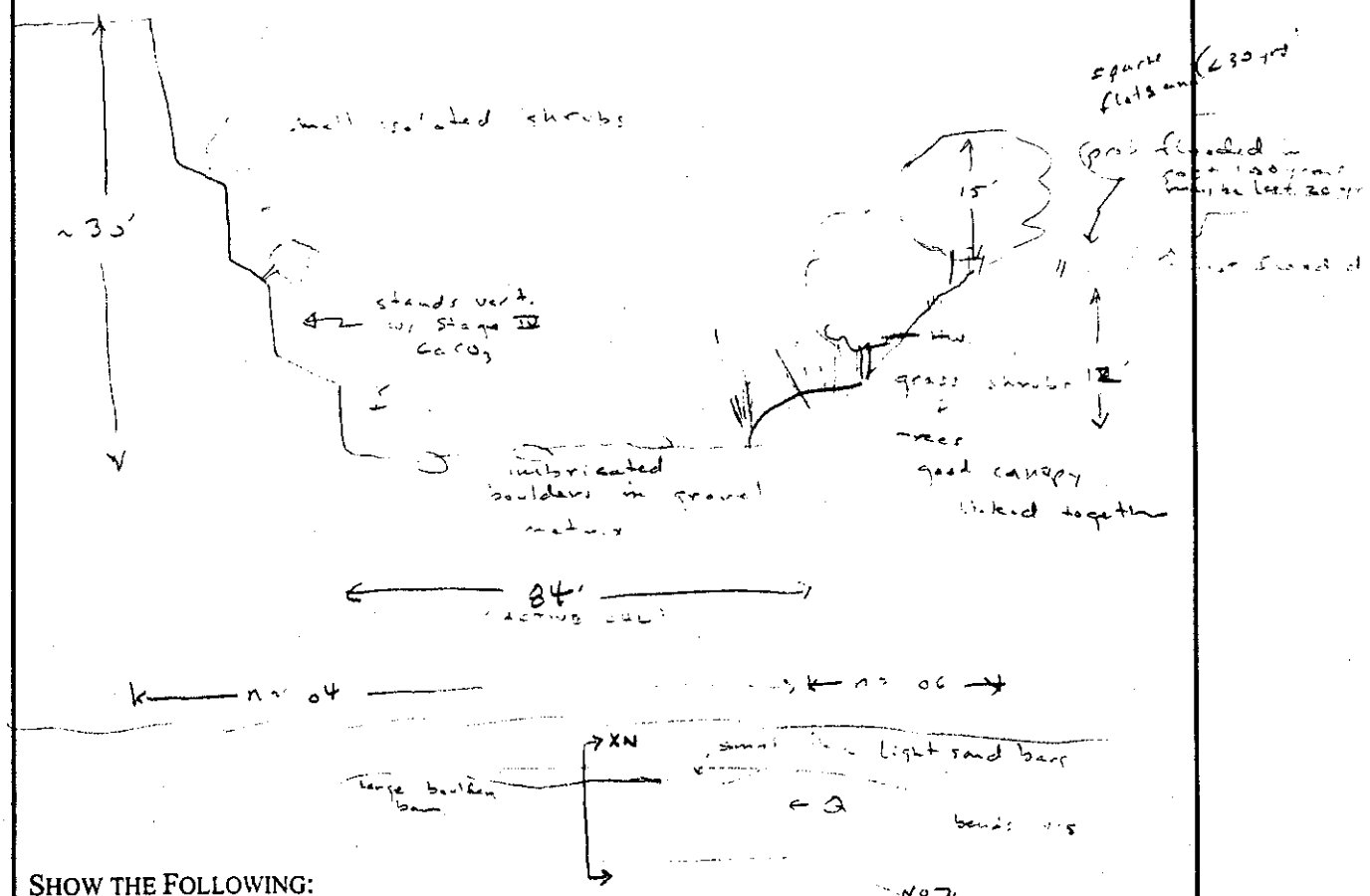
☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
Remnants of concrete crossing on RB u/s (under power line)

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
Imbricated boulders, longitudinal bars d/s boulders

☐ FENCES (PLOT LOCATION, PHOTO) No	☐ PHOTOGRAPH
OBSTRUCT FLOW? —	
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)	
HANGING TRIBUTARIES No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES Several recent geol.	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) v. steep [illegible]	☐ PHOTOGRAPH ☐ PLOT LOCATION
~~BRIDGE DATA (PIER GAPS, ABUTMENTS, ETC)~~	☐ PHOTOGRAPH
HEADCUTS N.O.	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS N.O.	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION possible	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) historically [illegible] active [illegible]	☐ PHOTOGRAPH ☐ PLOT LOCATION
☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) [illegible]	
☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)	



SHOW THE FOLLOWING:

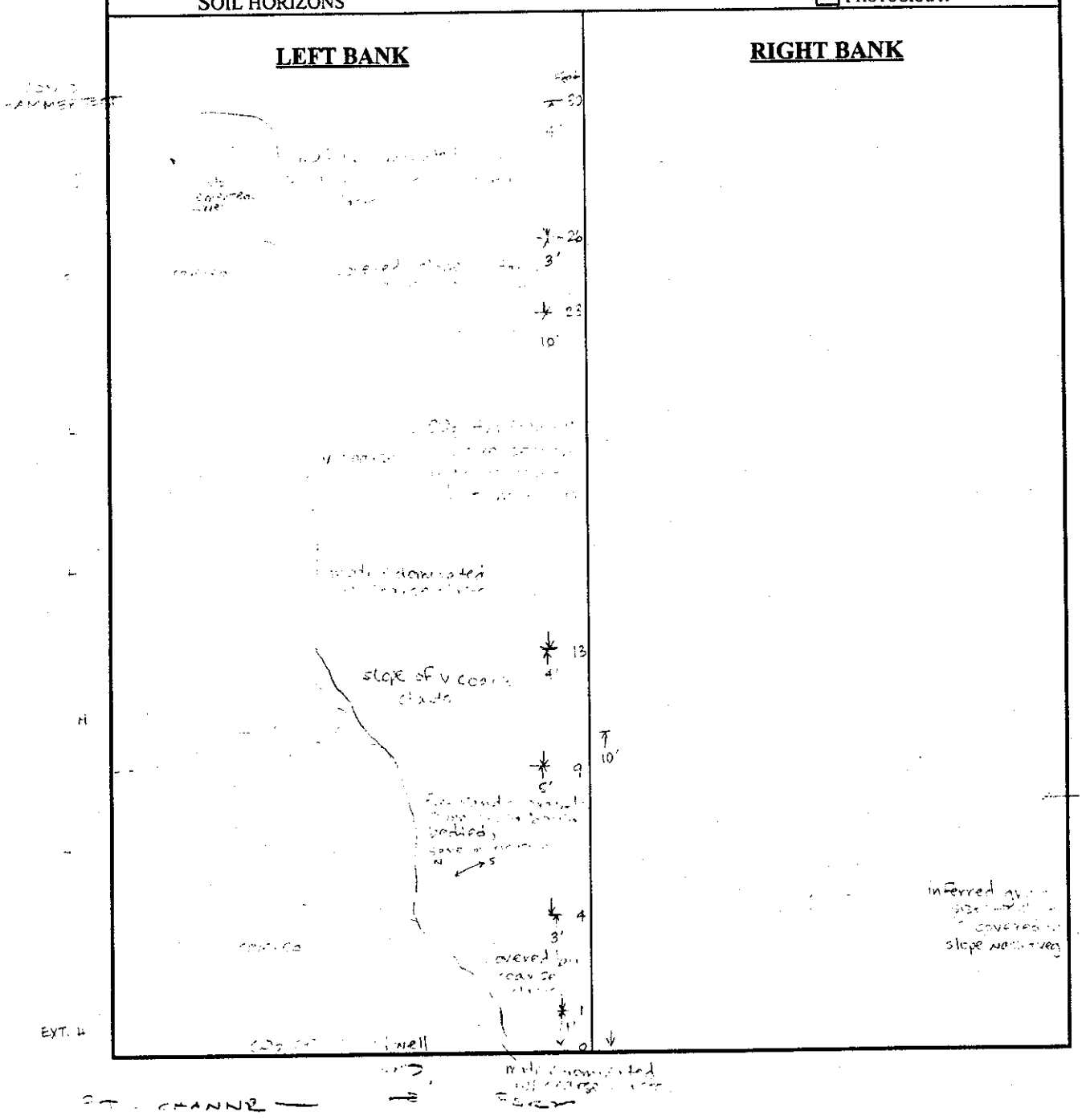
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ ~~OVERFLOW CHANNEL~~
- ☑ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS — None

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



8-19-90

[illegible] SITE - under powerline, beside old car frame in channel

Boulder (FEET) DIST. FROM LEFT BANK	Count (IN) INTERM AXIS				
0	silt/clay	36	0.25	72	silt/clay
4	7.5	40	0.5	76	silt/clay
8	0.25	44	1/8	80	silt/clay
12	0.25	48	0.25	84	silt/clay
16	3.5	52	1/8		
20	silt/clay	56	1/32		
24	8	60	silt/clay		
28	0.25	64	silt/clay		
32	17	68	1		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P- 1K (1000' S/S POWERLINE) AT CABLE

DATE: 3-20-98

TIME: (BEGIN/END) 9 AM

FIELD CREW: JF, HS, MUB

RECORDS CHECK BY: (NAME, DATE) 8/26/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Roll 9	
LOOKING DIRECTLY AT BANK	P15	
LOOKING UPSTREAM ALONG BANK	P17	
LOOKING DOWNSTREAM ALONG BANK	P16	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P19	
LOOKING UPSTREAM ALONG BANK	P20	
LOOKING DOWNSTREAM ALONG BANK	P21	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P18 L to R	
NOTABLE FEATURES: (LIST)		
[illegible] - P22		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION	RB / LB	☐ PHOTOGRAPH
TYPE	(most) TX, PV, Mesq, Bush grass (least)	
ROOT MAT	varies v tight	
CANOPY (HEIGHT, DENSITY)	<25 FT	
PERCENT OF BANK COVER	70% (40% tree) 30% grass	
APPROXIMATE AGE	<20 yrs	
☐ CHANNEL VEGETATION (TYPE & PERCENT COVER)		☐ PHOTOGRAPH
v. sparse TX (~5%)		
☐ ARMORING POTENTIAL		
Low - gravels - v loose from yesterday	material in [illegible]	
☐ VISUAL ESTIMATE OF D50 ¼"		☐ PHOTOGRAPH
D90 4"	D10 < silt/clay (#200)	

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	@ base only		☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No - v the steep		☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	Yes		☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No		☐ PHOTOGRAPH	☐ PLOT LOCATION

Low damage, small cracks, roots exposed

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
Single ch v straight gravel bed no bars

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
y = +2.5' TW = 100'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
flotsam in trees (+8')

TYPE AND STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ EROSION SCAR TREE SCAR ~~GRUB LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
plain bed - bed arched by ½-1'
↳ See Xs

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No - 1/4" cable strung 9' above ment

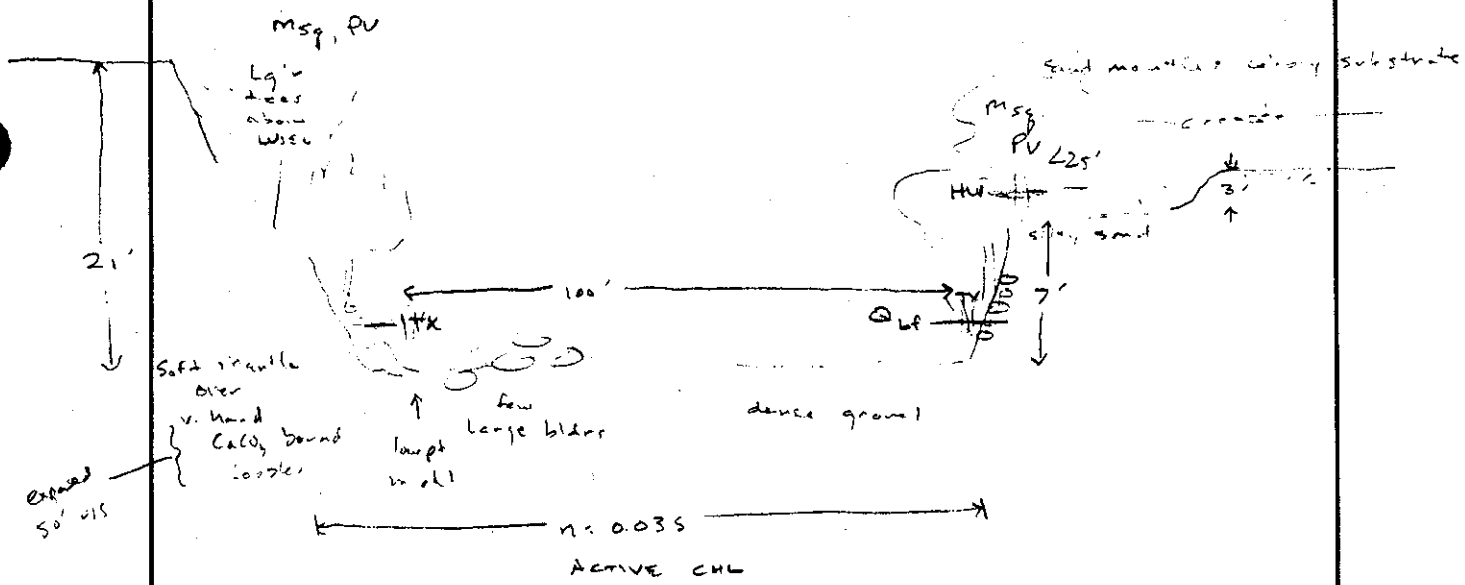
OBSTRUCT FLOW?
may catch debris @ > Q25

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	v. steep, both	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA (PIER CAPS, ABUTMENTS~~, ETC)		☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	No	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	some @ P	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
N.O.

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) ~~NOTE~~ SECTION ON BACK



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☐ ~~BARS~~
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☐ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS No

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK	RIGHT BANK
MOD. H coarse clasts SOFT	SOFT

8-20-98

K

DIST. FROM (FT)	INT. AXIS (IN)				
0	11	50	1/16	100	s/c
5	s/c	55	s/c		
10	s/c	60	1/2		
15	s/c	65	s/c		
20	s/c	70	s/c		
25	s/c	75	s/c		
30	1/4	80	1.5		
35	1/4	85	1		
40	1/2	90	1/2		
45	s/c	95	s/c		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-2K 2000' d/s [illegible]

DATE: 8/20

TIME: (BEGIN/END) 10 AM

FIELD CREW: JF / HS / MVB

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Roll 10	
LOOKING DIRECTLY AT BANK	P1	
LOOKING UPSTREAM ALONG BANK	P3	
LOOKING DOWNSTREAM ALONG BANK	P2	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)	Roll 9	
LOOKING DIRECTLY AT BANK	P23	
LOOKING UPSTREAM ALONG BANK	P24	
LOOKING DOWNSTREAM ALONG BANK	P25	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P4 - Roll - note silt drape & bar Tx	
NOTABLE FEATURES: (LIST)		

FLOW EXPANDING TO R
banks damaged by grazing

P5 - RB cattle damage - worse up/s
P6 - headcut on R side Note main chl w/ tributary d/s
LB7 L u/s from P6

P8 - L d/s thru head on L side chl - note 10' scarp on LB'
P9 - flood damage cottonwood on island between channels

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — LB / RB — ☐ PHOTOGRAPH

	LB	RB
TYPE	young Msq, Dbroom, [illegible]	Msq, PV, TX [illegible]
ROOT MAT	[illegible]	[illegible]
CANOPY (HEIGHT, DENSITY)	<5' [illegible]	~10' [illegible]
PERCENT OF BANK COVER	50% [illegible]	60% (15% [illegible]) [illegible]
APPROXIMATE AGE	<10 yrs	<20 yrs [illegible]

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

50% Tamarix to 7ft

☐ ARMORING POTENTIAL

Low - mostly gravels, covered by silty sands

☐ VISUAL ESTIMATE OF D50 - 4mm ☐ PHOTOGRAPH

D90 4" D10 silt/clay

large boulders 1-5' dia (>2 ft) (chl w: silty)

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES some	Yes some	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	- Some -		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	Minor		☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT ~~BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)			☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH

braided in single high flow ch'l, overflow chl on L strongly braided

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

TW=160, y=1 (shallow)

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

[illegible] flotsam [illegible] LOB L/P

TYPE AND STAGE (FEET)

FLOTSAM (circled) ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ ~~OTHER~~

☐ DEPTH TO BEDROCK (FT., UNKNOWN) (circled)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

[illegible] dunes <2ft some [illegible] silt accumulation @ base of [illegible]

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW?

No

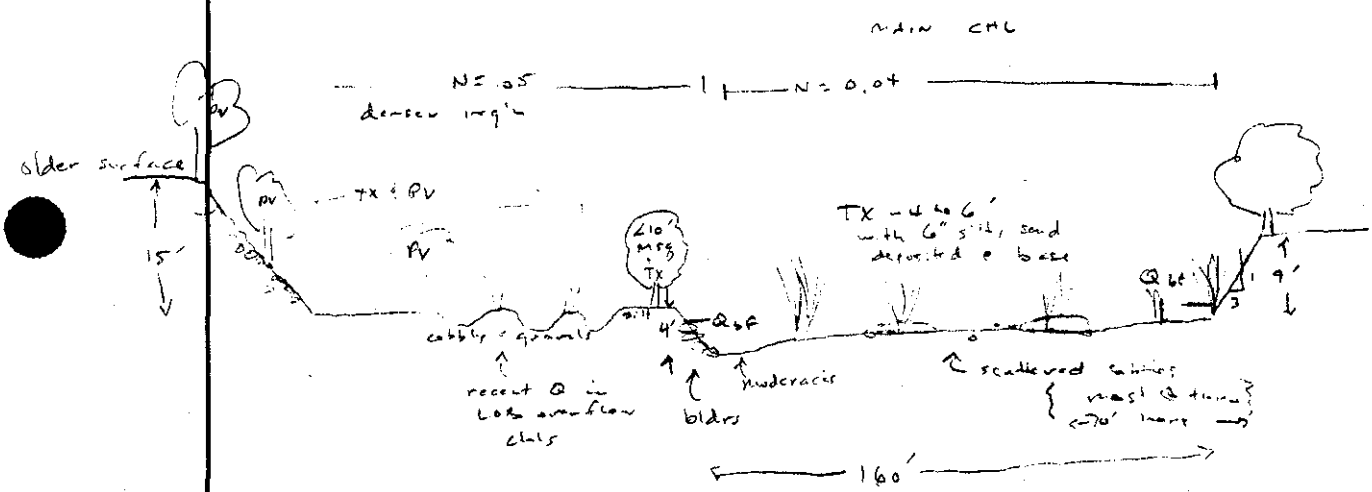
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES Yes - .05 - 4 ft	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA (PIER~~ CAPS, ABUTMENTS, ETC)		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS Yes - v. Steep	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION possible slight max = 4 ft		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) Some @ P	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

NO

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS NO

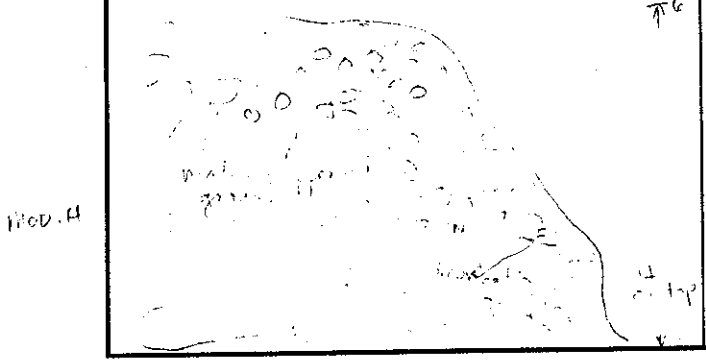
3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

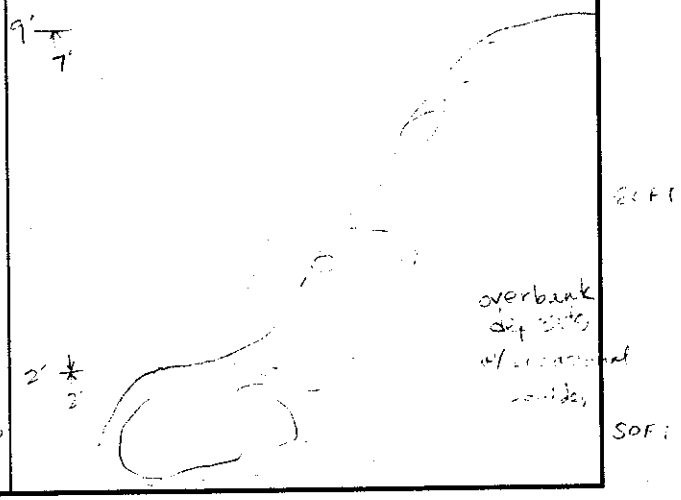
NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY [illegible]	☐ PHOTOGRAPH
GRAIN SIZE [illegible]	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



P-2K Boulder Count 8-20-92

Dist From RB (ft) | INT Axis (in)

s/c = silt/clay

0	[illegible]	55	1/2	110	s/c
[illegible]		60	1/4	115	1/2
[illegible]		65	2	120	1/8
[illegible]		70	1/4	125	1/4
20		75	1/8	130	1/2
[illegible]	1/8	80	s/c	135	1/32
[illegible]	1/4	85	1/4	140	1/8
[illegible]	1/8	90	s/c	145	1/16
[illegible]	s/c	95	"	150	1/4
[illegible]	1	100	1	155	s/c
[illegible]	1.5	105	s/c	160	s/c

P-3K Boulder Count 8-20-92 – Right side channel

Dist From RB (ft)	INT Axis (in)				
0	15	60	s/c	120	1/4
5	s/c	65	1	125	s/c
10	1/2	70	3	130	3
15	1	75	7	135	s/c
20	1/4	80	2.5	140	s/c
25	s/c	85	s/c		
30	5	90	6		
35	1/4	95	1/32		
40	s/c	100	s/c		
45	3	105	1/16		
50	4.5	110	1/32		
55	1/4	115	1/32		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-3K 3000' d/s [illegible] (TEST PIT #13 SITES)

DATE: 8/20

TIME: (BEGIN/END) 11:30 am

FIELD CREW: MVB - HJ - JF

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE Roll #10	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		Left side island
LOOKING DIRECTLY AT BANK	P17	P21
LOOKING UPSTREAM ALONG BANK	P19	P22
LOOKING DOWNSTREAM ALONG BANK	P18	P23
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)	Roll 10	Right side island
LOOKING DIRECTLY AT BANK	P10	P14
LOOKING UPSTREAM ALONG BANK	P11	P16
LOOKING DOWNSTREAM ALONG BANK	P12	P15
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P13 L to R in R ch	
NOTABLE FEATURES: (LIST)	P20 L to R in L ch	
P24 - transition/contact from cobble RB to silty sand RB. Note cobble bed near silt sand bank		clay bank near cobble bed
P25 @ top of slope break headcut 2nd episode of entrenchment		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION	L:	R:	☐ PHOTOGRAPH
TYPE	Mesq PV, Fr-Wood TX w/ minor Mesq		
ROOT MAT	Mod to weak	perched a top bank	
CANOPY (HEIGHT, DENSITY)	< 20 ft	< 4 ft	
PERCENT OF BANK COVER	~~50~~ 60% 20% trees 40% grass	5%	
APPROXIMATE AGE	< 30 yrs	< 5 yrs	

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

Rchl Tx to 5ft (10% cover)

☐ ARMORING POTENTIAL

Probable - large imbricated boulders line bed, boulder bars - rill and

☐ VISUAL ESTIMATE OF D50 1" 1/4 8" 1" ☐ PHOTOGRAPH

- chl D90 1' D10 1/4"

R chl 2' 1/2"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	YES recorded soils areas in cards	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes	Yes perched	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	Yes	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	Yes ($CaCO_3$)	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	N.O	Yes ~~No~~	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	N.	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	large center island		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Silty sand dissed over f/p ☐ PHOTOGRAPH

braided multiple chl - boulder bed entrenched (2 exposures?)

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

R chl - 3-4' deep TW: 150' defined by grasses L chl -

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

flotsam on island

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ EROSION SCAR ~~TREE SCAR~~ ~~GRUB LINE~~ OTHER

on island LB @ headcut

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

longitudinal bars

Island - has large multi-armed Saltcedar; 20 ft Mesq; PV trees; has been flooded - flotsam + cottonwood (in PIA) from way U/S

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No

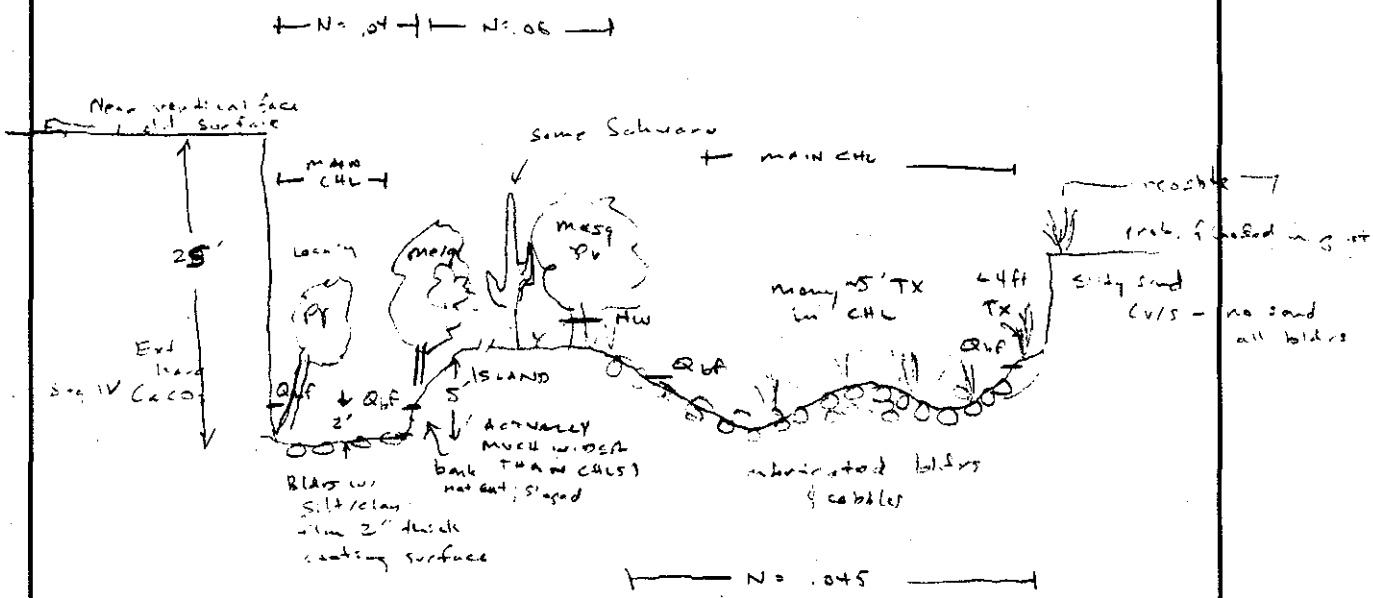
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

	L-chl	R-chl		
HANGING TRIBUTARIES	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)~~				☐ PHOTOGRAPH
HEADCUTS	U/S – 200'	Yes 2 U/S d/S	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	?	Yes ?	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	Yes	Yes 2-eq sides		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)		Yes d/s 200'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) THIS XN IS AT SOIL TEST LOCATION #13
N, TS



Some recent failure – large chunks of $CaCO_3$ at base of vert. cliff.

SHOW THE FOLLOWING:

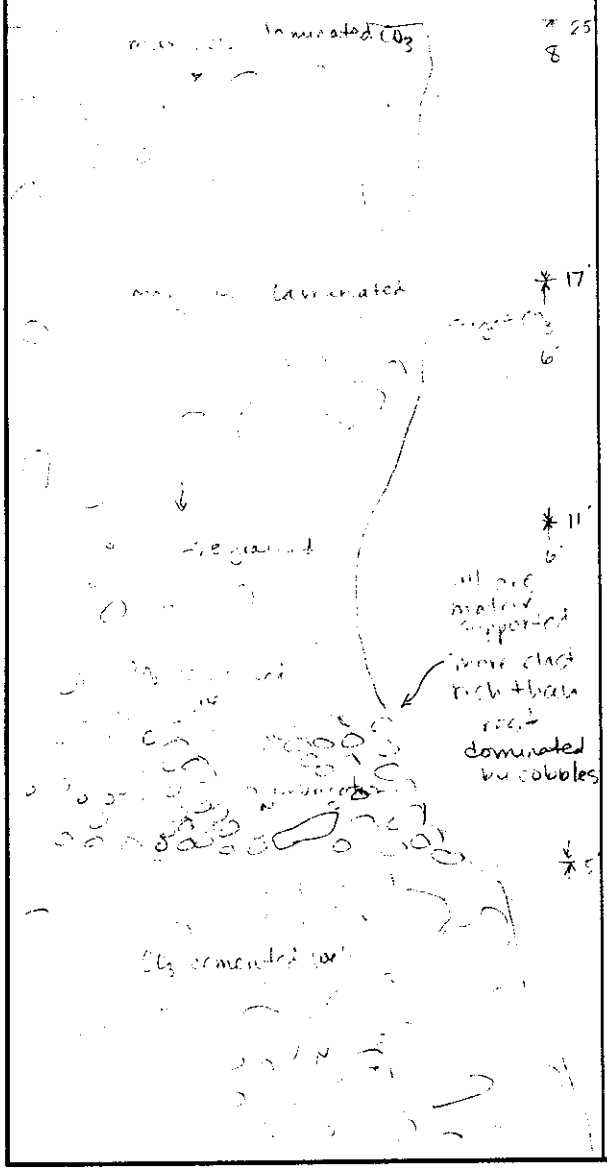
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

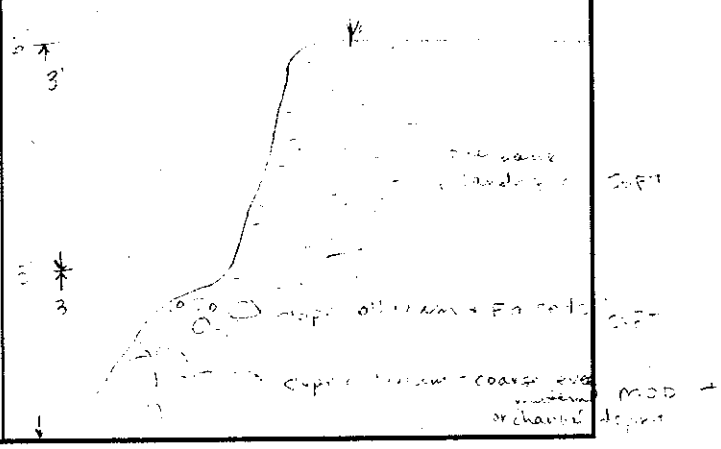
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



P-2K Boulder Count 8-20-98

S/C = silt/clay

DIST FROM LB (FT)	INT AXIS (IN)				
0	S/C	55	1/2	110	S/C
5	"	60	1/4	115	1/2
10	"	65	2	120	1/8
15	"	70	1/4	125	1/4
20	"	75	1/8	130	1/2
25	1/8	80	S/C	135	1/32
30	1/4	85	1/4	140	1/8
35	1/8	90	S/C	145	1/16
40	S/C	95	"	150	1/4
45	1	100	1	155	S/C
50	1.5	105	S/C	160	S/C

-3K Boulder Count 8-20-98 - Right side channel

Dist From RB (ft)	INT Axis (in)				
0	15	60	S/C	120	1/4
5	S/C	65	1	125	S/C
10	1/2	70	3	130	3
15	1	75	7	135	S/C
20	1/4	80	2.5	140	S/C
25	S/C	85	S/C		
30	5	90	6		
35	1/4	95	1/32		
40	S/C	100	S/C		
45	3	105	1/16		
50	4.5	110	1/32		
55	1/4	115	1/32		

P-3K Boulder Count 8-20-98 - Left Channel

Distance From RB (ft)	Int. Axis (in)		
0	s/c	56	1.5
4	s/c	60	s/c
8	6.5	64	4
12	36	68	s/c
16	3	72	s/c
20	s/c	76	s/c
24	4.5	80	Veg.
28	4		
32	1.5		
36	s/c		
40	s/c		
44	3.5		
48	s/c		
52	14		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-4k 4000' d/s Pinnacle [illegible]

DATE: 8/20

TIME: (BEGIN/END) 1:- Noon

FIELD CREW: JF HS MVB

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Roll 11	
LOOKING DIRECTLY AT BANK	P3	
LOOKING UPSTREAM ALONG BANK	P5	
LOOKING DOWNSTREAM ALONG BANK	P4	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P7	
LOOKING UPSTREAM ALONG BANK	P8	
LOOKING DOWNSTREAM ALONG BANK	P9	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P6 look R to L	
NOTABLE FEATURES: (LIST)		

P1 - roadcut 150' d/s xn P-4k [illegible] RB
P2 - recent #3 d/s xn P-4k where 2 chls join
P10 - look u/s into scour hole @ braid confluence [illegible] xn
P11 - wavy cool $CaCO_3$ [illegible] of cliff
P13 - bone in $CaCO_3$ layer
later discussion w/ AZGS (not bone) prob $CaCO_3$ filament

Roll #11

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — LB / RB — ☑ PHOTOGRAPH

	LB	RB
TYPE	fv above w line, none below	Tamx
ROOT MAT	N/A	shallow, mostly [illegible]
CANOPY (HEIGHT, DENSITY)	< 6 in	< 10 ft
PERCENT OF BANK COVER	< 5%	25%
APPROXIMATE AGE	0	< 10 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

Tamarix < 5 ft < 5% cover - chl w. narrow - scoured clean

☐ ARMORING POTENTIAL d_{50} = 3 ft

c xn - low - mostly gravels - u/s - d/s prob. armored

☐ VISUAL ESTIMATE OF D50 ¼" ☐ PHOTOGRAPH

D90 f gr D10 f gravel / sand

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT) (single main chl)

	LB	RB		
CUT BANKS	YES	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No, v. high	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	Yes	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	bar island now vegetated		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH

single chl - degraded at least 8 ft - multiple braids main 200' u/s of Xn

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

150' very small • L d/s of xn

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

N/A - chl recently entrenched - by silt lines + 2 ft (= y) TW = 57'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

flotsam on LB trees - 15 ft, on top of island + 3 ft

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ EROSION SCAR ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

↳ from degradation (6')

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No — Stg 4 $CaCO_3$ in LB ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No. ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

shadow dunes of gravelly sand around boulder

large scour hole on LB @ confluence of L & R chl's

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

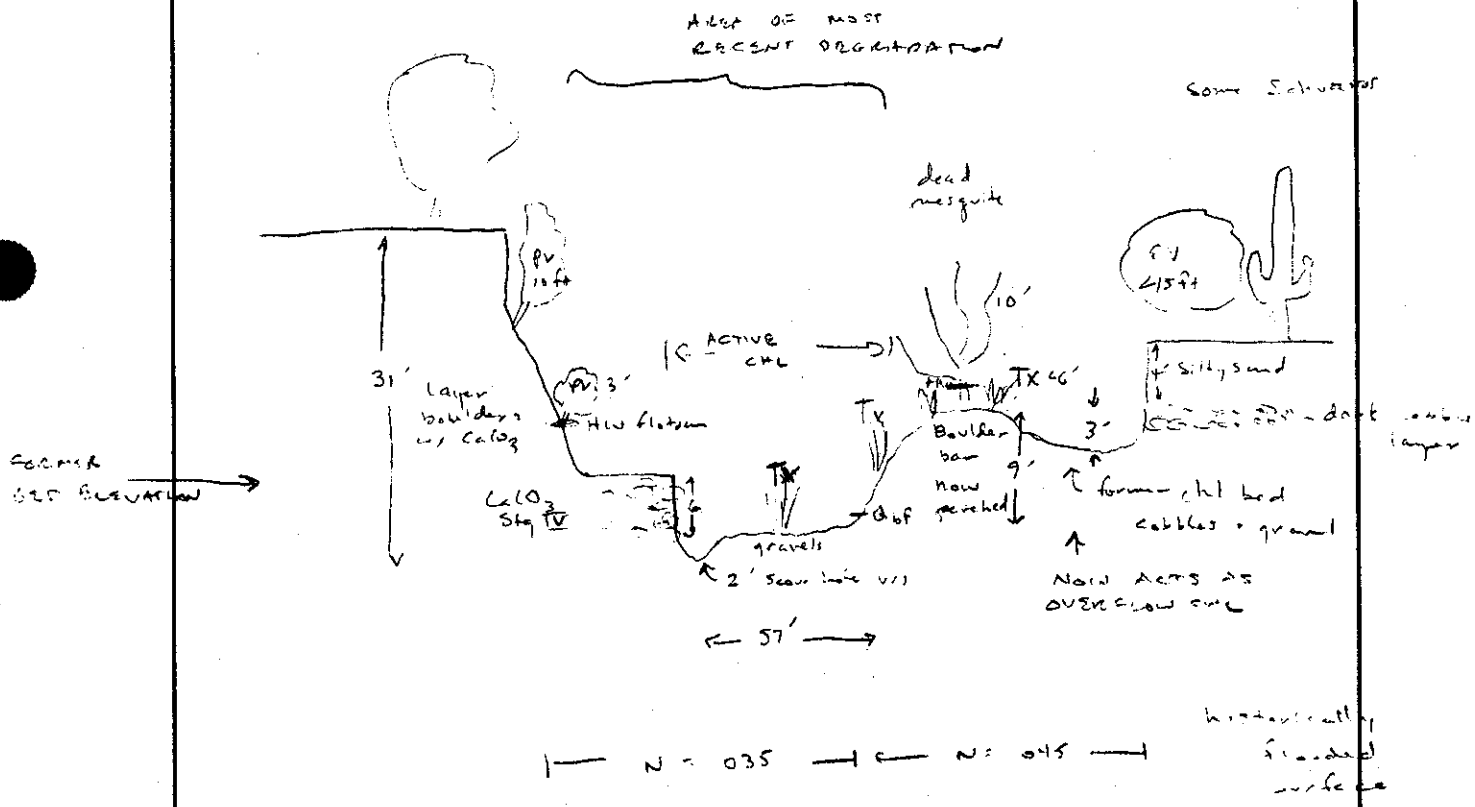
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	Yes - L -	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	Yes - perched [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes (L)	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA~~ (PIER CAPS, ABUTMENTS, ETC)		☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Yes - u/s & d/s defined by boulder [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	Yes 6-10ft	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	d/s 1500'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

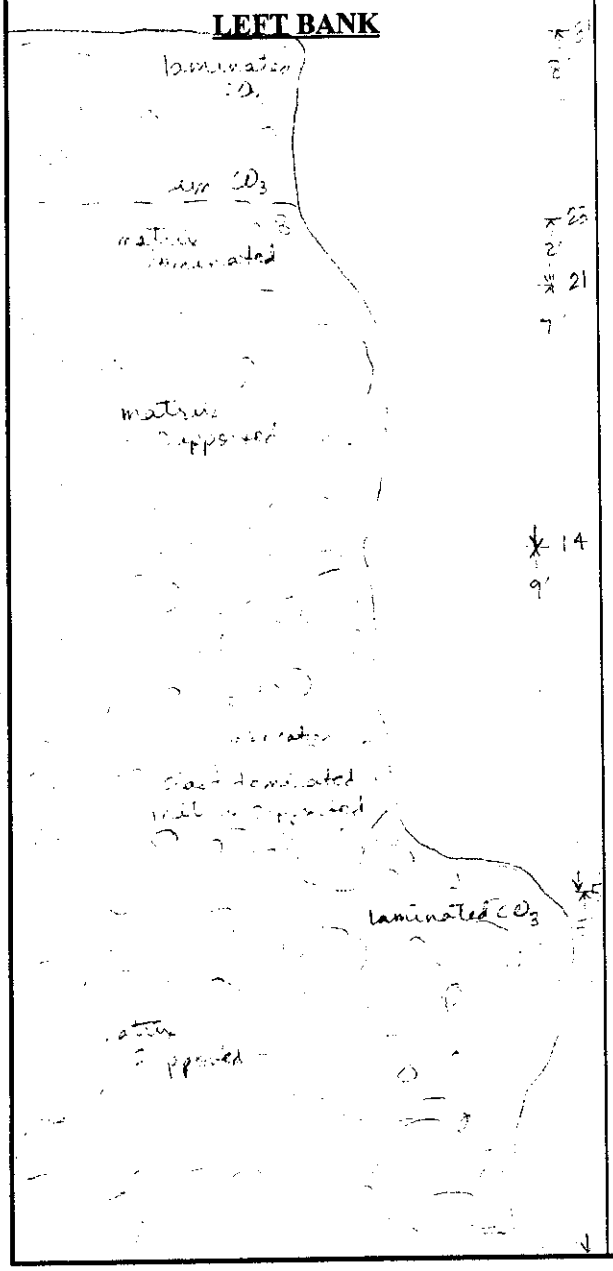
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

3. BANK PROFILE

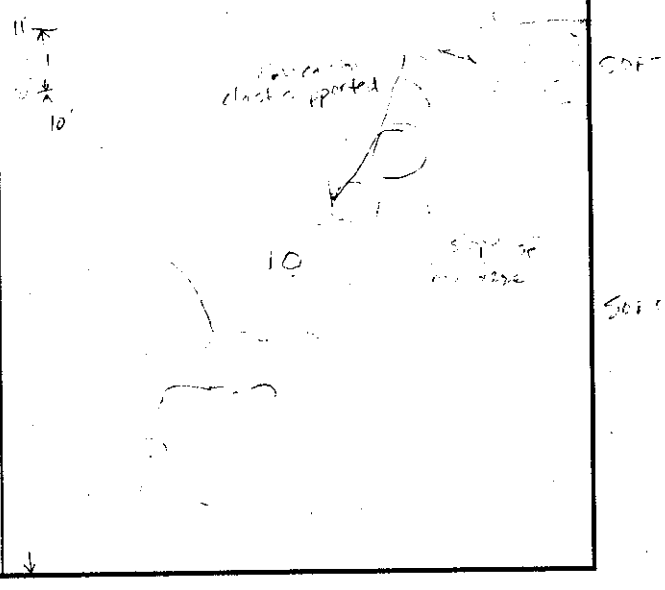
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



P-1K 2-20-72

LOT FROM PLANT (FEET)	AS (IN)		
0	9	30	2
3	1/4	33	4
6	1/2	36	s/c
9	1/4	39	5
12	4	42	11
15	1/2	45	s/c
18	9	48	14
21	s/c	51	10
24	"	54	s/c
27	s/c	57	veg

P-5K 2-20-72

LOT FROM PLANT (FEET)	AS (IN)				
0	s/c	44	1/16	88	s/c
4	1.5	48	s/c	92	17
8	6	52	s/c		
12	6	56	3.5		
16	1/32	60	1		
20	1/4	64	3/4		
24	12.5	68	1/4		
28	6.5	72	8		
32	s/c	76	1/4		
36	s/c	80	s/c		
40	s/c	84	s/c		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-6K 6000 [illegible] Near Pt #14 location

DATE: 8/20/98 | TIME: (BEGIN/END) 2 pm

FIELD CREW: JF MVB [illegible]

RECORDS CHECK BY: (NAME, DATE) JP 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	#9 [illegible]	
LOOKING UPSTREAM ALONG BANK	#11	
LOOKING DOWNSTREAM ALONG BANK	#10	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	#13	
LOOKING UPSTREAM ALONG BANK	=	
LOOKING DOWNSTREAM ALONG BANK	#14	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS	N/A	
INTERMEDIATE BANKS	N/A	
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	#15	
NOTABLE FEATURES: (LIST)		

Roll #11
P21 - view
P23 - [illegible] looks like trib. [illegible] is actually excellent [illegible] material
[illegible] - look u/s thru xn P-6K

Roll 12
P16 - look u/s [illegible]
[illegible] - look u/s into trib [illegible] entering xn 25 [illegible]

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

	LB	RB	
☐ BANK VEGETATION			☐ PHOTOGRAPH
Type	TX @ 2025 cont.	Cottonwood - cleared (PV @ 1 sq. / few)	
ROOT MAT	N/A	perennial	ineffective
CANOPY (HEIGHT, DENSITY)	< 6'	< 10'	
PERCENT OF BANK COVER	< 5%	< 5%	
APPROXIMATE AGE	< 5 yrs	< 10 yrs	

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
scattered dead brown : TX < 10%

☐ ARMORING POTENTIAL
low - lots of gravel + mud dropped over boulders

☐ VISUAL ESTIMATE OF D50 1" ☐ PHOTOGRAPH
D90 15' D10 silt / clay

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	talus	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~POINT BAR UNDER BRIDGE~~			☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		bar of gravel +4' on LB	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
single boulder bed entrenched chl (~10 ft) - min sinuous

☐ TRIBUTARIES NEARBY? possible trib 400' d/s on R ☐ PHOTOGRAPH
former main chl now drains f/ terrace 10-15' 50' d/s xn

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
y: 3' by silt drape TW: 105'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No d

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER
flotsam @ 3 ft [illegible]

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) plain bed mostly ☐ PHOTOGRAPH
boulder bar on RB + gravel bar on L
pools on L side of chl

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

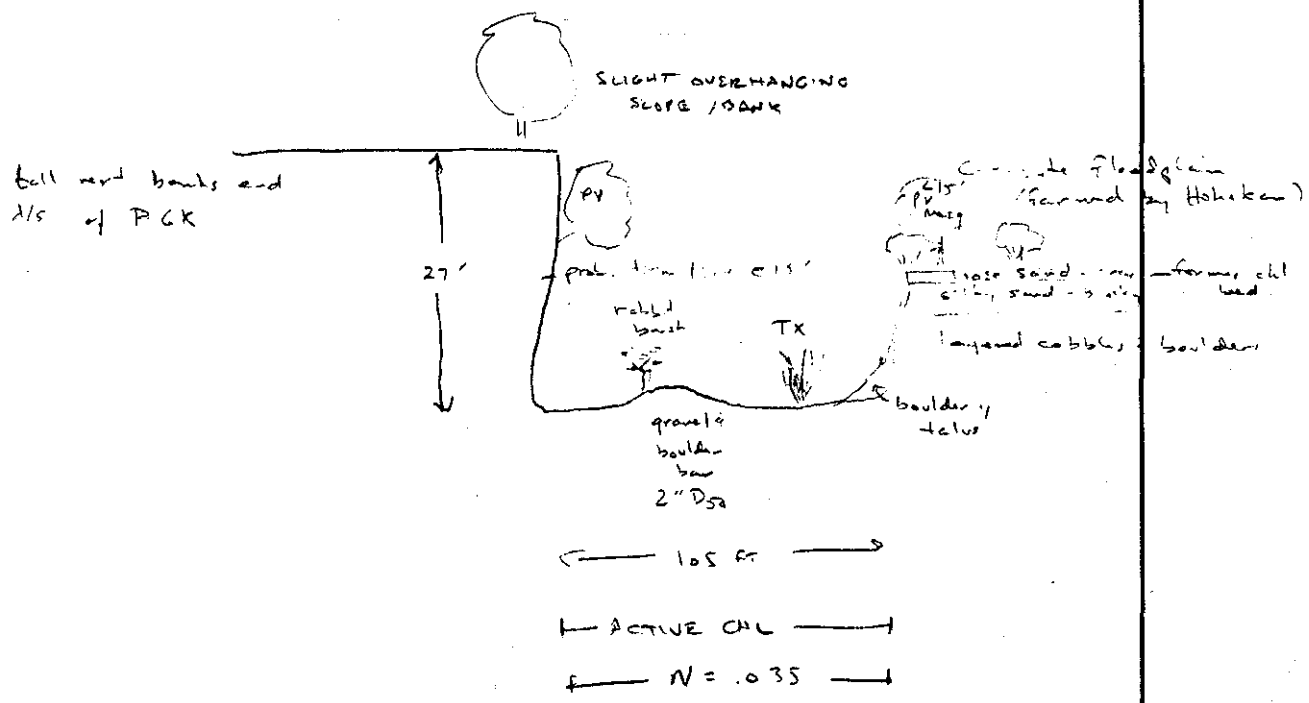
OBSTRUCT FLOW? No

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	yes (former main chl)	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)			☐ PHOTOGRAPH
HEADCUTS	No within 500'	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	"	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	yes ~10-12'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	D/S <500 historically	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
No (entrenchment)

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

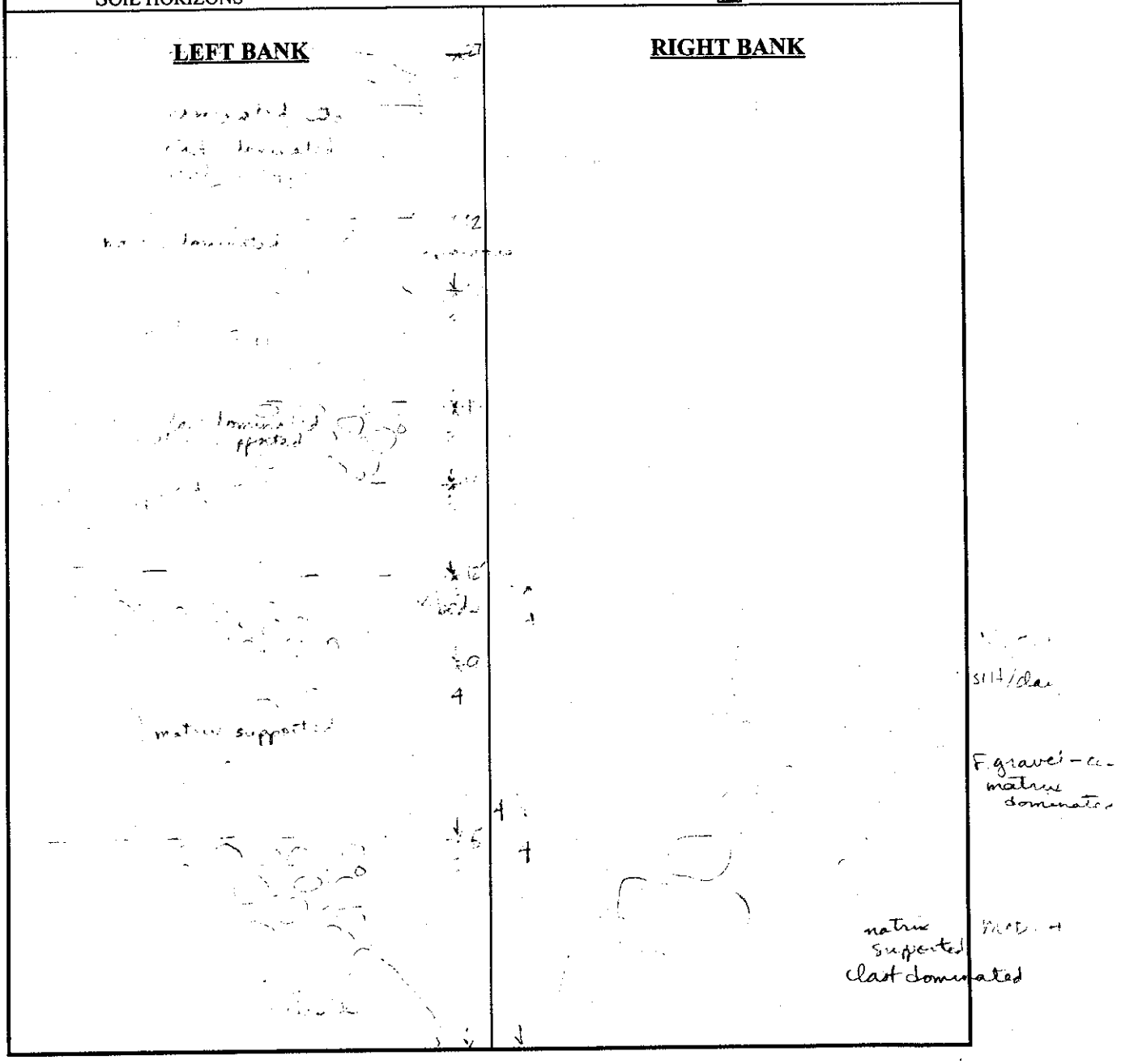
☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK

RIGHT BANK



Rock Boulder Count (near Site 14)

FROM (FT)	INT. AXIS (IN)		
0	1/8	40	3
5	1/2	[illegible]	11
10	1/2	[illegible]	0.5
[illegible]	[illegible]	[illegible]	[illegible]
20	1/2	80	1/2
25	[illegible]	85	1/2
30		90	1/2
[illegible]	1/2	95	0.5
40	1/2	100	1/2
45	[illegible]	105	1/2
50	[illegible]	110	2
[illegible]	1/2		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P - 5K [illegible] d/s [illegible] 2 animal [illegible]

DATE: 8/20/98

TIME: (BEGIN/END) 1 pm

FIELD CREW: JF, HS MVB

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Roll 11	
LOOKING DIRECTLY AT BANK	P13	
LOOKING UPSTREAM ALONG BANK	P15	
LOOKING DOWNSTREAM ALONG BANK	P14	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P17	
LOOKING UPSTREAM ALONG BANK	P19	
LOOKING DOWNSTREAM ALONG BANK	P18	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP		
BED MATERIAL - ENTIRE CHANNEL	P16 Look [illegible]	
NOTABLE FEATURES: (LIST)		
P20 - Scour hole @ $CaCO_3$ bound [illegible] failure of block	[illegible]	Note large [illegible]
P21 - look from perched chl d/s to Xing P-5K		
P22 - d/s of P-5K perched chl on R. [illegible]	[illegible]	10-12' drop to L

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — LB — RB — ☐ PHOTOGRAPH

	LB	RB
TYPE	Mesq + Tx	Mesq TX
ROOT MAT	[illegible]	perched
CANOPY (HEIGHT, DENSITY)	<10 ft	<15 ft
PERCENT OF BANK COVER	10% tree	20% tree <40% total
APPROXIMATE AGE	<10 yrs	<15 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

small Tx <4 ft 10%

☐ ARMORING POTENTIAL

possible silt + gravel drape over 1 ft cobbles

☐ VISUAL ESTIMATE OF D50 4" ☐ PHOTOGRAPH

D90 1' D10 1/4"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	Yes	Yes etc	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	Yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	Yes - v high	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	~~Yes~~ No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	Yes	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT ~~BAR UNDER BRIDGE~~		Yes [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS OR~~ BARS (UPSTREAM/DOWNSTREAM)			☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN — ☐ PHOTOGRAPH

→ [illegible] perched [illegible] described [illegible] P-4K

single channel, sinuous, entrenched

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

N/A due to entrenchment TW = 92 y = 1.5' by silt drape

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)

FLOTSAM — SLACKWATER — EROSION SCAR — TREE SCAR — GRUS LINE — OTHER

→ 5 ft → degradational u/s on LB

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

Boulder bar - imbricated - scour hole @ LB d/s 50' by [illegible] knob protruding into ch

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW?

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

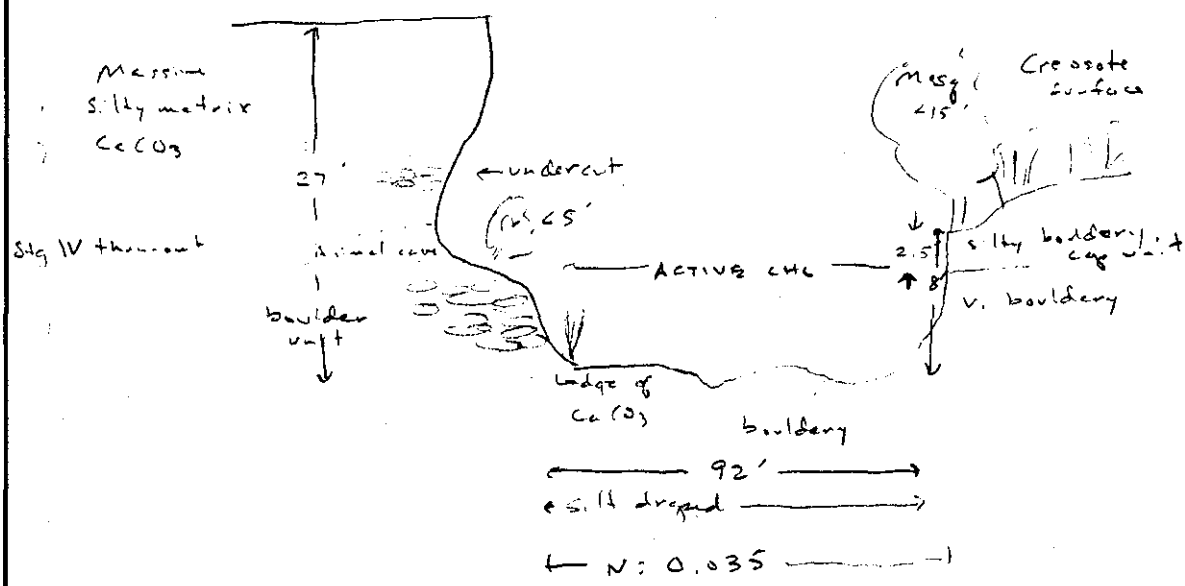
perched chl on R u/s 150'

HANGING TRIBUTARIES	N.	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	Yes. several on L	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)~~		☐ PHOTOGRAPH	
HEADCUTS	u/s & d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	→ defined by boulder riffle	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	Yes.	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	d/s 1000' ?	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☐ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY [illegible]	☐ PHOTOGRAPH
GRAIN SIZE [illegible]	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS [illegible]	☐ PHOTOGRAPH

LEFT BANK

Laminated CO_3

all CO_2 cemented well

[illegible]

[illegible] matrix cemented

[illegible] well cemented

matrix [illegible]

RIGHT BANK

9 ↑ 5

4 ↓ 4

[illegible] SOFT

4K 8-20-98

DIST FROM LB (FT)	INT AXIS (IN)		
0	9	30	2
3	1/4	33	4
6	1/2	36	s/c
9	1/4	39	5
12	4	42	11
15	1/2	45	s/c
18	9	48	14
21	s/c	51	10
24	"	54	s/c
27	s/c	57	veg

5K 8-20-98

DIST FROM RB (FT)	CLAST AXIS (IN)				
0	s/c	44	1/16	88	s/c
4	1.5	48	s/c	92	17
8	6	52	s/c		
12	6	56	3.5		
16	1/32	60	1		
20	1/4	64	3/4		
24	12.5	68	1/4		
28	6.5	72	8		
32	s/c	76	1/4		
36	s/c	80	s/c		
40	s/c	84	s/c		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-7k Near gravel pile in Rd 3

DATE: 12-21-98

TIME: (BEGIN/END) 10:20

FIELD CREW: JF & HS

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	1-4	
LOOKING UPSTREAM ALONG BANK	1-6	
LOOKING DOWNSTREAM ALONG BANK	1-5	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	Roll 1, 1	
LOOKING UPSTREAM ALONG BANK	1-3	
LOOKING DOWNSTREAM ALONG BANK	1-2	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	1-8	
BED MATERIAL - ENTIRE CHANNEL	1-7 (NOTE INSPECTION) L to R	
NOTABLE FEATURES: (LIST)		
@ entrench constriction to r.b. & dirt P1.7. Road on Lb d/s xn by 200' - cut off by 6-8' of INSPECTION	concentrating on Left side	& / or lateral movement
to builder storage d/s		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH Cam CL # 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION – vert. cut banks in both sides ☐ PHOTOGRAPH
mostly creosote, some mesquite

ROOT MAT – v. sparse, perched – some young TX & rabbit brush @ base of cuts

CANOPY (HEIGHT, DENSITY) < 7 ft (max) AVG: 4'

PERCENT OF BANK COVER 5%

APPROXIMATE AGE young

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
bursage, TX 15%

☐ ARMORING POTENTIAL
possible – xn is @ boulder riffle

☐ VISUAL ESTIMATE OF D50 = 4" ☐ PHOTOGRAPH
D90 3 FT ← imbricated D10 ½"
some gravels @ edge of thalweg

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

		LB	RB		
✓	CUT BANKS	12'	8'	☐ PHOTOGRAPH	☐ PLOT LOCATION
✓	VERTICAL BANKS	YES	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
	UNDERCUT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
	TENSION CRACKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
	EXPOSED ROOTS	minor	some	☐ PHOTOGRAPH	☐ PLOT LOCATION
	VEGETATION REMOVED FROM BANKS	Y	Y	☐ PHOTOGRAPH	☐ PLOT LOCATION
(none	VEGETATION TIPPED	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
	PILES OF DIRT AT BANKS	YES, small cobbles	small	☐ PHOTOGRAPH	☐ PLOT LOCATION
	POINT BAR UNDER BRIDGE	N/A	N/A	☐ PHOTOGRAPH	☐ PLOT LOCATION
	PIPING	(minor) ← YES in silt cap	→	☐ PHOTOGRAPH	☐ PLOT LOCATION
	RILLING OF BANKS	(minor) YES in cap	(too steep)	☐ PHOTOGRAPH	☐ PLOT LOCATION
	ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	YES thalweg is sinuous		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
↳ straight braided, thalweg is sinuous in incised ch'l

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
NO

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No flow Roscoe BF: ½' TW ≈ 90'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
ACTIVE F/C (cutbank to cutbank = 141')

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
recent flotsam @ 1-2', light flotsam on LB terrace ≈8'

TYPE AND STAGE (FEET)

FLOTSAM	SLACKWATER	EROSION SCAR	TREE SCAR	GRUS LINE	OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

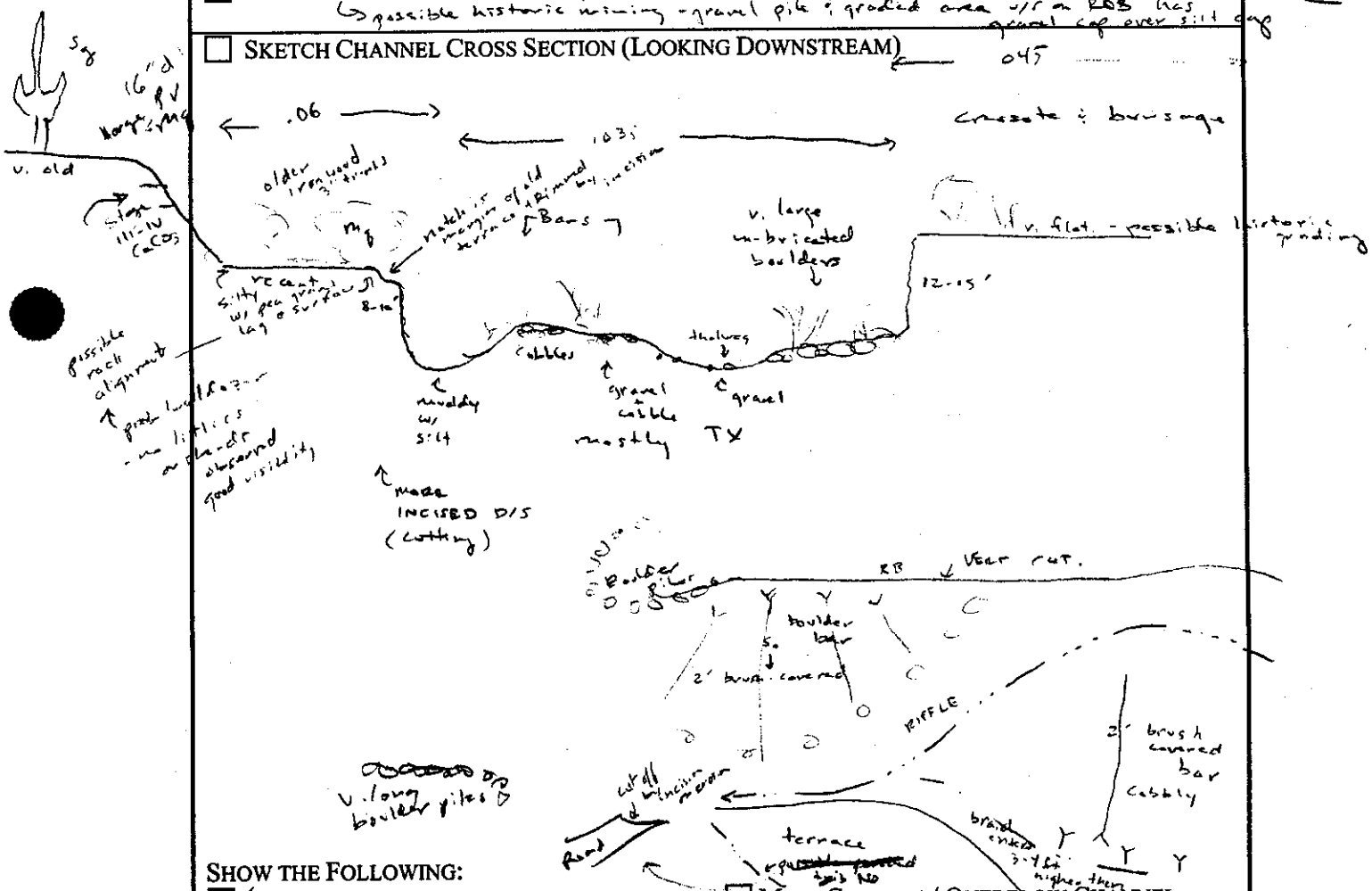
BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) stage break d/s ☐ PHOTOGRAPH
NONE – Riffle armored?

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
longitudinal bars, v. large point bars

☐ FENCES (PLOT LOCATION, PHOTO) No	☐ PHOTOGRAPH
OBSTRUCT FLOW? —	
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)	
HANGING TRIBUTARIES - u/s near P-6k	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES LB- perched, abandoned	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) VERTICAL ON BOTH	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) N/A	☐ PHOTOGRAPH
HEADCUTS - NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS YES d/s & u/s	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION PROBABLY	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) 5000'	☐ PHOTOGRAPH ☐ PLOT LOCATION
☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) ↳ possible historic mining - gravel pile & graded area u/s on ROB has gravel cap over silt cap	PHOTO

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) ← 045



SHOW THE FOLLOWING:

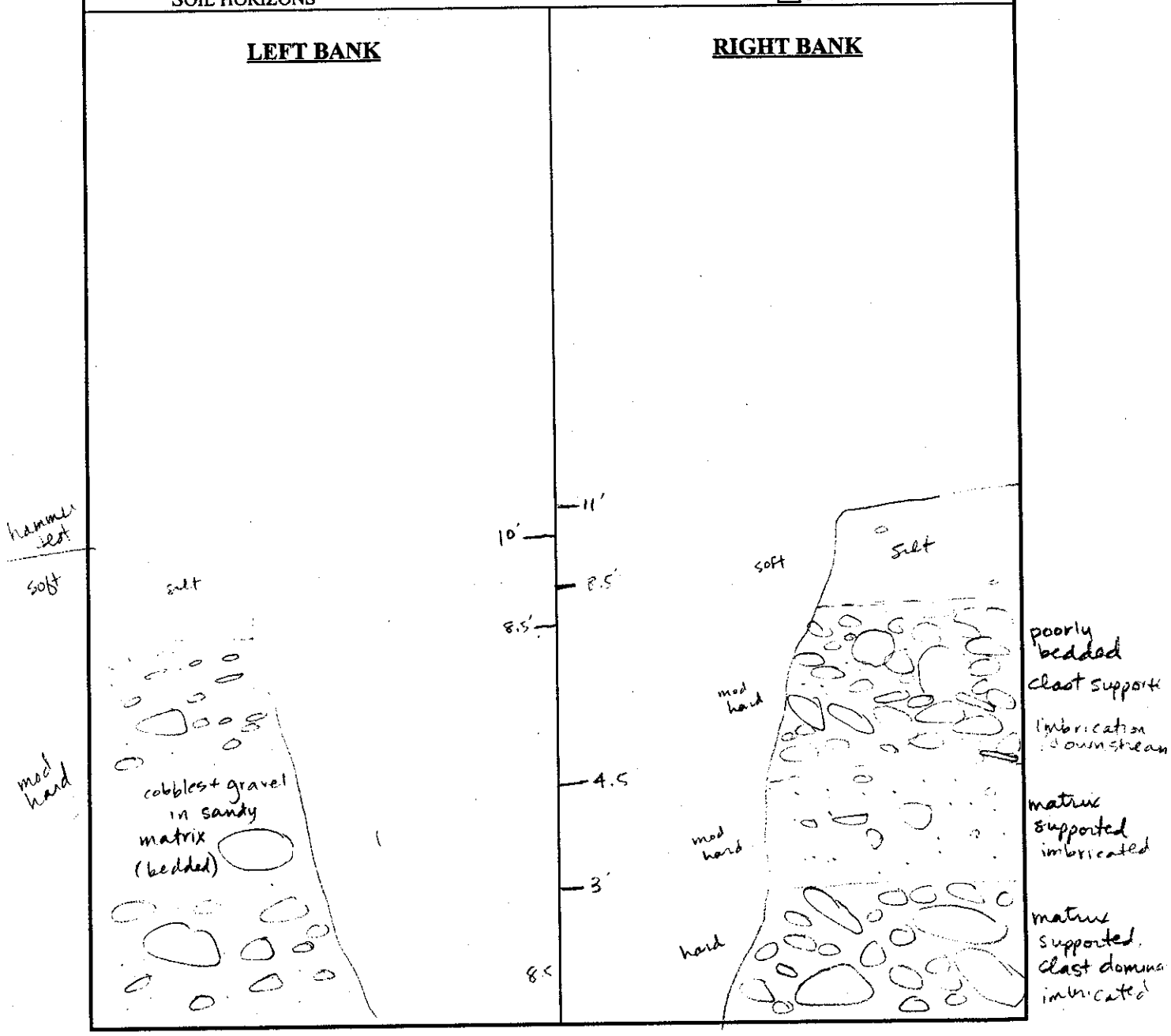
- ☐ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☐ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

3. BANK PROFILE

☑ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



P-7K Boulder Count 12/21/98

Distance (From Rt Bank)	Grain Size (in)				
0'	1/2	50	1/8	102	1.0
4	silt	54	3/4	106	1/8
8	silt	58	1.5	110	1.0
12	3/16	62	1/8	114	1/8
16	3.5	66	1/16	118	1/8
20	6.5	70	1/16	122	1/8
24	4	74	1/16	126	2
28	1/2	78	1.5	130	1/2
32	2.5	82	1/16	134	silt
36	1/4	86	1/4	138	silt
40	1/4	90	2.5	142	silt
42	1/4	94	6.5		
46	1/8	98	2.5		

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-8K - in reach of huge boulder piles on LB

DATE: 12-21

TIME: (BEGIN/END) 11 25

FIELD CREW: JF + HS

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
~~LEFT~~ RIGHT BANK (SURVEY ROD FOR SCALE)	GRADED BANK	P15 NATURAL BANK - 20'
LOOKING DIRECTLY AT BANK	1-15	1-18
LOOKING UPSTREAM ALONG BANK	1-16	1-19
LOOKING DOWNSTREAM ALONG BANK	1-17	1-20
LEFT BANK BLOW COUNT		
~~RIGHT~~ LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	P-21	
LOOKING UPSTREAM ALONG BANK	P-22	
LOOKING DOWNSTREAM ALONG BANK	P-23	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	1-12	
BED MATERIAL - ENTIRE CHANNEL	~~1-9~~ 1-11 (blimp)	

Switched

not hard to hard

NOTABLE FEATURES: (LIST)

Boulder piles on LB - huge!

Wierdo sandy island - CHECK OUT BANK LOCATION ON OLD PHOTOS - WAS SAGUARO ON ISLAND OR BANK? P1-9, 14

2 healthy 6" trunk ~~6" cottonwoods~~ 20' tall in the LB boulder graveler P1-10 - no leaves @ base - swept away?

P1-13 - exposed root on base of PV on RB 50' d/s of xs

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

left bank boulders in place long enough for 2-20' cottonwoods to grow

prob. modified by gravel mining

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

	LB	RB	
☐ BANK VEGETATION	NONE - all boulders	v limited, gravel	☐ PHOTOGRAPH
ROOT MAT	v. sparse; perched →		
CANOPY (HEIGHT, DENSITY)	~~[illegible]~~	< 6 ft, mostly brush 3' or less	
PERCENT OF BANK COVER		10%	
APPROXIMATE AGE		young - annuals	

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

TX, creosote, sage, brush (< 6') 15-20%

☐ ARMORING POTENTIAL

Not armored - scattered & frequent boulders

☐ VISUAL ESTIMATE OF D50 - 4' ☐ PHOTOGRAPH

D90 2' D10 gravel

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	Buried	Yes dis No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	(Cont. see)	" "	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS		Yes elsewhere!	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS		Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED		No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS		No - clean	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE		—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING		N.O.	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS		N.O.	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		mid chl	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN multiple chl thru boulders from LB to RB - see sketch BRAIDED, SLIGHTLY SINUOUS ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

large trib to E - see sketch joins > 100 ft dis

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

N/A - multiples chl between more confined reaches

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

flotsam on bars in braids + 3 ft

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUB LINE~~ OTHER

→ human debris mostly, lots junk

☐ DEPTH TO BEDROCK (FT., ~~UNKNOWN~~)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

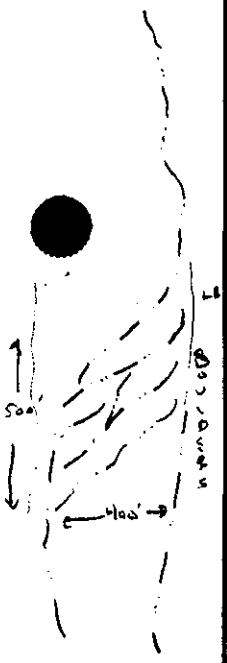
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

Bars



☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

NONE IN CHL – 3 strand BW parallels trib to R

Analogy to Aquatic / Paradise

OBSTRUCT FLOW?

No

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH) / heavy, uniform gravel bed & distinct gravel overbank deposits like P, Pt

trib to east is not degraded

RB 11 [illegible] v. cut/[illegible]

P xn: [illegible]

HANGING TRIBUTARIES No ☐ PHOTOGRAPH ☐ PLOT LOCATION

STREAM TERRACES R & L – blocked by mining ☐ PHOTOGRAPH ☐ PLOT LOCATION

OVERSTEEPENED BANKS (SIDE SLOPE) R – L buried ☐ PHOTOGRAPH ☐ PLOT LOCATION

BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) N/A ☐ PHOTOGRAPH

HEADCUTS No ☐ PHOTOGRAPH ☐ PLOT LOCATION

SLOPE BREAKS in braid riffle L to R ☐ PHOTOGRAPH ☐ PLOT LOCATION

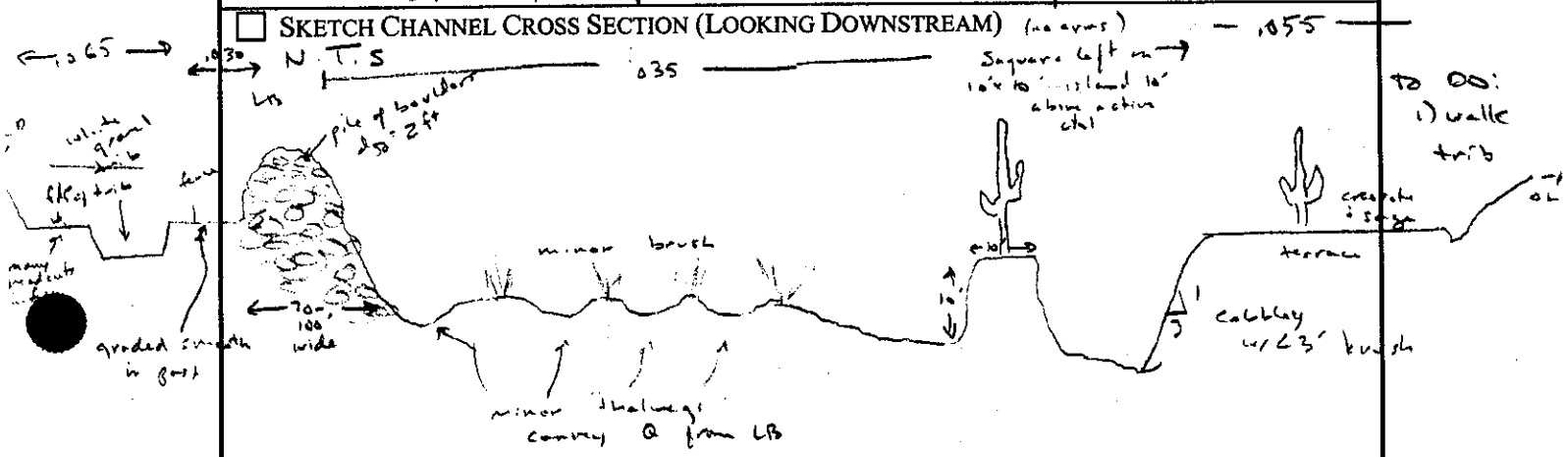
RECENT INCISION No ☐ PHOTOGRAPH

GRAVEL MINING (DISTANCE, EXTENT) historic ~~now~~ yes ~1000 ft ds ☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

↳ much gradiday & material excavation of chl & bath overbank

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) (no exag)



SHOW THE FOLLOWING:

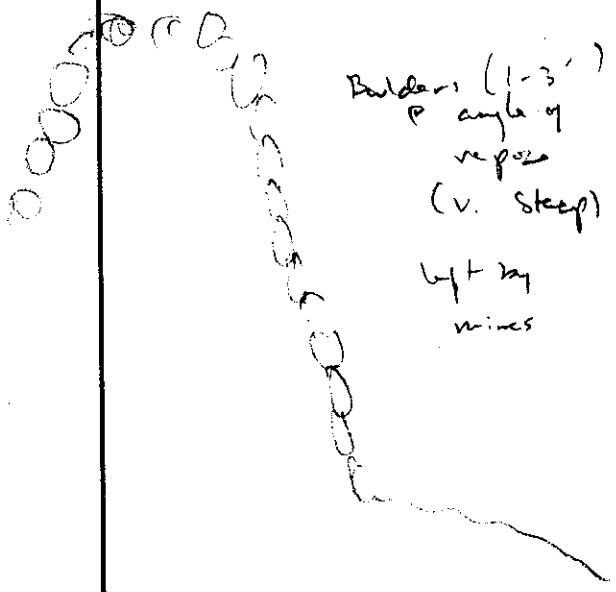
☐ VEGETATION
☐ MANNING'S N VALUES
☐ BARS
☐ FLOODPLAIN/ TERRACES
☐ MAIN CHANNEL/ OVERFLOW CHANNEL
☐ ACTIVE CHANNEL LIMITS
☐ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

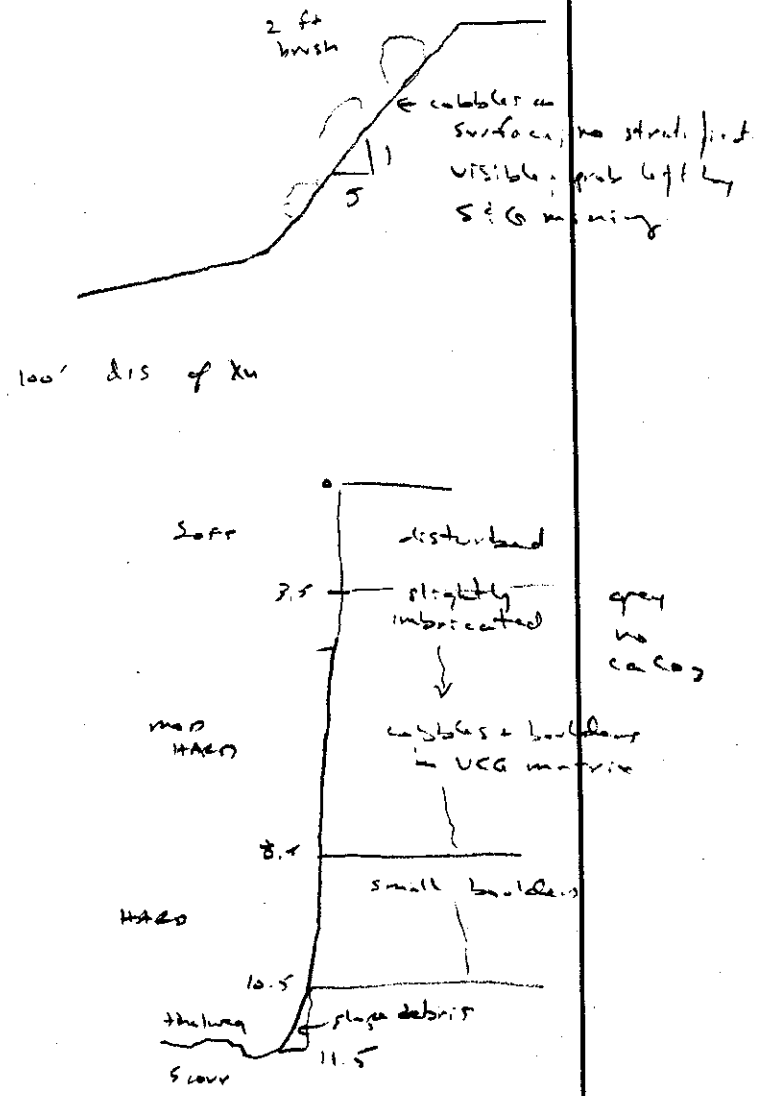
✓ STRATIGRAPHY	☐ PHOTOGRAPH
✓ GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
✓ CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE No	☐ PHOTOGRAPH
SOIL HORIZONS No	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK

AT SECTION



FIELD GEOMORPHOLOGY/ - CHANNEL CHARACTERISTICS #: P-8K DATE: 12/21/98 INITIALS: HDS

DIST FROM LEFT BANK	Grain Size (in)
0'	1/2
15'	9.0
30	2.0
45	silt
60	1/16
75	silt
90	silt
105	1/4
120	7
135	1/2
150	1.5
165	3
180	4
195	1
210	silt
225	5
240	1/16
255	3/4
270	3.5
285	4
300	2
315	2
330	1/4
345	1/4
360	2
375	silt
390	silt
405	1/8
420	1/16
435	1/16
450	1/16
465	silt

473' across

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: near d/s end of boulder pile
P-9K

DATE: 1:21

TIME: (BEGIN/END) 1:40

FIELD CREW: JF & HS

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-2	
LOOKING UPSTREAM ALONG BANK	2-3	
LOOKING DOWNSTREAM ALONG BANK	2-4	
LEFT BANK BLOW COUNT	N/A boulder pile	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-8	
LOOKING UPSTREAM ALONG BANK	2-9	
LOOKING DOWNSTREAM ALONG BANK	2-10	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS	2-7	
INTERMEDIATE BANKS ~~along~~ ch		
BED MATERIAL - CLOSE UP	2-5	
BED MATERIAL - ENTIRE CHANNEL	2-6	
NOTABLE FEATURES: (LIST)		

BEGIN ROLL #2

P1-24 look u/s along boulder bank (L)
P1-25 look d/s along " " (L)
2-1 - look x chl @ veg'n & tbl slightly d/s
2-11 - look d/s along RB where active ROW sweeps back into chl
2-12 - look d/s along chl - ROW 500' w of main chl & f/B
2-13,14 - old clay material (soil) @ grade break in chl - protected bank? - 240' d/s of P9K
weir't forever bank line

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — LB: obscured by bldr deposit — RB: ☐ PHOTOGRAPH

	LB	RB
ROOT MAT	N/A	perched or sparse @ toe
CANOPY (HEIGHT, DENSITY)	N/A	< 7 ft
PERCENT OF BANK COVER	N/A	varies locally > 50% – < 10%
APPROXIMATE AGE	N/A	< 10 yrs (> annuals tho)

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH — thalweg chl - clear

moderately dense TX + Rabbit brush, desert broom

☐ ARMORING POTENTIAL

Low – cobbles + gravel – sand near LB

☐ VISUAL ESTIMATE OF D50 ½" ☐ PHOTOGRAPH

ONLY MAIN CHL

D90 6" D10 CG

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	– RB	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	– RB	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES – LB	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	YES – LB	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	YES – LB	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	YES – LB	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	N/A	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	see sketch	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN sinous thalweg w/in incised chl ☐ PHOTOGRAPH

braided @ high flow

☐ TRIBUTARIES NEARBY? to E large trib - joins d/s ☐ PHOTOGRAPH

distributary chls leaving between P-8K + P-9K

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

on ROB terrace above active f/p

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUB LINE~~ OTHER

→ some possible on top of boulder bank (@)

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? NO ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) NO ☐ PHOTOGRAPH

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

Bars – point + longitudinal

☐ FENCES (PLOT LOCATION, PHOTO) No. ☐ PHOTOGRAPH
(3 strand BW on trib to E)

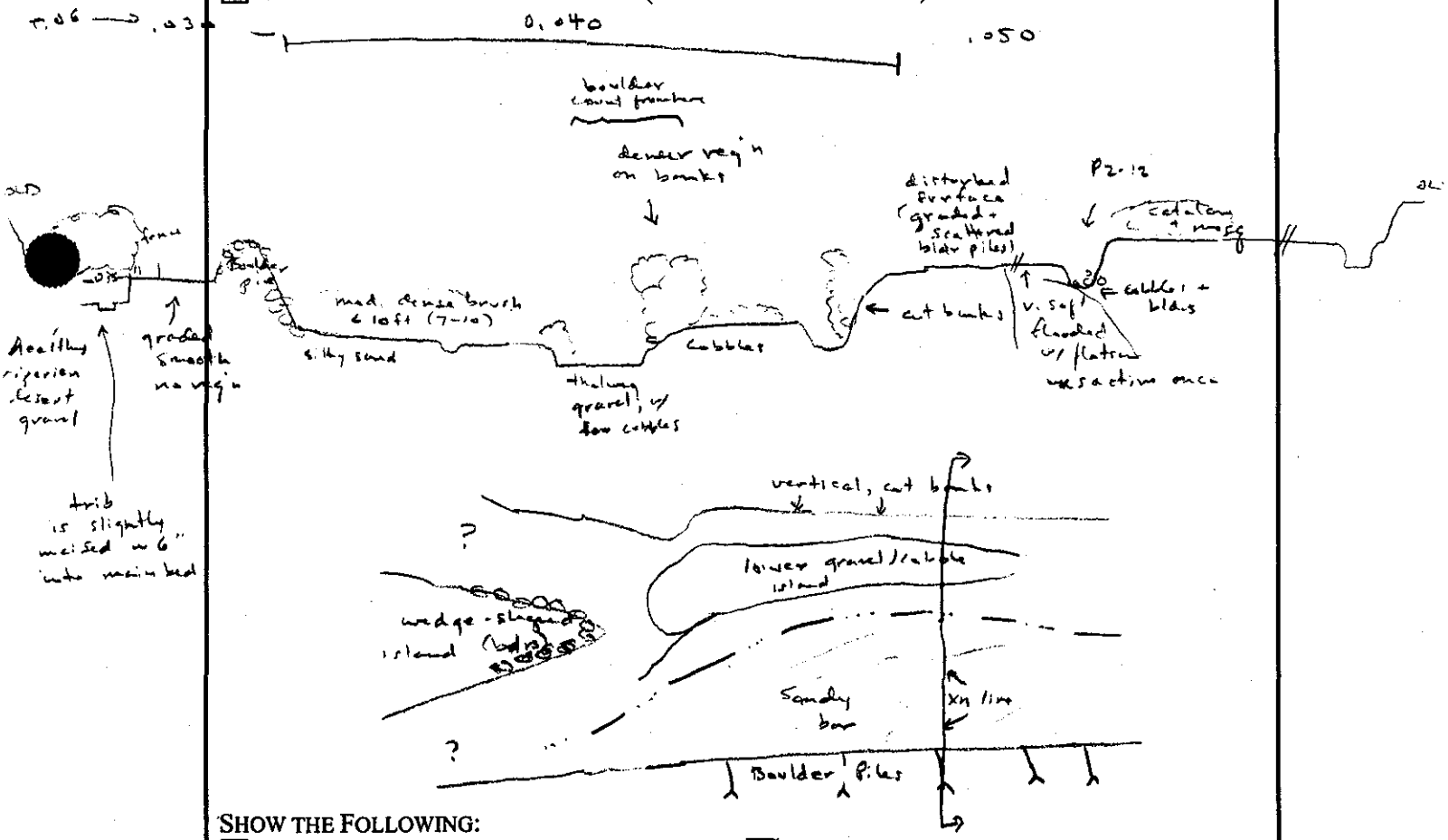
OBSTRUCT FLOW? No.

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH) – bb observed by boulder pile

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES – mid chl d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	2.5 yer	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	— N/A		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No (v. minor)	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	probable		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	> 1000 ft d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
→ Historic mining, grading, possible cut w/b chl u/s on R

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

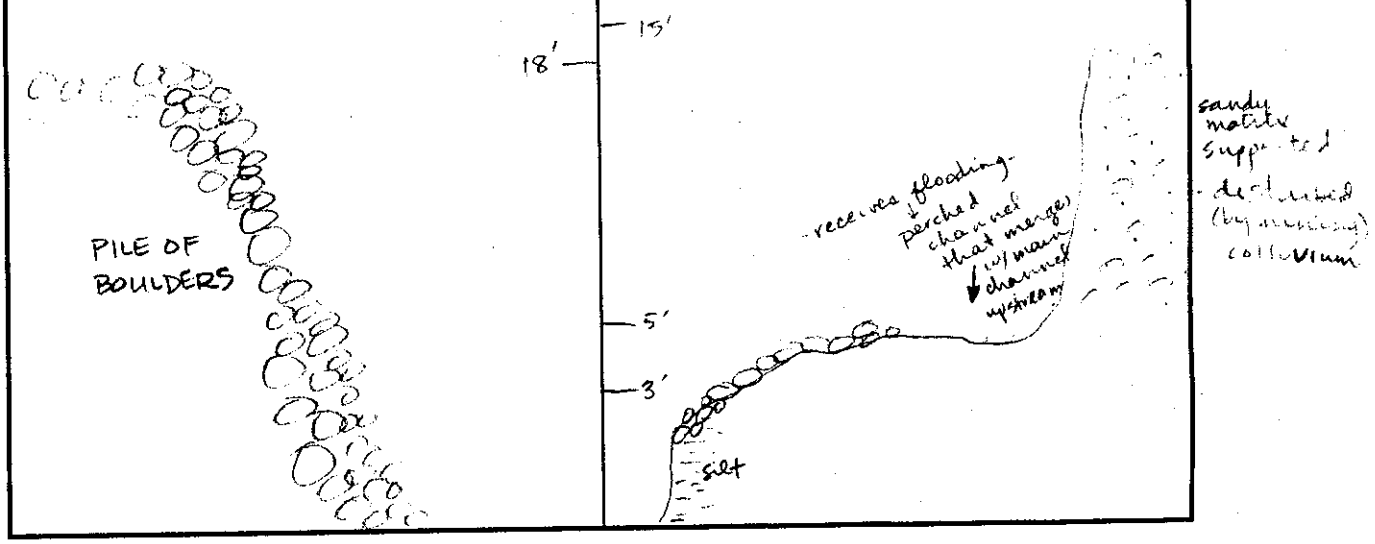
- ☑ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS none	☐ PHOTOGRAPH

LEFT BANK | **RIGHT BANK**



P - 9K

DIST FROM LFT BANK	GRAIN SIZE (IN)
0'	1.5
3	1/4
6	1/2
9	4.5
12	silt
15	silt
18	1.0
21	1/16
24	2.5
27	1/2
30	silt
33	silt
36	silt + clay
39	silt
42	silt + clay
45	"
48	"
51	"
54	1/16
57	silt
60	silt

#: P-9K DATE: 12/21/98 INITIALS: WDG

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: JUST U/S OF TRIB CONFLUENCE
P-10K -

DATE: 12-21

TIME: (BEGIN/END) 4 pm

FIELD CREW: JF & HS

RECORDS CHECK BY: (NAME, DATE) 8/26/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-18	
LOOKING UPSTREAM ALONG BANK	2-19	
LOOKING DOWNSTREAM ALONG BANK	2-20	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-15	
LOOKING UPSTREAM ALONG BANK	2-17	
LOOKING DOWNSTREAM ALONG BANK	2-16	
RIGHT BANK BLOW COUNT	Soft @ top ; Mod hard @ base	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	2-21	
BED MATERIAL - ENTIRE CHANNEL	2-22	
NOTABLE FEATURES: (LIST)		

TRIB MOUTH - INCISED AT LEAST 10 FT
ISLAND - ROCK ALIGNMENTS & PETIFACT
PERCHED, ABANDONED CHL ON W SIDE ISLAND

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH ~~STRIP~~ 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION ☐ PHOTOGRAPH
v. minor - perched above cut banks & in talus @ base of slope

ROOT MAT perched - sparse
CANOPY (HEIGHT, DENSITY) ~4 FT closed
PERCENT OF BANK COVER 15%
APPROXIMATE AGE <10 yrs
(some dead PV stumps on banks of island R + L w/ exposed roots)

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
10% TX & Brom

☐ ARMORING POTENTIAL
future maybe, not now; many bldrs thru

☐ VISUAL ESTIMATE OF D50 4" bimodal ☐ PHOTOGRAPH
D90 2' D10 gravel cg

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)
has boulder piles ← L R

CUT BANKS	~~YES~~ YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION

↳ big island due to avulsion change

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
Incised, straight to slightly sinuous - now distributary due to

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
Yes @ Xn (20' d/s) - 2 large from L (East) large fed load

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
Q=0 TW=74' y=1

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
—

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
flotsam on f/p of abandoned chnl

TYPE AND STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUB LINE~~ ~~OTHER~~

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR/PLAIN~~) ☐ PHOTOGRAPH
Riffler

☐ FENCES (PLOT LOCATION, PHOTO) N.O ☐ PHOTOGRAPH

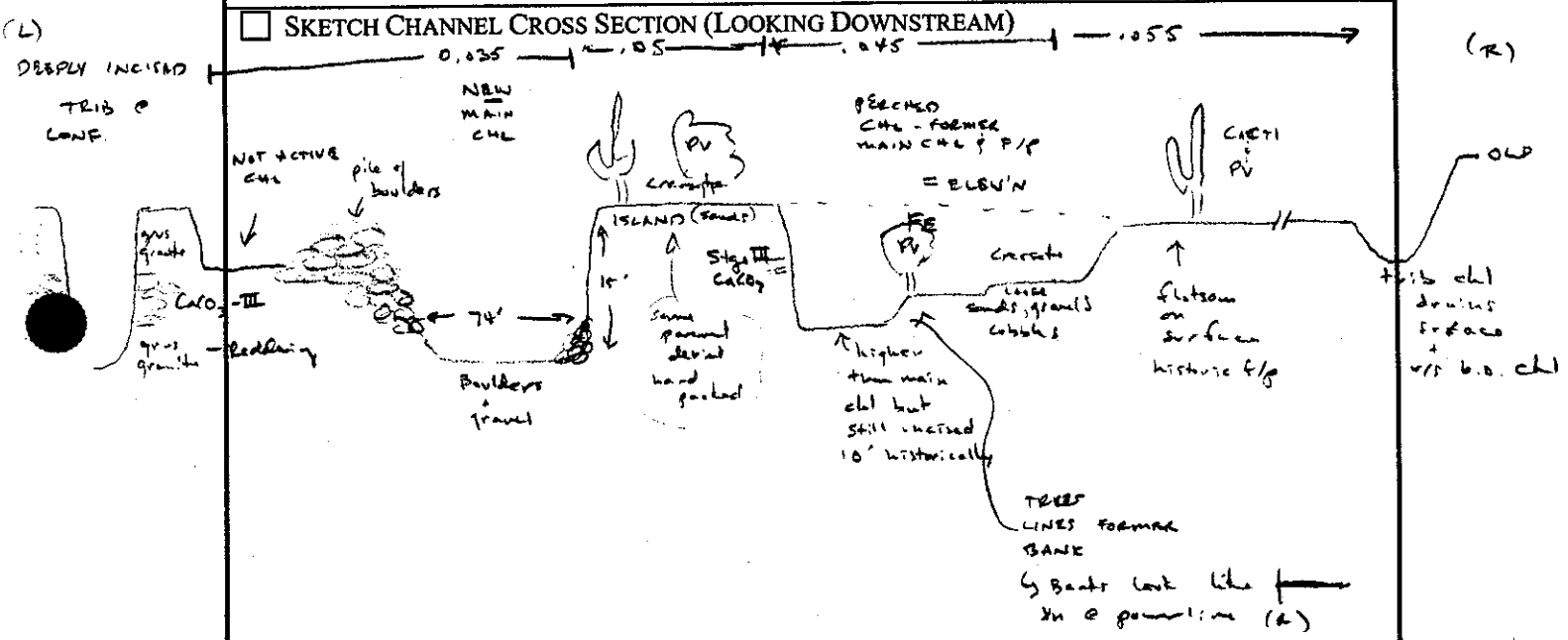
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES - multiple	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	YES. VERT	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	AT CLAY LINE? TRIBS	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	YES	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	> 100 FT ACTIVE	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
→ HISTORIC MINING REACH

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



ROUGH FOR A PLAN VIEW SEE BACK

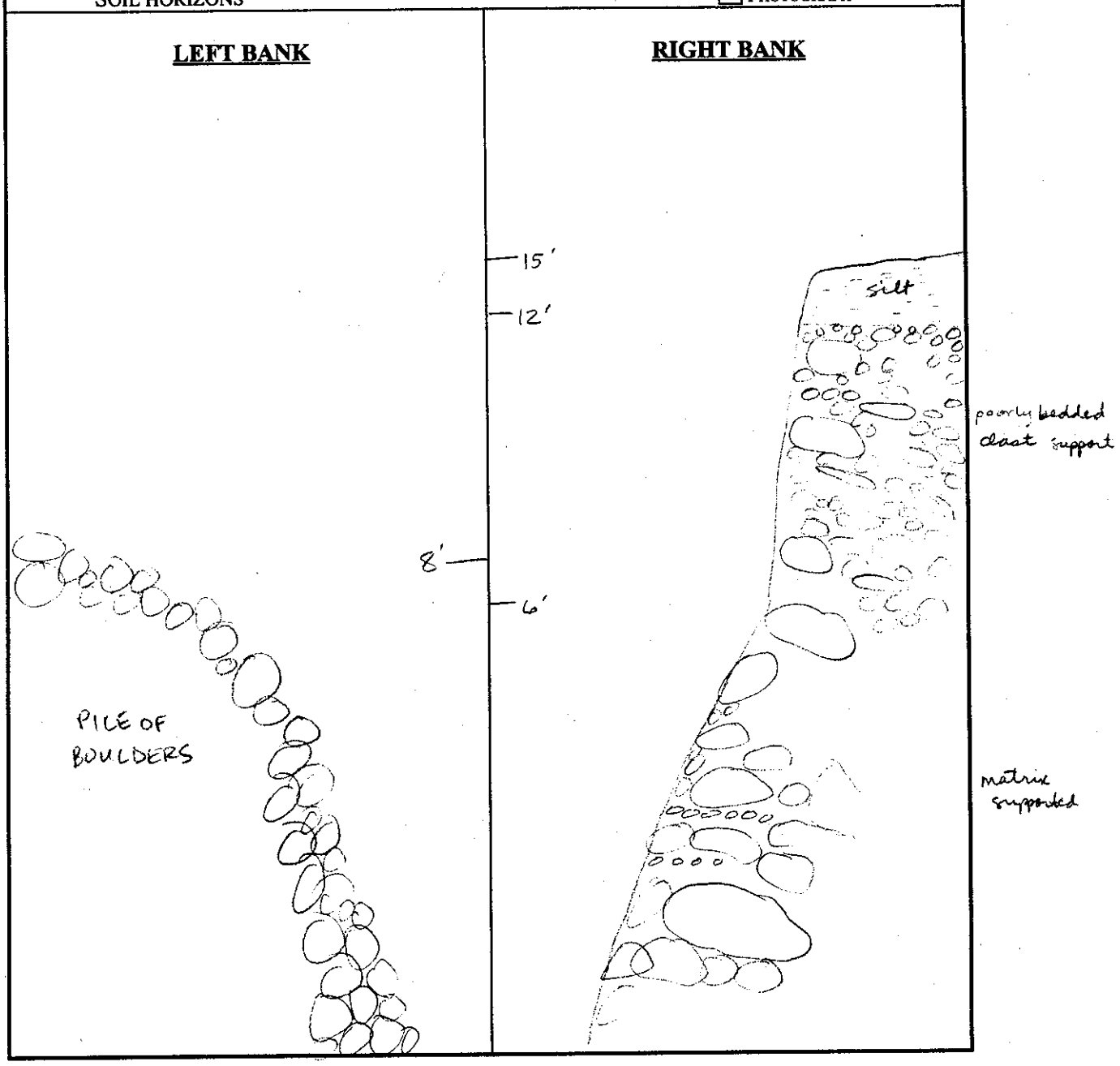
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS — MINOR
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT v. little	☐ PHOTOGRAPH
SOIL STRUCTURE "	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



P-10K

DIST FROM RT BANK (FT)	GRAIN SIZE (IN)
0'	1
3'	7
6	14
9	9
12	1/8
15	4.5
18	3/4
21	1/4
24	silt
27	silt
30	1.5
33	1/32
36	1
39	1/16
42	1/16
45	1
48	1/2
51	1
54	1/16
57	1/2
60	1.5
63	2
66	10
69	1/16
72	1/2

74' across

#: P-10K DATE: 12/21/98 INITIALS: LHS

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-11K D/S of pit Rd Xing v/s Wheelan

DATE: 12-22-98

TIME: (BEGIN/END) 9 Am

FIELD CREW: JE + HS + NJCF

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

BEGIN ROLL 3

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-3	
LOOKING UPSTREAM ALONG BANK	3-4	
LOOKING DOWNSTREAM ALONG BANK	3-5	
LEFT BANK BLOW COUNT	v. hard stage III CaCO3 to mod hard locally	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-24	
LOOKING UPSTREAM ALONG BANK	3-1	
LOOKING DOWNSTREAM ALONG BANK	2-25	
RIGHT BANK BLOW COUNT	Soft to mod hard	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	3-6 left side near LB	
BED MATERIAL - ENTIRE CHANNEL	3-2	
NOTABLE FEATURES: (LIST) Historically widened by mining?		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION - Mg, PV, TX ☐ PHOTOGRAPH

ROOT MAT	- perched, sparse	cut banks unveg'd
CANOPY (HEIGHT, DENSITY)	< 10 ft	small trees: lough e
PERCENT OF BANK COVER	5%	top & bottom of bank
APPROXIMATE AGE	< 5-10 yrs	

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) TX = 90% of veg ☐ PHOTOGRAPH
lots TX, more than u/s xns - 30-40% cover 8 ft thick

☐ ARMORING POTENTIAL
Low - more gravel than any u/s xn (trib load?)

☐ VISUAL ESTIMATE OF D50 - 1" ☐ PHOTOGRAPH
D90 2 ft D10 2"
boulders in gravel matrix - lag from degrad'n?

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT) also historic mining
↳ lots up to 25' e LB RB → places covered by dumped bldrs

CUT BANKS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	yes	N.O.	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	yes	N.O	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	yes	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—		☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	N.O	N.O	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	N.O	N.O	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Braided (strongly) - flow is expanding from constriction u/s - active chl fills entire entrenched xn ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? Yes - 2 u/s e P-10K ☐ PHOTOGRAPH
w/ large gravel load

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) → see Boulder Count ☐ PHOTOGRAPH
? < 1' 460'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUSLINE~~ OTHER
↳ 8+ ft on boulders e RB

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR/PLANE~~) ☐ PHOTOGRAPH
some small Amplitude dunes in gravels u/s
chl veg'n obscures bedforms

☐ FENCES (PLOT LOCATION, PHOTO) NO. ☐ PHOTOGRAPH

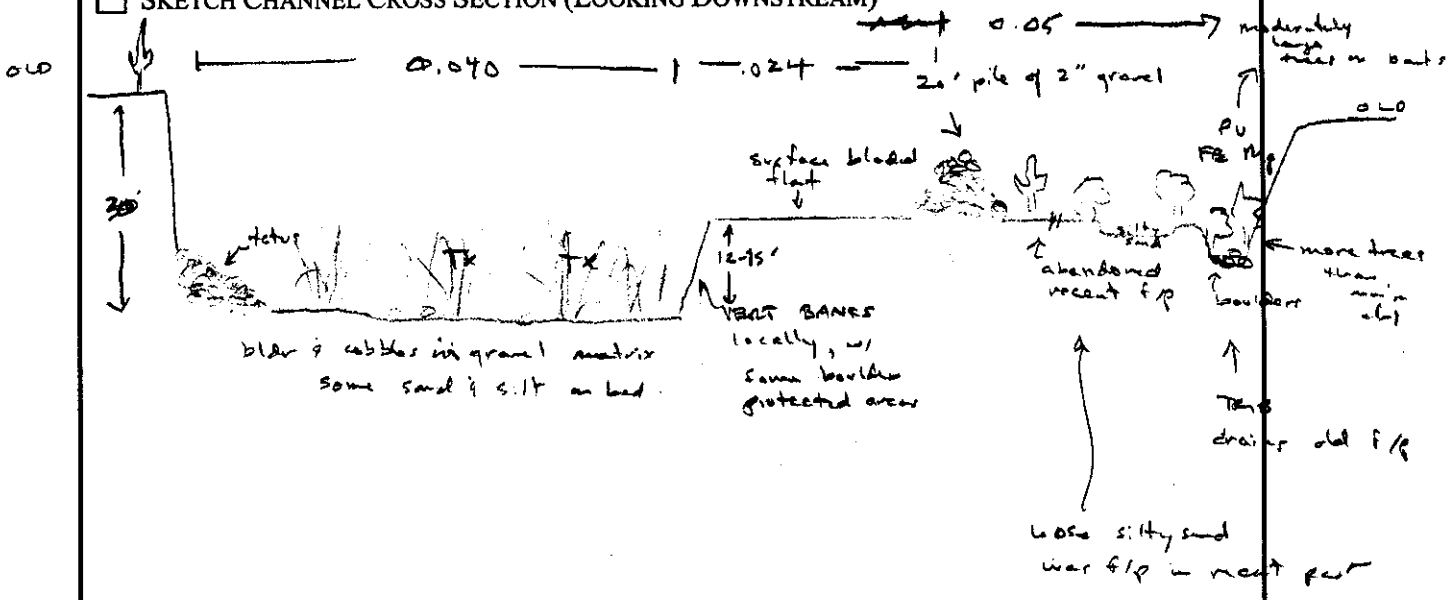
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)
Perched f/p in ROB o/l / behind gravel piles

HANGING TRIBUTARIES	v. small @ LB + 15'	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	– several	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	VERT	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	NO – flatter than u/s?	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	YES – ~~overhead~~ chl @ 6.5-7 ft u/s		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	>1000 ft d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
historic chl

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

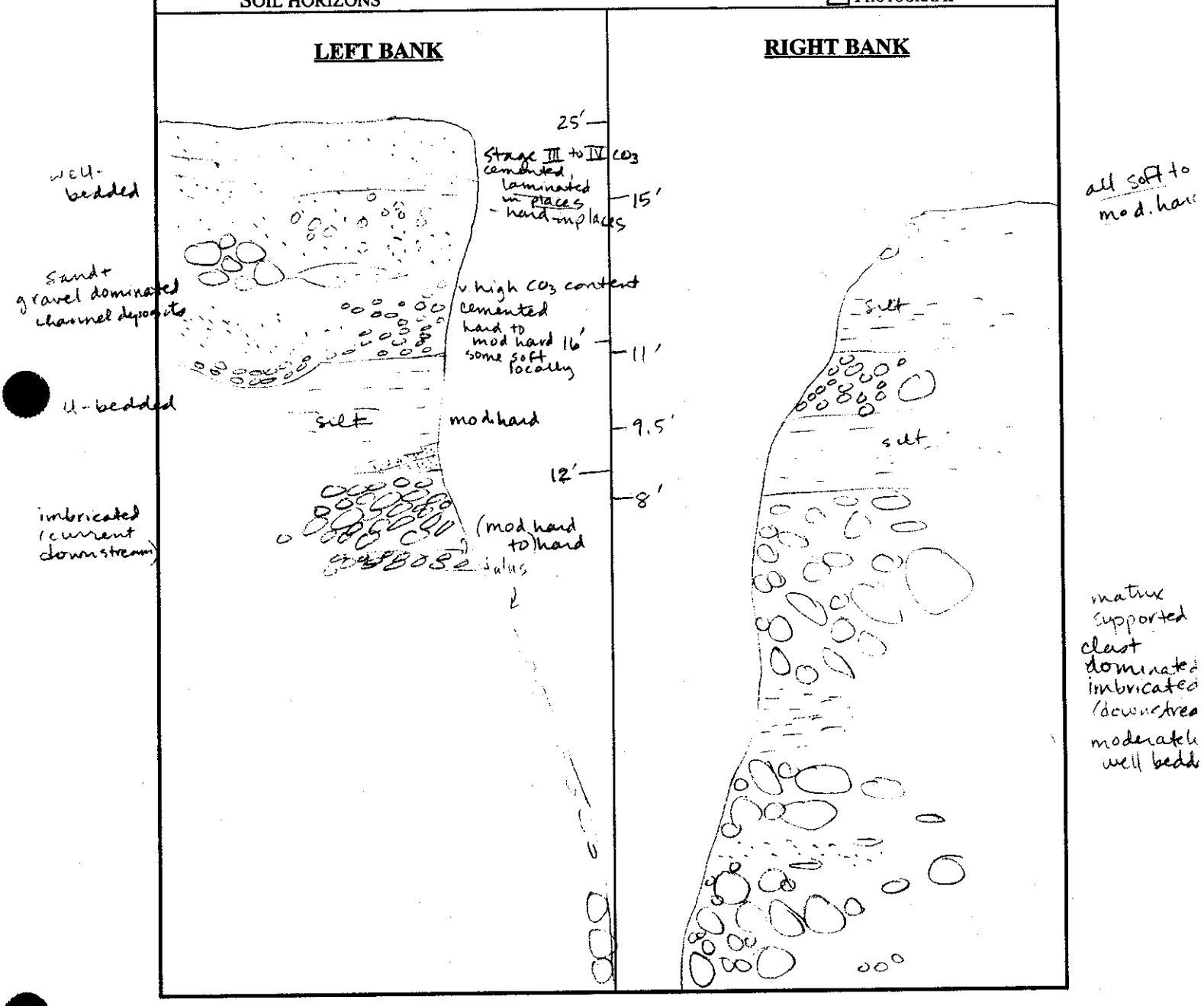
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



#: P-11K DATE: 12/22/98 INITIALS: [illegible]

DIST FROM LEFT BANK (FT)	GRAIN SIZE (IN)
0	silt
15	1/8
30	1/8
45	2.5
60	1/4
75	1/32
90	silt
105	1/8
120	1/2
135	1/32
150	1/8
165	silt
180	1/8
195	3/4
210	1
225	1/2
240	1/8
255	1/8
270	silt
285	"
300	1/8
315	2.5
330	silt
345	"
360	2
375	4
390	1/8
405	silt
420	1.5
435	1/2
450	silt + clay
465	"

464' across

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-12k u/s wheeler

DATE: 12-22-98

TIME: (BEGIN/END) 10:15

FIELD CREW: JF HS NJCF

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-7	
LOOKING UPSTREAM ALONG BANK	3-8	
LOOKING DOWNSTREAM ALONG BANK	3-9	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-10	
LOOKING UPSTREAM ALONG BANK	3-12	
LOOKING DOWNSTREAM ALONG BANK	3-11	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	3-14	
BED MATERIAL - ENTIRE CHANNEL	3-13	
NOTABLE FEATURES: (LIST)		
ch1 constriction		
35' high LB		
ROB - P3-13 - look L to R to West		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH SHEET 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION – sparse TX & rabbit brush ☐ PHOTOGRAPH

ROOT MAT mostly parched

CANOPY (HEIGHT, DENSITY) < 4 ft sparse

PERCENT OF BANK COVER L = 0 R = 15-20%

APPROXIMATE AGE Annuals

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
↳ sparse TX & rabbit brush

☐ ARMORING POTENTIAL
v. Low – sands & gravels w/ mod. gravel bar

☐ VISUAL ESTIMATE OF D50 1/4" ☐ PHOTOGRAPH
D90 2" D10 MS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	Yes	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	Yes	some	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	Yes	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	some	N.O.	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	a typ	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS		NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED		NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS		yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	YES	N.O	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION

clay layer c base

☐ CHANNEL PATTERN straight braided; ☐ PHOTOGRAPH
constricted w/d; historic mining disturbed alt

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
u/s of P-10K

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 1' 85'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
NO ch

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
Few flots on ROB

TYPE AND STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUG LINE~~ ~~OTHER~~

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS ~~(DUNES/RIPPLES/ARMOR/~~PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

OBSTRUCT FLOW? -

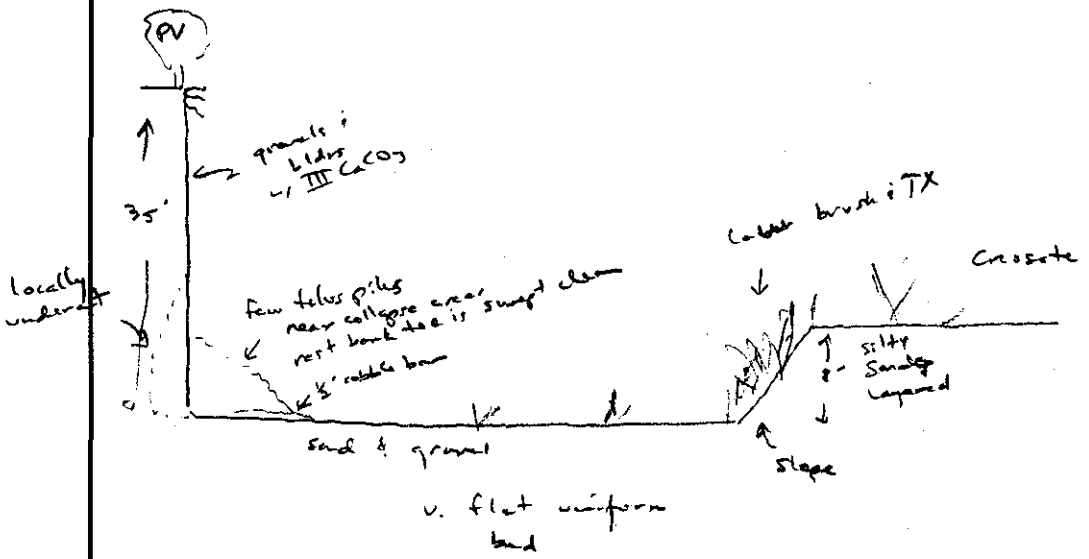
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

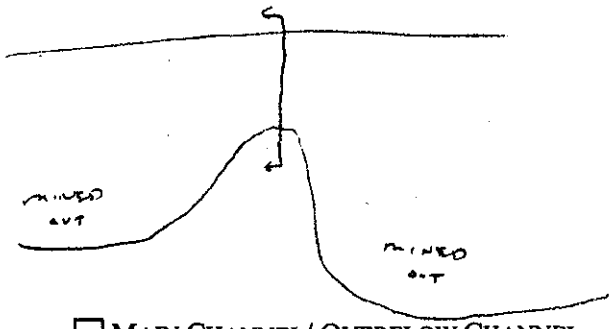
HANGING TRIBUTARIES	perched RoB f/p	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES in RoB	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	YES - L & R	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	N.O.	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	YES	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	d/s > 1000'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

HISTORIC MINING

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)





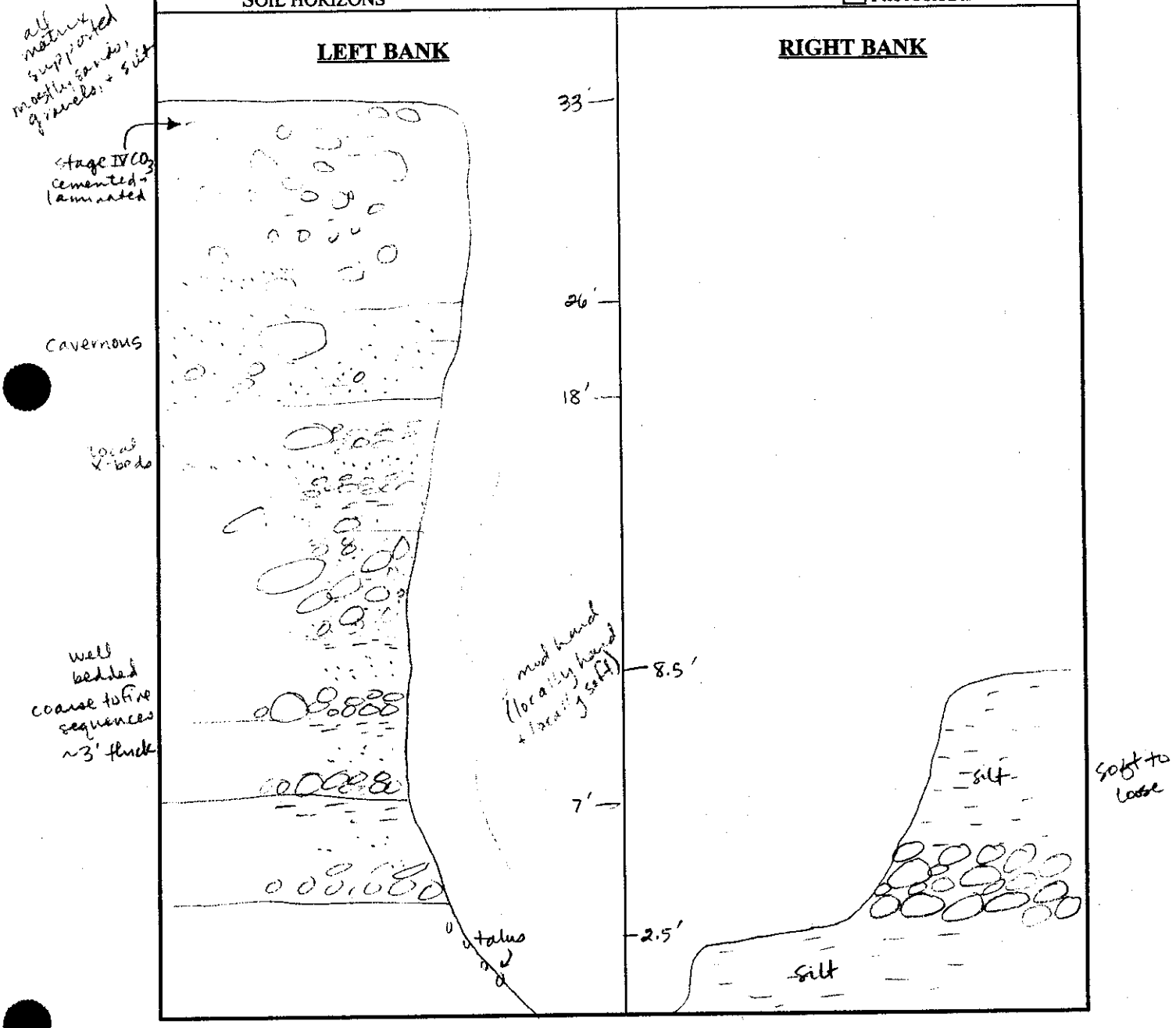
SHOW THE FOLLOWING:

- ☐ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☐ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING some	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



#: P-12K DATE: 12/22/98 INITIALS: HDS

DIST FROM LEFT BANK (FT)	GRAIN SIZE (IN)
0'	silt
4	1/2
8	1/8
12	1/4
16	1.5
20	1/8
24	1/2
28	silt
32	silt
36	1/8
40	1/2
44	1/8
48	1/16
52	1/8
56	1/8
60	1/8
64	1/16
68	1/8
72	1/16
76	1/32
80	silt

78' across

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: P-13K u/s Wheeler

DATE: 12-22-98

TIME: (BEGIN/END) 11 Am

FIELD CREW: JF, HS, NJCF

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: INCLUDE SCALE IN ALL PHOTOGRAPHS
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-15	
LOOKING UPSTREAM ALONG BANK	3-16	
LOOKING DOWNSTREAM ALONG BANK	3-17	
LEFT BANK BLOW COUNT	hard locally - mostly	med. hard
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-20	
LOOKING UPSTREAM ALONG BANK	3-21	
LOOKING DOWNSTREAM ALONG BANK	3-22	
RIGHT BANK BLOW COUNT	SOFT! - loose sand	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	3-18	
BED MATERIAL - ENTIRE CHANNEL	3-19	
NOTABLE FEATURES: (LIST)		

Wheeler gravel mine 500' d/s
grading for mine @ Xu in Bros
3-23 - look e w/s face of action pit
3-24 - look d/s e excavation
3-26 - mine
3-27 - d/s from trib e mine
3-28 [illegible]

(p. 3-25)

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH OFF SHEET 2 (NUMBER)
Not on Sheet 3

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION LB RB ☐ PHOTOGRAPH
35' VERT BANK - no veg ↩ ↳ 3:1 well veg'd bank

	LB	RB
ROOT MAT	perched some TX at base	mod. good
CANOPY (HEIGHT, DENSITY)	–	4-15 ft - tall Mg & top TX & brush along
PERCENT OF BANK COVER	< 5%	40-60 %
APPROXIMATE AGE	2 years	TX, Broom, Mg & Ve top

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) 12" diam 15' tall ☐ PHOTOGRAPH
↳ chl clear grass & marginal TX & brush 5%

☐ ARMORING POTENTIAL
v. Low - small cobbles 2"

☐ VISUAL ESTIMATE OF D50 1" ☐ PHOTOGRAPH
D90 4" D10 F.G

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	Yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	Yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	Yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	Yes	Some	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ye than P-12K ← PILES OF DIRT AT BANKS	Yes	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	–	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	N.O.	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	N.O.		☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Straight, single chl - weakly braided ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
– ½' 64'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER
↳ +6ft

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS ~~(DUNES/RIPPLES/ARMOR/PLAIN)~~ ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

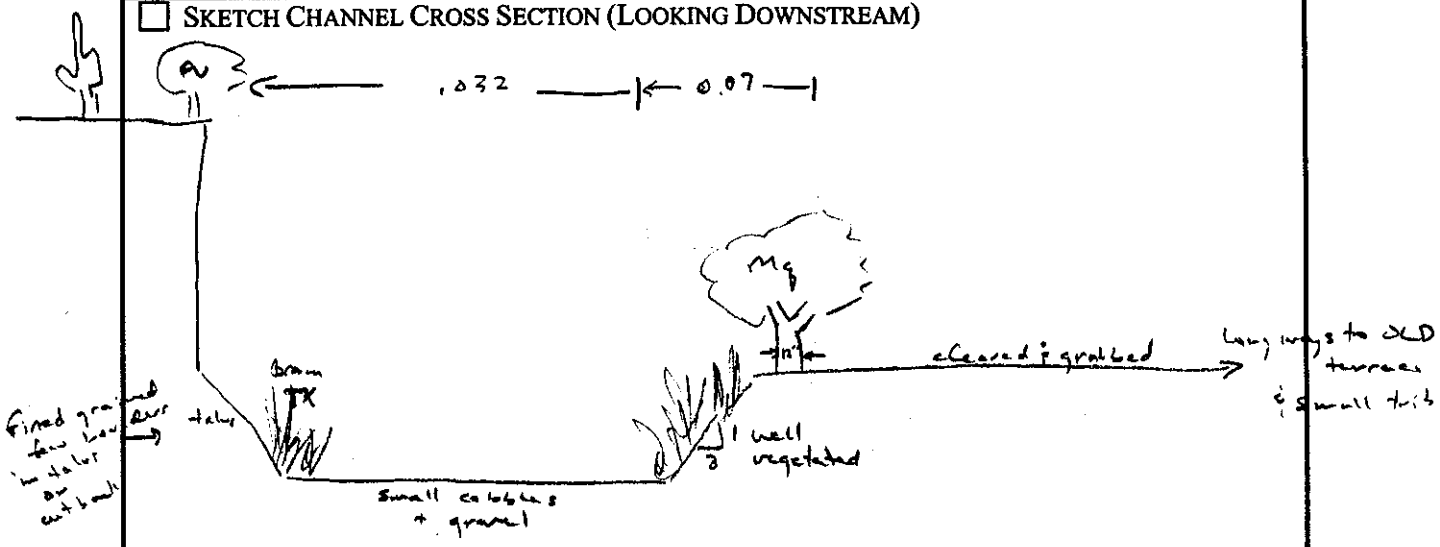
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No.	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	Yes RB	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes LB RBok	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	u/s boulder riffle	☐ PHOTOGRAPH	☐ PLOT LOCATION
* RECENT INCISION	Not really		☐ PHOTOGRAPH
Wheeler GRAVEL MINING (DISTANCE, EXTENT)	d/s ~1000'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
→ RB has been cleared & grubbed

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

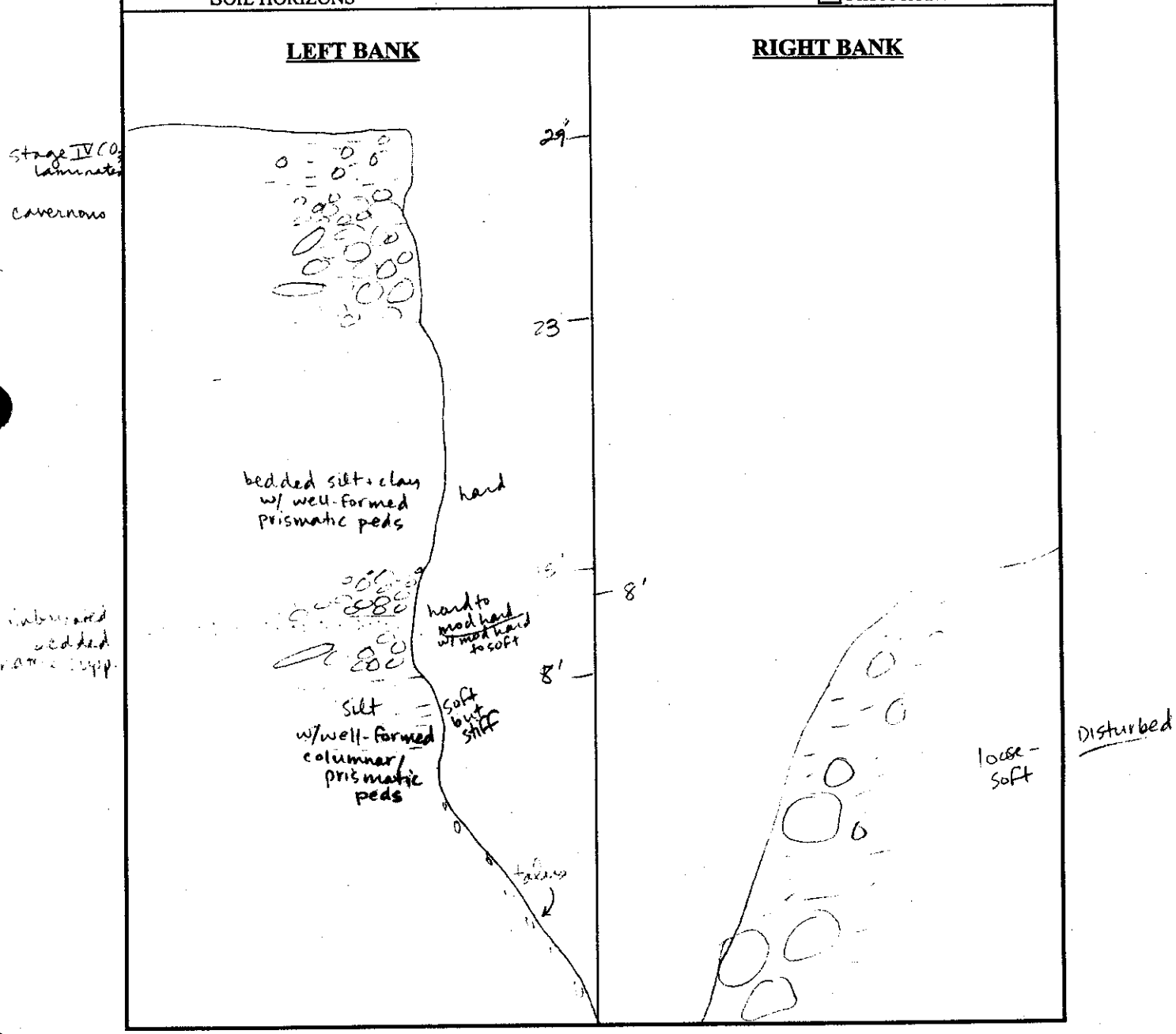
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



P-13K

DIST FROM LT. BANK (FT)	GRAIN SIZE (IN)
0'	2.5
3	1/4
6	1/16
9	silt
12	1/4
15	1
18	1.5
21	2
24	1/8
27	1/2
30	1/8
33	1/4
36	1/8
39	1/16
42	1/2
45	1
48	1/8
51	1/16
54	1/8
57	1/16
60	1/16
63	25
66	silt

66' across

FIELD GEOMORPHOLOGY/ - CHANNEL CHARACTERISTICS

#: P-13K DATE: 12/22/99 INITIALS: HOG

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: A - 1st xn d/s Wheeler Access Rd ~500	
DATE: 12-22-98	TIME: (BEGIN/END) 1:10
FIELD CREW: JF HS NJCF	
RECORDS CHECK BY: (NAME, DATE) 5/26/99 JRF	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO# & TIME)

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-29	
LOOKING UPSTREAM ALONG BANK	3-30	
LOOKING DOWNSTREAM ALONG BANK	3-31	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-32	
LOOKING UPSTREAM ALONG BANK	3-34	
LOOKING DOWNSTREAM ALONG BANK	3-33	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	3-36	
BED MATERIAL - ENTIRE CHANNEL	3-35	
NOTABLE FEATURES: (LIST)		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — LB: TX, Creosote, PV — RB: + some Mq, Sagwaro — ☐ PHOTOGRAPH

	LB	RB
ROOT MAT	weak	weak
CANOPY (HEIGHT, DENSITY)	< 7 ft	mostly < 7 ft, few > 10 ft trees
PERCENT OF BANK COVER	20%	20%
APPROXIMATE AGE	2-5 yrs	2-5 → > 20 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) — ☐ PHOTOGRAPH
TX and brush 10%

☐ ARMORING POTENTIAL
Probably armored; weakly imbricated boulders

☐ VISUAL ESTIMATE OF D50 = 6" — ☐ PHOTOGRAPH
D90 2' D10 2"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT) — good condition, sloped ~5:1, some veg in

	LB	RB		
CUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—		☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No		☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	boulder bars		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN — braided macroscale, straight chl microscale — ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No — ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) — ☐ PHOTOGRAPH
3-4' 32'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) — ☐ PHOTOGRAPH
No ⊘

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) — ☐ PHOTOGRAPH
debris rafts on mid chl trees

~~TYPE AND~~ STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No — ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No — ☐ PHOTOGRAPH

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/ARMOR/~~PLAIN~~) N.O bars — ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

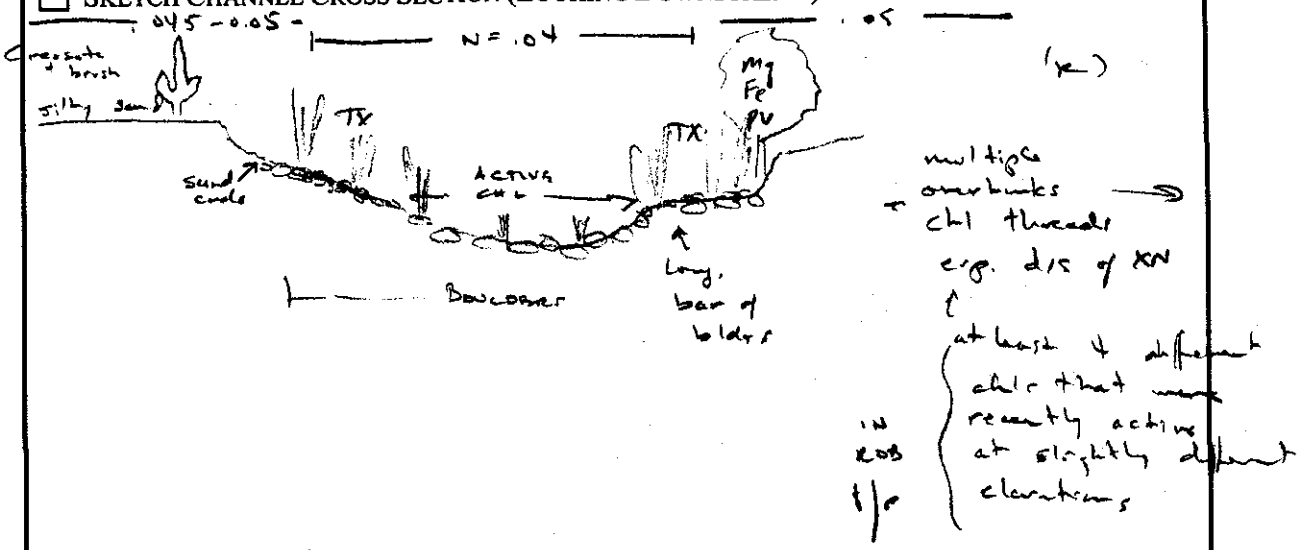
Bowlders occur higher than active chl bankfull indicating former chl bottom was once higher

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	Yes 3+ near chl	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	possible, but not necessarily	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	u/s 500' & in ROB	☒ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

just u/s is wheeler pits;

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



Case chl was naturally multiple chl in this reach pre-mining

SHOW THE FOLLOWING:

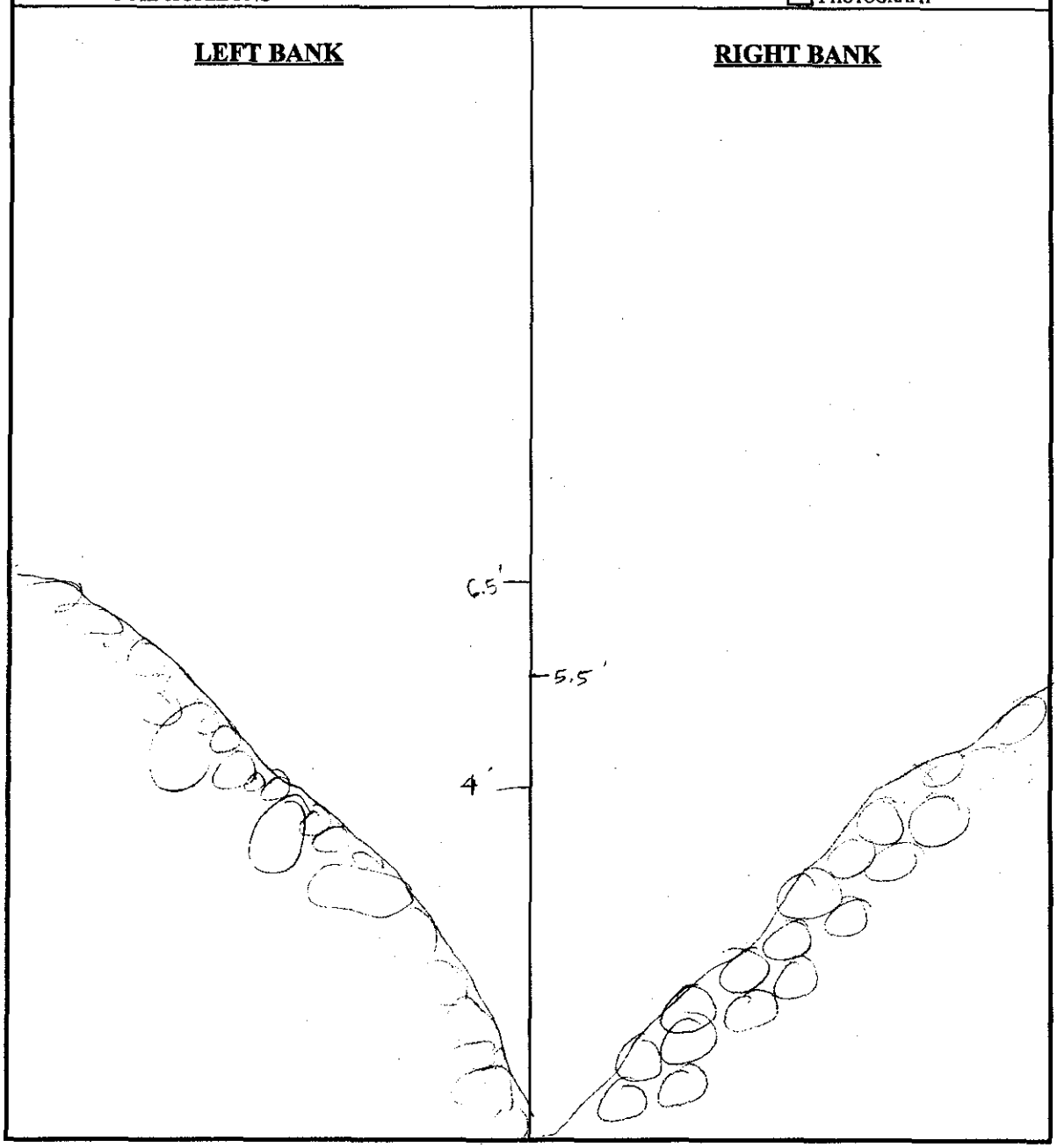
- ☒ VEGETATION
- ☒ MANNING'S N VALUES
- ☒ BARS
- ☒ FLOODPLAIN/ TERRACES
- ☒ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☒ ACTIVE CHANNEL LIMITS
- ☒ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE none	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



Banks lined in boulders

#: A DATE: 12/22/98 INITIALS: HOC

CHANNEL A DIST FROM RT BANK (FT)	GRAIN SIZE (IN)
0	5
1.5	1/2
3	15
4.5	5
6	6
7.5	1/16
9	1/16
10.5	5
12	20
13.5	2.5
15	1
16.5	1.5
18	1.5
19.5	1/4
21	1/4
22.5	1/8
24	2.5
25.5	1/8
27	silt
28.5	14
30	1/32
31.5	6

32' across

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: B - LEFT

DATE: 12-22-98

TIME: (BEGIN/END) 2 pm

FIELD CREW: JF HS NJCF

RECORDS CHECK BY: (NAME, DATE) 8/26/99 JM

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: INCLUDE SCALE IN ALL PHOTOGRAPHS
PLOT PHOTO LOCATION AND ASPECT ON TOPO

Begin Roll 4

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-1	
LOOKING UPSTREAM ALONG BANK	4-3	
LOOKING DOWNSTREAM ALONG BANK	4-2	
LEFT BANK BLOW COUNT	ext. hard base, soft silt	cage
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-4	
LOOKING UPSTREAM ALONG BANK	4-5	
LOOKING DOWNSTREAM ALONG BANK	4-6	
RIGHT BANK BLOW COUNT	N/A - soft sloping	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	4-7	
BED MATERIAL - ENTIRE CHANNEL	4-6	
NOTABLE FEATURES: (LIST)		
big gravel lobe deposits @ this meandr		
" " " " u/s this along RB - LB is bare.	distinct bank	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH SHEET 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION FE, PV, MG, TX & brush ☐ PHOTOGRAPH

	LB	RB
ROOT MAT	perched	pinks good
CANOPY (HEIGHT, DENSITY)	6' - patchy	6-15' dense, thick w/ some bare spots
PERCENT OF BANK COVER	10%	50+ %
APPROXIMATE AGE	4-8" trunks	<15' - 10-20yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
small TX (< 6') - 5-10%

☐ ARMORING POTENTIAL
low - few boulders, mostly VCG

☐ VISUAL ESTIMATE OF D50 ½" ☐ PHOTOGRAPH
D90 2" D10 FG
big wedge of gravels deposited in 8-98 storm, esp. a few d/s & tr.b. mouth

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	MINOR	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—		☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	~~NO~~ Minor	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS OR~~ BARS (UPSTREAM/DOWNSTREAM)			☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN braided - multiple chnls --- figure main flow path in ROB ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
Yes immediately d/s - large trib joins from Rcpt

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
½', 47'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
on ROB surface 42 ft.

TYPE AND STAGE (FEET)
FLOTSAM ~~BACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ ~~OTHER~~

☐ DEPTH TO BEDROCK (FT. UNKNOWN)

BEDROCK EXPOSED? NO ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) NO ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/~~RIPPLES/ARMOR/PLAIN~~) ☐ PHOTOGRAPH
longitudinal?

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

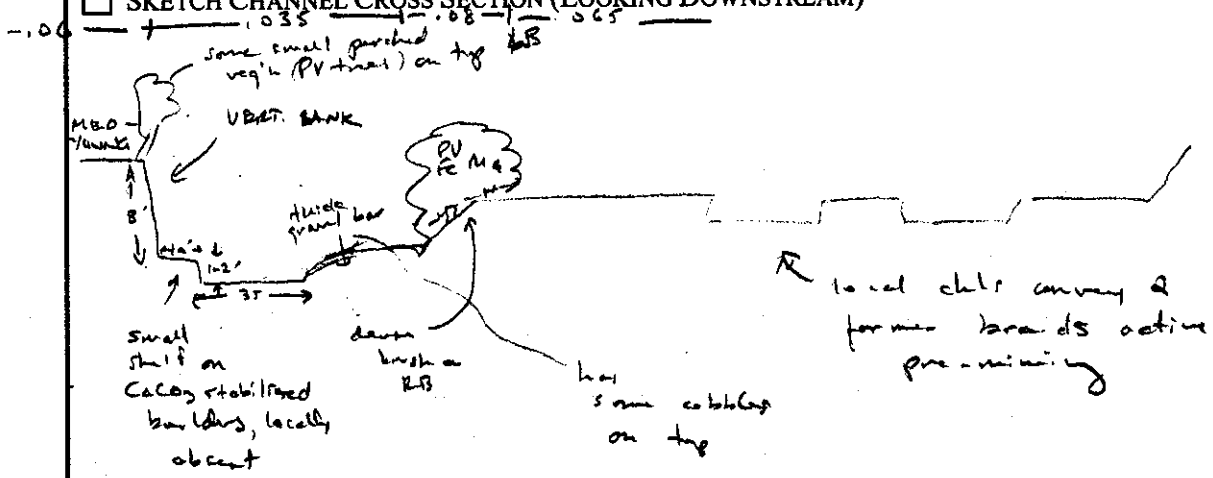
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No - joins c grade & fills chl	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	RoB f/p - still flooded	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	L only	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—		☐ PHOTOGRAPH
HEADCUTS	No.	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No.	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	minimal - normal scour & fill		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	u/s 2000'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
u/s mining

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

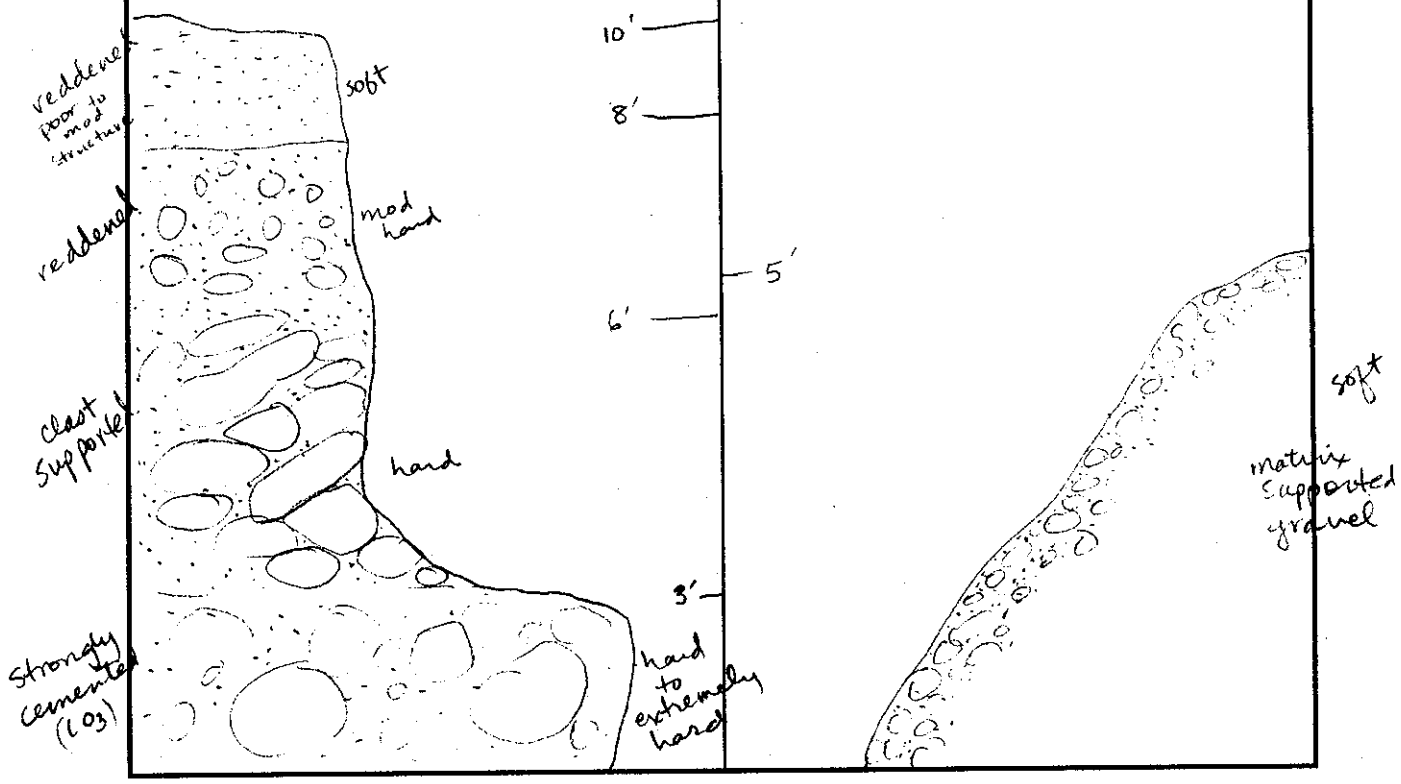
B LEFT CHANNEL

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT v. high in left bank, v. low in right	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK | **RIGHT BANK**



#: B left DATE: 12/22/98 INITIALS: HDS

47' across

"B" LEFT CHANNEL

DIST. FROM LEFT BANK (FT)	GRAIN SIZE (IN)
0'	5
2	silt
4	5
6	1
8	silt
10	1/2
12	silt
14	silt
16	1
18	1/8
20	1/32
22	silt
24	1/2
26	1/4
28	1/4
30	1/16
32	1/8
34	1/4
36	1/8
38	1/8
40	1/4
42	1/16
44	silt
46	1/16

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: d/s wheeler
B-RIGHT

DATE: 12.22.98

TIME: (BEGIN/END) 2:35

FIELD CREW: JF HS NJCF

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: *INCLUDE SCALE IN ALL PHOTOGRAPHS*
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-10	
LOOKING UPSTREAM ALONG BANK	4-12	
LOOKING DOWNSTREAM ALONG BANK	4-11	
LEFT BANK BLOW COUNT	N/A sloped - cobbles	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-13	
LOOKING UPSTREAM ALONG BANK	4-15	
LOOKING DOWNSTREAM ALONG BANK	4-14	
RIGHT BANK BLOW COUNT	N/A sloped - soft sands	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	4-16	
BED MATERIAL - ENTIRE CHANNEL	4-17	
NOTABLE FEATURES: (LIST) Trib d/s → really multiple ch		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH SHEET 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION TX - Fe ☐ PHOTOGRAPH

	LB	RB
ROOT MAT	mod to weak	mod to weak
CANOPY (HEIGHT, DENSITY)	< 8 ft	—
PERCENT OF BANK COVER	—	40% —
APPROXIMATE AGE	—	2-10 yrs —

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
V. minor -

☐ ARMORING POTENTIAL
Low - mostly gravel - some cobbles & small boulders

☐ VISUAL ESTIMATE OF D50 1/4" ☐ PHOTOGRAPH
D90 3" D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	- locally -		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—		☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	locally		☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Braided, straight ☐ PHOTOGRAPH
(distributary - complex)

☐ TRIBUTARIES NEARBY? No - multiple chl, join & split along main flow path ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
- 0 - 1/2-1', 38'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
Flotsam on LOB (the ROB of Xn B-left)

TYPE AND STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUB LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? NO ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? No

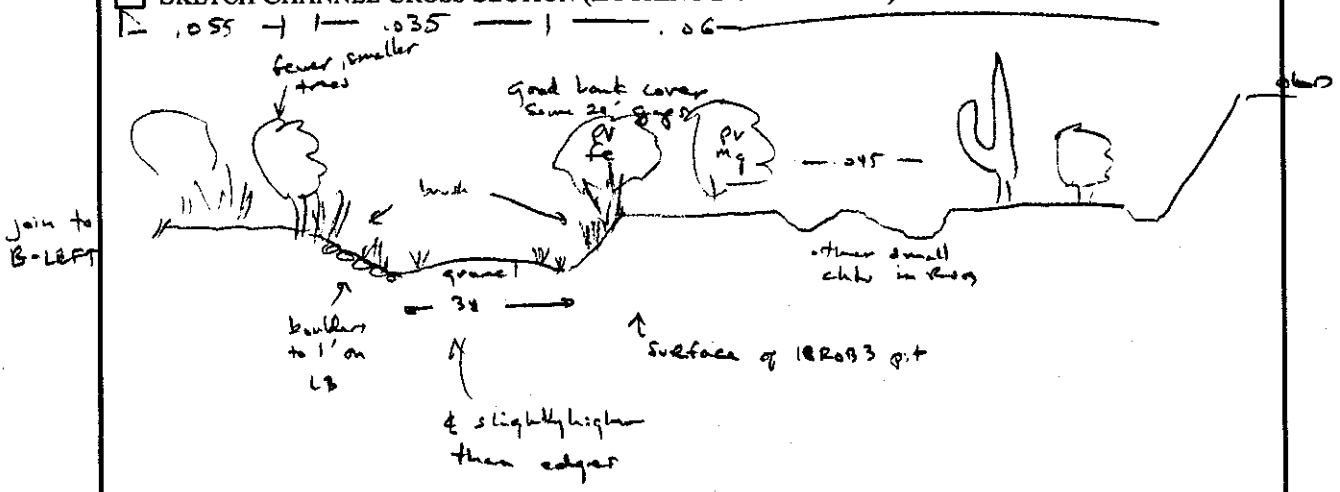
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	F/B only	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No ~5:1	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	No	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	U/S 2000'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

Some interfluves look worked, but no hard evidence of grading

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

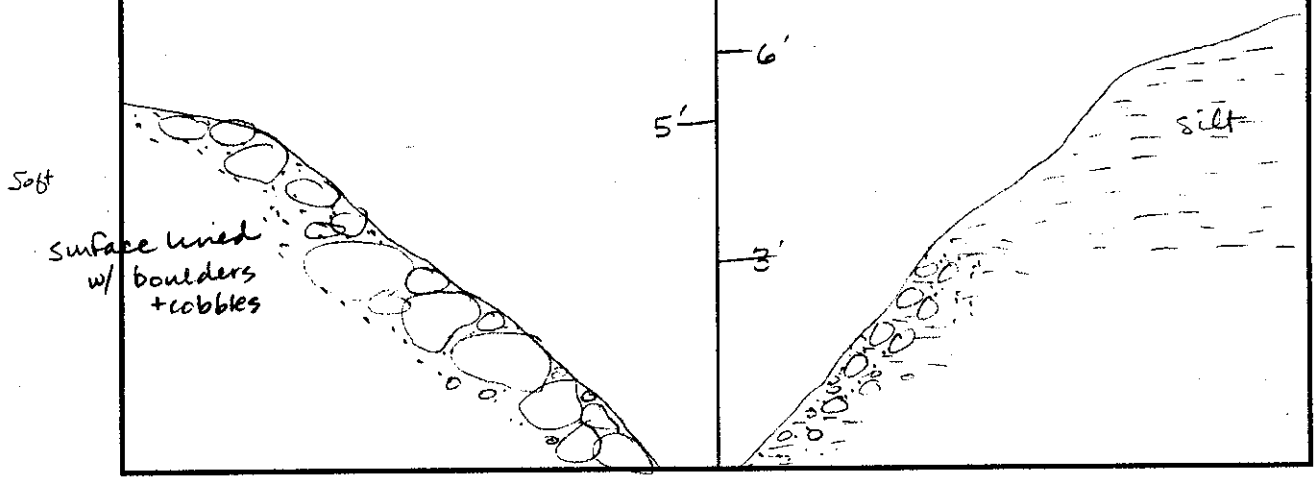
☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT low to none	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

B RIGHT CHANNEL

LEFT BANK | **RIGHT BANK**



#: B right DATE: 12/22/99 INITIALS: HRS

38' across

"B"
RIGHT
CHANNEL

DIST FROM LEFT BANK (FT)	GRAIN SIZE (IN)
0	2
2	1.5
4	1/16
6	1/16
8	1/8
10	1/8
12	1/4
14	1/8
16	1/4
18	1/8
20	1/8
22	1/2
24	1/4
26	1/8
28	1/8
30	silt
32	silt
34	silt
36	2.5
38	12

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: L - LEFT	d/s trib confluence (active) u/s of ctr's former flow
DATE: 12-22-98	TIME: (BEGIN/END) 3:25
FIELD CREW: JF HS NJCF	
RECORDS CHECK BY: (NAME, DATE) JF 8/26/99	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: INCLUDE SCALE IN ALL PHOTOGRAPHS
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-18	
LOOKING UPSTREAM ALONG BANK	4-20	
LOOKING DOWNSTREAM ALONG BANK	4-19	
LEFT BANK BLOW COUNT	N/A - slaped soft	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-21	
LOOKING UPSTREAM ALONG BANK	4-22	
LOOKING DOWNSTREAM ALONG BANK	4-23	
RIGHT BANK BLOW COUNT	N/A Slaped - soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	4-24	
BED MATERIAL - ENTIRE CHANNEL	4-25	
NOTABLE FEATURES: (LIST)		
AREA OF ACTIVE CHL MOVEMENT - @ FAN @ MOUTH OF TRIB		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH SHEET 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION LB RB ☐ PHOTOGRAPH
TX, MG, PV

ROOT MAT	– fair to poor –
CANOPY (HEIGHT, DENSITY)	mostly < 6ft ; some trees to 12'
PERCENT OF BANK COVER	15-25 % –
APPROXIMATE AGE	< 5 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
much mid-chl veg'n along (grass.) former bank lines

☐ ARMORING POTENTIAL many boulders – about 40% coverage of bed
low – too wide & active laterally

☐ VISUAL ESTIMATE OF D50 = 3" ☐ PHOTOGRAPH
D90 1.5' D10 CG

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB RB		
CUT BANKS	more than ½	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	generally sloped	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Some	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	locally	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	Some	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	many mid chl	☐ PHOTOGRAPH	☐ PLOT LOCATION

banks loose

☐ CHANNEL PATTERN Braided ☐ PHOTOGRAPH
this braided is slightly sinuous & braided itself

☐ TRIBUTARIES NEARBY? Yes from L (East) ☐ PHOTOGRAPH
major sediment supply

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
– 1-2' 191'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
across chl @ +2 ft & n f/p

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

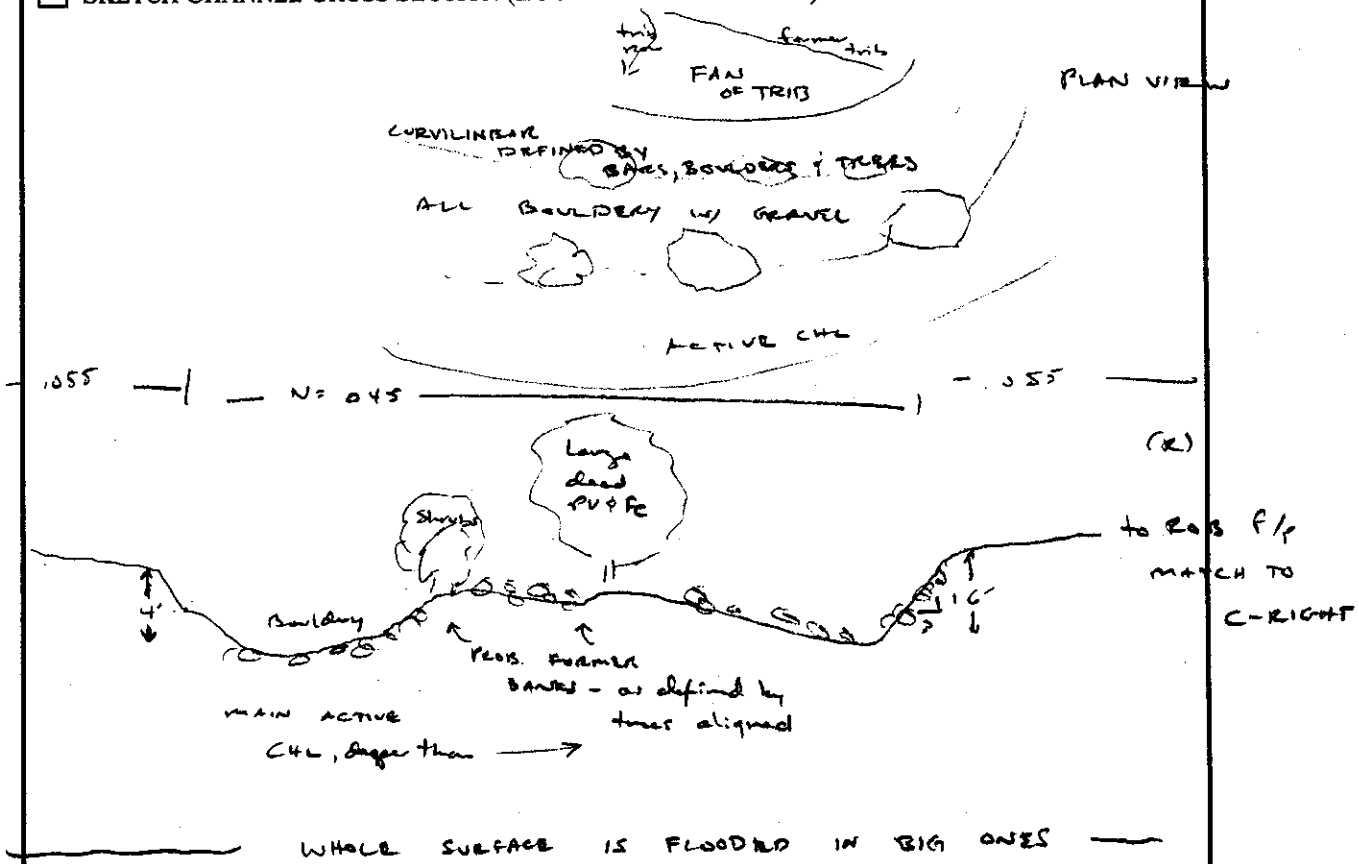
HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	v. minor		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)		☐ PHOTOGRAPH	☐ PLOT LOCATION

slightly perched abandoned chl, may be due to (etc) rather than vertical movement F

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

None obvious

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

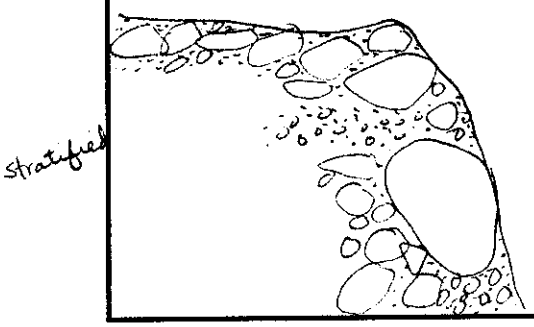
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

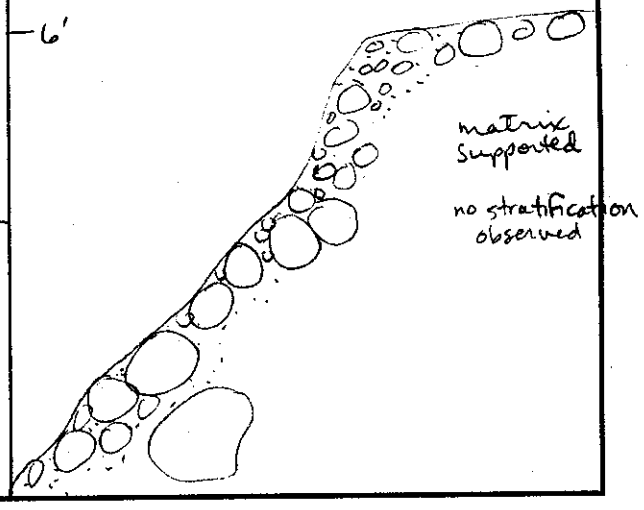
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE none	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



#: C left DATE: 12/22/98 INITIALS: HDS

Dist. from left bank (ft)	Grain Size (cm)
0	2
7	1/8
14	1/16
21	1/4
28	1/2
35	1.5
42	1/4
49	3/4
56	1/16
63	1.5
70	1/2
77	1/4
84	1/32
91	5
108	1.5
115	3
122	1/8
129	2
136	1/16
143	1/16
150	3
157	1/4
164	12
171	2.5
178	13
185	1/4
192	3

191' across

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: C- RIGHT — RIGHT SIDE OF F/P u/s of braid conf from L

DATE: 12-22-95 | TIME: (BEGIN/END) 4 pm

FIELD CREW: JF, HS, NJCF

RECORDS CHECK BY: (NAME, DATE) 8/26/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: INCLUDE SCALE IN ALL PHOTOGRAPHS
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-26	
LOOKING UPSTREAM ALONG BANK	4-28	
LOOKING DOWNSTREAM ALONG BANK	4-27	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-29	
LOOKING UPSTREAM ALONG BANK	4-31	
LOOKING DOWNSTREAM ALONG BANK	4-30	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	4-32	
BED MATERIAL - ENTIRE CHANNEL	4-33	
NOTABLE FEATURES: (LIST) killed veil 4 looking u/s then d/s		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION	GOOD COVER – STAGE CHL LOCATION		☐ PHOTOGRAPH
tall Tx, Cornus, PV, Mg	LB	RB	
ROOT MAT	FAIR TO GOOD	FAIR	
CANOPY (HEIGHT, DENSITY)	<8ft	<8ft	LB – large trees 20' setback from bank
PERCENT OF BANK COVER	>50%	40%	
APPROXIMATE AGE	5-10 yrs	2-5 yrs	
☐ CHANNEL VEGETATION (TYPE & PERCENT COVER)			☐ PHOTOGRAPH
CHL clear, bks veg'd			
☐ ARMORING POTENTIAL			
low – mostly gravel			
☐ VISUAL ESTIMATE OF D50 = VCG			☐ PHOTOGRAPH
D90 6"	D10 <5		
☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)			
	LB	RB → silty material – thick deposits some erosion of silt	
CUT BANKS	NO	mostly NO silt caps is cut	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	NO	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	NO	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	NO	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	NO	some	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	NO	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–		☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	NO	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	NO	YES!	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO		☐ PHOTOGRAPH ☐ PLOT LOCATION
☐ CHANNEL PATTERN	BRAIDED. This chl is v. straight		☐ PHOTOGRAPH
☐ TRIBUTARIES NEARBY?			☐ PHOTOGRAPH
Not on this side of f/p			
☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH)			☐ PHOTOGRAPH
	1½'	46'	
☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH)			☐ PHOTOGRAPH
	NO Q		
☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP)			☐ PHOTOGRAPH
on f/p between C-Left & C-Right			
TYPE ~~AND STAGE~~ (FEET)			
FLOTSAM	~~SLACKWATER~~	~~EROSION SCAR~~	~~TREE SCAR~~ ~~GRUS LINE~~ OTHER
silt cap on ROB of this Xs			
☐ DEPTH TO BEDROCK (FT., UNKNOWN)			
BEDROCK EXPOSED?			☐ PHOTOGRAPH
NO			
GRADE CONTROL? (TYPE, PHOTO)			☐ PHOTOGRAPH
NO			
☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN)			☐ PHOTOGRAPH
– NO bars			

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? —

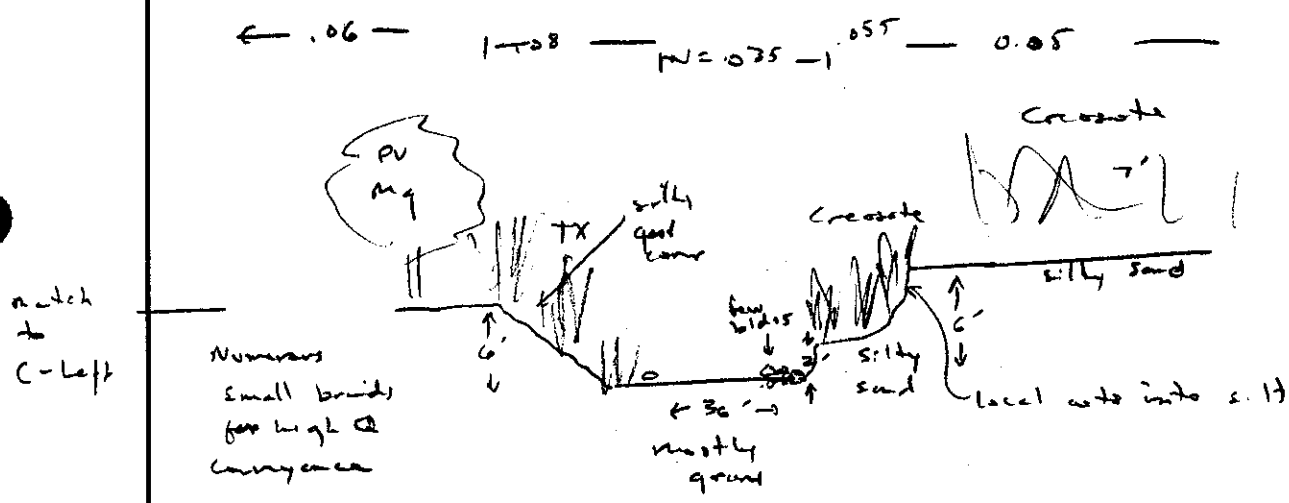
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	Yes unsat + Y on RB silt	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	No	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	~ 2000'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No obvious signs

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



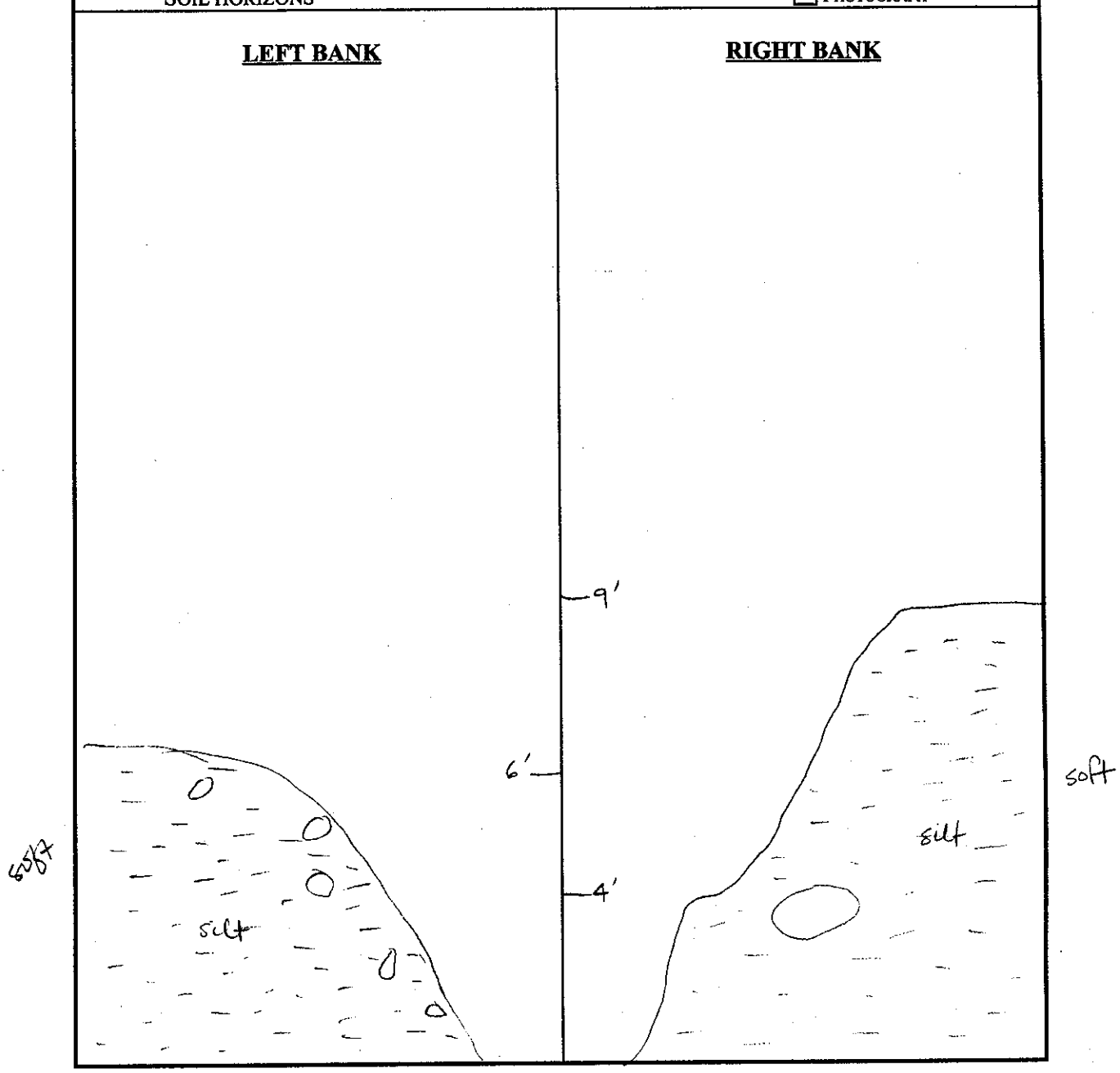
SHOW THE FOLLOWING:

☐ VEGETATION
☐ MANNING'S N VALUES
☐ BARS
☐ FLOODPLAIN/ TERRACES
☐ MAIN CHANNEL/ OVERFLOW CHANNEL
☐ ACTIVE CHANNEL LIMITS
☐ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



#: Cright DATE: 12/22/98 INITIALS: LMS

DIST. FROM RT. BANK (FT)	GRAIN SIZE (IN)
0	silt
2	"
4	"
6	"
8	"
10	"
12	2.5
14	1/32
16	1.5
18	1/16
20	1/16
22	1/8
24	1/8
26	1/16
28	1/8
30	1/16
32	1/16
34	1/16
36	1/8
38	2
40	1/8
42	1/16
44	silt
46	"

46' across

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: D LEFT

DATE: 1-8-99

TIME: (BEGIN/END) 9:10

FIELD CREW: JF + TL

RECORDS CHECK BY: (NAME, DATE) 8/26/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS.***
PLOT PHOTO LOCATION AND ASPECT ON TOPO.

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	13	Roll 15
LOOKING UPSTREAM ALONG BANK	14	
LOOKING DOWNSTREAM ALONG BANK	15	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	10	
LOOKING UPSTREAM ALONG BANK	11	
LOOKING DOWNSTREAM ALONG BANK	12	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	16	
BED MATERIAL - ENTIRE CHANNEL	17	
NOTABLE FEATURES: (LIST) Incised -		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV ; TX ; DB ☐ PHOTOGRAPH
↑ LB only LB RB

ROOT MAT	Reclined ; @ base - bank exposed ↳ all of bank	
CANOPY (HEIGHT, DENSITY)	PV: 15' ; TX = 5'	90% TX = 8'
PERCENT OF BANK COVER	40%	85%
APPROXIMATE AGE	PV > 15 yrs Cottonwood ~ 20 yr	5-10 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
chl is clear

☐ ARMORING POTENTIAL MINOR - some boulders mostly gravel
↳ grab from LB failure

☐ VISUAL ESTIMATE OF D50 1/4" ☐ PHOTOGRAPH
D90 1' D10 f. sand

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	YES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	YES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	~~No~~ Some	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	YES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	Local	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	Local	Banks are sloped	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No.	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	—	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	- MANY		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN → highly braided, local entrenchment ☐ PHOTOGRAPH
↳ braids, islands are prominent chl beds

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
Non-braided
Yes u/s L trib from "kidney beans"

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 1/2' 50'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
8' on active f/p R of chl xn

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER
slight discoloration in calcareous rich banks - may be erosion line

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

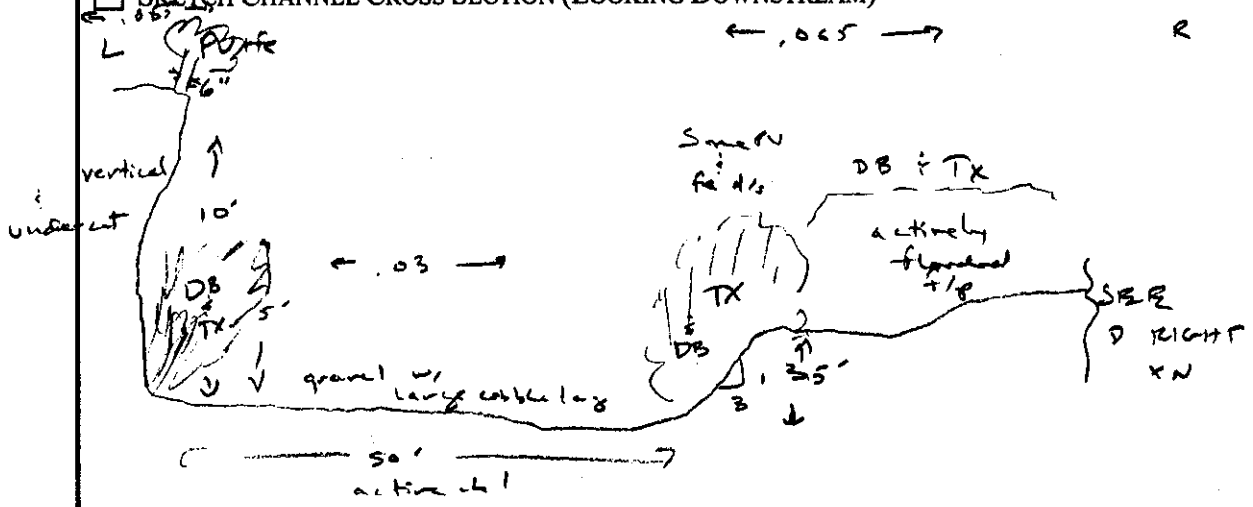
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH) "hanging" laterals — island by MCA with exposed root zone u/s

HANGING TRIBUTARIES	tribs are e grade	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	- many -	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	L yes R no	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—		☐ PHOTOGRAPH
HEADCUTS	N.O.	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	probable 4'	wheeler	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	u/s 4000'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (~~STRAIGHTENING~~, BANK ~~PROTECTION~~, ETC)
↳ probably in broader area of C Butte Dam; Mining u/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

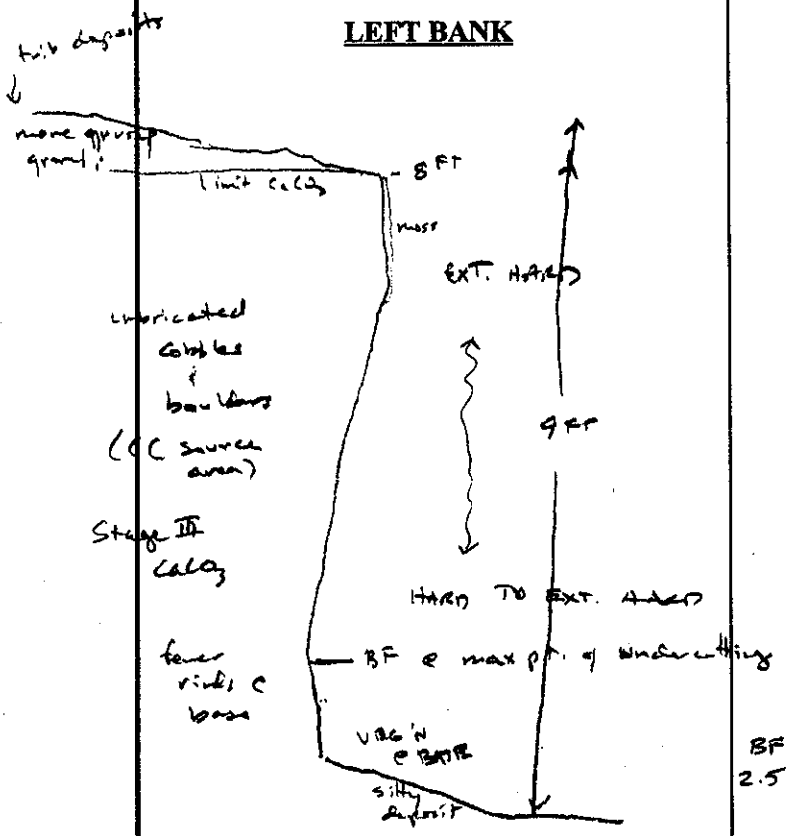
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS - very low indistinct
- ☐ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS - u/s - see plot

3. BANK PROFILE

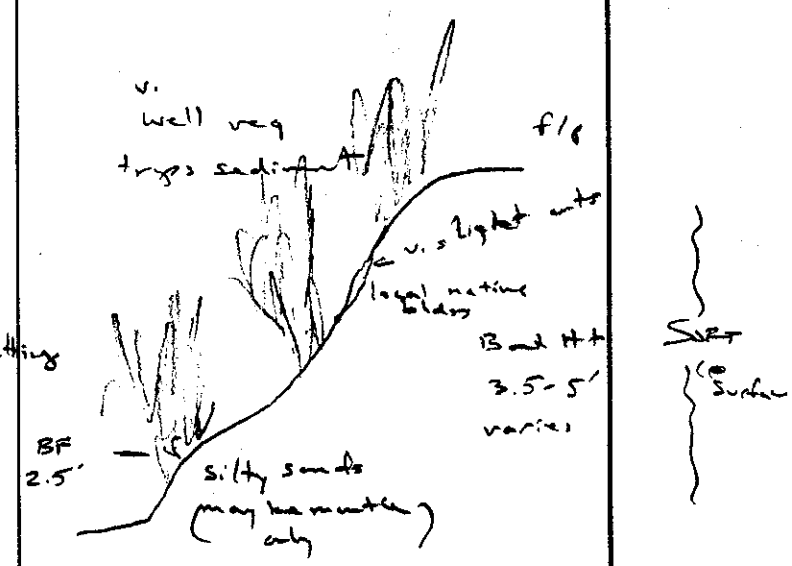
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	indistinct LB / single unit RB	☐ PHOTOGRAPH
GRAIN SIZE	cobbley	☐ PHOTOGRAPH
COLOR	grayish; basaltic	☐ PHOTOGRAPH
CROSS BEDDING	No	☐ PHOTOGRAPH
CARBONATE CONTENT	III	☐ PHOTOGRAPH
SOIL STRUCTURE	obscured by CaCO3	☐ PHOTOGRAPH
SOIL HORIZONS	- C	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



X[illegible]D - LEFT
1/8/99
TWL

Boulder Count

Station	Size
2	fine sand
4	fine sand
6	0.2'
8	0.4'
10	0.1'
12	0.2'
14	gravel (>2mm, <0.05')
16	gravel
18	gravel
20	0.1'
22	0.06'
24	0.05'
26	0.05'
28	0.35'
30	0.08'
32	gravel
34	gravel
36	course sand
38	0.25'
40	gravel
42	gravel

Sta	Size
44	gravel
46	0.32'
48	fine sand
50	silt & very fine sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: D-BRAT

DATE: 1-8-99

TIME: (BEGIN/END) 10:30

FIELD CREW: JF + TL

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: INCLUDE SCALE IN ALL PHOTOGRAPHS
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	B-18	
LOOKING UPSTREAM ALONG BANK	B-19	
LOOKING DOWNSTREAM ALONG BANK	B-20	
LEFT BANK BLOW COUNT	soft · base cobbly	slightly more resistant
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	B-21	
LOOKING UPSTREAM ALONG BANK	B-22	
LOOKING DOWNSTREAM ALONG BANK	B-23	
RIGHT BANK BLOW COUNT	STIFF @ BASE	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	B-25	
BED MATERIAL - ENTIRE CHANNEL	B-24	
NOTABLE FEATURES: (LIST) headcut v/s q.m. 200'	26 - GWD BRIAN'S call L d/s; B-1 - look v/s @ headcut	
split d/s q.m. 100'	B-2 look d/s @ split from LS	

Roll #5

Roll 6

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH SHEET 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION — almost bosque like on LB f/p ☐ PHOTOGRAPH

	LB	RB
ROOT MAT	on bank u/s of xn slightly perched o xn	on bank, some mostly exposed
CANOPY (HEIGHT, DENSITY)	> 10 ft PV, Fe, DS	< 10 ft DS, TX, Few PV, Cottonwood tg
PERCENT OF BANK COVER	40%	65%
APPROXIMATE AGE	20+ yrs	10 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
5% TX < 4 ft

☐ ARMORING POTENTIAL @ xn is bouldery
possible - local gravel (@ xn & u/s of bendcut)

☐ VISUAL ESTIMATE OF D50 bimodal - gravel & boulders ☐ PHOTOGRAPH
D90 1' D10 coarse sand

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)
RB — u/s 1400' - looks = to LB @ D_{LBRT}

	LB	RB		
CUT BANKS	No	v. minor in silt	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes, many	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	large widely spaced rills	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	Yes d/s		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
↳ braided overall, xn is straight split d/s. R split is perched 4-6'

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
braids only

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
- 2.5' 80'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
2 m - f/p to + 2 ft - scattered logs on f/p

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
boulder lag left by incision, too coarse

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

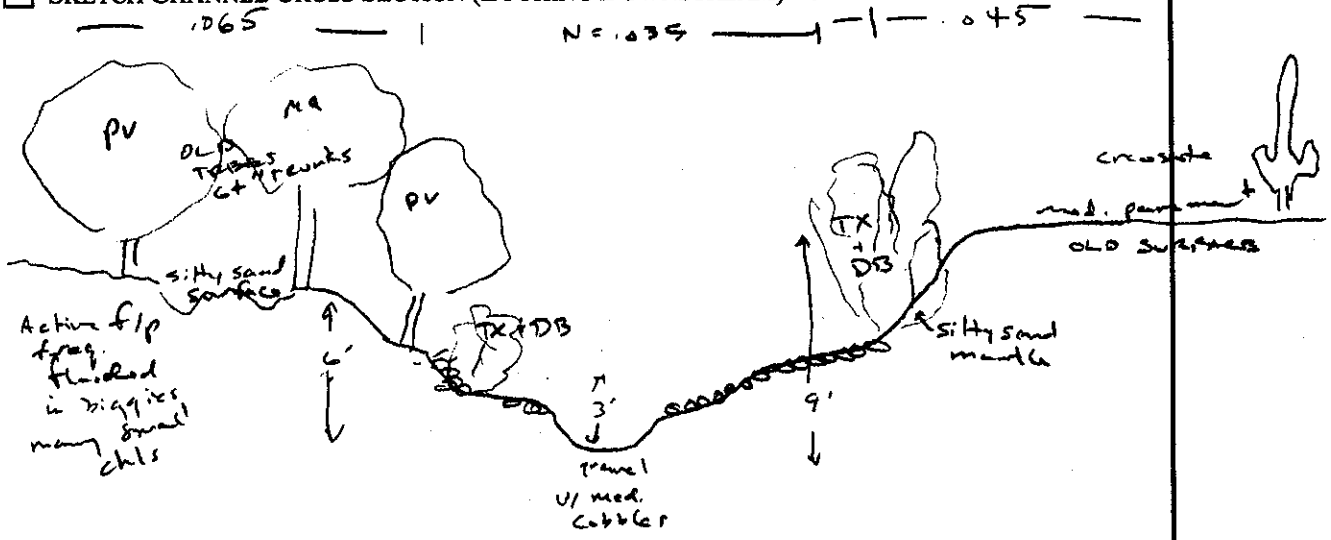
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING ~~TRIBUTARIES~~ BRAID D/S R 4'		☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES L + R		☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –			☐ PHOTOGRAPH
HEADCUTS Yes 200' u/s – 2 ft		☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS Yes " "		☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION Yes			☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) – u/s wheeler		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
Dam 1 mi d/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) .08



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

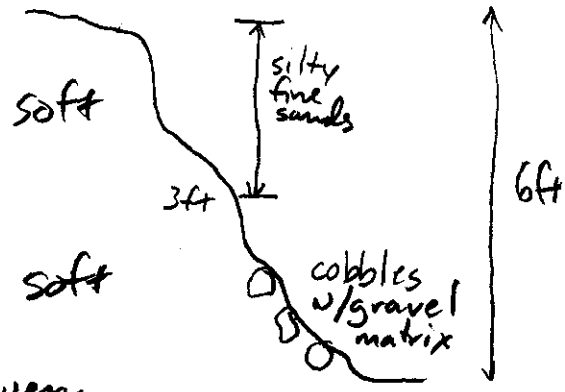
3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

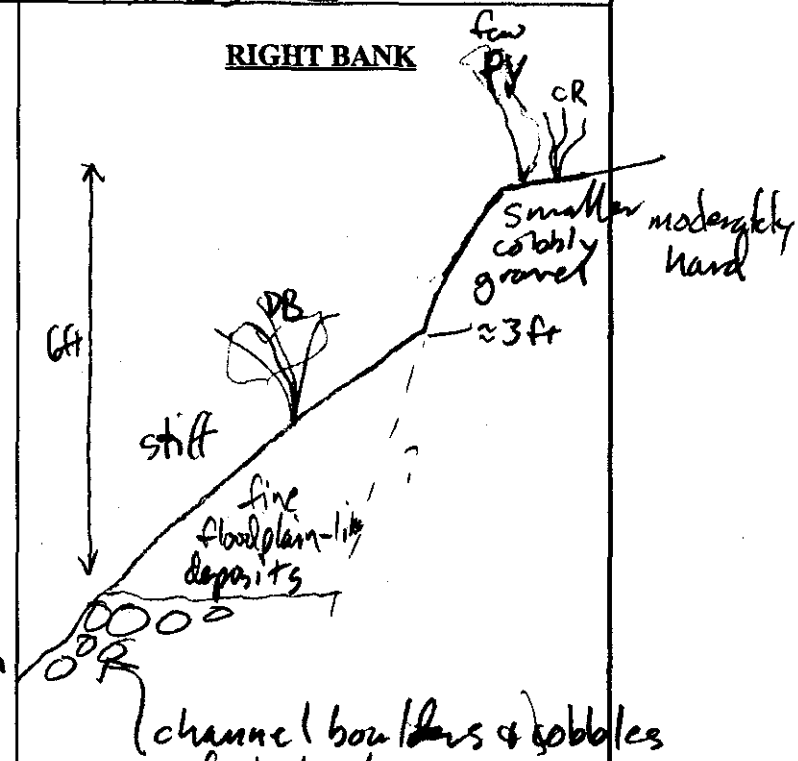
	LB	RB	
STRATIGRAPHY	f over cobbles		☐ PHOTOGRAPH
GRAIN SIZE	upper fine sand/silt; lower cobbly gravel		☐ PHOTOGRAPH
COLOR	tan/brown; lower grayish	upper reddish; lower tan/brown	☐ PHOTOGRAPH
CROSS BEDDING	no	no	☐ PHOTOGRAPH
CARBONATE CONTENT	no	no	☐ PHOTOGRAPH
SOIL STRUCTURE	no		☐ PHOTOGRAPH
SOIL HORIZONS	none	some B	☐ PHOTOGRAPH

LEFT BANK



very cobbly gravel overlain by fine floodplain deposits; contact betw. near elevation of old bed surface prior to passing of headcut now ≈ 100ft upstream

RIGHT BANK



channel boulders & cobbles at elevation similar to top of cobbly surface in LB

upper surface has some saguaro; soil has some B horizon development very old surface; carbonate not seen but some probable

XS D Right
1/8/99
TWL

Boulder Count

Sta	Size
4	0.35'
8	0.65'
12	0.40'
16	gravel
20	gravel
24	gravel
28	0.25'
32	0.12'
36	0.25'
40	0.20'
44	0.25'
48	very fine sand
52	very fine sand
56	very fine sand
60	0.10'
64	0.30'
68	gravel
72	very fine sand
76	very fine sand
80	gravel

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: E RIGHT <1000' U/S of impoundment

DATE: 1-8-99

TIME: (BEGIN/END) 11:25

FIELD CREW: JF + TL

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: INCLUDE SCALE IN ALL PHOTOGRAPHS
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	6	
LOOKING DIRECTLY AT BANK	2-3	
LOOKING UPSTREAM ALONG BANK	2-4	
LOOKING DOWNSTREAM ALONG BANK	2-5	
LEFT BANK BLOW COUNT	SOFT	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-6	
LOOKING UPSTREAM ALONG BANK	2-7	
LOOKING DOWNSTREAM ALONG BANK	2-8	
RIGHT BANK BLOW COUNT	N/A - banks	poorly defined
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	2-10	
BED MATERIAL - ENTIRE CHANNEL	2-9	
NOTABLE FEATURES: (LIST)		
thick stratified sandy silts in middle of bank w/ human artifacts embedded	2-11	

Roll 6

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH Sheet 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

bank is poorly defined

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION MQ & PU, DB & TX (LB) TX - 80% PB 20% (RB) ☐ PHOTOGRAPH

	LB	RB
ROOT MAT	@ WSEL	@ WSEL or below
CANOPY (HEIGHT, DENSITY)	Trees 10-20', Brush 6'	7'
PERCENT OF BANK COVER	35 %	45%
APPROXIMATE AGE	Trees -20yrs Brush 5yrs	5yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
chl is mostly clear 2% TX

☐ ARMORING POTENTIAL
Low - gravel & small cobbles

☐ VISUAL ESTIMATE OF D50 = < 1/4" F.G. ☐ PHOTOGRAPH
D90 6" D10 sand

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT) → flow is breaking out to R

LB bank is broken by flow return flow

	LB	RB		
CUT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES, many	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	some	NO - not general	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		split, with pt bar in bars	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
braided & distributary - v active, slightly sinuous

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
just braids

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 2' 85'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
NO Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
recent HW @ 64' (R) stage of 1.5'

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER
→ also on flp & bank reg'n +6'

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
some pt bars on bends composed of coarse matl

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

N.O.

OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

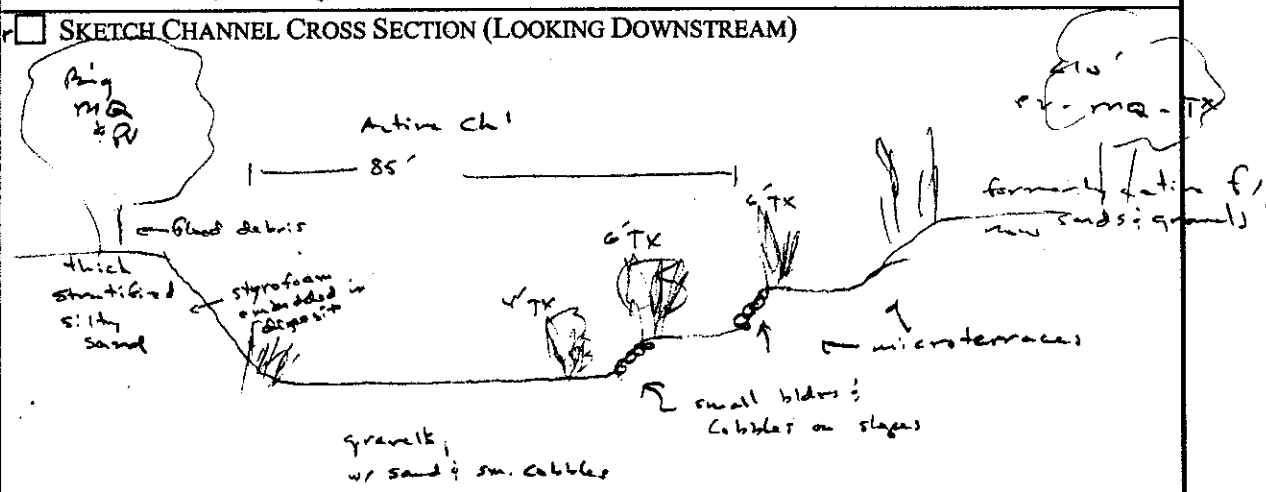
↳ appears to be aggrading - f/p is being dissected

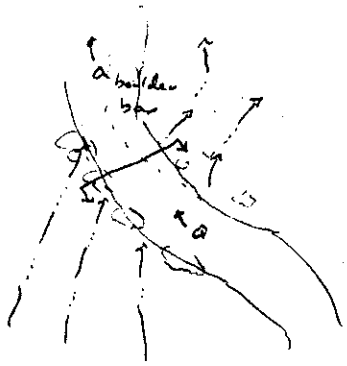
HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	yes f/p - minor remnants of active chl	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No!	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	only normal general scour - possibly 2'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	u/s @ Wheeler	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

dam dis

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)





lots of f/p Q - breaks into & out of chl is dissecting LOB to boulder remnant w/ thick veg'd silty sand islands

SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

may have extended 4' into f/p here

POSSIBLE SCENARIO

① broad shallow p 4 ft on other is now Rob

② entrench into current chl position

③ deposit silt in lows

but only not [illegible] material [illegible] this source covers?

3. BANK PROFILE

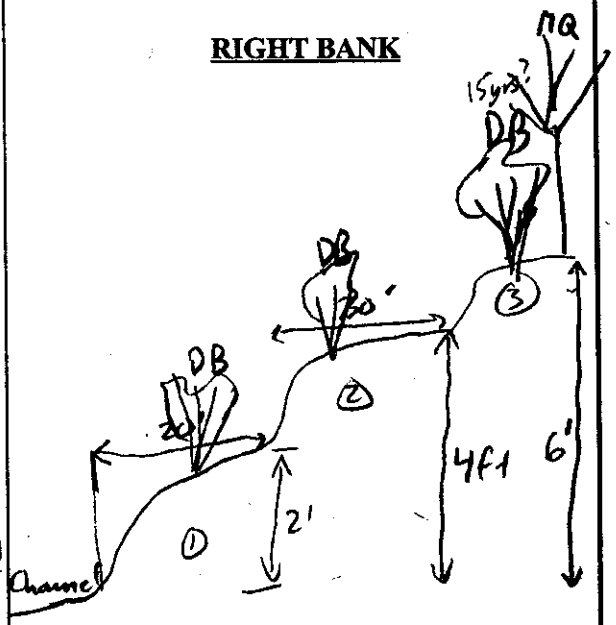
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

	LB	RB	
STRATIGRAPHY	event stratification	no	☐ PHOTOGRAPH
GRAIN SIZE	silty vfs	med. cobble gravel	☐ PHOTOGRAPH
COLOR	tan/brown	–	☐ PHOTOGRAPH
CROSS BEDDING	no	no	☐ PHOTOGRAPH
CARBONATE CONTENT	no	no	☐ PHOTOGRAPH
SOIL STRUCTURE	no	none	☐ PHOTOGRAPH
SOIL HORIZONS	no	none	☐ PHOTOGRAPH

LEFT BANK

- soft overbank fines being dissected from inflow channels from the left (east)
- high likelihood of erosion from inflowing water from left

RIGHT BANK



① & ② similar
very cobbly gravels
soft w/no signs of soil dev. & some DB ≤5yrs growing on ① & ②

③ very sandy fine gravels
relatively low velocity, infrequently but inundated area
all surfaces soft

XS [redacted] - Right
1/8/99
TWL

Boulder Count

Sta	Size
0	silty fine sand
4	"
8	0.09'
12	gravel
16	gravel
20	gravel
24	0.07'
28	coarse sand
32	0.12'
36	gravel
40	gravel
44	0.07'
48	0.50'
52	0.05'
56	silty fine sand → in lee of shrub in channel
60	0.05'
64	0.25'
68	0.06'
72	0.13'
76	gravel
80	gravel
84	gravel

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: E LRFT — IN HEAD CUT AREA D/S WIDE SPOT

DATE:	TIME: (BEGIN/END)
1-8-99	12:15

FIELD CREW: JF + TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: INCLUDE SCALE IN ALL PHOTOGRAPHS
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	6	Roll 6
LOOKING DIRECTLY AT BANK	2-12	
LOOKING UPSTREAM ALONG BANK	2-13	
LOOKING DOWNSTREAM ALONG BANK	2-14	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-15	
LOOKING UPSTREAM ALONG BANK	2-16	
LOOKING DOWNSTREAM ALONG BANK	2-17 - flotsam pile	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	2-18	
BED MATERIAL - ENTIRE CHANNEL	2-19	
NOTABLE FEATURES: (LIST)		
Look U/S @ headcut from ch1 bed	2-19	
Left to R x ch1	2-20	

3. PLOT CROSS SECTION LOCATION

- [ ] ON USGS QUADRANGLE _____ (NAME)
- [x] ON RECENT AERIAL PHOTOGRAPH SHEET 2 (NUMBER)
- [ ] ON FCDMC TOPOGRAPHY _____ (SHEET #)

PV & MO on terrace above LB & RB
see sketch

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

	LB	RB
☐ BANK VEGETATION	TX	DB & TX ☐ PHOTOGRAPH
ROOT MAT	OK - shallow	shallow
CANOPY (HEIGHT, DENSITY)	4-7'	6'
PERCENT OF BANK COVER	60%	40%
APPROXIMATE AGE	< 5 yr	< 5 y

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
chl clear

☐ ARMORING POTENTIAL
moderate · small boulder - to reach is headcutting gravel bed u/s & d/s of cut

☐ VISUAL ESTIMATE OF D50 MG - bimodal ☐ PHOTOGRAPH
D90 1' D10 sand

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	- lots cuts in headcut	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	" "	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	some	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	-	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
→ terraces due to incision not bars
braided - reach & braid is straight

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
u/s from L

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
- 2.5' 55'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q
due to incision

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
flotsam pile on trunk @ RB @ 6'

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER
thick f/p silts

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
→ gravel shadow dunes

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

NO

OBSTRUCT FLOW? –

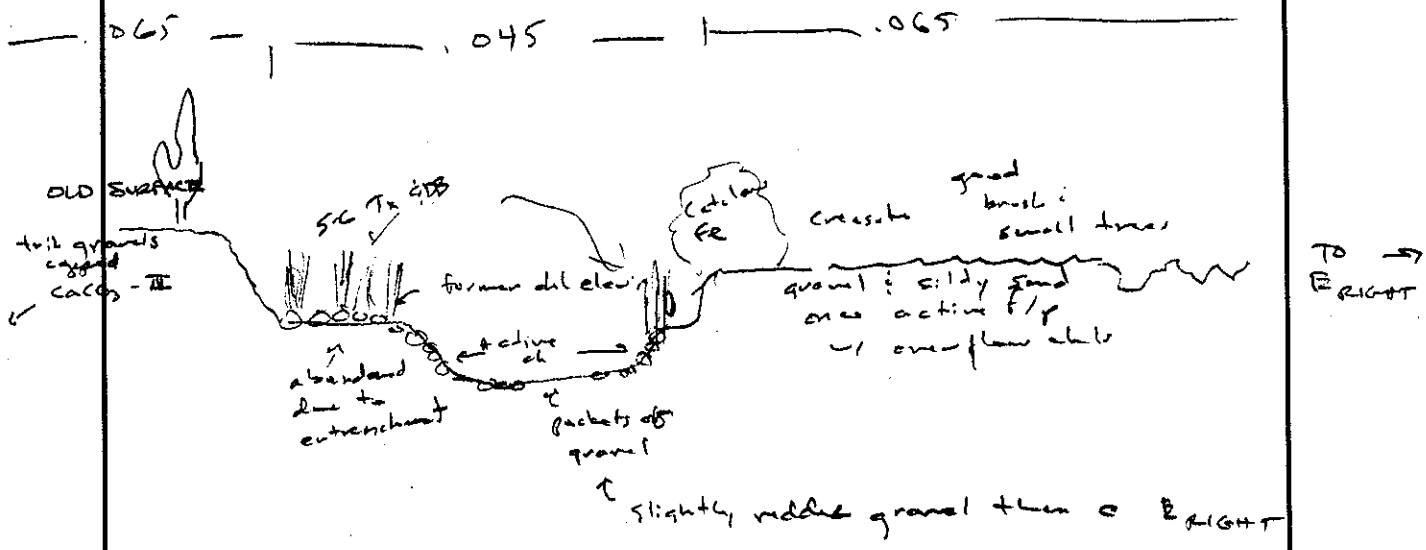
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	yes <4ft L & R	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH
HEADCUTS	yes 200 u/s 3-4 ft	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	< yes ⊃	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	yes prob < 50yrs	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	u/s (wheeler)	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

dam d/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

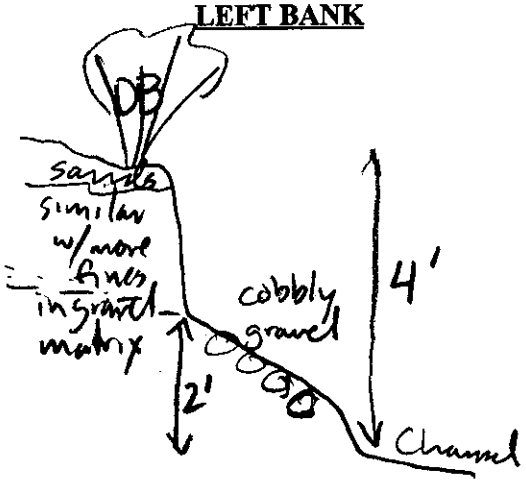
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

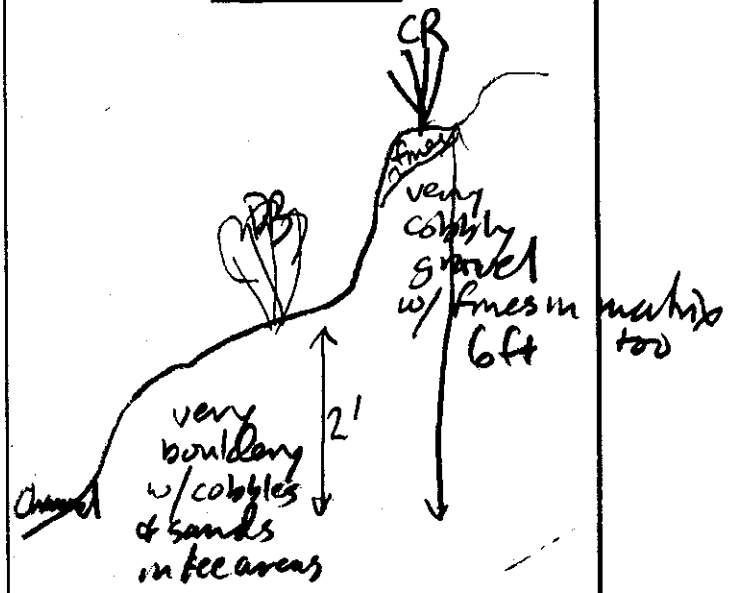
	LB	RB	
STRATIGRAPHY	none	none	☐ PHOTOGRAPH
GRAIN SIZE	cobbly gravels	cobbly gravel	☐ PHOTOGRAPH
COLOR	tan/brown	brown	☐ PHOTOGRAPH
CROSS BEDDING	None	no/imbricated	☐ PHOTOGRAPH
CARBONATE CONTENT	very slight	I –	☐ PHOTOGRAPH
SOIL STRUCTURE	none	possible B	☐ PHOTOGRAPH
SOIL HORIZONS	none	starting?	☐ PHOTOGRAPH

LEFT BANK



grussy gravel matrix w/some cobbles overlaying?
cobbly gravel similar to channel
presently bank is being actively dissected by inflow from left
DB < 5yrs on top

RIGHT BANK



- lower unit contains VERY large rocks > 1'
- upper unit has some locations of fine sand deposits but mostly cobbly gravel
- some faint calcification

moderately hard base
soft fines on top

XS E - Left
1/8/99
TWL

Boulder Count

Sta	Size
0	0.1'
2	0.1'
4	0.05'
6	0.1'
8	0.7'
10	0.1'
12	0.2'
14	gravel
16	0.37'
18	gravel
20	gravel
22	gravel
24	0.07'
26	1.0'
28	0.3'
30	0.35'
32	0.06'
34	0.2'
36	1.4'
38	1.2'
40	sand
42	sand
44	sand
46	0.75'
48	0.13'
50	0.25'
52	0.1'
54	fine sand

3-5-99 FIELD PHOTO LOG

STOP 1

APACHE WASH @ 32ND (U/S ↑ STUDY AREA)

ROLL 1, #16 - LOOK D/S FROM RD. (ROLL ½ DONE

V STABLE LATERALLY, DENSE BANK VEG

ANGULAR BED SEDIMENT D_{50} ≤ 4" , BW = 15-20 FT

ONLY LOCAL F/P , RECENT HW ~ 2 FT

STOP 2

DIRT RD XING ½ MI D/S 32ND ST

1-17 LOOK D/S FROM RD

SPLIT CHL - LOWER CHL (IN PHOTO) INCISED @ ROAD 2+ FT

SCOUR AREA D/S (VEG'N) REMOVED

NO LATERAL SCOUR. III - $CaCO_3$ in banks & locally in bed

D_{50} ≤ 2" with local boulders to 1.5' BW = 20-40'

HW @ 3.5 FT on lower chl

STOP 3

RD XING

1-18 LOOK D/S X ROAD - SADDLE MTN RD (E OF ~~THE~~ 26TH ST)

CHL IS STRAIGHT & CLEAR OF VEG'N. F/P DEVELOPS HERE ON R.S.L

F/P ABOUT 40-80' WIDE, CUT BANK 250' D/S OF PHOTO INTO

OLDER SURFACE. HAS LOST ~4 FT LATERALLY OVER PAST 0-50 YRS

GOOD TERRACE DEVELOPMENT @ + 6 FT, 9 FT

TRIBS ~~ENTER~~ FROM R . Laterally stable BW = 20'

STOP 4

1-19 LOOK U/S

UNNAMED DIRT RD ½ S of SADDLE MTN

DEVELOPMENT RIGHT UP TO MAIN BANK. 3 STRAND BW FENCE

MATERIAL REMOVED FROM BED U/S XING

D_{50} : 3" w/ SOME BOULDERS TO 1.2'. GOOD VEG'N - LATERALLY

Stable

STOP 5 - BEGINNING OF STUDY REACH

1-20, U/S OF SMALL PIT (U/S of DIRT RD XING)
- 20,21 Look D/S @ HOLE
- 22 Look U/S @ Headcut to R
- 23 Look d/s @ hole (closer)
- 24 Look U/S past hole

1-25 Look d/s from dirt Road xing

F/P 150-200' LOB, higher terrace on LB
↳ f. sand material, dense sonoran vegin, slight weddering

Main cut is straight 30-35' wide, D_{50} ≤ ½"
↳ pole has been graded 100' U/S : d/s
↳ may have bedrock control - crops out in bed @ end of graded reach d/s of xing

HW marks @ f/p elevation

V. minor cut banks here - FIRST TIME TODAY (in D/S direction)

STOP 6 - 15- SHARP BEND U/S OF BEGINNING

1-26 ~~band~~ root w/ rock on LB cut

1-27 - pebbles in cut bank - look U/S

2-1 - -

Bedrock on LB d/s of band - possible 5' bank erosion
historical glacial mining? piles of coarse material
f/p pinched out d/s of band -- f/p elevation much higher
w.r.t. main chl d/s of band D_{50} ≤ 4" BW = 30'
HW marks @ 5- ft in band

STOP 7 - CARLISLE (?) ~ ¼ mile S of Jay Ranch

similar to U/S xns

2-2 Look U/S for Rd xing

D_{50} ≤ 2" more rounded material BW = 30'
f/p in clayey mat'l - volcanic ash derived
well vegi'd - laterally stable HW ~ 4-5'

Visit ROB headcut on f/p on Next trip
& sharp bend ¼ mile U/S

STOP 8 - MADDOCK RD

HARSH CUTTING OF LB, NUMEROUS GRAVEL BARS

MCDOT? DUMPED WATER on d/s side of xing

2-3 - exposed roots in LB @ xing

2-4,5 " " " - slightly d/s

2-5 tree in chl looking d/s

HW = 6 FT, REMNANTS of pavement & culvert 200' d/s of xing

QUESTION: Is this erosion local or system wide? Looking to Alan

the floodplain ground at the trailing edge

Reasons for local - dumped material redirects Q @ bank

- outside of bend

- affect of road crossing

STOP 9 - NEW RIVER RD

2-6 look d/s

chl becomes braided / small for d/s ~400'

may be geologic - converging terraces - loses confinement

allows higher % of f/p flow and .. chl aggradation & aggradation

- lower bank height - same effect

check out Cloud Rd xing - backwater?

f/p has finer material (f. sand) & overflow chls throughout

terraces @ margin are rel. low

D_{50} @ Rd ≅ gravel w/ some boulders to 1'

BW = 30-35'

bank ht is markedly lower than u/s stop sites

STOP 10 - CLOUD RD

dip xing - landowner storing cars & junk in f/p & chls

mining gravel from stream. chls rejoin @ d/s side of Cloud Rd, though maybe not historically - if it did it was perched on LOB

STOP 11 - POWERLINE xing on 24th St

2-7 look u/s - boulder riffle & slope break

BW = 20' HW = 5.5'

2-8 look d/s

chl narrower & single path D_{50} 1" , minor cut banks

STOP 12 - @ Breakout, marked on photo as #12

2-9 look u/s @ split

2-10 look d/s @ split

d_{50} = 4" BW = 50' bk height = 4'

veg is much less dense on banks & chl is clear

f/p v. broad & low w.r.t. to chl current

hard pack sand (f to m) in beds

f/p looks grazed - much less veg. than elsewhere

b.o. prob. in '93 or '95 could prevent w/ dike

STOP 13 culvert crossing @ 24th St

Q bypasses box & weirs over Rd

2-11 look S (d/s at weir overflow structure)

2-12 look @ HW on 2-cell elliptical RCP - Q @ + 3 ft

bypasses culverts

2-13 look d/s @ RCP outlet - wire & rail reinforcement

creates backwater - prob. clogs pipe

Severe constriction d/s $Area_{culv}$ < $Area_{chl}$

chl wants to be on the Rd alignments - needs new chl

STOP 14 - Confluence Hwy

past R braid stopped @ Hwy w/ no culvert ⊥ hard to

main chl. Hydraulics interrupted by 24th St u/s anyway

Check RAS model. Culvert is 3 5×10 RCBC WW @ 45°

bevel top. Road will overtop @ WSEL + 2 over obvert

2-14 look W along R braid diversion

2-15 look d/s @ inlet

2-16 look d/s d/s of Hwy D_{50} 2" 60' BW BL 4+ 8ft

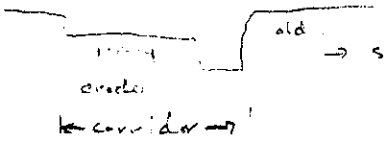
(APACHE W)

STOP #15 - Bend in chl d/s confluence

2-17 look d/s @ cut bank on pt of bend

2-18 look u/s from 2-17

Appears to be terrace old/young erosion boundaries



Idea: map surfaces on aerials 1st then do field work & verify young/old vs erodes/deposits hypothesis

STOP 16 (APACHE)

CATTLE PEN DEAD END (XN LINE)

large amounts of gravelly sand in wash

D50 VCS but w/ cobble riffles (4") BW: 20'

young surfaces on both LOB & ROB

stable banks w/ moderately good veg'n - some dipping

* could cross wash here, if needed

STOP 17 - General confluence area of DHW, AW & PW

2-19 look d/s near end of upper surface (b.o. to DHW) in main chl of AW BW=20; bkf ht = 7'; d50 ≈ 4"

2-20 look d/s on DHW ash in over-flow area u/s stock pond

2-21 buried tree on LB of DHW @ breached stock pond - area prob. filled u/s pond, then drastically incised for DHW will need to analyze impact of stock pond

2-22 look d/s d/s of DHW/AW confluence

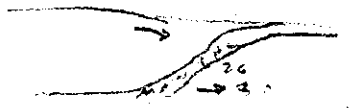
STOP 18 Rd (dirt) Xing u/s double chl

2-23 - look d/s @ split - left braid active & incised

2-24 - look u/s from split right filling @ split

- island prob not flooded, except v. rare

STOP 19 - Bend between LOS f/p & ROS f/p



f/p appears quenched - have numerous small chuts -- what is mechanism

2-25 look d/s @ band/ difference

is this related to avulsion shifts? cap tree? cut off?

f/p has two terraces -- transitions are very gradual w/o sharp scarps

2-26 undercut bank d/s of scour

STOP 20 - Next d/s King past old elevated tank

2-27 look d/s @ beaver dam

General Impression

- degree of confinement ↓ in d/s direction
- 2nd ary entrenchment occurs d/s Comptonville
- fair like - low confinement between Cloud Rd & Comptonville
- main chl width varies throughout study area
- Paradise Wash more confined in corridor
- check periodicity of splits on Paradise Wash - single to multiple
- Old surface easy to ID by topo & veg'n
- No consistent trend in bed size

This

- generally stable throughout - pattern same - in D prob in engineering time
- periodic wider & more unstable, followed by more narrow, confined reaches - are these spatially fixed in time
- lateral corridor is generally restricted - prob would be large changes
- local erosion near large c banks -- may be worthwhile to stop bldg here (even though outside of f/p)
- chl size (overall) not all that different from Jay Ranch Rd to near Cam Butter -- no signif inflow - upper watershed governs

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-19K CBD [illegible]	
DATE: 5-13-99	TIME: (BEGIN/END) 1640/1655
FIELD CREW: JF + [illegible]	
RECORDS CHECK BY: (NAME, DATE) 9/1/99 JF	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	21-24	
LOOKING UPSTREAM ALONG BANK	21-25	
LOOKING DOWNSTREAM ALONG BANK	21-26? / 22-1	
LEFT BANK BLOW COUNT	still	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	22-2	
LOOKING UPSTREAM ALONG BANK	22-3	
LOOKING DOWNSTREAM ALONG BANK	22-4	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	22-5	
BED MATERIAL - ENTIRE CHANNEL	22-6 view D/S from ≈ 60' U/S of ℄	
NOTABLE FEATURES: (LIST) · aggradation from poolaren · bank heights noticeably lower	22-7 ltwm view D/S of debris on tamarisk in middle of channel ≈ 50' D/S of XS	

3. PLOT CROSS SECTION LOCATION

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH 4-4 (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY off (beyond) (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Blackberry, Mix ☐ PHOTOGRAPH

ROOT MAT fair

CANOPY (HEIGHT, DENSITY) <10' dense

PERCENT OF BANK COVER 40'

APPROXIMATE AGE 5-30

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

TX - 5% ↑ dense dis - begin [illegible] from [illegible]

☐ ARMORING POTENTIAL

Low

☐ VISUAL ESTIMATE OF D50 FG BIMODAL ☐ PHOTOGRAPH

D90 2" D10 <S

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	50'	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Single chl @ xs ☐ PHOTOGRAPH
splits to 2 chls 50' ds

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
– 1.5' BW = 60 TW = 70'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET) 3'
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUB LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No (CBD) ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? –

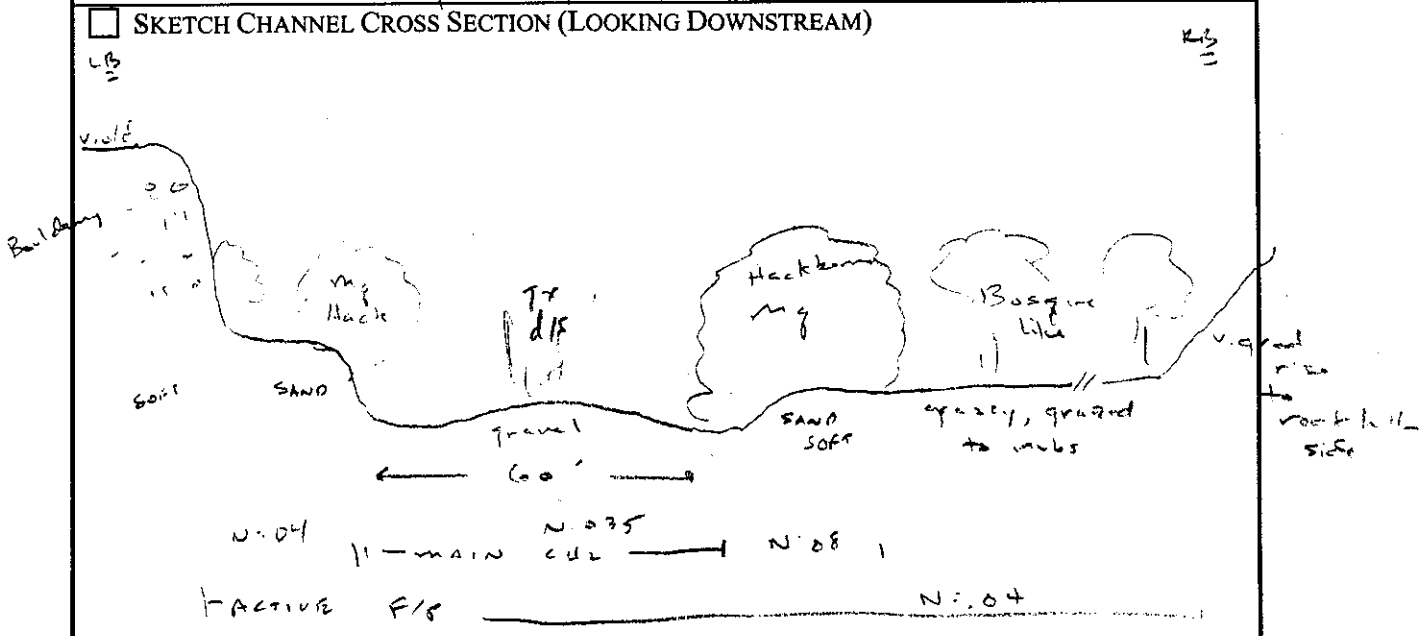
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	R · L f/p	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	No – aggrading – CHL & higher	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

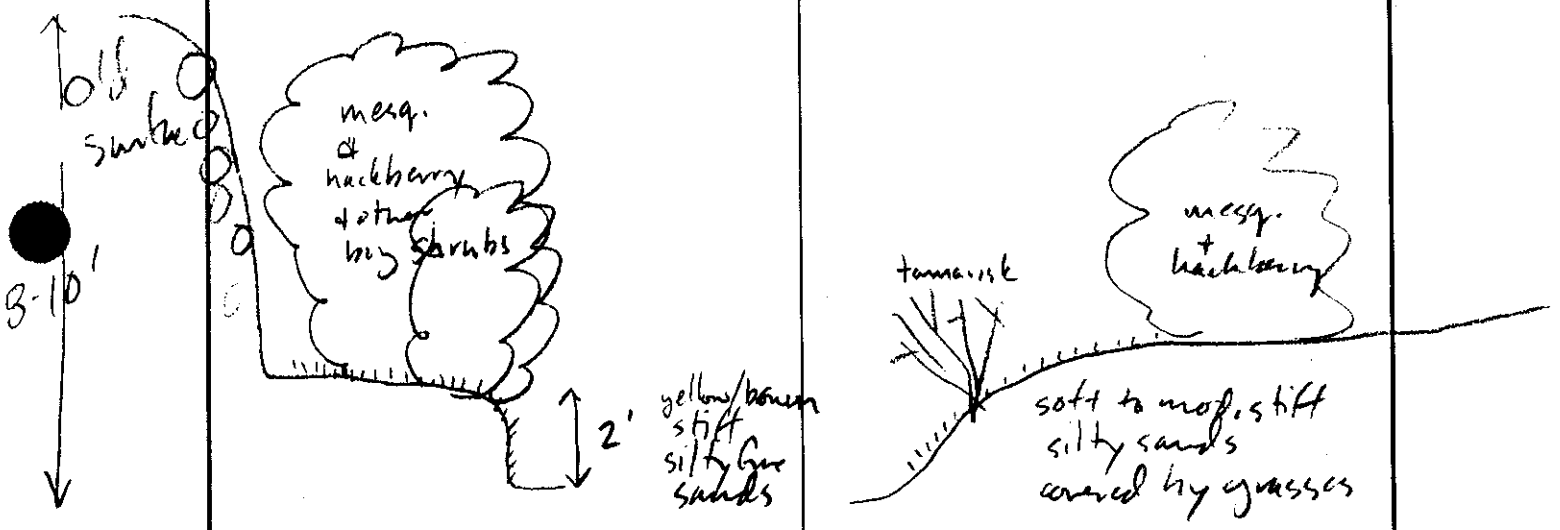
- ☐ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☐ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY		☐ PHOTOGRAPH
GRAIN SIZE		☐ PHOTOGRAPH
COLOR		☐ PHOTOGRAPH
CROSS BEDDING		☐ PHOTOGRAPH
CARBONATE CONTENT	none in lower silty units	☐ PHOTOGRAPH
SOIL STRUCTURE		☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH

LEFT BANK | **RIGHT BANK**



Boulder Count

Sta	Texture
0	silty fine sand
3	fg
6	vcs
9	cs
12	cs
15	vcs
18	fg
21	0.01'
24	0.01
27	0.07'
30	0.04
33	0.01
36	cs
39	med. sand
42	ms
45	ms
48	vcs
51	ms
54	ms
57	0.01
60	silty fine sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-18K

DATE: 5.13 | TIME: (BEGIN/END) 4:15

FIELD CREW: JF TL 5521

RECORDS CHECK BY: (NAME, DATE) 9/1/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	21-15	
LOOKING UPSTREAM ALONG BANK	21-16	
LOOKING DOWNSTREAM ALONG BANK	21-17	
LEFT BANK BLOW COUNT	lower 1.5' mod stiff / upper soft to mod stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	21-18	
LOOKING UPSTREAM ALONG BANK	21-19	
LOOKING DOWNSTREAM ALONG BANK	21-20	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	21-21	
BED MATERIAL - ENTIRE CHANNEL	21-22 view D/S	from LB ≈ 50' D/S of XS
NOTABLE FEATURES: (LIST) • long rough of finer grained deposits	21-23 HWM in tree on LB ≈ 20' D/S of XS	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Mg, Cat, PV, Blackberry ☐ PHOTOGRAPH

ROOT MAT mod slightly prevalent on LB

CANOPY (HEIGHT, DENSITY) <15'

PERCENT OF BANK COVER 40%

APPROXIMATE AGE 10-40 yr

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL is clear, except that Bk veg canopy hangs mid ch l

☐ ARMORING POTENTIAL

Low

☐ VISUAL ESTIMATE OF D50 FG ☐ PHOTOGRAPH

D90 ½" D10 <S

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Sinuous CHL ☐ PHOTOGRAPH

Pool may have ended @ or w/i of AW-17K

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No (small trib from hill on RB)

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

—

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

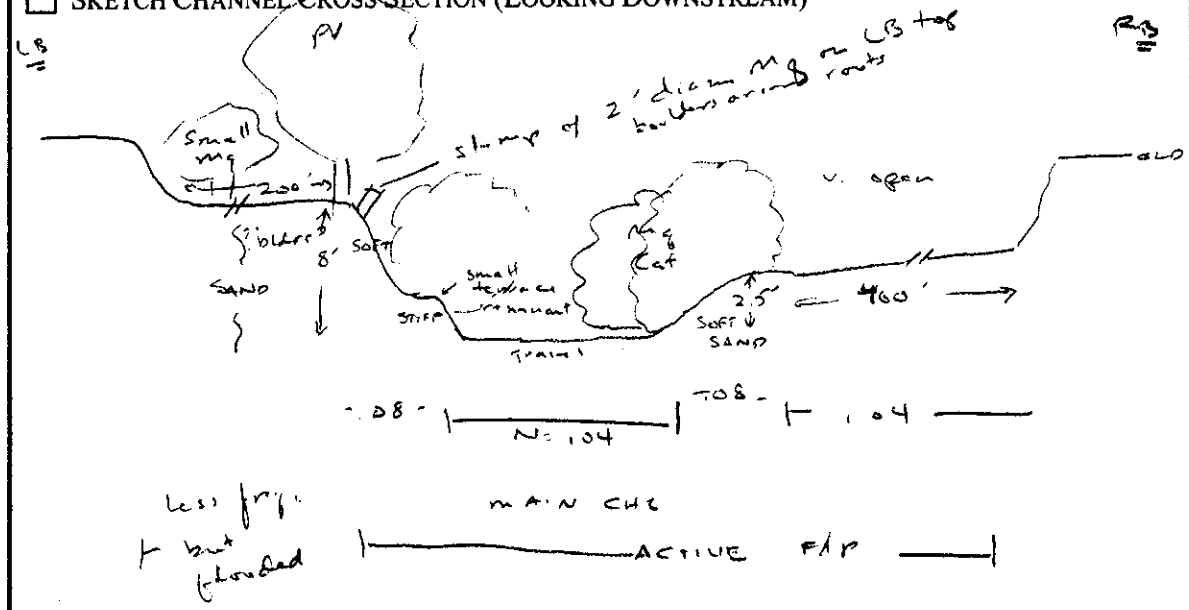
GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No	☐ PHOTOGRAPH
OBSTRUCT FLOW? —	
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)	
HANGING TRIBUTARIES No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES R & L f/p	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –	☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION No (1.5' terrace remnant on LB)	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH ☐ PLOT LOCATION
☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) grazing & CBD d/s	

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

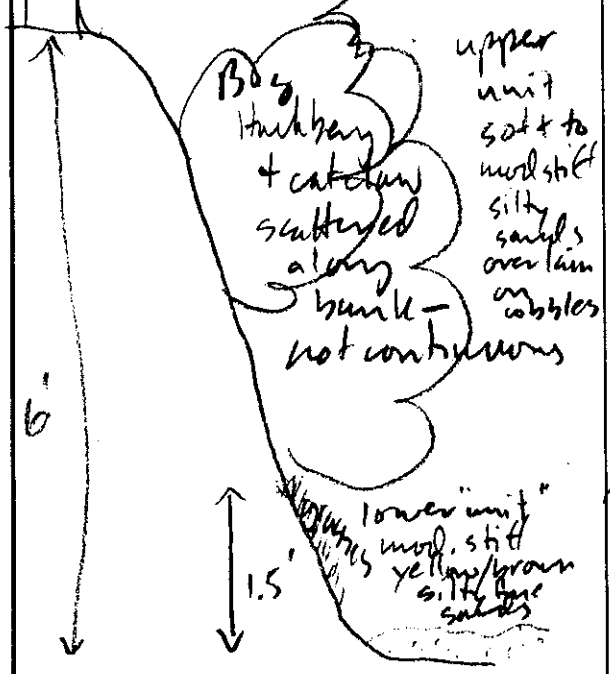
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

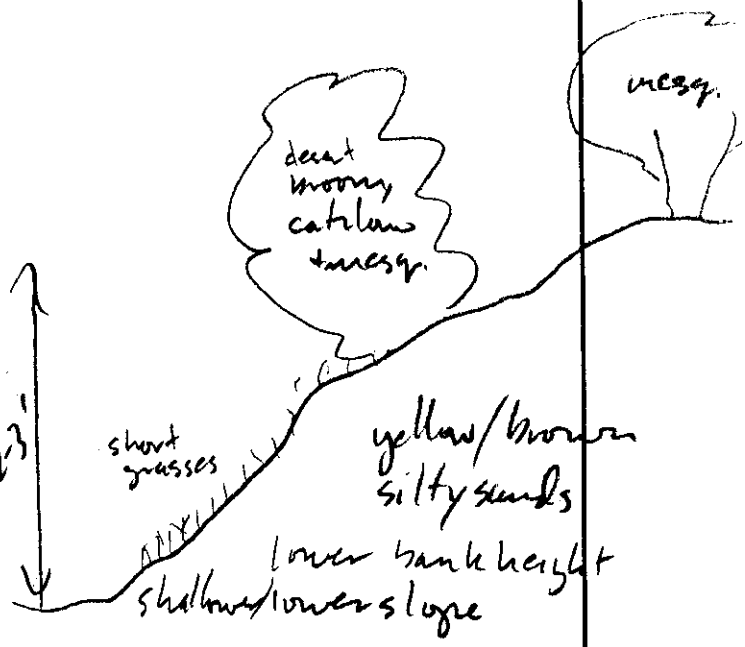
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



Boulder Count

Sta	Texture
0	- 0.01'
2	- vcs
4	- 0.01
6	- 0.01
8	- 0.03
10	- vcs
12	- 0.01
14	- 0.03
16	- 0.01
18	- 0.02
20	- 0.01
22	- 0.02
24	- 0.01
26	- 0.01
28	- vcs
30	- 0.02
32	- 0.01
34	- 0.01

Sta	Texture
36	- 0.01
38	- vcs
40	- fg
42	- vcs
44	-(cowpie diareaha), cs

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-17K

DATE: 5-13

TIME: (BEGIN/END) 1550 / 1610

FIELD CREW: JF + TL + BRJ

RECORDS CHECK BY: (NAME, DATE) 9/1/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	21-6	
LOOKING UPSTREAM ALONG BANK	21-7	
LOOKING DOWNSTREAM ALONG BANK	21-8	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	21-9	
LOOKING UPSTREAM ALONG BANK	21-10	
LOOKING DOWNSTREAM ALONG BANK	21-11	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	21-12	
BED MATERIAL - ENTIRE CHANNEL	21-13 view u/s	from ℄ ≈ 50' D/S
NOTABLE FEATURES: (LIST)	21-14 HWM view D/S of HWM in LB ≈ 5' U/S XS	
• DEEP scour hole ~ 150' u/s		
• in long relatively fine grained reach just after separation from hillslope foot		

in approximate

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH 4-4 Apr '99 (NUMBER)

☐ ON FCDMC TOPOGRAPHY beyond (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Cottonwood, DB, Mg ☐ PHOTOGRAPH

ROOT MAT vi good

CANOPY (HEIGHT, DENSITY) < 15'

PERCENT OF BANK COVER 80%

APPROXIMATE AGE 10 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL IS CLEAR

☐ ARMORING POTENTIAL Mod

☐ VISUAL ESTIMATE OF D50 = 1" COBBLES ☐ PHOTOGRAPH

D90 3" D10 ¼"

(FLAT RACKS d₅₀ << d₉₀

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN P < R ☐ PHOTOGRAPH

SINGLE CHL STRAIGHT

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

YES. Small trib enters @ RB 10' d/s from 12:11

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

– D = 4' R = 3' BW = 50' TW = 65'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

5' on RB

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? Not @ Xn (on RB 500' u/s @ bend) ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

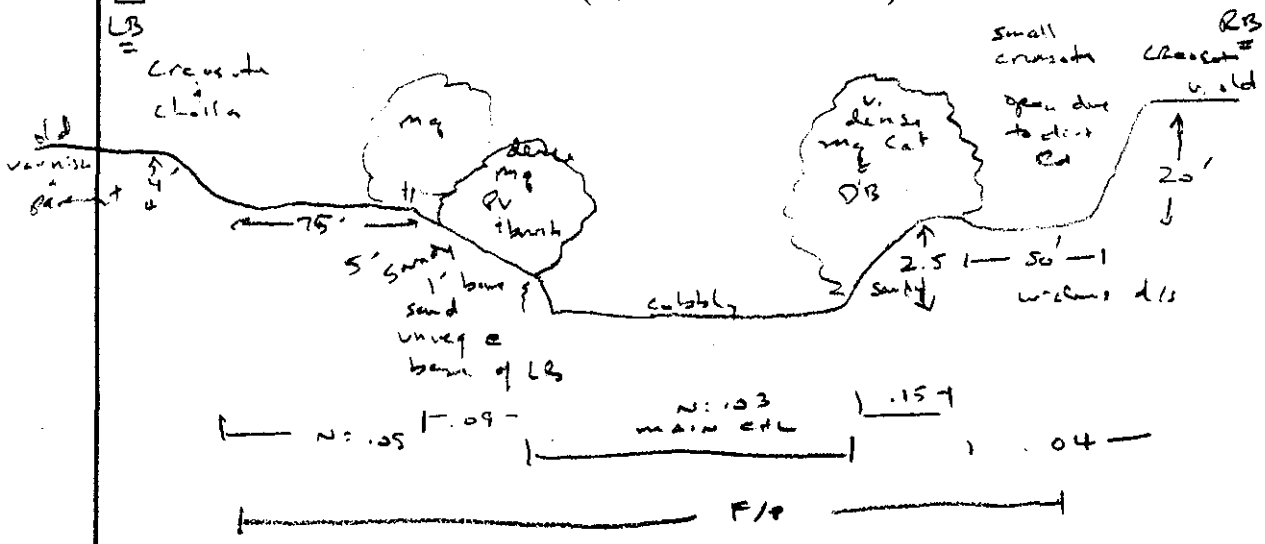
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	R & L f/p	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	< 1'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
grazing CB d/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



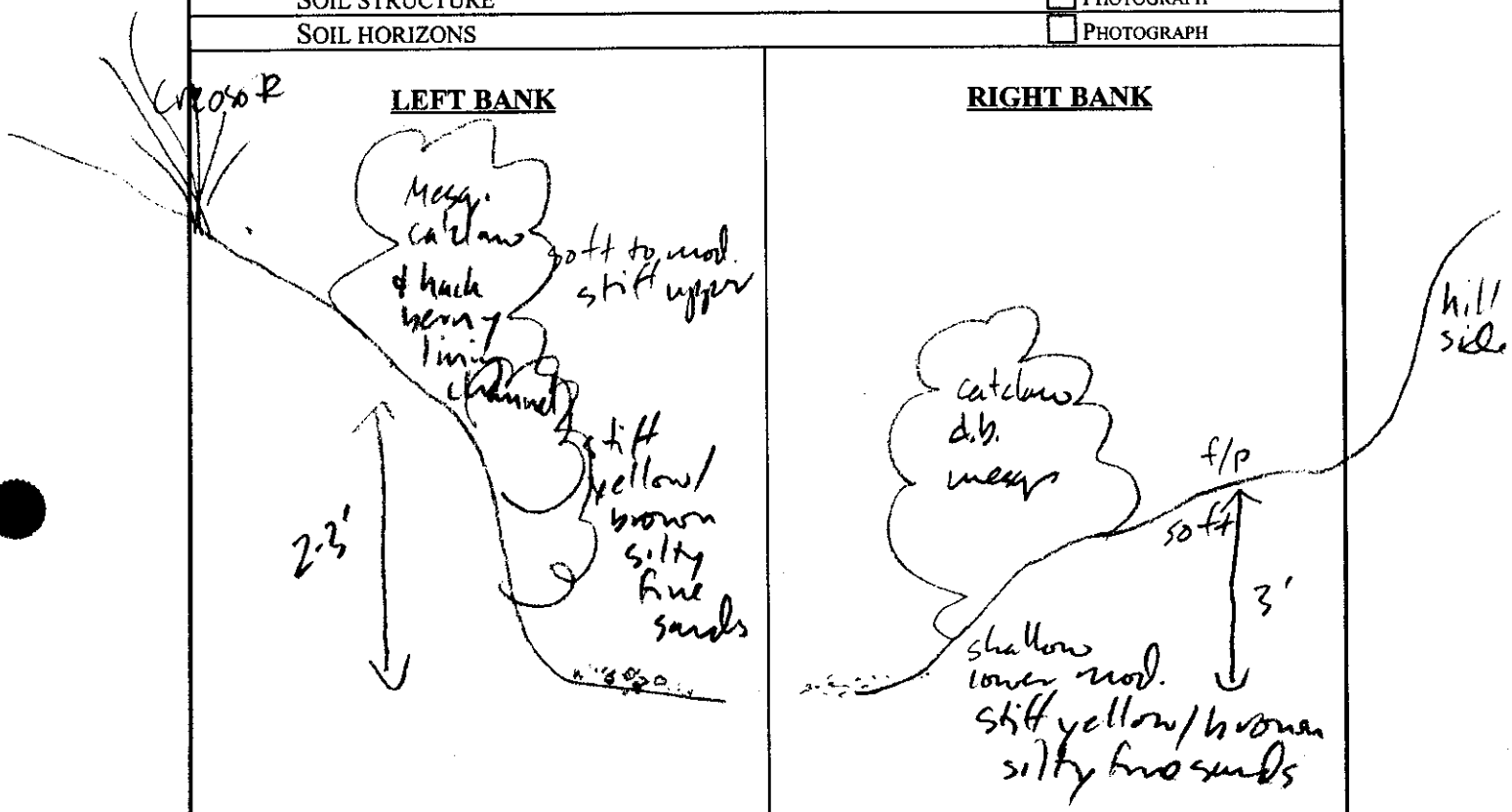
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



Boulder Count

Sta	Texture
0	vfs
2	vcs
4	0.01
6	vcs
8	vcs
10	0.01
12	0.05
14	0.10
16	0.04
18	0.02
20	0.05
22	0.03
24	0.04
26	0.05
28	0.02
30	0.02

Sta	Texture
32	fs
34	0.03
36	0.03
38	0.04
40	0.02
42	0.02
44	0.02
46	0.07
48	0.08
50	vfs

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-16K d/s of main access Rd (to IW Lake)

DATE: 5-13-99

TIME: (BEGIN/END) 1525 / 1545

FIELD CREW: JF + TL + BRI

RECORDS CHECK BY: (NAME, DATE) JF 9/02/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	20-23	
LOOKING UPSTREAM ALONG BANK	20-24	
LOOKING DOWNSTREAM ALONG BANK	20-25	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	20-26	
LOOKING UPSTREAM ALONG BANK	21-1	
LOOKING DOWNSTREAM ALONG BANK	21-2	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	21-3	
BED MATERIAL - ENTIRE CHANNEL	21-4 view U/S from ℄ ≈ 40' D/S of XS	
NOTABLE FEATURES: (LIST)	21-5 HWM on LB ≈ 40' U/S view D/S	

- return of right split combined w/ small trib.
- near end of high walled riffle
- not far D/S of dirt road Xsing

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 4-4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Cat, DB, mg ☐ PHOTOGRAPH

ROOT MAT v. good

CANOPY (HEIGHT, DENSITY) <15'

PERCENT OF BANK COVER 75%

APPROXIMATE AGE 10-40 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL IS CLEAR

☐ ARMORING POTENTIAL Poss / Prob

☐ VISUAL ESTIMATE OF D50 = 6" BIMODAL ☐ PHOTOGRAPH

D90 2' D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Slightly sinuous - single chl P&R ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No. Rtn of RoB B.o chl dis ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

- 8' R, 5' L, BW = 30' (not incl RoB trib)

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No d

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

6 in RB in trees

TYPE AND STAGE (FEET)

PLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

Cyl

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

NO

OBSTRUCT FLOW?

–

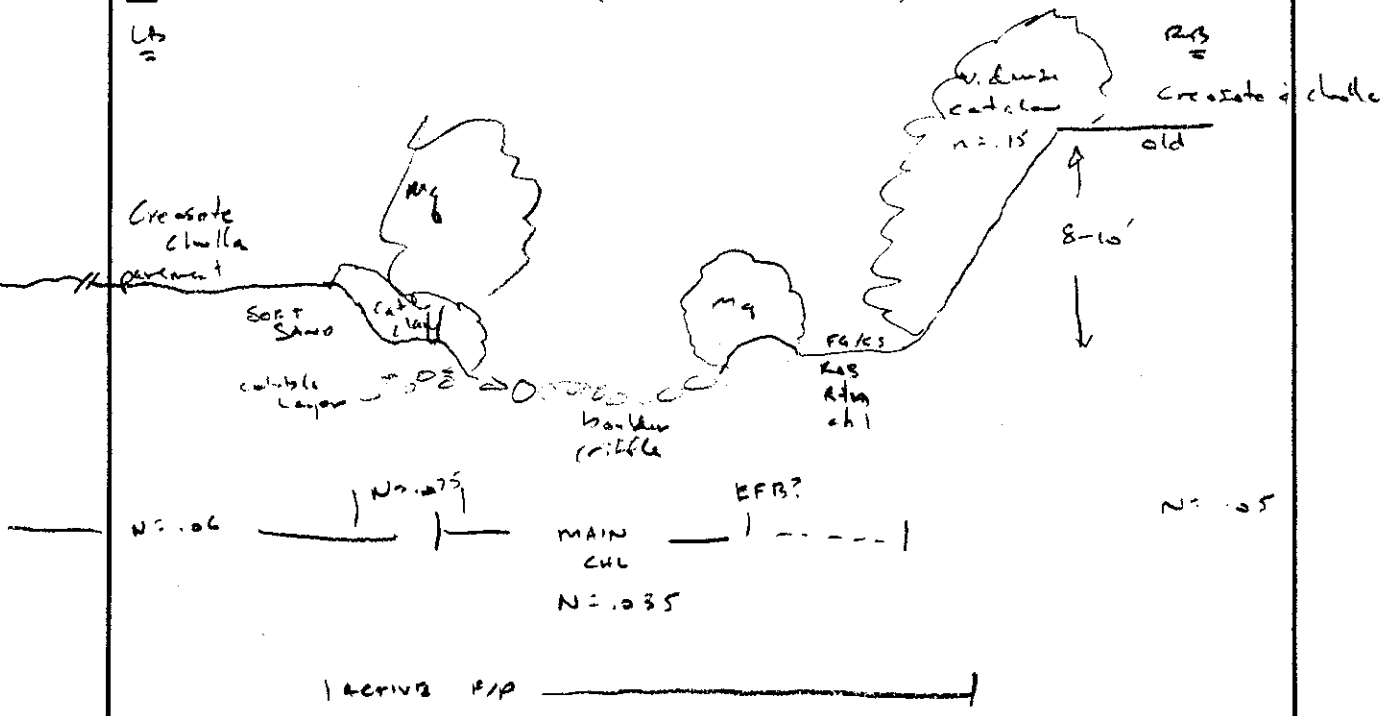
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO RoB rtn e grade	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	small RgL	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH	
HEADCUTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Ruffles – not as steep as v/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	NO	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing – CCB d/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



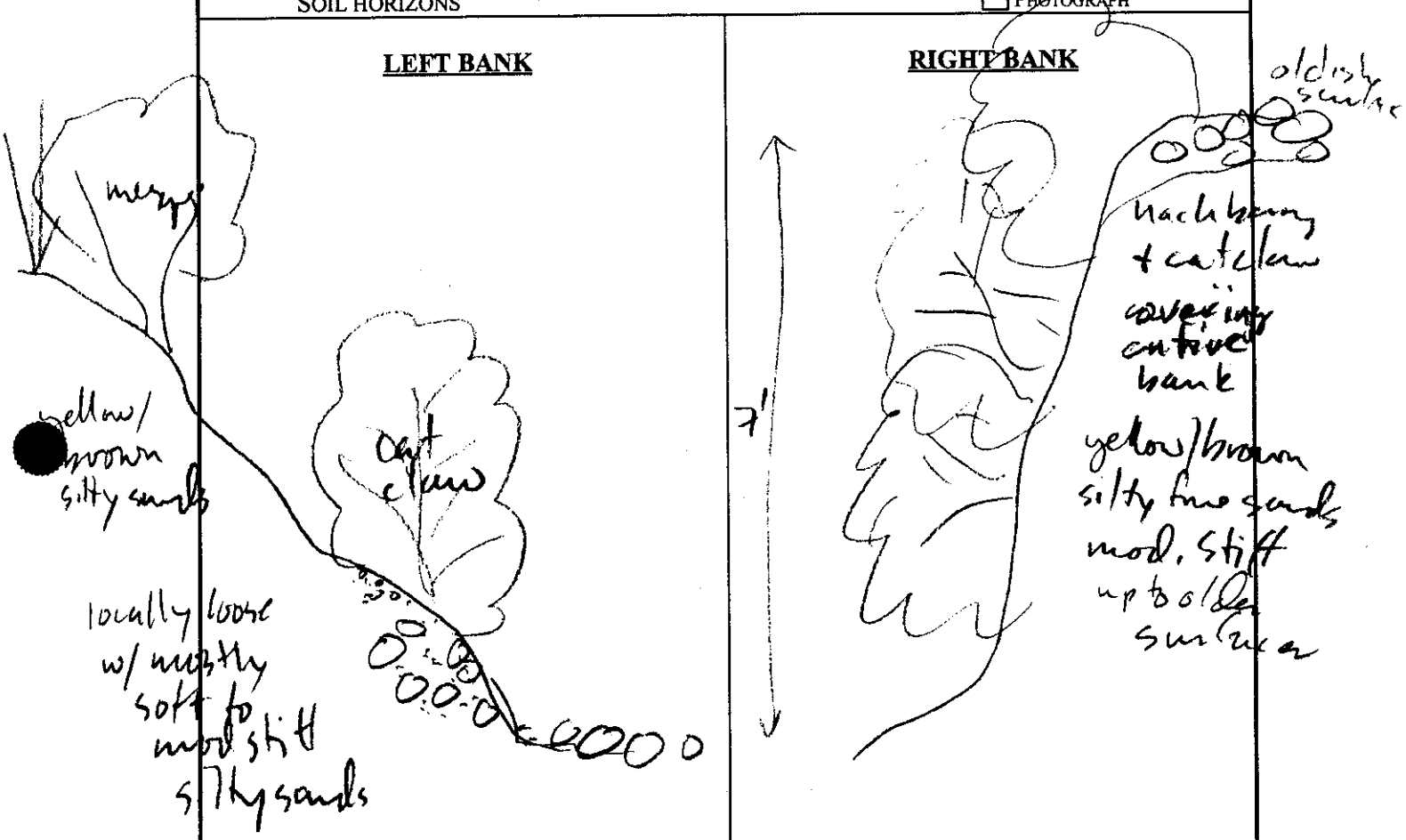
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



Boulder Count

Stn	Texture
0	- 0.09
2	- 0.18
4	- 0.12
6	- 0.24
8	- 0.06
10	- 0.1
12	- 0.35
14	- 0.05
16	- 0.5
18	- vcs
20	- 0.17
22	- 0.6
24	- 0.15
26	- 0.09
28	- 0.3

Stn	Texture	
30	- 0.13	main wash
32	- cs	~~trip~~ return of breakout channel
34	- vcs	
36	- vcs	
38	- 0.02	
40	- vcs	
42	-> med. sand	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: A1N-151S

DATE: 5-13

TIME: (BEGIN/END) 1500 / 1515

FIELD CREW: JF + [illegible] + Sal

RECORDS CHECK BY: (NAME, DATE) 9/2/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	20-14	
LOOKING UPSTREAM ALONG BANK	20-15	
LOOKING DOWNSTREAM ALONG BANK	20-16	
LEFT BANK BLOW COUNT	lower soft / upper mod. stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	20-17	
LOOKING UPSTREAM ALONG BANK	20-18	
LOOKING DOWNSTREAM ALONG BANK	20-19	
RIGHT BANK BLOW COUNT	mod. stiff throughout	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	20-20	
BED MATERIAL - ENTIRE CHANNEL	20-21 view from ℄ ≈ 60' U/S of XS	
NOTABLE FEATURES: (LIST)	20-22 ITWM ≈ 20' D/S on RB	look D/S

- XS @ head of riffle
- reach since last complex XSs more steep riffles bigger scour holes, large fine gravel bars

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 4-4 (NUMBER)

☑ ON FCDMC TOPOGRAPHY Sheet 4-6 on sheet (SHEET #)
off topo area

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV, Mg, DB, Cat, Arrow ☐ PHOTOGRAPH

ROOT MAT good

CANOPY (HEIGHT, DENSITY) <20'

PERCENT OF BANK COVER 60-70%

APPROXIMATE AGE 20-50 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL is clear

☐ ARMORING POTENTIAL PROB.

☐ VISUAL ESTIMATE OF D50 = 2" BIMODAL ☐ PHOTOGRAPH

D90 2' D10 <3

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN SL. SINUOUS SINGLE CHL P & R ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? YES 300' U/S enters from RB - @ grade (or BELOW) ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

- 4' BW = 37' TW = 57

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

5' on RB signs of Q on both R & L f/p

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR ~~TREE SCAR~~ ~~GRUS LINE~~ ~~OTHER~~

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (~~DUNES/RIPPLES~~/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

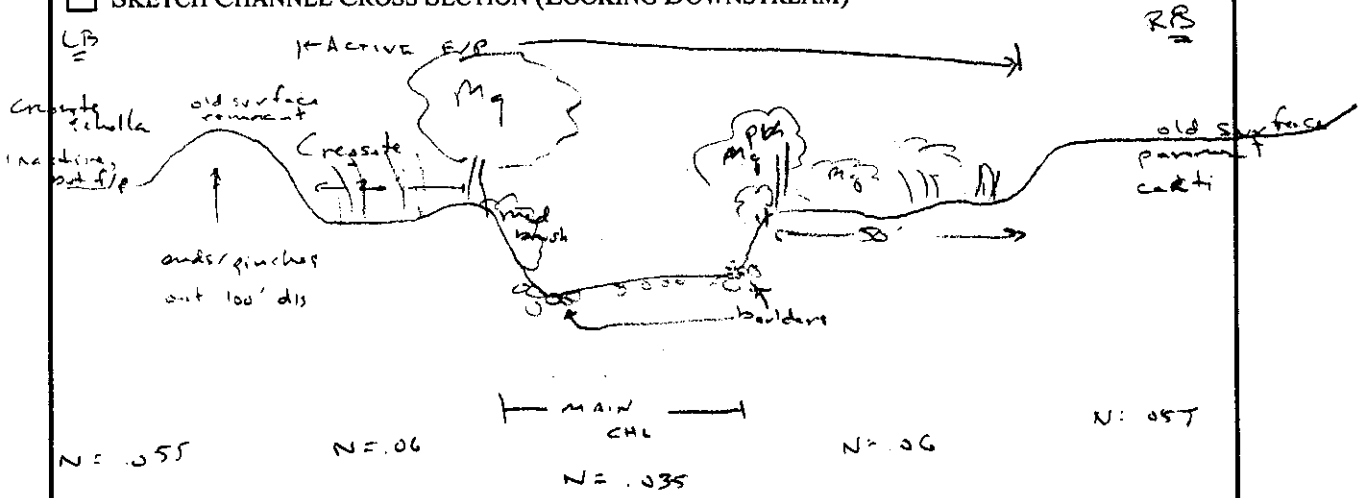
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No (@ grade u/s	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	R + L f/p + old	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	Riffles	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	<1'	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
grazing @ CBD d/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



top of riffle

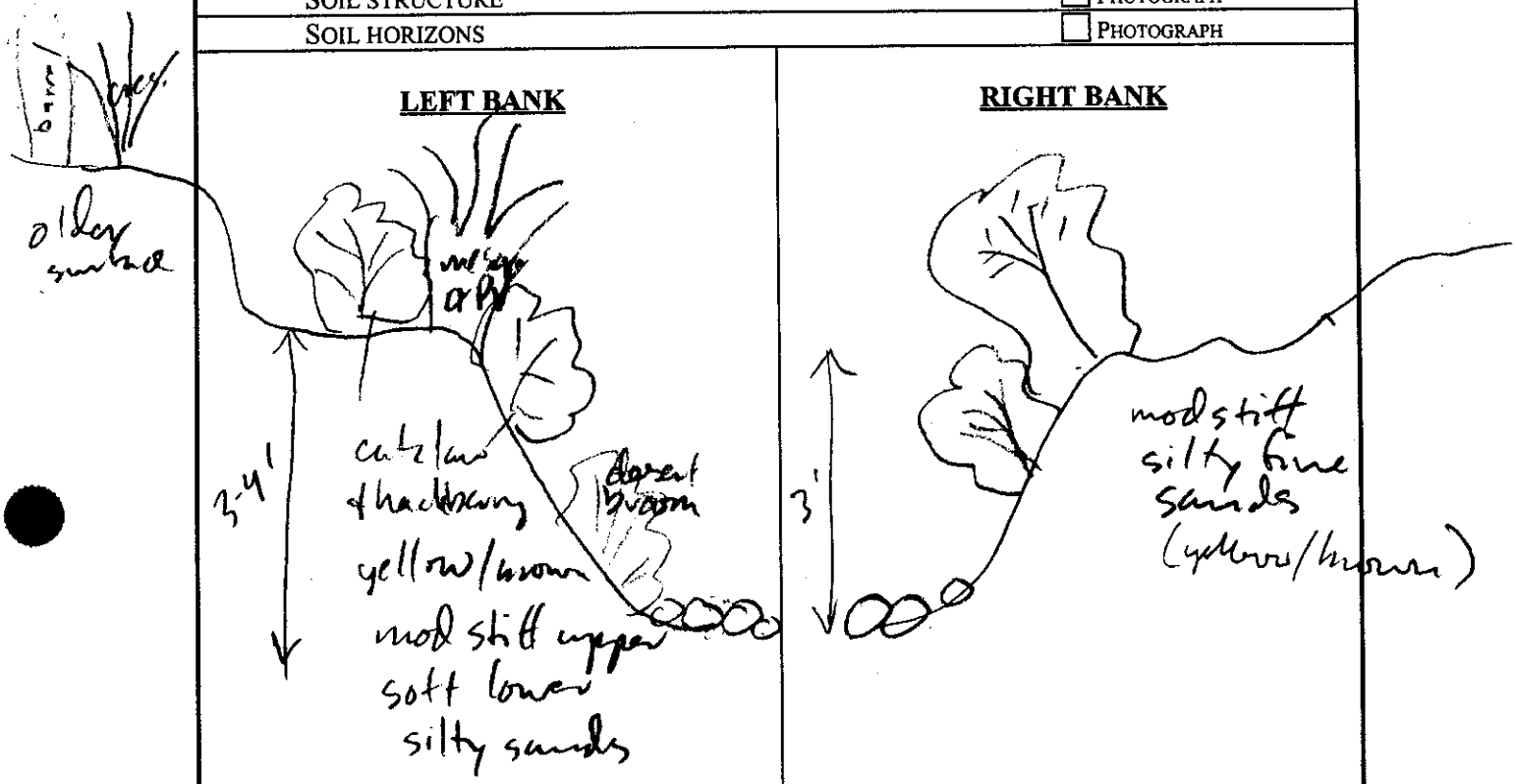
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY		☐ PHOTOGRAPH
GRAIN SIZE		☐ PHOTOGRAPH
COLOR		☐ PHOTOGRAPH
CROSS BEDDING	none	☐ PHOTOGRAPH
CARBONATE CONTENT	none	☐ PHOTOGRAPH
SOIL STRUCTURE		☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH



Boulder Count

Sta	Texture	Sta	Texture
0	vfs	36	0.03
2	~~stick~~ fs		
4	0.7		
6	0.17		
8	0.25		
10	0.5		
12	vcs		
14	0.01		
16	0.06		
18	vcs		
20	fg		
22	med. gravel		
24	vcs		
26	0.01		
28	vcs		
30	0.04		
32	0.6		
34	~~fs~~ med. sand		

A.U. 15K
5.13 72

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 14K

DATE: 5.13

TIME: (BEGIN/END) 2 30 / 250

FIELD CREW: JF, TL, SRI

RECORDS CHECK BY: (NAME, DATE) 9/2/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	20-5	
LOOKING UPSTREAM ALONG BANK	20-6	
LOOKING DOWNSTREAM ALONG BANK	20-7	
LEFT BANK BLOW COUNT	loose bottom / soft top	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	20-8	
LOOKING UPSTREAM ALONG BANK	20-9	
LOOKING DOWNSTREAM ALONG BANK	20-10	
RIGHT BANK BLOW COUNT	mod. hard lower	/ stiff upper
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	20-11	
BED MATERIAL - ENTIRE CHANNEL	20-12 view D/S from LB ≈ 40' U/S	
NOTABLE FEATURES: (LIST) XS in bend near end of pool / start of riffle. left bank more 'point bar'-like right bank on outside of bend	20-13 1hr M on RB @ XS view D/S	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH 4-8 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY Sheet 4 of 6 (SHEET #)

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? –

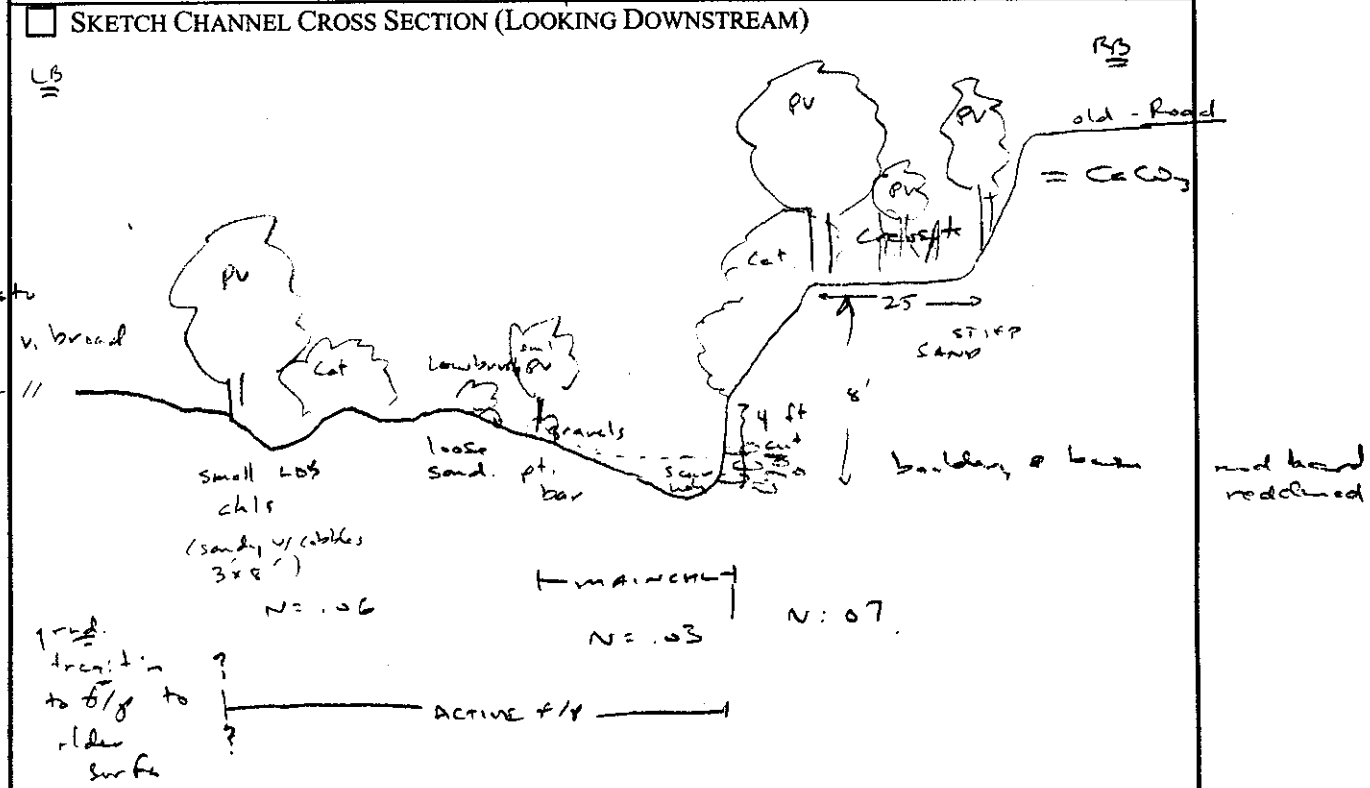
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	L & R f/p	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes (R)	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Riffles u/s & d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	bend scour ~4' ~~No~~		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
grazing CBD d/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)

Compare to AW-LOB1



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

LB too poorly defined to - more of a pt. bar

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Cot, PV, Mg, Arrow ☐ PHOTOGRAPH

ROOT MAT good, slightly gouged on R (band scour)

CANOPY (HEIGHT, DENSITY) <15 ~15 lower

PERCENT OF BANK COVER 60%

APPROXIMATE AGE <20 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL CLEAR @ Xn - brush island 150' dis of Xn

☐ ARMORING POTENTIAL

No

☐ VISUAL ESTIMATE OF D50 1/4" ☐ PHOTOGRAPH

D90 1" D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	L	R		
CUT BANKS	No	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	YES @ base	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	yes @ base	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)			☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN → @ LB xn ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

— L=2' R=8' BW=36'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q → in band scour hole

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

7' on RB 4 ft from current

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

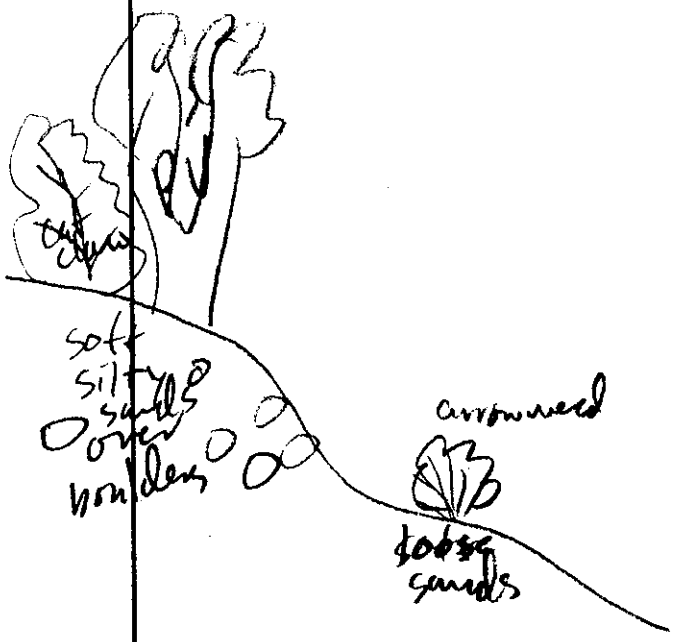
☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

3. BANK PROFILE

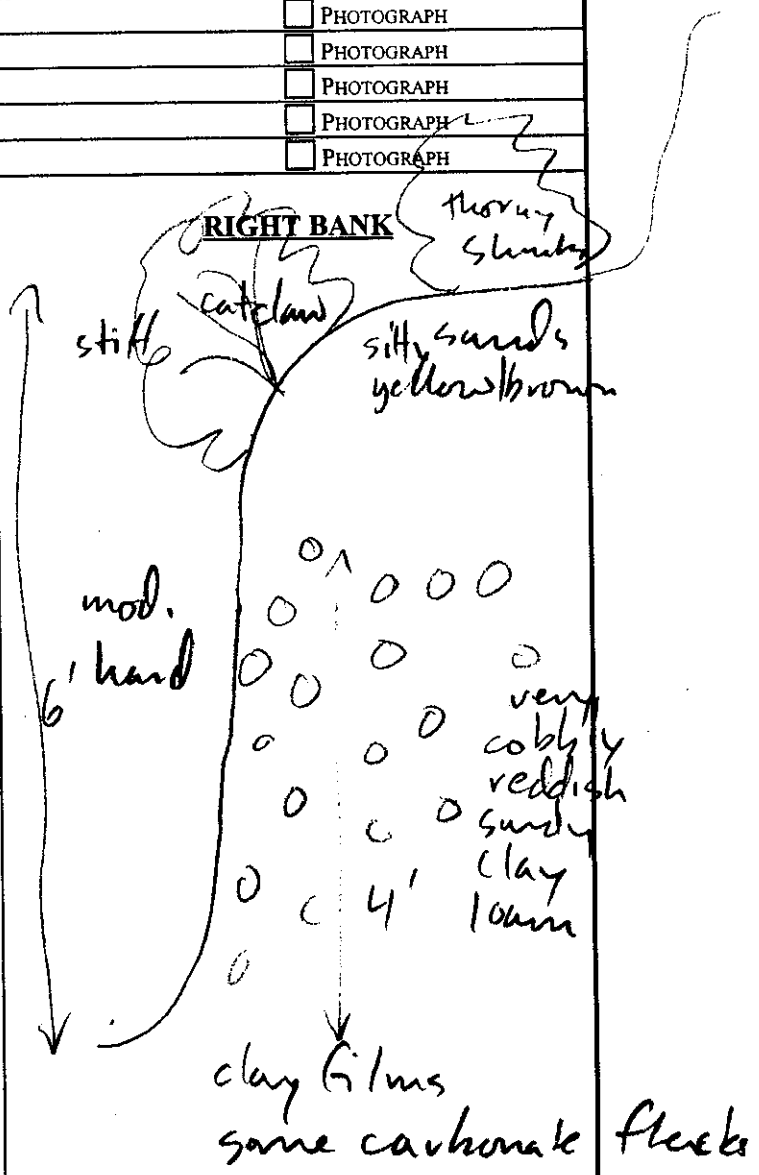
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



Boulder Count

Sta	Texture
0	cs
1	0.05'
2	0.03
3	0.13
4	cs
5	0.05
6	0.01
7	med. sand
8	cs
9	cs
10	0.12
11	cs
12	fg
13	cs
14	fg
15	0.03
16	0.02
17	fg
18	0.03
19	0.04
20	0.01
21	0.07
22	vcs
23	0.02
24	0.01
25	0.09
26	0.06
27	0.02
28	vcs
29	0.02
30	0.05
31	fg
32	0.08
33	0.03
34	0.02
35	0.01

AW-14K
5-13
TT

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-13K

DATE: 5-13

TIME: (BEGIN/END) 1400 / 1420

FIELD CREW: JF BCI TWL

RECORDS CHECK BY: (NAME, DATE) JF 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	19-22	
LOOKING UPSTREAM ALONG BANK	19-23	
LOOKING DOWNSTREAM ALONG BANK	19-24	
LEFT BANK BLOW COUNT	mod. stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	19-25	
LOOKING UPSTREAM ALONG BANK	19-26	
LOOKING DOWNSTREAM ALONG BANK	20-1	
RIGHT BANK BLOW COUNT	soft lower half / stiff upper	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	20-2	
BED MATERIAL - ENTIRE CHANNEL	20-3 view D/S from LB ≈ 40' u/s	
NOTABLE FEATURES: (LIST)	20-4 thru M on LB ≈ 100' u/s of XS	

- beginning of long pool
- banks somewhat higher + generally smoother/rounder than in U/S sections seen today

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 4-8 AZL (NUMBER)

☑ ON FCDMC TOPOGRAPHY Sheet 4 of 6 (SHEET #)

NOTE: There are 2 very steep riffles u/s of AW-13K & evidence of ~6' of vert drop in

But NONE @ XW

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Mg, Cot, Pv, Arrow ☐ PHOTOGRAPH

ROOT MAT good

CANOPY (HEIGHT, DENSITY) mostly <20' some to 35'

PERCENT OF BANK COVER 55%

APPROXIMATE AGE 10-50+

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL is clear

☐ ARMORING POTENTIAL Low

☐ VISUAL ESTIMATE OF D50 1/4" ☐ PHOTOGRAPH

D90 3" D10 CS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No - except on oldest trees	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

-13 35' Pv w/ root exposed

☐ CHANNEL PATTERN P&R ☐ PHOTOGRAPH

STRAIGHT SINGLE CHL

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

-, R = 8' L = 7', BW = 36, TW = 50

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

4th Lx

terrace along RCS

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW? —

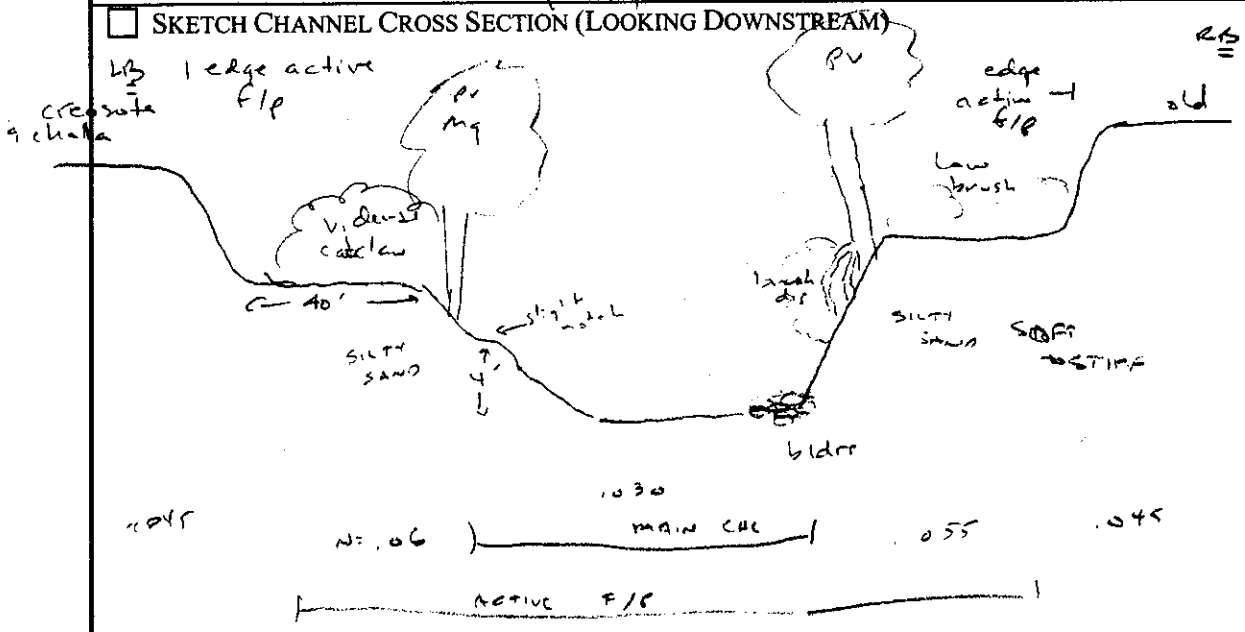
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	R - L	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—		☐ PHOTOGRAPH
HEADCUTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	— v. steep riffles u/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	Yes u/s ~6' - 21' @ KN		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing Cam Butler Dam d/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



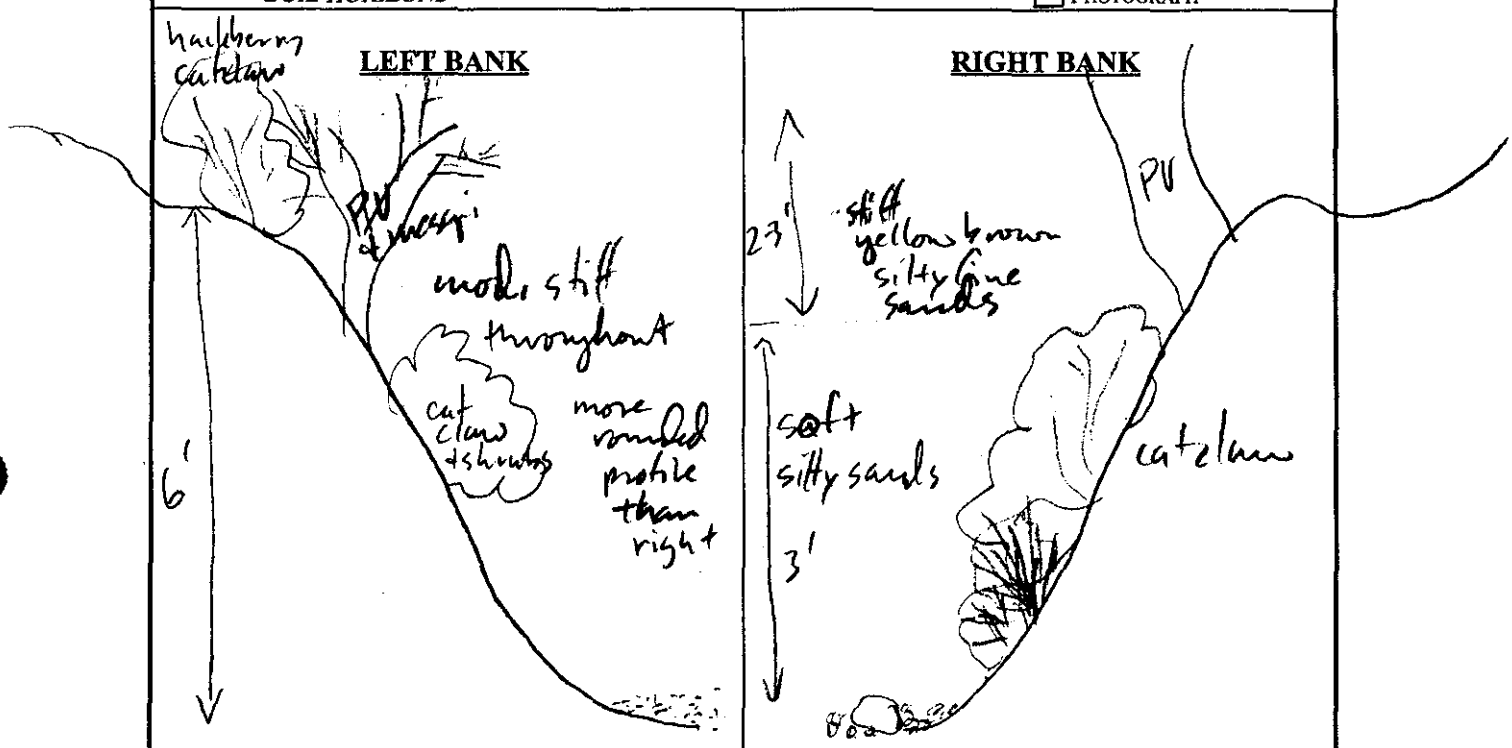
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



Boulder Count

Stn	Texture	Stn	Text
1	fs	25	fg
2	fs	26	fg
3	fs	27	fg
4	0.07	28	vcs
5	0.03	29	vcs
6	0.07	30	vcs
7	fs	31	vcs
8	0.04	32	vcs
9	0.02	33	0.11
10	0.02	34	0.22
11	0.03	35	1.0
12	0.02	36	vfs
13	0.02		
14	0.03		
15	0.03		
16	0.04		
17	0.03		
18	0.04		
19	(very hot sand) (0.03)		
20	fs		
21	0.01		
22	fg		
23	0.02		
24	fg		

BEGIN STUDY REACH

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 12K

DATE: 5-13

TIME: (BEGIN/END) 1330/1350

FIELD CREW: JF + BRI + TL

RECORDS CHECK BY: (NAME, DATE) 9/2/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	19-13	
LOOKING UPSTREAM ALONG BANK	19-14	
LOOKING DOWNSTREAM ALONG BANK	19-15	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	19-16	
LOOKING UPSTREAM ALONG BANK	19-17	
LOOKING DOWNSTREAM ALONG BANK	19-18	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	19-20	
BED MATERIAL - ENTIRE CHANNEL	19-21 ≈ 40' U/S view D/S from LB	
NOTABLE FEATURES: (LIST) · just U/S of steep riffle which falls off to right · overflowing into left overbank at head of riffle	19-22 - HWM on LB ≈ 100' U/S of AW - 12K	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 4-8 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY Sheet 4-6 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Creosote, SV, Mq, DS, Cat ☐ PHOTOGRAPH

ROOT MAT fair, slightly ~~[illegible]~~ [illegible]

CANOPY (HEIGHT, DENSITY) < 20'

PERCENT OF BANK COVER 40%

APPROXIMATE AGE most < 20 yrs some 50 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL CLEAR @ XN, Cat on island 70' d/s

☐ ARMORING POTENTIAL

low

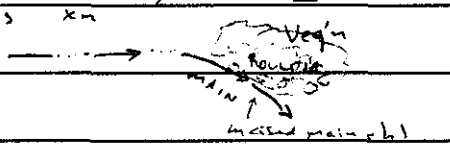
☐ VISUAL ESTIMATE OF D50 ½" ☐ PHOTOGRAPH

D90 6" D10 FG

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	R	L		
CUT BANKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–		☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	on LB d/s xn		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH



☐ TRIBUTARIES NEARBY? NO ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

–, 5', BW = 39 TW = 55

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

NO Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

on Banks @ 3 ft

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT. UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

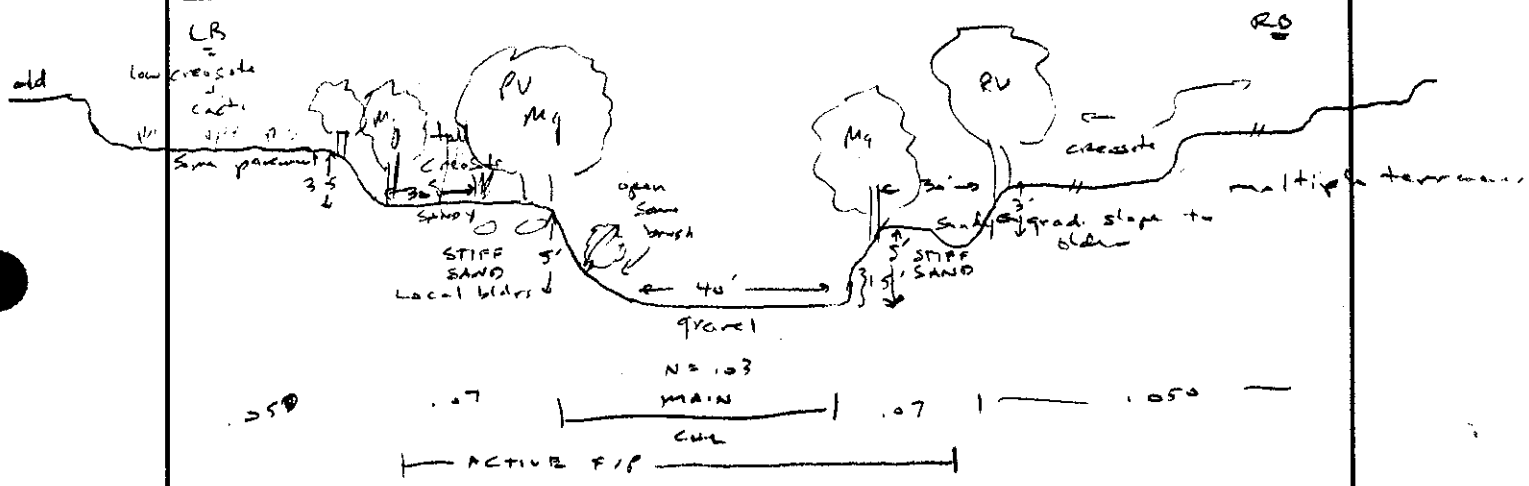
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	L & R	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	yes @ base	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	?? 5' dry thru r. short riffle	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	d/s (150' long)	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	possible 1.5'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

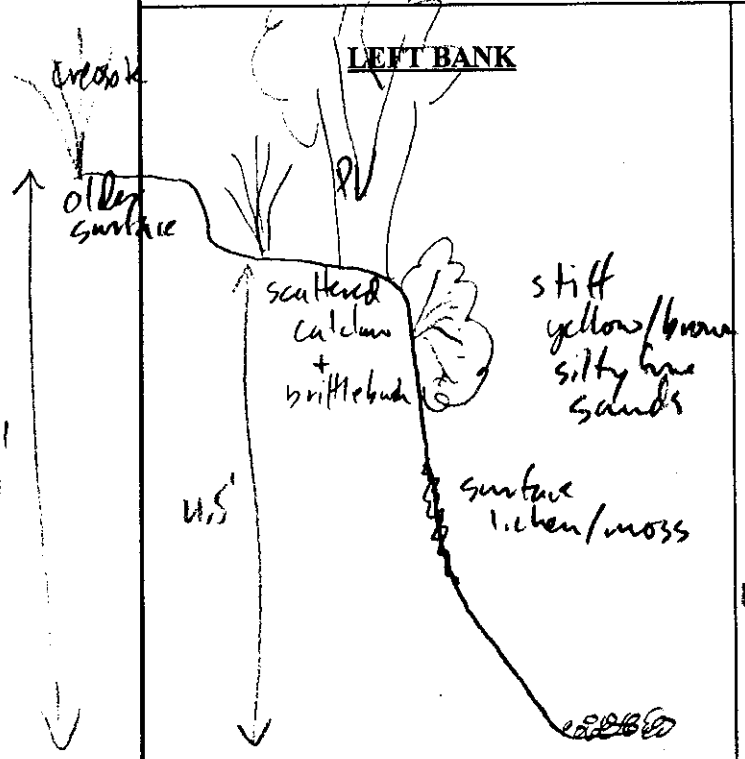
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

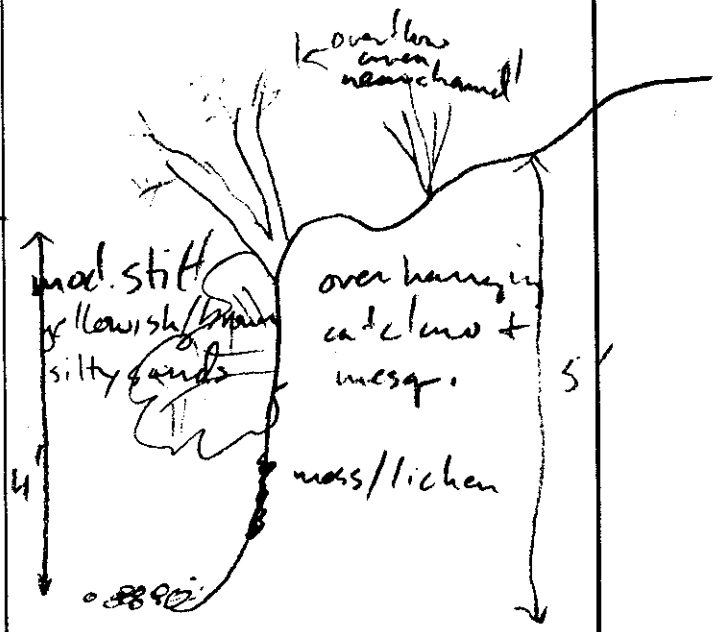
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT None	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



Boulder Count

Sta	Texture
0'	silty ufs
2'	0.12'
4	0.15'
6	fg
8	fg
10	1.6'
12	0.07'
14	1.0
16	0.02
18	0.02
20	0.05
22	0.7
24	0.05
26	0.05
28	0.01
30	0.01
32	0.01
34	fg
36	0.05
38	fs

HW-12K
S-13

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 11K

DATE: 5 · 13

TIME: (BEGIN/END) 1305

FIELD CREW: JF, BKI, TL

RECORDS CHECK BY: (NAME, DATE) JE 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	19-4	
LOOKING UPSTREAM ALONG BANK	19-5	
LOOKING DOWNSTREAM ALONG BANK	19-6	
LEFT BANK BLOW COUNT	mod. stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	19-7	
LOOKING UPSTREAM ALONG BANK	19-8	
LOOKING DOWNSTREAM ALONG BANK	19-9	
RIGHT BANK BLOW COUNT	mod stiff	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	19-10	
BED MATERIAL - ENTIRE CHANNEL	19-11 view D/S from 925' U/S on LB	
NOTABLE FEATURES: (LIST) middle of pool - 19-12 - hum @ RB		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 4-6 ASC '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY 4 of 6 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Cat, Pv, Mg, Arrow ☐ PHOTOGRAPH

ROOT MAT v. good

CANOPY (HEIGHT, DENSITY) <15'

PERCENT OF BANK COVER 80%

APPROXIMATE AGE 20-30

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) Db & Arrow ☐ PHOTOGRAPH
CHL is clear @ XN, Mg in chl 50' w/s -200

☐ ARMORING POTENTIAL
No

☐ VISUAL ESTIMATE OF D50 FG ☐ PHOTOGRAPH
D90 1/2" D10 5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	yes	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ CHANNEL PATTERN STRAIGHT SINGLE CHL P&R ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? LOB trib spills into main chl @ XN over the LB ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 6', Bw = 45' TW = 55

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
Q48 buoy Mg in LOB 10' from chl

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS ~~(DUNES/RIPPLES/ARMOR/PLAIN)~~ ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

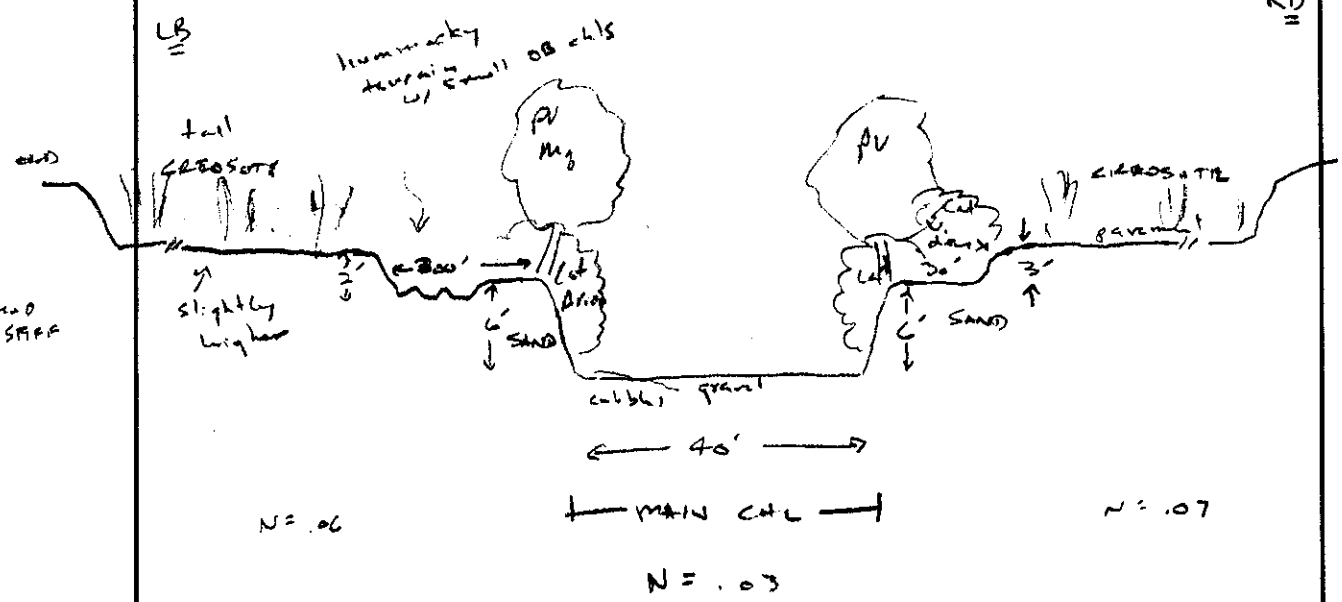
(no large) TRIB in LOB

HANGING TRIBUTARIES	LOB ~6'	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	yes L & R	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	[illegible] u/s & d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	— possible 1'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING ~~DOWNSTREAM~~) UPSTREAM



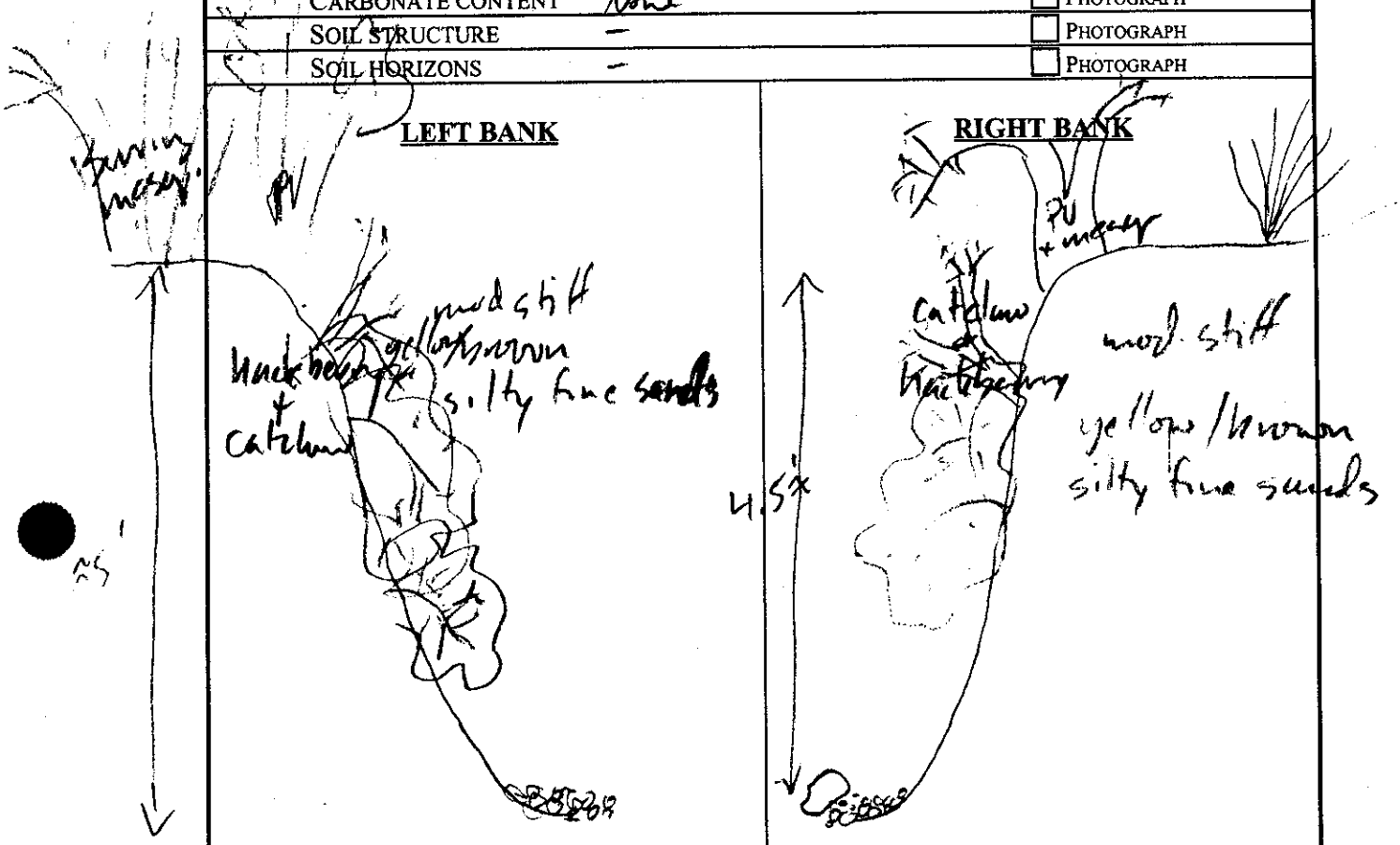
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY		☐ PHOTOGRAPH
GRAIN SIZE		☐ PHOTOGRAPH
COLOR		☐ PHOTOGRAPH
CROSS BEDDING		☐ PHOTOGRAPH
CARBONATE CONTENT	None	☐ PHOTOGRAPH
SOIL STRUCTURE	—	☐ PHOTOGRAPH
SOIL HORIZONS	—	☐ PHOTOGRAPH



Au[illegible]11..
5-13-99

Boulder Count

Sta	Texture
0	vfs
~~1~~	~~vfs~~
2	vcs
4	0.01
6	0.1
8	fg
10	0.03
12	0.05
14	0.04
16	0.01
18	0.01
20	0.02
22	fg
24	0.01
26	0.02
28	0.02
30	fg
32	0.02
34	0.19

Sta	Texture
36	0.22
38	vcs
40	vcs

5-13

906
- 17
8:9

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 10K

DATE: 5-13

TIME: (BEGIN/END) 12:35pm - 1pm

FIELD CREW: JF + BRI + TL

RECORDS CHECK BY: (NAME, DATE) JF 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS!***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	18-23	
LOOKING DIRECTLY AT BANK		
LOOKING UPSTREAM ALONG BANK	18-24	
LOOKING DOWNSTREAM ALONG BANK	18-25	
LEFT BANK BLOW COUNT	Soft top, Loose to soft on bottom	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	18-26	
LOOKING UPSTREAM ALONG BANK	18-27	
LOOKING DOWNSTREAM ALONG BANK	18-28	
RIGHT BANK BLOW COUNT	Loose lower, moderately stiff	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	19-1	
BED MATERIAL - ENTIRE CHANNEL	19-2 L.d.S. from ~15' U.S. from AW-10K on left bank	
NOTABLE FEATURES: (LIST) Looking @ high water debris in mesquite tree on left bank ~15' d.s. of AW-10K	19-3	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 4 - 8 (NUMBER)

☑ ON FCDMC TOPOGRAPHY 4 of 6 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Mg, Cat, (FV) ☐ PHOTOGRAPH

ROOT MAT good

CANOPY (HEIGHT, DENSITY) ≈15'

PERCENT OF BANK COVER 50-70%

APPROXIMATE AGE 20+

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL IS clear, except leaning trees

☐ ARMORING POTENTIAL

YES

☐ VISUAL ESTIMATE OF D50 4" BIMODAL ☐ PHOTOGRAPH

D90 3' D10 CS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES / very old Mg, slight	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN P&R ☐ PHOTOGRAPH

STRAIGHT SINGLE CHL

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

NO - RJS CHL RTNS 50-200' U/S

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

- 6' BW = 30 TW = 50

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

NO Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

IN FALLEN TREES ON LB ~ 7.8'

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT. UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) IMBRICATION ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW? —

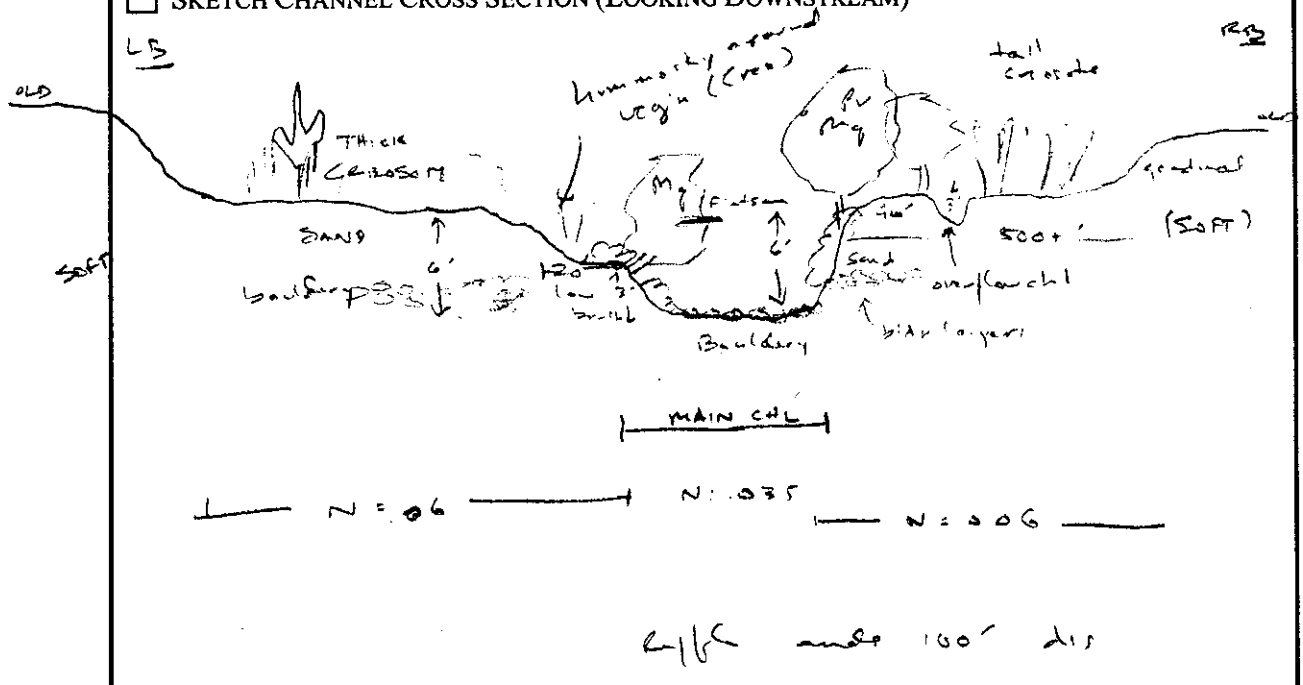
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES – ROB 0.1N + 4ft	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES LOL	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) 3:1	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) —		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS in riffle	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION No		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☒ VEGETATION
- ☒ MANNING'S N VALUES
- ☒ BARS
- ☒ FLOODPLAIN/ TERRACES
- ☒ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☒ ACTIVE CHANNEL LIMITS
- ☒ ISLANDS

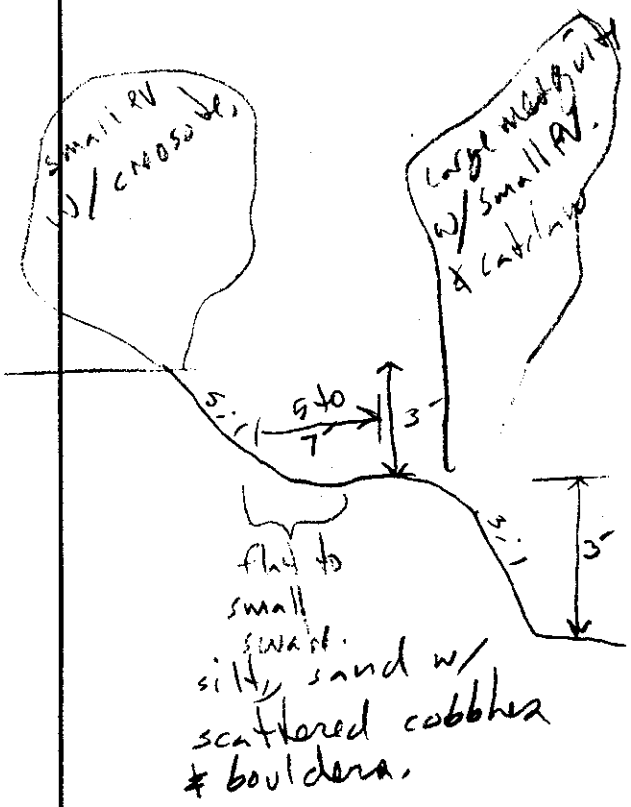
3. BANK PROFILE

☑ DRAW REPRESENTATIVE BANK PROFILE

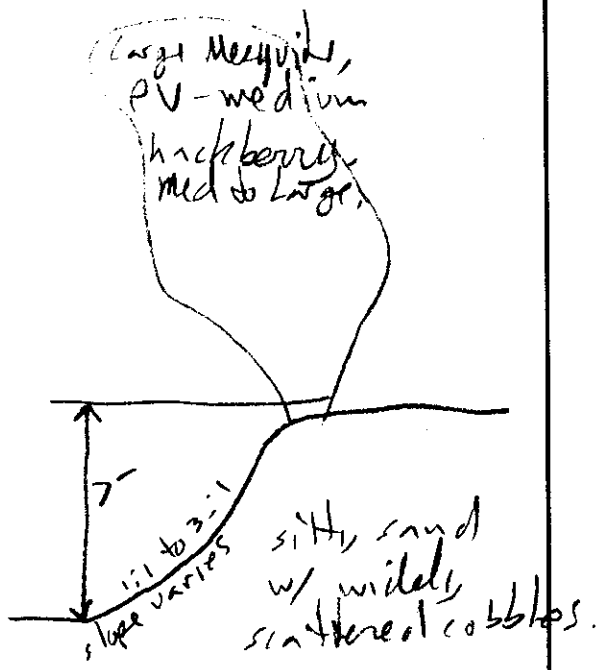
NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY —	☐ PHOTOGRAPH
GRAIN SIZE silty sand	☑ PHOTOGRAPH
COLOR yellow	☑ PHOTOGRAPH
CROSS BEDDING —	☐ PHOTOGRAPH
CARBONATE CONTENT —	☐ PHOTOGRAPH
SOIL STRUCTURE —	☐ PHOTOGRAPH
SOIL HORIZONS —	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-10K
5/13/99

Boulder Count

0 - 0.3

1 - c. Sand

2 - ( )

3 - ( ) same

4 - ( )

5 - 0.23

6 - 0.01

7 - 0.02

8 - 0.03

9 - 0.55

10 - 0.35

11 - 0.10

12 - 0.05

13 - 1.5

14 - 1.5 same rock

15 - v. c. Sand

16 - 0.13

17 - 0.2

18 - 0.23

19 - 0.02

20 - 0.26

21 - 0.15

22 - 0.12

23 - 0.55

24 - 0.23

25 - 0.95

26 - 0.06

27 - 0.14

28 - v.c. Sand

29 - 0.3

30 - 0.55

AW-10K
5-13

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-9K

DATE: 5-13-99

TIME: (BEGIN/END) 11:00am - 11:40am

FIELD CREW: JF BRI TWL

RECORDS CHECK BY: (NAME, DATE) 9/2/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Left of two chan	Right channel.
LOOKING DIRECTLY AT BANK	18-4	18-13
LOOKING UPSTREAM ALONG BANK	18-5	18-14
LOOKING DOWNSTREAM ALONG BANK	18-3	18-15
LEFT BANK BLOW COUNT	mod stiff matrix Material.	Mod, stiff bottom soft top.
RIGHT BANK (SURVEY ROD FOR SCALE)		18-16
LOOKING DIRECTLY AT BANK	18-1	18-17
LOOKING UPSTREAM ALONG BANK	18-2	18-18
LOOKING DOWNSTREAM ALONG BANK	18-4	18-3
RIGHT BANK BLOW COUNT	soft	mod stiff to soft.
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	18-[illegible]	18-19
BED MATERIAL - ENTIRE CHANNEL	18-11, L. D.S. from	20' U.S. on L.B.
NOTABLE FEATURES: (LIST) high water debris pile on left bank ~ 25' U.S. of AW-9K	18-12	18-20 L. d.s. from — 20' U.S. of AW-9K rig channel on r.b.
		18-21 - high water debris pile at AW-9K on R. bank.

[illegible]ATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-8 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY 4 of 6 (SHEET #)

RIGHT CHL

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION L: DS, Mg, Cat, PV ☐ PHOTOGRAPH
R: Cat, Acrow, Ts, Mg, PV

	R	L
ROOT MAT	good	few
CANOPY (HEIGHT, DENSITY)	>15'	<10
PERCENT OF BANK COVER	80	20
APPROXIMATE AGE	20-50	1-5

Crosote: Mg / Ac / <15' / 40 / <20

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
Some DS & Mg w/ trailing bars (Sand) 5%

10% brush

☐ ARMORING POTENTIAL Mod.

☐ VISUAL ESTIMATE OF D50 1" (Riffle) ☐ PHOTOGRAPH
D90 1' D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	L	R		
CUT BANKS	YES		☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES		☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	YES		☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	YES		☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—		☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	pt. bar on R (inside)		☐ PHOTOGRAPH	☐ PLOT LOCATION

No

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
SINUOUS - on bend in riffle

STRAIGHT, SINGLE NATURE, MULTIPLE Qrs

☐ TRIBUTARIES NEARBY? (US CHLS IN LOB) ☐ PHOTOGRAPH
NO

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— (3'R) BW = 33 TW = 50

BW = 19' y = 2'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q L 20'

—

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
2bf +

Flotsam @ bedt = 2 ft

TYPE AND STAGE (FEET) Trimline @ ~3' on LOB & 6' (?)
FLOTSAM ~~SLACKWATER~~ EROSION SCAR TREE SCAR ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

No

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
?

PLAIN @ R

R CHL

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH — NO

OBSTRUCT FLOW? —

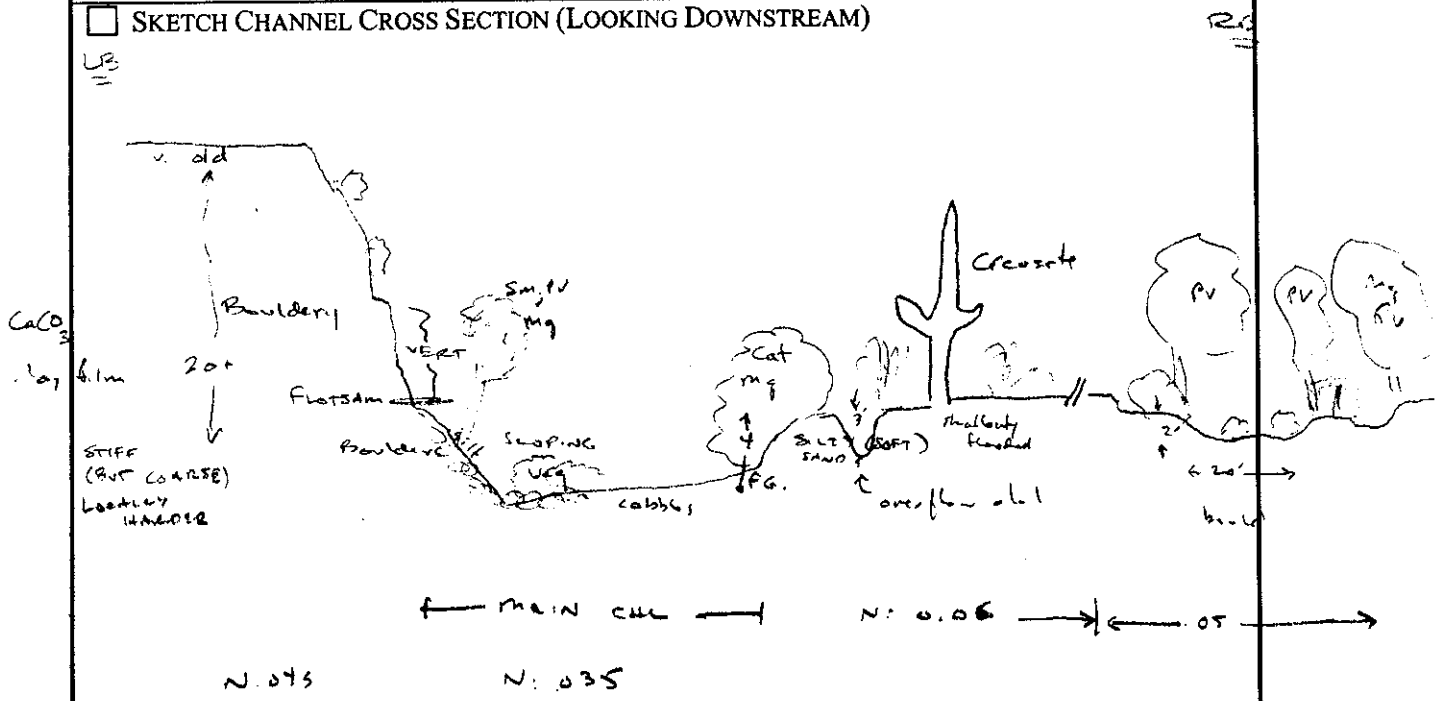
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES R f/p ; NO L	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	YES L	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS ~~N~~	small riffle	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	NO	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

NO

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☐ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☐ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

3. BANK PROFILE

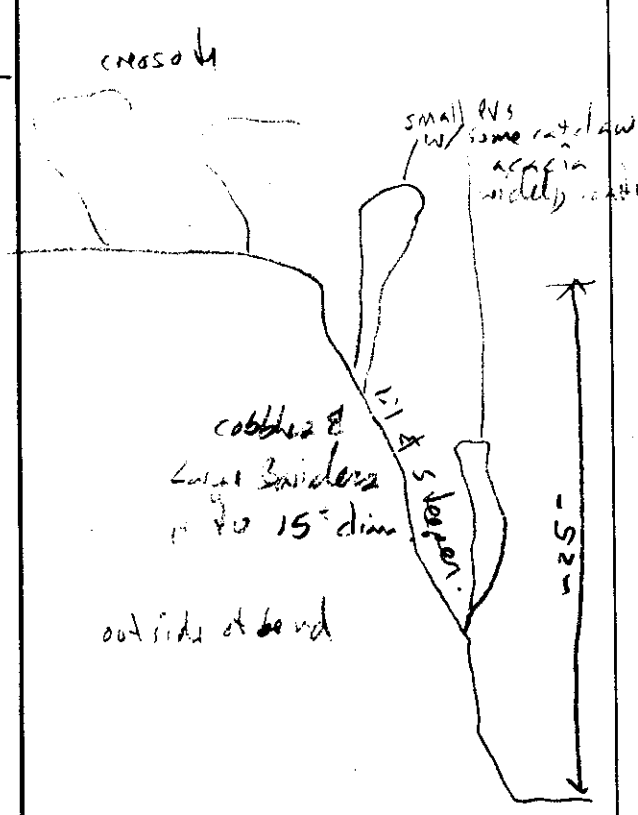
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY alternating layers in both banks cobbles/boulders	☑ PHOTOGRAPH	weak
GRAIN SIZE coarse gravel w/ cobbles & boulders	☑ PHOTOGRAPH	
COLOR yellow	☐ PHOTOGRAPH	
CROSS BEDDING —	☐ PHOTOGRAPH	
CARBONATE CONTENT, Phase 1, Thin discontinuous coating	☑ PHOTOGRAPH	
SOIL STRUCTURE —	☐ PHOTOGRAPH	
SOIL HORIZONS —	☐ PHOTOGRAPH	

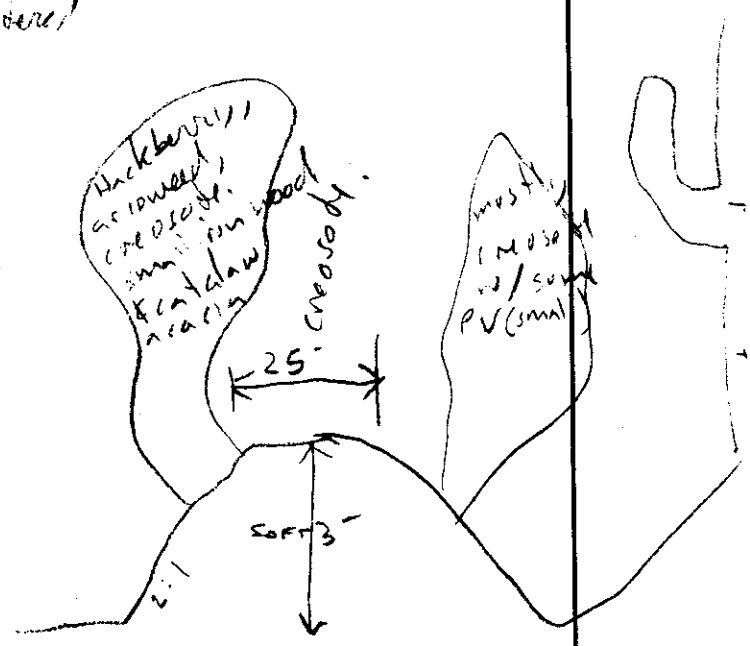
RIGHT ↑ NO ↓

MAIN (LEFT) CHL

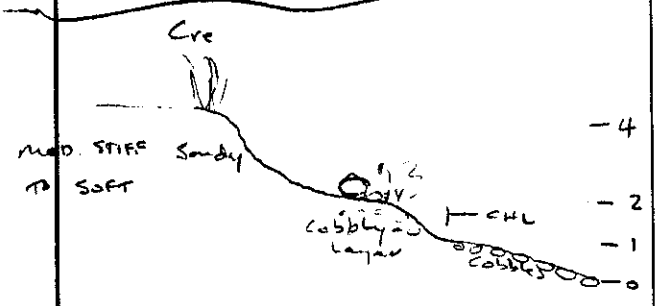
LEFT BANK

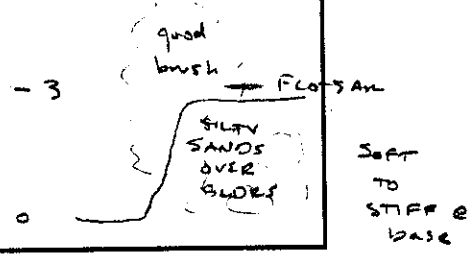


RIGHT BANK



RIGHT CHL





somewhat poorly defined banks in RO'S CHL

A 9K
5-13

Boulder Count

Left channel

1 – silt
2 – 0.08
3 – 0.17
4 – 0.06
5 – 0.50
6 – 0.27
7 – 0.18
8 – 0.07
9 – 0.45
10 – 0.04
11 – 0.13
12 – 0.80
13 – 0.70
14 – 0.08
15 – 0.20
16 – 0.70
17 – 0.01
18 – v.c. sand
19 – 0.02
20 – f. gravel
21 – 0.04
22 – 0.28
23 – 0.02
24 – 0.05
25 – f. gravel
26 – f. gravel
27 – v.c. sand
28 – v.c. sand
29 – f. gravel
30 – v.c. sand
31 – v.c. sand
32 – v.c. sand

Right channel

0 – silty v.f. sand.
1 – m. sand
2 – silty v.f. sand
3 – same
4 – same
5 – 0.16
6 – silty f. sand
7 – 0.20
8 – 0.7
9 – 0.22
10 – f. gravel
11 – v.c. sand
12 – 0.02
13 – f. gravel
14 – f. gravel
15 – 0.01
16 – silty f. sand
17 – same
18 – same
19 – same

same

same

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 8K

DATE: 5-13-99 | TIME: (BEGIN/END) 10:08 – 10:30 am

FIELD CREW: JF BRI TWL

RECORDS CHECK BY: (NAME, DATE) JF 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	17-10	
LOOKING UPSTREAM ALONG BANK	17-11	
LOOKING DOWNSTREAM ALONG BANK	17-12	
LEFT BANK BLOW COUNT	mod stiff bottom,	soft Top
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	17-13	
LOOKING UPSTREAM ALONG BANK	17-14	
LOOKING DOWNSTREAM ALONG BANK	17-15	
RIGHT BANK BLOW COUNT	mod. stiff, soft	top
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	17-16	
BED MATERIAL - ENTIRE CHANNEL	18-2 L.d.s, from ~15' us of AW-K8 on RB.	
NOTABLE FEATURES: (LIST) high water. debris pile ~20' ds of AW-K8	18-3 looking ds from AW-K8	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-8 99 ASL (NUMBER)

☑ ON FCDMC TOPOGRAPHY 4-6 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Cat, PV, Arrowwood Mg ☐ PHOTOGRAPH

ROOT MAT v. good but overhead +1-2' from land

CANOPY (HEIGHT, DENSITY) <15' dense

PERCENT OF BANK COVER 60%

APPROXIMATE AGE 20+ yrs - 50

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL is clear

☐ ARMORING POTENTIAL

Low

☐ VISUAL ESTIMATE OF D50 1/2" ☐ PHOTOGRAPH

D90 ~~3~~ 3" D10 CS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS Some	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE –	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH

Straight Single CHL

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

NO

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

— 4-6' BW = 39 TW = 50

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

NO Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

e Dup

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

Light silty sand

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

OBSTRUCT FLOW? No

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

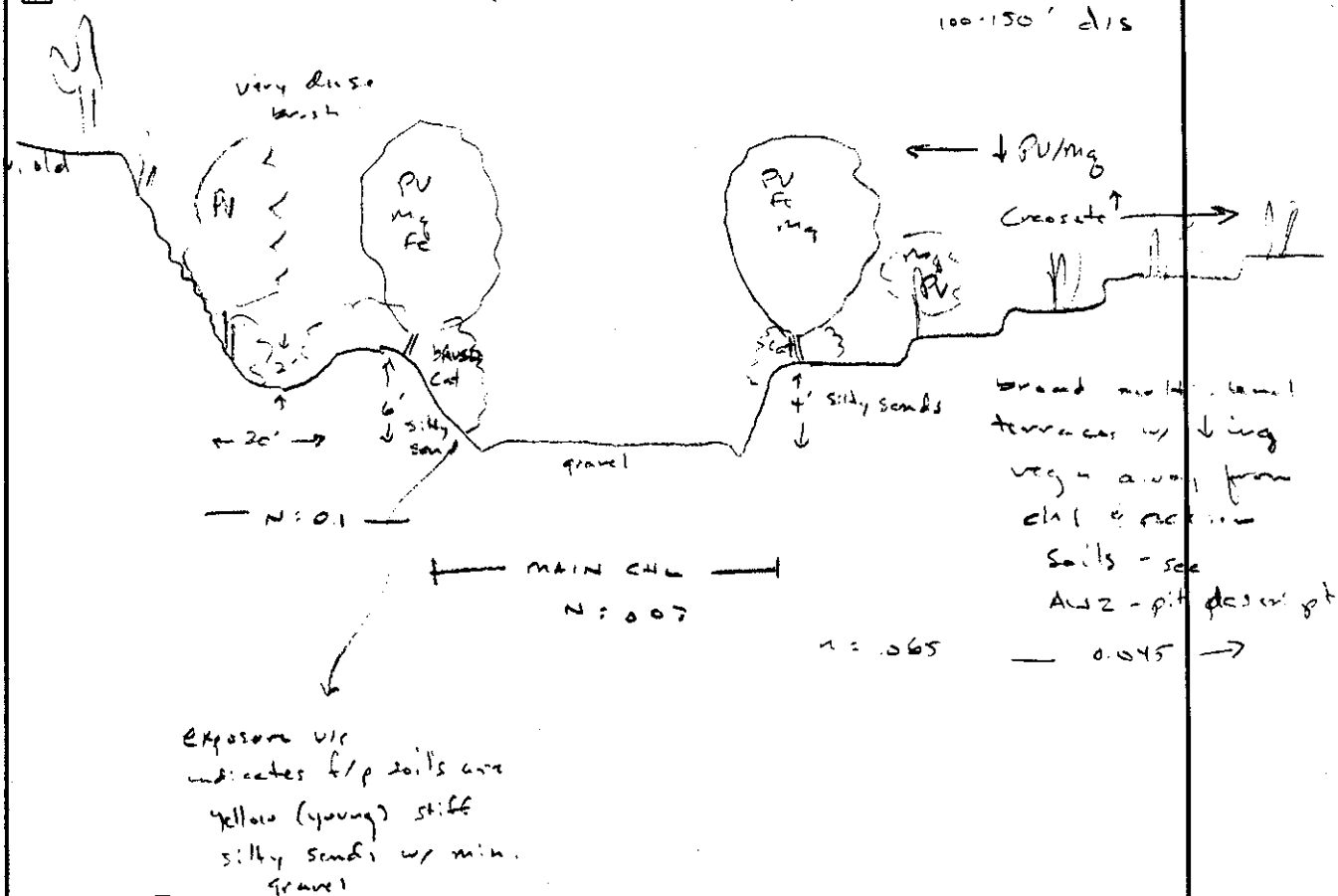
small OS chl min [illegible] 6' to grade w/ red Z

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	yes R & L	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	yes	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	-	☐ PHOTOGRAPH
HEADCUTS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	silty d/s 400'	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	~1 ft	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)

AW2-CHL is 100-150' d/s



SHOW THE FOLLOWING:

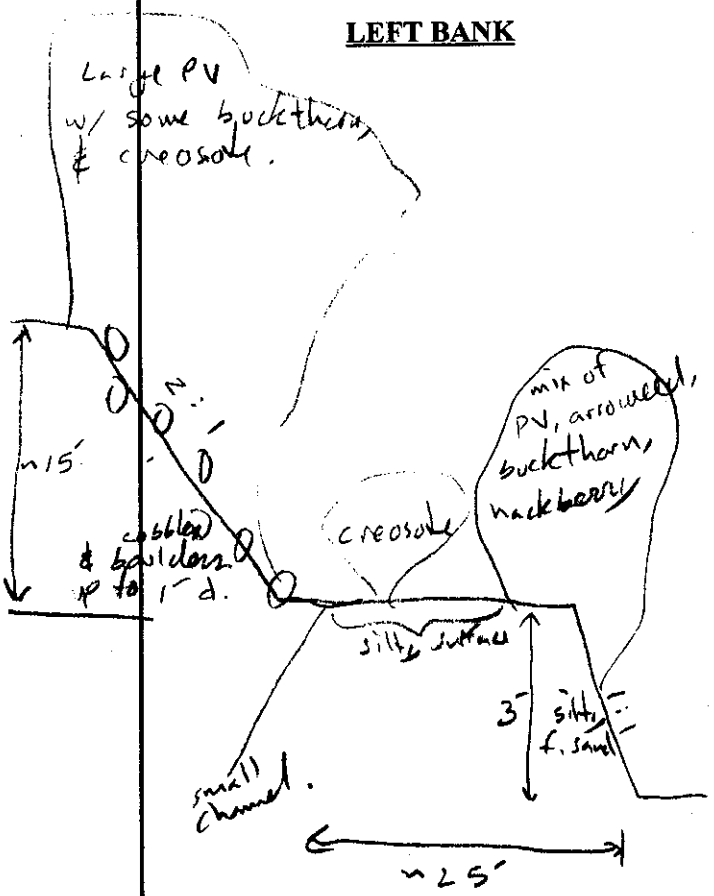
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

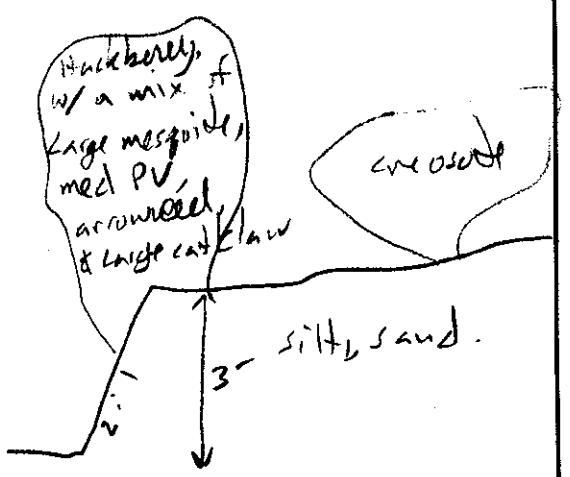
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	no	☐ PHOTOGRAPH
GRAIN SIZE	silty sand	☑ PHOTOGRAPH
COLOR	yellow	☑ PHOTOGRAPH
CROSS BEDDING	—	☐ PHOTOGRAPH
CARBONATE CONTENT	—	☐ PHOTOGRAPH
SOIL STRUCTURE	—	☐ PHOTOGRAPH
SOIL HORIZONS	—	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-8K
5-13

Boulder Count

0 - v.f. sand.
1 - c. sand.
2 - v.c. sand.
3 - f. gravel
4 - v.c. sand
5 - 0.01
6 - 0.02
7 - 0.01
8 - 0.05
9 - 0.1
10 - 0.04
11 - 0.06
12 - 0.07
13 - 0.37
14 - 0.18
15 - 0.03
16 - 0.07
17 - 0.03
18 - 0.05
19 - 0.01
20 - 0.05
21 - 0.09
22 - 0.04
23 - v.c. sand
24 - 0.01
25 - f. gravel
26 - 0.02
27 - 0.04
28 - 0.02
29 - v.c sand
30 - 0.06
31 - 0.10
32 - v.c. sand
33 - c. sand
34 - 0.01
35 - v.c. sand
36 - c. sand
37 - c. sand
38 - c. sand.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-7K

DATE: 5-13-99

TIME: (BEGIN/END) 9:25 – 9:50

FIELD CREW: JF SRI TWC

RECORDS CHECK BY: (NAME, DATE) JF 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	17-1	
LOOKING UPSTREAM ALONG BANK	17-2	
LOOKING DOWNSTREAM ALONG BANK	17-3	
LEFT BANK BLOW COUNT	mod stiff lower 3', soft upper 2'	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	17-4	
LOOKING UPSTREAM ALONG BANK	17-5	
LOOKING DOWNSTREAM ALONG BANK	17-6	
RIGHT BANK BLOW COUNT	all moderately stiff.	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	17-7	
BED MATERIAL - ENTIRE CHANNEL	17-8 c. u.s. fence	15'd s on r. bank.
NOTABLE FEATURES: (LIST)		
7-9 – Hum w/s 15' from Xn on RB		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-8 (NUMBER)

☑ ON FCDMC TOPOGRAPHY 4 of 6 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION dense cattail, black berry, some PV ☐ PHOTOGRAPH

ROOT MAT v good, slightly compacted

CANOPY (HEIGHT, DENSITY) ~10 ft

PERCENT OF BANK COVER 80%

APPROXIMATE AGE 2+

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL is clear

☐ ARMORING POTENTIAL

M.N.

☐ VISUAL ESTIMATE OF D50 FG ☐ PHOTOGRAPH

D90 2" D10 MS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS YES @ base, vicks, weir	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH

SINGLE CHL, STRAIGHT (band 150' d/s)

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

NO

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

– 6' 45 TW, 37 BW

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

NO d

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

on RB & LB – excellent

TYPE AND STAGE (FEET) on RB slope

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

P

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

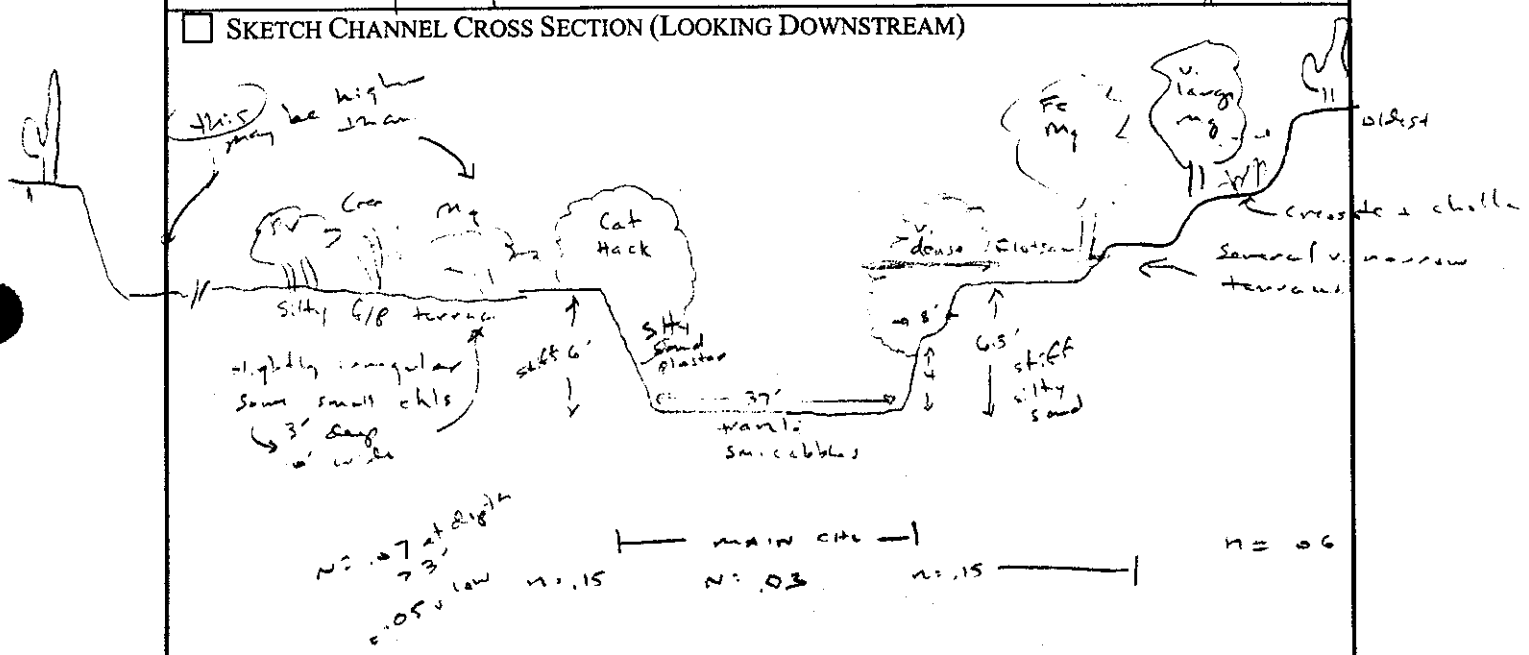
OBSTRUCT FLOW? -

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES YES R & L	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) -	☐ PHOTOGRAPH	
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS R/L d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION ~2 ft recent	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
grating

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

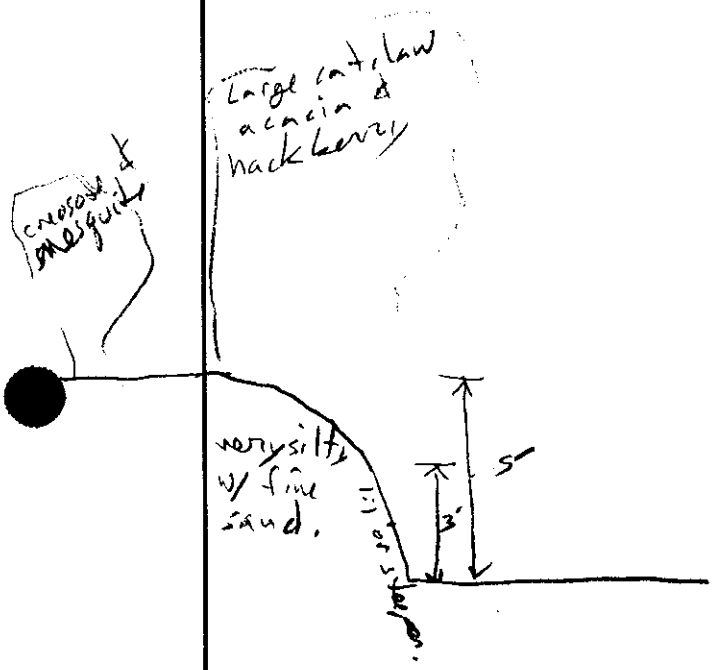
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

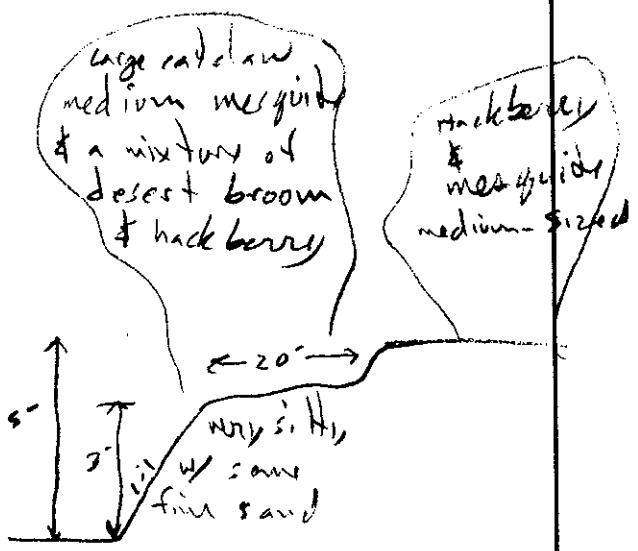
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY no	☐ PHOTOGRAPH
GRAIN SIZE silt	☑ PHOTOGRAPH
COLOR yellow	☑ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-7K
5/13/99

Boulder Count

0 - v.f. sand
1.5 - c. sand.
3 - v.c. sand
4.5 - v.c. sand
6 - v.c. sand
7.5 - f. gravel
9 - f. gravel
10.5 - V.C. Sand
12 - 0.01
13.5 - 0.01
15 - 0.05
16.5 - 0.04
18 - 0.03
19.5 - f. gravel
21 - 0.01
22.5 - 0.02
24 - 0.03
25.5 - 0.02
27 - 0.02
28.5 - 0.01
30 - 0.06
31.5 - 0.01
33 - 0.03
34.5 - 0.01
36 - v.c. Sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-61K — @ PROPOSED NEW ROAD ALIGNMENT	
DATE: 4-29-99	TIME: (BEGIN/END) 9:40/1705
FIELD CREW: JF TL. 321	
RECORDS CHECK BY: (NAME, DATE) 9/2/99 JF	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		Did not fill K
LOOKING DIRECTLY AT BANK	13-2	
LOOKING UPSTREAM ALONG BANK	13-3	
LOOKING DOWNSTREAM ALONG BANK	13-4	
LEFT BANK BLOW COUNT	mod. stiff throughout	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	13-5	
LOOKING UPSTREAM ALONG BANK	13-6	
LOOKING DOWNSTREAM ALONG BANK	13-7	
RIGHT BANK BLOW COUNT	assumed hard (old surface)	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	13-8	
BED MATERIAL - ENTIRE CHANNEL	13-9: view D/S from ≈ 60' US of X	
NOTABLE FEATURES: (LIST)		

· 13-10: 1 hum on RB, view from LB Note TWL's feet on top of flotsam pile; est. 7.5-8.0' above channel
· top of short riffle

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH ASL '99 3-8 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Hack B, PV, Mg, Cat, Arrow ☐ PHOTOGRAPH

ROOT MAT GOOD ~ EXCEL

CANOPY (HEIGHT, DENSITY) <15'

PERCENT OF BANK COVER 55%

APPROXIMATE AGE 10-30 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL IS CLEAR

☐ ARMORING POTENTIAL MOD. - U/S end of Boulder Riffle

☐ VISUAL ESTIMATE OF D50 = 1" ☐ PHOTOGRAPH

D90 2' D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS~~ OR BARS (UPS~~TREAM~~/DOWNS~~TREAM~~)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Sinuous Single CHL ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? NO ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

- L = 6' R ≈ 20', BW = 35 TW = 55

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

high pile on RB Ledge @ 9'

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

?

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? –

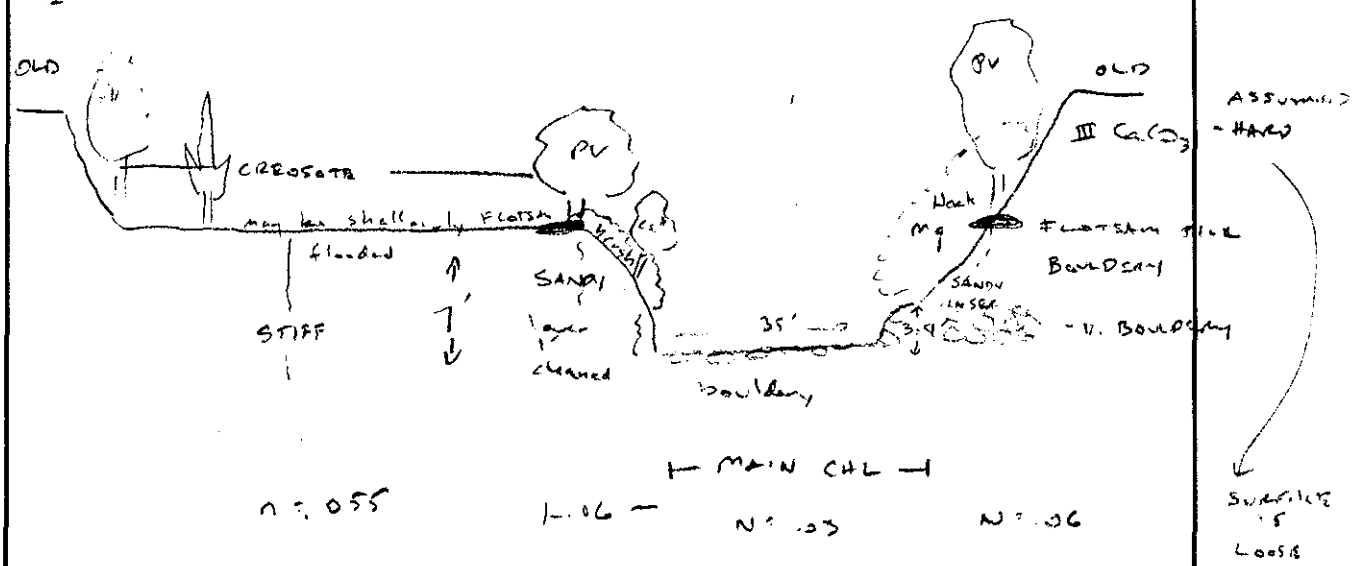
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	f/p	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Riffles	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	< 1'	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

Grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

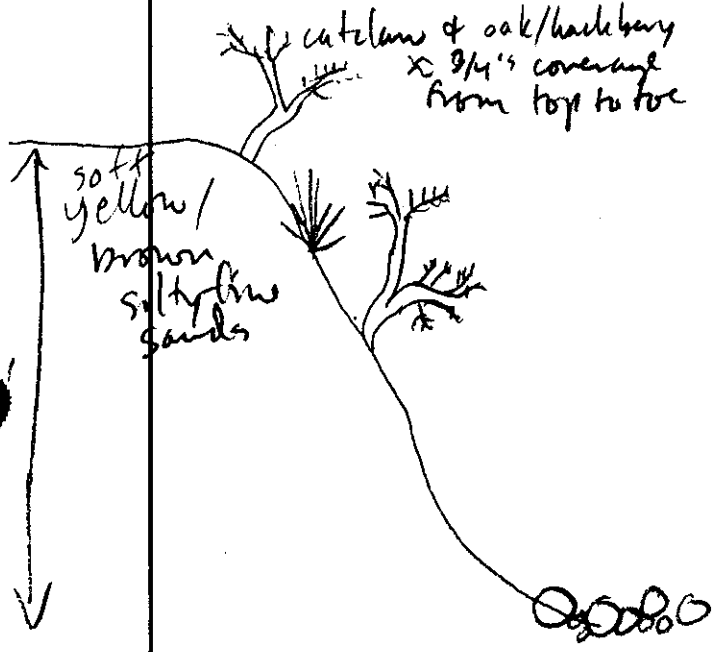
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

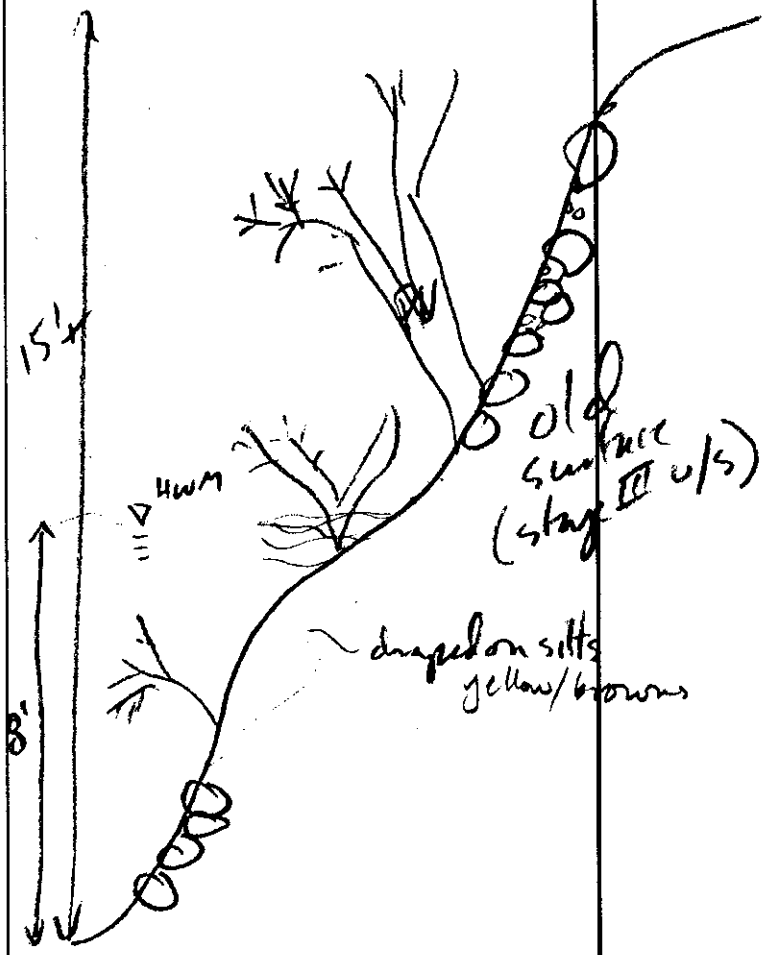
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE LB silty fine sands; RB thin sands over BIG Boulders	☐ PHOTOGRAPH
COLOR yellow/brown	☐ PHOTOGRAPH
CROSS BEDDING None	☐ PHOTOGRAPH
CARBONATE CONTENT stage III scon in RB u/s	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



[illegible] - [illegible]K
4-29-99

Boulder Count

Sta	Texture
1'	cs
3'	0.6'
5'	1.4'
7	0.4
9	cs
11	0.06'
13	cs
15	0.12'
17	cs
19	0.09'
21	vcs
23	0.15'
25	0.6'
27	0.1
29	0.6'
31	0.6'
33	0.25'
35	fs

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 5K

DATE: 4-29-99

TIME: (BEGIN/END) 4:05

FIELD CREW: JF SCL TR

RECORDS CHECK BY: (NAME, DATE) 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	12-19	
LOOKING UPSTREAM ALONG BANK	12-20	
LOOKING DOWNSTREAM ALONG BANK	12-21	
LEFT BANK BLOW COUNT	mod. hard base & soft upper cobbles	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	12-22	
LOOKING UPSTREAM ALONG BANK	12-23	
LOOKING DOWNSTREAM ALONG BANK	12-24	
RIGHT BANK BLOW COUNT	soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	12-25	
BED MATERIAL - ENTIRE CHANNEL	12-26 from LB looking across channel	
NOTABLE FEATURES: (LIST)		

- flow (as seen in 1st WM's) well over both banks ≈ 50' U/S
- X-in long pool
- line of VERY thick hackberrys along RB

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH ASC '99 3-8 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Huckleberry - 100% of RB ☐ PHOTOGRAPH
LB = Pv - Fe - Hack, DB Mg

ROOT MAT EXCELLENT [illegible] to [illegible] LB

CANOPY (HEIGHT, DENSITY) <5'

PERCENT OF BANK COVER [illegible] 30% lower 5' bare

APPROXIMATE AGE 20-50 yr

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
CHL IS CLEAR

☐ ARMORING POTENTIAL
LOW

☐ VISUAL ESTIMATE OF D50 1/4" ☐ PHOTOGRAPH
D90 1" D10 cs

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

	LB	RB		
CUT BANKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
STRAIGHT SINGLE CHL

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
No RB chl [illegible] to main 200' u/s

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— ; L: 8' R: 5' ; BW: 36' TW: 40'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
LB + 2ft

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR (LB) ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER
None exp; gravel in RB confl mouth

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No

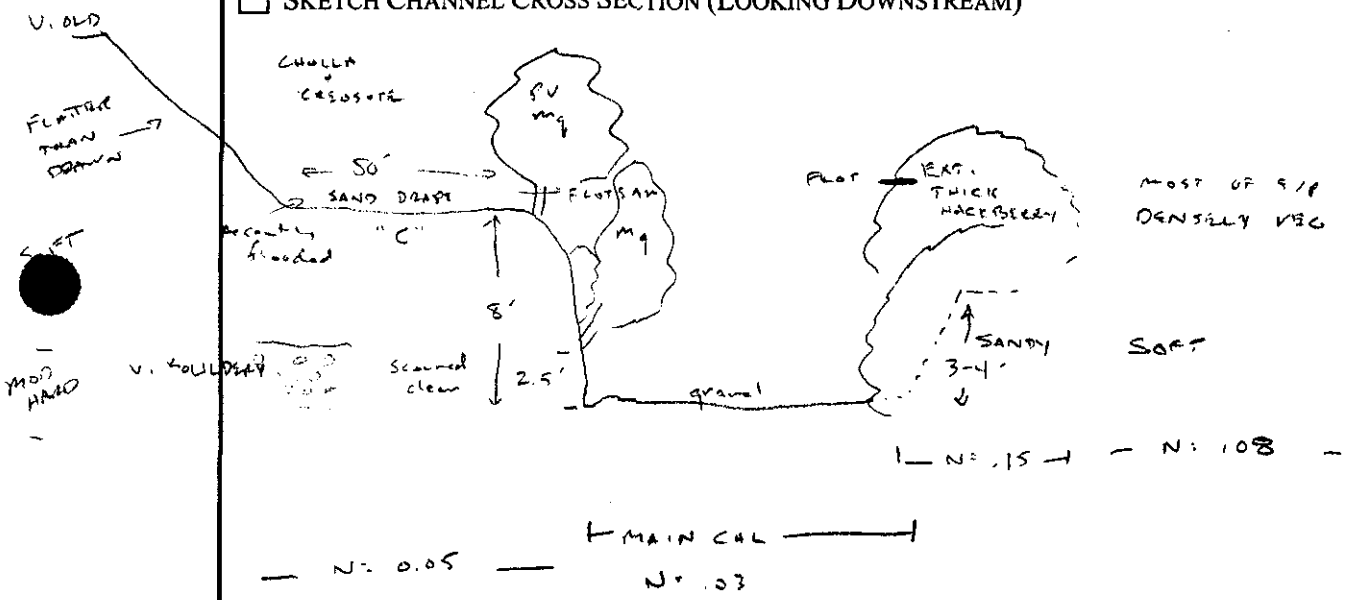
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES R-L - old	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) L YES VERT	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION No		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
Grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

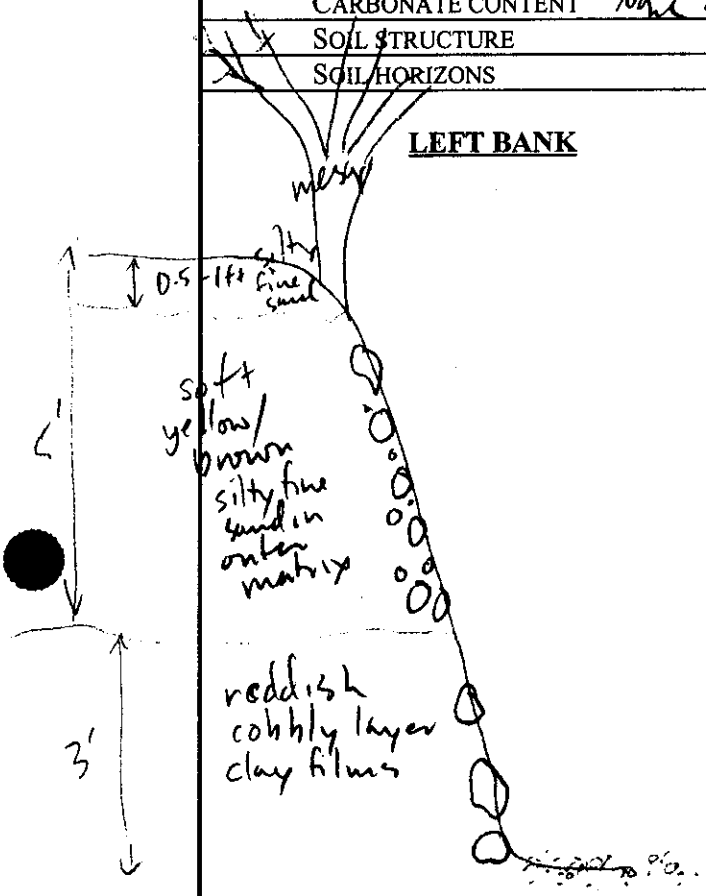
- ☐ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

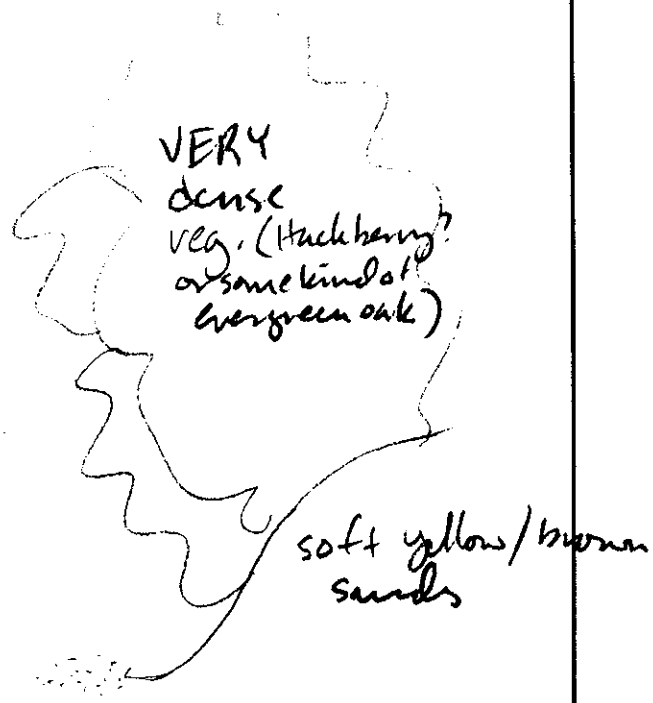
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT None seen	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



5k
4-29-99

Boulder Count

Sta	Texture	
0'	vfg	
2'	fg	
4'	fg	
6'	0.02'	
8'	0.07'	
10'	0.06'	
12'	0.02	
14'	fg	
16'	fg	
18	0.06'	
20	0.1'	
22	0.09'	
24'	0.02'	
26'	0.04'	
28'	fg	
30'	0.01'	
32	0.01'	
34	vcs	rock heavy
36	fine sand	heavily hanging
38	fine sand	in channel
40	fine sand	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 4K

DATE: 4-29-99

TIME: (BEGIN/END) 1510 / 1550

FIELD CREW: JF TL BRI

RECORDS CHECK BY: (NAME, DATE) JF 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	Left	Right
LOOKING DIRECTLY AT BANK	11-26/12-1	12-10
LOOKING UPSTREAM ALONG BANK	12-2	12-11
LOOKING DOWNSTREAM ALONG BANK	12-3	12-12
LEFT BANK BLOW COUNT	stiff at bottom (gravel!)	loose
RIGHT BANK (SURVEY ROD FOR SCALE)	mod. stiff top (silts)	
LOOKING DIRECTLY AT BANK	12-4	12-13
LOOKING UPSTREAM ALONG BANK	12-5	12-14
LOOKING DOWNSTREAM ALONG BANK	12-6	12-15
RIGHT BANK BLOW COUNT	soft throughout	soft
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	12-7	12-16
BED MATERIAL - ENTIRE CHANNEL	12-8: view from LB x 80' U/S of Xn Left	12-17: view from LB x 50' U/S of Xn Right
NOTABLE FEATURES: (LIST)	12-9: HWM on LB Note flotsam in tree LEFT OB	12-18: HWM RB on R. C view D/S x 50' U/S of

(main Left channel)
- reconcentration reach below a divided flow area
- many large boulders exhibiting "lehmanation"
- many LARGE mesquite trees in reach since last XS
- Xn in riffle
- more overflow areas in both OB's; LOB w/active gravel; ROB swales

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-8 L + R Channels (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV - fe - Mq	☐ PHOTOGRAPH	ROB CHL PV - Cat
ROOT MAT GOOD		good
CANOPY (HEIGHT, DENSITY) <20'		<15'
PERCENT OF BANK COVER 35%		35%
APPROXIMATE AGE 20 - 50 + yrs		<20 yr
☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) CHL @ XN IS CLEAR; OB in CHL (15%) dis	☐ PHOTOGRAPH	5% Arrow
☐ ARMORING POTENTIAL PUSTICLES - BOULDERY		MOD
☐ VISUAL ESTIMATE OF D50 2" D90 1.5' D10 <5	☐ PHOTOGRAPH	D50 = ½" D90 = FS D10 = 1'
☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)		
CUT BANKS NO - MINOR SCALLOPING ON BARE BU	☐ PHOTOGRAPH ☐ PLOT LOCATION	NO
VERTICAL BANKS NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
UNDERCUT BANKS NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
TENSION CRACKS NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
EXPOSED ROOTS NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
VEGETATION REMOVED FROM BANKS NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
VEGETATION TIPPED NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
PILES OF DIRT AT BANKS NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH ☐ PLOT LOCATION	
PIPING NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
RILLING OF BANKS NO	☐ PHOTOGRAPH ☐ PLOT LOCATION	
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	☐ PHOTOGRAPH ☐ PLOT LOCATION	
☐ CHANNEL PATTERN MULTIPLE CHL - 2 OB CHL THIS IS MAIN CHL → HIGHER & SMALLER	☐ PHOTOGRAPH	BRAIDED
☐ TRIBUTARIES NEARBY? MINOR NO - BEFAK OUTS RETURN U/S	☐ PHOTOGRAPH	NO
☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) - 3' L, 6' R, BW = 35 TW = 60	☐ PHOTOGRAPH	DEPTH = 4' TW = 20'
☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) NO Q	☐ PHOTOGRAPH	—
☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) Q* = 1'	☐ PHOTOGRAPH	Q bf
TYPE AND STAGE (FEET) FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER		
☐ DEPTH TO BEDROCK (FT., UNKNOWN)		
BEDROCK EXPOSED? NO	☐ PHOTOGRAPH	NO
GRADE CONTROL? (TYPE, PHOTO) NO	☐ PHOTOGRAPH	
☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN)	☐ PHOTOGRAPH	NO

MAIN (LEFT)

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW?

–

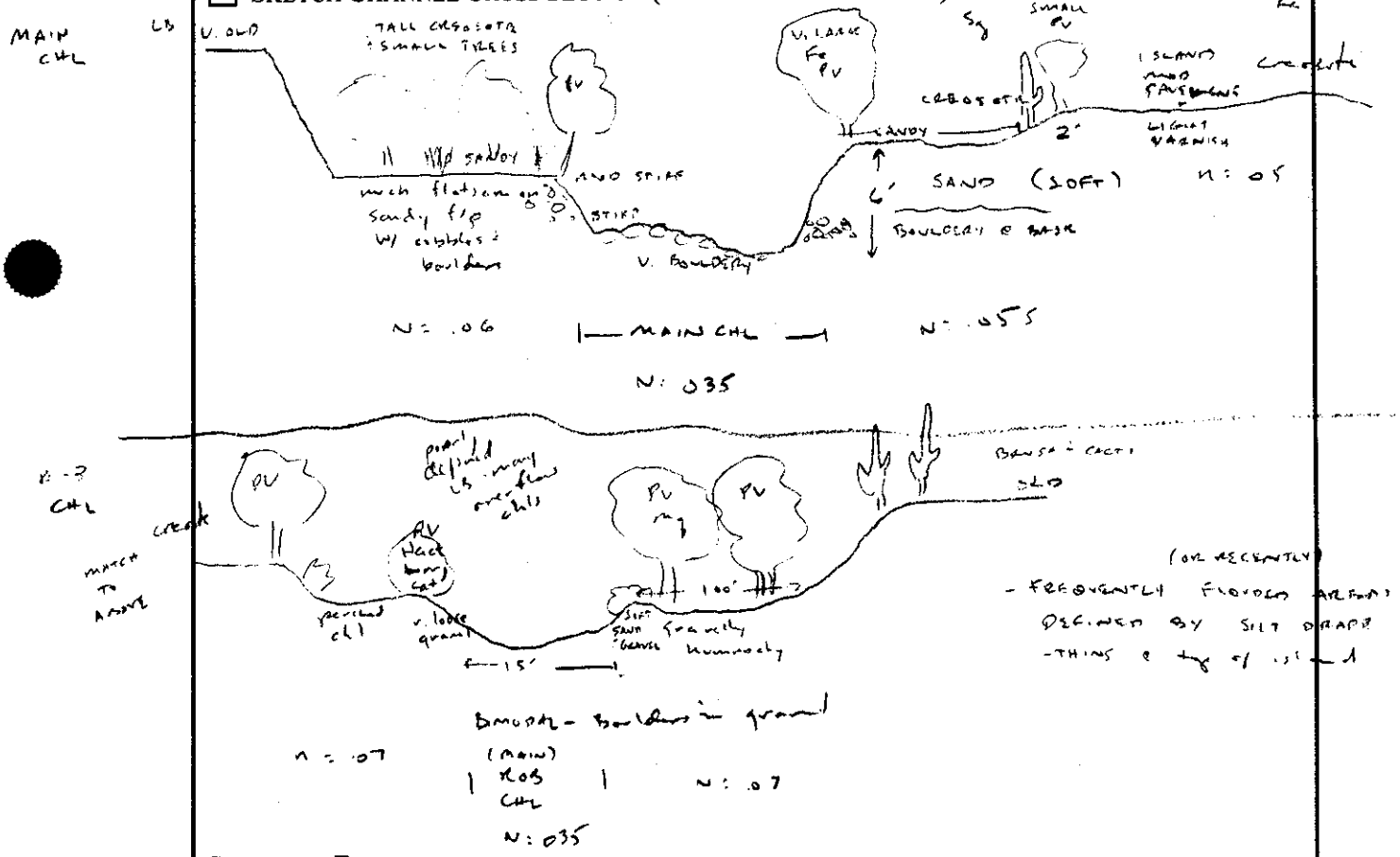
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No - perched ROB CHL	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES 6/p	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	- No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	RIFFLES	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	~4 ft by terrace remnant LB v/s		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



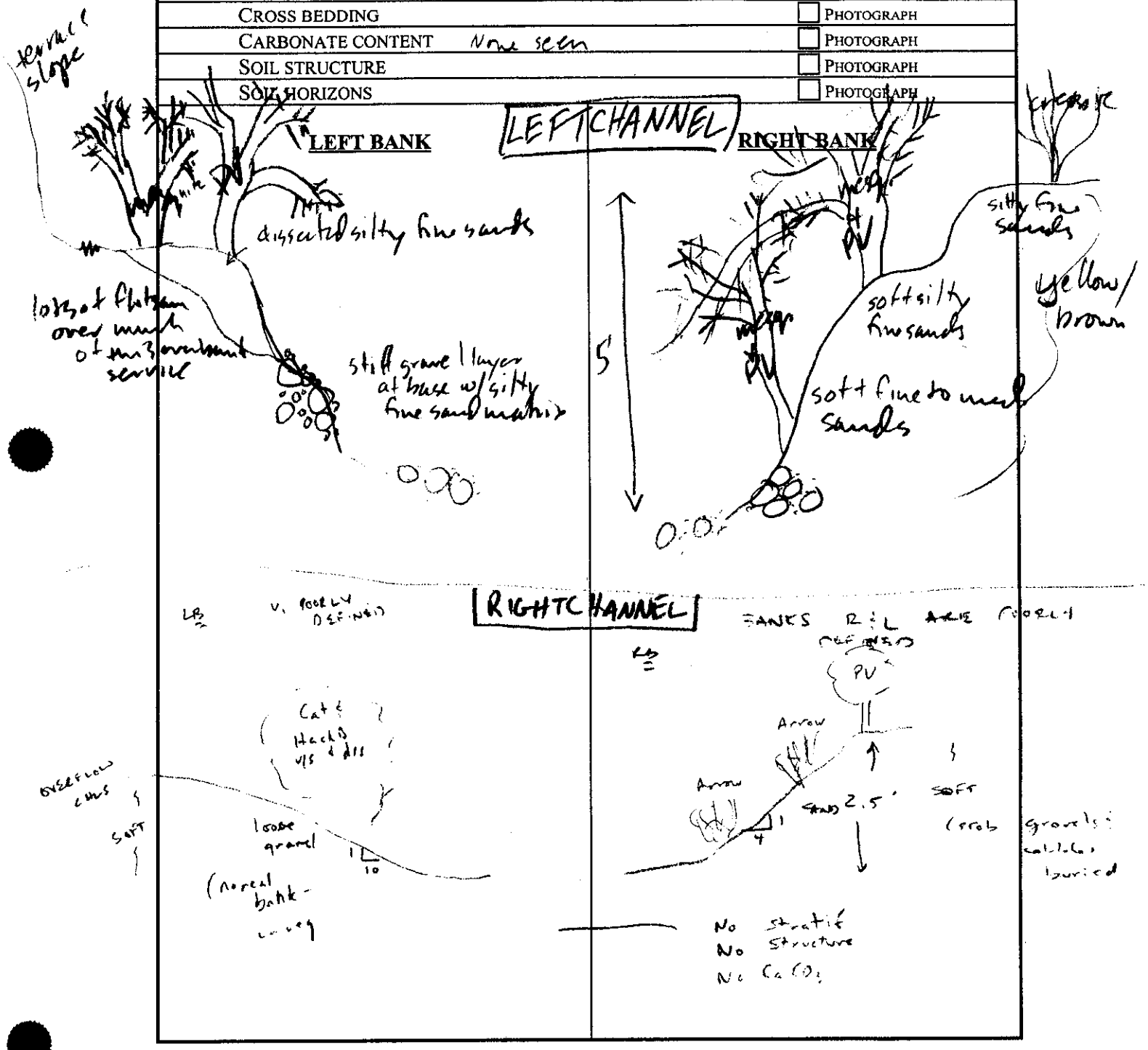
SHOW THE FOLLOWING:

- ☐ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT None seen	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



AW-4KL
4-29-99 (MAIN)

LEFT Channel

Boulder Count

Sta	Texture
1'	0.15'
3	0.25'
5	vcs
7	0.4'
9	0.7'
11	0.03'
13	0.04'
15	vcs
17	1.2'
19	0.9'
21	0.27'
23	0.05'
25	0.09'
27	0.22'
29	0.25'
31	0.32'
33	vcs
~~35~~	

Right Channel

Sta	Texture
1'	0.01'
2'	vcs
3	0.02'
4	vcs
5	0.05'
6	0.07'
7	0.15'
8	0.10'
9	0.14' (pink)
10	fg
11	0.01
12	0.08
13	0.05
14	0.55
15	0.17' (ugly)
16	fg
17	ditto
18	0.04'
19	0.09'
20	0.01'
21	0.01'
22'	0.02'
23'	vcs
24'	0.13'
25'	fg
26'	vcs

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 3K

DATE: 4-29 | TIME: (BEGIN/END) 1440 / 1500

FIELD CREW: JF TL [illegible]

RECORDS CHECK BY: (NAME, DATE) JF 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	11-17	
LOOKING UPSTREAM ALONG BANK	11-18	
LOOKING DOWNSTREAM ALONG BANK	11-19	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	11-20	
LOOKING UPSTREAM ALONG BANK	11-21	
LOOKING DOWNSTREAM ALONG BANK	11-22	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	11-23	
BED MATERIAL - ENTIRE CHANNEL	11-24 → from ≈ 100' u/s center	view D/S from of channel
NOTABLE FEATURES: (LIST)		

- diffluence immediately D/S (≈ 50')
- end of long pool
- 11-25 → 1hw on LB just u/s of split flow

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH AGS '99 7-8 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION DS, Cat, PV ☐ PHOTOGRAPH

ROOT MAT - Good

CANOPY (HEIGHT, DENSITY) - <10' on banks up to ~15' back from banks

PERCENT OF BANK COVER 50%

APPROXIMATE AGE 10 - 30 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
CHL IS CLEARED XN, DS @ L split blocked by DB

☐ ARMORING POTENTIAL V. low

☐ VISUAL ESTIMATE OF D50 FG ☐ PHOTOGRAPH
D90 1" D10 FS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS NO (LS in steep bank)	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE -	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
STRT SINGLE CHL EXN - LOS overflow braid dis

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
NO

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
- , 4', BW = 55 TW = 65

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
Bankfull + 6"

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER ~~EROSION~~ SCAR ~~TREE SCAR~~ GRIS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

N.

OBSTRUCT FLOW?

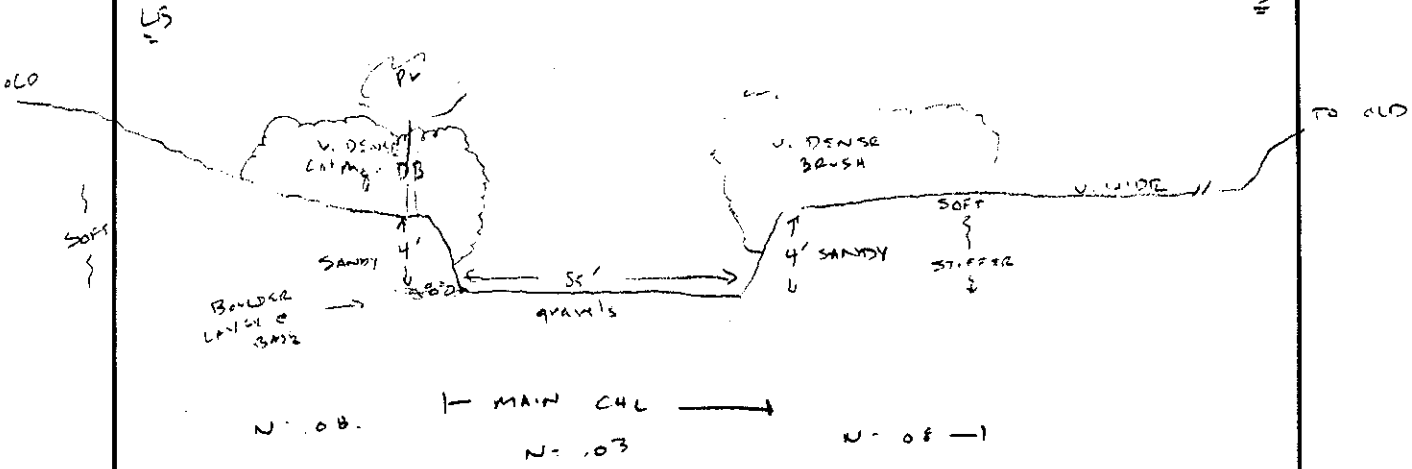
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No - RB a [illegible] dis	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) Yes 2	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) -		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS Riffle 50' dis	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION < 2' if any		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

Grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



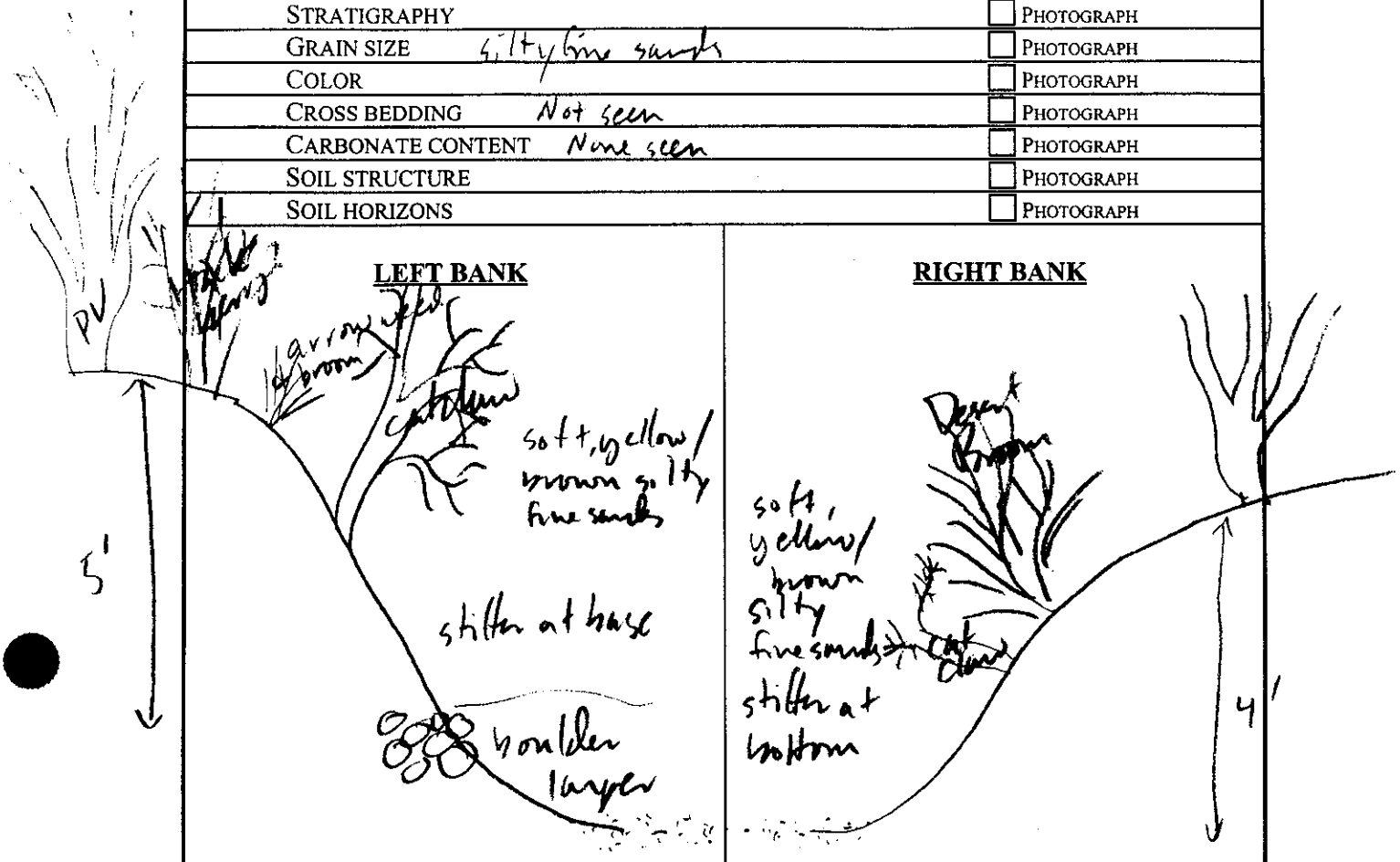
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY		☐ PHOTOGRAPH
GRAIN SIZE	silty fine sands	☐ PHOTOGRAPH
COLOR		☐ PHOTOGRAPH
CROSS BEDDING	Not seen	☐ PHOTOGRAPH
CARBONATE CONTENT	None seen	☐ PHOTOGRAPH
SOIL STRUCTURE		☐ PHOTOGRAPH
✓ SOIL HORIZONS		☐ PHOTOGRAPH



Aw : 3K

4/29

Boulder Count

Stn	Texture
0	fg
3	fg
6	0.01'
9	0.03'
12	fg
15	0.02'
18	0.01'
21	0.19'
24	fg
27	fg
30	fg
33	0.06'
36	0.04'
39	fg
42	0.02'
45	0.01'
48	0.01'
51	fg
~~54~~	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: Aw- 2K

DATE: 4-29-99

TIME: (BEGIN/END) 2 15

FIELD CREW: JE TL - 3.21

RECORDS CHECK BY: (NAME, DATE) JE 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	11-7	
LOOKING UPSTREAM ALONG BANK	11-8	
LOOKING DOWNSTREAM ALONG BANK	11-9	
LEFT BANK BLOW COUNT	moderately stiff throughout	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	11-10	
LOOKING UPSTREAM ALONG BANK	11-11	
LOOKING DOWNSTREAM ALONG BANK	11-12	
RIGHT BANK BLOW COUNT	soft lower half / mod. stiff upper	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	11-13	
BED MATERIAL - ENTIRE CHANNEL	11-14	
NOTABLE FEATURES: (LIST) • in middle of long pool • hillside along RB •		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH 3-8 ASL '99 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION mg, PV, FX, DB, cat	☐ PHOTOGRAPH
ROOT MAT Good	
CANOPY (HEIGHT, DENSITY) <15'	
PERCENT OF BANK COVER 40%	
APPROXIMATE AGE 5-30 yrs	
☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) CHL CLEAR @ XN, some DB in chl d/s 100-400'	☐ PHOTOGRAPH
☐ ARMORING POTENTIAL v low	
☐ VISUAL ESTIMATE OF D50 = MG D90 4" D10 FS	☐ PHOTOGRAPH
☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)	
CUT BANKS - some in LB, No LB	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS lower 2 RB, no LB	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS Yes	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED No	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) No	☐ PHOTOGRAPH ☐ PLOT LOCATION
☐ CHANNEL PATTERN SINGLE CHL - STRAIGHT	☐ PHOTOGRAPH
☐ TRIBUTARIES NEARBY? No	☐ PHOTOGRAPH
☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) - 6' TW = 60 BW = 75'	☐ PHOTOGRAPH
☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) No Q	☐ PHOTOGRAPH
☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP)	☐ PHOTOGRAPH
TYPE ~~AND~~ STAGE (FEET) Bankfull FLOTSAM SLACKWATER EROSION SCAR +2' in RIL ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER	
☐ DEPTH TO BEDROCK (FT., UNKNOWN)	
BEDROCK EXPOSED? YES in RB 100' u/s Xn	☐ PHOTOGRAPH
GRADE CONTROL? (TYPE, PHOTO) ON HILL IN RB	☐ PHOTOGRAPH
☐ BEDFORMS (DUNES/~~RIPPLES~~/~~ARMOR~~/PLAIN) No	☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? -

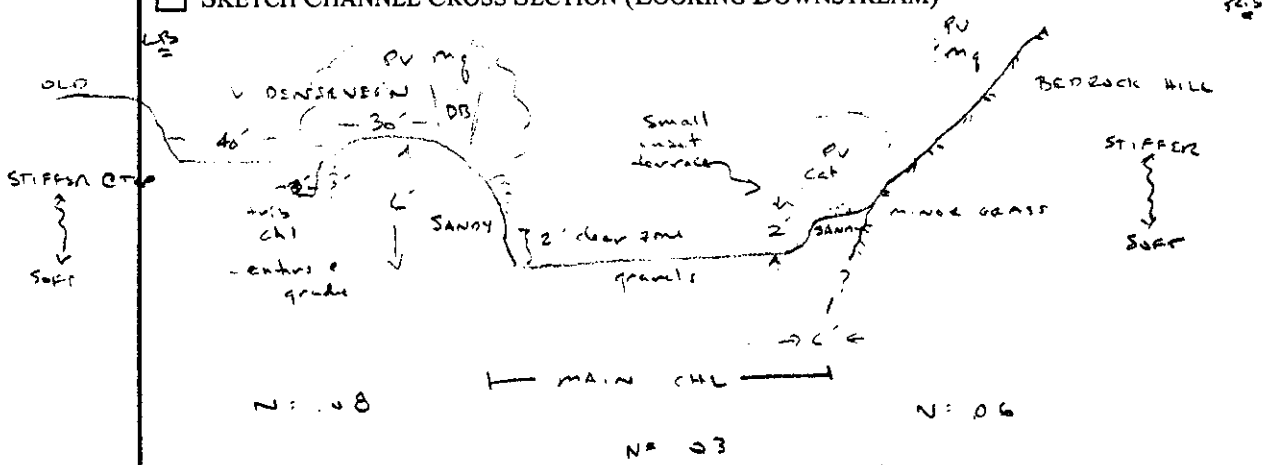
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	-	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	Riffles . v/s : d/s	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	< 2 ft	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

Grazing - [illegible] banks - no [illegible]

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

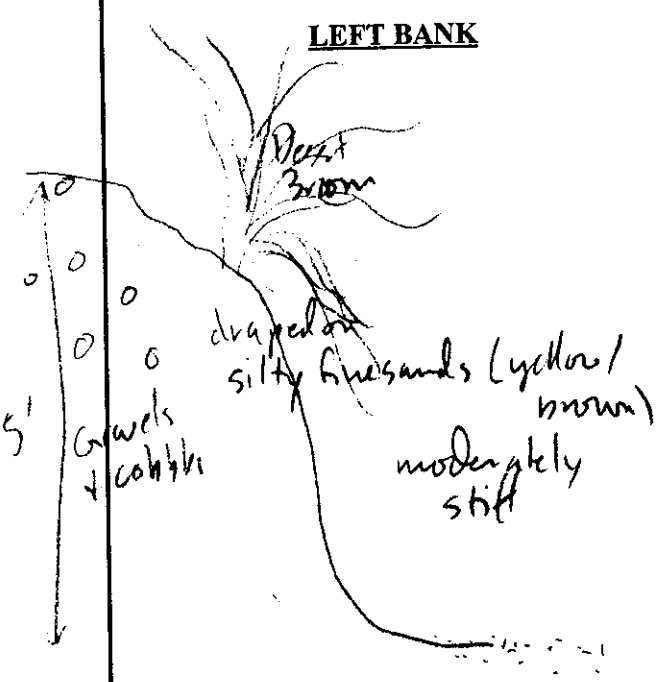
3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

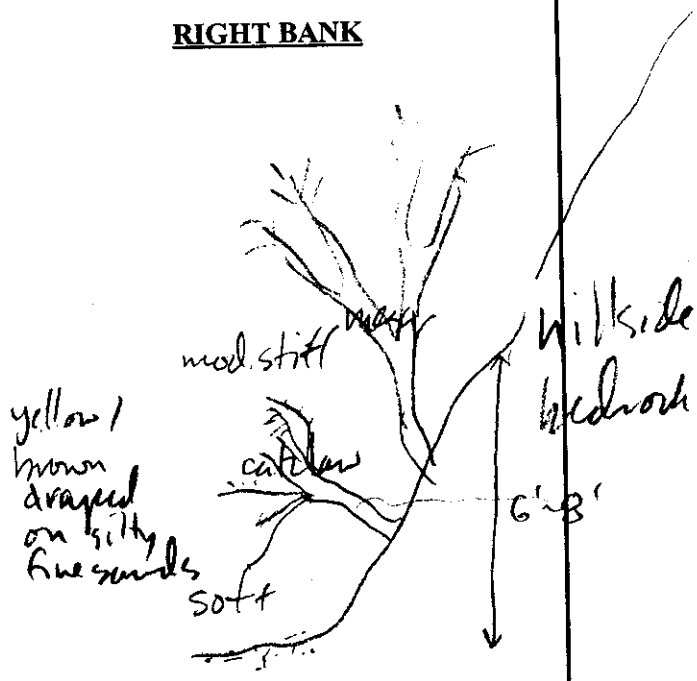
STRATIGRAPHY	none obvious	☐ PHOTOGRAPH
GRAIN SIZE	silty fine sands	☐ PHOTOGRAPH
COLOR	yellow browns	☐ PHOTOGRAPH
CROSS BEDDING	none visible	☐ PHOTOGRAPH
CARBONATE CONTENT	N/A	☐ PHOTOGRAPH
SOIL STRUCTURE		☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH

LEFT BANK



some overhanging trees

RIGHT BANK



AW-2K
4-29-99
BRI, TWL, JEF

Boulder Count

Stn	Texture
0'	silty fine sand
3	very coarse sand (VCS)
6	VCS
9	0.04'
12	0.01
15	fine gravel (fg)
18	fg
21	0.01'
24	very coarse sand
27	0.01'
30	0.02'
33	0.01'
36	0.01'
39	0.01'
42	0.03'
45	0.01
48	fg
51	VCS
54	0.01'
57	silty fine sand
60	" " "

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 1K

DATE: 4/29/99 | TIME: (BEGIN/END) 1:50 pm -

FIELD CREW: Brian L., Todd., Jon F.

RECORDS CHECK BY: (NAME, DATE) 9/2/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	10-24	
LOOKING UPSTREAM ALONG BANK	10-25	
LOOKING DOWNSTREAM ALONG BANK	10-26, 11-1	may have double exposure!
LEFT BANK BLOW COUNT	soft trimed, stiff lower, soft upper	
RIGHT BANK (SURVEY ROD FOR SCALE)		may have double exposure.
LOOKING DIRECTLY AT BANK	10-27 11-2	
LOOKING UPSTREAM ALONG BANK	11-3	
LOOKING DOWNSTREAM ALONG BANK	11-4	
RIGHT BANK BLOW COUNT	50 ft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	11-5	
BED MATERIAL - ENTIRE CHANNEL	11-6, L.D.S. from ~20' US on L Bank.	
NOTABLE FEATURES: (LIST)		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV Mag FX DB ☐ PHOTOGRAPH

ROOT MAT Good

CANOPY (HEIGHT, DENSITY) ~20'

PERCENT OF BANK COVER 50%

APPROXIMATE AGE 5-50 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL IS CLEAR

☐ ARMORING POTENTIAL

Low - tail end of riffle

☐ VISUAL ESTIMATE OF D50 ¼" Smooth ☐ PHOTOGRAPH

D90 12" D10 cs

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	- a few on Cs base	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	Yes - some - most No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ CHANNEL PATTERN SINGLE CHL, STRAIGHT BANKFULL OVERFLOW PERCHED TO ROB ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? PW 600' U/S ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

- , 6' L, 12' R, BW = 46' TW = 70

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

+4'

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUB LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

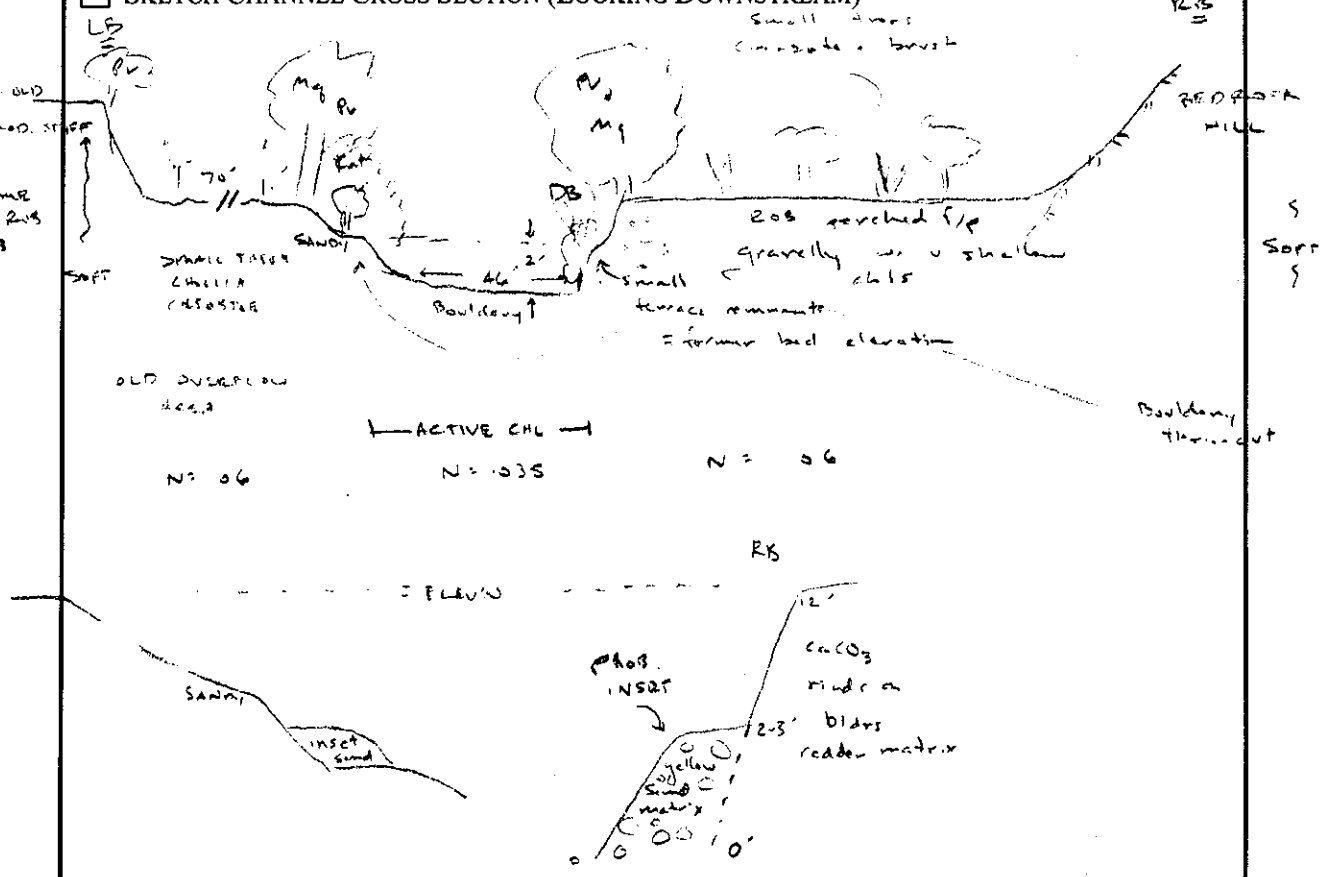
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) —	☐ PHOTOGRAPH	
HEADCUTS	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



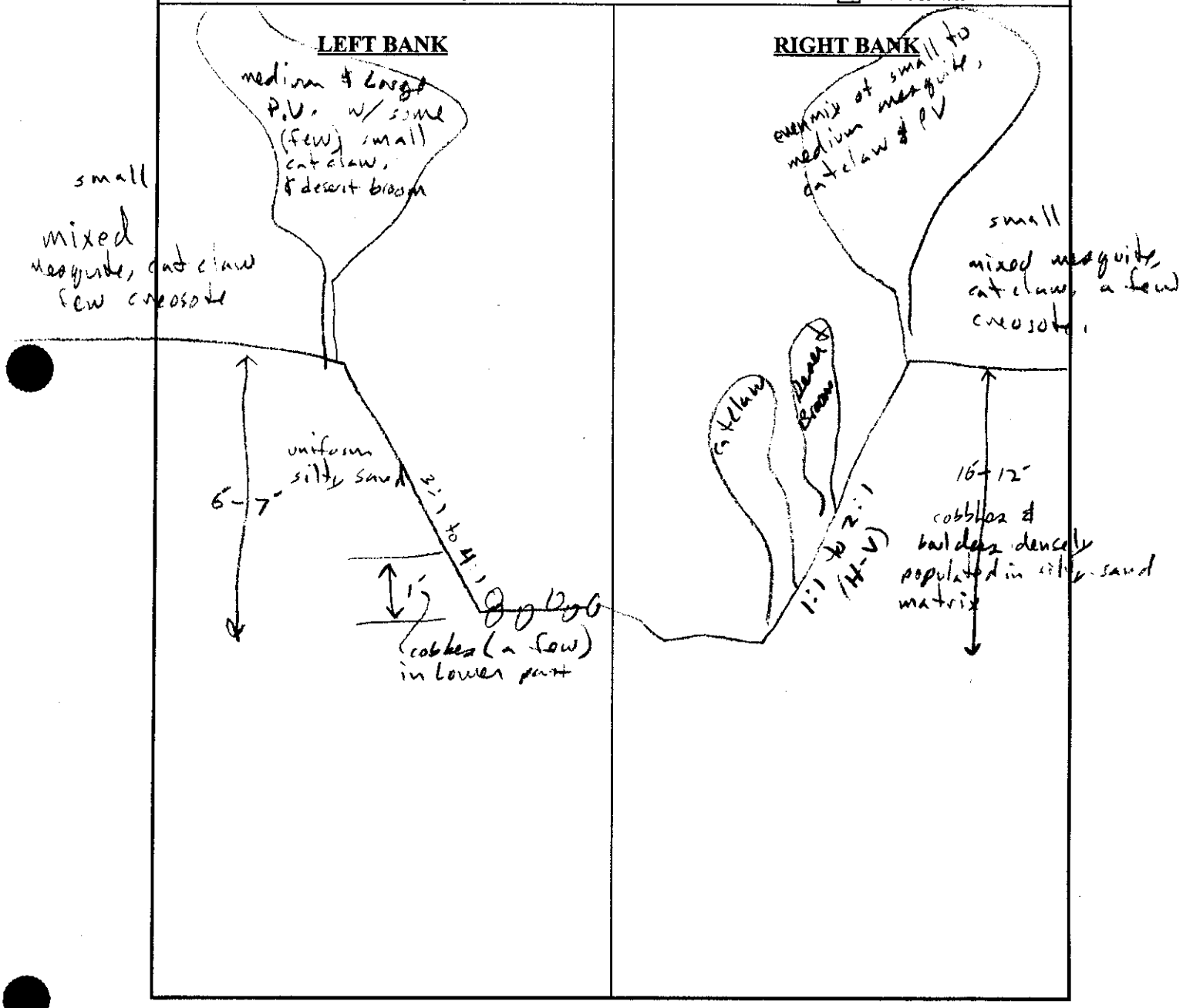
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY ✓	☐ PHOTOGRAPH
GRAIN SIZE silty sand	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH



4/29/99
AW-1k
Boulder Count

1 – m. sand
3 – c. sand
5 – c. sand
7 – c. sand
9 – c. sand
11 – f. gravel
13 – 0.50
15 – f. gravel
17 – 0.26
19 – 0.6
21 – f. gravel
23 – 0.01
25 – 0.07
27 – 1.5
29 – 0.15
31 – f. gravel
33 – 0.02
35 – 0.18
37 – 0.01
39 – c. sand
41 – 0.02
43 – 1.25
45 – 0.20

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - OK — 400' d/s DMW Gage	
DATE: 4-29-99	TIME: (BEGIN/END) 1:15 - 1:40
FIELD CREW: JF TL BZ1	
RECORDS CHECK BY: (NAME, DATE) JF 9/2/99	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	10-13	
LOOKING UPSTREAM ALONG BANK	10-14	
LOOKING DOWNSTREAM ALONG BANK	10-15	
LEFT BANK BLOW COUNT	Lower unit soft to Med stiff - soft above	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	10-16	
LOOKING UPSTREAM ALONG BANK	10-17	
LOOKING DOWNSTREAM ALONG BANK	10-18	
RIGHT BANK BLOW COUNT	bottom - stiff to med hard - soft above.	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	10-19	
BED MATERIAL - ENTIRE CHANNEL	10-20 L. d.s. from LB ~30' u/s of AW-OK	
NOTABLE FEATURES: (LIST)		
L. d.s. @ high water debris pile on rb ~ 15' u/s of AW-OK	10-21	
L. d.s. from AW-OK. note right overbank channel @ right.	10-22	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH ASL '99 3-8 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV, mg Cottonwood walnut? Creosote ☐ PHOTOGRAPH

ROOT MAT Good, slightly exposed on LB

CANOPY (HEIGHT, DENSITY) <20

PERCENT OF BANK COVER 45%

APPROXIMATE AGE 10-40 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

THE IS CLEAR

☐ ARMORING POTENTIAL

M.N. (yes for low Q?

☐ VISUAL ESTIMATE OF D50 1/2" ☐ PHOTOGRAPH

D90 2" D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	LEFT YES R NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	BOTH - Some	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN High flow ☐ PHOTOGRAPH

SINGLE CHL PXN, SPLIT / BRAIDED 200' d/s

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

YES DHW 200' d/s Dry 600' d/s

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

4-6' BW = 40 TW = 50

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q ~~4-6~~

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

Bankfull

TYPE AND STAGE (FEET) LBGB 4

FLOTSAM ~~SLACKWATER~~ ~~EROSION~~ SCAR TREE SCAR ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., ~~UNKNOWN~~)

PROB SHALLOW

BEDROCK EXPOSED? 100' ☐ PHOTOGRAPH

IN RB d/s of Xn

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

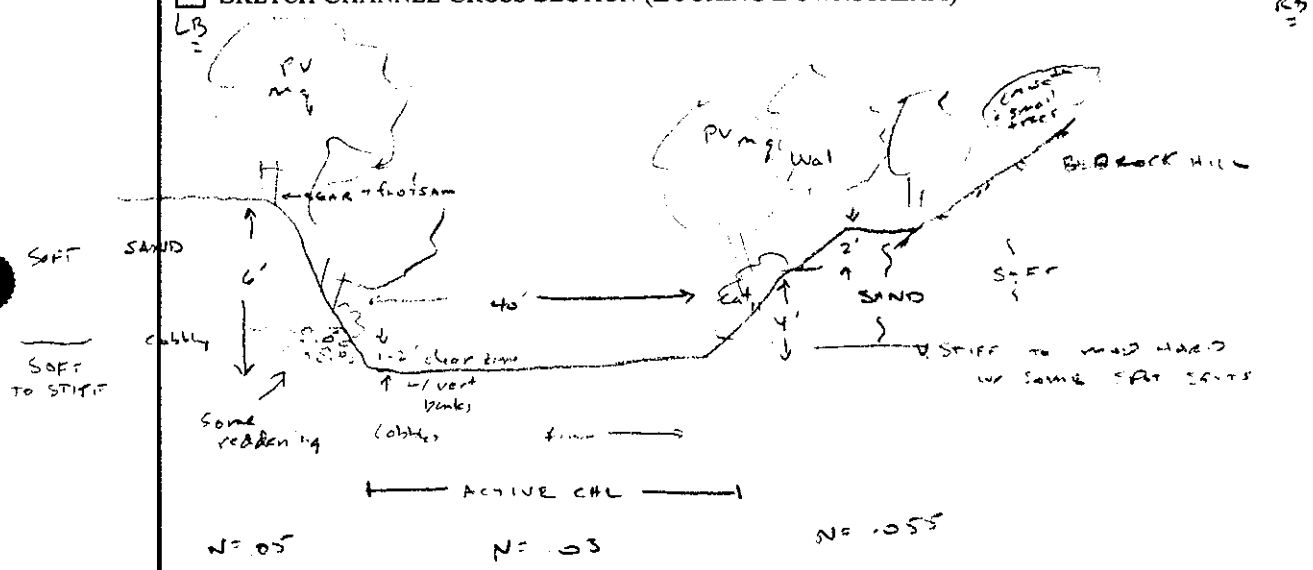
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO - AW steep w/s only	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	f/g only	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	in AW w/s confluence relief	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	<2' if any	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

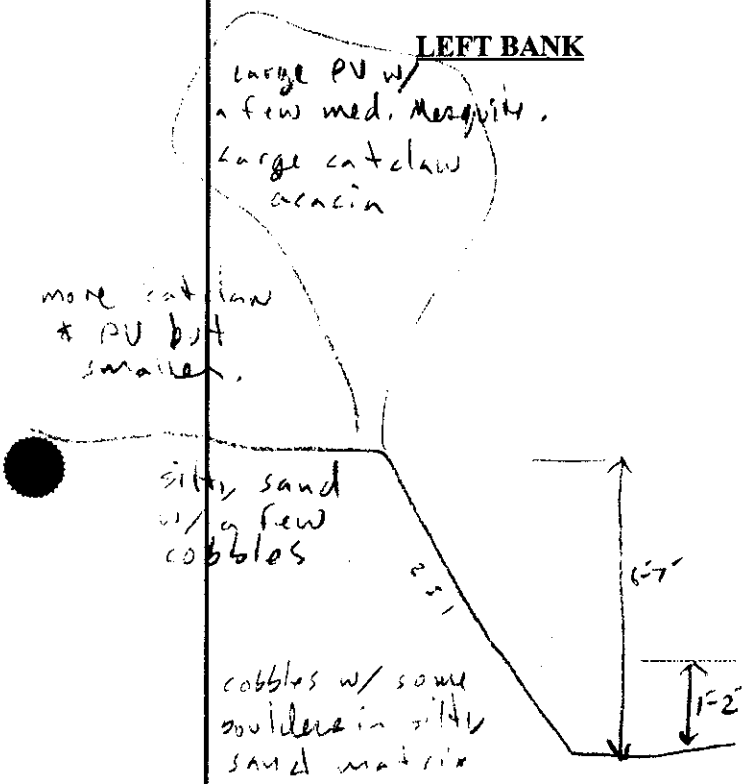
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

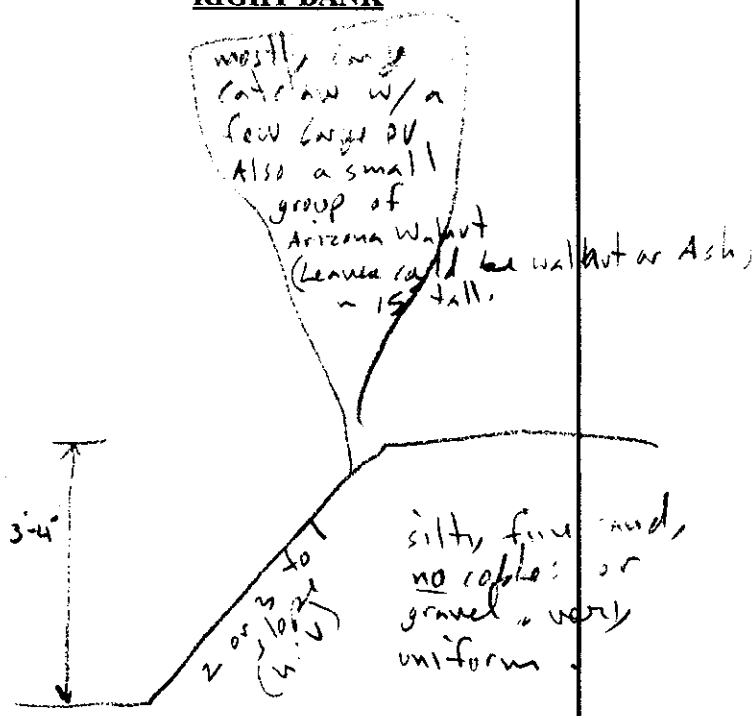
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-OK
4/29/99

Boulder Count

0 – silty f. Sand
1.5 – coarse Sand
3 – 0.01
4.5 – 0.5
6 – 0.15
7.5 – 0.13
9 – 0.16
10.5 – 0.06
12 – 0.04
13.5 – 0.08
15 – C. Sand
16.5 – 0.10
18 – 0.03
19.5 – 0.12
21 – 0.04
22.5 – 0.08
24 – 0.10
25.5 – 0.05
27 – f. gravel
28.5 – 0.01
30 – V.C. Sand
31.5 – 0.23
33 – 0.15
34.5 – 0.08
36 – 0.30
37.5 – 0.08
39 – silty fine sand.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW-0	75' U/S of [illegible] WASH CONFL
DATE: 4-23-99	TIME: (BEGIN/END) 11:35
FIELD CREW: BRI - TL - JEF	
RECORDS CHECK BY: (NAME, DATE) 9/3/99 JF	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	6-10	
LOOKING UPSTREAM ALONG BANK	6-11	
LOOKING DOWNSTREAM ALONG BANK	6-12	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	6-13	
LOOKING UPSTREAM ALONG BANK	6-14	
LOOKING DOWNSTREAM ALONG BANK	6-15	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	6-16	
BED MATERIAL - ENTIRE CHANNEL	6-17	
NOTABLE FEATURES: (LIST) - confluence just D/S w/ DHW - widening section toward confluence - 6:18 → 1 HWM on LB looking D/S toward confluence evidence of scour on ROB indicating flow in over bank		

3. PLOT CROSS SECTION LOCATION

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH 3-10 (NUMBER)
- ☑ ON FCDMC TOPOGRAPHY Sheet 4 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Creosote - Mq · Cat claw ☐ PHOTOGRAPH

ROOT MAT perched

CANOPY (HEIGHT, DENSITY) [illegible] 6-15' few PV to 20'

PERCENT OF BANK COVER <30%

APPROXIMATE AGE 5-10 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
CHL IS CLEAR

☐ ARMORING POTENTIAL Low · some boulders but much CG

☐ VISUAL ESTIMATE OF D50 = 1/4" BIMODAL - Boulders gravel ☐ PHOTOGRAPH
D90 8" D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)~~		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
SINGLE CHL, SINUOUS

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
DHW confluence 75' D/S - scoured

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— , 4' , BW = 32' TW = 47

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION~~ SCAR ~~TREE SCAR~~ ~~GRUB LINE~~ OTHER
→ BANKFULL HT. - IN OVERBANK - few marks in xs

☐ DEPTH TO BEDROCK (FT., UNKNOWN) - @ xs

BEDROCK EXPOSED? ☐ PHOTOGRAPH
YES - d/s of confluence on RB

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
— NO

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☑ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

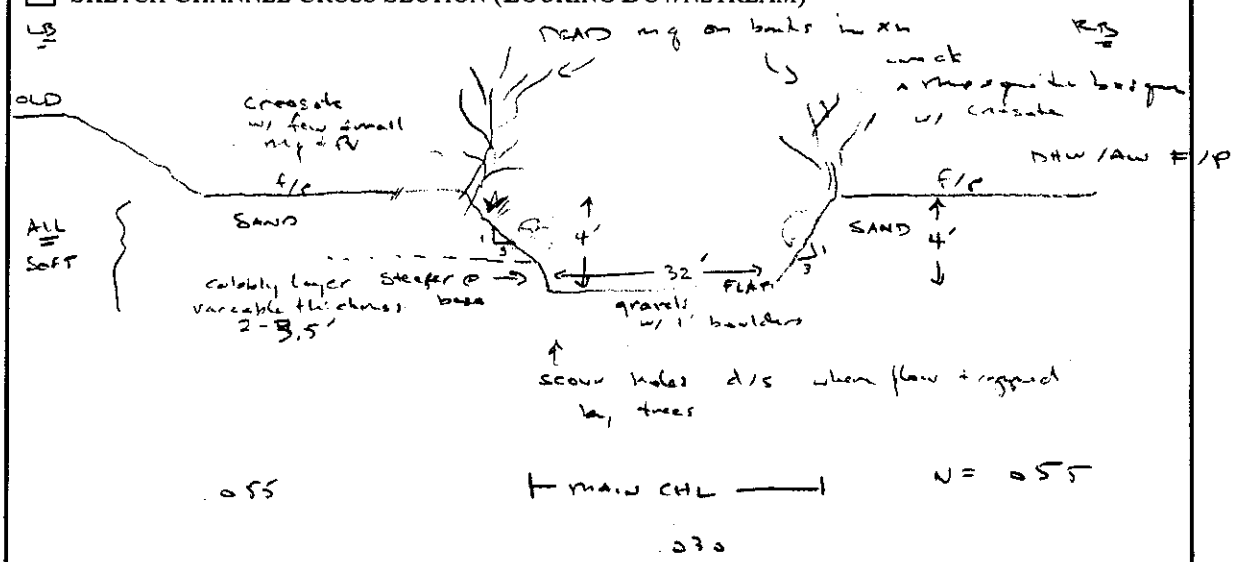
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES NO - DHW is LOWER	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES F/P	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) NO 2:1	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –	☐ PHOTOGRAPH	
HEADCUTS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS - IN XN due to d/s trib scour	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION < 2 ft	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
NO; unless stock pond breach on DHW

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



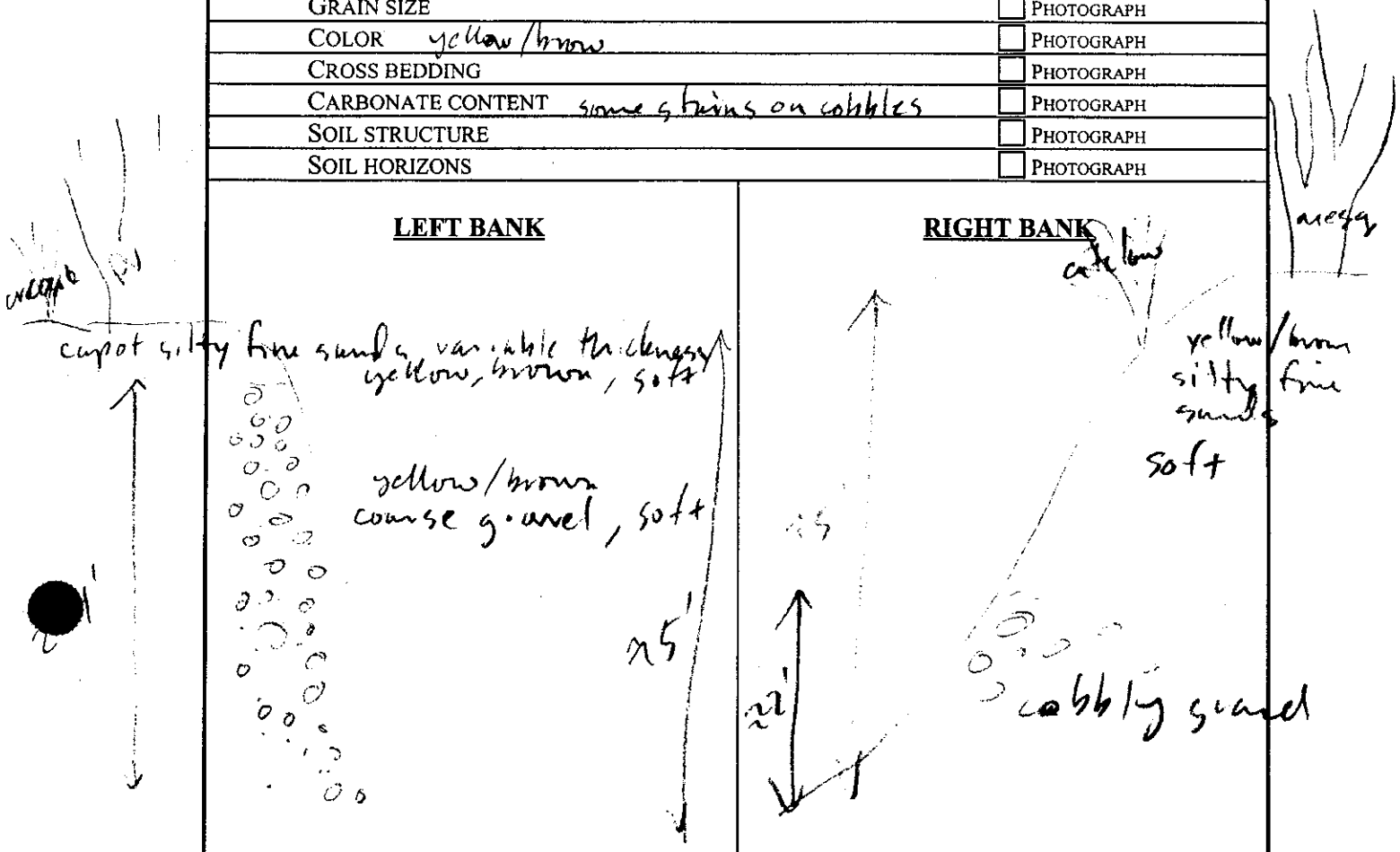
SHOW THE FOLLOWING:

☑ VEGETATION
☑ MANNING'S N VALUES
☑ BARS
☑ FLOODPLAIN/ TERRACES
☑ MAIN CHANNEL/ OVERFLOW CHANNEL
☑ ACTIVE CHANNEL LIMITS
☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR yellow/brown	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT some stains on cobbles	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



AWØ
4-23-99
TWL, BRJ

Boulder Count

Sta	Texture
1	very coarse sand
2	0.17'
3	0.19'
4	0.07'
5	0.12'
6	0.07'
7	0.17'
8	0.03'
9	0.04'
10	0.8'
11	very coarse sand
12	0.01'
13	vcs
14	0.01'
15	0.03'
16	0.03'
17	0.25'
18	0.03'
19	0.02
20'	0.01'
21'	0.03'
22	0.4'
23	vcs
24	0.21'
25	0.01'
26	0.01'
27	0.09'
28	0.01'
29	0.20'
30	0.3'
31	0.18'
32	fine sand
33	fine sand

AWØ

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW + 1000

DATE: 4-23-99 | TIME: (BEGIN/END) 1 20 / 1 45

FIELD CREW: JF [illegible]

RECORDS CHECK BY: (NAME, DATE) JF 9/2/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	6-19, note trib @ right	
LOOKING UPSTREAM ALONG BANK	6-20	
LOOKING DOWNSTREAM ALONG BANK	6-21	
LEFT BANK BLOW COUNT	mod hard bottom, mid = stiff, top hard	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	6-22	
LOOKING UPSTREAM ALONG BANK	6-23	
LOOKING DOWNSTREAM ALONG BANK	6-24	
RIGHT BANK BLOW COUNT	same as left	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	6-25	
BED MATERIAL - ENTIRE CHANNEL	6-26 L. ds from rb ~40' us of AW1000	
NOTABLE FEATURES: (LIST) highwater ~ 18' ds of AW-1000 on right bank.	6-27	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH ASL '99 3-10 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 4 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION ☐ PHOTOGRAPH
RV - mg - Cottonwood

ROOT MAT - good

CANOPY (HEIGHT, DENSITY) RV to 20' mg < 10'

PERCENT OF BANK COVER 25%

APPROXIMATE AGE 5-50 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
5% cottonwood - few aquatic weed; w/s chl clear

☐ ARMORING POTENTIAL
possible - in boulder riffle

☐ VISUAL ESTIMATE OF D50 = 2" Bimodal - blders in gravel ☐ PHOTOGRAPH
D90 8" D10 FG

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	YES - outside bend	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	LB - NO RB - yes	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	- NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION

cottonwood + grass chl terrace bank line

☐ CHANNEL PATTERN - Riffles ☐ PHOTOGRAPH
SINGLE CHL

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
Yes - LOB chl from terrace re-enters chl @ grade or BELOW

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
- 6'; BW = 40 TW = 60'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No ⊘

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
Bankfull

TYPE ~~AND~~ STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ TREE SCAR ~~GRUB LINE~~ OTHER
→ mg w/s LS

☐ DEPTH TO BEDROCK (FT. UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (~~DUNES/RIPPLES/~~ARMOR/PLAIN) ☐ PHOTOGRAPH
?

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

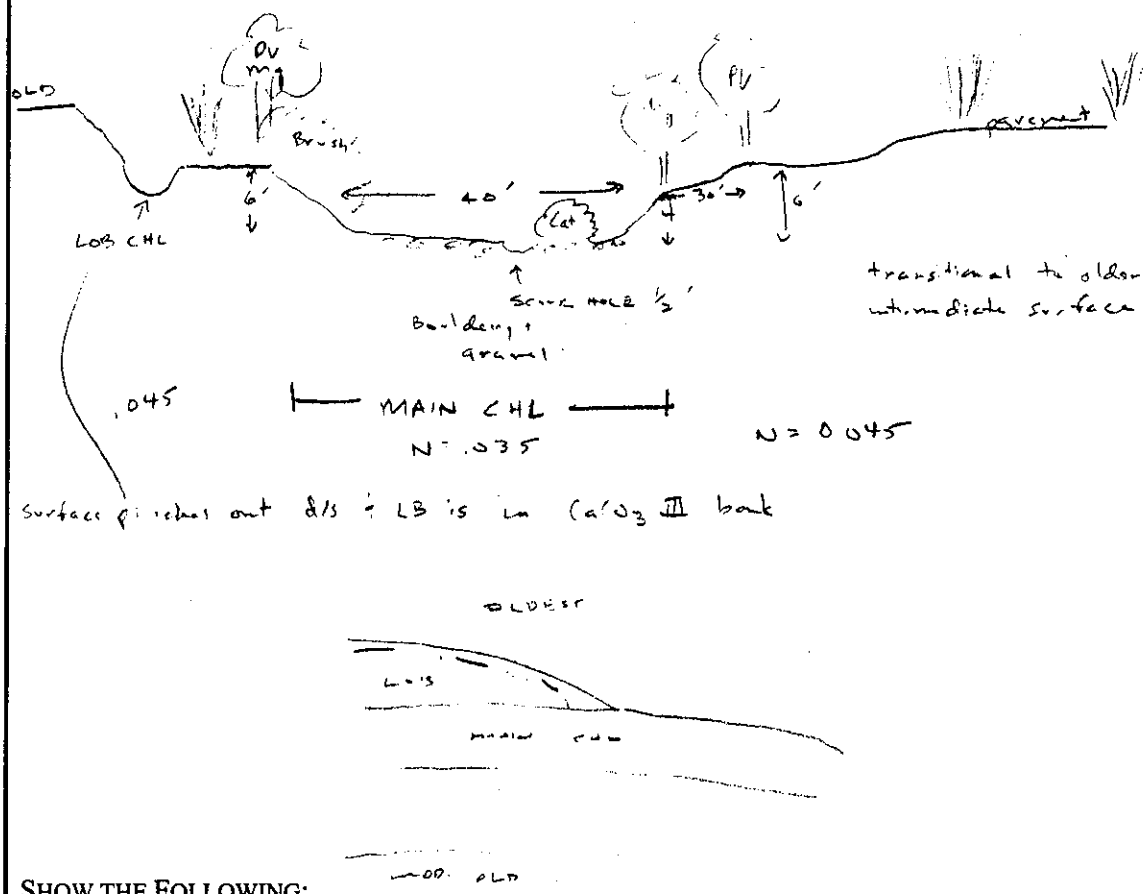
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES – @ grade or below	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES f/p	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS Riffles	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION No		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) cross sec



SHOW THE FOLLOWING:

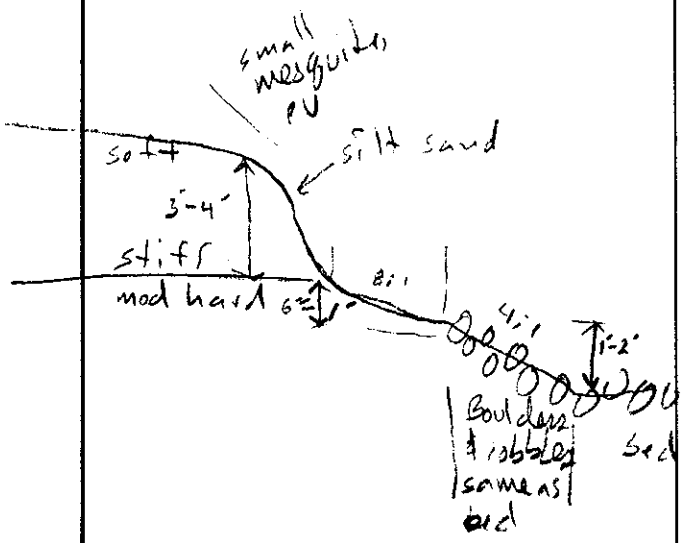
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☐ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

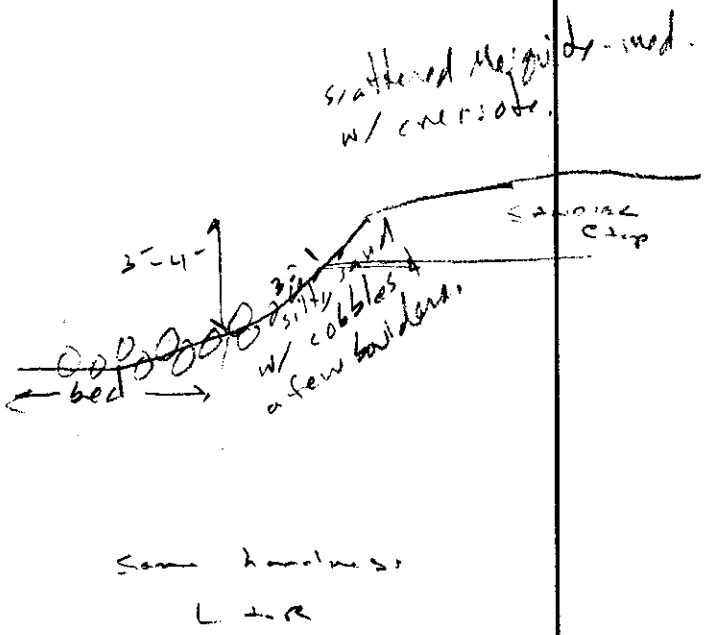
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY no	☐ PHOTOGRAPH
GRAIN SIZE silty, sand	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-1000
4/23/99

Boulder Count

2 - m. sand
4 - 0.22
6 - C. Sand
8 - 0.07
10 - 0.07
12 - 0.31
14 - F. gravel
16 - 0.05
18 - F. gravel
20 - 0.30
22 - 0.15
24 - 0.40
26 - 0.35
28 - 0.29
30 - 0.35
32 - 0.6
34 - 0.19
36 - 0.02
38 - 0.05
40 - 0.02

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION:
AW-2000

DATE: 4/23/99

TIME: (BEGIN/END) 2 pm / 2:15 pm

FIELD CREW: Bri, Ted, Jon

RECORDS CHECK BY: (NAME, DATE) 9/3/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	7-3	
LOOKING UPSTREAM ALONG BANK	7-4	
LOOKING DOWNSTREAM ALONG BANK	7-5 not cut bank ~200' ds on Lb.	
LEFT BANK BLOW COUNT	stiff to med hard, very top is soft.	
RIGHT BANK (SURVEY ROD FOR SCALE)	tough lower gravel	over.
LOOKING DIRECTLY AT BANK	7-6	
LOOKING UPSTREAM ALONG BANK	7-7	
LOOKING DOWNSTREAM ALONG BANK	7-8	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	7-9	
BED MATERIAL - ENTIRE CHANNEL	7-10, L. ds from Lb. ~20' ds of AW-2000	
NOTABLE FEATURES: (LIST) L. ds. @ high water marks and scour hole ~ 60' d.s. of AW-2000	7-11	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

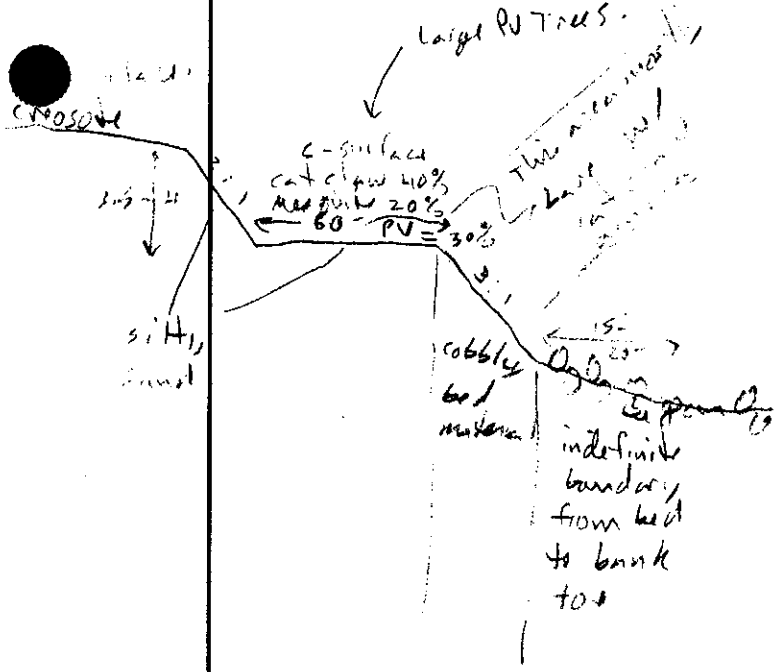
☑ ON FCDMC TOPOGRAPHY _____ (SHEET #)

3. BANK PROFILE

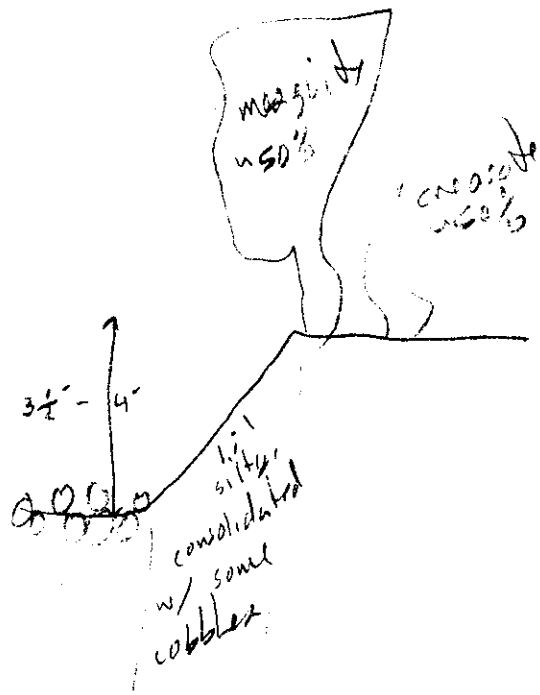
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



FIELD GEOMORPHOLOGY/ - CHANNEL CHARACTERISTICS #: AW+ 2000 DATE: 4/23 INITIALS: JF

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
YES 60' U/S [illegible]

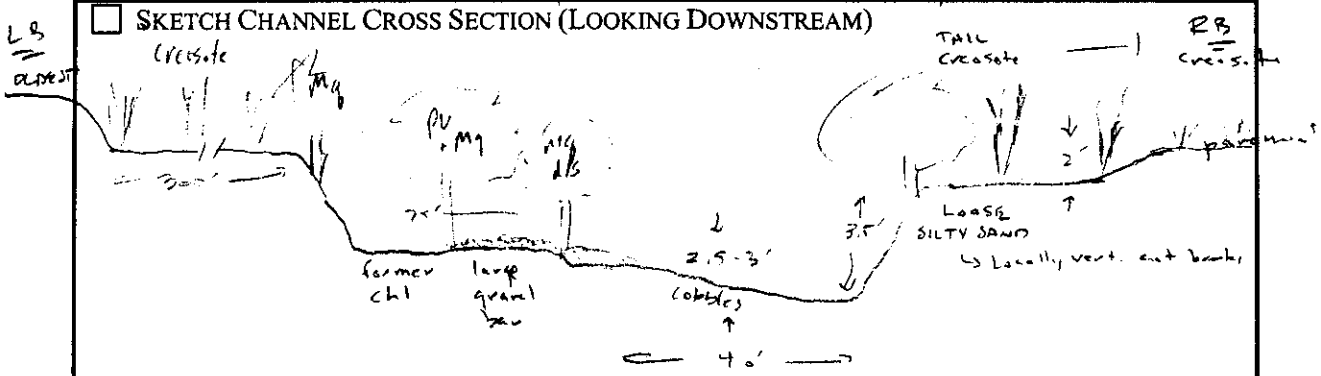
OBSTRUCT FLOW? Yes. flotsam on fence - fails (posts) e high Q

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES - perched abandoned flow path	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES Yes 2	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) -	☐ PHOTOGRAPH	
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS riffles	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION scour holes	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
fence - grazing (applies to entire study area)

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



- reach v. active laterally within 200' corridor
- sinuous; abandoning chls - cut banks & scour holes

— .15 — | — main chl — | — .05 —
.035

* EXAMINE HISTORICAL PHOTOS CAREFULLY HERE & TO SEE Δ's IN REACH / ALIGNMENT / WIDTH / ETC.

SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION mg & PV ☐ PHOTOGRAPH
~90%

ROOT MAT – good – holding under severe attack

CANOPY (HEIGHT, DENSITY) 15-20'

PERCENT OF BANK COVER 35%

APPROXIMATE AGE 50+ yrs – 12" trees

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
chl is clear, except where bank movement prodded, put trees in chl edge

☐ ARMORING POTENTIAL Possible – cobbly

☐ VISUAL ESTIMATE OF D50 = 3" ☐ PHOTOGRAPH
D90 8" D10 ms

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES!	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No, holding on, big flotsam	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	~~No~~	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN → huge pt & shadow bars; ~~3 [illegible]~~ four holes ☐ PHOTOGRAPH
Sinuous & single chl, scoured

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
– 3.5'. BW = 40', TW = 45'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
4' bankfull

~~TYPE AND~~ STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ TREE SCAR? ~~GRUS LINE~~ OTHER
possible under flotsam

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS (DUNES/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH
Scour?

4/23/99
AW-2000

Boulder Count

2 - M. sand
4 - 0.03
6 - 0.07
8 - 0.08
10 - 0.09
12 - 0.06
14 - silt
16 - 0.5
18 - 0.32
20 - F. gravel
22 - 0.32
24 - 0.06
26 - v.c. sand
28 - 0.18
30 - v.c. sand
32 - 0.03
34 - 0.01
36 - 0.02
38 - 0.15
40 - 0.05
42 - v.f. sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW +3000

DATE: 4-23 | TIME: (BEGIN/END) 2:20 - 2:43

FIELD CREW: JF [illegible] TL

RECORDS CHECK BY: (NAME, DATE) 9/3/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	7-12	
LOOKING UPSTREAM ALONG BANK	7-13	
LOOKING DOWNSTREAM ALONG BANK	7-14	
LEFT BANK BLOW COUNT	med. hard rock base, soft upper	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	7-15	
LOOKING UPSTREAM ALONG BANK	7-16	
LOOKING DOWNSTREAM ALONG BANK	7-17	
RIGHT BANK BLOW COUNT	stiff	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	7-18	
BED MATERIAL - ENTIRE CHANNEL	7-19 L.d.s. from ~20' us of AW-3000 in rb.	
NOTABLE FEATURES: (LIST) L. u.s. @ high water debris pile on left bank located ~15' us of AW-3000	7-20	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 (NUMBER) 3-10

☑ ON FCDMC TOPOGRAPHY 5 (SHEET #) sheet 5

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION	RV - mostly - varying thin ratio/low >18" trees	☐ PHOTOGRAPH
ROOT MAT	good	
CANOPY (HEIGHT, DENSITY)	RV to 25' 3' max brush	
PERCENT OF BANK COVER	35%	
APPROXIMATE AGE	RV - 50yrs - varies < 5yrs	
☐ CHANNEL VEGETATION (TYPE & PERCENT COVER)	chl is clear	☐ PHOTOGRAPH
☐ ARMORING POTENTIAL	low	
☐ VISUAL ESTIMATE OF D50 = 1/4"	Bimodal cobbles in gravel	☐ PHOTOGRAPH
D90 8"	D10 <5	
☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)	MIN	
CUT BANKS	YES	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	YES - many	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/~~DOWNSTREAM~~)	–	☐ PHOTOGRAPH ☐ PLOT LOCATION
☐ CHANNEL PATTERN	→ huge US bar or perched abandoned chl u/s 100 ft	☐ PHOTOGRAPH
☐ TRIBUTARIES NEARBY?	Lots local chl rejoins main chl 100' d/s	☐ PHOTOGRAPH
☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH)	– 4-6', BW = 19' TW = 39'	☐ PHOTOGRAPH
☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH)	No Q	☐ PHOTOGRAPH
☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP)		☐ PHOTOGRAPH
TYPE AND STAGE (FEET)	FLOTSAM ~ 4ft ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER	
☐ DEPTH TO BEDROCK (FT., UNKNOWN)		
BEDROCK EXPOSED?	NO	☐ PHOTOGRAPH
GRADE CONTROL? (TYPE, PHOTO)	NO	☐ PHOTOGRAPH
☐ BEDFORMS (~~DUNES/RIPPLES~~/ARMOR/PLAIN)	?	☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) B/W D/S 900' ☐ PHOTOGRAPH

OBSTRUCT FLOW? Not @ this Xm

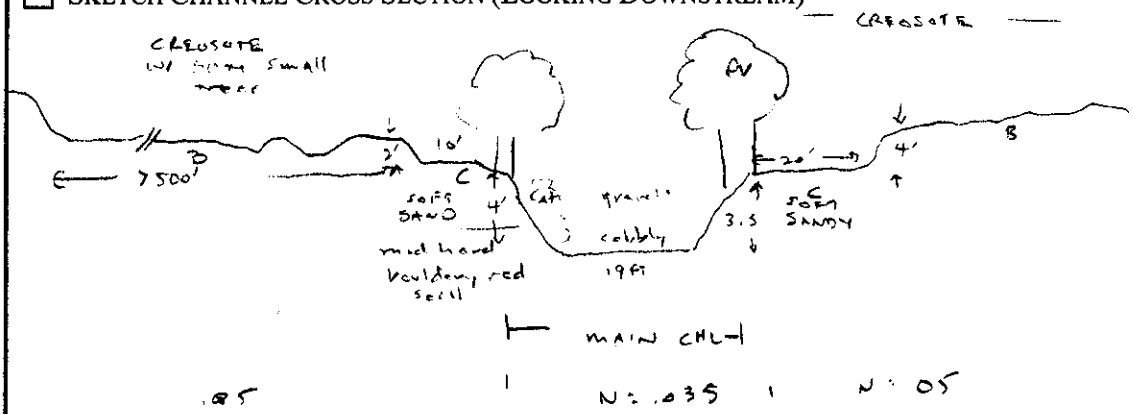
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No, @ grade d/s	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES		☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)		☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	Riffle	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	max: 2'	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing

LB = ☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM) RB =



- downstream clay layer in bank - somewhat resistant, but crumbles

- chl narrows from d/s

SHOW THE FOLLOWING:

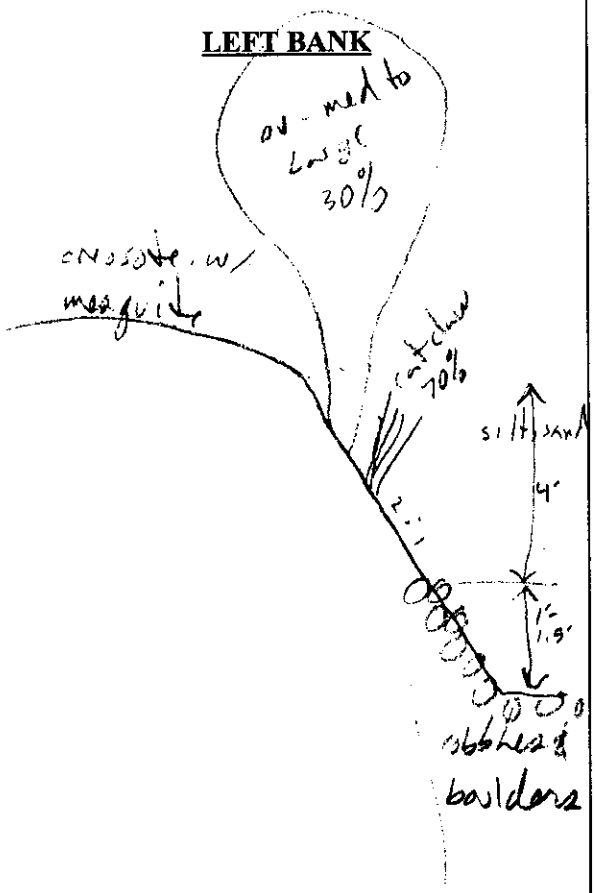
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

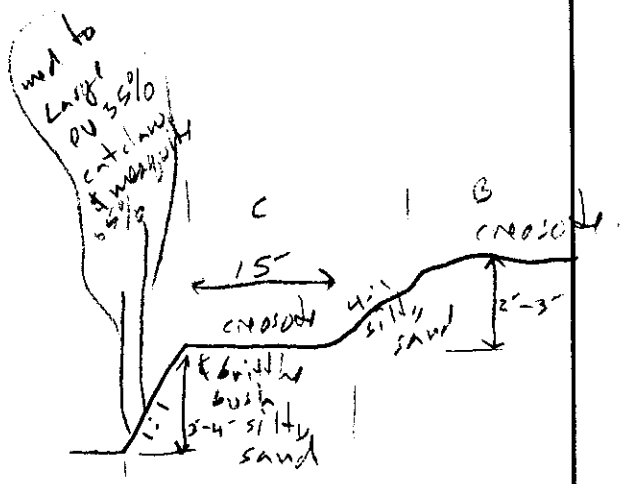
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY no	☐ PHOTOGRAPH
GRAIN SIZE silty sand	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-3000

4/23/99

Boulder Count

0 - 0.55

1 - 0.30

2 - 0.20

3 - 0.01

4 - V.C. Sand

5 - f. gravel

6 - 0.02

7 - 0.65

8 - f. gravel

9 - 0.01

10 - f. gravel

11 - 0.11

12 - 0.12

13 - 0.10

14 - 0.16

15 - m. sand

16 - 0.30

17 - 0.13

18 - f. sand.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW+4000 u/s end of long straight reach	
DATE: 4-23-99	TIME: (BEGIN/END) 2:50 / 3:10
FIELD CREW: JF TL BRI	
RECORDS CHECK BY: (NAME, DATE) JF 9/3/99	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	7-22	
LOOKING UPSTREAM ALONG BANK	7-23	
LOOKING DOWNSTREAM ALONG BANK	7-24	
LEFT BANK BLOW COUNT	soft gravel @ lower, mod stiff upper.	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	7-25	
LOOKING UPSTREAM ALONG BANK	7-26	
LOOKING DOWNSTREAM ALONG BANK	7-1	
RIGHT BANK BLOW COUNT	soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	8-2	
BED MATERIAL - ENTIRE CHANNEL	8-3, L.d.s. from 15' us of AW 4000	
NOTABLE FEATURES: (LIST)	on L.b.	
L.d.s. @ high water debris pile approximately 50' us of AW-4000 on L.b.	8-4	

3. PLOT CROSS SECTION LOCATION

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL '99 (NUMBER)
- ☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

Chl is narrower, larger than d/s

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Cottonwood, Creosote, brittle bush, mq, PV ☐ PHOTOGRAPH

ROOT MAT perched

CANOPY (HEIGHT, DENSITY) < 10'

PERCENT OF BANK COVER lower 2 ft + 5%; upper 4 ft 50%

APPROXIMATE AGE 0-10 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
CHL IS CLEAR

☐ ARMORING POTENTIAL possible - cobbles : boulders

☐ VISUAL ESTIMATE OF D50 = 2" ☐ PHOTOGRAPH
D90 12" D10 FG

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)
steepened, but essentially stable

CUT BANKS	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	some	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)~~	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN v. Straight single chl ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? small RB u/s 200' ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 6.5', BW = 21' TW = 25'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET) ~4 ft
FLOTSAM ↳ 4' SLACKWATER EROSION SCAR TREE SCAR ~~GRUB LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS (~~DUNES/RIPPLES~~/ARMOR/PLAIN) ? ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

NO

OBSTRUCT FLOW? NO

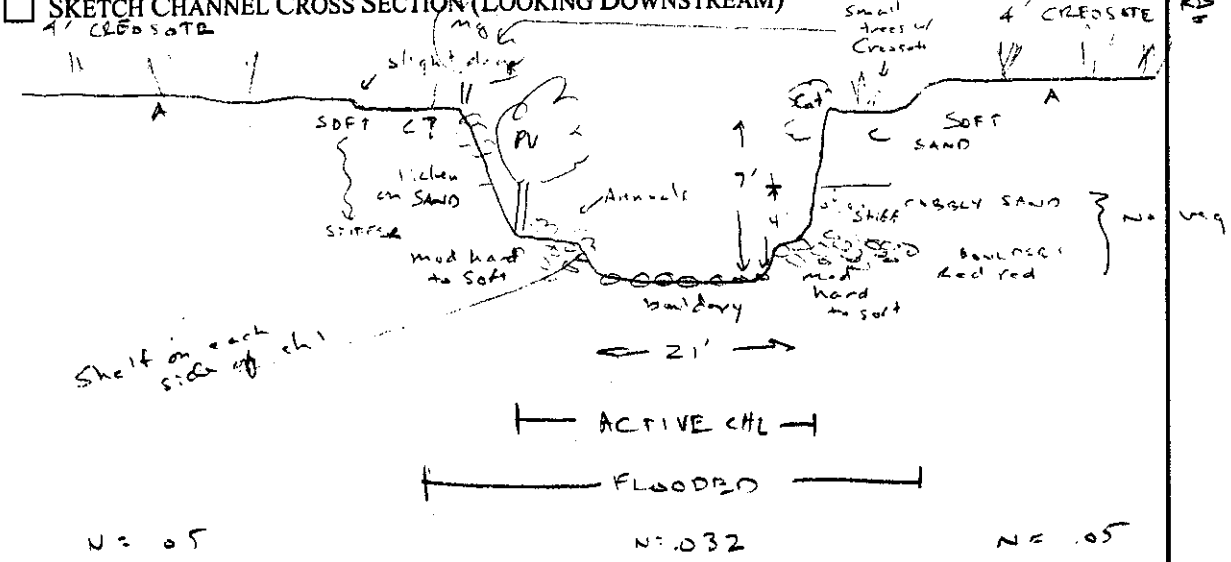
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	F/P ÷ C	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)			☐ PHOTOGRAPH
HEADCUTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Riffles	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	2-4'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

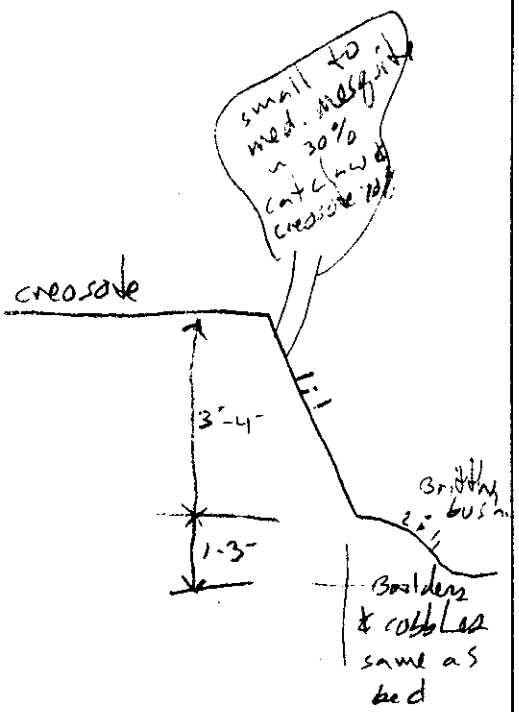
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS - NO
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

3. BANK PROFILE

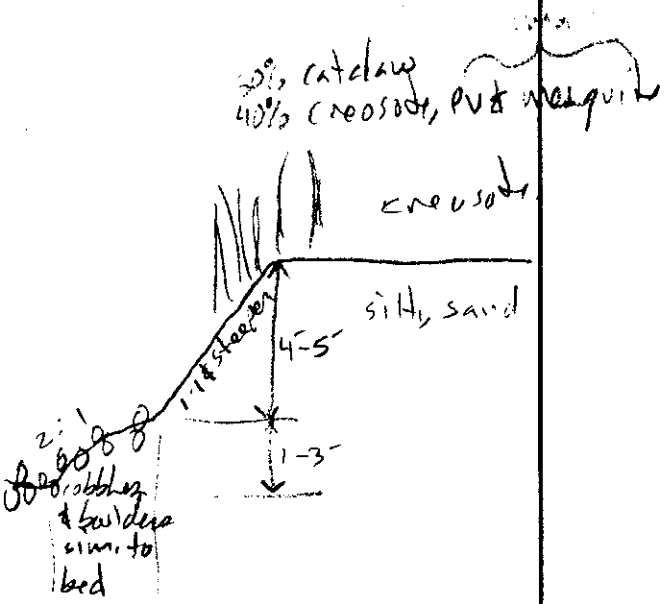
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY no	☐ PHOTOGRAPH
GRAIN SIZE silty sand	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW- 4000
4/23/99

Boulder Count

1 - v.f. sand

2 - c 1

3 - 0.60

4 - med sand

5 - 0.40

6 - 0.35

7 - 0.60

8 - 0.04

9 - 0.05

10 - 0.03

11 - 0.08

12 - f. gravel

13 - 0.10

14 - f. gravel

15 - 0.02

16 - 0.18

17 - 0.02

18 - 0.75

19 - 0.23

20 - 0.80

21 - 0.60

22 - f. sand.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW+5000

DATE: 4-23-99

TIME: (BEGIN/END) 3:15pm / 3:37

FIELD CREW: JF, BRI, TL

RECORDS CHECK BY: (NAME, DATE) 9/3/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	8-6	
LOOKING UPSTREAM ALONG BANK	8-7	
LOOKING DOWNSTREAM ALONG BANK	8-8	
LEFT BANK BLOW COUNT	50ft	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	8-9	
LOOKING UPSTREAM ALONG BANK	8-10	
LOOKING DOWNSTREAM ALONG BANK	8-11	
RIGHT BANK BLOW COUNT	50ft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	8-12	
BED MATERIAL - ENTIRE CHANNEL	8-13, c. d.s. from ~25' US of AW-5000	
NOTABLE FEATURES: (LIST) c. d.s. high water debris pile on r.b. from ~20' d.s of AW-5000	8-14	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Creosote PV Mg, Cat'claw ☐ PHOTOGRAPH

ROOT MAT good @ water'm, near invert

CANOPY (HEIGHT, DENSITY) PV ≈ 15' all else < 10'

PERCENT OF BANK COVER variable 30-50%

APPROXIMATE AGE PV - 50 yr, < 20 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
chl is clear, minor grass stalks

☐ ARMORING POTENTIAL
low - gravel bar

☐ VISUAL ESTIMATE OF D50 = ¼" ☐ PHOTOGRAPH
D90 2" D10 FS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)
Evidence of avulsive D d/s, banks look mod. stable

CUT BANKS	Some	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	Point Bars	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
↳ SINGLE CHL - BRAIDED @ V. HIGH FLOW (Q ≫)

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
2 small tribs from RO3 between AW4000 & AW5000

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— BW = 28, TW = 30 @ D of 2' Point

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM ↳ 4 ft SLACKWATER EROSION SCAR ↳ + silt drape @ +5' TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR/PLAIN~~) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW?

No

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

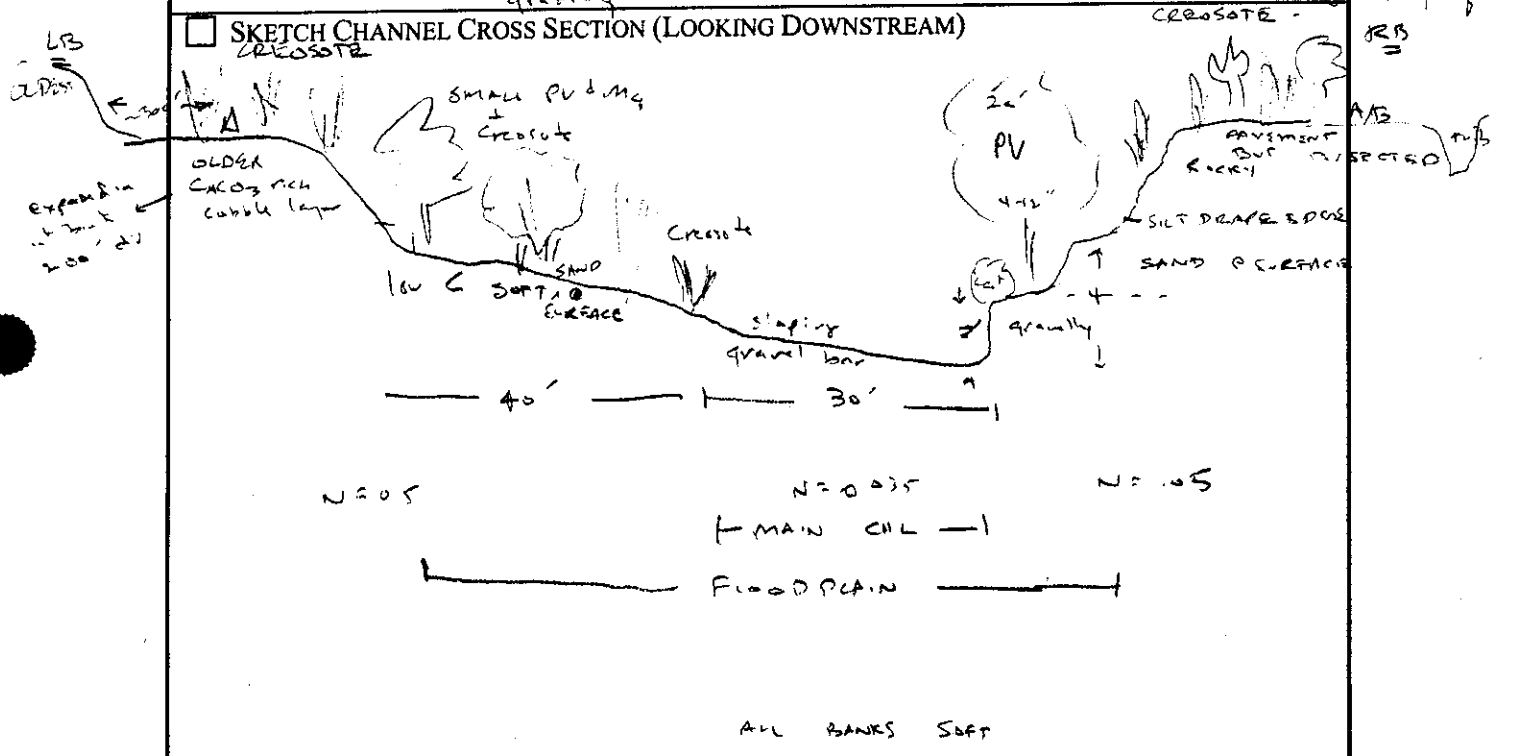
maybe 2' recent

HANGING TRIBUTARIES	No perched tribs	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	flat @ 4', notch @ 2' slope	☑ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes @ base R	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Yes Riffles w/ 0.5/5	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	< 2 ft	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

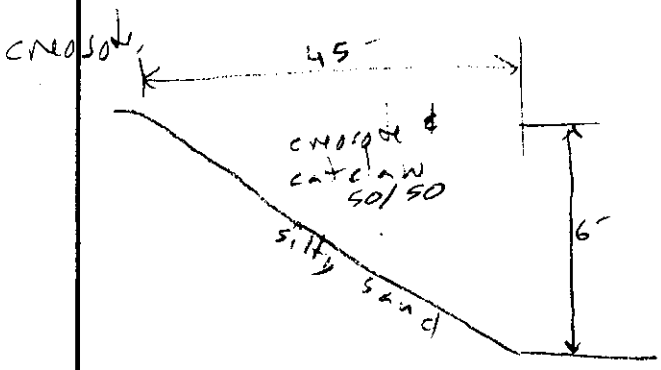
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

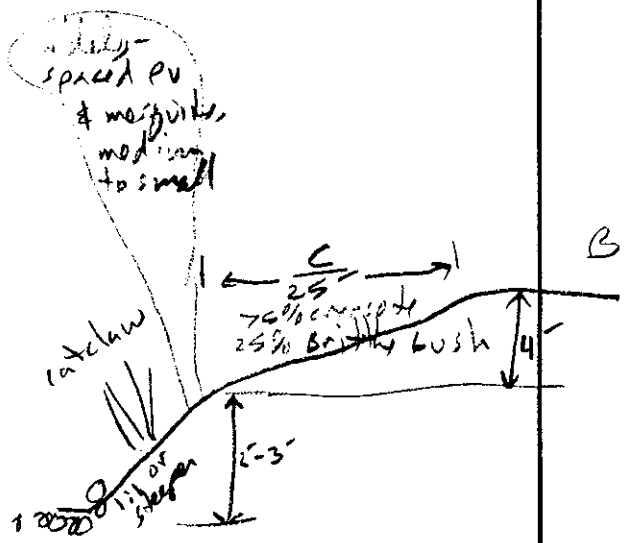
☒ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY no	☐ PHOTOGRAPH
GRAIN SIZE silty sand	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW+ 5000
4-23-99

Boulder Count

1 - m. sand.
2 - 0.1
3 - 0.04
4 - f. gravel
5 - v.c. sand
6 - 0.02
7 - 0.01
8 - c. sand
9 - 0.03
10. 0.07
11. - f. gravel
12 - c. sand.
13 - 0.05
14 - 0.03
15 - 0.05
16 - f. sand
17 - 0.01
18 - 0.03
19 - silty f. sand
20 - ( )
21 - ( )
22 ( )
23 0.02
24 0.12
25 0.14
26 - v.f. sand
27 - f. sand
28 - f. sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AN 46000

DATE: 4-23-99 | TIME: (BEGIN/END) 3:45 / 4:05

FIELD CREW: BRI - TL - JF

RECORDS CHECK BY: (NAME, DATE) JF 9/3/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	8-15, note high water debris @ 3.0	
LOOKING UPSTREAM ALONG BANK	8-16	
LOOKING DOWNSTREAM ALONG BANK	8-17	
LEFT BANK BLOW COUNT	5 ft	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	8-18	
LOOKING UPSTREAM ALONG BANK	8-19	
LOOKING DOWNSTREAM ALONG BANK	8-20	
RIGHT BANK BLOW COUNT	stiff lower, hard @ top, extremely hard 6" up	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	8-21	
BED MATERIAL - ENTIRE CHANNEL	8-22, 6 dia from ~20' u/s of AN-6000	
NOTABLE FEATURES: (LIST)		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

D/S of 3-SIDED BEND

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Mg - Bv - cattail ☐ PHOTOGRAPH
↑ alder on RB

ROOT MAT v. GOOD, some shallow exposed on RB ~3'

CANOPY (HEIGHT, DENSITY) ~15, cattail to 8'

PERCENT OF BANK COVER 50%

APPROXIMATE AGE Mg w/ 18" trunk - rest ~10 yr

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
LWL CLEAR @ xs; cattail bushes in ch! U/S & D/S

☐ ARMORING POTENTIAL possible - cobbly

☐ VISUAL ESTIMATE OF D50 = 3" ☐ PHOTOGRAPH
D90 9" D10 1/4"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)
ERODING OUTSIDE SLOWLY

CUT BANKS YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS SLIGHTLY	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS No?	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS @ base	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE -	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS~~ OR BARS (UPSTREAM/DOWNSTREAM)	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN → POINT BAR on inside bend ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
0 ; 3' = L 10' = R BW: 32 TW = 36

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET) → 6' on XS Mg
FLOTSAM → 4ft ~~SLACKWATER~~ EROSION SCAR → 2' on XS TREE SCAR ~~GRASS LINE~~ ~~OTHER~~

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS ~~(DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No

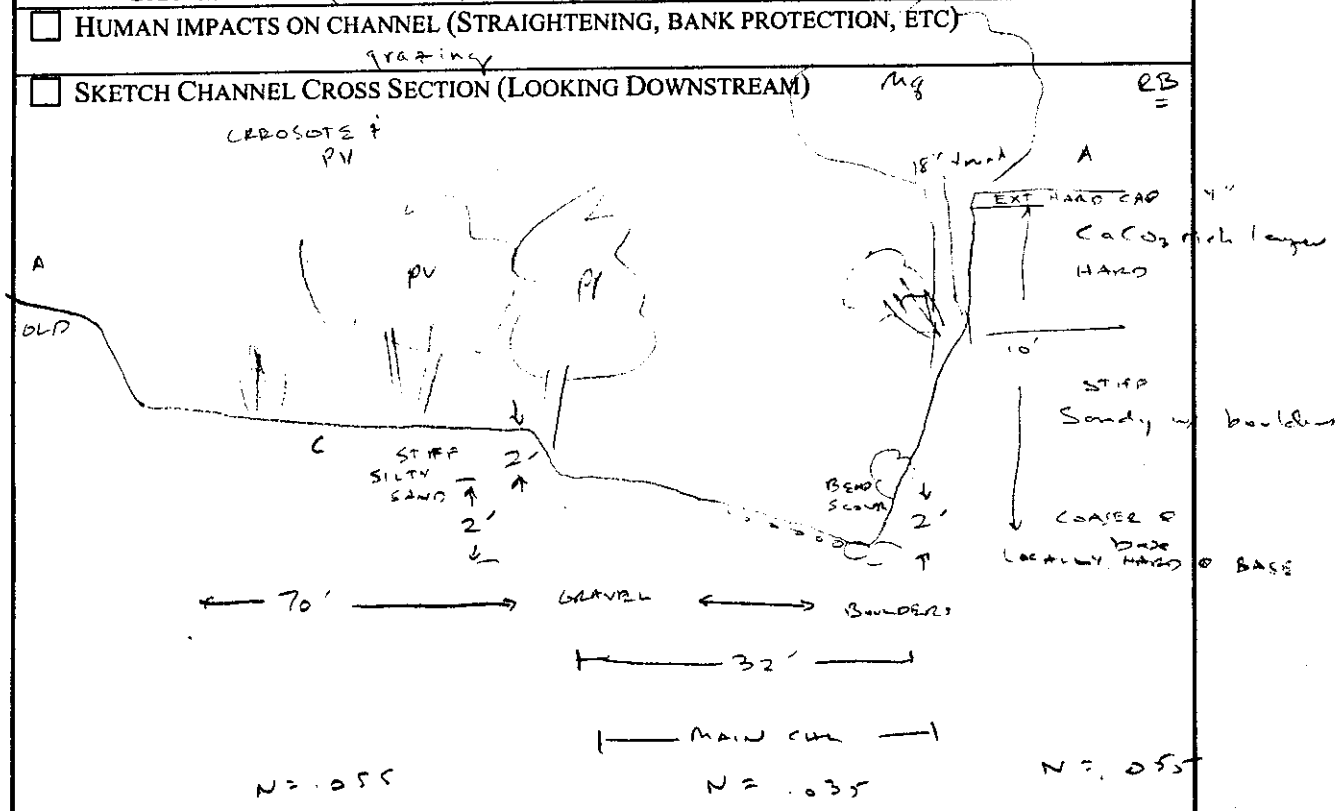
OBSTRUCT FLOW?
No

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)
Scour Holes on outside bend

HANGING TRIBUTARIES No @ grade dis	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES LB - 4 ft	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) -		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION < 2'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
grazing

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



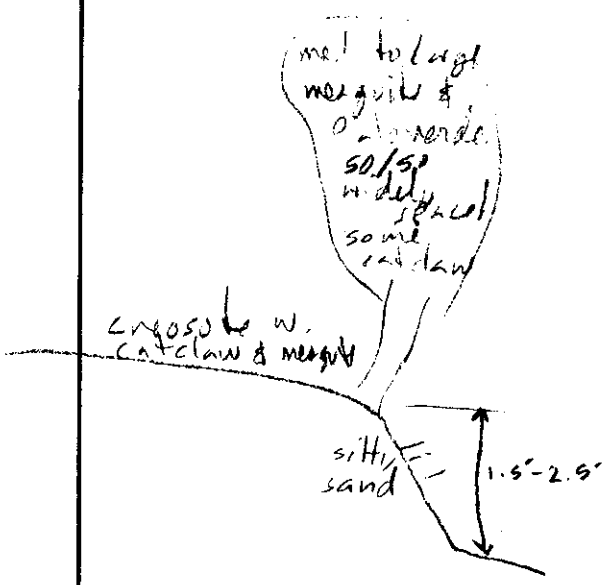
SHOW THE FOLLOWING:
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

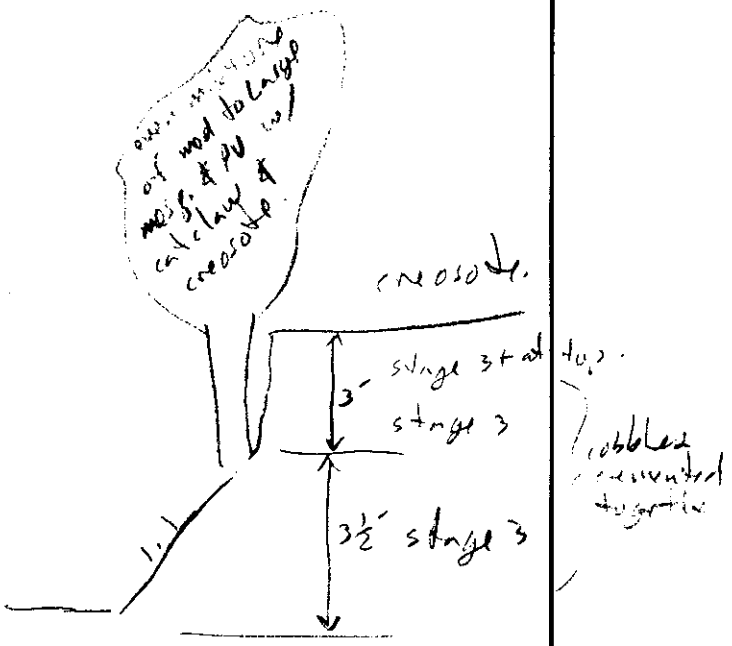
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	no	☐ PHOTOGRAPH
GRAIN SIZE	calcified marg.	☐ PHOTOGRAPH
COLOR	[illegible] white	☐ PHOTOGRAPH
CROSS BEDDING	no	☐ PHOTOGRAPH
CARBONATE CONTENT	stage 3	☐ PHOTOGRAPH
SOIL STRUCTURE	calcified	☐ PHOTOGRAPH
SOIL HORIZONS	no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW 4-23-99

Boulder Count

1 - v.f. sand
2 - f. Sand
3 - 0.02
4 - 0.04
5 - 0.07
6 - 0.05
7 - 0.03
8 - 0.07
9 - 0.07
10 - 0.04
11 - 0.08
12 - 0.09
13 - 0.10
14 - 0.27
15 - 0.07
16 - 0.11
17 - 0.05
18 - 0.08
19 - 0.12
20 - 0.09
21 - 0.07
22 - 0.6
23 - 0.05
24 - 0.09
25 - 0.32
26 - 0.06
27 - v.c. sand
28 - 0.25
29 - 0.06
30 - 0.57
31 - 0.03
32 - 0.20
33 - f. sand.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW+7000

DATE: 4-29-99

TIME: (BEGIN/END) 9:35, 10:00

FIELD CREW: JF TL SRJ

RECORDS CHECK BY: (NAME, DATE) JF 9/3/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	9-14	12-14
LOOKING UPSTREAM ALONG BANK	9-15	
LOOKING DOWNSTREAM ALONG BANK	9-16	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	9-17	
LOOKING UPSTREAM ALONG BANK	9-18	
LOOKING DOWNSTREAM ALONG BANK	9-19	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	9-20	
BED MATERIAL - ENTIRE CHANNEL	9-21	
NOTABLE FEATURES: (LIST)		
L. d.s. ① high-water mark from ~12' us of AW+7000	9-22	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH 3-12 ASC '99 (NUMBER)

NS ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV [illegible] ☐ PHOTOGRAPH

ROOT MAT leveled L & R

CANOPY (HEIGHT, DENSITY) <20'

PERCENT OF BANK COVER 20%

APPROXIMATE AGE 20-50 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
Chl [illegible] 3/4 [illegible]

☐ ARMORING POTENTIAL
Min [illegible]

☐ VISUAL ESTIMATE OF D50 1/4" ☐ PHOTOGRAPH
D90 8" D10 MS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	Yes [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	Yes L No R	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	Yes in Calcs	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No, clean	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	N/A	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	Yes from Calcs	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS~~ OR BARS (UPSTREAM/DOWNSTREAM)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN [illegible] large gravel splay ☐ PHOTOGRAPH
Meandering, single thal

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
Not [illegible] 5' LB 12', TW 30 BW 23

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
log 23

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No, but stage IV Calcs in LB ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No.

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

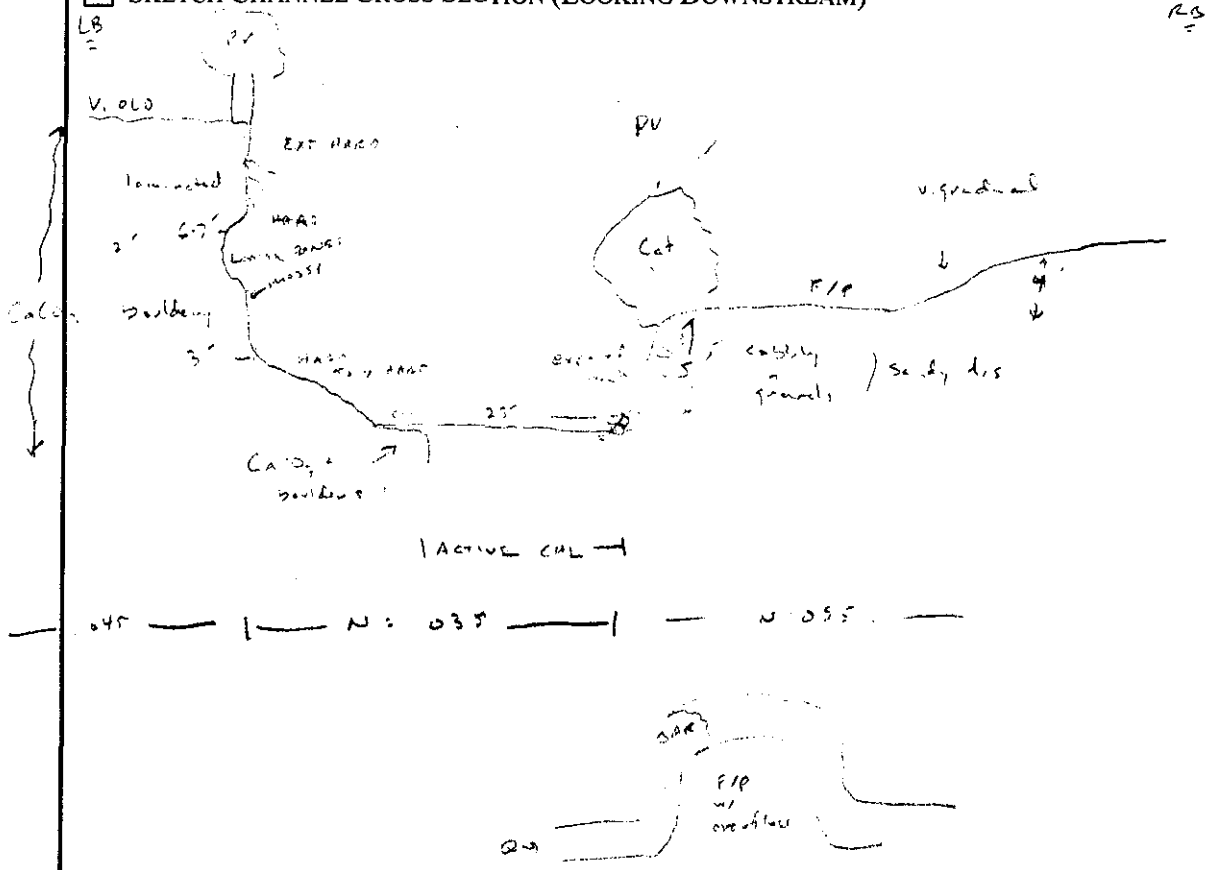
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION [illegible]		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

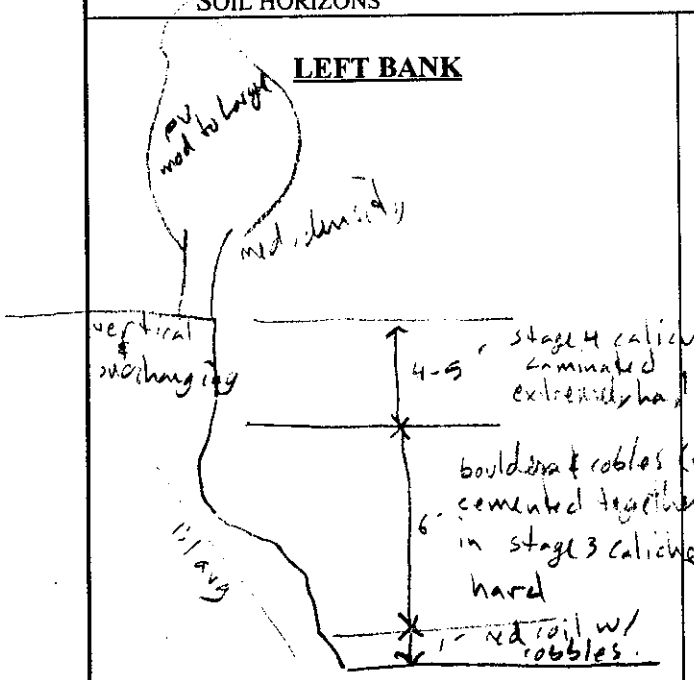
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

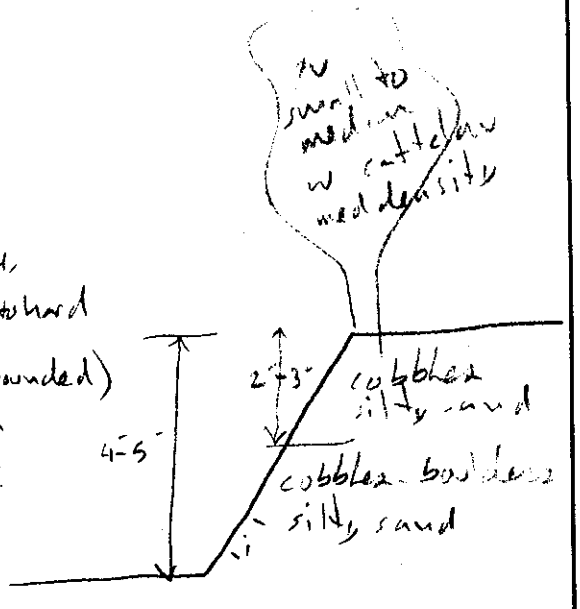
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY stage 4 & 3 caliche in lib.	☑ PHOTOGRAPH
GRAIN SIZE silty sand	☐ PHOTOGRAPH
COLOR yellow w/ red & white in lib.	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT stage 3 & 4	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-7000

4/29/99

Boulder Count

3 - silty f Sand

4 - 0.03

5 - V.C. Sand

6 - 0.01

7 - f G

8 - 0.1

9 - 0.07

10 - 0.25

11 - 0.14

12 - 0.13

13 - 0.06

14 - 0.04

15 - c. sand

16 - 0.02

17 - 0.12

18 - 0.11

19 - 0.04

20 - 0.17

21 - 0.14

22 - 0.02

23 - 0.08

24 - 0.02

25 - 0.85

26 - c. Sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW + 8500

DATE: 4 29

TIME: (BEGIN/END) 10 05, 10:27

FIELD CREW: TL JF SRI

RECORDS CHECK BY: (NAME, DATE) 9/3/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	9-23	
LOOKING UPSTREAM ALONG BANK	9-24	
LOOKING DOWNSTREAM ALONG BANK	9-25	
LEFT BANK BLOW COUNT	soft	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	9-26	
LOOKING UPSTREAM ALONG BANK	9-27	
LOOKING DOWNSTREAM ALONG BANK	9-28	
RIGHT BANK BLOW COUNT	soft to sift	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	9-29	
BED MATERIAL - ENTIRE CHANNEL	9-30	
NOTABLE FEATURES: (LIST)		
L. d.s. @ high water mark, ~ 10' d.s. of AW-8000	9-31	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-12 ASL '99 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION [illegible] ☐ PHOTOGRAPH

ROOT MAT [illegible]

CANOPY (HEIGHT, DENSITY) [illegible]

PERCENT OF BANK COVER 20%

APPROXIMATE AGE 5-50 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

[illegible]

☐ ARMORING POTENTIAL

M-U - armor @ low Q

☐ VISUAL ESTIMATE OF D50 ≈ 1" ☐ PHOTOGRAPH

D90 6" D10 mm

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS [illegible] NO OCC ROOTS	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH

V. STRAIGHT SINGLE CHL

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

NO

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

D: 3'R, 4'L BW = 29 TW = 39

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

NO Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

bankfull

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NO

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/ARMOR/PLAIN) ☐ PHOTOGRAPH

?

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

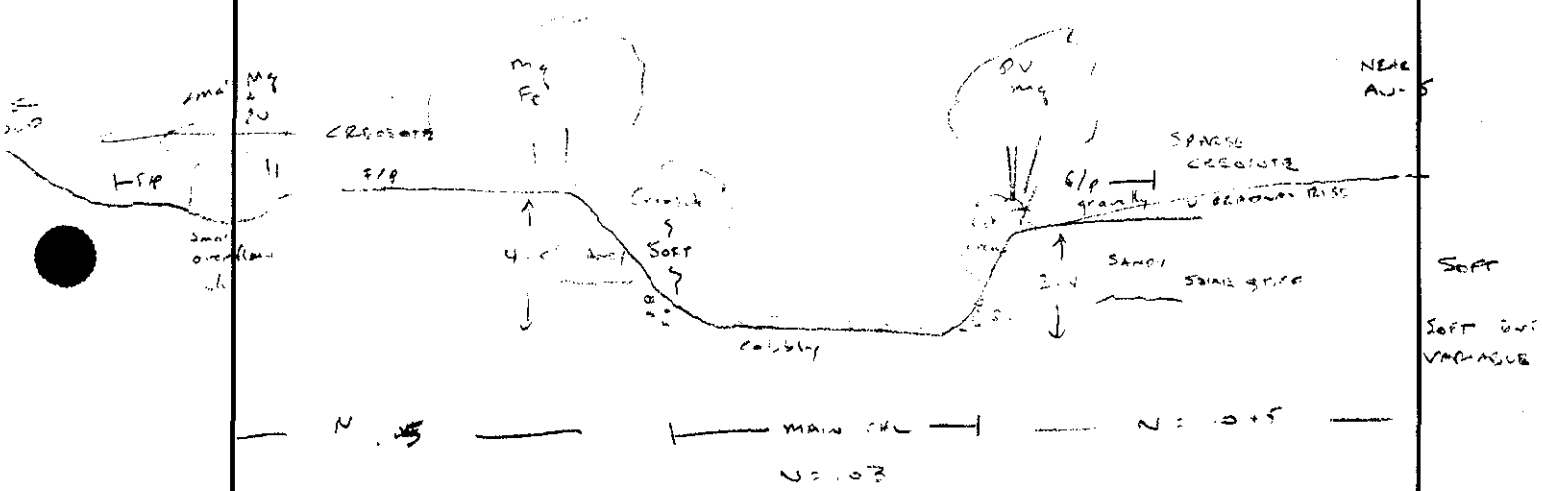
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	[illegible]	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	No	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) great mg

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

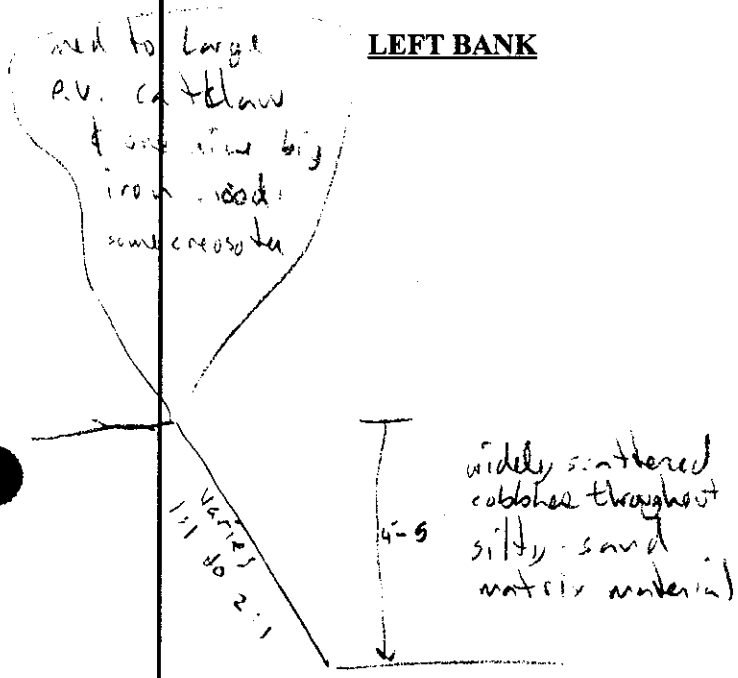
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

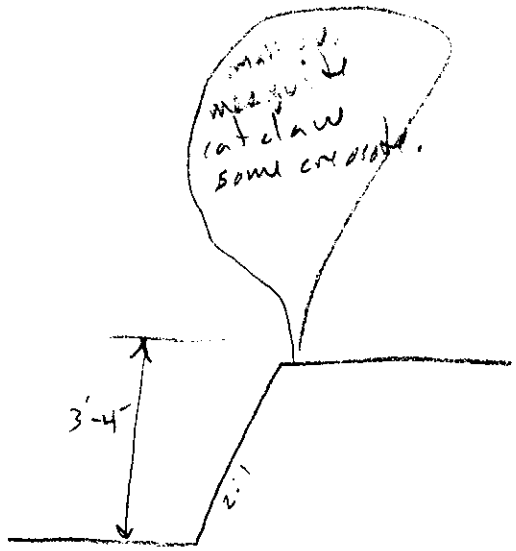
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT —	☐ PHOTOGRAPH
SOIL STRUCTURE —	☐ PHOTOGRAPH
SOIL HORIZONS —	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-8000

4/29/99

Boulder Count

3 - M. Sand.
4 - 0.17
5 - 0.09
6 - 0.02
7 - 0.04
8 - 0.17
9 - f. gravel
10 - 0.20
11 - 0.08
12 - 0.08
13 - 0.01
14 - 0.08
15 - v. c. sand
16 - 0.04
17 - 0.02
18 - 0.06
19 - 0.06
20 - 0.02
21 - 0.06
22 - 0.10
23 - 0.07
24 - 0.01
25 - 0.07
26 - 0.05
27 - m. sand
28 - 0.40
29 - silty m. sand.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: AW - 9000

DATE: 4/29

TIME: (BEGIN/END) 10:35 / 10:55

FIELD CREW: BE, TL, JF

RECORDS CHECK BY: (NAME, DATE) 9/3/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	9-32	
LOOKING UPSTREAM ALONG BANK	9-33	
LOOKING DOWNSTREAM ALONG BANK	9-34	
LEFT BANK BLOW COUNT	stiff bottom, Top = mod. stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	9-35	
LOOKING UPSTREAM ALONG BANK	9-36	
LOOKING DOWNSTREAM ALONG BANK	9-37	
RIGHT BANK BLOW COUNT	mod stiff bottom, Top = [illegible] to mod. stiff	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	9-38	
BED MATERIAL - ENTIRE CHANNEL	10-1 from L bank L. d. s.	
NOTABLE FEATURES: (LIST) L. d. s. @ HW. debris pile on right bank.	10-2	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☒ ON RECENT AERIAL PHOTOGRAPH ASI '99 3-12 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION [illegible] ☐ PHOTOGRAPH

ROOT MAT FAIR TO GOOD

CANOPY (HEIGHT, DENSITY) <15'

PERCENT OF BANK COVER 35%

APPROXIMATE AGE 5-20 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL IS CLEAR

☐ ARMORING POTENTIAL

MIN [illegible]

☐ VISUAL ESTIMATE OF D50 ½" ☐ PHOTOGRAPH

D90 3" D10 FG

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	✓ IN NAR - LOWEST 1'	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	VERT TOE & BB	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
~~ISLANDS~~ OR BA~~RS~~ (UPSTR~~EAM/DOWNSTREA~~M)	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ CHANNEL PATTERN STRAIGHT SINGLE CHL ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? NO ☐ PHOTOGRAPH

RC overflow chl

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

– , 5-6' , BW = 20 TW = 30

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

NO Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) RCBC ☐ PHOTOGRAPH

NO (US 0 Corrugated Hwy 1200')

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

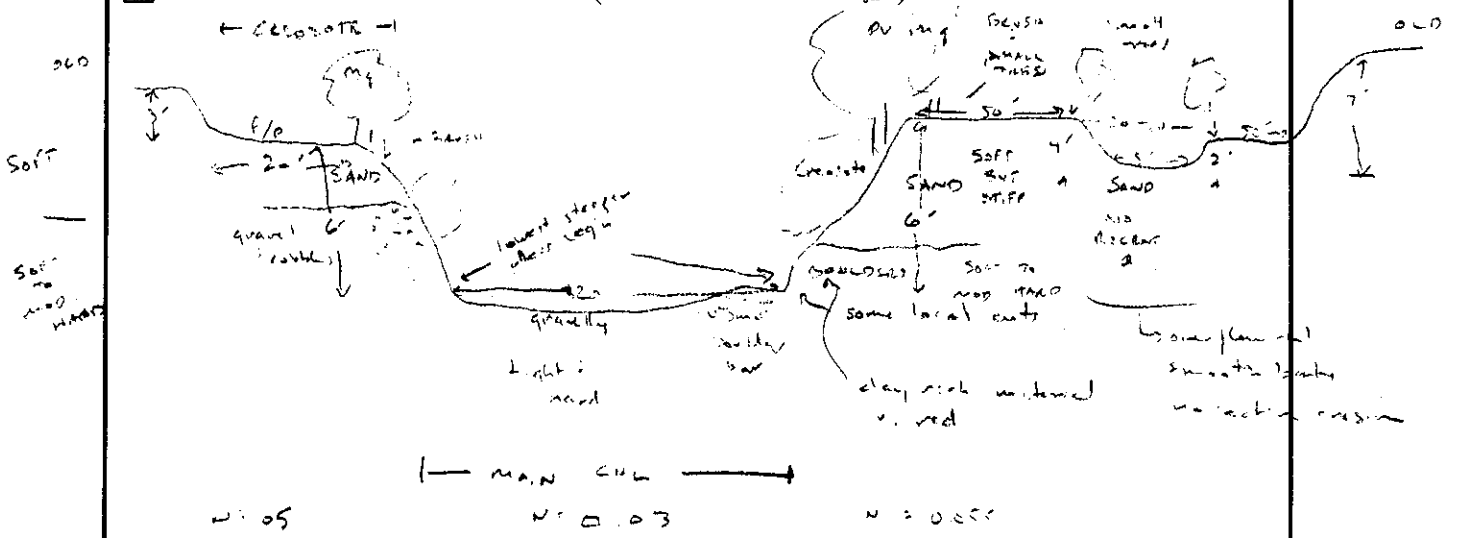
OBSTRUCT FLOW? —

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	T/T @ 5.5'	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	-	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	Cyllas u/s & d/s	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	No	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
gravel, rip-rap, dry ~1900' u/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

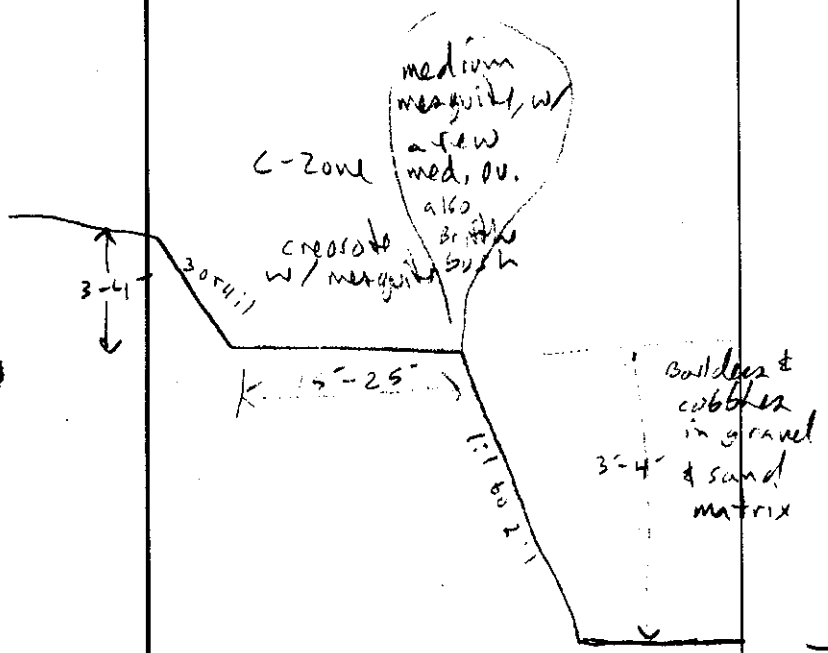
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

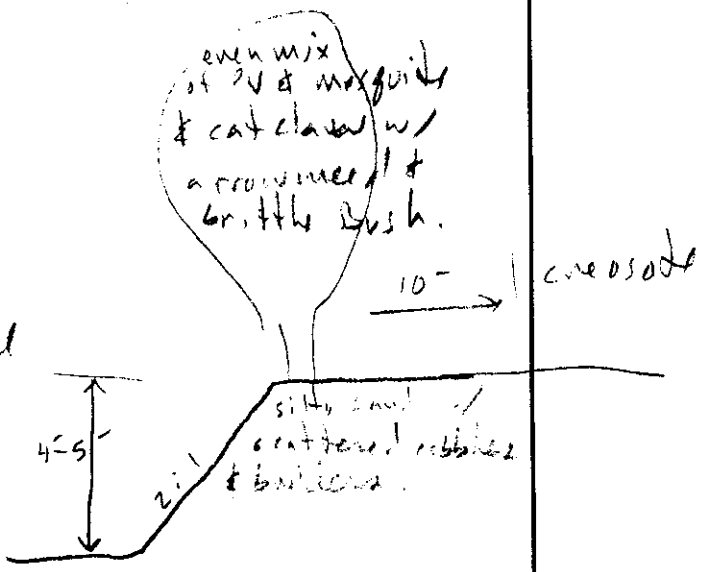
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY —	☐ PHOTOGRAPH
GRAIN SIZE — silty sand - right, gravels left.	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING —	☐ PHOTOGRAPH
CARBONATE CONTENT —	☐ PHOTOGRAPH
SOIL STRUCTURE —	☐ PHOTOGRAPH
SOIL HORIZONS —	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



AW-9000
4/29/99

Boulder Count

0 - 0.08
1 - 0.04
2 - 0.02
3 - 0.01
4 - f. gravel
5 - 0.03
6 - 0.10
7 - 0.05
8 - 0.10
9 - 0.03
10 - 0.01
11 - 0.04
12 - v.c. sand
13 - f. gravel
14 - 0.04
15 - 0.02
16 - f. gravel
17 - f. sand
18 - f. sand
19 - 0.30
20 - 0.20

4-29-99
AW/CC WMP

Boulder Count
TWB +1000

Stn	Texture
0	med. sand
1	0.07
2	0.01
3	0.04
4	fine gravel
5	0.03
6	0.03
7	0.06
8	0.03
9	0.04
10	0.04
11	0.02
12	0.08
13	0.03
14	0.07
15	0.08
16	0.04
17	0.03
18	0.01
19	0.01
20	0.01
21	0.02
22	med. sand

Photo 13-3 / 10-3 : close up of bed material
Photo 13-4 / 10-4 : view D/S from LB ≈ 20' U/S of bed
13-5 / 10-5 : view D/S from ≈ 20' U/S from center of channel
13-6 / 10-6 : " U/S " " D/S
13-7 / 10-7 : " " " " : view U/S toward channel @ Fence on West edge of 24th St ROW
→ Note channel in caliche & "headcut" of channel widening in R. portion of channel (Photo left)

April 22, 1999 — Misc. Photos on Paradise Wash

PW

4-18: view D/S over left branch from top of riffle
4-18 ≈ 200' U/S PWØ

1-19: lahmanated boulders imbricated in entrenched section
4-19 along old terrace on LB → evidence of stability of larger particles

1-26: view of old LB betw PWØ + PW1ØØØ
4-26

2-31: view of L/B betw. PW4000 & PW5000 ≈ 150'-200' D/S of PW5000
probable view of terrace A → note lack appearance
5-31 of carbonate at channel edge

3-23: view D/S of big scour hole at split around island
6-23 in channel between PW8000 & Pit PW

4-25- : photos of Box culvert for PW under Cave Creek Hwy
looking U/S
7-25 4, 12 × 10
w × h

4-22-99

PARADISE WASH

○ TRIBUTARY THAT JOINS MAIN CHL
2000' D/S OF CARSERIER HWY

@ CARSERIER HWY - 3 CELL RCBC
10 x 5.2'

GENERAL IMPRESSIONS

a) Trib is aggrading - (or main stem is degraded) - bank hts are lower, longer reaches of fine material, bed material is dropped over top of banks not vice versa

b) a recent flow has dropped gravel @ culvert outlet (2ft thick)

c) banks are stable - v. few cutbanks, no multiple terraces

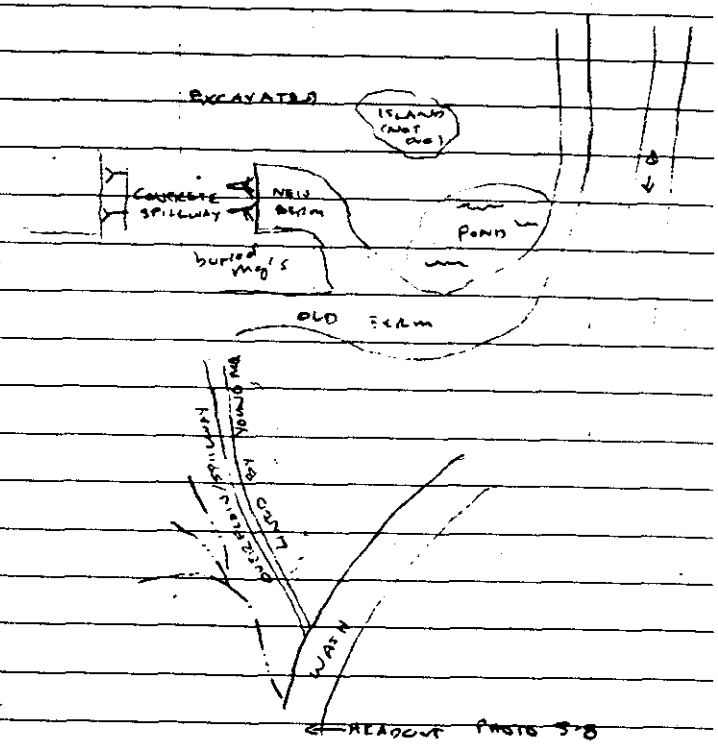
d) @ confluence, trib flow has trimmed delta of main stem ∴ ∴ had most recent flow

e) high sed yield from trib?

4-23-99

DESERT HILLS | STOCK POND

N.T.S.



- signs of recent O's (general) which scoured chl
- all Mgs are buried on berm

PW
April 22, 1999
TWL, BRI, JEF

Boulder Count

Sta		texture
from LB 5'	-	medium sand
6'	-	0.05'
7'	-	0.1'
8'	-	0.04'
9'	-	0.05'
10'	-	0.2'
11'	-	0.06'
12'	-	0.16'
13'	-	0.05'
14'	-	0.05'
15'	-	0.10'
16'	-	0.07'
17'	-	0.13'
18'	-	0.1'
19'	-	0.18'
20'	-	0.23'
21'	-	0.30'
22'	-	0.25'

Sta		texture
23'	-	0.06'
24'	-	0.10'
25'	-	0.05'
26'	-	0.22'
27'	-	0.06'
28'	-	0.06'
29'	-	0.10'
30'	-	0.13'
31'	-	0.38'
32'	-	0.18'
33'	-	0.02'

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW 0 PARADISE WASH 60' U/S CONFL.

DATE: 4-22-99 | TIME: (BEGIN/END) 1 40

FIELD CREW: CRI, TWL, JEF

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

1-4

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	1-9 contrast of fines → bank + coarse → bed	
LOOKING UPSTREAM ALONG BANK	1-10	
LOOKING DOWNSTREAM ALONG BANK	1-11	
LEFT BANK BLOW COUNT	soft - cutin prof.	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	1-12 buried cobbles in upper part of bank	
LOOKING UPSTREAM ALONG BANK	1-13	
LOOKING DOWNSTREAM ALONG BANK	1-14	
RIGHT BANK BLOW COUNT	soft to stiff	
INTERMEDIATE BANKS	island ~70' U/S, ~25' wide & vegetated	
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	1-15 → good mix of sands + gravels	
BED MATERIAL - ENTIRE CHANNEL	1-16 from RB U/S looking D/S	
NOTABLE FEATURES: (LIST)		
- island & riffle ≈ 50' U/S - contrast of fine grain banks + coarse bed material - plastering of fines on banks w/ mosses in some locations - big veg. hanging into channel - boulders buried beneath fines in RB	- cow paths in to channel down banks 1-17: Photo of HW M in tree on RB ≈ 5'	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH ASL 99 3-10 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 4 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☑ BANK VEGETATION PV + Mg + fe - locally thick brush - thick berry? Catalpa ☐ PHOTOGRAPH

ROOT MAT - extended in where present - undulating banks - becoming perched

CANOPY (HEIGHT, DENSITY) 4' to 15' - thick

PERCENT OF BANK COVER 50%

APPROXIMATE AGE 20-50 yrs

☑ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

clear @ xn, island 50' u/s is rejd w/ dead Mg + bank

☑ ARMORING POTENTIAL - low

☑ VISUAL ESTIMATE OF D50 - coarse sand, f gravel may be sch it ☐ PHOTOGRAPH

D90 3" D10 FS

angular to subangular, rounded boulders in riffle u/s

☑ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS - mostly not - some @ base slope	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS - locally < 30%	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS yes - frequent - stressed	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS No - dead	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS No, but sloping	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE N/A	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING No - cattle tracks	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS - large - erosion from terraces entering	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) → see aerial	☐ PHOTOGRAPH	☐ PLOT LOCATION

☑ CHANNEL PATTERN ☐ PHOTOGRAPH

single chl, straight, riffles

☑ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☑ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

0, ~6', 40 (+w)

☑ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

N/A

☑ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☑ PHOTOGRAPH

TYPE AND STAGE (FEET)

FLOTSAM → 4' SLACKWATER EROSION SCAR TREE SCAR GRUSLINE OTHER

Nothing obvious on FS terrace

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No - base level: AN ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) bars + riffles ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

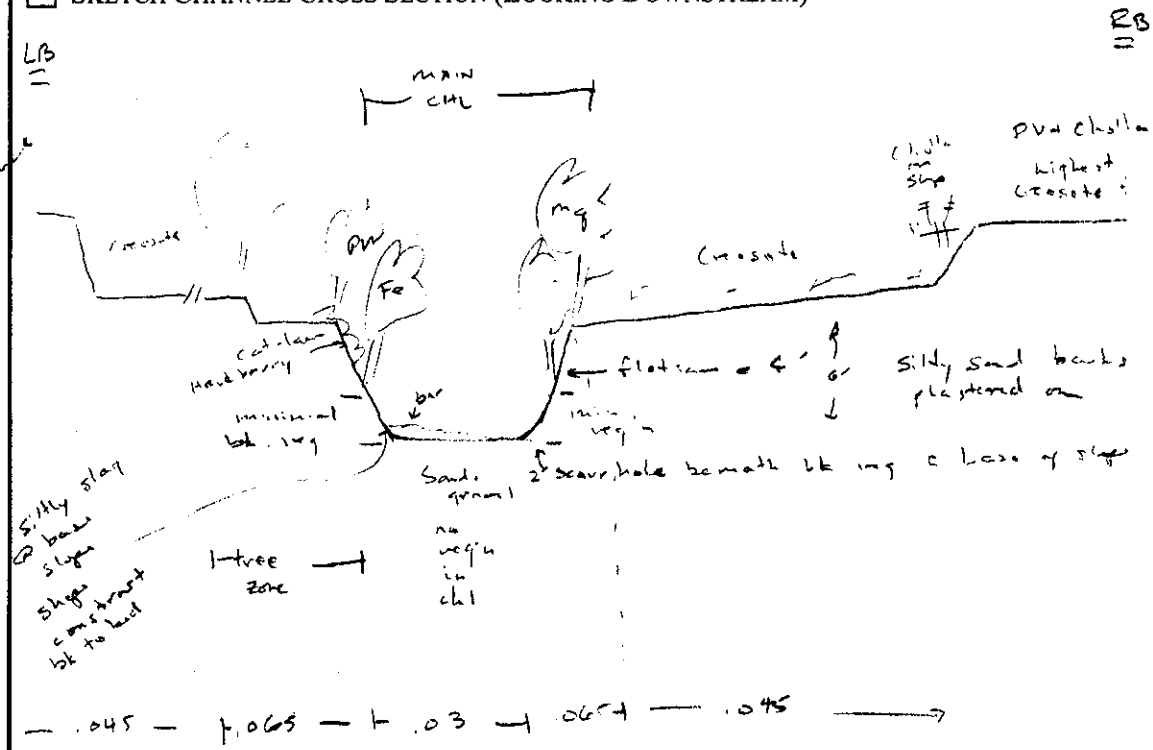
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	Not @ Xn	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	yes, 3 see figs	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	yes	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH
HEADCUTS	- riffle drops 4' u/s Xn	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	↗	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	prob. 2ft - exposed roots	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
No.

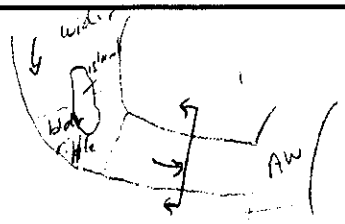
☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS ↳ see boulder const

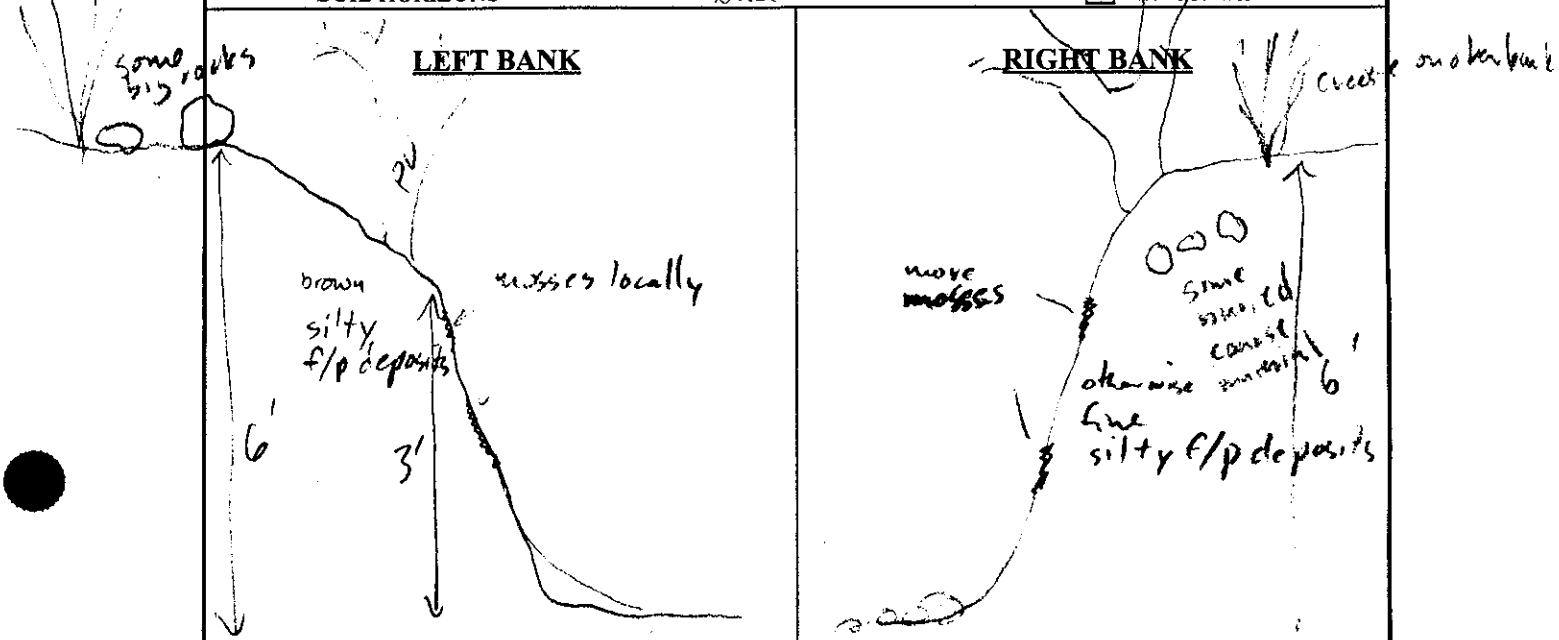
sharp bend u/s



3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	massive	☐ PHOTOGRAPH
GRAIN SIZE	silty sand	☐ PHOTOGRAPH
COLOR	yellow	☐ PHOTOGRAPH
CROSS BEDDING	No	☐ PHOTOGRAPH
CARBONATE CONTENT	N.O.	☐ PHOTOGRAPH
SOIL STRUCTURE	None	☐ PHOTOGRAPH
SOIL HORIZONS	None	☐ PHOTOGRAPH



also ← cow paths into channel exposing some of the bigger material

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW +1000 @ Beginning of split flow into Rover bank	
DATE: 4·22·99	TIME: (BEGIN/END) 10:50
FIELD CREW: JF BRI TL	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	1-21	
LOOKING UPSTREAM ALONG BANK	1-22	
LOOKING DOWNSTREAM ALONG BANK	1-23	
LEFT BANK BLOW COUNT	soft matrix betw.	boulders
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	1-24 → Note	
LOOKING UPSTREAM ALONG BANK	1-25	
LOOKING DOWNSTREAM ALONG BANK	1-26 → Note overflow channel	
RIGHT BANK BLOW COUNT	soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	1-27 end of roll	
BED MATERIAL - ENTIRE CHANNEL	2-1 from RB ≈ 50' U/S of XS	
NOTABLE FEATURES: (LIST) - overflow channel beginning on RB - LB is old boulder terrace - 2-2 : HWM in R. part of channel ≈ 4'		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 MSL (NUMBER)

☑ ON FCDMC TOPOGRAPHY 4 of 6 Exhibit B (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV - mg ☐ PHOTOGRAPH

ROOT MAT - good @ bank elevation

CANOPY (HEIGHT, DENSITY) 6-15' ft trees, 2'-4 shrub, brush

PERCENT OF BANK COVER 40 %

APPROXIMATE AGE 20-70 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

2-3' mag & armoured mg & PV wrapped long floteam

☐ ARMORING POTENTIAL

Prob. for low flow, gravel @ higher flow

☐ VISUAL ESTIMATE OF D50 - 3" ☐ PHOTOGRAPH

D90 9" D10 gravel - CG

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS No - gently sloping	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS Not @ xn - some on RB ds (see photo)	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS - No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED In chl, Not on bks	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS No - b v. coarse old surface	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS~~ OR BARS (UPSTREAM/DOWNSTREAM) → longitudinal dis of trees (R overflow)	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH

→ aux of high flow braid into ROB f/p - single chl dis

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

0 LB = 15+' RB = 20' > 50'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

— No ∂

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

floteam @ 4' in chl

TYPE AND STAGE (FEET)

FLOTSAM 4' SLACKWATER ~~EROSION~~ SCAR ~~TREE~~ SCAR ~~GRUS~~ SILT LINE in ROB @ margin of ROB f/p ~~OTHER~~

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

NONE

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/ARMOR/PLAIN) ☐ PHOTOGRAPH

RIFFLES - boulder lined

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No

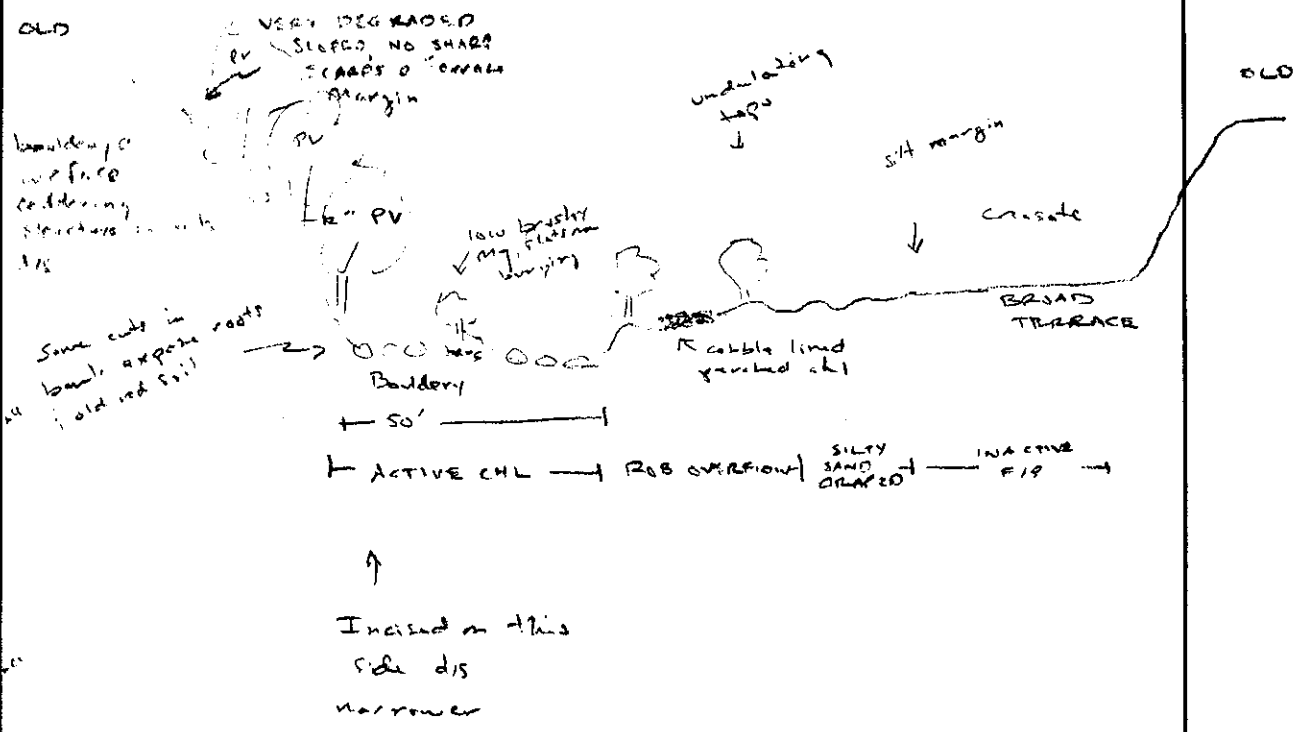
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES 1 recent, active @ RB	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –		☐ PHOTOGRAPH
HEADCUTS – No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS – Riffle – v long & steep	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION possible 2' d/s of xn; 0 @ xn		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
No.

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

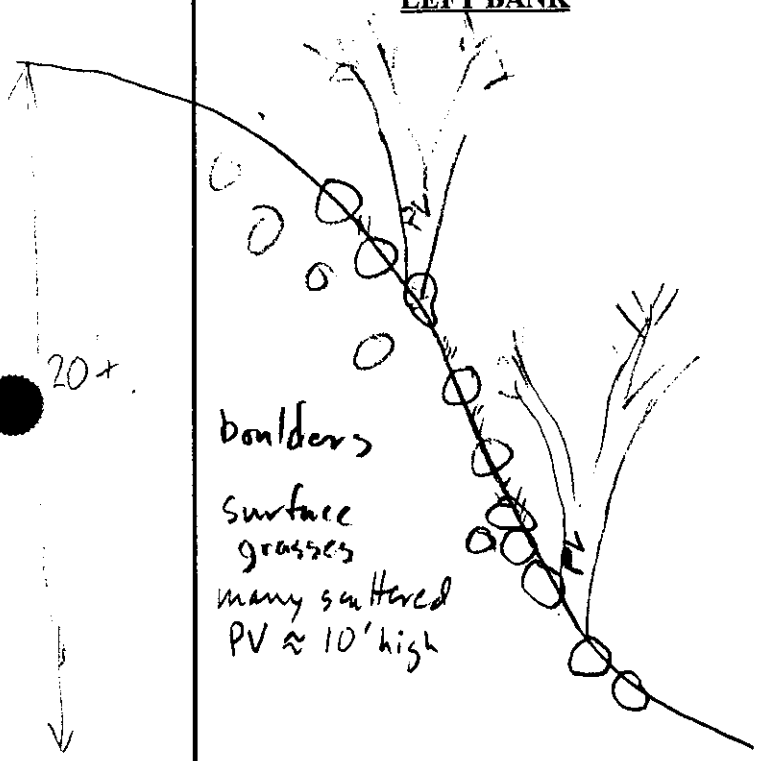
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

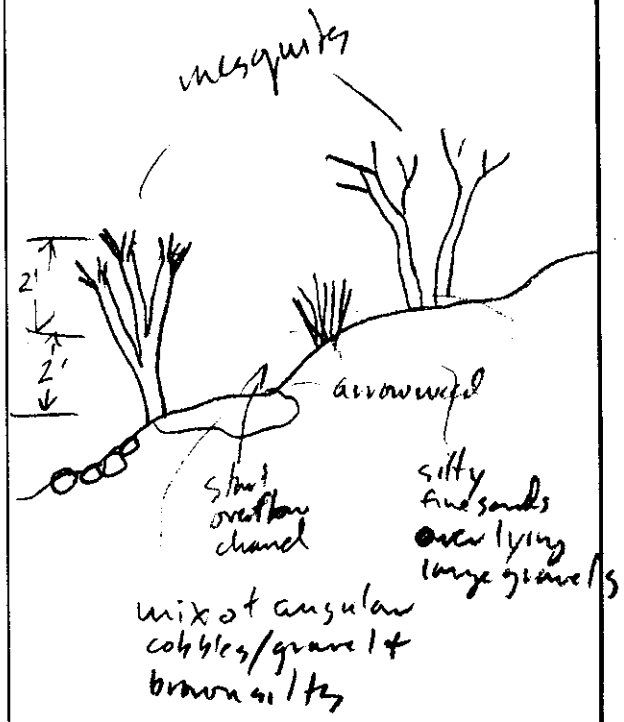
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	- NONE VISIBLE, may be present [illegible]	☐ PHOTOGRAPH
GRAIN SIZE	- boulders L, silty gravels R	☐ PHOTOGRAPH
COLOR	- L - red R - yellow	☐ PHOTOGRAPH
CROSS BEDDING	- No	☐ PHOTOGRAPH
CARBONATE CONTENT	- No caliche	☐ PHOTOGRAPH
SOIL STRUCTURE	- blocky in cuts dry & wet	☐ PHOTOGRAPH
SOIL HORIZONS	- Red -- no profile visible	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



A[illegible] 22, 1999
TWL, BRI

PJ+1000 4-22

Boulder Count

	Sta		Texture
LT	0'	-	0.5'
	2'	-	0.26'
	4'	-	0.07'
	6'	-	0.23'
	8'	-	0.6'
	10'	-	0.03'
	12'	-	0.06'
	14'	-	0.25'
	16'	-	0.22'
	18'	-	0.15'
	20'	-	0.6'
	22'	-	0.3'
	24'	-	0.2'
	26'	-	0.13'
	28'	-	0.7'
	30'	-	0.08'

Sta		Texture
32	-	0.08'
34	-	0.3'
36	-	0.75'
38	-	0.2'
40	-	0.2'
42	-	0.3'
44	-	0.1'
46	-	fine sand
48	-	silty sand
50	-	silty sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW + 2000

DATE: 4-22-99

TIME: (BEGIN/END) 11 35

FIELD CREW: JF BRI TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-3	
LOOKING UPSTREAM ALONG BANK	2-4	
LOOKING DOWNSTREAM ALONG BANK	2-5	
LEFT BANK BLOW COUNT	soft	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-6	
LOOKING UPSTREAM ALONG BANK	2-7	
LOOKING DOWNSTREAM ALONG BANK	2-8	
RIGHT BANK BLOW COUNT	soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	2-9	
BED MATERIAL - ENTIRE CHANNEL	2-10	
NOTABLE FEATURES: (LIST) high-water mark ~50' ds of PW +2000, to right side of channel on mesquite tree.	2-11	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL '99 (NUMBER)

☑ ON ~~FCDMC~~ ASL TOPOGRAPHY SHEET 5 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☑ BANK VEGETATION	pv, fe, mg + brush w some 12" trees, mostly 6-8"	☐ PHOTOGRAPH
ROOT MAT	good - @ water line, exposed	
CANOPY (HEIGHT, DENSITY)	<20' most 10'	
PERCENT OF BANK COVER	25%	
APPROXIMATE AGE	- younger than d/s, w/ few older 50+, most 5-20 yr	
☑ CHANNEL VEGETATION (TYPE & PERCENT COVER)	→ mg on island d/s - clear chl	☐ PHOTOGRAPH
☑ ARMORING POTENTIAL	lower - riffle begins d/s of xn, boulders an imbricate	
☑ VISUAL ESTIMATE OF D50 = FG D90 12"	- BIMODAL D10 MSand	☐ PHOTOGRAPH
☑ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)		
CUT BANKS	- u/s & d/s of xn - Not in xn	☐ PHOTOGRAPH ☐ PLOT LOCATION
VERTICAL BANKS	"	☐ PHOTOGRAPH ☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
EXPOSED ROOTS	yes, many	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
VEGETATION TIPPED	Not @ xn - v. stable	☐ PHOTOGRAPH ☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH ☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
ISLANDS OR ~~BARS (UPSTREAM~~/DOWNSTREAM)		☐ PHOTOGRAPH ☐ PLOT LOCATION
☑ CHANNEL PATTERN	single main w/ braided island d/s but 3 LWB overflow chl, 1 RWB overflows magin	☐ PHOTOGRAPH
☑ TRIBUTARIES NEARBY?	No	☐ PHOTOGRAPH
☑ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH)	~~60~~ 0 4' 60' (50'BW)	☐ PHOTOGRAPH
☑ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH)	No Q	☐ PHOTOGRAPH
☑ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP)		☐ PHOTOGRAPH
TYPE AND STAGE (FEET) FLOTSAM ~4' ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER	silt drape over entire C/S	
☑ DEPTH TO BEDROCK (FT. UNKNOWN)		
BEDROCK EXPOSED?	No	☐ PHOTOGRAPH
GRADE CONTROL? (TYPE, PHOTO)	No	☐ PHOTOGRAPH
☑ BEDFORMS (~~DUNES~~/~~RIPPLES~~/ARMOR/PLAIN)	↳?	☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No

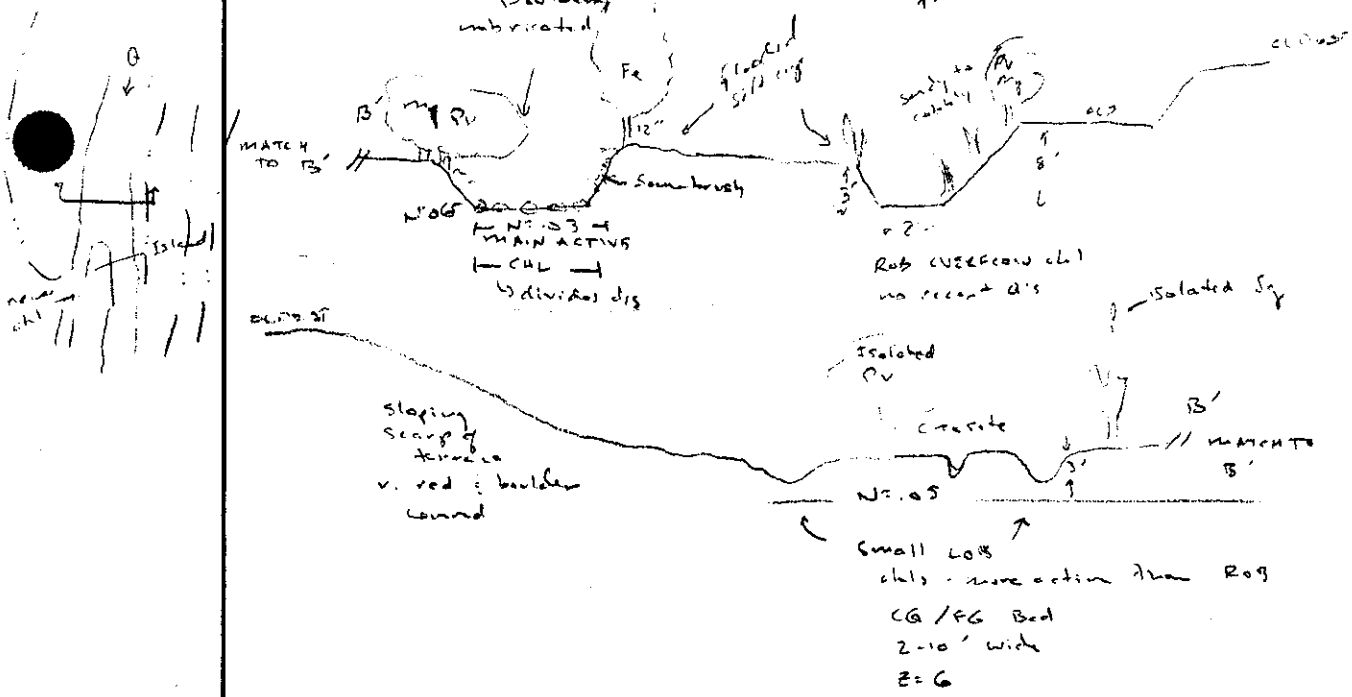
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES No - just @ f/p + above	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –		☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS yes d/s in Riffle	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION No - scoured new chl R of island d/s		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



NOTE: EROSION CORRIDOR IS ENTIRE F/P DUE TO POTENTIAL FOR AVULSIVE CHL CHANGES

SHOW THE FOLLOWING:

- ☐ VEGETATION
- ☐ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

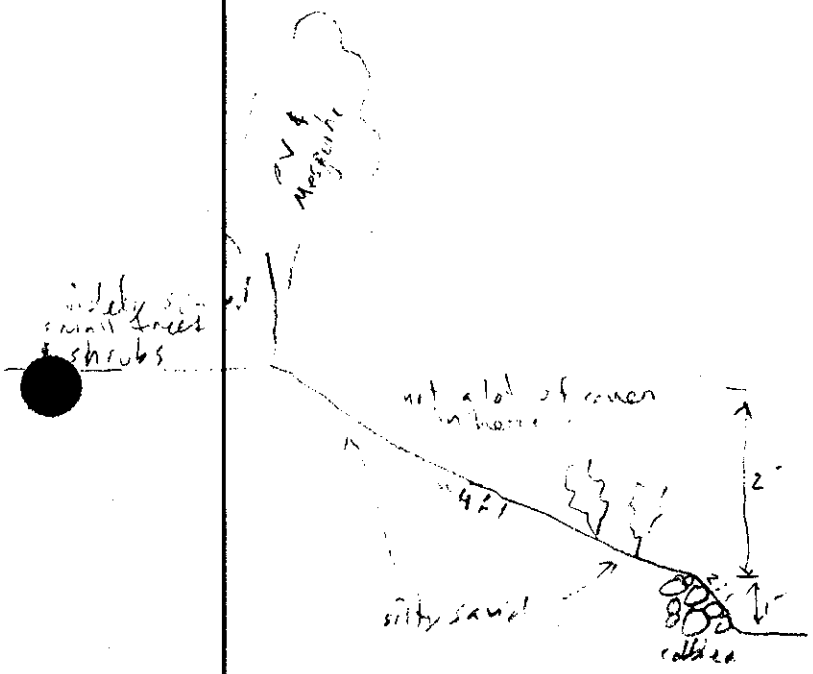
completed @ noon

3. BANK PROFILE

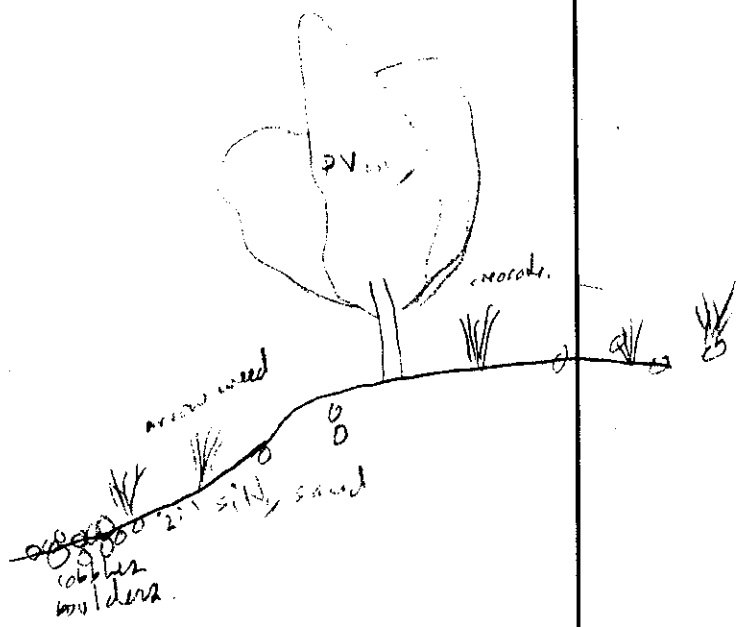
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY silty sand in upper half, cobbles mixed	☑ PHOTOGRAPH
GRAIN SIZE silty sand	☑ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE no structure	☐ PHOTOGRAPH
SOIL HORIZONS none	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



PW+2000 4-22

Boulder Count

0 - silty sand
2 - 0.33
4 - 0.28
6 - 0.18
8 - 0.27
10 - 0.8
12 - 0.5
14 - 0.04
16 - 0.01
18 - Coarse Sand
20 - 0.04
22 - 0.02
24 - 0.9
26 - 0.06
28 - 0.65
30 - 0.03
32 - 0.01
34 - 0.45
36 - 0.5
38 - Silty Sand
40 - Silty fine sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: RM 13000

DATE: 4-22-99

TIME: (BEGIN/END) 1pm

FIELD CREW: JF BEI TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)	~~2~~	
LOOKING DIRECTLY AT BANK	2-12 @13:00/S.	
LOOKING UPSTREAM ALONG BANK	2-14	
LOOKING DOWNSTREAM ALONG BANK	2-15	
LEFT BANK BLOW COUNT	upper half soft, lower half medium to soft	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-16	
LOOKING UPSTREAM ALONG BANK	2-17	
LOOKING DOWNSTREAM ALONG BANK	2-18 note small tree at right	
RIGHT BANK BLOW COUNT	soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	2-19	
BED MATERIAL - ENTIRE CHANNEL	2-20	
NOTABLE FEATURES: (LIST) left overbank transition from c.h. zone Looking downstream	2-21	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 Apr '99 (NUMBER)

☐ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV, Mg, Fr - trees w/ 12" trunks ☐ PHOTOGRAPH

ROOT MAT good @ trees - brush is shallow - slightly above bed elev n

CANOPY (HEIGHT, DENSITY) 15-20'

PERCENT OF BANK COVER 30

APPROXIMATE AGE 20-70 years trees brush is annuals

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

chl is clear

☐ ARMORING POTENTIAL low - boulder riffle forms u/s of xn

☐ VISUAL ESTIMATE OF D50 = ½ ☐ PHOTOGRAPH

D90 4" D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

↳ Banks appear stable

CUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No - 15:1	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Few	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN single chl straight ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No - some OB chl to join main chl in reach ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

- 55' 35'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

sheet flow flotsam on B surface

TYPE AND STAGE (FEET)

FLOTSAM ~~SLACKWATER~~ EROSION SCAR TREE SCAR GRUS LINE OTHER

↳ 3ft ↳ silt on C surface (see sketch)

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

No bars

☐ FENCES (PLOT LOCATION, PHOTO) NO ☐ PHOTOGRAPH

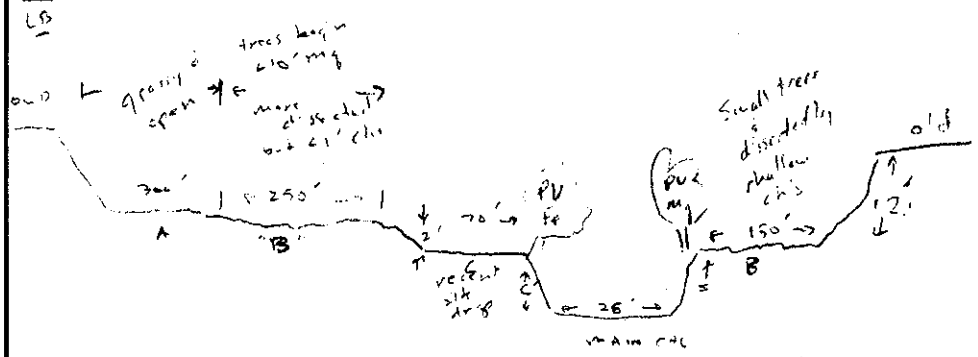
OBSTRUCT FLOW? – (w/in 500' u/s)

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	Yes - < surface 0-5'	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	No –	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Riffle u/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	No. Possible 1' based on root line		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

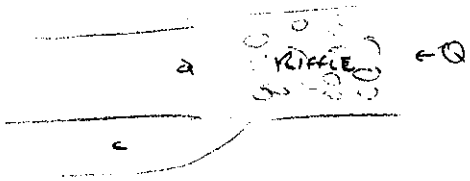
☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



Notes

- < surface begins @ end of u/s riffle
- Not much brush on banks, but some
- banks overlain by silt (probably a mantle)
- u/s end of long straight reach between riffles



SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS – None
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

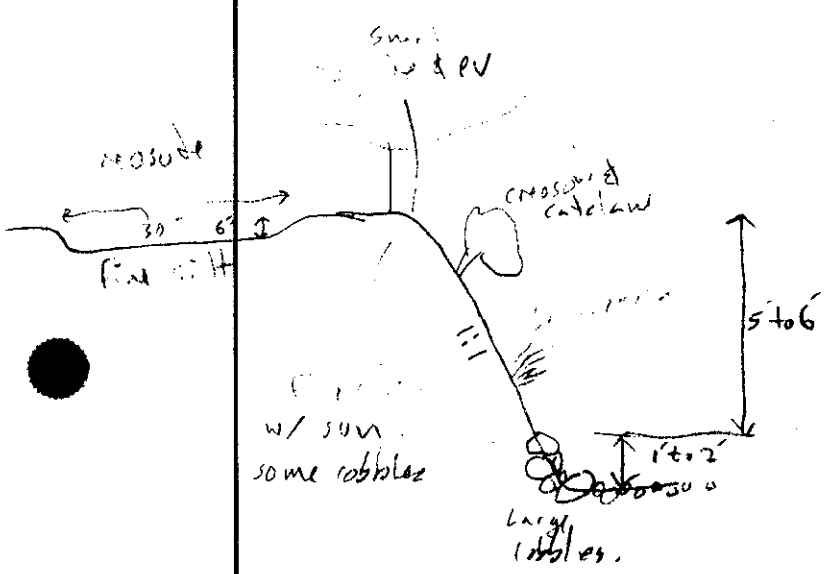
* ch better defined & entrenched LOB spur less likely to have avulsion A

3. BANK PROFILE

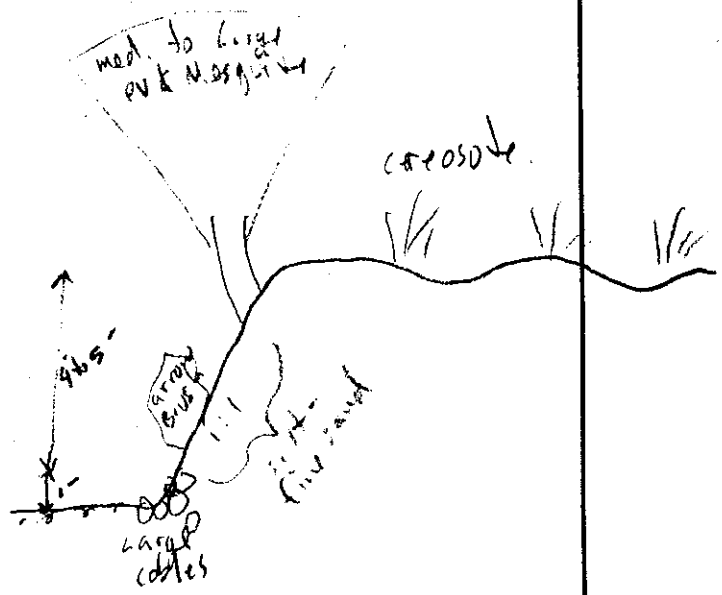
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY none except for cobble at lower end	☑ PHOTOGRAPH
GRAIN SIZE silt	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



PW + 3000 4-22

Boulder Count

1 - 0.04
2 - fine gravel
3 - 0.03
4 - sand
5 - 0.04
6 - 0.07
7 - coarse sand
8 - 0.06
9 - 0.06
10 - 0.20
11 - sand
12 - 0.04
13 - 0.10
14 - 0.02
15 - 0.06
16 - 0.07
17 - 0.05
18 - 0.02
19 - 0.11
20 - 0.26
21 - 0.02
22 - sand
23 - 0.02
24 - 0.10
25 - 0.04
26 - 0.04

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW+4000. w/s of bend - b. fence

DATE: 4-22-99

TIME: (BEGIN/END) 1:35pm / 2pm

FIELD CREW: JF - BRI TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-22	
LOOKING UPSTREAM ALONG BANK	2-23	
LOOKING DOWNSTREAM ALONG BANK	2-24	
LEFT BANK BLOW COUNT	soft to mod stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-25	
LOOKING UPSTREAM ALONG BANK	2-26	
LOOKING DOWNSTREAM ALONG BANK	2-27	
RIGHT BANK BLOW COUNT	soft to mod stiff	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	2-28	
BED MATERIAL - ENTIRE CHANNEL		
NOTABLE FEATURES: (LIST) high water mark ~ 20' ds of PW+4000 at mid channel	2-29	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

d/s end straight reach ; u/s U-shaped bend . [illegible]

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Pv & Mg LB - cloft dense Mg RB - tall Pv ☐ PHOTOGRAPH

ROOT MAT good, appr 1' above bed

CANOPY (HEIGHT, DENSITY) dense canopy ; RB base is cl [illegible]

PERCENT OF BANK COVER 50%

APPROXIMATE AGE 2-10 RB ; 10-50 LB

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

u/s chl is clear ; d/s chl has 6-8' Mg on mid-chl

☐ ARMORING POTENTIAL

low - gravel

☐ VISUAL ESTIMATE OF D50 - CS ☐ PHOTOGRAPH

D90 ½" D10 ms

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No small vert @ base, bks layoff	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	v. minor	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (~~UPSTREAM~~/DOWNSTREAM)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN single high flow braided straight u/s ; bend d/s - see sketch ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

— 3.5'-4' ; BW = 27, TW = 35

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)

FLOTSAM SLACKWATER ~~EROSION~~ SCAR TREE ~~SCAR~~ GRUS ~~LINE~~ OTHER

→ 2.5 in main ch

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/~~ARMOR~~/PLAIN) ☐ PHOTOGRAPH

Riffle 20' d/s ; 300' u/s

☑ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

d/s of d/s bend - b/w

OBSTRUCT FLOW?

No - minor debris hanging but trees in chl [illegible] the bulk -/s of [illegible]

☑ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

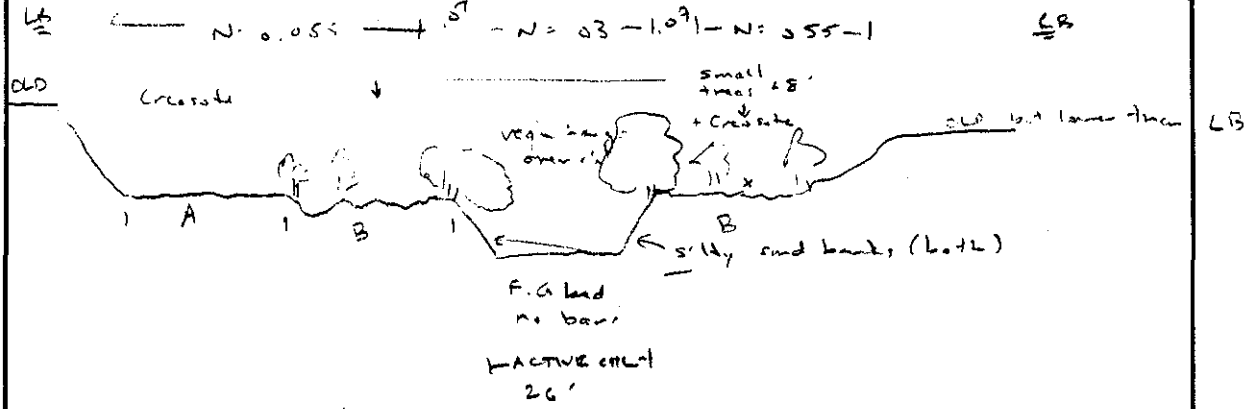
HANGING TRIBUTARIES No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES f/l - See sketch	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) —		☐ PHOTOGRAPH
HEADCUTS —	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS u/s - d/s riffles - bedrock	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION < 1'		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☑ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)

See A B descriptions for Pin [illegible]



A - slightly higher smooth, low density veg

B - " lower, directed by small chl <2' deep (8' TW), denser veg + small trees

x = found Olympia beer can w/ pull tab cap >20yrs - B surface not flooded (or surface, not in flood deposit)

D/S - chl bends, but moderate to high flows go straight

many OB chl's

SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

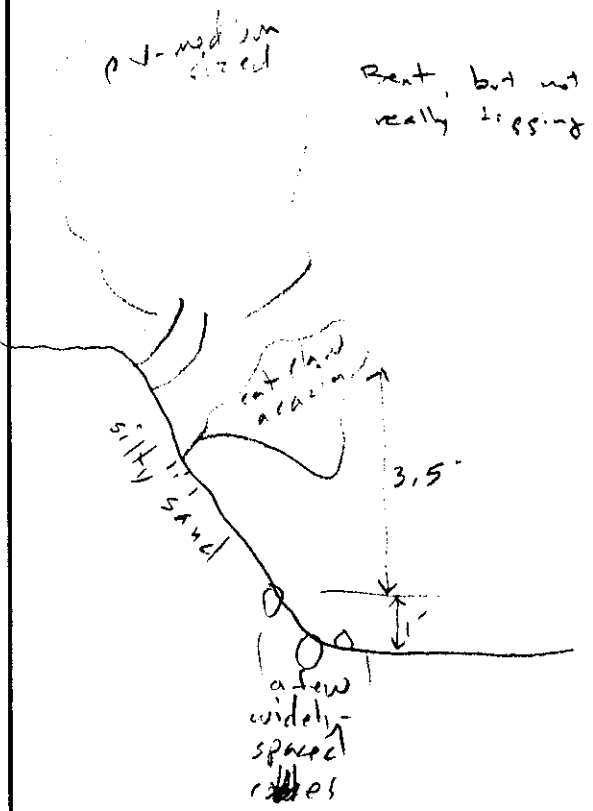
3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE

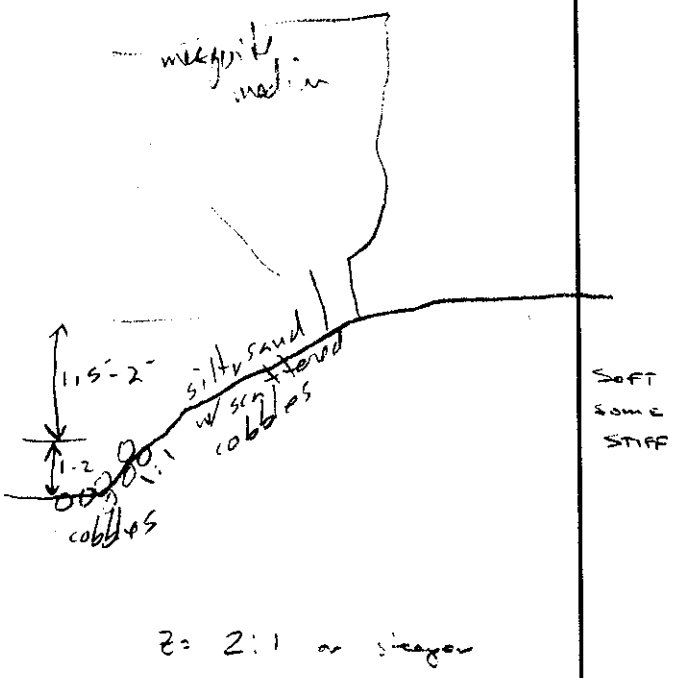
NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY no	☐ PHOTOGRAPH
GRAIN SIZE silty sands	☑ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT no	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



PW+A000
4.22

Boulder Count

1 - silty sand
2 - coarse sand
3 - fine gravel
4 - 0.01
5 - fine gravel
6 - 0.02
7 - fine gravel
8 - 0.02
9 - 0.01
10 - 0.02
11 - fine gravel
12 - 0.02
13 - coarse sand
14 - fine gravel
15 - coarse sand
16 - 0.01
17 - coarse sand
18 - fine gravel
19 - 0.08
20 - coarse sand
21 - 0.02
22 - 0.01
23 - 0.02
24 - 0.01
25 - coarse sand
26 - 0.33
27 - 0.12

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: RS+5000 on bend @ cut bank in old surface

DATE: 4-27-99

TIME: (BEGIN/END) 2:10 / 2:40

FIELD CREW: JF BRI TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-32	
LOOKING UPSTREAM ALONG BANK	2-33	
LOOKING DOWNSTREAM ALONG BANK	2-34 note 2' deep	scour hole
LEFT BANK BLOW COUNT	mod. hard to hard	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	2-35	
LOOKING UPSTREAM ALONG BANK	2-36	
LOOKING DOWNSTREAM ALONG BANK	2-37	
RIGHT BANK BLOW COUNT	soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	2-38, 3-1	
BED MATERIAL - ENTIRE CHANNEL		
NOTABLE FEATURES: (LIST)		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL 99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Cottonwood, PV, Img, Arrowweed ☐ PHOTOGRAPH

ROOT MAT good - @ waterline to land

CANOPY (HEIGHT, DENSITY) <20 LB (u/s) - w/ few PV to 30'

PERCENT OF BANK COVER 40% - except @ vert CaCO3 bank

APPROXIMATE AGE 10 - 50+ yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) - chl is clear ☐ PHOTOGRAPH
<5% tamarix d/s @ xn

☐ ARMORING POTENTIAL possible u/s. + d/s in riffle - gravelly @ xn

☐ VISUAL ESTIMATE OF D50 - FG BIMODAL (2" D50 in bar) ☐ PHOTOGRAPH
D90 12" D10 ms

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	yes - left in CaCO3	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	slight @ scour hole on LB	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes L, No R	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	Yes L	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No - cuts v hard bank	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN → huge RB ☐ PHOTOGRAPH
→ sinuous single chl w/ high flow B.O. to R

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
N.O.

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
– 6', BW = 48 SO = TW

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR (Scour Hole = 2') TREE SCAR GRUS LINE OTHER
→ +5' d/s

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No . III CaCO3 in LB ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH
Riffles u/s + d/s

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW? —

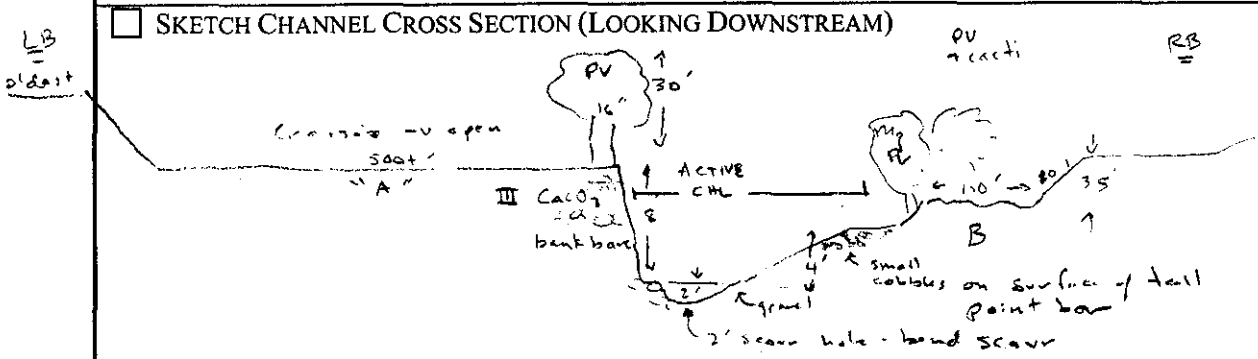
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
* STREAM TERRACES	– pinched out on LOB – only A	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes L	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	v/s : d/s riffles	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	Scary	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

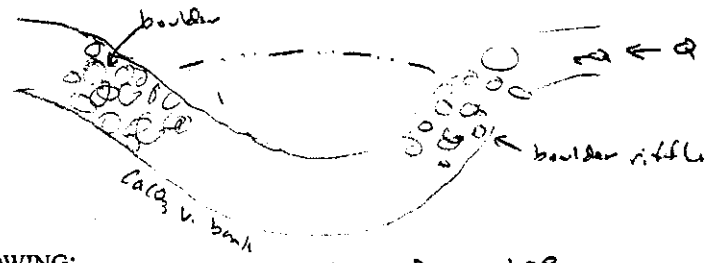
No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



N = .045 → ← N = .03 → ← N = .055 →

- much lower relief between RB "B" & old surface than in d/s xns - pinching out?
- LB - CaCO3 thick coatings, matrix filled & grain to grain connections - no laminar structure observed



No / Rare Q on LOB

SHOW THE FOLLOWING:

- ☐ VEGETATION
- ☑ MANNING'S N VALUES
- ☐ BARS
- ☐ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

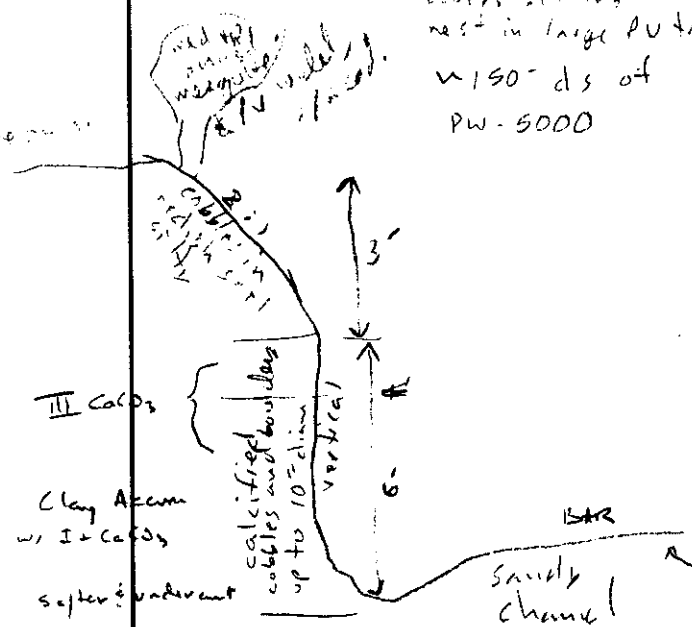
3. BANK PROFILE

☑ DRAW REPRESENTATIVE BANK PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

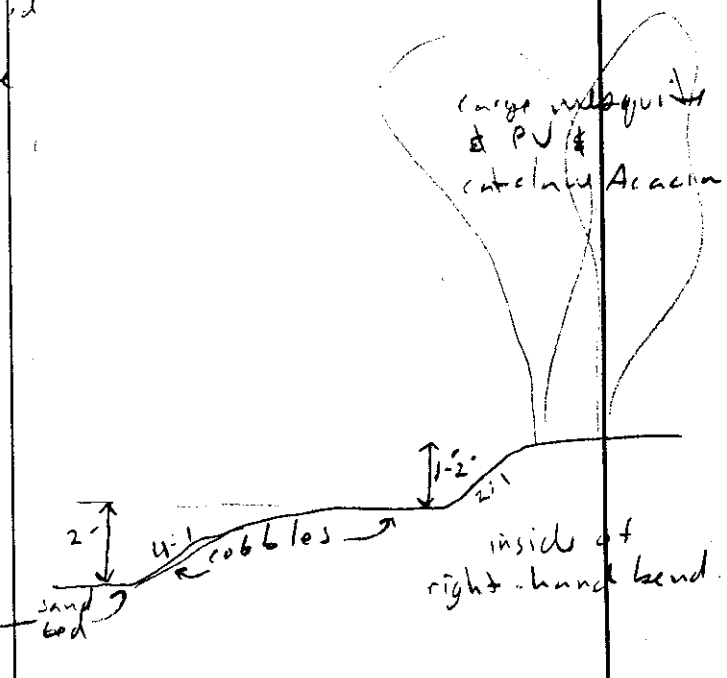
STRATIGRAPHY	AT WATERLINE $CaCO_3$ hard or clay enriched v. resistant; calcified layers w/ some reddish layers	☑ PHOTOGRAPH → layers will cause terracing
GRAIN SIZE	mainly 2B, some cobbles, 2B non-calcified	☐ PHOTOGRAPH
COLOR	reddish w/ white	☐ PHOTOGRAPH
CROSS BEDDING	no	☐ PHOTOGRAPH
CARBONATE CONTENT	stage 3 @ 4' level, locally thick coatings on underside below 4' level; right bank has none of this.	☑ PHOTOGRAPH
Calcy – SOIL STRUCTURE		☐ PHOTOGRAPH
too LOAFF SOIL HORIZONS	YES $CaCO_3$ + clay	☐ PHOTOGRAPH

LEFT BANK



outside of right-hand bend.

RIGHT BANK



4-22-99

Boulder Count PW + 5000

0 - 0.4

2 - 0.15

4 - 0.05

6 - 0.05

8 - 0.02

10 - coarse sand

12 - fine gravel

14 - 0.04

16 - 0.02

18 - 0.02

20 - 0.11

22 - 0.07

24 - 0.05

26 - 0.14

28 - 0.08

30 - 0.07

32 - 0.05

34 - 0.06

36 - 0.02

38 - 0.04

40 - 0.03

42 - silty sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW + 6000	
DATE: 4-22	TIME: (BEGIN/END) 3:45
FIELD CREW: [illegible]	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-3	
LOOKING UPSTREAM ALONG BANK	3-4	
LOOKING DOWNSTREAM ALONG BANK	3-5	
LEFT BANK BLOW COUNT	Lower 1' is soft to mod. hard, soft above	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-6	
LOOKING UPSTREAM ALONG BANK	3-7 note trib at left ~ 150' US from PW-6000	
LOOKING DOWNSTREAM ALONG BANK	3-8	
RIGHT BANK BLOW COUNT	soft.	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	3-9	
BED MATERIAL - ENTIRE CHANNEL	3-10	
NOTABLE FEATURES: (LIST)		
Looking east toward left abandoned channel from A zone to B zone	3-11	
Looking west toward left abandoned channel (west extent).	3-12	
high water mark ~ 70' ds of PW-6000	3-13	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE	_____ (NAME)
☑ ON RECENT AERIAL PHOTOGRAPH	3-10 ASC '99 (NUMBER)
☑ ON FCDMC TOPOGRAPHY	SHEET 5 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV, Mg, Fr trees w/ catclaw brush ☐ PHOTOGRAPH

ROOT MAT good @ water edge of bank + 1'

CANOPY (HEIGHT, DENSITY) 15-20'

PERCENT OF BANK COVER 40%

APPROXIMATE AGE 20-50 yrs - banks stable

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

chl is clear exn - catclaw island 150' u/s

☐ ARMORING POTENTIAL

possible @ high Q; probable @ low Q

☐ VISUAL ESTIMATE OF D50 = 3" ☐ PHOTOGRAPH

D90 12" D10 ½"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS No = 2:1	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILL~~ING OF~~ BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS OR BARS~~ (UPSTREAM/~~DOWNSTREAM~~)	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHA~~NNEL~~ PATTERN ☐ PHOTOGRAPH

Sinuous - braided (2-chl u/s w/ low island)

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

— 4' L; BW = 30 TW = 40

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)

~~PLOTSAM~~ ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~CRUSTLINE~~ OTHER

→ 4' on trunks → PV

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH

No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH

No

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☑ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

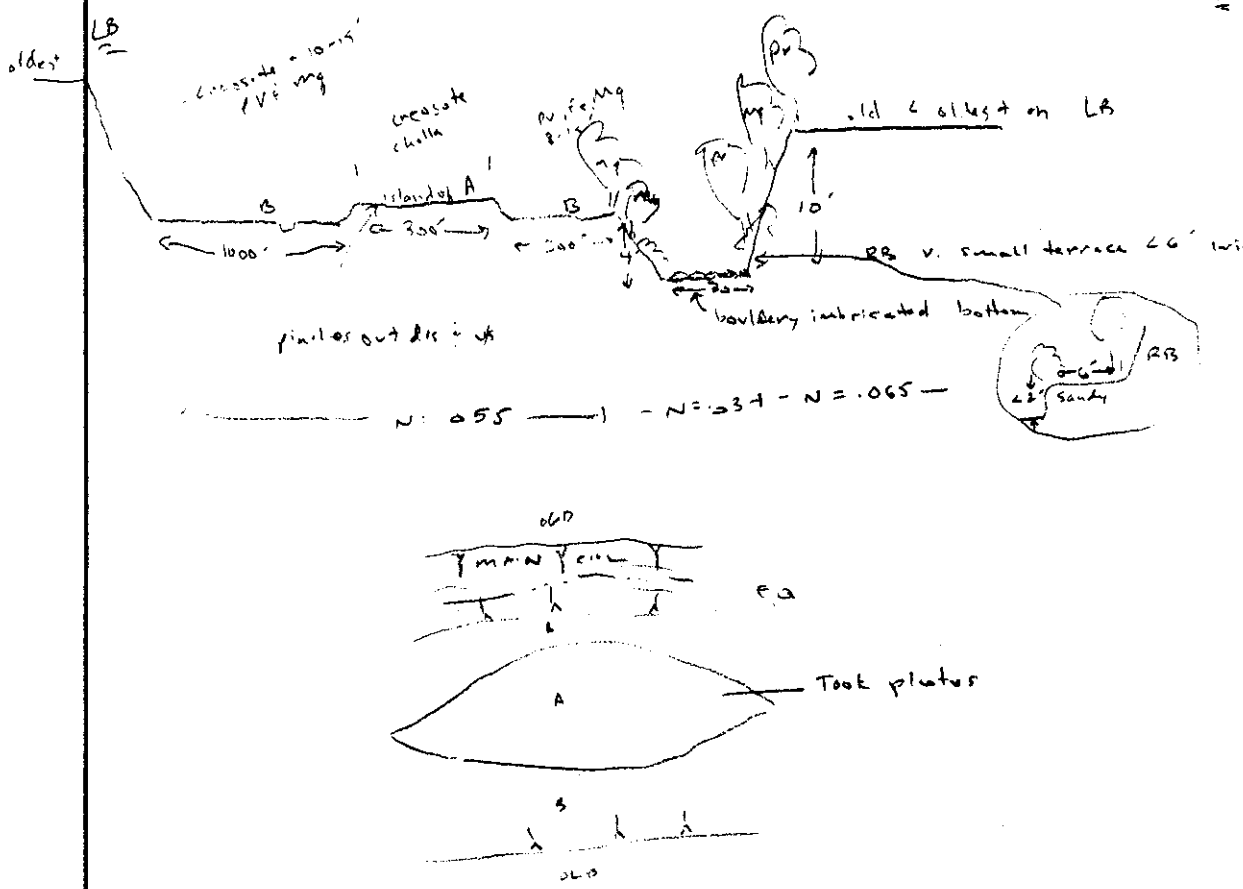
OBSTRUCT FLOW? No

☑ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES A + B - no C	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	Riffles	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	– possible 1.5' by RB low terrace	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☑ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) No

☑ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

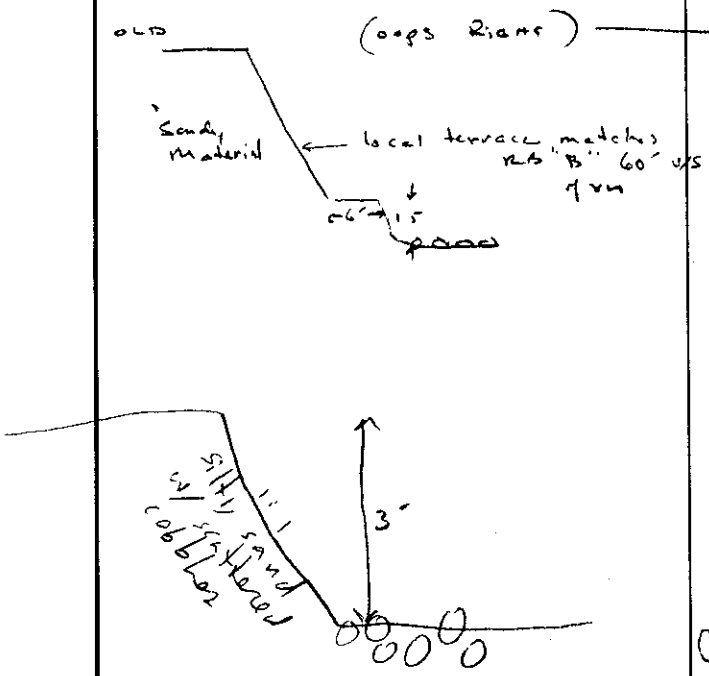
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

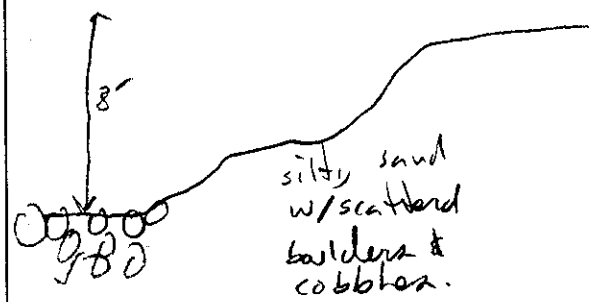
☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY none	☐ PHOTOGRAPH
GRAIN SIZE silty sand	☐ PHOTOGRAPH
COLOR yellow	☐ PHOTOGRAPH
CROSS BEDDING no	☐ PHOTOGRAPH
CARBONATE CONTENT none	☐ PHOTOGRAPH
SOIL STRUCTURE no	☐ PHOTOGRAPH
SOIL HORIZONS no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



Boulder Count PW-6000 4/22/99 Bri

1 - 0.03
2 - 0.06
3 - 0.24
4 - 0.06
5 - 0.04
6 - 0.20
7 - 0.9
8 - 0.03
9 - 0.40
10 - 0.09
11 - coarse sand
12 - 0.18
13 - 0.11
14 - 0.08
15 - fine gravel
16 - 0.05
17 - 0.28
18 - 0.25
19 - 0.5
20 - 1.1
21 - 0.8
22 - 0.5
23 - 0.08
24 - 0.04
25 - 0.50
26 - fine gravel
27 - 0.12
28 - 0.12
29 - 0.55
30 - 0.22

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW+7000

DATE: 4-22-99

TIME: (BEGIN/END) 3:30pm 3:50pm

FIELD CREW: JF BZ1 TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-14	
LOOKING UPSTREAM ALONG BANK	3-15	
LOOKING DOWNSTREAM ALONG BANK	3-16	
LEFT BANK BLOW COUNT	soft to mod stiff lower, soft upper	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-17	
LOOKING UPSTREAM ALONG BANK	3-18	
LOOKING DOWNSTREAM ALONG BANK	3-19	
RIGHT BANK BLOW COUNT	soft	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	3-20	
BED MATERIAL - ENTIRE CHANNEL	3-21	
NOTABLE FEATURES: (LIST) highwater mark - looking ds note - flow splits around island directly behind (ds of) the high water mark.	3-22	

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____(NAME)

☑ ON RECENT AERIAL PHOTOGRAPH _____(NUMBER)

☑ ON FCDMC TOPOGRAPHY _____(SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Mg : PV ☐ PHOTOGRAPH
-v. dense TK in chl d/s

ROOT MAT

CANOPY (HEIGHT, DENSITY) <20' trees, annuals - arrowweed

PERCENT OF BANK COVER 30%

APPROXIMATE AGE 10-20 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
chl clear exn, TK = 70% d/s

☐ ARMORING POTENTIAL
Low

☐ VISUAL ESTIMATE OF D50 = 1/2" ☐ PHOTOGRAPH
D90 3" D10 MS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No 2:1	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	1 Mg slightly - most No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN single chl sinuous u/s ☐ PHOTOGRAPH
braided reach d/s

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
No

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
–, 3-3.5', BW: 30', TW: 40

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
in chl + 2 ft

TYPE AND STAGE (FEET)
FLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER
on bks + 3 ft

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
No

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☑ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No

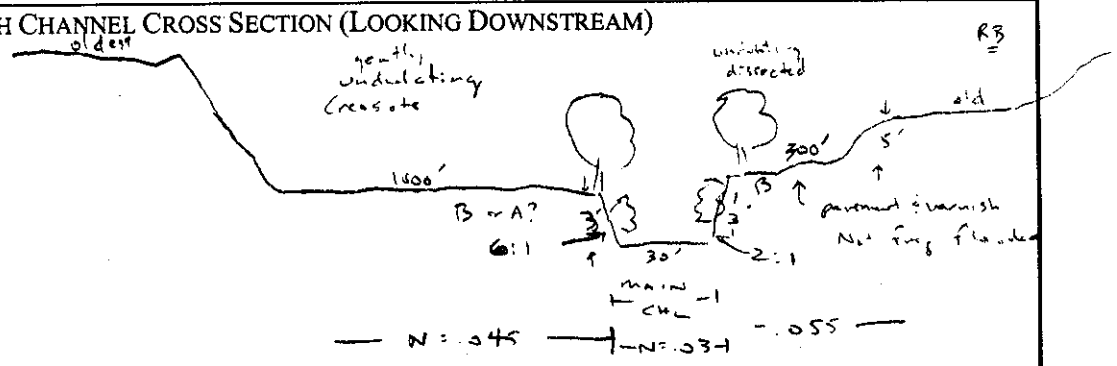
OBSTRUCT FLOW?
No

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	YES - B SOUTH SIDE	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	–		☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS → SEE TBRD - PRIS. GLEE D/S		☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	< 1 FT		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



Lob - is not clearly A or B - more undulating than A d/s, but less so than B d/s. More trees than A d/s, but fewer cacti

* CHL D/S of xn is choked w/ TX - v. low capacity
multiple chl - Braided < 15' ft / chl

Q →

SHOW THE FOLLOWING:

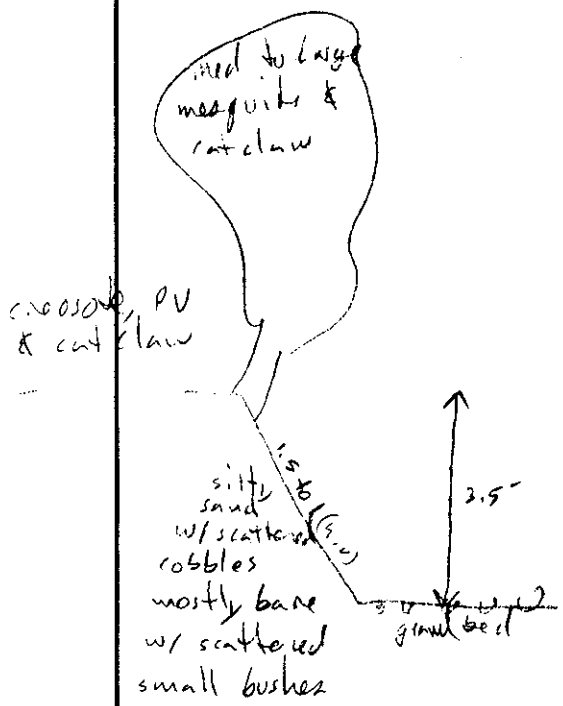
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS - None
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

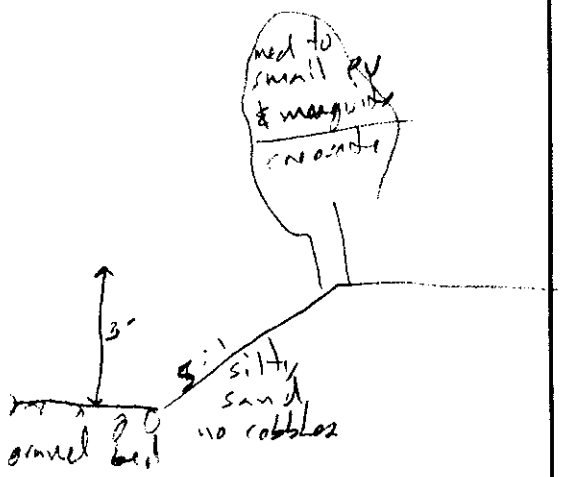
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	no	☐ PHOTOGRAPH
GRAIN SIZE	silty sand	☐ PHOTOGRAPH
COLOR	yellow	☐ PHOTOGRAPH
CROSS BEDDING	no	☐ PHOTOGRAPH
CARBONATE CONTENT	none	☐ PHOTOGRAPH
SOIL STRUCTURE	no	☐ PHOTOGRAPH
SOIL HORIZONS	no	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



4-22-99

PK +7000

Boulder Count

1 - coarse sand
2 - 0.01
3 - fine gravel
4 - 0.04
5 - 0.04
6 - fine gravel
7 - 0.02
8 - 0.02
9 - fine gravel
10 - 0.08
11 - 0.02
12 - 0.01
13 - 0.09
14 - 0.03
15 - 0.03
16 - 0.04
17 - 0.05
18 - 0.10
19 - 0.04
20 - fine gravel
21 - ( )
22 - 0.03
23 - 0.03
24 - 0.02
25 - fine gravel
26 - 0.03
27 - fine gravel
28 - ( )
29 - silty coarse sand
30 - silty sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW + 8000

DATE: 4-2-99

TIME: (BEGIN/END) 4.00 pm / 4:30

FIELD CREW: JF 32 -

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	3-24	
LOOKING UPSTREAM ALONG BANK	3-25	
LOOKING DOWNSTREAM ALONG BANK	3-26	
LEFT BANK BLOW COUNT	Soft, lower ½ stiffer than top	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-1	
LOOKING UPSTREAM ALONG BANK	4-2	
LOOKING DOWNSTREAM ALONG BANK	4-3	
RIGHT BANK BLOW COUNT	SOFT - (loose on bar)	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	4-4	
BED MATERIAL - ENTIRE CHANNEL	4-5	
NOTABLE FEATURES: (LIST)		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 2-11 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 5 ASL TOPO (SHEET #)

D/S OF TRIB CONFLUENCE FROM L

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV + Mg + Cat.tail arrowhead bulrush ☐ PHOTOGRAPH

ROOT MAT good @ bank elevn

CANOPY (HEIGHT, DENSITY) <15'

PERCENT OF BANK COVER 30%

APPROXIMATE AGE 10-30 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

Mg + Cat.tail - 60% dis xn - clear @ xn & u/s

☐ ARMORING POTENTIAL possible bed size - pit PW-1 250' d/s indicates no armor exists

☐ VISUAL ESTIMATE OF D50 = 1" BIMODAL - gravel bar on R ☐ PHOTOGRAPH

D90 9" D10 FS (bar bar begins @ 28'

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN → R from tributary flow path ☐ PHOTOGRAPH

braided d/s - narrow single ch u/s

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH

Yes immediately u/s from L

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

0, 3-4' BW = 50' TW = 60'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

good flotsam @ banks & Mg

TYPE AND STAGE (FEET)

FLOTSAM → +3 ft SLACKWATER ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUB LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? NO - SEE PIT PROFILE for clay layer depth ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) NO ☐ PHOTOGRAPH

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No

OBSTRUCT FLOW? —

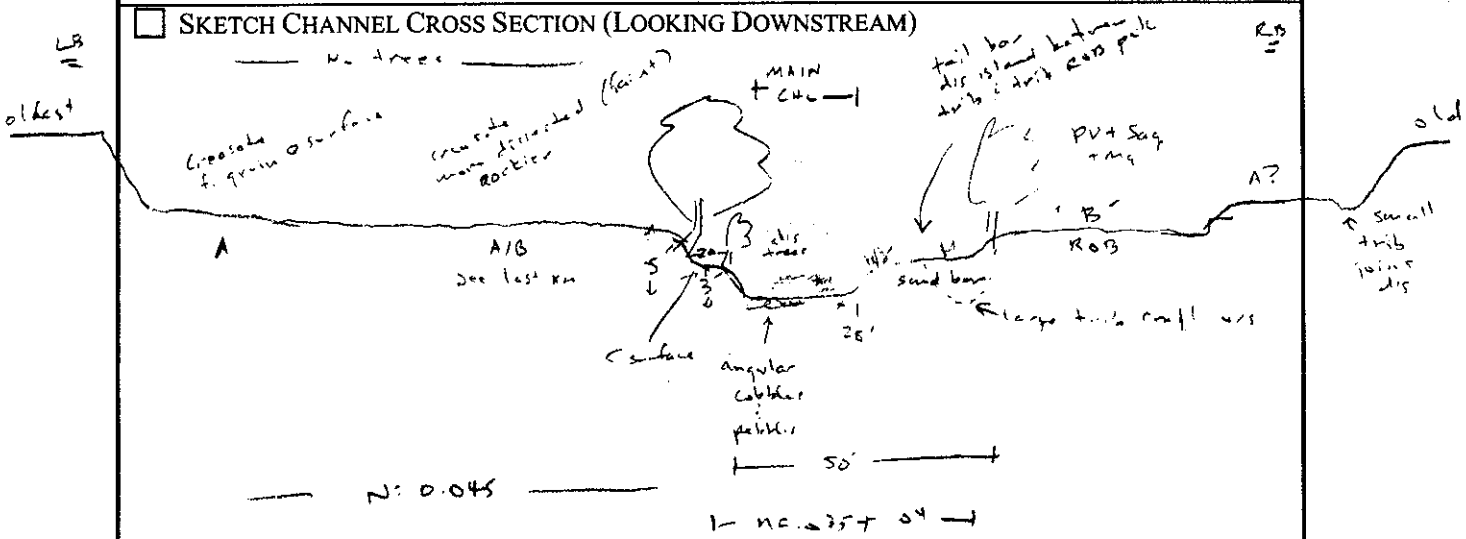
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	– @ grade	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	yes	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No – gentle	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	N/A	☐ PHOTOGRAPH
HEADCUTS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	– 3.5' scour on tree in mid-chl 200' d/s xn	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

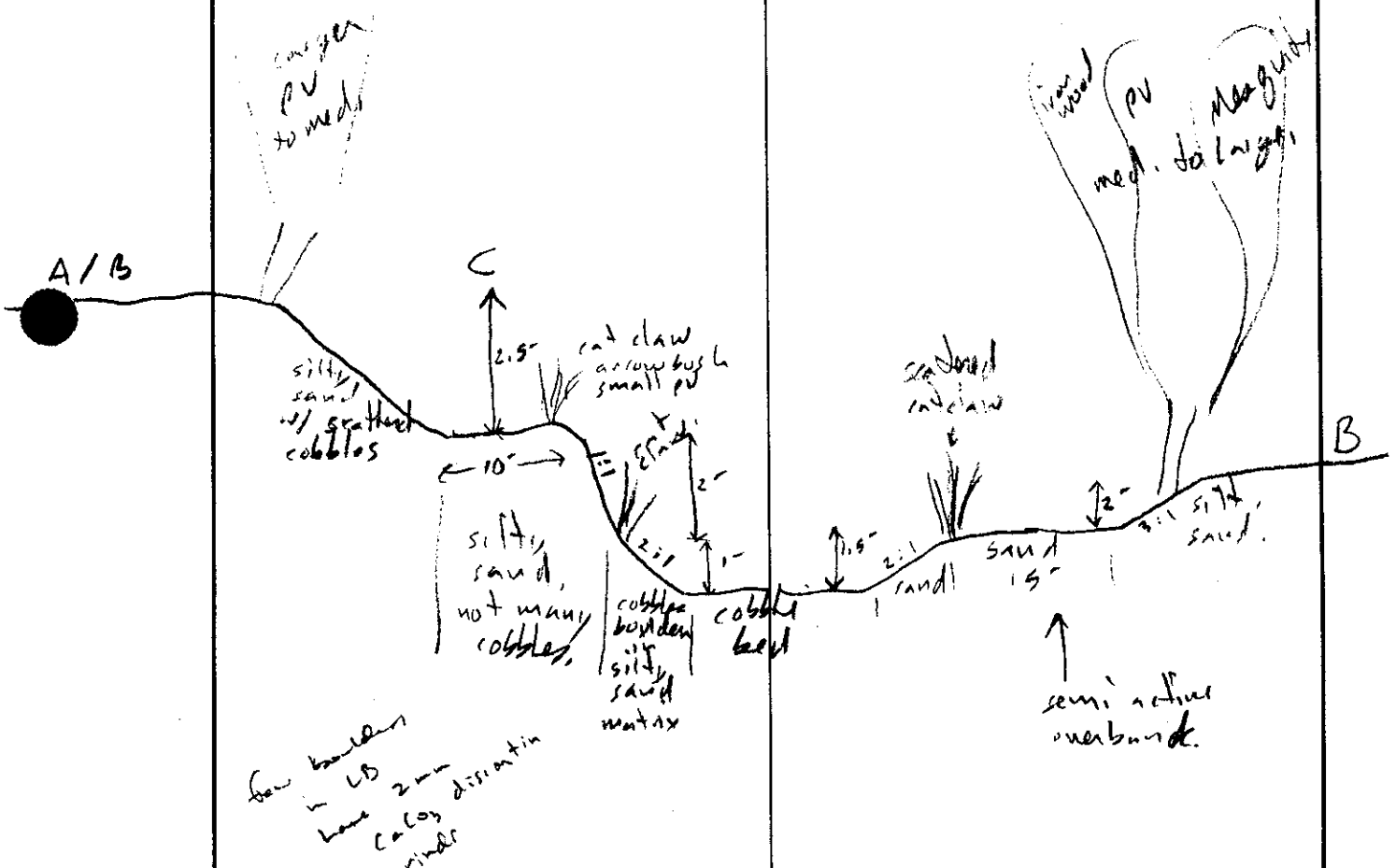
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☑ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	no	☐ PHOTOGRAPH
GRAIN SIZE	silt, sand	☐ PHOTOGRAPH
COLOR	yellow	☐ PHOTOGRAPH
CROSS BEDDING	no	☐ PHOTOGRAPH
CARBONATE CONTENT	no - rinds on some bldrs & bank	☐ PHOTOGRAPH
SOIL STRUCTURE	no	☐ PHOTOGRAPH
SOIL HORIZONS	no	☐ PHOTOGRAPH

LEFT BANK | **RIGHT BANK**



PW + 8000
4-22-99

Boulder Count

2 - 0.11
4 - 0.07
6 - 0.03
8 - 0.02
10 - 0.45
12 - 0.13
14 - 0.04
16 - 0.10
18 - 0.05
20 - 0.05
22 - 0.04
24 - fine gravel
26 - 0.65
28 - 0.01
30 - 0.06
32 - coarse sand
34 - fine gravel
36 - medium sand
38 - medium sand
40 - " "
42 - coarse sand
44 - 0.04
46 - 0.01
48 - fine gravel
50 - sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: Pin + 9000

DATE: 4-22-99

TIME: (BEGIN/END) 4:40 / 5:00

FIELD CREW: JF BRI TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-7	
LOOKING UPSTREAM ALONG BANK	4-8	
LOOKING DOWNSTREAM ALONG BANK	4-9	
LEFT BANK BLOW COUNT	moderately stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-10	
LOOKING UPSTREAM ALONG BANK	4-11	
LOOKING DOWNSTREAM ALONG BANK	4-12	
RIGHT BANK BLOW COUNT	moderately stiff	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	4-13	
BED MATERIAL - ENTIRE CHANNEL	4-14	
NOTABLE FEATURES: (LIST)		

- 4-15 → thm on RB
- low area in LOB which sees flows sometimes
- old terrace to left of area discussed above

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 2-11 ASL '99 (NUMBER)

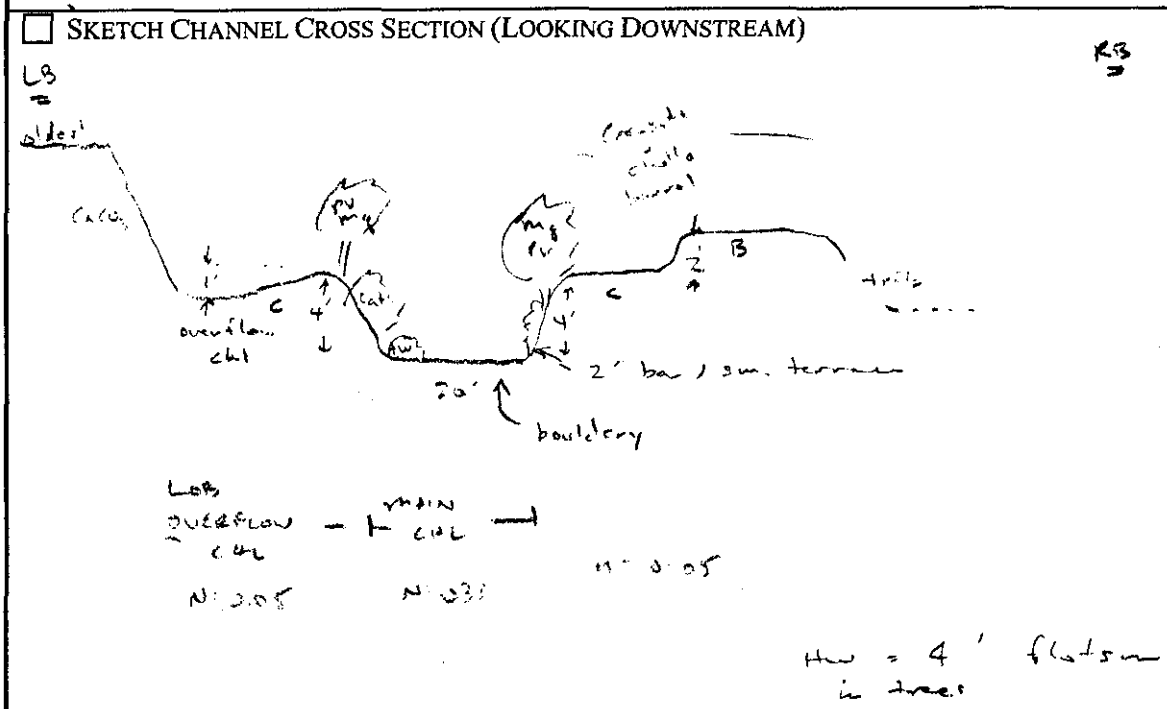
☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☑ BANK VEGETATION mg & Pv - cattail, arrowweed		☐ PHOTOGRAPH
ROOT MAT fair / good		
CANOPY (HEIGHT, DENSITY) 8-12' trees		
PERCENT OF BANK COVER 40%		
APPROXIMATE AGE < 20 yrs		
☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) 5% cattail - arrowweed		☐ PHOTOGRAPH
☐ ARMORING POTENTIAL probable		
☐ VISUAL ESTIMATE OF D50 = 3" D90 9" D10 FG		☐ PHOTOGRAPH
☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT) looks stable	- Narrower x-n than d/s	
CUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS Some, most No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM) —	☐ PHOTOGRAPH	☐ PLOT LOCATION
☐ CHANNEL PATTERN Single chl straight		☐ PHOTOGRAPH
☐ TRIBUTARIES NEARBY? No		☐ PHOTOGRAPH
☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) 4' BW = 20 TW = 30		☐ PHOTOGRAPH
☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) No Q		☐ PHOTOGRAPH
☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) 4 ft Qbf		☐ PHOTOGRAPH
TYPE AND STAGE (FEET) FLOTSAM STACKWATER EROSION SCAR TREE SCAR GRUS LINE OTHER		
☐ DEPTH TO BEDROCK (FT., UNKNOWN)		
BEDROCK EXPOSED? No		☐ PHOTOGRAPH
GRADE CONTROL? (TYPE, PHOTO) No		☐ PHOTOGRAPH
☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN)		☐ PHOTOGRAPH

☒ FENCES (PLOT LOCATION, PHOTO) No	☐ PHOTOGRAPH
OBSTRUCT FLOW? No	
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)	
HANGING TRIBUTARIES No	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES 1 set L & R =	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) No	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –	☐ PHOTOGRAPH
HEADCUTS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS No	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION No	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH ☐ PLOT LOCATION
☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC) No	

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

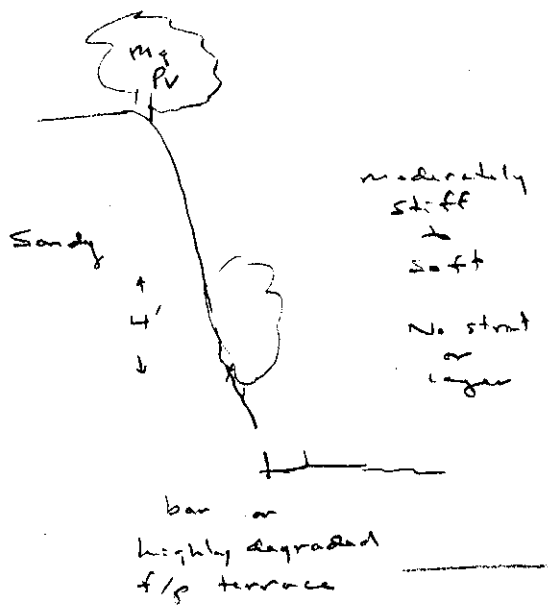
- ☒ VEGETATION
- ☒ MANNING'S N VALUES
- ☒ BARS
- ☒ FLOODPLAIN/ TERRACES
- ☒ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☒ ACTIVE CHANNEL LIMITS
- ☒ ISLANDS

3. BANK PROFILE

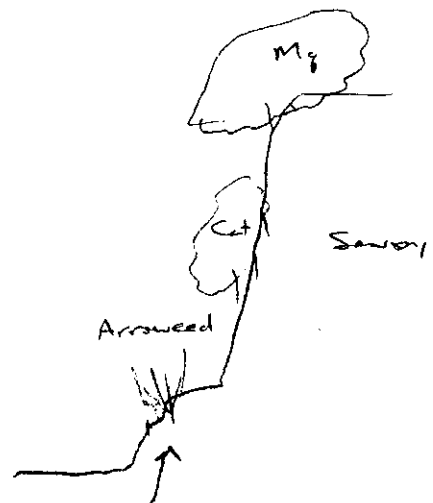
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	No	☐ PHOTOGRAPH
GRAIN SIZE	SAND	☐ PHOTOGRAPH
COLOR	Yellow	☐ PHOTOGRAPH
CROSS BEDDING	No	☐ PHOTOGRAPH
CARBONATE CONTENT	N.S.	☐ PHOTOGRAPH
SOIL STRUCTURE	N.S.	☐ PHOTOGRAPH
SOIL HORIZONS	No	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



4-22-99
PW+9000

Boulder Count

Sta		Texture
1	-	silty sand
2	-	0.5
3	-	silty sand
4	-	0.17'
5	-	0.13'
6	-	0.03'
7	-	0.08'
8	-	0.15'
9	-	0.19'
10	-	0.4'
11	-	0.03'
12	-	0.25'
13	-	0.03'
14	-	0.11'
15	-	0.09'
16	-	0.5'
17	-	0.04'
18	-	0.09'
19	-	0.04'
20	-	fine gravel
21	-	silt
22	-	silt
23	-	silty sand

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: PW + 10000

DATE: 4-22-99 | TIME: (BEGIN/END) 5:05

FIELD CREW: JF BRI TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-16	
LOOKING UPSTREAM ALONG BANK	4-17	
LOOKING DOWNSTREAM ALONG BANK	4-18	
LEFT BANK BLOW COUNT	moderately stiff	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-19	
LOOKING UPSTREAM ALONG BANK	4-20	
LOOKING DOWNSTREAM ALONG BANK	4-21	
RIGHT BANK BLOW COUNT	soft up to ≈ 2';	top ≤ 2' stiff
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	4-22	
BED MATERIAL - ENTIRE CHANNEL	4-23 from RB ≈ 15' U/S looking D/S	
NOTABLE FEATURES: (LIST)		

- XS in short pool immediately U/S of long riffle w/ much larger calibre material
- reach very straight
- OB's both banks older terraces
4-24: HWM on RB ≈ Bankfull

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 2-11 ASL 99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION pv - mg - cat claw ☐ PHOTOGRAPH

ROOT MAT	Good - @ WSEL ~ 1 ft above bed ← ALMOST ALL LIKE THIS KNS
CANOPY (HEIGHT, DENSITY)	< 15'
PERCENT OF BANK COVER	35 %
APPROXIMATE AGE	10-30 yr

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
chl is clear

☐ ARMORING POTENTIAL
possible @ low Q - cobbles

☐ VISUAL ESTIMATE OF D50 = 1" ☐ PHOTOGRAPH
D90 6" D10 ¼"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)
Appears stable, signif narrower, rock... the dry cnl @ 8000

CUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Some, most No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	-	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Single chl straight ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No. ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 4' BW = 20 : TW = 30

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM ~2' of LB SLACKWATER ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? NO ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
No

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? -

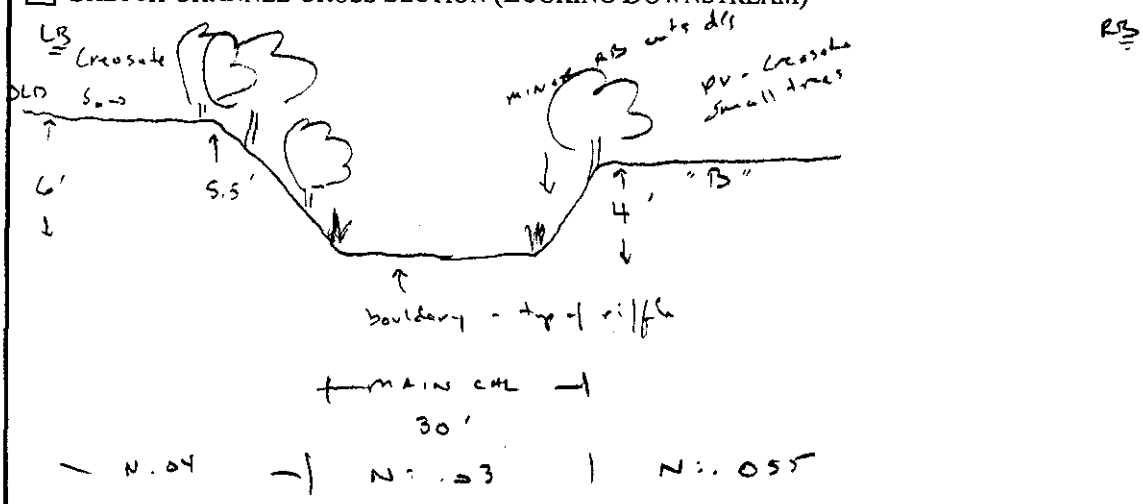
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	ephemeral @ +1' RB	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No - floodplain site w/ [illegible]	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	No	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

No - Cerrito Hwy 800' u/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

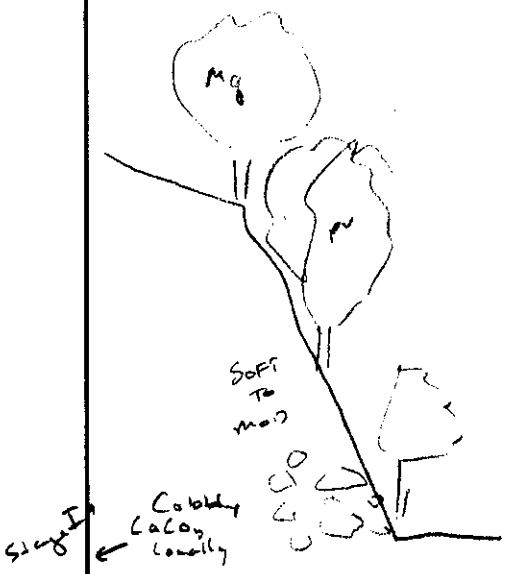
- ☒ VEGETATION
- ☒ MANNING'S N VALUES
- ☒ BARS
- ☒ FLOODPLAIN/ TERRACES
- ☒ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☒ ACTIVE CHANNEL LIMITS
- ☒ ISLANDS

3. BANK PROFILE

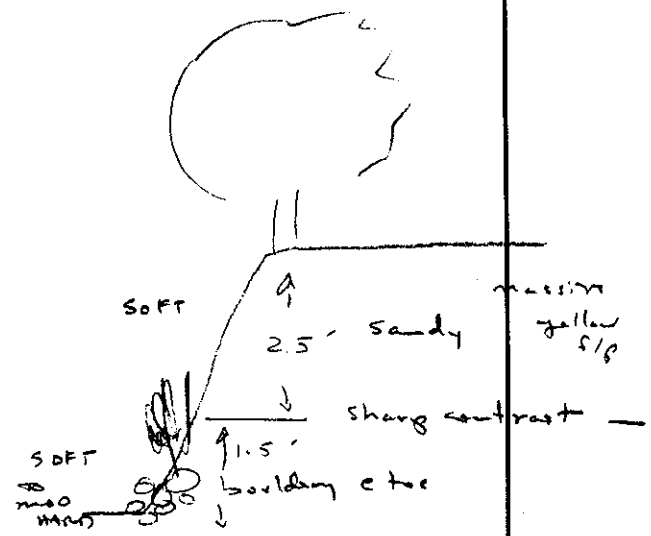
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	RB - see sketch, sand over cobble	☐ PHOTOGRAPH
GRAIN SIZE	SAND @ top, C : B @ base	☐ PHOTOGRAPH
COLOR	Yellow	☐ PHOTOGRAPH
CROSS BEDDING	No	☐ PHOTOGRAPH
CARBONATE CONTENT	I+ in LB, 0 in RB	☐ PHOTOGRAPH
SOIL STRUCTURE	No, massive	☐ PHOTOGRAPH
SOIL HORIZONS	No	☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



@ cut bank dir 50'

4-22-99
PW +10000
TWL, BRI

Boulder Count

Sta		Texture	Sta		Texture
1'	-	0.09'	18	-	0.02'
2'	-	0.22'	19	-	0.29'
3'	-	0.03'	20	-	0.6'
4'	-	0.09'			
5'	-	0.09'			
6'	-	0.07'			
7'	-	0.15'			
8'	-	0.03'			
9'	-	0.07'			
10'	-	0.02'			
11'	-	0.09'			
12'	-	0.03'			
13'	-	0.08'			
14	-	0.09'			
15'	-	0.02'			
16'	-	0.06'			
17'	-	0.05'			

4-29-99
RW/CC WCRP

PWB + 1000
Boulder Count

Sta	Texture
1'	0.4'
2	0.26
3	0.04
4	0.17
5	0.45
6	0.02
7	0.02
8	0.06
9	coarse sand
10	0.06
11	0.28
12	0.02
13	0.09
14	0.10
15	0.04
16	0.02
17	0.02
18	0.03
19	0.16
20	0.04
21	fine gravel
22	0.08
23	0.03
24	0.06
25	0.04
26	coarse sand
27	0.13

Photo 10-8 (17-8): view U/S of confluence of trib. w/ big stock tank U/S (Ranch?) Note diff. bed conditions & bed material (or lack thereof!)
10-9 (17-9): close up of bed material
10-10 (17-10): view of bed material from RB ≈ 5' U/S of XS
10-11 (17-11): view D/S ≈ 25' U/S of XS
10-12 (17-12): view U/S ≈ 25' D/S of XS

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: DAW - 0

DATE: 4-23-99

TIME: (BEGIN/END) 8:00 / 8:25

FIELD CREW: JF BZ1 TL

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	4-26	
LOOKING UPSTREAM ALONG BANK	4-27	
LOOKING DOWNSTREAM ALONG BANK	5-1	
LEFT BANK BLOW COUNT		
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-2	
LOOKING UPSTREAM ALONG BANK	5-3	
LOOKING DOWNSTREAM ALONG BANK	5-4	
RIGHT BANK BLOW COUNT	soft w/ stiff zones;	bedrock ex. hard
INTERMEDIATE BANKS		
INTERMEDIATE BANKS	base unit mod. hard; top soft	
BED MATERIAL - CLOSE UP	5-5	
BED MATERIAL - ENTIRE CHANNEL	5-6	
NOTABLE FEATURES: (LIST) - bedrock along RB - confluence w/ AW immediately D/S - 5-7: HWM on RB - scour hole along RB		

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 4 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION PV - Cottonwood, cottonwood ☐ PHOTOGRAPH

ROOT MAT - Percolated on LB; above Bedrock on right

CANOPY (HEIGHT, DENSITY) 10-20'

PERCENT OF BANK COVER 50% above scour line, 5% below it

APPROXIMATE AGE 20-50 yrs

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
channel is clear (0.)

☐ ARMORING POTENTIAL
Low - small

☐ VISUAL ESTIMATE OF D50 : CS ☐ PHOTOGRAPH
D90 1" D10 Ms

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	Not @ Xn, bridges on AW d/s	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	Yes - most	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	Yes lower ½	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No, clean	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)	No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
Single chl, sinuous

☐ TRIBUTARIES NEARBY? ☐ PHOTOGRAPH
Confl w/ AW 20' d/s - backwater area

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 7' BW: 26 TW: 28 (very steep banks)

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No ⊘

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET) possible on RB 6'
PLOTSAM SLACKWATER EROSION SCAR TREE SCAR GRUB LINE OTHER
→ Left RB

☐ DEPTH TO BEDROCK (FT., UNKNOWN)
0' @ RB @ in bed 30' d/s @ confl.

BEDROCK EXPOSED? YES in RB ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
- Rock -

☐ BEDFORMS (DUNES/RIPPLES/ARMOR/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH

No.

OBSTRUCT FLOW? –

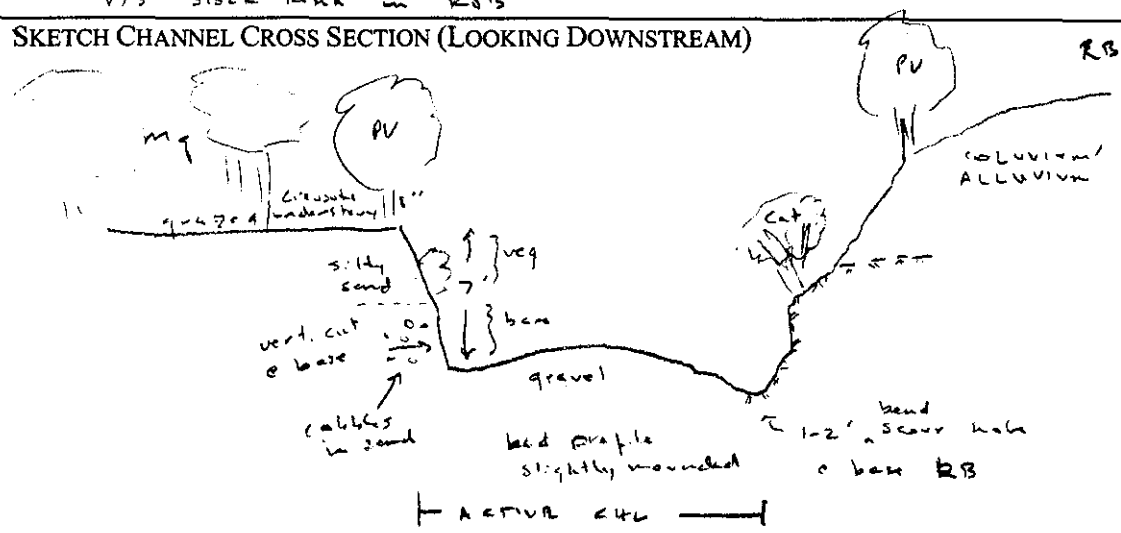
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES - low path - 2'	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES just f/p	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –		☐ PHOTOGRAPH
HEADCUTS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION Peak ~ 2 ft		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)

v/s stock tank in RB

LB ☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



- DHW is ~ 1-2' lower than AW @ confluence

.05 | N = .03 | .045

SHOW THE FOLLOWING:

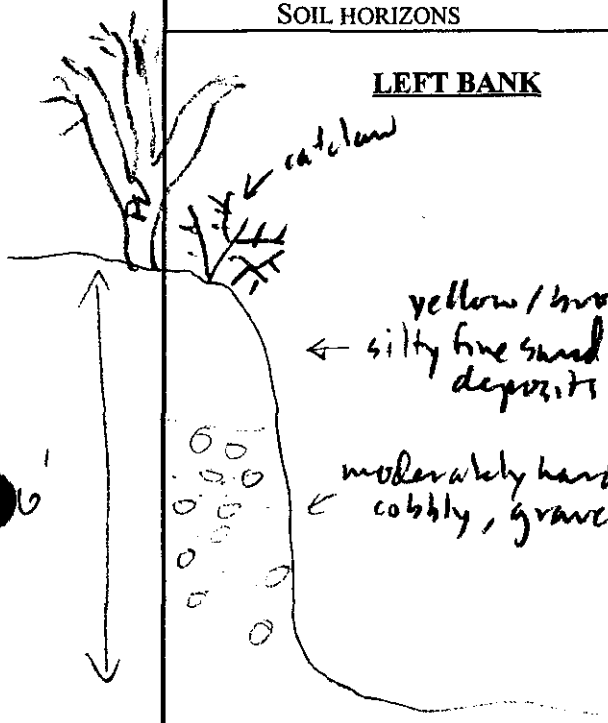
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

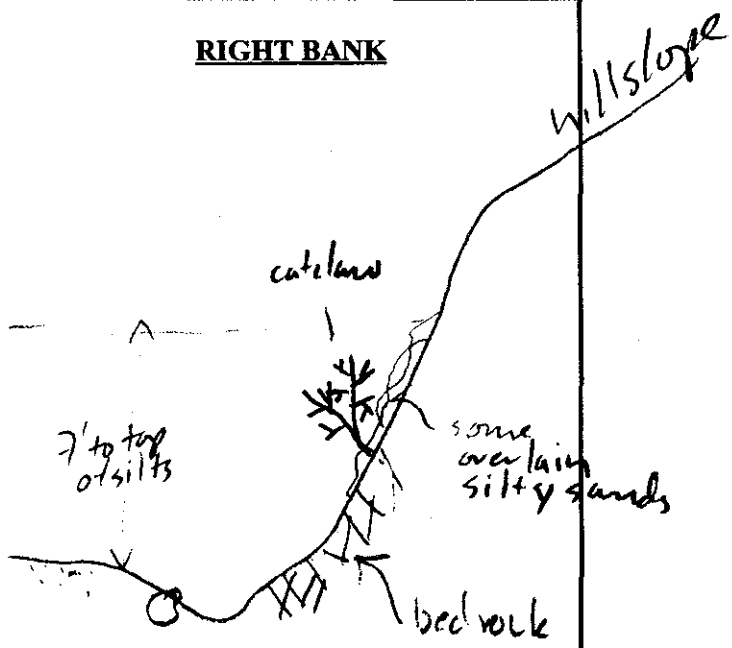
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	silty fine sands overlie cobbly gravel on LB	☐ PHOTOGRAPH
GRAIN SIZE		☐ PHOTOGRAPH
COLOR	yellow / brown silty sands	☐ PHOTOGRAPH
CROSS BEDDING	N/A	☐ PHOTOGRAPH
CARBONATE CONTENT	None	☐ PHOTOGRAPH
SOIL STRUCTURE	None	☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



DHW-0
4-23-99

Boulder Count

Sta		Texture
1'	-	0.4'
2	-	coarse sand
3	-	"
4	-	fine gravel
5	-	"
6	-	"
7	-	"
8	-	coarse sand
9	-	0.03'
10	-	0.02'
11	-	fine gravel
12	-	0.02'
13	-	0.01'
14	-	0.06'
15	-	0.08'
16	-	0.04'

Sta		Texture
17'	-	coarse sand
18'	-	"
19'	-	"
20'	-	"
21'	-	"
22'	-	0.02'
23'	-	0.6'
24'	-	0.4'
25'	-	~~0.5'~~ ← bedrock
26'	-	0.02'

scour hole w/ bedrock exposed ≈ 5' U/S

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: DHW + 2000

DATE: 4-23-99

TIME: (BEGIN/END) 0930 / 0950

FIELD CREW: TL - BRI - JEF

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-18	
LOOKING UPSTREAM ALONG BANK	5-19	
LOOKING DOWNSTREAM ALONG BANK	5-20	
LEFT BANK BLOW COUNT	soft at top; moderately stiff on bottom	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-21	
LOOKING UPSTREAM ALONG BANK	5-22	
LOOKING DOWNSTREAM ALONG BANK	5-23	
RIGHT BANK BLOW COUNT		
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	5-24	
BED MATERIAL - ENTIRE CHANNEL	5-25	
NOTABLE FEATURES: (LIST)		

5-26: 1hwM on RB ≈ 20' D/S of DHW 2000, view from D/S looking U/S toward x
- vertical banks
- exposed roots
- mosses on banks
- lower ≈ 2' is reddish gravelly old soil seen at channel pit DHW

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 4 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Mg & most w/ PV, Cat claw, Arrowwood ☐ PHOTOGRAPH

ROOT MAT Perched 2' above invert

CANOPY (HEIGHT, DENSITY) <15'

PERCENT OF BANK COVER upper - 40% ; lower bare 5%

APPROXIMATE AGE 5-20 yrs

☒ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
CHL CL BAR

☐ ARMORING POTENTIAL mod @ XN LOW ELSEWHERE

☐ VISUAL ESTIMATE OF D50 FG ☐ PHOTOGRAPH
D90 3" D10 CS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS YES - most	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS YES - most	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS YES lower ½	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS No, but talus slope on some	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE —	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS No	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS OR BARS (UPSTREAM/DOWNSTREAM)~~	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN Straight single ch l ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? No ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 6' BW = 22' ; TW: 30'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)
FLOTSAM → 4-5' ~~SLACKWATER~~ EROSION SCAR ~~TREE SCAR~~ ~~GRUS LINE~~ ~~OTHER~~
↳ TRIM LINE @ 2'

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) No ☐ PHOTOGRAPH

☐ BEDFORMS ~~(DUNES/RIPPLES/ARMOR/PLAIN)~~ ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
NO

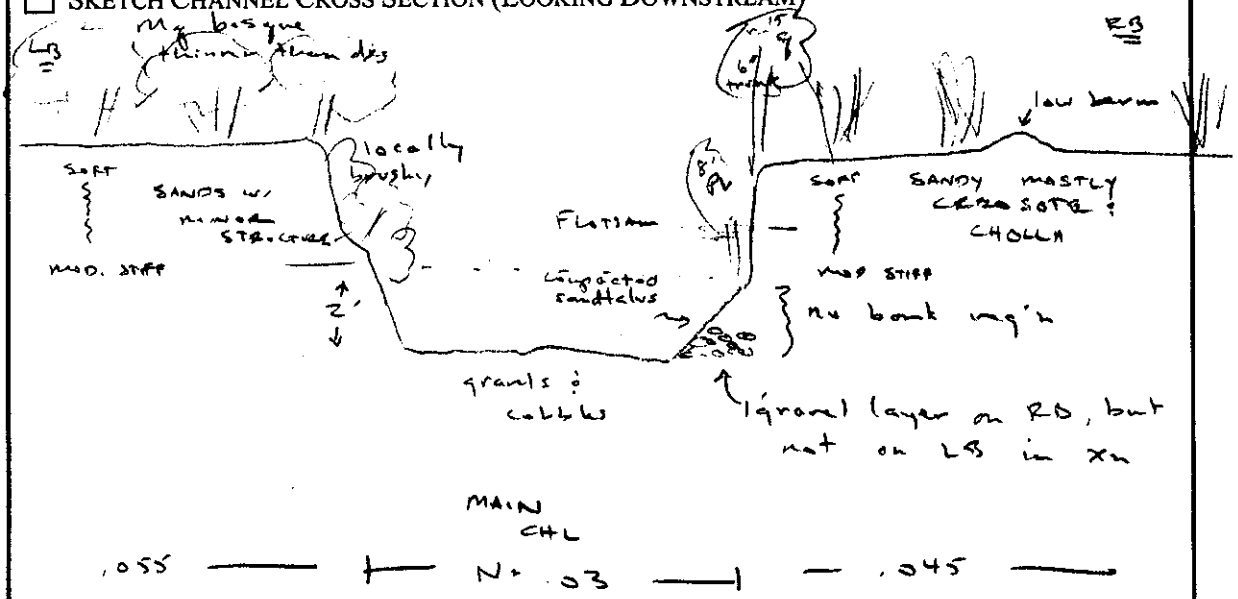
OBSTRUCT FLOW?
NO

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION
STREAM TERRACES	F/P ONLY	☐ PHOTOGRAPH ☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	YES	☐ PHOTOGRAPH ☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	-	☐ PHOTOGRAPH
HEADCUTS	NOT @ XN	☐ PHOTOGRAPH ☐ PLOT LOCATION
SLOPE BREAKS	" "	☐ PHOTOGRAPH ☐ PLOT LOCATION
RECENT INCISION	~ 2 FT - TRAM LINE @ BASE OF BANK	☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT)	NO	☐ PHOTOGRAPH ☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
STOCK POND 400-2000' D/S

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



MAIN CHL

.055 — N = .03 — .045

- much different character to xn than DHW + 1000 - less laterally active, fewer scour holes, straighter, bed more compacted, less mg'n

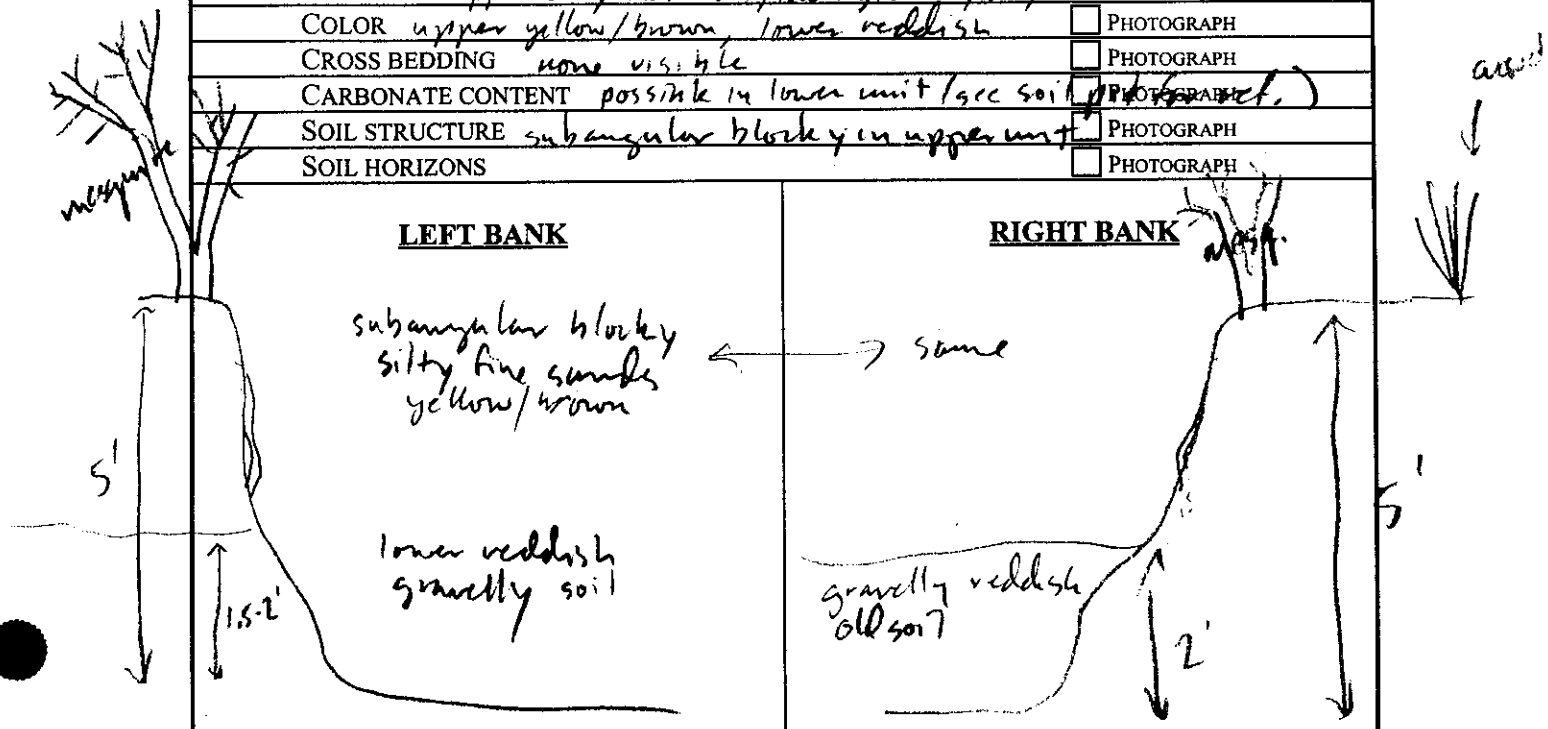
SHOW THE FOLLOWING:

- ☒ VEGETATION
- ☒ MANNING'S N VALUES
- ☒ BARS
- ☒ FLOODPLAIN/ TERRACES
- ☒ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☒ ACTIVE CHANNEL LIMITS
- ☐ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	base unit x2' of reddish old soil	☐ PHOTOGRAPH
GRAIN SIZE	upper silty fine sands; lower gravelly clay loam	☐ PHOTOGRAPH
COLOR	upper yellow/brown, lower reddish	☐ PHOTOGRAPH
CROSS BEDDING	none visible	☐ PHOTOGRAPH
CARBONATE CONTENT	possible in lower unit (see soil profile)	☐ PHOTOGRAPH
SOIL STRUCTURE	subangular blocky in upper unit	☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH



DHW 12000
4-23

Boulder Count

Sta		Texture
1	-	very course sand
2	-	0.08'
3	-	0.03'
4	-	0.02'
5	-	course sand
6	-	0.01'
7	-	0.09'
8	-	0.05'
9	-	0.02'
10	-	0.26'
11	-	0.07'
12	-	0.27'
13	-	6 02'
14	-	0.06'

Sta		Texture
15	-	0.26'
16	-	0.18'
17	-	0.20'
18	-	0.10'
19	-	0.23'
20	-	0.06'

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: OHW +1000	
DATE: 4-23	TIME: (BEGIN/END) 9 4m
FIELD CREW: BRI JF TL	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-9	
LOOKING UPSTREAM ALONG BANK	5-10	
LOOKING DOWNSTREAM ALONG BANK	5-11	
LEFT BANK BLOW COUNT	soft	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-12	
LOOKING UPSTREAM ALONG BANK	5-13	
LOOKING DOWNSTREAM ALONG BANK	5-14	
RIGHT BANK BLOW COUNT	moderately hard lower unit; stiff upper	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	5-15	
BED MATERIAL - ENTIRE CHANNEL	5-16	
NOTABLE FEATURES: (LIST)		

- mesquite bosque
- large gravel bars actively transported thru this
- many exposed roots
- vertical banks on outside of bends
- mosses on silty banks

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-10 ASL '99 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 4 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Almost all Mg, few brush or grass 1 PV in view ☐ PHOTOGRAPH

ROOT MAT perched

CANOPY (HEIGHT, DENSITY) < 20 ft

PERCENT OF BANK COVER 30%

APPROXIMATE AGE 10 - 30 years

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
ch1 is clear.

☐ ARMORING POTENTIAL v. low

☐ VISUAL ESTIMATE OF D50 - MG ☐ PHOTOGRAPH
D90 1" D10 FS

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

CUT BANKS	ON BENDS	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES!	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	–	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	–	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
IS ~~ISLANDS~~ OR BARS (UPSTREAM/DOWNSTREAM)	ON BEND	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN ☐ PHOTOGRAPH
V. SINUOUS

☐ TRIBUTARIES NEARBY? INFLOW FROM STOCK POND ☐ PHOTOGRAPH
No – DIVERSIONS

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
— 3-4', BW = 28 TW = 30

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH
PHOTO'S

~~TYPE AND~~ STAGE (FEET)
FLOTSAM ~~SLACKWATER~~ ~~EROSION~~ SCAR ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER
Bankfull

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) No ☐ PHOTOGRAPH

OBSTRUCT FLOW? —

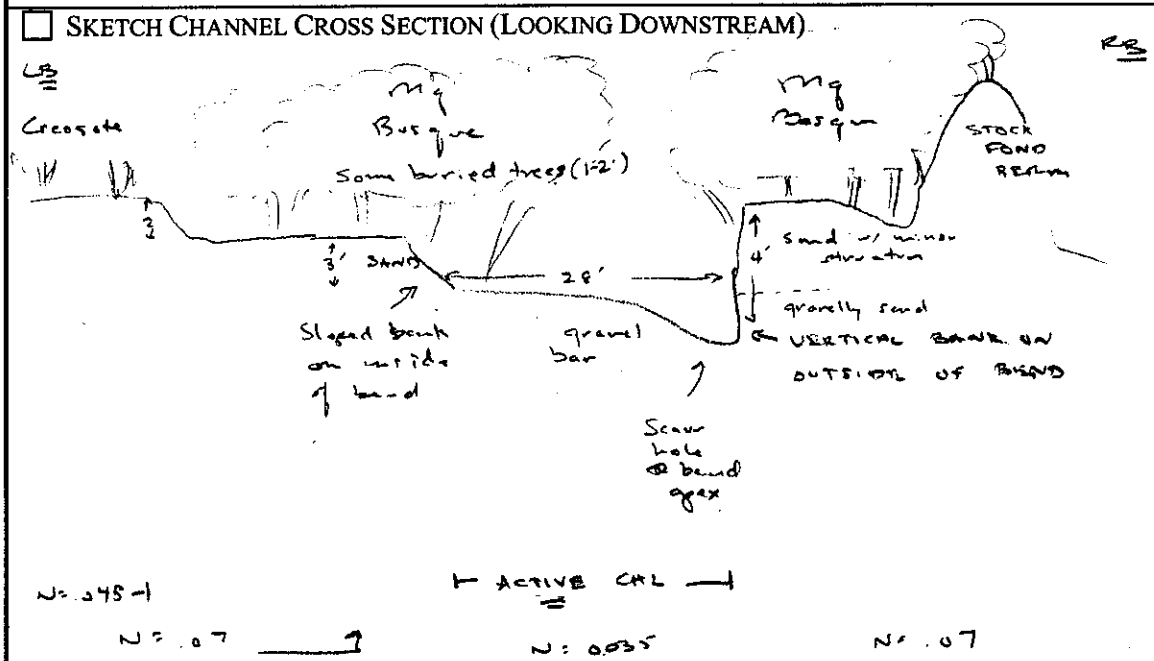
☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES — OVERFLOW RTNS	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES —	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) —		☐ PHOTOGRAPH
HEADCUTS D/S @ DHW +200	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION YES		☐ PHOTOGRAPH
GRAVEL MINING (DISTANCE, EXTENT) NO	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
↳ STOCK POND - SEE NOTES IN FIELD POND

DO HISTORICAL ANALYSIS OF CHANGE

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



SHOW THE FOLLOWING:

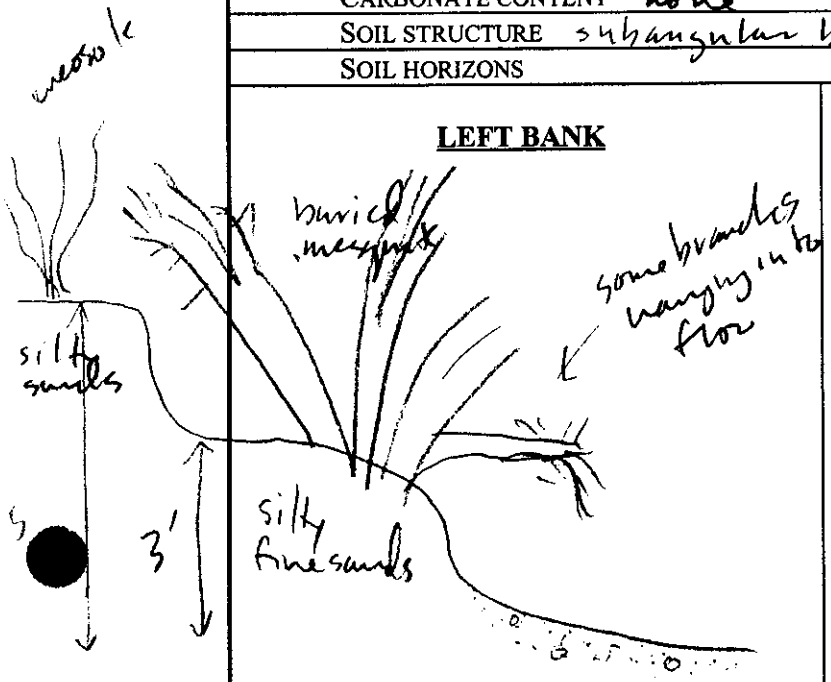
- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

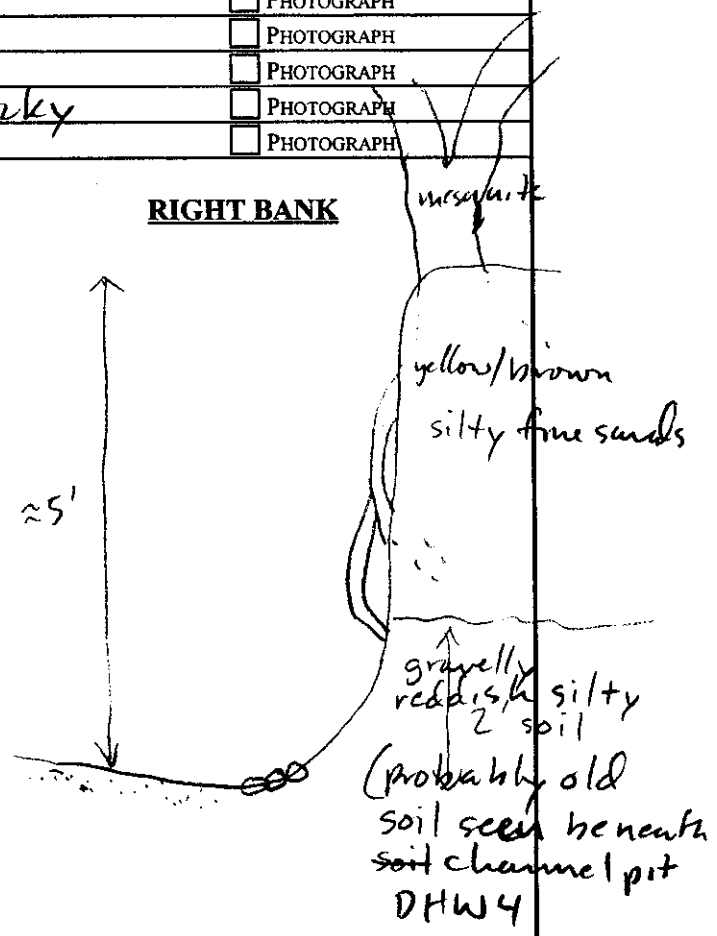
☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	massive silty sands over reddish gravelly silty soil on RB	☐ PHOTOGRAPH
GRAIN SIZE	silty fine sands	☐ PHOTOGRAPH
COLOR	yellow / brown	☐ PHOTOGRAPH
CROSS BEDDING	none visible	☐ PHOTOGRAPH
CARBONATE CONTENT	none	☐ PHOTOGRAPH
SOIL STRUCTURE	subangular blocky	☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH

LEFT BANK



RIGHT BANK



DAW + 1000
4-23

Boulder Count

Sta	Texture
1'	fine sand
2'	coarse sand
3'	0.02'
4	coarse sand
5	0.03'
6	0.08'
7	coarse sand
8	0.08'
9	0.04'
10	coarse sand
11	"
12	0.06'
13	coarse sand
14	0.20'
15	0.03'
16	0.02'
17	0.05'
18	med. sand
19	0.02'
20'	0.02'
21'	coarse sand
22'	coarse sand
23'	0.02'
24'	0.02'
25	0.02'
26	0.04'

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: DHW + 3000

DATE: 4-23-99

TIME: (BEGIN/END) 1000 / 1020

FIELD CREW: JF - TL - BRI

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-27	
LOOKING UPSTREAM ALONG BANK	5-28	
LOOKING DOWNSTREAM ALONG BANK	5-29	
LEFT BANK BLOW COUNT	soft to pum. & moderately stiff at bottom	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-30	
LOOKING UPSTREAM ALONG BANK	5-31	
LOOKING DOWNSTREAM ALONG BANK	5-32	
RIGHT BANK BLOW COUNT	soft to unit, stiff mid, mod. hard lower/base	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	5-33	
BED MATERIAL - ENTIRE CHANNEL	5-34	
NOTABLE FEATURES: (LIST)		

- 5-35: HWM on LB view looking U/S from ≈ XS location
- base unit → visible in channel bottom in several locations betw. 2000 + 3000
- slightly less incised (≈ 1' less)
- XS on U/S corner of bend, across gravelly channel bar.

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH ASL '99 3-10 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 4 (SHEET #)

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION Av - Mg - Creosote - Catclaw ☐ PHOTOGRAPH

ROOT MAT pervasive 1-2' above invert

CANOPY (HEIGHT, DENSITY) <15' trees brush < 6'

PERCENT OF BANK COVER lower 1.5' = 5%, upper 30%

APPROXIMATE AGE 5-20 years

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH

CHL is CLEAR

☐ ARMORING POTENTIAL Low, some cobbles

☐ VISUAL ESTIMATE OF D50 ~ 2" (in xn - finer u/s) ☐ PHOTOGRAPH

D90 4" D10 <5

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)

banks are trimmed & scour - but evidence of extension lateral movement except at stock pond d/s

CUT BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	Yes, some	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	No - cow tracks	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS~~ OR ~~BARS~~ (~~UPSTREAM~~/DO~~WNSTREAM~~)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN SINGLE CHL, SINUOUS ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? two small tribs between +2000 & +3000 were incised 6' but only 1-2' wide ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

— 4.5', BW = 21', TW = 25

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH

No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

TYPE AND STAGE (FEET)

~~FLOTSAM~~ ~~SLACKWATER~~ ~~EROSION SCAR~~ ~~TREE SCAR~~ ~~GRUS LINE~~ OTHER

~3' → scour line @ 1.5'

☐ DEPTH TO BEDROCK (FT., UNKNOWN)

BEDROCK EXPOSED? No ☐ PHOTOGRAPH

GRADE CONTROL? (TYPE, PHOTO) NO ☐ PHOTOGRAPH

☐ BEDFORMS (~~DUNES/RIPPLES/ARMOR~~/PLAIN) ☐ PHOTOGRAPH

☐ FENCES (PLOT LOCATION, PHOTO) ☐ PHOTOGRAPH
No

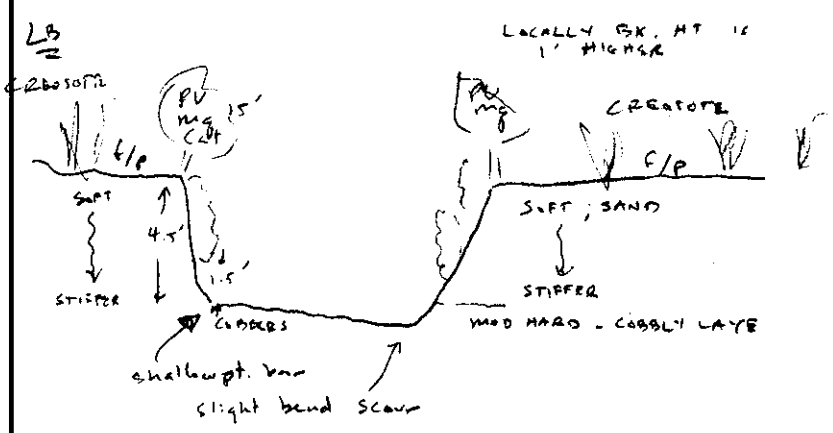
OBSTRUCT FLOW? –

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES – Not hanging, incised 6'	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES F/P only + 4.5'	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE) YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC) –	☐ PHOTOGRAPH	
HEADCUTS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION 1.5 based on trimline	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT) No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
Stock pond d/s ; Acr lots 1/4 mi. u/s

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



N: .045 N: .03 N: .045
to ACTIVE CHL

- between +3000 & +2000 - chl had scoured to clay-hard layer 1st seen in pit of DHW-CHL - in many places ∴ active layer is thin

- trees smaller
- bed seems coarser than d/s
- DHW - lacks large boulder like PW & AW, width is more uniform

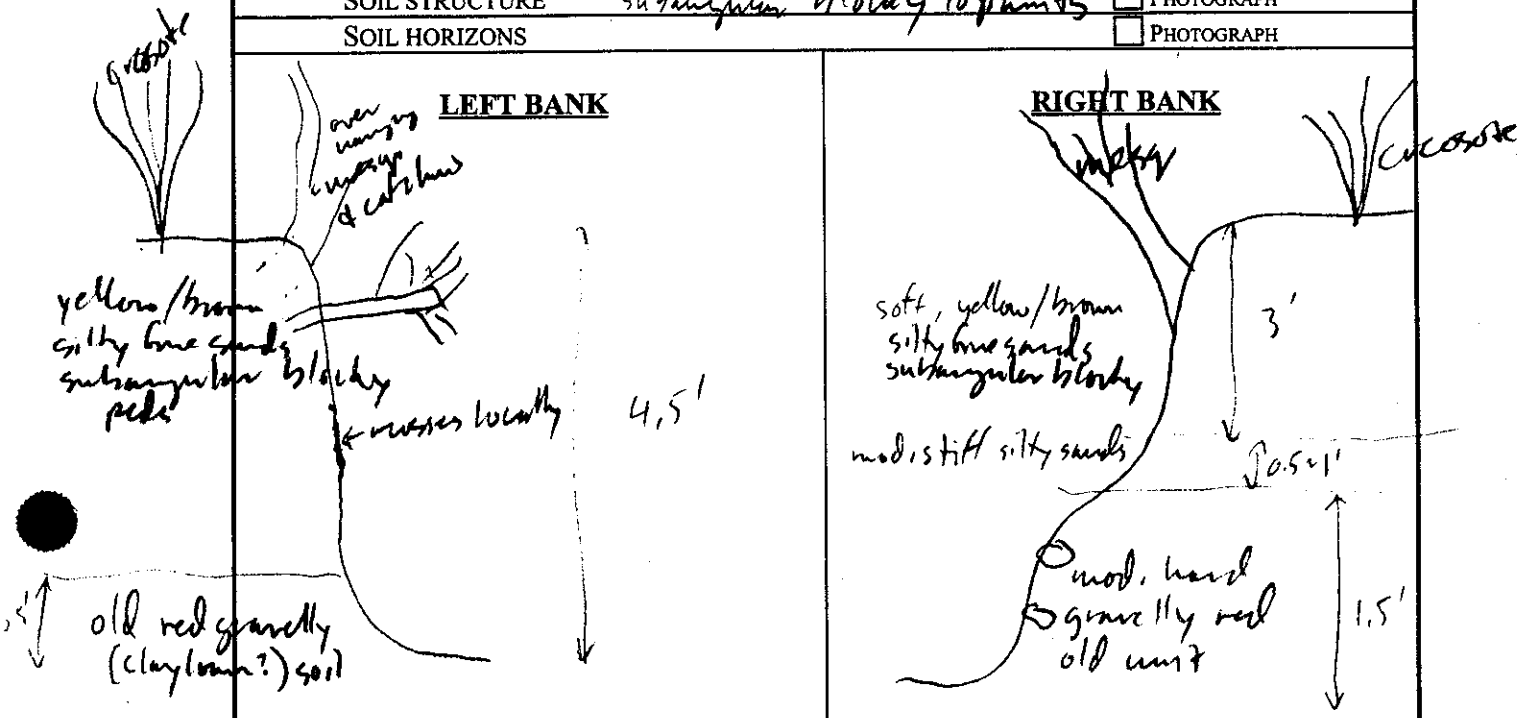
SHOW THE FOLLOWING:

- ☑ VEGETATION
- ☑ MANNING'S N VALUES
- ☑ BARS
- ☑ FLOODPLAIN/ TERRACES
- ☑ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☑ ACTIVE CHANNEL LIMITS
- ☑ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	note esp. lower red unit	☐ PHOTOGRAPH
GRAIN SIZE		☐ PHOTOGRAPH
COLOR		☐ PHOTOGRAPH
CROSS BEDDING	none visible	☐ PHOTOGRAPH
CARBONATE CONTENT		☐ PHOTOGRAPH
SOIL STRUCTURE	subangular blocky topsoil	☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH



DHW +3000
4-23

Boulder Count

Stn		Texture
1'	-	0.03'
2'	-	0.03'
3	-	0.03'
4	-	VCS
5	-	0.03'
6	-	0.3'
7	-	0.04'
8	-	0.04'
9	-	0.04'
10	-	0.01'
11	-	0.16'
12	-	0.05'
13	-	0.15'
14	-	0.10'
15	-	0.09'
16'	-	0.10'
17'	-	0.23'
18'	-	0.15'
19'	-	0.06'
20'	-	0.04'
21'	-	med. sand.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
CHANNEL CHARACTERISTICS

CHANNEL LOCATION: DAN + 4000

DATE: 4/23

TIME: (BEGIN/END) 10:30/

FIELD CREW: TL - JEF - BRI

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

NOTES: ***INCLUDE SCALE IN ALL PHOTOGRAPHS***
PLOT PHOTO LOCATION AND ASPECT ON TOPO

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
LEFT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	5-37	
LOOKING UPSTREAM ALONG BANK	5-38	
LOOKING DOWNSTREAM ALONG BANK	6-1	
LEFT BANK BLOW COUNT	soft throughout	
RIGHT BANK (SURVEY ROD FOR SCALE)		
LOOKING DIRECTLY AT BANK	6-2 → Note knocked down, respirated mesq	
LOOKING UPSTREAM ALONG BANK	6-3	
LOOKING DOWNSTREAM ALONG BANK	6-4	
RIGHT BANK BLOW COUNT	soft upper, mod. stiff lower 1'	
INTERMEDIATE BANKS		
INTERMEDIATE BANKS		
BED MATERIAL - CLOSE UP	6-5	
BED MATERIAL - ENTIRE CHANNEL	6-6	
NOTABLE FEATURES: (LIST)		

5-36: HWM on LB view D/S past XS
- grasses covering banks & o.b.'s
- channel slightly narrower
- banks generally somewhat shallower sloped
- depth of incision similar to previous complex XS

3. PLOT CROSS SECTION LOCATION

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH ASL '99 3-10 (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 5 (SHEET #)

THIS SECTION IS OFF STATE LAND & IS NOT GRAZED

2. DESCRIPTION OF CROSS SECTION CHARACTERISTICS

☐ BANK VEGETATION mg mostly - GRASS! covers soil some Creosote ☐ PHOTOGRAPH

ROOT MAT good w/ trees; grass blanketed surface

CANOPY (HEIGHT, DENSITY) <15' trees

PERCENT OF BANK COVER - grass 95%; tree & shrub 35%

APPROXIMATE AGE 5-20 years

☐ CHANNEL VEGETATION (TYPE & PERCENT COVER) ☐ PHOTOGRAPH
CHL IS CLEAR - some stalks of grass

☐ ARMORING POTENTIAL
Possible to xn

☐ VISUAL ESTIMATE OF D50 = 3" ☐ PHOTOGRAPH
D90 6" D10 ½"

☐ BANK EROSION SIGNS (PLOT LOCATION ON CROSS SECTION SKETCH, PHOTOGRAPH, EXTENT)
BANKS ARE COVERED BY GRASS, except for that, v. similar to d/s sections

CUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VERTICAL BANKS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
UNDERCUT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
TENSION CRACKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
EXPOSED ROOTS	YES	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION REMOVED FROM BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
VEGETATION TIPPED	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
PILES OF DIRT AT BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
POINT BAR UNDER BRIDGE	—	☐ PHOTOGRAPH	☐ PLOT LOCATION
PIPING	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
RILLING OF BANKS	NO	☐ PHOTOGRAPH	☐ PLOT LOCATION
~~ISLANDS~~ OR ~~BARS~~ (UPSTREAM/DOWNSTREAM)		☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ CHANNEL PATTERN SINGLE CHL - SINUOUS ☐ PHOTOGRAPH

☐ TRIBUTARIES NEARBY? YES - SMALL TRIB D/S ☐ PHOTOGRAPH

☐ BANKFULL CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
0 ; 6 ; BW = 18' TW = 30'

☐ FLOW CHARACTERISTICS (VELOCITY, DEPTH, TOPWIDTH) ☐ PHOTOGRAPH
No Q

☐ HIGH WATERMARKS (PHOTOGRAPH & PLOT ON AERIAL/MAP) ☐ PHOTOGRAPH

~~TYPE~~ AND STAGE (FEET) ↗ mg @ ES - fallen/resprout
FLOTSAM ~~STACKWATER~~ EROSION SCAR TREE SCAR ~~GRUB LINE~~ ~~OTHER~~
4.5' PHOTO ON LB ↳ FAINT TRIM LINE @ 2'

☐ DEPTH TO BEDROCK (FT, UNKNOWN)

BEDROCK EXPOSED? ☐ PHOTOGRAPH
NO

GRADE CONTROL? (TYPE, PHOTO) ☐ PHOTOGRAPH
NO

☐ BEDFORMS (~~DUNES~~/~~RIPPLES~~/ARMOR/PLAIN) ☐ PHOTOGRAPH
?

Bed material getting coarser than d/s w/ riffle-like coarse zones (but w/o slope break)

☐ FENCES (PLOT LOCATION, PHOTO) D/S 300' - b/w + hogwire ☐ PHOTOGRAPH

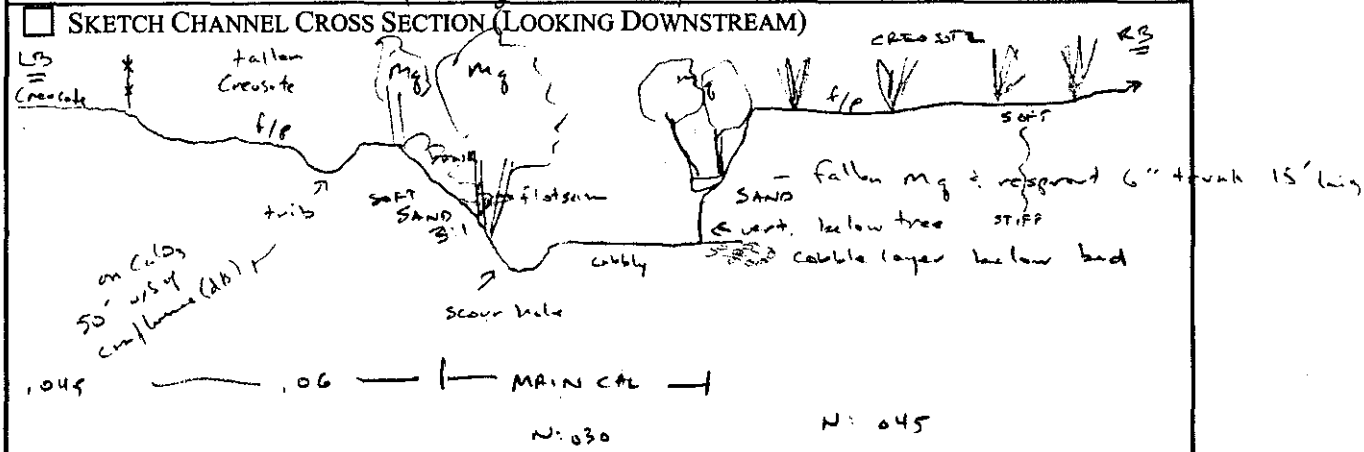
OBSTRUCT FLOW? Yes, but prob fails in large events

☐ LONG-TERM SCOUR EVIDENCE (PLOT LOCATION, EXTENT, PHOTOGRAPH)

HANGING TRIBUTARIES	No - graded & incised	☐ PHOTOGRAPH	☐ PLOT LOCATION
STREAM TERRACES	F/P	☐ PHOTOGRAPH	☐ PLOT LOCATION
OVERSTEEPENED BANKS (SIDE SLOPE)	Yes	☐ PHOTOGRAPH	☐ PLOT LOCATION
BRIDGE DATA (PIER CAPS, ABUTMENTS, ETC)	—	☐ PHOTOGRAPH	
HEADCUTS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
SLOPE BREAKS	No	☐ PHOTOGRAPH	☐ PLOT LOCATION
RECENT INCISION	1.5-2'	☐ PHOTOGRAPH	
GRAVEL MINING (DISTANCE, EXTENT)	- No	☐ PHOTOGRAPH	☐ PLOT LOCATION

☐ HUMAN IMPACTS ON CHANNEL (STRAIGHTENING, BANK PROTECTION, ETC)
→ controlled grazing - buffer veg'n - WHEN STOPPED?

☐ SKETCH CHANNEL CROSS SECTION (LOOKING DOWNSTREAM)



- lacks pool / riffle sequence
- compare veg & bank slope to d/s xn

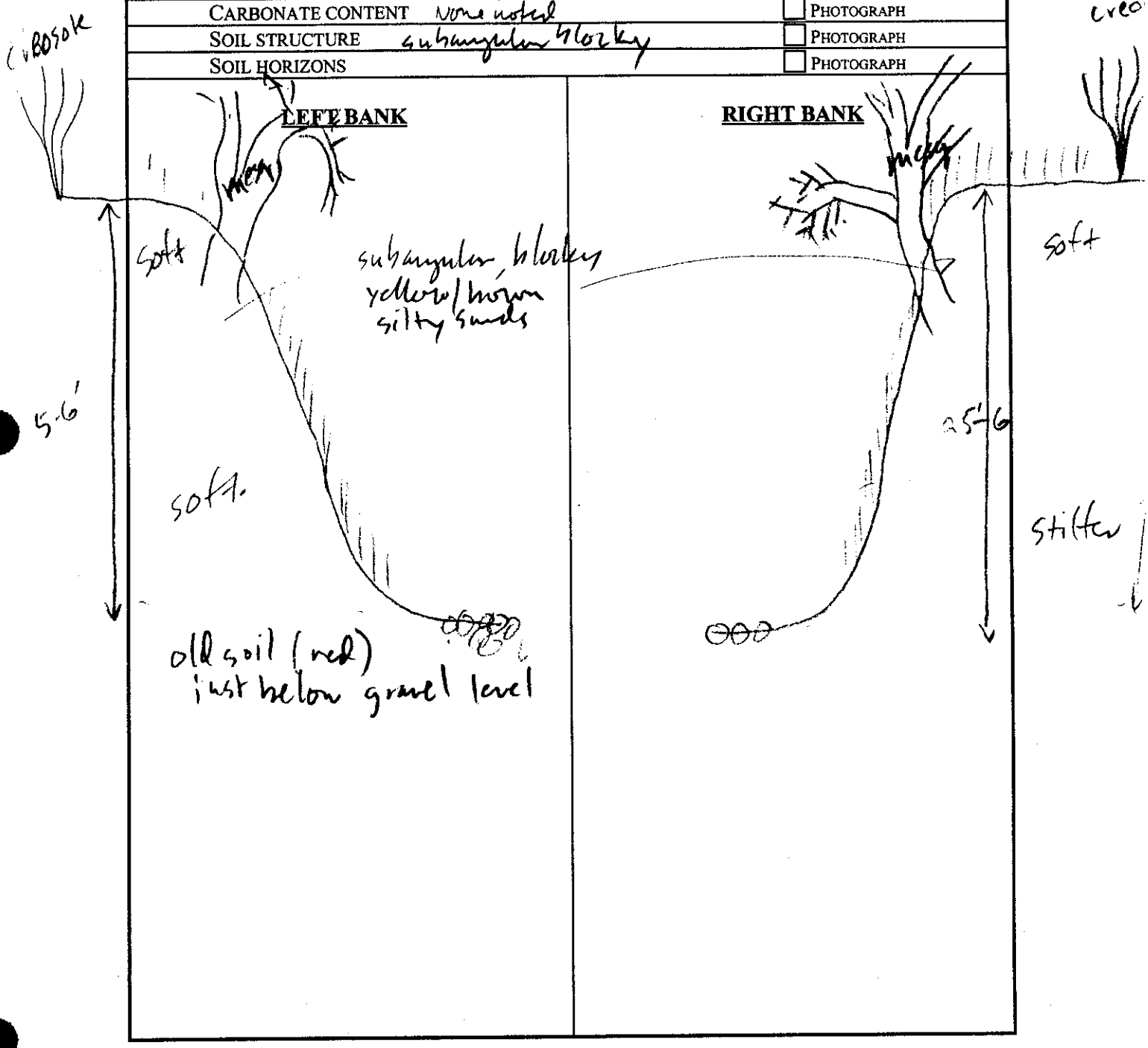
SHOW THE FOLLOWING:

- ☒ VEGETATION
- ☒ MANNING'S N VALUES
- ☒ BARS
- ☒ FLOODPLAIN/ TERRACES
- ☒ MAIN CHANNEL/ OVERFLOW CHANNEL
- ☒ ACTIVE CHANNEL LIMITS
- ☒ ISLANDS

3. BANK PROFILE

☐ DRAW REPRESENTATIVE BANK PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR yellow/brown upper	☐ PHOTOGRAPH
CROSS BEDDING none noted	☐ PHOTOGRAPH
CARBONATE CONTENT None noted	☐ PHOTOGRAPH
SOIL STRUCTURE subangular blocky	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



DHU 14000
4/23/99

Boulder Count

Sta	Texture
1'	silty sand
2'	0.2'
3	0.25'
4	0.18'
5	0.09'
6	0.07'
7	0.11'
8	0.07'
9	0.02'
10	0.16'
11	0.07'
12	0.27'
13	0.02'
14	0.09'
15	0.14'
16	0.20'
17	0.12'
18	0.14'

Apr. 23, 1999
Misc. Photos: Desert Hills

8 5-8: view u/s at headcut ≈ 200' u/s of DHW ϕ
7 6-7: view d/s @ power cable crossing near house on LOB marked on photo
7-8 6-8: view up trib inflowing from left just d/s of DHW 4000
9-9 6-9: view of deep(est) scour hole near 1st big bend at start of stock tank

APACHE

10-1 7-1 look d/s @ RR tie in PV 5.5' above invert on RB between AW+1000 & AW+2000

10-2 7-2 look u/s thru disturbed reach from site of 7-1

10-21 7-21 scour hole on RB u/s of Xn AW+3000 4.5' deep adjacent to perched abandoned chl

11-5 8-5 look u/s @ small trib confluence 200' u/s of AW+4000'

4-22-99

PARADISE WASH

1) TRIBUTARY THAT JOINS MAIN CHL
2500' D/S OF CARSERTER HWY

@ CARSERTER HWY - 3 CELL RCBC
10' x 5.2'

GENERAL IMPRESSIONS

a) Trib is aggrading - (or main stem is degraded) - bank hts are lower, longer reaches of finer material, bed material is dropped over top of banks not vice versa

b) a recent flow has dropped gravel @ culvert outlet (2ft thick)

c) banks are stable - v. few cut banks, no multiple terraces

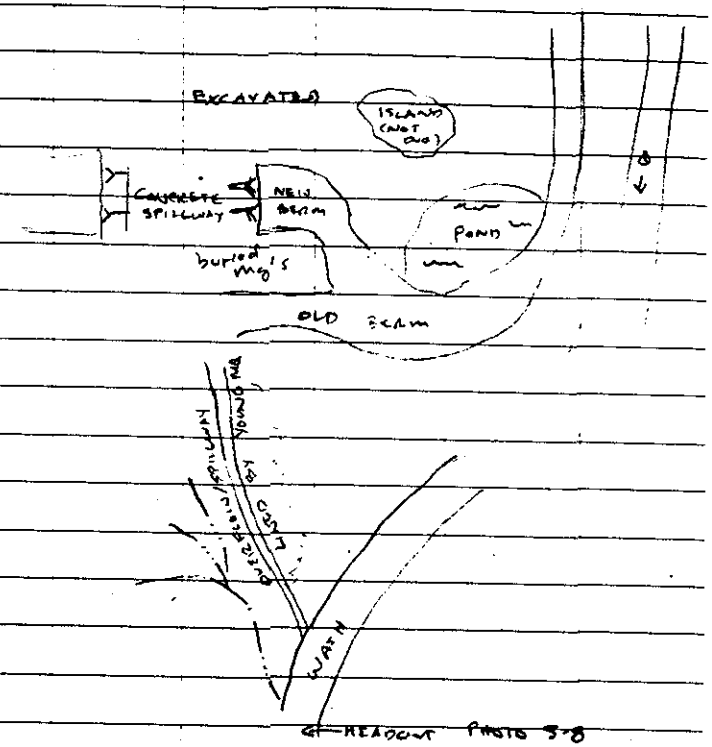
d) @ confluence trib flow has trimmed delta of main stem ∴ ∴ had most recent flow

e) high sed yield from trib?

4-23-99

DESERT HILLS STOCK POND

N.T.S.



- signs of recent Q's (several) which scoured chl
- all Mgs are buried on berm

VERY COMPLICATED HISTORY CHL movement in DHW reach near stock pond.

- Mg basque is thicker here than anywhere else in study area
- Did stock tank capture DHW in part or just tributaries
- Any local ranchers / residents have knowledge of flood history?
- Major scour holes & gravel deposits unlike any other reach observed yet
- Are the scour areas w AW d/s of confluence due to the same flood(s)

TIGER WASH
4-27-99

PALEOFLOOD SITE
↳ ORIGINAL PIT WAS NOT INUNDATED. DIFFERENCE IN PSI IS ~1.2-3.6 FT TO HIGHEST SWD - WHICH MAY BE 0.5' ABOVE TOP OF PIT

MISC. PHOTOS

13 ~~16~~ - 23 . Look d/s @ bend scour

in LB between AW-0K & RW conf.

14 ~~17~~ - 16 . Cow scars on LB between

AW-2K & AW-3K 300 d/s Rd xing

Apr. 23, 1999
Misc. Photos: Desert Hills

5-8 5-8: view u/s at headcut ≈ 200' u/s of DHW ϕ
6-7: view d/s @ power cable crossing near house on LOB marked on photo
9-8 6-8: view up trib inflowing from left just d/s of DHW 4000
9-9 6-9: view of deep(est) scour hole near 1st big bend at start of stock tank

MACHE

10-1 7-1 look d/s @ RR tie in PV 5.5' above invert on RB between AW+1000 & AW+2000

10-2 7-2 look u/s thru disturbed reach from site of 7-1

10-21 7-21 Scour hole on RB u/s of Xn AW+3000 4.5' deep adjacent to perched abandoned chl

11-5 8-5 look u/s @ small trib confluence 200' u/s of AW+4000'

CAVE CK 9-15-98 ROLL 16

FILL IN PITS

P5 - 19 LOB 1

P6 - 19 LOB2

P7 18 LOB 3

P8 18 LOB2

P9 18 LOB1

P10 18 ROB1

P11 18 ROB2

P12 16 ROB3

P13 16 ROB2

P14 16 ROB1

P15 15 ROB1

P16 14 ROB2

P17 14 ROB 3

P18 14 ROB 1

P19 13 ROB1

P20 13 LOAND

P21 12 ROB1

P22 12 ROB2

P23 12 ROB3

P24 11 ROB1

P25 12 LOB1

Σ: 21

20 CHL , ROB

19 CHL

18 CHL

16 CHL

15 CHL

14 CHL

13 CHL

12 CHL

11 CHL

Σ = 31

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: [illegible]	
LOCATION: [illegible]	
DATE: 8/25/99, Tuesday	TIME: (BEGIN/END) [illegible] am/[illegible] am
FIELD CREW: JF, MVB, [illegible], GB	
RECORDS CHECK BY: (NAME, DATE) JF 8/25/99	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#18 Roll 13 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		Hand-picture # 1 roll 15 ✓
	IN SHADE	#2 Roll 15 ✓	
SPOIL PILE MATERIALS		#21 Roll 3 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#19 Roll 3 ✓	
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		16-24	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION <5% saguaro ☐ PHOTOGRAPH
<5% mesquite, 15% creosote, 5% bursage(?), 5% grasses, [illegible] #19 Roll 13 ✓

☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH
55% fines, ~20% sand, 10% gravel, ~5% cobbles #20 Roll 13 ✓

☐ DESERT PAVEMENT bimodal - [illegible] sand ☐ PHOTOGRAPH
poor - [illegible] seems to float at top of surface #20 Roll 13 ✓

☐ DESERT VARNISH ☐ PHOTOGRAPH
poor - occasional basalt cobble has dull black varnish on top

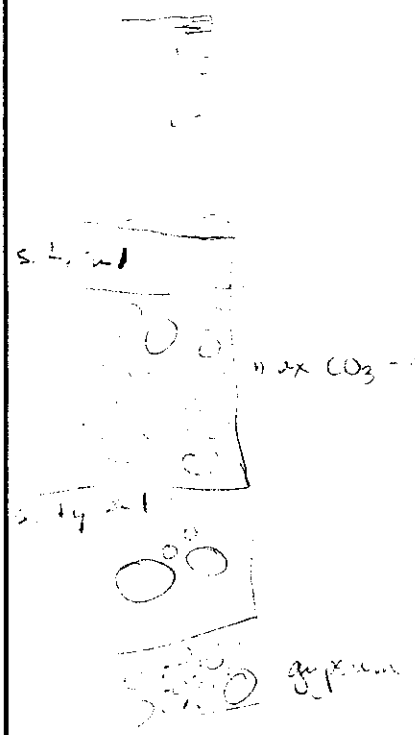
☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
rock lines on surface, away from pit, none in pit

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY see below	☐ PHOTOGRAPH
GRAIN SIZE [illegible] cobbles, sand at base	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING none, bedding of units 5, 6, 7	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible] common	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS [illegible]	☐ PHOTOGRAPH

single soil development



[illegible] deposit at several time periods

PhD notes
>1000 yrs
For typical
soil level
(could be
because of
smokum
farm

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 11R0B1

Site No.: R0B1 Date 8/25/08 Time 2pm Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

hammer resist	Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
soft	1.5		10 YR 4/2 / 10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	- strong eff.
soft	7		10 YR 4/3 / 10 YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	- strong eff. - very few fil.
soft	23.5		10 YR 4/2 / 10 YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	- strong eff. - very few fil. - thin cont. rinds
soft	29		10 YR 4/4 / 10 YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	- strong eff. - very thin cont. rinds - very few fil.
soft	54		10 YR 4/3 / 10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	- strong eff. - some fil. - occasional very thin disc. rinds.
Mod. hard	66.5		10 YR 4/3 / 10 YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	- violent eff. - very thin cont. coatings common. - some fil.
soft	72		10 YR 4/3 / 10 YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	- strong eff. - some gypsum rinds - few fil.
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

Roll 15
3 - closed pit

Soil Pit - @ 11-CHL

8/25/98 8Am

JF - no photos

Description of site

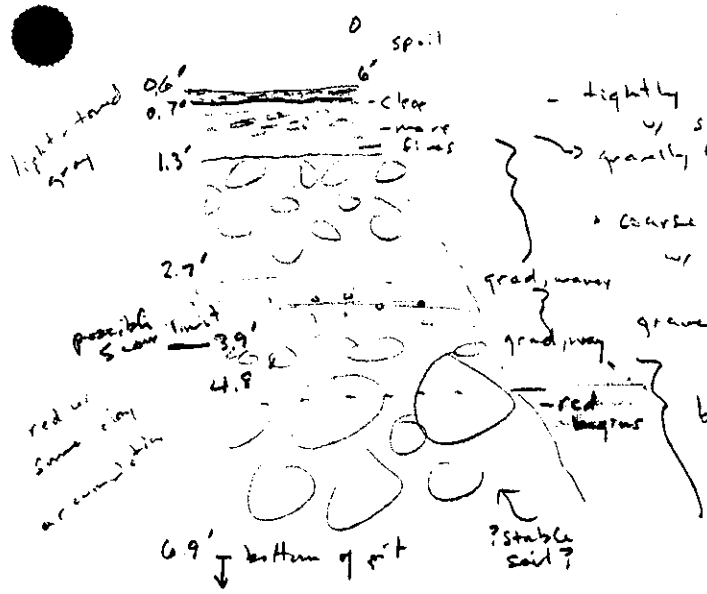
Veg: tamarix & brush in chl - brush med. dense 50% cover (3') on lowest boulder bars
↳ 10% cover

Surface soil - gravel; silty sand dropped over chl from recent Q
large bldrs v/s & d/s in riffles

Armor - slight thin layer @ surface - armor to v small Q
not for big Q
coarse material in profile, but no not. tamped into

Artifacts - No

Profile



- tightly packed crusty layer (from fines) w/ sands & silt
↳ gravelly layer; flat alignment of clasts
+ coarse layer; v. loose w/ cobbles & sm bldrs
gravel lens; clean & aligned-layered
boulders w/ to D=3' in matrix that includes some clays
reddening + clay films
small platey structures
soft

rest of profile is loose & gravelly (doesn't hold v. slope)

No particular wetting front
No obvious scour limit

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:
12 LOB 1

LOCATION:
Site 12 - along power line; highest surface

DATE: [illegible]

TIME: (BEGIN/END) [illegible]

could sample for cosmo dates

FIELD CREW:
[illegible]

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#22 Roll 13 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#18 Roll 4 ✓	
SPOIL PILE MATERIALS		#15 Roll 4 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#[illegible] ✓	
NOTABLE FEATURES:	(LIST)		
	[illegible]	#19 ✓	
	[illegible]	#20 - stage II ✓	
PIT LOCATION AFTER BACKFILL		16-25	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION ☐ PHOTOGRAPH
Creosote (4.5') moderately dense - some barrel & saguaro #16 Roll 14 ✓

☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH #17 Roll 14 ✓
silty fine sand, somewhat reddened, boulders/cobbles - red varnish light/thin black varnish
not heavily varnished

☐ DESERT PAVEMENT locally - not well developed ☐ PHOTOGRAPH
surface gen. disturbed #17 Roll 4 ✓

☐ DESERT VARNISH ☐ PHOTOGRAPH
light

☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
No

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY see below		☐ PHOTOGRAPH
GRAIN SIZE [illegible]		☐ PHOTOGRAPH
COLOR [illegible]		☐ PHOTOGRAPH
CROSS BEDDING none		☐ PHOTOGRAPH
CARBONATE CONTENT high - stage II max		☐ PHOTOGRAPH
SOIL STRUCTURE well developed - angular blocky	near top	☐ PHOTOGRAPH
SOIL HORIZONS see sg		☐ PHOTOGRAPH

have deeper CO_3 here - at site 12 than elsewhere, maybe

several hundred to thousands in gram size

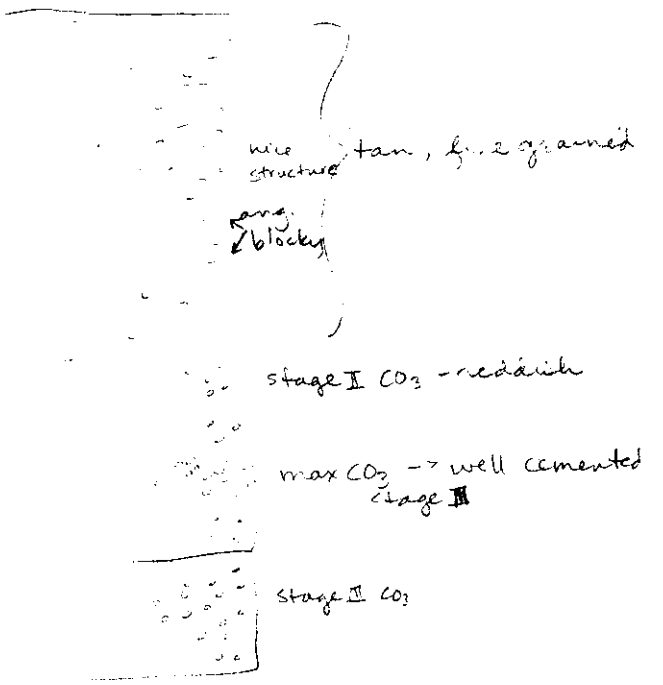


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 12 LOB1

Site No. 12LOB1 Date 5/25/86 Time 10:40am Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

hammer test	Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
loose	2.5		7.5 YR 4/2 10 YR 6/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS. SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	no eff.
soft	9.0		7.5 YR 5/4 7.5 YR 5/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr few to common	a s c w g i d b	-slight eff. -occasional very thin disc. rinds -few fil.
Mod. hard	29.0		7.5 YR 4/3 7.5 YR 6/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr abundant	a s c w g i d b	-Strong eff. -some fil. -very thin disc. rinds
Mod. hard	44.5		7.5 YR 5/4 7.5 YR 5/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	-Strong eff -some fil. to many -very thin disc. rinds -some gypsum
hard	47.5		7.5 YR 5/4 7.5 YR 6/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L M C CL & SC		v1 f pf 1 po 2 d br 3 co p cobr few	a s c w g i d b	-violent eff -abundant fil. -thin carb. rinds -stage 2
very hard	57		7.5 YR 6/3 7.5 YR 7/2	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr very few	a s c w g i d b	-violent eff. -strongly cemented -stage 3
hard	71		7.5 YR 6/4 7.5 YR 7/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL M SI SCL & SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr few	a s c w g i d b	-Strong eff -mod. cemented -stage 3
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp lo / vfr fr fi vfi efi lo so sh h vh eh	S SiCL LS SIL SL SI SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:
12 - CHL 1

LOCATION:
Site 12

DATE:
8-24-98 Monday

TIME: (BEGIN/END)
excavate 12:31pm

FIELD CREW:
JF, MvB, HS, GB

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#11 Roll 13 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#13 Roll 13 ✓	
SPOIL PILE MATERIALS		#16 " ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#15 Roll 13 ✓	
NOTABLE FEATURES:	(LIST)		
CO3 zone - #14 ✓			
PIT LOCATION AFTER BACKFILL		#17 - Roll 13 ✓	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION ☐ PHOTOGRAPH
tamarack 5-10% cover

☐ SURFACE SOIL MATERIAL - top layer (see log) has ~20% Fines (> ~~fine~~ sand) ☐ PHOTOGRAPH
slight v. mor -- large boulders riffles up+ downstream

☐ DESERT PAVEMENT ☐ PHOTOGRAPH
~~none~~ N/A

☐ DESERT VARNISH ☐ PHOTOGRAPH
N/A

☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
none

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

clay-films in sandy gravel – material just has more fines than rest of column

no soil development

← buried of soil

reddish. some clay movement

cemented stage 3 – v. little rinds – dissolved gypsum rinds (prob post-burial of soil)

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location 12 CH2 1

Site No. ____ Date 8-24-94 Time 1:11 pm Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Notes: carbonate eff; nodules; cement.
3.5		11 YR 7/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	no carbonate v. slight eff
37.5		7.5 YR 4/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr none	a s c w g i d b	occasional filaments moder. eff.
48		5 YR 4/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	very thin disc. rinds occasional strong eff.
73		7.5 YR 6/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr few	a s c w g i d b	gypsum common (probably post carbonate) patchy well-cemented thin disc. rinds v strong eff.
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:
12 ROP 1

LOCATION:
Site 12

DATE:
8/24/98. excavated

TIME: (BEGIN/END)

FIELD CREW:
JF MVB, HS, GB

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

possibly sample for bulk carbon but she gives us some age con

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#1 Roll 14 ✓	
SPOIL PILE MATERIALS		#23 Roll 13 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#24 Roll 13 ✓	
NOTABLE FEATURES:	(LIST)		
	mud pit	#2 Roll 14 ✓	
PIT LOCATION AFTER BACKFILL		16-21	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH Sheet 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION — ☐ PHOTOGRAPH
15% creosote, 15% bursage, 20% grasses, <5% cholla — #24, Roll 13 ✓

☐ SURFACE SOIL MATERIAL — ☐ PHOTOGRAPH
85% fines, 5% sand, 10% gravel occasional boulder — #25, Roll 13 ✓

☐ DESERT PAVEMENT — ☐ PHOTOGRAPH
none — #25, Roll 13 (none) ✓

☐ DESERT VARNISH — ☐ PHOTOGRAPH
none — N/A

☐ ARCHAEOLOGICAL ARTIFACTS — ☐ PHOTOGRAPH
~~none in pit~~ sherd found in pit — N/A

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY see below	☐ PHOTOGRAPH
GRAIN SIZE F-S except coarse at base	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING none, some thin bedding at base	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible] stage I	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible] at top [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS See [illegible]	☐ PHOTOGRAPH

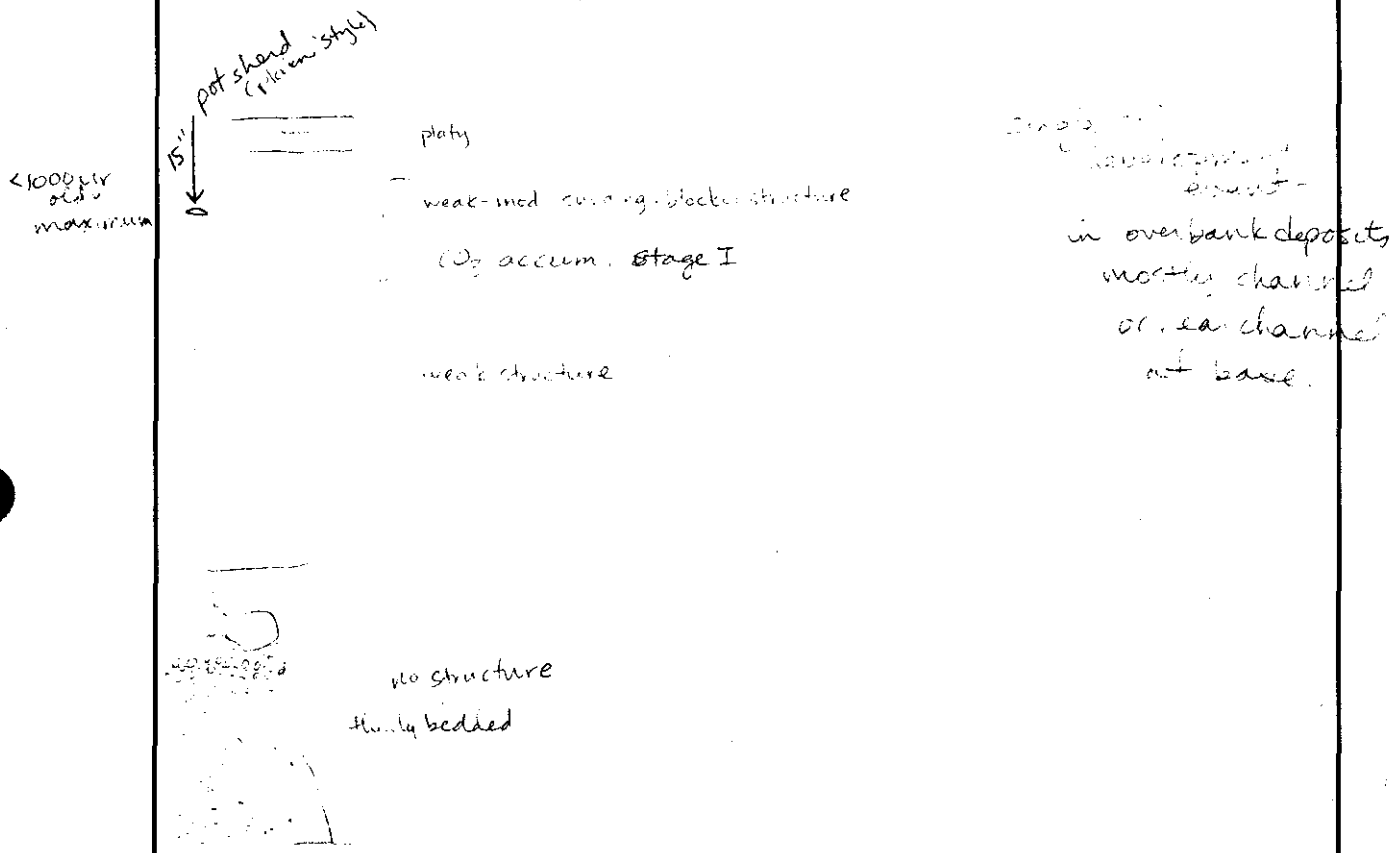


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 12 RDBI Cave Creek

Site No. 12 RDBI Date 7-2-98 Time 7:30 am Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
2		7.5 YR 4/2 / 10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	~~no carbonate~~ very slightly eff
14		7.5 YR 4/2 / 10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	Strongly eff. very few fil occasional very thin disc. rinds
43		7.5 YR 4/2 / 10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	Strongly eff. very few fil occasional very thin disc. rinds
69		7.5 YR 4/2 / 10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	strongly eff. very few fil occasional very thin disc. rinds.
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:
12 ROB2

LOCATION:
Site 12

DATE: [illegible] | TIME: (BEGIN/END)

FIELD CREW:
[illegible]

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#6 - whole profile ✓	
	IN SHADE		
SPOIL PILE MATERIALS		#3 Roll 14 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#4 " ✓	
NOTABLE FEATURES:	(LIST)		
$CaCO_3$ reddening @ depth - unit #5 ✓ #7 - unit #4 - younger development than below ✓ #8 - bottom of pit unit 6&7			
PIT LOCATION AFTER BACKFILL		16-22	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH Sheet 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION 15% grasses, 30% burrsage, 45% cholla, 10% creosote, 4% mesquite, 5% paloverde — ☐ PHOTOGRAPH #4 Roll 14

☐ SURFACE SOIL MATERIAL 85% fines, 10% sand, 5% gravel, occasional cobble — ☐ PHOTOGRAPH #5 Roll 14 ✓

☐ DESERT PAVEMENT none — ☐ PHOTOGRAPH #5

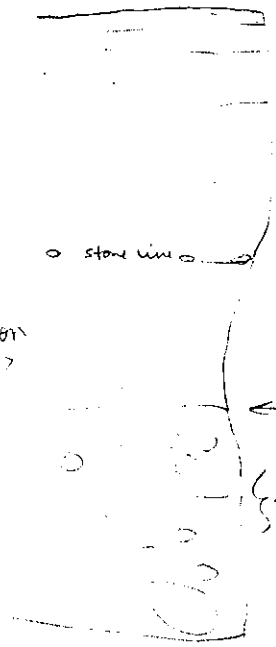
☐ DESERT VARNISH none observed, but few cobbles are present — ☐ PHOTOGRAPH N/A

☐ ARCHAEOLOGICAL ARTIFACTS — ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	see below	☐ PHOTOGRAPH
GRAIN SIZE	[illegible] except coarse at base	☐ PHOTOGRAPH
COLOR	tan w/ red at base	☐ PHOTOGRAPH
CROSS BEDDING	none	☐ PHOTOGRAPH
CARBONATE CONTENT	low in recent soil - stage I, stage II in buried soil	☐ PHOTOGRAPH
SOIL STRUCTURE	low in recent soil, moderate to well in lowest soil	☐ PHOTOGRAPH
SOIL HORIZONS	see log.	☐ PHOTOGRAPH



mid-late Holocene soil

erosion w/ CO_3 stage I

fine unit [illegible] sand - 2 overbank sequences

stone line

possible second soil buried

little more clay than above
stage I CO_3 (more than above)

Pink color → poss. ground soil w/ [illegible] A horizon w/ old?

erosion surface w/ burial of previous soil

some clay
reddish
stage II CO_3

possibly latest Pleist.

high clay content

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 12 ROB2 Cave Creek

Site No. 12ROB2 Date 8/5/98 Time 8:15am Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by HS + MVB

Hammer test	Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
soft	1.5		10 YR 4/3	10 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; common	a s; c w; g i; d b	No $CaCO_3$; no efferv
soft	4		10 YR 4/3	10 YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SIC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	No $CaCO_3$; no efferv
soft	13		10 YR 4/3	10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SIC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	No $CaCO_3$; v. slight effer
soft	28.5		10 YR 4/3	10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	few filaments; occassional v. thin discontinuous rinds; slight effer
soft	40		7.5 YR 4/3	10 YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; few to common	a s; c w; g i; d b	v. thin discontinuous rinds; few filaments; strong effer
soft to Mod. hard	51		10 YR 4/3	10 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SIC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; common to abund	a s; c w; g i; d b	thin cont. coatings + gypsum; common filaments; strong effer
Mod hard	65		7.5 YR 4/4	7.5 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 d cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL SI; SCL SIC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; abundant	a s; c w; g i; d b	v. thin disc. cont. rinds; some filaments; strong effer
					m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL SI; SCL SIC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
					m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SIC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
					m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SIC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 12-R05

LOCATION:

DATE: [illegible] Tucson [illegible] 4/95

TIME: (BEGIN/END)

FIELD CREW: JF, W, B, HS, EB

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE	Roll #14	STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#12 - profile ✓	
	IN SHADE		
SPOIL PILE MATERIALS		#9 Roll 4 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#10 " ✓	
NOTABLE FEATURES:	(LIST)		
#13 - Unit 3 w/ [illegible] joints ✓			
#14 - Unit 5 (CaCO3) ✓			
PIT LOCATION AFTER BACKFILL		16-23	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH sheet 4 (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

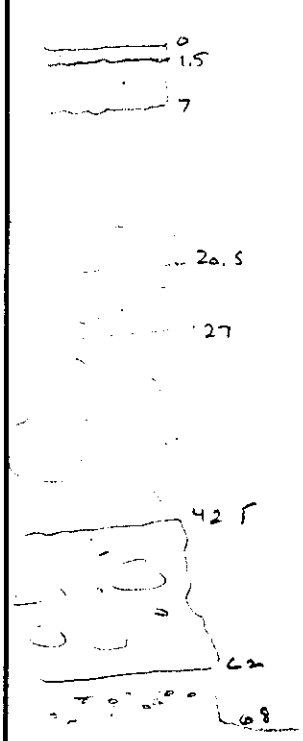
2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION 5-10% cholla, <5% crucifixion thorn, [illegible] sage, <5% creosote, 5% [illegible] squite, [illegible] paloverde <5% [illegible] prickly pear 15% grasses — ☐ PHOTOGRAPH #10 Roll 4
- ☐ SURFACE SOIL MATERIAL 70% fines, 5% sand, 15% gravel, 10% cobbles - boulders — ☐ PHOTOGRAPH #11 Roll 14 ✓
- ☐ DESERT PAVEMENT poor - mod — ☐ PHOTOGRAPH #11 Roll 14
- ☐ DESERT VARNISH black tops - some shiny patina, red bottoms — ☐ PHOTOGRAPH #11 Roll 14
- ☐ ARCHAEOLOGICAL ARTIFACTS [illegible] pit — ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	good stratum thickness	☐ PHOTOGRAPH
GRAIN SIZE	fine to top	☐ PHOTOGRAPH
COLOR	- reddening strong in 3 to light	☐ PHOTOGRAPH
CROSS BEDDING	- None	☐ PHOTOGRAPH
CARBONATE CONTENT	- flecks in Units 4 & 5, no cementation	☐ PHOTOGRAPH
SOIL STRUCTURE	columnar in unit 3	☐ PHOTOGRAPH
SOIL HORIZONS	B - clay illuviation	☐ PHOTOGRAPH



columnar, well developed
red

carbonate accumulation
many flecks: filament
reddest layer
bouldery
some gypsum rinds

some gypsum bouldery

(very hard) cemented, not a lot of visible carbonate, gravel

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 2-ROB 3

Site No. [illegible] Date [illegible] Time 9:30am Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by HS & MVB

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Notes: Carbonate eff; rinds; cement.
1.5		7.5YR 4/2	10YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; few to common p cobr	a s; c w; g i; d b	No filament or rinds No eff
7		7.5YR 4/4	7.5YR 4/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	No filaments or rinds No eff
20.5		7.5YR 4/4	7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr abundant	a s; c w; g i; d b	v. thin discont. rinds Few filaments; flecks Slight eff - local lens of low $CaCO_3$ flecks
27		7.5YR 4/4	7.5YR 4/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr common	a s; c w; g i; d b	thin discontinuous rinds common filaments Strong eff
42.5		5YR 5/6	5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co medium; p cobr abundant	a s; c w; g i; d b	thin discontinuous rinds gypsum rinds Strong eff
62		7.5YR 4/4	7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr common	a s; c w; g i; d b	occ. v thin discont rinds some gypsum Slight eff
68	bottom pit	7.5YR 4/4	7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	some filaments no rinds No eff cemented?
		.....		m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....		m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....		m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		vl f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 13 island

LOCATION: [illegible]

DATE: [illegible] 1/6 day

TIME: (BEGIN/END) [illegible]

FIELD CREW: [illegible]

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#3 roll 13 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#25 Roll 14 ✓	
	IN SHADE		
SPOIL PILE MATERIALS		#7 roll 3 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#8 " ✓	
NOTABLE FEATURES:	(LIST)		
Roll 14 #23 - top ½ profile - noted boundary ✓			
#24 - bedded in thick unit		(#2) ✓	
PIT LOCATION AFTER BACKFILL		16-20	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION <5" low grassy/bushy w/flowers, <5/5 gravel 0 — ☐ PHOTOGRAPH
5' Palo verde, 5' mesquite, <5' creosote, 5/ cholla, 5/ desert broom. #8 Roll 3 ✓

☐ SURFACE SOIL MATERIAL — ☐ PHOTOGRAPH
80% fines, 10% sand + gravel, 10% cobbles + boulders #9 Roll 13 ✓ missing

☐ DESERT PAVEMENT — ☐ PHOTOGRAPH
none

☐ DESERT VARNISH — ☐ PHOTOGRAPH
none

☐ ARCHAEOLOGICAL ARTIFACTS — ☐ PHOTOGRAPH
none

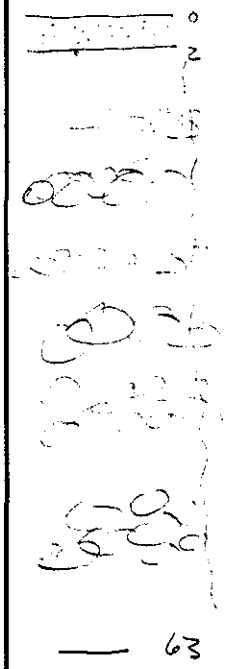
3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	layered ; channel layers - fo	☐ PHOTOGRAPH
GRAIN SIZE	coarse (med sand gravel - cobble	☐ PHOTOGRAPH
COLOR	gray clean river deposit	☐ PHOTOGRAPH
CROSS BEDDING	No	☐ PHOTOGRAPH
CARBONATE CONTENT	minimal	☐ PHOTOGRAPH
SOIL STRUCTURE	minimal ; slight CaCO3	☐ PHOTOGRAPH
SOIL HORIZONS	No no clay	☐ PHOTOGRAPH

surface flooded by recent 1993?

loose



gray sand loose

soft

thinly bedded coarse & fine layers
cobbles < 1 ft diam
& gravel - v clean

- banks stand near vertical, but loose

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location 13 - ISLAND

Site No. 13 Date 8/25 Time 1:30 Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by HS, MVB

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes pff; rinds; cement.
2		10 YR 4/2	10 YR 6/2	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr None	a s c w g i d b	silt laminations slightly eff.
63 bottom of p.t		7.5 YR 5/1	7.5 YR 7/2	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr None	a s c w g i d b	thinly bedded - c & fine alternations slightly effervescent
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
				m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo lo vfr so fr sh fi h vfi vh efi eh	S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: [illegible]

LOCATION: [illegible]

DATE: 7-24-98 Monday

TIME: (BEGIN/END)

FIELD CREW: Jo Fuller Mike Vandenberg [illegible] Greg Pierson

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE Roll 3		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#23-Roll 2 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		✓
	IN SHADE	#21-Roll 14 ✓	Bottom of pit #22 roll 14
SPOIL PILE MATERIALS		#1-Roll 13 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#25 Roll 12 ✓	
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		16-19	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION probably cleared for farming — PHOTOGRAPH #25 - Ro 3 ✓
10% Creosote, 5% grasses,

☐ SURFACE SOIL MATERIAL - probably old farmland of Native peoples — PHOTOGRAPH #24 - Roll 2 ✓
85% Fines, 5% sand, 10% gravel

☐ DESERT PAVEMENT — PHOTOGRAPH #24 - Roll 2 ✓
none

☐ DESERT VARNISH — PHOTOGRAPH
none

☐ ARCHAEOLOGICAL ARTIFACTS — PHOTOGRAPH
sherds w/in 2-3m of pit, rock lines within 15m of pit.

Note: when filling in pit - doesn't scrape to surface - just push in most dirt + disturb surface the least. So as not to disturb archaeological artifacts

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR tan	☐ PHOTOGRAPH
CROSS BEDDING low - Stage II-9 , one	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE low	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

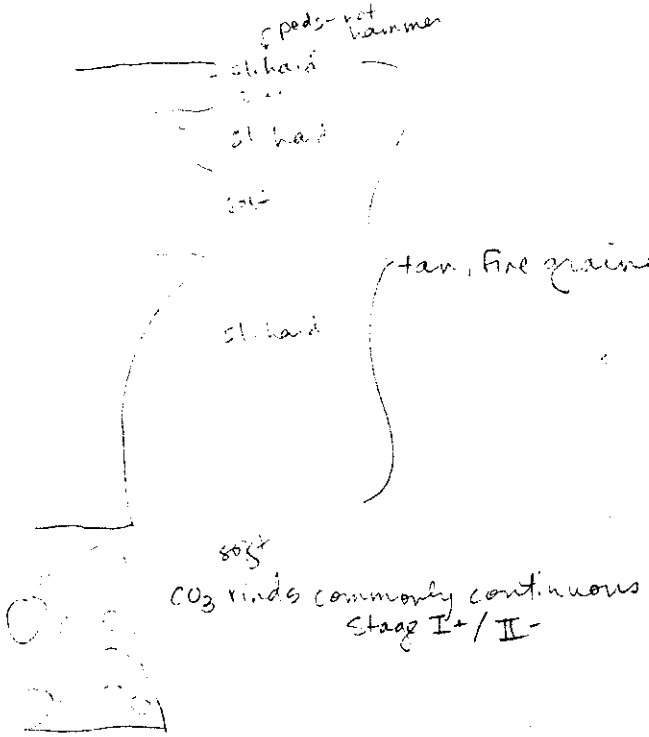


Table A-2.—Work sheet for recording soil properties in the field
[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____
Pavement, varnish development: _____

Soil Description: **Location** 13 ROB 1
Site No. ____ **Date** 4-25-98 **Time** 12:00 pm **Vegetation** _____
Elevation _____ **Slope** _____ **Aspect** _____ **Geomorphic Surface** _____
Parent Material(s) _____ **Described by** _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
1.5		10 YR 4/2 / 10 YR 6/4	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / very few	a s / c w / g i / d b	slightly eff.
5		10 YR 4/2 / 10 YR 6/3	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / very few	a s / c w / g i / d b	slightly eff. very few fil
9		10 YR 4/2 / 10 YR 6/3	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / few	a s / c w / g i / d b	slightly eff. very few fil.
24.5		10 YR 4/3 / 10 YR 5/3	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / few	a s / c w / g i / d b	slightly eff. very few fil.
51		10 YR 4/3 / 10 YR 5/3	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / none	a s / c w / g i / d b	slightly eff. some fil.
81		10 YR 4/3 / 10 YR 7/2	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / very few	a s / c w / g i / d b	slightly eff. thin cont. rinds thickened on bottoms
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:
12 (ch 1)

LOCATION:
S-C #13 - At side of ch in P-3K

DATE: 8-4-98 Monday

TIME: (BEGIN/END) 10:27 am

FIELD CREW:
JF, MvdB, HS, GB

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#2 Roll 13 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#4 Roll 13 ✓	
SPOIL PILE MATERIALS		#6 " ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#6 " ✓	
NOTABLE FEATURES:	(LIST) close up, mid pt	#5 ✓	
in betw. headcuts - hole on L side of Right @ top of 2nd headcut			
PIT LOCATION AFTER BACKFILL		#10 ✓	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION (CHL) - Tamarix ☐ PHOTOGRAPH

☐ SURFACE SOIL MATERIAL - possible armoring ☐ PHOTOGRAPH
- boulders & cobbles - gravels v/s

☐ DESERT PAVEMENT N/A ☐ PHOTOGRAPH

☐ DESERT VARNISH N/A ☐ PHOTOGRAPH

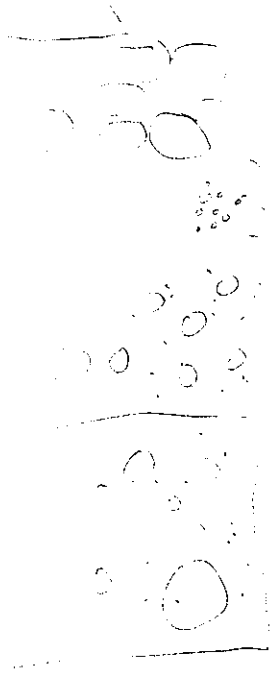
☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY [illegible]	☐ PHOTOGRAPH
GRAIN SIZE [illegible]	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT v. little [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS See log	☐ PHOTOGRAPH



soil separation } recent
} has more soil development

[illegible] movement
} slight reddening

some clay movement
(most)
distinct peds

Table A-2.—Work sheet for recording soil properties in the field
[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____
Pavement, varnish development: _____

Soil Description: Location 13 CHL #1
Site No. ____ Date 8-24-98 Time 10:30 am Vegetation _____
Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____
Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
21.5		10 YR 4/3 10 YR 6/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr none	a s c w g i d b	no eff no rinds
29		10 YR 4/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co few p cobr	a s c w g i d b	no eff occasional very thin disc.
45.5		7.5 YR 4/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co few p cobr	a s c w g i d b	very slight eff occasional very thin disc.
70		7.5 YR 4/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co few p cobr	a s c w g i d b	slight eff some gypsum occasional large/med f.
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / ss ps / s p / vs vp lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pl 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 17 - CHL

LOCATION: SAME SPOT AS P-6K

DATE: 8/24/98

TIME: (BEGIN/END) 8.15

FIELD CREW: JE, HS, MVB, GREG BROWN / LSD

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE Roll 12		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#19 ✓	
	IN SHADE	#20 ✓	
SPOIL PILE MATERIALS			
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES:	(LIST) close up of CO_3 (unit 4)	#21 ✓	
PIT LOCATION AFTER BACKFILL		#22 ✓	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION see notes on P-6K ☐ PHOTOGRAPH

☐ SURFACE SOIL MATERIAL gravels w/ some cobbles & boulders ☐ PHOTOGRAPH

☐ DESERT PAVEMENT moderate armor on L side ☐ PHOTOGRAPH

☐ DESERT VARNISH N/A ☐ PHOTOGRAPH

☐ ARCHAEOLOGICAL ARTIFACTS NO ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY [illegible]	☐ PHOTOGRAPH
GRAIN SIZE [illegible]	☐ PHOTOGRAPH
COLOR [illegible]	☐ PHOTOGRAPH
CROSS BEDDING [illegible]	☐ PHOTOGRAPH
CARBONATE CONTENT [illegible]	☐ PHOTOGRAPH
SOIL STRUCTURE [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS [illegible]	☐ PHOTOGRAPH

1 [illegible] sand

2 [illegible] coarse sand

3 cobbly sand ← likely time of scour over earlier soil

4 stage 3- CO_3 some reddening

5 coarse sand ← probable second scour over earlier soil

6 stage 2/3 CO_3

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location 14 CHL

Site No. ____ Date 6-24-96 Time 7:00 am Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Notes (Carbonate eff; rinds; cement)
7.6		7.5YR 5/6 7.5YR 7/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr none	a s c w g i d b	no carbonate slight eff. no rind / fil
5.45		7.5YR 4/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr none	a s c w g i d b	slight eff. no rinds / fil
4.0		7.5YR 3/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr none	a s c w g i d b	slight eff. no rinds/fil.
3.4		7.5YR 5/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	Violent eff. patchy cementation stage 3 – very thin disc. rinds Matrix alm. entirely carbon.
2.25		7.5YR 5/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr none	a s c w g i d b	no eff. very thin disc. rinds some filaments
0.9		7.5YR 7/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	Violent eff. very thin disc. rinds Matrix almost entirely carbonate
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po / lo ss ps / vfr s p / fr vs vp / fi vfi efi	lo / lo so sh h vh eh		S SiCL LS SiL SL Si SCL SiC L C CL SC	v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: [illegible]	
LOCATION: Site [illegible]	
DATE: 8-24-98 [illegible]	TIME: (BEGIN/END) [illegible] 7:45am
FIELD CREW: Gregg [illegible] Heidi Stenner	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#6 R.12 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#11 Roll 15 ✓	
SPOIL PILE MATERIALS			
GENERAL VIEW OF GEOMORPHIC SURFACE		#7 R.12 ✓	
NOTABLE FEATURES:	(LIST)		
	units 4+5	#12 R.15 – missing	
	historic burned trash-can (unit 3)	#13 R.15 ✓	
	can	#14 R.15 ✓	
PIT LOCATION AFTER BACKFILL		16-18	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH Sheet 4 (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION 5% grasses — ☐ PHOTOGRAPH
  Palo verde, 15/desert broom, 5/[illegible], 10/acacia/mesquite #7 R 12 ✓
- ☐ SURFACE SOIL MATERIAL — ☐ PHOTOGRAPH
  70% fines, 20% sand, 10% gravel #8 R 12 ✓
- ☐ DESERT PAVEMENT — ☐ PHOTOGRAPH
  none – Faint rinse case in gravel at surface (log?) #8 R 12 ✓
- ☐ DESERT VARNISH — ☐ PHOTOGRAPH
  none #8 R 12 ✓
- ☒ ARCHAEOLOGICAL ARTIFACTS — ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

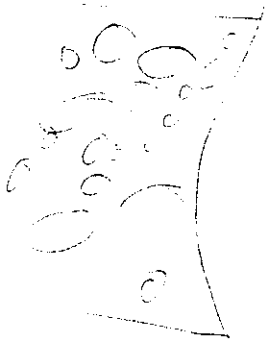
NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY see below	☐ PHOTOGRAPH
GRAIN SIZE fine to sandy to coarse at base	☐ PHOTOGRAPH
COLOR tan	☐ PHOTOGRAPH
CROSS BEDDING channel sands — in unit 3	☐ PHOTOGRAPH
CARBONATE CONTENT low - [illegible] stage I	☐ PHOTOGRAPH
SOIL STRUCTURE low	☐ PHOTOGRAPH
SOIL HORIZONS [illegible]	☐ PHOTOGRAPH

one soil development

coarsening lists [illegible] can

curved metric can -> crimped edges on it



max CO_3 nods stage I (earlyish)

channel

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Sediment, varnish development: _____

Soil Description: Location 14 R o B - 1

Site No. 1 **Date** 8/26 **Time** 9 Am **Vegetation** _____

Elevation _____ **Slope** _____ **Aspect** _____ **Geomorphic Surface** _____

Parent Material(s) _____ **Described by** VF, MvB

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
inches 1.5		10YR 5/2 moist ..... 10YR 5/2 dry	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	slight eff
11		10YR 4/3 ..... 10YR 3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	slight eff
29.5		10YR 4/2 ..... 10YR 5/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	slight eff; occ v thin discon. rinds (> cal to gravels only)
35		10YR 4/3 ..... 10YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	slight -> strong eff; some filaments
10		10YR 3/2 ..... 10YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	strong eff (max of profile); occ v. thin discon. rinds; few filaments
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 14 - 20B2

LOCATION: Site #14

DATE: 5-24-98 Monday

TIME: (BEGIN/END) [illegible]

FIELD CREW: [illegible] Mike Vandenberg [illegible]

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE	Roll 15	STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#6 - whole profile	
	IN SHADE		missing
SPOIL PILE MATERIALS		#8	
GENERAL VIEW OF GEOMORPHIC SURFACE		#9, #10 - close up varnished blders	
NOTABLE FEATURES: Roll #15 #7 - Units 4 & 5 (bottom) #10 -	(LIST)	Shots 5	
PIT LOCATION AFTER BACKFILL		16-16	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH SHEET 4 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION ☐ PHOTOGRAPH
mostly creosote & brittle brush. some PV, Saguaro, Cane Cholla, barrel

☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH
silty sand matrix slight dissection 2ndary drainage @ terrace margin

☐ DESERT PAVEMENT ☐ PHOTOGRAPH
slight (20% cover)

☐ DESERT VARNISH ☐ PHOTOGRAPH
mostly no, some slight on few large blders

☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
one sherd <3m from pit, none in pit

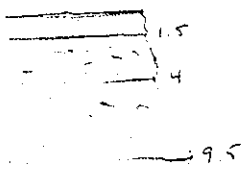
Pagination of area possible take a look in Panel

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

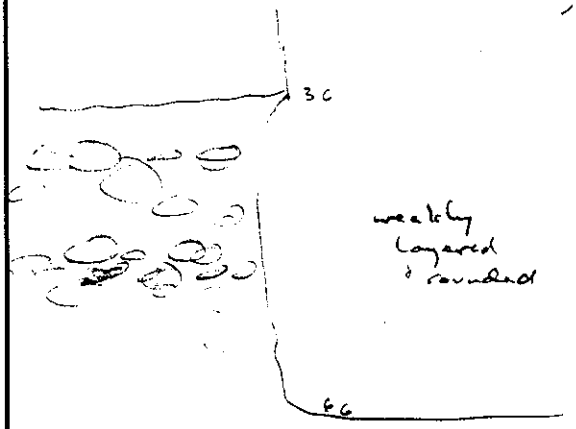
STRATIGRAPHY	massive silt sand @ top	☐ PHOTOGRAPH
GRAIN SIZE	f sand [illegible]	☐ PHOTOGRAPH
COLOR	yellow, not much reddening	☐ PHOTOGRAPH
CROSS BEDDING	No	☐ PHOTOGRAPH
CARBONATE CONTENT	Min, slight in unit 4	☐ PHOTOGRAPH
SOIL STRUCTURE	slight, not strongly [illegible]	☐ PHOTOGRAPH
SOIL HORIZONS	No, weak C, no B	☐ PHOTOGRAPH



silty sand, capped w/ thin pebble layer
massive appearance
roots thru-out

→ pocket of c gravel

$CaCO_3$ - slight accumulation (max in profile)



weakly layered & rounded

boulders & cobbles - loose
weakly cemented
gypsum

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 14 Road 2

Site No. ____ Date 8/26 Time 8:30 Vegetation –

Elevation ____ Slope ____ Aspect ____ Geomorphic Surface ____

Parent Material(s) ____ Described by LS + MVB

Holocene – maybe slightly older than surrounding surface pit

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
1.5		10YR 4/2	10YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; v. few	a s; c w; g i; d b	No filaments or rinds; v slight efferv.
4		10YR 3/2	7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	No filaments; thin occ. discont. rinds; v slight efferv.
9.5		10YR 4/3	10YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	No filaments; thin occasional cont. rinds; slight efferv.
36		10YR 4/2	10YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L med C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	v. thin discont. rinds; strong efferv.
66		10YR 3/2	10YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L med C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	v. thin discont. occa. rin; v. few filaments; gypsum rinds; strong efferv.
Bottom of Pit				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:	
LOCATION:	
DATE:	TIME: (BEGIN/END)
FIELD CREW:	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#4 Roll 15	#5 Roll 5
SPOIL PILE MATERIALS		✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		✓	
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		16-17	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT ☐ PHOTOGRAPH
- ☐ DESERT VARNISH ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: **Location** 14 ROB 3

Site No. 14 ROB 3 **Date** 8-26-96 **Time** 7:00 am **Vegetation** _____

Elevation _____ **Slope** _____ **Aspect** _____ **Geomorphic Surface** _____

Parent Material(s) _____ **Described by** _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes effer; nodules; cement.
2		7.5 YR 4/3 ..... 7.5 YR 5/1	m vf gr / sg f pl / 1 m pr / (2) (c) cpr / 3 vc abk / (sbk)	0 50 / <10 75 / (10) >75 / 25	so po / (ss) (ps) / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / (sh) / (h) / vh / eh	S SiCL / LS SiL / (SL) Si / SCL SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr / few	a s / (c) (w) / g i / d b	no eff.
4		7.5 YR 3/4 ..... 7.5 YR 4/4	m vf gr / sg f pl / 1 m pr / (2) c cpr / 3 vc abk / (sbk)	0 50 / <10 75 / (10) >75 / 25	so po / ss ps / (s) (p) / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / (sh) / (h) / vh / eh	S SiCL / LS SiL / SL Si / (SCL) SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr / few	a s / (c) (w) / g i / d b	no eff.
19.5		7.5 YR 5/4 ..... 7.5 YR 5/3	m vf gr / sg f pl / 1 m (pr) / 2 (c) cpr / (3) vc abk / sbk	0 50 / <10 75 / 10 >75 / (25)	so po / ss (p) / (s) (p) / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / (h) / vh / eh	S SiCL / LS SiL / SL Si / SCL (SiC) / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr / abundant	a s / (c) w / g (i) / d b	slightly eff. few [illegible] very thin discontinuous
26.5		7.5 YR 3/4 ..... 7.5 YR 3/4	m vf gr / sg (f) pl / 1 (m) pr / (2) c cpr / 3 vc abk / (sbk)	0 50 / <10 (75) >75 / 10 / 25	so po / (ss) ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / (sh) / (h) / vh / eh	S (SiCL) / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr / common	a s / (c) (w) / g i / d b	strong eff. many [illegible] very thin discontinuous
30.5		[illegible] ..... 7.5 YR 3/4	m vf gr / sg (f) pl / (1) m pr / 2 c cpr / 3 vc abk / (sbk)	0 (50) / <10 75 / 10 >75 / 25	so po / ss ps / (s) (p) / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / (sh) / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL (SC)		v1 f pl / 1 po / 2 d br / 3 co / p cobr / few	a s / (c) w / g (i) / d b	slightly eff. few filaments very thin discontinuous
45		7.5 YR 6/4 ..... 7.5 [illegible]	m vf gr / sg f pl / (1) (m) pr / 2 c cpr / 3 vc (abk) / sbk	0 (50) / <10 (75) / 10 >75 / 25	(so) (po) / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / (h) / vh / eh	(S) SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr / none	a s / c w / g i / d b	no eff. strongly cemented stage 4
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
		.....	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pl / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:	
LOCATION:	
DATE:	TIME: (BEGIN/END)
FIELD CREW:	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#14 ✓	
	IN SHADE	#13 ✓	
SPOIL PILE MATERIALS		#15 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#16 (5) ✓	
NOTABLE FEATURES:	(LIST)	✓ ✓	
PIT LOCATION AFTER BACKFILL		#17	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____(NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH _____(NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____(SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION ☐PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL ☐PHOTOGRAPH
- ☐ DESERT PAVEMENT ☐PHOTOGRAPH
- ☐ DESERT VARNISH ☐PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS ☐PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 15 ROB1

LOCATION: site 15

DATE: 8-17-98 Monday

TIME: (BEGIN/END) excavate 12pm/12:20pm

FIELD CREW: Mike VandenBerg, Greg Brown, Heidi Stenner, JF

RECORDS CHECK BY: (NAME, DATE) JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE Roll 5		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#10 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#23 ✓	
SPOIL PILE MATERIALS		#20 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#18 ✓	
NOTABLE FEATURES:	(LIST) top of profile bottom "	#21 ✓ #22 ✓	
PIT LOCATION AFTER BACKFILL		16-15	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH Sheet 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY #2 of 5 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION 20% grasses, <5% saguaro, <5% palo verde ☐ PHOTOGRAPH
5% cholla, 5% mesquite, 30% creosote, 20% bursage(?) #18 ✓

45 barrel cactus

☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH
40% fines, 15% sand, 30% gravel, 15% cobble + boulder #19 ✓

☐ DESERT PAVEMENT ☐ PHOTOGRAPH
mod - 40% fines, large clasts dominate (5-15cm) #19 ✓

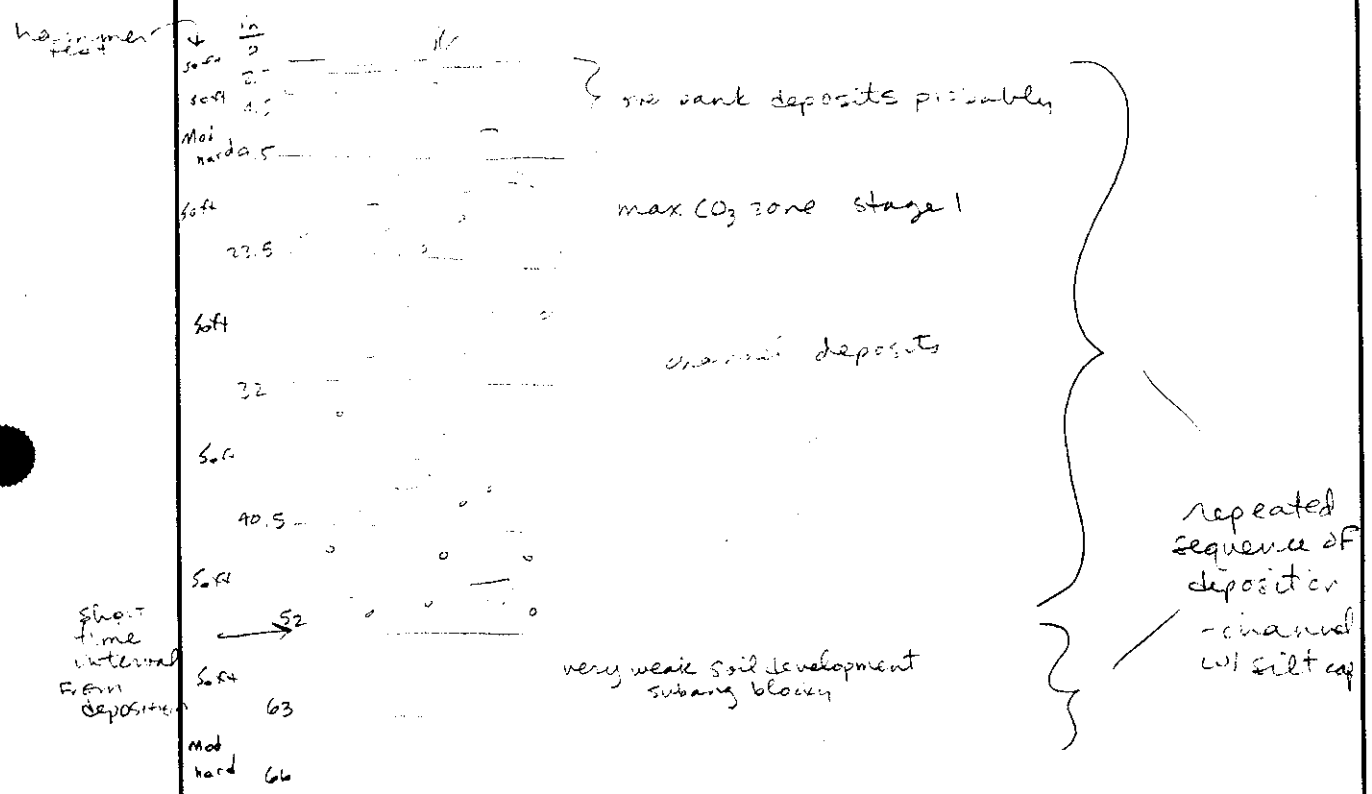
☐ DESERT VARNISH ☐ PHOTOGRAPH
mod - some dull black tops + red bottoms #19 ✓

☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
none in pit N/A

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	buried fine poor soil	☐ PHOTOGRAPH
GRAIN SIZE	coarse except for top - buried fine	☐ PHOTOGRAPH
COLOR	tan	☐ PHOTOGRAPH
CROSS BEDDING	none observed	☐ PHOTOGRAPH
CARBONATE CONTENT	low stage 1 max	☐ PHOTOGRAPH
SOIL STRUCTURE	poor – top unit best w/ planar str.	☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH



Depth inches	Color moist	Color dry	Structure	% gravel	Consistence wet	Consistence dry	Texture	Clay film	Boundary	Carbonate, eff., rind
2.5	10YR 3/4	10YR 5/4	2 m pl	<10	so po	sh	fine SL	very few	c w	- weak eff - no fil. - no rinds
4.5	7.5YR 4/4	10YR 5/4	1 f m sbk	25	so po	s	med SL	few	c i	- weak eff. - very few - no rinds
9.5	7.5YR 4/4	7.5YR 5/3	1 f gr	50	so po	s	med LS	very few	c w	- weak eff. - few fil. - no rind
23.5	7.5YR 5/3	7.5YR 5/3	1 f gr	75	so po	s	LS coarse	very few	c w	- very thin - slightly - abu.
32	10YR 3/3	7.5YR 5/3	sg	>75	so po	lo	s	none	c w	- very thin - slightly - com. fil.
40.5	10YR 3/2	10YR 5/2	sg	>75	so po	lo	LS coarse	none	c w	- few fil. - slightly e - very thin
52	10YR 4/4	10YR 6/3	sg	>75	so po	lo	s	none	a w	- few fil. - slightly eff - very thin
63	7.5YR 4/6	10YR 5/4	1 m sbk	<10	so po	s	LS	none	a i	- common - slightly eff - very thin
66	10YR 4/4	10YR 6/4	sg	>75	so po	s	LS	none		- thin disc. - strong eff. - few fil.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:
16-ROB!

LOCATION:
site #16

DATE:
8-17-98 Monday

TIME: (BEGIN/END)
excavate: 7:50am / 8:15am

FIELD CREW:
[illegible], Heidi Fenner

RECORDS CHECK BY: (NAME, DATE)
JE 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE Roll 5		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		16-5'	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	top mid	bot. while [illegible]
	IN SHADE	R.11 #6 - #5, #6	#7 #8
SPOIL PILE MATERIALS		#5 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#2, looking N	
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		16-14	

5.2?

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH sheet 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY sheet 1 of 5 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION ☐ PHOTOGRAPH #3 ✓
25% ~~black/rabbit brush~~ bursage(?), 15% grasses, 10% creosote, 5% cholla, <5% paloverde, <5% barrel cactus, <5% salt cedar(?)

☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH #4 ✓
~45% Fines, 10% sand, 20% gravel, 5% cobbles

☐ DESERT PAVEMENT ☐ PHOTOGRAPH #4 ✓
poor - 65% Fines, v poorly sorted larger grains

☐ DESERT VARNISH ☐ PHOTOGRAPH #4
v slight red/brown tones on bottoms

☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
none in pit — area contains sherds, cores, rock lines, flakes

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY see below	☐ PHOTOGRAPH
GRAIN SIZE upper 3 units fine, lowers are coarse	☐ PHOTOGRAPH
COLOR tan	☐ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT slight - stage I -	☐ PHOTOGRAPH
SOIL STRUCTURE poor	☐ PHOTOGRAPH
SOIL HORIZONS see log	☐ PHOTOGRAPH

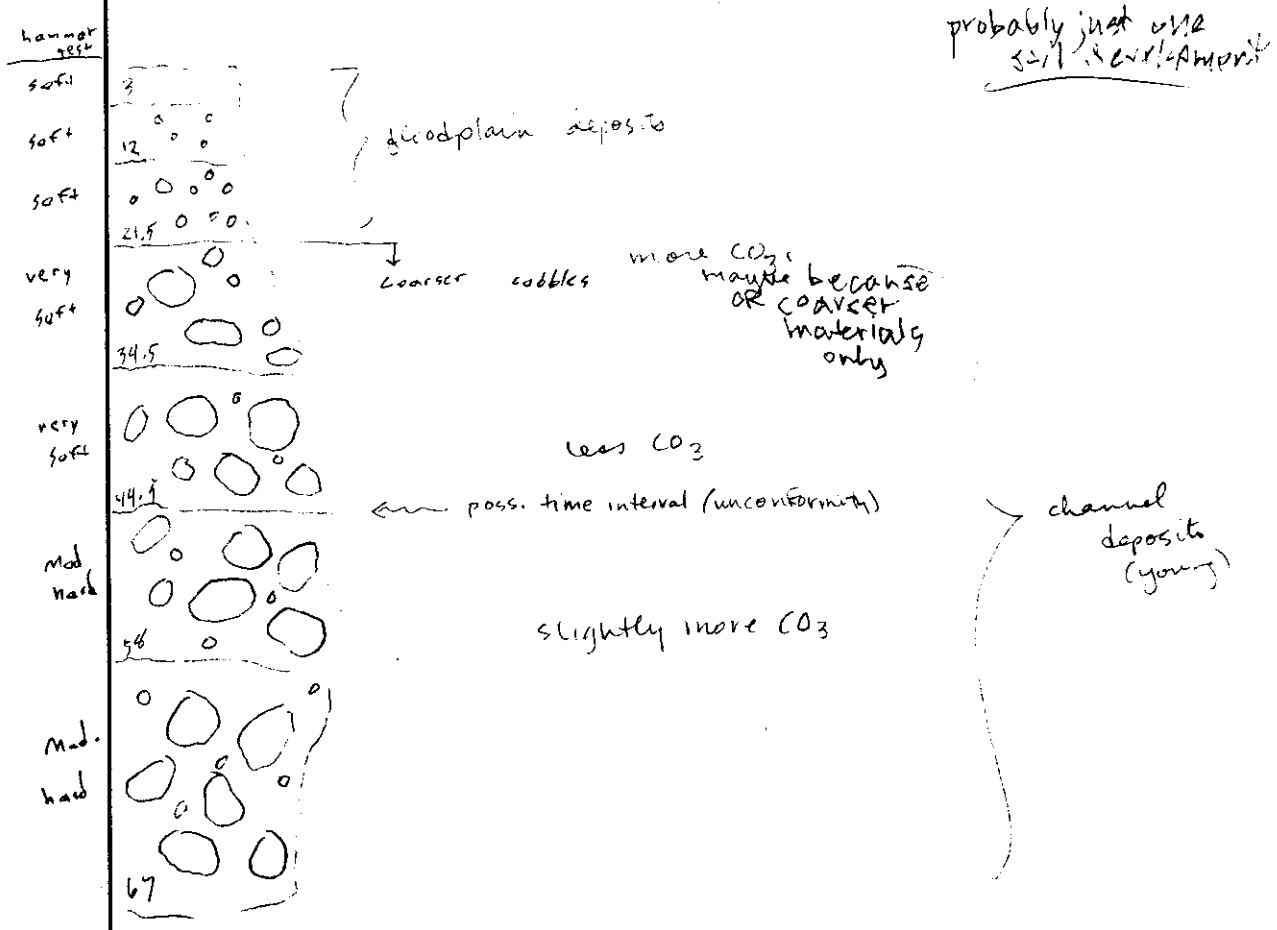


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location 16 ROB # 1

Site No. 16 **Date** 8-14-96 **Time** 12:30 pm **Vegetation** _____

Elevation _____ **Slope** _____ **Aspect** _____ **Geomorphic Surface** _____

Parent Material(s) _____ **Described by** _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes: eff; rinds; cement.
3		10 YR 3/4 ..... 10 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	- none eff. - none rinds - no filament
12		10 YR 3/4 ..... 10 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	- strong eff. - very thin dis - very few fil.
21.5		10 YR 3/3 ..... 7.5 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	- strong eff. - very thin dis. - few fil.
34.5		7.5 YR 4/6 ..... 7.5 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	- strong eff. - thin dis. - few fil.
44.5		7.5 YR 4/6 ..... 7.5 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	- strong eff. - thin dis. - few fil.
56		7.5 YR 3/4 ..... 7.5 YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; few to com.	a s; c w; g i; d b	- strong eff. to violent - thin dis. - very few fil.
67		7.5 YR 4/4 ..... 7.5 YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	- strong eff. to violent - very thin dis. - few fil.
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr fl; vfi vh; efi eh	lo so; sh h; vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 16 ROB 2

LOCATION: site 16

DATE: 8-17-98 Monday

TIME: (BEGIN/END) excavate 10:05am / 10:20am

FIELD CREW: Greg Brown, Mike VandenBerg, Heidi Steuner

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#25 Roll 4 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#1 Roll 6	
SPOIL PILE MATERIALS		#6 Roll 5 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#2 Roll 5 ✓ (S)	
NOTABLE FEATURES:	(LIST)	✓✓✓ #24-26 close ups Roll 5	
reddish blocky clay-rich layer @ depth below $CaCO_3$ layer			
PIT LOCATION AFTER BACKFILL		16-13	

termed dich surface

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH sheet 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY 1 OF 5 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION — ☐ PHOTOGRAPH #2 Roll 5 ✓
10% cholla, 10% creosote, 30% bursage(?), 20% grass, <5% paloverde

☐ SURFACE SOIL MATERIAL — ☐ PHOTOGRAPH #1 Roll 5 ✓
65% fines, 15% sand, 20% gravel, 5% cobbles

☐ DESERT PAVEMENT — ☐ PHOTOGRAPH #1 Roll 5 ✓
poor-mod. 65% fines, poorly sorted

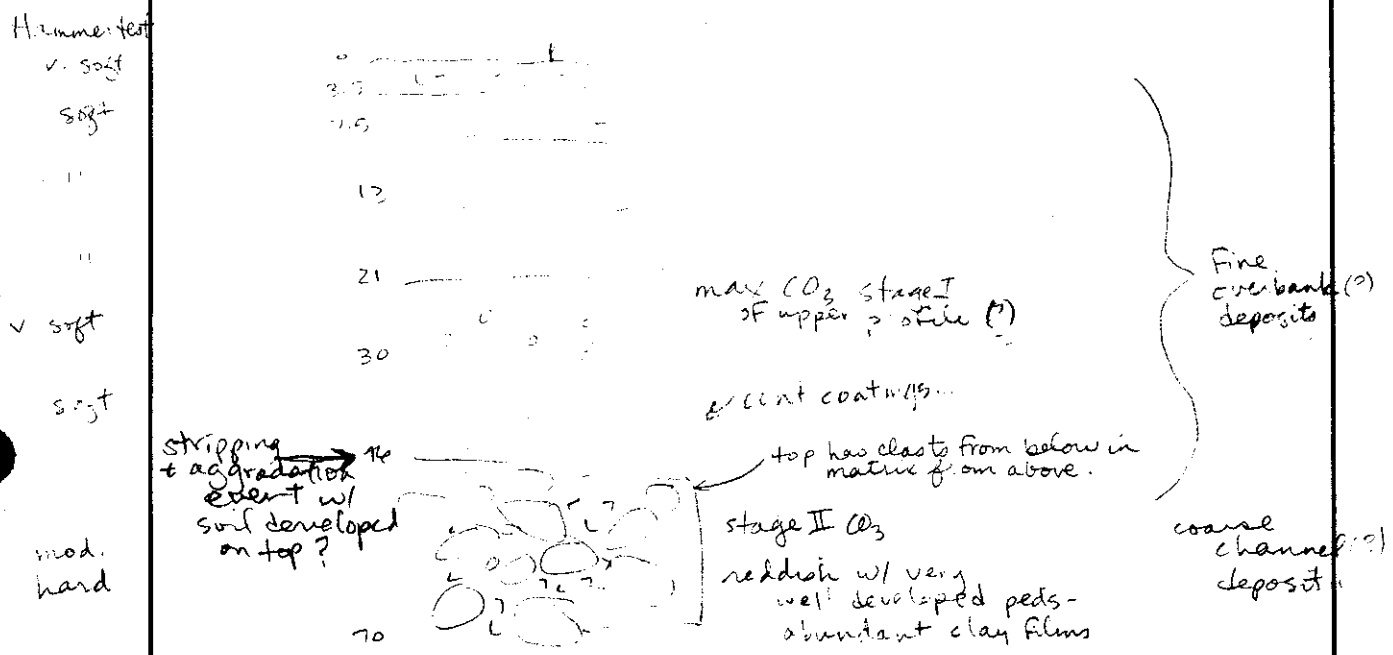
☐ DESERT VARNISH — ☐ PHOTOGRAPH #1 Roll 5 ✓
poor - some red undersides, occasional slight black top

☐ ARCHAEOLOGICAL ARTIFACTS — ☐ PHOTOGRAPH N/A
none in pit, area has sherds, fire cracked rocks(?)

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	see below - mostly except boundary w/ coarse	☐ PHOTOGRAPH
GRAIN SIZE	v. fine except bottom unit coarse	☐ PHOTOGRAPH
COLOR	tan w/ reddish on bottom	☐ PHOTOGRAPH
CROSS BEDDING	none	☐ PHOTOGRAPH
CARBONATE CONTENT	low - stage I at top, buried stage II	☐ PHOTOGRAPH
SOIL STRUCTURE	poor except in bottom	☐ PHOTOGRAPH
SOIL HORIZONS	see log	☐ PHOTOGRAPH



Depth (cm)	Color moist	Color Dry	Structure	% Gravel	Consistence wet	Consistence Dry	Texture	clay films	Boundaries	Carbonate eff. rinds, etc
3.5	7.5 YR 4/6	10 YR 5/4	2 m sbk	10	vss vps	sh	fine SL	very few	LW	- slightly eff. - extr. thin dis. - very few fil.
7.5	7.5 YR 4/4	7.5 YR 5/4	1 f m sbk	10	so po	s	fine SL	very few	LW	- very thin dis. - strong eff. - few fil.
13	10 YR 4/3	10 YR 5/4	1 f sbk	10	so po	s-sh	fine SL	very few	LW	- few fil. - strong eff. - very thin dis.
21	7.5 YR 4/4	10 YR 5/4	1 f m sbk	10	vss vps	s	L	very few	LW	- strong eff. - few fil. - extremely thin frode
30	7.5 YR 4/4	7.5 YR 5/4	1 f m sbk	25	so po	s	fine SL	very few	LW	- strong eff. - few filaments - thin cont. rinds common
46	7.5 YR 4/4	7.5 YR 5/4	2 m sbk	<10	so ps	s	SL	none	g i	- strong eff. - very thin cont. coatings common - few fil.
70	7.5 YR 4/6	7.5 YR 5/4 blocks → 5 YR 5/6	3 c abk	25-50	s p	vh	SCL	abu.		- strong eff. - thin cont. rinds - common fil.

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 16-~~#083~~

LOCATION: Site 16

DATE: 8-17-92 Monday — DESCRIPTION 8/18 - TUE 11 AM

TIME: (BEGIN/END) excavate 9:30am/

not bad for comm coating

FIELD CREW: Jon Fuller, Greg Brown, Mike VandenBerg, Heidi Stenner

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE Roll 5		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	Roll 5 #2 - top profile ✓ #3 - bottom ✓	
	IN SHADE	#4 - whole pit ✓	
SPOIL PILE MATERIALS		#7 ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#8, Looking S ✓	
NOTABLE FEATURES: (LIST) Excellent profile - surface reddening - $CaCO_3$ @ 1m below surface			
PIT LOCATION AFTER BACKFILL		16-12	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH Sheet 3 (NUMBER)

☐ ON FCDMC TOPOGRAPHY Sheet 1 of 5 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION ☐ PHOTOGRAPH #8 ✓
20% cholla, 10% creosote, 10% palo verde, 15% grasses

☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH #9 ✓
45% fines, 15% sand, 30% gravel, 10% cobbles

☐ DESERT PAVEMENT ☐ PHOTOGRAPH #9 ✓
mod. 45% fines, poorly sorted

☐ DESERT VARNISH ☐ PHOTOGRAPH #9 ✓
most - well. Large boulders are black w/ shiny patina, others have continuous red coating

☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
none in pit

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
✓ GRAIN SIZE	☐ PHOTOGRAPH
✓ COLOR	☐ PHOTOGRAPH
CROSS BEDDING None	☐ PHOTOGRAPH
/ CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE B & C	☐ PHOTOGRAPH
SOIL HORIZONS Blocky strong in B	☐ PHOTOGRAPH

Probably only one soil developing event

mid Pleistocene age ½ ma

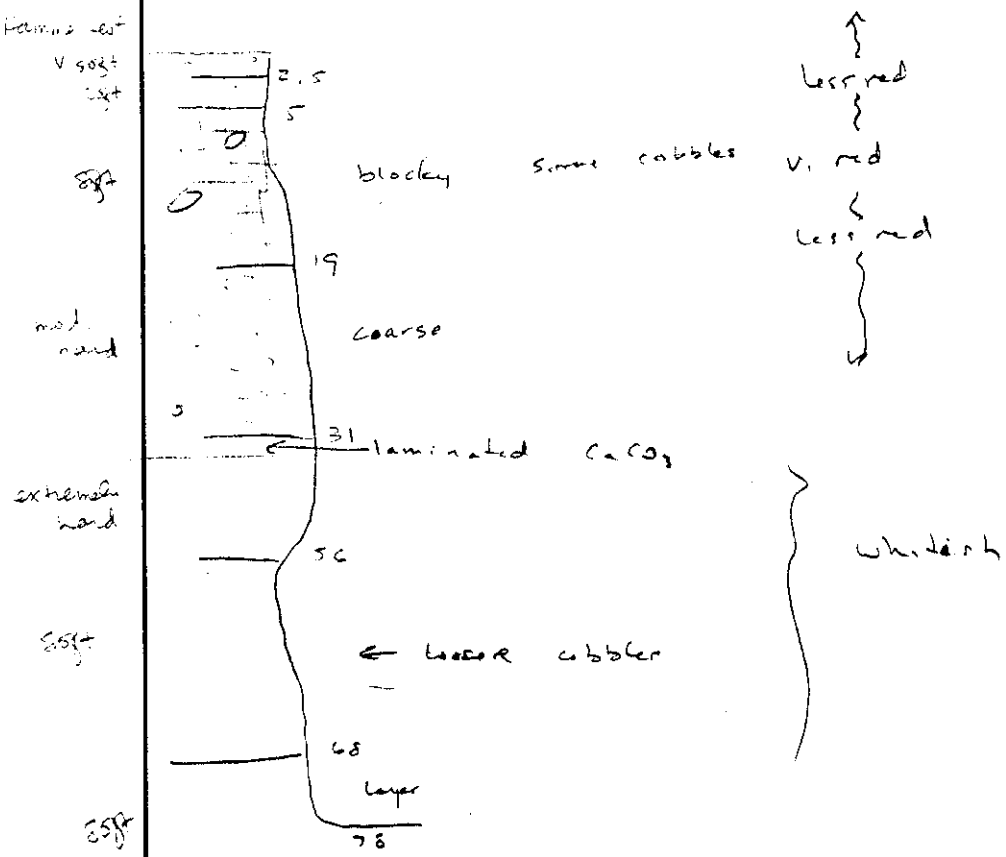


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 16 Rob 3 - highest surface tested

Site No. ____ Date 8/18 Time 11 AM Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
2.5		7.5YR 4/6	7.5YR 5/8	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; common	a s; c w; g i; d b	No $CaCO_3$ Not eff
5		7.5YR 4/6	5YR 4/8	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; common	a s; c w; g i; d b	No $CaCO_3$ Not eff
19		5YR 4/8	5YR 4/8	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; abundant	a s; c w; g i; d b	Few filaments w. thin discont. rinds Not eff
31		5YR 4/6	7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; common	a s; c w; g i; d b	- Abundant filaments Stage III - v. thin continuous rinds common patchy moderate cementa Strong eff
56		5YR 5/3	5YR 7/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	Stage IV thin laminated horizon strongly cemented Violent eff
68		7.5YR 3/2	7.5YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	abundant filament patchy moderate cementati v. thin discont. rinds Strong eff
78		7.5YR 3/3	7.5YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	gypsum v. thin discontinuous rin some filaments Slight
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr; fr so; fi sh; vfi h; efi vh	lo so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 16 - CHL

LOCATION: u/s of Wheelen N. access Rd

DATE: 8-17-98

TIME: (BEGIN/END) 7 am

FIELD CREW: JF, HS, MVB, GB (LSD)

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE	Roll 4	STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#17 ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN ~~SUN~~ CLOUDY	18 19 - top 20	
	IN SHADE	21 - bottom	
SPOIL PILE MATERIALS		#23	
GENERAL VIEW OF GEOMORPHIC SURFACE		#23	
NOTABLE FEATURES: (LIST) uniform f. gravel - v. loose		#22 - silt cap	
PIT LOCATION AFTER BACKFILL		#24 Roll 4	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH #1-5 (1-12-96) (NUMBER)

☑ ON FCDMC TOPOGRAPHY SHEET 3 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION minor tamarix < 6' ☐ PHOTOGRAPH

☐ SURFACE SOIL MATERIAL c. gravel, some cobble & boulder areas ☐ PHOTOGRAPH

☐ DESERT PAVEMENT - N/A - CHANNEL pebbles over surface - fine gravel beneath ☐ PHOTOGRAPH

☐ DESERT VARNISH No ☐ PHOTOGRAPH

☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

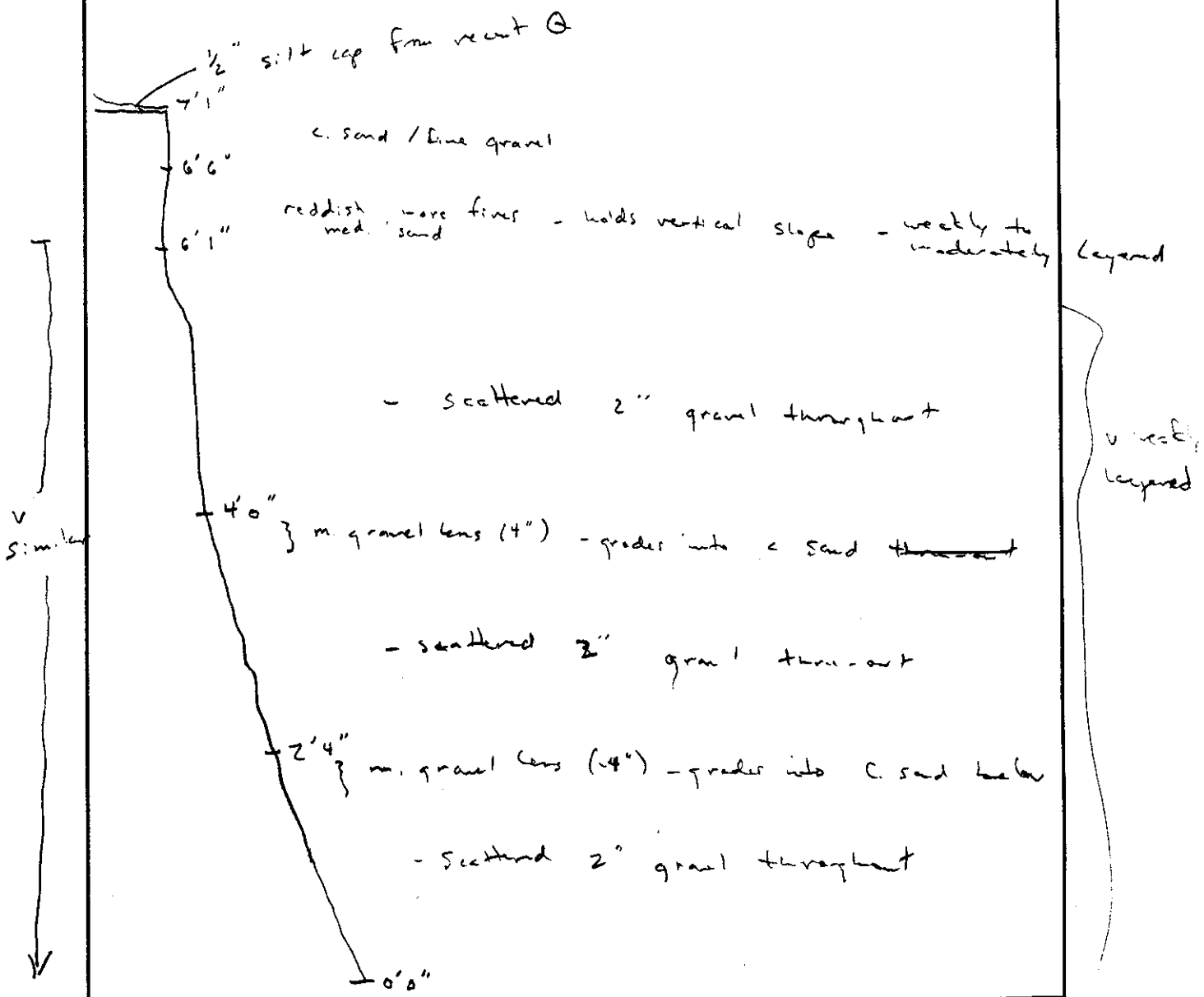


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 16-CHL

Site No. 16CHL Date 8-17-98 Time _____ Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes
6'6"		7.5YR 7/2	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co None p cobr	a s c w g i d b	effervescence; nodules; cement. No $CaCO_3$
6'1"		7.5YR ≤7/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
4'0"			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
2'4"			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
0			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: [illegible]	
LOCATION: [illegible]	
DATE: 8-1-99 Tuesday	TIME: (BEGIN/END) 9:15am / 9:40am
FIELD CREW: [illegible] Tanner Garrett Godman Greg Brown (excavation only)	
RECORDS CHECK BY: (NAME, DATE) JF 8/26/99	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#14 9:[illegible]am	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#12 (Roll 4)	
SPOIL PILE MATERIALS		#18 9:40am	
GENERAL VIEW OF GEOMORPHIC SURFACE		#[illegible] [illegible]	
NOTABLE FEATURES:	(LIST) grain size	#13 (Roll 4) 1pm	
PIT LOCATION AFTER BACKFILL		16-9	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION [illegible] 20% creosote [illegible] ☐ PHOTOGRAPH #17 9:21am
  ~20% black brush/rabbit brush (?)
- ☐ SURFACE SOIL MATERIAL 35% fine tan material, 35% cobbles/gravels, [illegible] ☐ PHOTOGRAPH #16 9:[illegible]am
  (see pit log)
- ☐ DESERT PAVEMENT ☐ PHOTOGRAPH #16 9:27am
  [illegible] to moderate development
  some gravel [illegible] fine material exposed
- ☐ DESERT VARNISH ☐ PHOTOGRAPH N/A
  none
- ☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH N/A
  none observed in pit or surface

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	[illegible]	☐ PHOTOGRAPH
GRAIN SIZE	fine w/ [illegible]	☐ PHOTOGRAPH
COLOR	[illegible]	☐ PHOTOGRAPH
CROSS BEDDING	none	☐ PHOTOGRAPH
CARBONATE CONTENT	[illegible] much	☐ PHOTOGRAPH
SOIL STRUCTURE	[illegible] much	☐ PHOTOGRAPH
SOIL HORIZONS	[illegible]	☐ PHOTOGRAPH

Phil Holocene - [illegible]

hammer test

v soft

0

1.5

1.5

soft

very homogenous

a few filaments - extremely thin CO_3 coatings.

soft+

← Phil notes may have some ↑ in CO_3 - more filaments

stage I/II

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location 14 LOB 1

Site No. ____ Date 8-13-88 Time 12:00-12:30p Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
1.5		7.5YR 4/4 / 7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	very slightly eff. nothing
4.5		7.5YR 4/4 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	slight eff. very few filaments no coating
11		7.5YR 4/6 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	slight eff. very few filaments very thin disc.
69		7.5YR 4/4 / 7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	very thin disc. very few filaments - strong eff. stage I/ (less grave
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:

LOCATION:

DATE:

TIME: (BEGIN/END) 10:25am

FIELD CREW:

RECORDS CHECK BY: (NAME, DATE) 8/26/99 JF

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#19 9:47am ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#7, #9 11:35am (Roll 4) ✓	
SPOIL PILE MATERIALS		#22 10:25am ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		[illegible] ✓	
NOTABLE FEATURES:	(LIST) top	#8 - close up of pit Roll 4 ✓	
	old clay at bottom	#10 Roll 4 ✓	
	CO_3 near top	#11 Roll 4 ✓	
PIT LOCATION AFTER BACKFILL		16 ✓	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION 20% creosote, 25% [illegible] brittle, 45% cholla ☑ PHOTOGRAPH #22 [illegible] ✓

☐ SURFACE SOIL MATERIAL 60% [illegible] fines, 40% pebbles/gravel, <5% cobbles ☑ PHOTOGRAPH #21 9:57am ✓
see log sheet

☐ DESERT PAVEMENT ☑ PHOTOGRAPH
moderate to poor - 60% fine deposit, gravel not apparent #21 9:57am ✓

☐ DESERT VARNISH mod - we ☑ PHOTOGRAPH
dark [illegible] tops w/ thick [illegible] brownish red undersides #20 [illegible] ✓

☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH
none observed in pit - surface [illegible] N/A

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	so wind	☑ PHOTOGRAPH
GRAIN SIZE	pebble sand loam overall	☑ PHOTOGRAPH
COLOR	reddish, white at base	☑ PHOTOGRAPH
CROSS BEDDING	none	☐ PHOTOGRAPH
CARBONATE CONTENT	max, except bottom? stage?	☑ PHOTOGRAPH
SOIL STRUCTURE	prismatic in clay deposit	☑ PHOTOGRAPH
SOIL HORIZONS	see log	☑ PHOTOGRAPH

100 Late Pleistocene

Jon's hammer test of Fun

v. soft	0	
v. soft	2	
	9	
soft		prismatic structure – v. clay rich
	21.5	
hard		max CO_3 zone stage 4+
	34.5	Very homogenous lithologically
hard		
mod hard	47	
hard	55.5	← possible erosion event → prob. not, prob. Pleistocene soil development (deep) w/overprinting (small of Holoc CO_3 development
		white; rest reddish Stage 3
	63	

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location 18 - LB 32

Site No. 18 Date 8·13 Time 11:00 am - 11:40 am Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Notes: Carbonate eff; rinds; cement.
skip		.....		m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
skip		.....		m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
2 9 21.5 31.5 skip		.....		m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr	a s / c w / g i / d b	
2		7.5YR 4/6	7.5YR 6/6	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / v. few	a s / c w / g i / d b	Slight eff.
9		7.5YR 4/6	7.5YR 5/6	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / few	a s / c w / g i / d b	no eff.
21.5		7.5YR 5/6	7.5YR 5/6	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / common	a s / c w / g i / d b	no eff.
34.5		7.5YR 5/4	7.5YR 5/6	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / abun.	a s / c w / g i / d b	Strong eff. Many filaments Stage 1+ thin disc.
47		7.5YR 5/6	7.5YR 5/8	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / common	a s / c w / g i / d b	Mod. eff. Stage 1 very thin disc. some or mod filaments
55.5		7.5YR 4/6	7.5YR 6/4	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / few	a s / c w / g i / d b	Stage 1 few filaments very thin disc Slight eff
63		7.5YR 5/6	7.5YR 7/2	m vf gr / sg f pl / 1 m pr / 2 c cpr / 3 vc abk / sbk	0 50 / <10 75 / 10 >75 / 25	so po / ss ps / s p / vs vp	lo / vfr / fr / fi / vfi / efi	lo / so / sh / h / vh / eh	S SiCL / LS SiL / SL Si / SCL SiC / L C / CL SC		v1 f pf / 1 po / 2 d br / 3 co / p cobr / v. few	a s / c w / g i / d b	Stage 3 strongly cemented very strong eff

Bottom of pit

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:
[illegible] 1 OF 2

LOCATION:
[illegible]

DATE: [illegible] Tuesday

TIME: (BEGIN/END) 8/13 Soils
[illegible] 30am / 1:25am
8:30 Am – 10 15 am

FIELD CREW:
Greg Brown, Garret [illegible], Mike Vandenberg, [illegible] Tanner + JEF Too!

RECORDS CHECK BY: (NAME, DATE)
JF 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#24 [illegible] 30am ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#4 (roll 4) - top profile ✓	
	IN SHADE	#5 (roll 4) - bot. profile #6 (") - whole profile ✓	
SPOIL PILE MATERIALS		#4 11:49 am ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#1 10:35am looking N ✓	
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		16-8	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH sheet 2 large scale (NUMBER)

☑ ON FCDMC TOPOGRAPHY sheet 1 of 5 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION 5% Palo verde, 25% ~~mesquite~~ creosote, <5% Cholla, <5% Black brush (?), <5% saguaro, 20% grasses — ☐ PHOTOGRAPH #1 [illegible] 2:[illegible]am ✓

☐ SURFACE SOIL MATERIAL ~30% fines reddish-tan, 40% pebbles, gravel 20% boulders 10% cobbles — ☑ PHOTOGRAPH #2 10:27am ✓
See soil pit log

☐ DESERT PAVEMENT moderate - armored but ~30% fines exposed — ☑ PHOTOGRAPH #2 10:27am ✓

☐ DESERT VARNISH mod-well dark black on top w/ occasional [illegible] patina, red brown — ☑ PHOTOGRAPH #3 10:27am ✓

☐ ARCHAEOLOGICAL ARTIFACTS flakes — ☐ PHOTOGRAPH N/A

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	see below	☐ PHOTOGRAPH
GRAIN SIZE	coarse in older soil, fine w/ pebbles at bottom	☐ PHOTOGRAPH
COLOR	red on top, white in middle	☐ PHOTOGRAPH
CROSS BEDDING	none	☐ PHOTOGRAPH
CARBONATE CONTENT	max Stage 4	☐ PHOTOGRAPH
SOIL STRUCTURE	Fairly poor in uppermost.	☐ PHOTOGRAPH
SOIL HORIZONS	see attached log	☐ PHOTOGRAPH

massive in middle

Phil says prob. just one soil forming event

Whack It Test

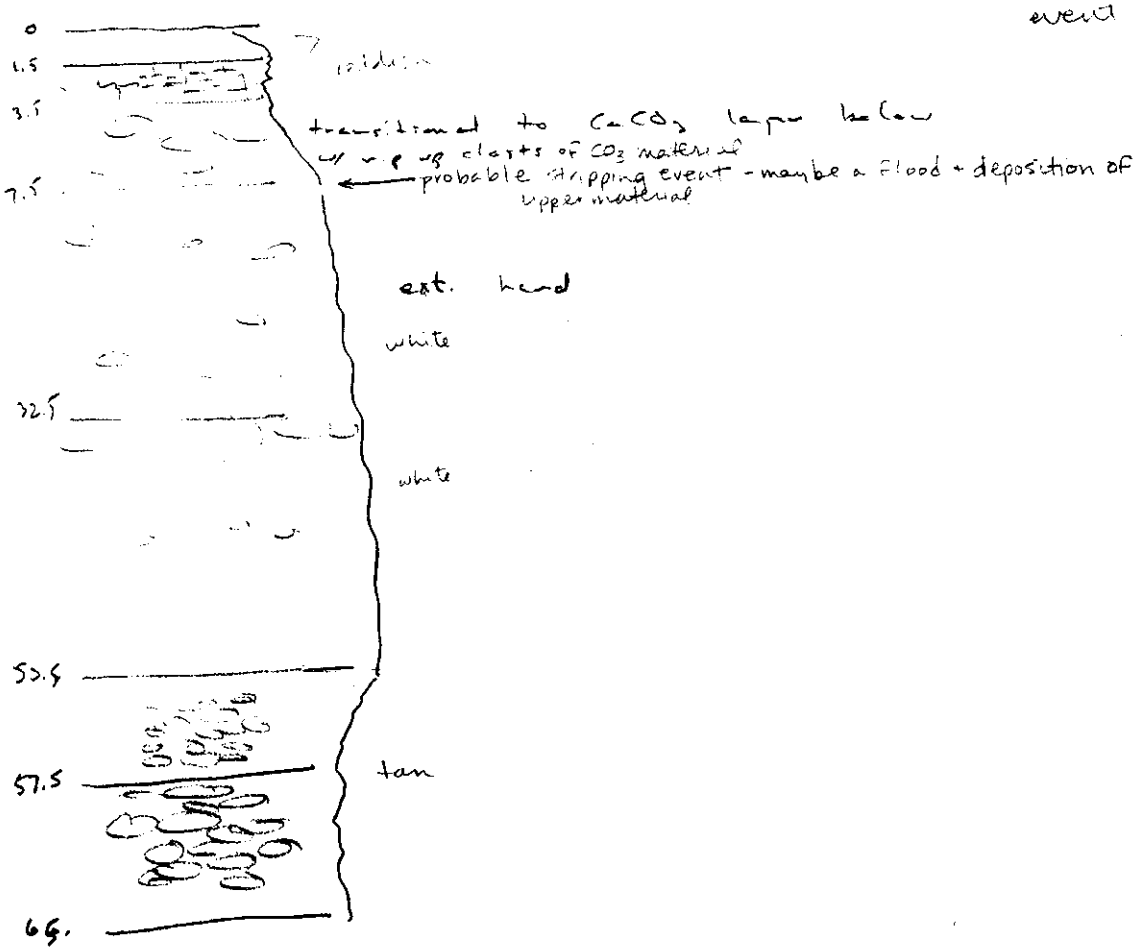


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: Pavement forming → 80% cover

Soil Description: Location 19 Lots 3

Site No. 19 Date 8/13 Time 8:30 Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface v. old - highest terrace

Parent Material(s) _____ Described by JEF MVB, HS

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
1.5		7.5YR 5/6	7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	none slightly eff.
3.5		7.5YR 4/6	5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; common	a s; c w; g i; d b	sparse filament slightly eff
7.5		7.5YR 4/6	7.5YR 6/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC (coarse sand)		v1 f pf; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	v. thin discont. rinds filaments strongly eff
32.5		7.5YR 8/2	2.5Y 8/1	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC (coarse sand)		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	stage IV strongly cemented violently eff
50.5		7.5YR 7/3	7.5YR 8/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC (coarse sand)		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	strongly cemented late stage III+ violently eff
57.5		7.5 4/4	7.5YR 6/8	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC (coarse sand)		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	gypsum plent. fil thick discontin rinds stage III - strongly eff.
65		10YR 3/2	10YR 4/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC (coarse sand)		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	Non $CaCO_3$ not eff
		.....		m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....		m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....		m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 18 CHL

LOCATION: CHL –

DATE: 8.12.98 | TIME: (BEGIN/END) 10: Am

FIELD CREW: MVB, JEF, DD

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	Roll 3 #7	
	IN SHADE	#8	
SPOIL PILE MATERIALS		#9	
GENERAL VIEW OF GEOMORPHIC SURFACE		#10	
NOTABLE FEATURES: (LIST) silt layer ~14 below surface; twicket @ edge chl		#13 missing	#11 - R CHL PIT; #12 - filled PIT R CHL - missing
PIT LOCATION AFTER BACKFILL		#13 - look dis	#12 R

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH 1-2 (NUMBER)
- ☑ ON FCDMC TOPOGRAPHY sheet 2 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION banks (not vert) covered by tamarix, mesq. & small salt cedar mid channel ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL med gravel e pit; boulder bar d/s ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT N/A - surf. mat'l d50 1" ☐ PHOTOGRAPH
- ☐ DESERT VARNISH N/A ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY ✓	☐ PHOTOGRAPH
GRAIN SIZE ✓	☐ PHOTOGRAPH
COLOR ✓	☐ PHOTOGRAPH
CROSS BEDDING ✓	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

LEFT MAIN CHL

v. thin armor ½" dgo

chl bed 0

horizontal bedded gravel uniform to surface

gravel v. minor x-beds

dgo < ½" - possible bimodal

dry to slightly

ACTIVE CHL + RECENT DEPOSITION

PROB. SOIL LIMIT

16

silty sand 18 - well layer horizontal beds 2-6" thick

stiff

← weakly cemented @ top

reddened gravel unit

large cobbles

loose @ bottom

41

$CaCO_3$ flecks

small stains on cobbles

largest boulders

66

v. red - bouldery & gravels w/ some clay in f. matrix between large clasts

RIGHT CHL

0-8 white gravel

8-60 cobbles & gravel boulders

all poorly consolidated

stiff to below w/ loose stiff falling

weakly layered

no $CaCO_3$

Not old, not buried soil

Table A-2.—Work sheet for recording soil properties in the field
[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____
Pavement, varnish development: N/A

Soil Description: Location L ch1

Site No. 18 Date 8-12 Time 10 Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface CHANNEL

Parent Material(s) _____ Described by JLF

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
0-16		10YR 3/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
16-18		10YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
18-41		10YR 4/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fi; vfi; efi	lo; so; sh; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	Stage I - flock spots on rock
41-66		5YR 3/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fi; vfi; efi	lo; so; sh; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
66 - Bottom: 74"		5YR 4/8	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	possible Stage II
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 8 ROR 1

LOCATION: Site 8 Fan/low surface — 20' from R branch of main channel recent sedimentation, well sorted [illegible] f/p

DATE: 8-18-98 - DESCRIPTION; 8-18-98 Tue [illegible] | TIME: (BEGIN/END) 1pm; 2:31pm/1:00pm

FIELD CREW: [illegible] Garrett [illegible] Stenner

RECORDS CHECK BY: (NAME, DATE) JF 9/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#3 2:31pm ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#9 whole pit + (Rill 6)	✓
SPOIL PILE MATERIALS		#14 1:40pm ✓	
GENERAL VIEW OF GEOMORPHIC SURFACE		#[illegible] 12:[illegible]pm	✓
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		16-10	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH sheet 2 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION 20% Mesquite, 20% creosote 5% black brush, 5% salt cedar(?) 5% paloverde, 20% grass — ☑ PHOTOGRAPH #7 12:31pm ✓ } pol 2 missing

☐ SURFACE SOIL MATERIAL 80% tan fine 5-15% pebbles/gravel, 5% cobbles/boulders see pit log — ☑ PHOTOGRAPH #8 12:37pm ✓

☐ DESERT PAVEMENT none — ☐ PHOTOGRAPH N/A

☐ DESERT VARNISH none — ☐ PHOTOGRAPH N/A

☐ ARCHAEOLOGICAL ARTIFACTS none observed in pit or surface — ☐ PHOTOGRAPH N/A

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY see below	☑ PHOTOGRAPH
GRAIN SIZE Fine & sandy above coarse below	☑ PHOTOGRAPH
COLOR tan w/ white gypsum on gravels	☑ PHOTOGRAPH
CROSS BEDDING none	☐ PHOTOGRAPH
CARBONATE CONTENT very little	☑ PHOTOGRAPH
SOIL STRUCTURE very little	☐ PHOTOGRAPH
SOIL HORIZONS see log	☑ PHOTOGRAPH

Late ~~early~~ Holocene

gravel bars
sands & gravels
old mineral aggregate
[illegible] 3x [illegible]
[illegible] post 10ka

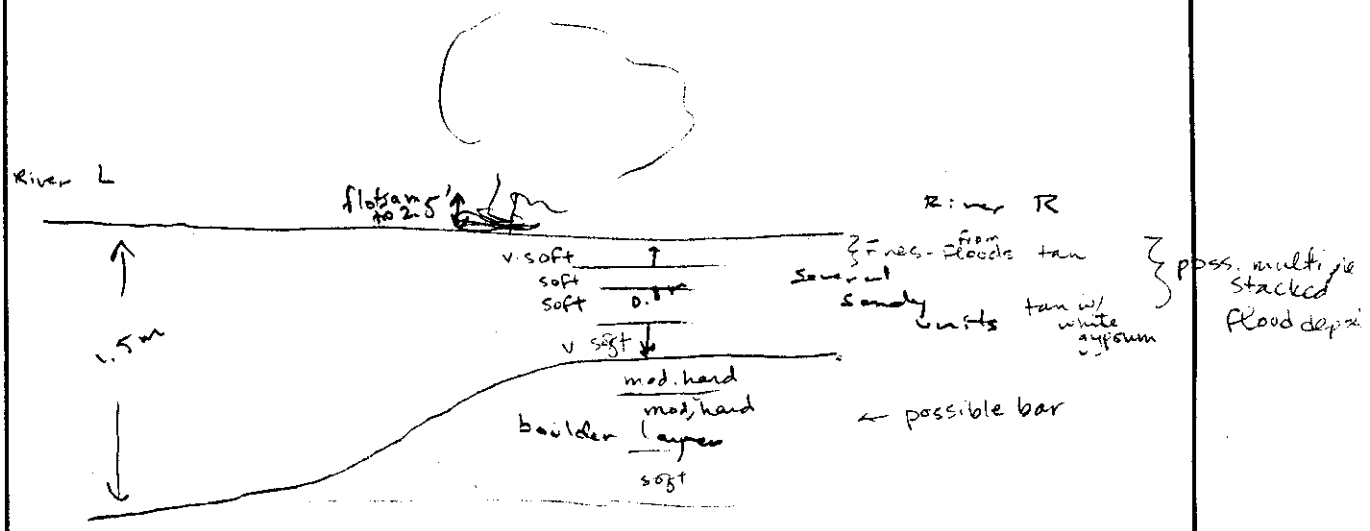


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location 18 - ROB - 1

Site No. 16 Date 8-13 Time 2 pm Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by HS & MVB

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Notes: Carbonate effr; rinds; cement.
1.5		7.5YR 4/3	7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL fine SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	No rinds v. slight eff
5		7.5YR 3/3	10YR 5/3	m vf gr; sg L pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL fine SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	No rinds slightly eff
9.5		7.5YR 4/3	7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L medium C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; v. few	a s; c w; g i; d b	Some filaments v. thin discontin rinds slightly eff
19		7.5YR 4/3	7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L fine C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	occaissional filament v. thin discont. rinds slight eff
30		7.5YR 4/4	7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L Coarse C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; v. few	a s; c w; g i; d b	Some filaments + gypsum thin discont. rinds strong eff
51		7.5YR 3/3	7.5YR 5/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L medium C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	occaissional filament + gypsum v. thin discontinuous rinds strong eff
67		7.5YR 4/4	7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL Coarse SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	v. thin discontinuous rinds + gypsum occ. filament slightly eff
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 8 R022

LOCATION: Site 2, [illegible] of R081

DATE: 8-[illegible]-98 Tues la

TIME: (BEGIN/END) [illegible] 1:31pm

FIELD CREW: Mike VandenBerg, Garrett Goldman, Greg Brown, Heidi Stenner

RECORDS CHECK BY: (NAME, DATE) JF 8/28/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE Roll 2		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		#9 1:2pm ✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	#14 (Roll 4) -	missing
SPOIL PILE MATERIALS		#13 1:32pm -	missing
GENERAL VIEW OF GEOMORPHIC SURFACE		#2 1:15pm looking [illegible] -	missing
NOTABLE FEATURES:	(LIST)	pit #15 top fine units (Roll 4)	✓
		pit #16 bottom coarse (Roll 4)	✓
PIT LOCATION AFTER BACKFILL		#16-11	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

this may be for 18R081

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION 55% Paloverde, 10% mesquite, 30% creosote, 20% grasses, 1% root-bran, 5% Salt cedar(?), <5% cholla — ☑ PHOTOGRAPH #11 1:14pm

☐ SURFACE SOIL MATERIAL 75% tan fines, 20% pebbles/gravel, 5% cobbles — ☐ PHOTOGRAPH #10 1:13pm ✓

☐ DESERT PAVEMENT none — ☐ PHOTOGRAPH N/A

☐ DESERT VARNISH reddish on bottoms - v. light — ☐ PHOTOGRAPH N/A

☐ ARCHAEOLOGICAL ARTIFACTS none observed on surface or in pit — ☐ PHOTOGRAPH N/A

flotsam wrapped around base of trees

surface was flooded in past 20-30 years at least once

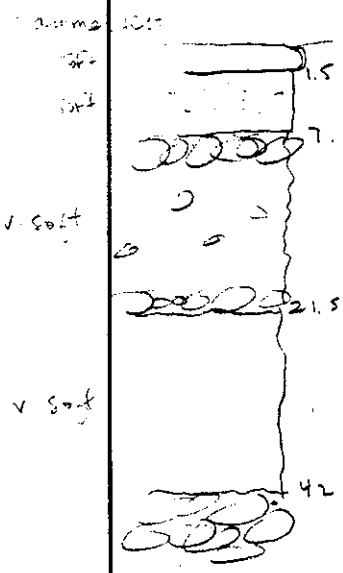
#: 18 ROB 2 DATE: 8 · 15 INITIALS: JF

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

✓ STRATIGRAPHY	☐ PHOTOGRAPH
✓ GRAIN SIZE	☐ PHOTOGRAPH
✓ COLOR	☐ PHOTOGRAPH
CROSS BEDDING - NONE	☐ PHOTOGRAPH
✓ CARBONATE CONTENT - MINOR	☐ PHOTOGRAPH
SOIL STRUCTURE - weak	☐ PHOTOGRAPH
SOIL HORIZONS -	☐ PHOTOGRAPH



platy silty sand

sand w/ gravel

gravel w/ cobbles, coarse e typ ?

clean gravel

v. loose material
pit walls collapsed
due to recent rain
8/16-17 19

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: active f/p - recent [illegible]

Pavement, varnish development: No VARNISH

Soil Description: Location 18 ROB 2

Site No. ____ Date ____ Time ____ Vegetation ____

Elevation ____ Slope ____ Aspect ____ Geomorphic Surface ____

Parent Material(s) ____ Described by HS & MVB

Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
1.5		10YR 3/4	10YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; v. few clay films	a s; c w; g i; d b	No cement; No $CaCO_3$; Not eff.
7		10YR 3/4	10YR 5/3	m vf gr; sg 1 pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; v few	a s; c w; g i; d b	v. thin disc. coatings - occasis; Not eff.
21.5		7.5YR 3/3	7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	v. few filaments; v. thin discont. coatings; slightly eff.
42		7.5YR 3/3	7.5YR 5/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	v. few filaments; v. thin discont. - occasion; slightly eff.
Layer below 42" begin large tabbet similar to bank				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
				m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fl; vfl; efl	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 19 - CHL

LOCATION: BRAID CLOSEST TO 19-LOB PITS (6 FT FROM L CUTBANK)

DATE: 8-12-98

TIME: (BEGIN/END) 9 AM

FIELD CREW: JEF, MVB, HS, DD (LS & D)

RECORDS CHECK BY: (NAME, DATE) JP 8/26/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

R-CHL PIT ~~Rot~~

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE Roll #3		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#2 - hand @ 28"	✓
	IN SHADE	#3 - hand @ 15'	✓
SPOIL PILE MATERIALS		#4 - look w/s	✓
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES: (LIST) VERT. cut bank on L w/ Stage III $CaCO_3$ (RB is vegetated silty sand) from 0-12"		#5	✓
PIT LOCATION AFTER BACKFILL		3-6	

Roll 3 - #1 missing

Figure @ 1:30 19-CHL 8-12-98

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH (1-1) 1-12-96 (NUMBER)
- ☑ ON FCDMC TOPOGRAPHY SHEET 1 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION - CHANNEL CLEAR OF VEG'N ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL GRAVEL ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT NO - SLIGHT ARMOR LAYER ☐ PHOTOGRAPH
- ☐ DESERT VARNISH NO ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS NO ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

0 - 70"

½" material pavement w/ scattered 4"-8" cobbles

0 — CHANNEL BED } partial armor is 1 D50 thick

uniform gravel - v. dry & loose

4" - wetting front sharp boundary

vert

more fines, stays wetter, stand straighter ~~[illegible]~~ moderately cohesive

24" - subtle boundary defined by gradation Δ & steepness of bank

Scour limit

some large cobbles & boulders (14")

prob. bimodal 2"

mean sloped & rough

44" - faint / possible Δ from boulders to gravel

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: N/A

Pavement, varnish development:

Soil Description: Location 19-CHL (L)

Site No. 19 Date 8/12 Time 9 Am Vegetation

Elevation Slope Aspect Geomorphic Surface

Parent Material(s) Described by JEF

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes
0-4	No	.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	gritty non-cohesive
4-24	No	.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
24-44	No	.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
44-70	No	.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		.....	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:	
LOCATION:	
DATE:	TIME: (BEGIN/END)
FIELD CREW:	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#33	
	IN SHADE		
SPOIL PILE MATERIALS			
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		#16-5	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____(NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH _____(NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____(SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT ☐ PHOTOGRAPH
- ☐ DESERT VARNISH ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

Stage 3-/2+

hard

hard

v. soft - hammer goes [illegible] no resistance

soft - hammer goes in [illegible] minor resistance

m. hard - [illegible] chunks break off

hard - slight ring when hit, flakes & chips come off

e hard - rings when hit no flakes come off

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location _____

Site No. ____ Date ____ Time ____ Vegetation _____

Elevation ____ Slope ____ Aspect ____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
		7.5YR 4/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L Med C CL SC		v1 f pf 1 po 2 d br 3 co p cobr vf	a s c w g i d b	Mefr - no rind - no cement
		7.5YR 4/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L Mer C CL SC		v1 f pf 1 po 2 d br 3 co p cobr few	a s c w g i d b	very thin disc. - [redacted] filam. Sefr - no cement
		7.5YR 4/6 7.5YR 3/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	Sefr - very thin disc. filaments
		7.5YR 4/6 7.5YR 4/6	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr common	a s c w g i d b	Sefr - [redacted] thin disc. filament
		7.5YR 4/4 7.5YR 6/1	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 br 3 co p cobr very few	a s c w g i d b	carbonate layer Sefr thin disc. fil. weakly cemented
		7.5YR 4/4 7.5YR 5/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr very few	a s c w g i d b	very thin disc. [redacted] Sefr [redacted] cemented
57		7.5YR 4/6 7.5YR 6/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr very few	a s c w g i d b	very thin disc. filaments slightly eff.
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
			m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:	
LOCATION:	
DATE:	TIME: (BEGIN/END)
FIELD CREW:	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		✓	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	✓	
	IN SHADE		
SPOIL PILE MATERIALS		✓	
GENERAL VIEW OF GEOMORPHIC SURFACE			✓
NOTABLE FEATURES:	(LIST)	✓	✓
PIT LOCATION AFTER BACKFILL		#16-6	

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE	_____	(NAME)
☑ ON RECENT AERIAL PHOTOGRAPH	1-1	(NUMBER)
☑ ON FCDMC TOPOGRAPHY	SHEET 1	(SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION	☐ PHOTOGRAPH ✓
☐ SURFACE SOIL MATERIAL	☐ PHOTOGRAPH
☐ DESERT PAVEMENT	☐ PHOTOGRAPH ✓
☐ DESERT VARNISH	☐ PHOTOGRAPH
☐ ARCHAEOLOGICAL ARTIFACTS	☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location 19-LOE2

Site No. 1 Date 4-12-91 Time 8:00 am Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; nuds; cement.
2		7.5YR 5/4 ..... 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very few	a s; c w; g i; d b	- very [illegible] eff
4.5		7.5YR 5/4 ..... 7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	- very [illegible] eff
15		7.5YR 4/4 ..... 7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; ab	a s; c w; g i; d b	- none eff. - no filaments
24		[illegible] ..... [illegible]	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; ab.	a s; c w; g i; d b	- stage 1+ - [illegible] eff - [illegible] filaments
36.5		7.5YR 4/6 ..... 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; common	a s; c w; g i; d b	- few filaments - strong eff - stage 1
50		7.5YR 6/4 ..... 7.5YR 7/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; few	a s; c w; g i; d b	[illegible] - very strong eff - stage 3
56		7.5YR 4/4 ..... 7.5YR 7/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very [illegible]	a s; c w; g i; d b	- very [illegible] - strong eff. - stage 3+
60.5		7.5YR 5/3 ..... 7.5YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; vss vps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; very [illegible]	a s; c w; g i; d b	- very [illegible] - strong - stage 2
66.5		7.5YR 4/4 ..... 7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; n/a	a s; c w; g i; d b	- very [illegible] - [illegible] - [illegible]
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: 20 - CHL IMPOUNDMENT AREA

LOCATION: [illegible] 6' [illegible] RIGHT BANK

DATE: [illegible] | TIME: (BEGIN/END) 7 AM

FIELD CREW: JEF MVE HS, DJ (LSO)

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION	Roll #2		
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	#15 [illegible] ✓	Roll 2
	IN SHADE	#16 [illegible] ✓	Roll 2
SPOIL PILE MATERIALS		#17 ✓	✓
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES:	(LIST)	[illegible]	[illegible]
PIT LOCATION AFTER BACKFILL			

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH 1-1 (1-12-96) (NUMBER)
- ☑ ON FCDMC TOPOGRAPHY SHEET 1 (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION grass (grazed to ground) [illegible] ☐ PHOTOGRAPH #18-19
- ☐ SURFACE SOIL MATERIAL silty sand ☐ PHOTOGRAPH #18-20
- ☐ DESERT PAVEMENT No ☐ PHOTOGRAPH #18-[illegible]
- ☐ DESERT VARNISH No ☐ PHOTOGRAPH #18-20
- ☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH #24
  some possible worked stone [illegible]

DJ found fire cracked rock @ ~6" from surface

MISSING 20-21

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

N.T.S

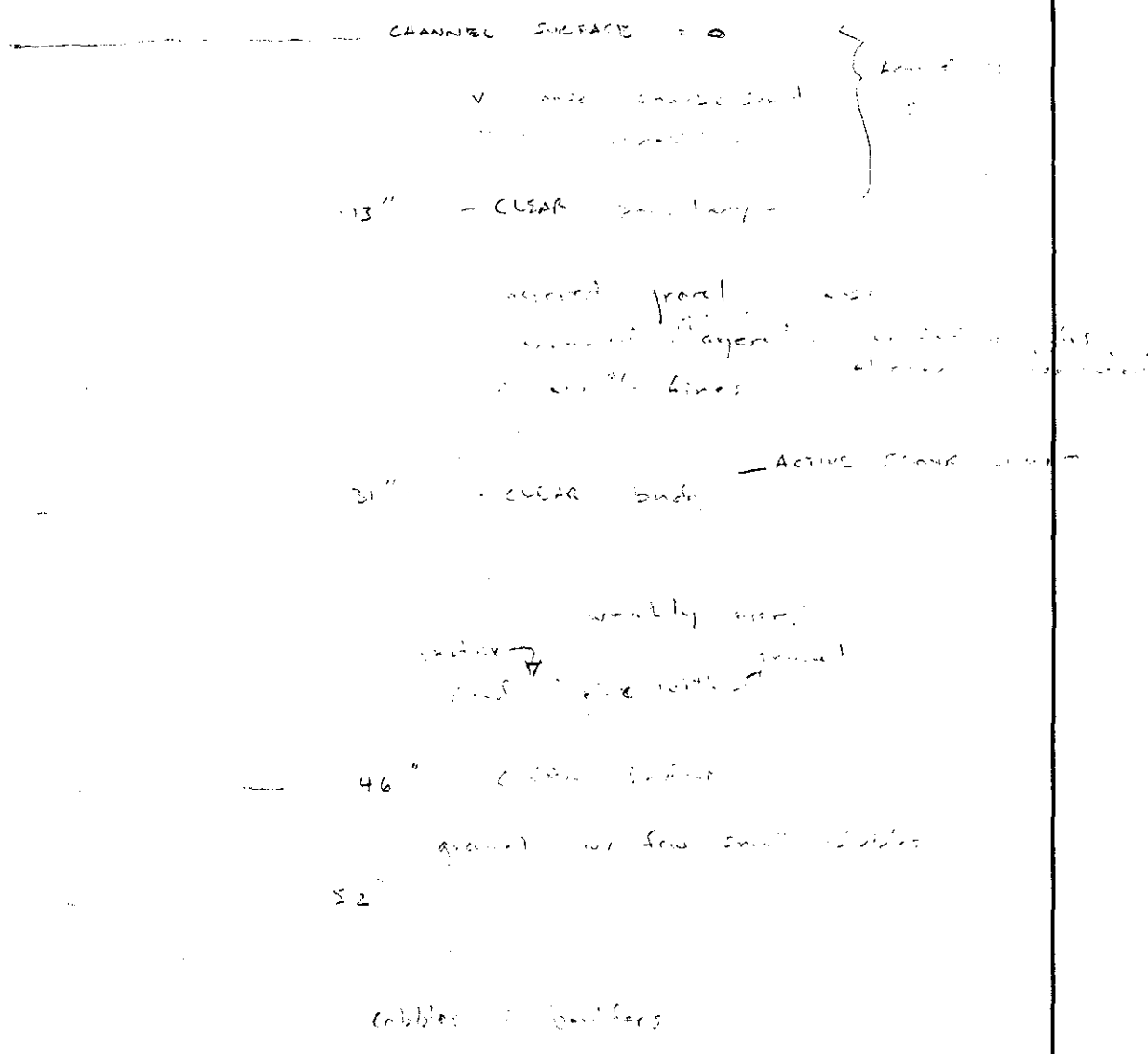


Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: [illegible]

Pavement, varnish development: [illegible]

Soil Description: Location [illegible]

Site No. 2c Date [illegible] Time 7 AM Vegetation [illegible]

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface [illegible]

Parent Material(s) _____ Described by [illegible]

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes effer; nodules; cement.
[illegible]	[illegible]	[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	[illegible]
[illegible]		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
[illegible]		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
[illegible]		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
[illegible]		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
[illegible]		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	
		[illegible]	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #:	
LOCATION:	
DATE:	TIME: (BEGIN/END)
FIELD CREW:	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION			
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	5pm	
SPOIL PILE MATERIALS			
GENERAL VIEW OF GEOMORPHIC SURFACE		see channel sheet	
NOTABLE FEATURES:	(LIST)	#16 top portion of profile #16 middle portion #17 28-36 #18 ripup clasts #19 [illegible] profile #24 Roll 3 top of pit #25 Roll 3 very top of pit	
PIT LOCATION AFTER BACKFILL		#22 5pm	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION mesquite [illegible]	☐ PHOTOGRAPH see [illegible]
☐ SURFACE SOIL MATERIAL	☐ PHOTOGRAPH #21 12:36pm
☐ DESERT PAVEMENT	☐ PHOTOGRAPH
☐ DESERT VARNISH	☐ PHOTOGRAPH
☐ ARCHAEOLOGICAL ARTIFACTS	☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location _____

Site No. _____ Date _____ Time _____ Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by _____

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
1.5		10YR 4/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr v.f	a s c w g i d b	
4.5		10YR 4/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr v.f	a s c w g i d b	
7.25		10YR 3/1	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr few	a s c w g i d b	
8.25		10YR 3/4 10YR 5/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr few	a s c w g i d b	
		10YR 3/2	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr v.f	a s c w g i d b	
12.75		10YR 4/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr v.f	a s c w g i d b	v. strong eff
15.0		10YR 3/3 10YR 5/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr r	a s c w g i d b	Ver[illegible] moderate eff
1.25		10YR 3/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	Somewhat [illegible] eff
22.5		10YR 4/3	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr v.f	a s c w g i d b	[illegible] s. eff
28		10YR 3/4	m vf gr sg f pl 1 m pr 2 c cpr 3 vc abk sbk	0 50 <10 75 10 >75 25	so po ss ps s p vs vp	lo vfr fr fi vfi efi	lo so sh h vh eh	S SiCL LS SiL SL Si SCL SiC L C CL SC		v1 f pf 1 po 2 d br 3 co p cobr	a s c w g i d b	[illegible] s eff

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-1 (HC	
LOCATION: APACHE WASH CHANNEL	
DATE: 3-24-99	TIME: (BEGIN/END) 7:30
FIELD CREW: JF, JR, TH	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		Roll 1- 20 - look w/	e pit location
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	1-24	
	IN SHADE		
SPOIL PILE MATERIALS		1-25 also Roll 2- #1	
GENERAL VIEW OF GEOMORPHIC SURFACE		1-20	
NOTABLE FEATURES: (LIST) chl is cobble & gravel bed - large rocks in bank in good condition. bk ht ~6' v. well vegetated small bank - riffle 75' d/s of pit		1-21 - top of profile 1-22 - bottom of profile 1-23 - look R to L 1-24 - look L to R	
filled in pit		~~2-2~~	
PIT LOCATION AFTER BACKFILL		2-2	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH AMC 3-6 (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

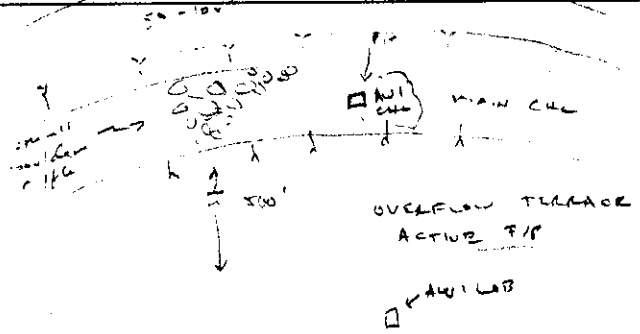
- ☐ VEGETATION Mq, PV - good brush cover — ☒ PHOTOGRAPH 1-20
- ☐ SURFACE SOIL MATERIAL d50 - ½-1" f gravel w/ small to med cobble e surface — ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT N/A — ☐ PHOTOGRAPH
- ☐ DESERT VARNISH N/A } chl — ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS - No — ☐ PHOTOGRAPH

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR - red @ depth	☐ PHOTOGRAPH
CROSS BEDDING None observed	☐ PHOTOGRAPH
CARBONATE CONTENT None visible	☐ PHOTOGRAPH
SOIL STRUCTURE - massive clay, layered gravels	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

CH1 sketch



HAMMER TEST

dry moist

10YR 5/3

5.8' — DRY

5.6' — v. thin cobble layer 1 d_{50} thick d_{50} = ½"
— c. gravel layer, horizontal bedding
individual clasts are disk-shaped ▭ & strongly aligned

fine gravel d_{max} = ¼"

— v. loose coarse gravel lens
zone of most active transport
layered

4.8' — regular abrupt

coarse gravel & cobbles d_{max} = 3"

v. LOOSE DRY

3.3 — indistinct

— transition to increase clay content in gravel
— noticeable redder than above or below but v. gravel - clay is sticky

5YR 5/4

m. HARD

2.7 — wavy, abrupt

individual peds are <10mm subangular blocky massive
— v. stiff silty clay - some scattered isolated pebbles & small cobbles

7.5YR 5/6

distinctly redder

m. HARD

slightly sticky, gritty - forms bar worms, but doesn't stretch

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-1 LOB1

LOCATION: APACHE WASH

DATE: 3-22-99

TIME: (BEGIN/END) 8 Am

FIELD CREW: JF, JR TH (FCD)

RECORDS CHECK BY: (NAME, DATE) JF 9/8/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		Roll 1 - #7 - look x pit E to W	Cassette
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	3-16	
	IN SHADE	3-15	
SPOIL PILE MATERIALS		3-16 look W	
GENERAL VIEW OF GEOMORPHIC SURFACE		3-16	
NOTABLE FEATURES: (LIST) pit profile similar to generalized Cave Ck profiles (large cobble / gravel under finer grained material)		ROLL-D1-5	
PIT LOCATION AFTER BACKFILL			

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-8 1979 AMC Stereos (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION 70% creosote ~4 ft minor cholla & brush fair cover ☐ PHOTOGRAPH

☐ SURFACE SOIL MATERIAL sandy - few cobbles ☐ PHOTOGRAPH

☐ DESERT PAVEMENT good varnish where cobbles accumulated on surface ☐ PHOTOGRAPH

☐ DESERT VARNISH No some gravel & cobbles locally ☐ PHOTOGRAPH

☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

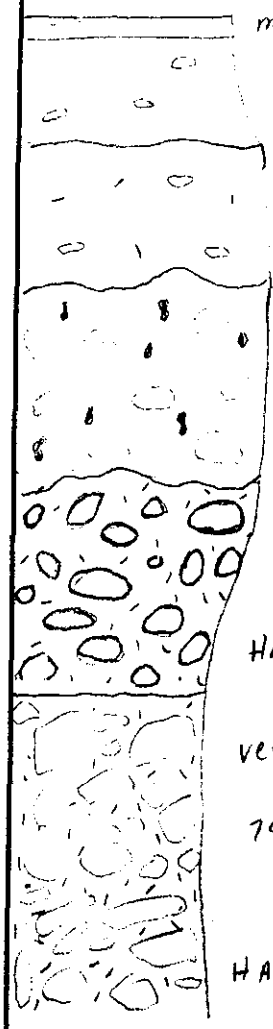
Ages: [redacted] - Late Pleistocene river terraces (10-250 ka)

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



med. platy loamy sand, slightly eff. SOFT

med-coarse subang blocky sandy loam, slightly eff. SOFT

med. subang. blocky loam w/ isolated carb flecks, strongly eff. SOFT

med subang. blocky sandy loam, carb. nodules HARD

v. fine subang. blocky sandy loam w/ thick cont carb. rinds 50% gravel HARD - EXTREMELY HARD

very fine loamy sand, strongly eff., v. few thin clay films 75% gravel HARD - EXTREMELY HARD

Jeanne Klawon

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections:

Pavement, varnish development:

Soil Description: Location APACHE WASH

Site No. AW-1 Date 3-25 Time 8:00 Am Vegetation Creosote, Cholla, Brittlebush

Elevation LOB1 Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by JF, TL

	Depth (cm)	Horizon	Color moist	Color dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes
1	7.25' 0.6" 7.2'		7.5YR 4/3	7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	No $CaCO_3$ observed slightly eff.
2	3.6" 6.9'		7.5YR 4/6	7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	vesicular No $CaCO_3$ observed slightly eff.
3	7.2" 6.3'		7.5YR 5/4	7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	Isolated carbonate flecks strongly eff.
4	15.6" 4.6'		7.5YR 5/4	7.5YR 8/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	Vesicular $CaCO_3$ nodule [illegible] from disseminated $CaCO_3$ filaments violently eff.
5	12" 3.6'		7.5YR 5/4	7.5YR 7/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	vessicular thick continuous [illegible] violently eff.
6	43.2" 0'		7.5YR 6/4	7.5YR 7/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	strongly eff. Carbonate in matrix but horizon is not indurated
					m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	May be vigorously $CaCO_3$ [illegible] layer @ base of profile, but too poorly exposed to describe
					m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
					m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
					m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW2 - CHL

LOCATION: APACHE WASH - D/S PV CONTL ; U/S C. BUTTES

DATE: 3-24-99 | TIME: (BEGIN/END) 9:05

FIELD CREW: JF JR TH (FCD) TL & JK

RECORDS CHECK BY: (NAME, DATE) JF 9/3/99

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		2-3 look u/s	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	2-5 - top of ~~2-6 - bottom~~	
	IN SHADE		
SPOIL PILE MATERIALS		2-8	
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES: (LIST) gravel bed chl, silty banks, well vegetated - bed is undulating in long'l. profile. banks are sloped ~2:1 no active cuts		2-4 - general view of profile 2-7 - look u/s @ active pit	
PIT LOCATION AFTER BACKFILL			

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH 3-8 (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION PV, Mq, med thick brush, ☐ PHOTOGRAPH

☐ SURFACE SOIL MATERIAL gravel w/ small to med cobble lag; marked contrast to f. grained banks ☐ PHOTOGRAPH

☐ DESERT PAVEMENT N/A } chl ☐ PHOTOGRAPH

☐ DESERT VARNISH N/A } ☐ PHOTOGRAPH

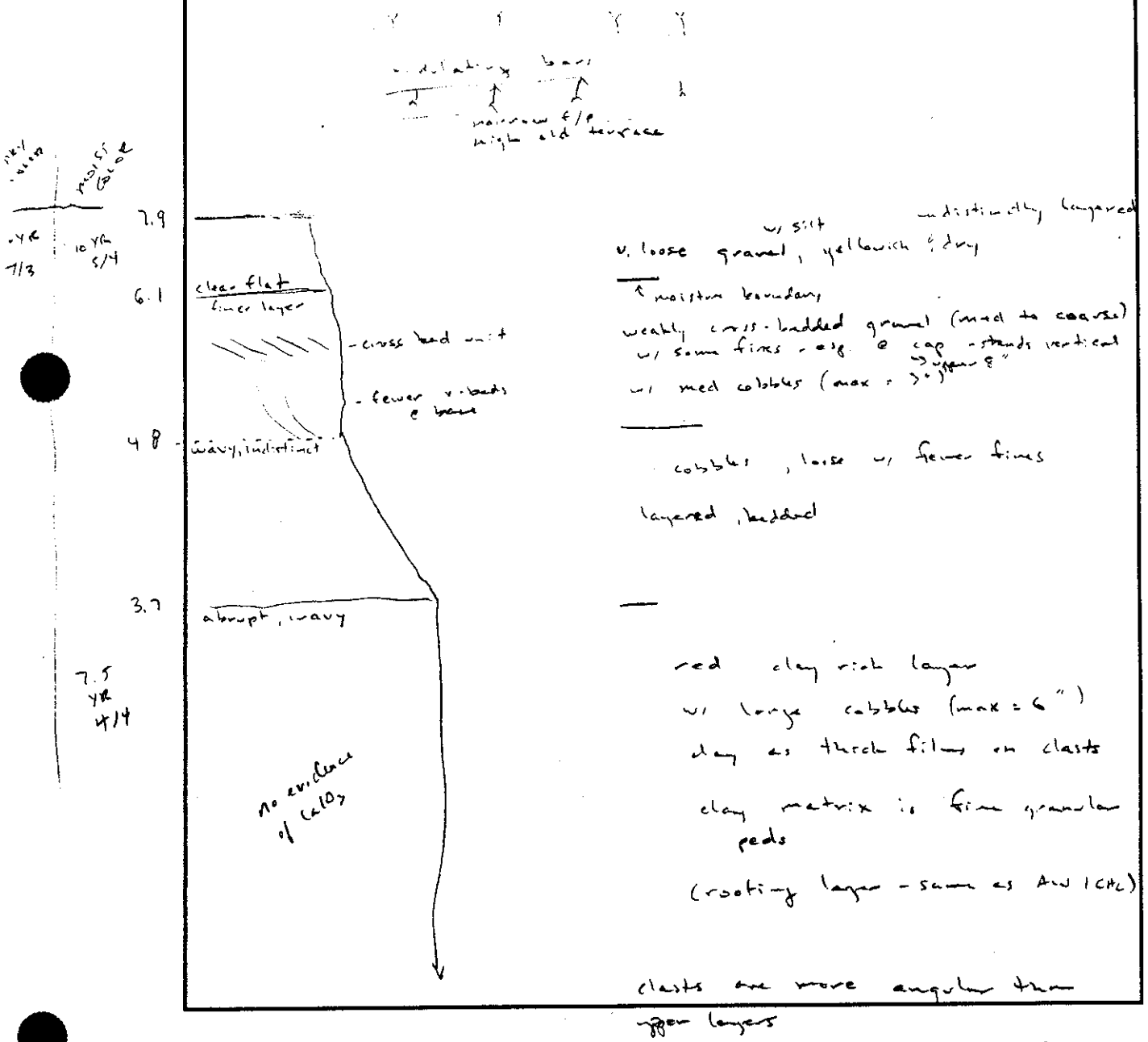
☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

#: AW-2 CHL DATE: 3-24 INITIALS: [illegible]

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-2 LOB 1

LOCATION: APACHE WASH

DATE: 3-23-99 | TIME: (BEGIN/END) 10:30

FIELD CREW: JF, JR TH (FCD)

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		Roll 1-8 last W to E	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	Photo 3-11 top portion of profile	
	IN SHADE	Photo 3-12 lower portion of profile	
SPOIL PILE MATERIALS		Photo 3-13 view of profile from above	
GENERAL VIEW OF GEOMORPHIC SURFACE		Photo 3-14 view of pit from west to east	
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL		D-1-4 (W to E)	powder on post

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☒ ON RECENT AERIAL PHOTOGRAPH Pair c Stereo Pair _____ (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION scattered creosote & cholla, patches of grass ~4'-6' fair cover 66' ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL loamy gravel. silt & sand ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT moderate scattered patches of gravels & cobbles w/areas of few gravels ☐ PHOTOGRAPH
- ☐ DESERT VARNISH some of pavement cobbles have moderate varnish; most none ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

[redacted], - older number of Middle Pleistocene river terraces (400-750 ka)

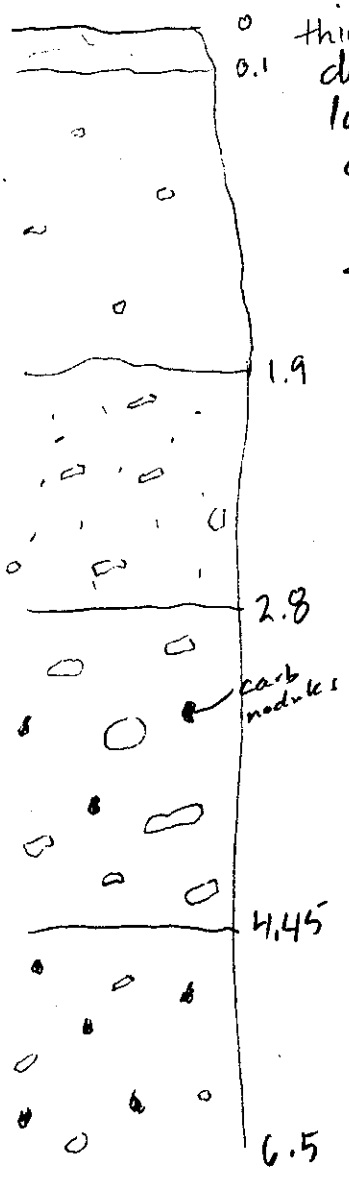
#: AW-2 LOB-1 DATE: 3/23/99 INITIALS: TWL

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



0 thin platy structure

0.1 dull brown to bright brown silty clay loam w/ med. subangular blocky structure
soft - mod hard
<10% gravel

1.9 hard
carbonate flecks + sm. nodules
very hard silty clay
<10% gravel

2.8 med. subangular blocky silt loam w/ thin discontinuous carbonates w/ some small carbonate nodules
hard
<10% gravel

4.45 reigish silt loam w/ subangular blocky structure w/ thin discontinuous carbonate w/ small nodules
hard <10% gravel

6.5 Bottom of pit

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location AW-2 LOB1

Site No. AW-2 Date 3/23/99 Time 1630 Vegetation scattered creosote & Cholla (stashorn)

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface high terrace

Parent Material(s) _____ Described by _____

	Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
6.5	0–0.1		7.5YR 5/6 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	~~none~~ eff
6.4	0.1–1.9		7.5YR 5/6 / 7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	strong eff.
4.6	1.9–2.8		7.5YR 5/6 / 7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	flecks & small nodules extremely thin discontinuous } strong to ~~violent~~ eff
3.7	2.8–4.45		7.5YR 6/4 / 7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	thin discontinuous carbonate w/small nodules - violent eff
2.05	4.45–6.5		7.5YR 6/4 / 7.5YR 7/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	thin discontinuous small nodules slightly vesicular - violent eff.
0			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pl; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-2 (ROB) [illegible]	
LOCATION: APACHE WASH	
DATE: 3-23-19	TIME: (BEGIN/END) 11:35
FIELD CREW: [illegible] (FCM)	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION	Roll 1 #10 - look W to E [illegible]	
SOIL PROFILE IN PIT (WITH SCALE) - IN ~~SUN~~	3-7 - top of profile	
IN SHADE	3-8 - bottom of profile	
SPOIL PILE MATERIALS	3-10	
GENERAL VIEW OF GEOMORPHIC SURFACE	3-9 w/ pit & rod	
NOTABLE FEATURES: (LIST) caliche horizon		
PIT LOCATION AFTER BACKFILL	Roll D1-2 W to E to [illegible]	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH AMC _____ (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION — creosote, cholla, barrel cactus, moderately good cover (> than ROB2) mam cacti — ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL — gravels, — ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT - No — loose open framework, [illegible] amt of fill to surface — ☐ PHOTOGRAPH
- ☐ DESERT VARNISH — moderate, greater toward margin of terrace — ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS — No — ☐ PHOTOGRAPH

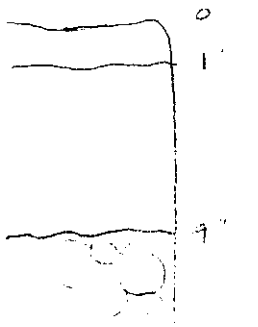
AZGS - Q_{1r} - Late Pleistocene River terrace (10-250 ka)

#: AW-2 ROB1 DATE: 3/23/99 INITIALS: TWL

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



Platy, vesicular with scattered surface clasts

soft (hammer test), weakly blocky
silty sand

top portion with some cobbles + large gravel
reddish carbonate veins throughout
soft to moderately hard (hammer test)

thick, carbonate layer

very hard (hammer test)
lenses of concentrated gravels (fine)
probable erosional surface (often)

buried soil
stringers
+
reddened

6.5' Bottom of Trench

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: Planar surface

Pavement, varnish development: loose, open pavement, moderate varnish

Soil Description: Location APACHE WASH

Site No. NW-2 Date 3/23/99 Time 3:00 pm Vegetation

Elevation Slope Aspect Geomorphic Surface

Parent Material(s) Described by TL + JK

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
0-1		10YR 4/6 ..... 7.5YR 5/4	m vf gr; sg f (pl); 1 (m) pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; (10) >75; 25	so po; (ss) (ps); s p; vs vp / lo (sg); vfr sh; (fr) h; fi vh; vfi eh; efi	S SiCL; LS SIL; SL SI; SCL SiC; (L) C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; (c) (w); g i; d b	vesicular; No visible CaCO3; no eff
1-9		7.5YR 5/6 ..... 7.5YR 6/6	m vf gr; sg f pl; 1 (m) pr; 2 c cpr; 3 vc (abk); sbk	0 50; <10 75; 10 >75; (25)	so po; (ss) ps; s (p); vs vp / lo; vfr so; (fr) (sh); fi h; vfi vh; efi eh	S SiCL; LS SIL; SL SI; SCL SiC; (L) C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	(a) s; c w; g (i); d b	No visible; no eff.
9-25		7.5YR 5/6 ..... 7.5YR 5/6	m vf gr; sg (f) pl; 1 m pr; 2 c cpr; 3 vc abk; (sbk)	0 (50); <10 75; 10 >75; 25	so po; ss ps; s (p); vs vp / lo; vfr so; (fr) (sh); fi h; vfi vh; efi eh	S SiCL; LS SIL; (SL) SI; SCL SiC; L C; CL SC		v1 (f) pf; 1 po; (2) d br; 3 co; p cobr; None; increase in degree of clarity	(a) (s); c w; g i; d b	carbonate filaments in finer matrix; thin discontinuous CaCO3 on clasts; strong eff.
25-66+		7.5YR 7/4 ..... 7.5YR 8/2	m vf gr; sg f pl; 1 (m) pr; 2 c cpr; 3 vc abk; (sbk)	0 (50); <10 75; 10 >75; (25)	(so) (po); ss ps; s p; vs vp / lo; vfr so; fr sh; fi h; (vfi) vh; efi eh	S SiCL; (LS) SIL; SL SI; SCL SiC; L C; CL SC		v1 (f) pf; (1) po; 2 d br; 3 co; p cobr; None; Intermittent	a s; c w; g i; d b	vesicular; Ca on clasts; matrix; thin discontinuous laminations; violent eff.; some moderate laminations on top of unit
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo; vfr so; fr sh; fi h; vfi vh; efi eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo; vfr so; fr sh; fi h; vfi vh; efi eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo; vfr so; fr sh; fi h; vfi vh; efi eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo; vfr so; fr sh; fi h; vfi vh; efi eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo; vfr so; fr sh; fi h; vfi vh; efi eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo; vfr so; fr sh; fi h; vfi vh; efi eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW 2 ROB 2	
LOCATION: APACHE WASH - FURTHEST FROM MAIN [illegible]	
DATE: 5-23-99	TIME: (BEGIN/END) 11:05
FIELD CREW: JF JR TH	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION	Roll 1 - #9 - look E to W	[illegible]
SOIL PROFILE IN PIT (WITH SCALE) - IN SUN	3.1 [illegible] profile	
IN SHADE	3.2 bottom profile	
SPOIL PILE MATERIALS	3-5	
GENERAL VIEW OF GEOMORPHIC SURFACE	3-6 - look towards Cl.1	
NOTABLE FEATURES: (LIST) Planar surface Appears disturbed - veg. density is low compared to surrounding area	3-3 - shade 3-4 - sun	- [illegible]
PIT LOCATION AFTER BACKFILL	Roll D1-3 look E to W	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☒ ON RECENT AERIAL PHOTOGRAPH _____ (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☐ VEGETATION	Creosote, cholla, brittlebush, mesquite, paloverde rel. open - sparse cover 6' high	☐ PHOTOGRAPH
☐ SURFACE SOIL MATERIAL	cobbles + gravels w/ silty matrix	☐ PHOTOGRAPH
☐ DESERT PAVEMENT no	loosely packed cobbles + gravels few amt of silt at surface	☐ PHOTOGRAPH
☐ DESERT VARNISH	moderate to low	☐ PHOTOGRAPH
☐ ARCHAEOLOGICAL ARTIFACTS No		☐ PHOTOGRAPH

[illegible] - late Pleistocene river terrace (10-250 ka)

Phil had this = to ROB1, but ROB1 is topographically lower (younger) w/ less clay

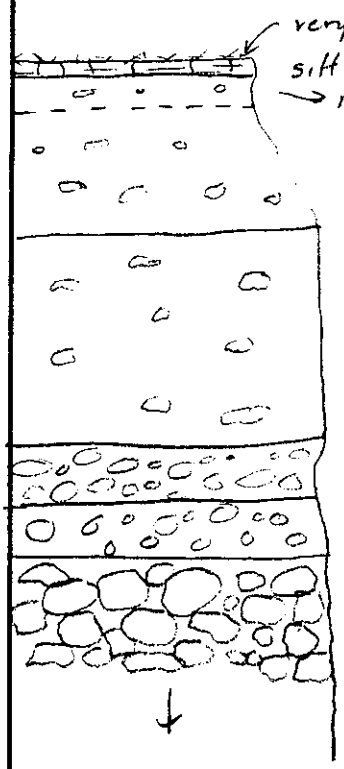
#: AW-2 ROB-2 DATE: 3/23/99 INITIALS: JF

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE

NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	below	☐ PHOTOGRAPH
GRAIN SIZE	mostly fine w 1, 2, 3, 4	☐ PHOTOGRAPH
COLOR	✓	☐ PHOTOGRAPH
CROSS BEDDING	- No	☐ PHOTOGRAPH
CARBONATE CONTENT	- See pg 3	☐ PHOTOGRAPH
SOIL STRUCTURE	Yes in Un + 2	☐ PHOTOGRAPH
SOIL HORIZONS	✓	☐ PHOTOGRAPH



very thin organic mat on top
silt cap, vesicular
→ med. subang blocky structure, weak clay films - moderately hard
coarse subang blocky structure, weak clay films
carbonate not evident - hard

coarse subang blocky structure, weak - mod clay films
carbonate not evident - hard

reddened, gravelly w/ thin discont. carb. coatings - hard

abundant clay films, increase in carb. both on clasts & in matrix - hard

gravelly, carbonate induration
increase in clast size from above units & in % gravel material - extremely hard

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: very flat + smooth

Pavement, varnish development: moderate scattered pavement, little varnish

Soil Description: Location AW-2 ROB-2

Site No. AW-2 Date 3/23/99 Time 1125 Vegetation scattered creosote + stick/staghorn cholla

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface terrace

Parent Material(s) gravelly Described by JC

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet	Consistence Moist	Consistence Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
0-2	Av	7.5YR 4/4 / 7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a w; c i; g b; d	surface gravels scattered as part of pavement; very few to none - clay film: none
2-20	Bt1	10YR 4/4 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	few clay films — sharp; none
20-68	Bt2	7.5YR 4/6 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	few clay films; none
68-101	Bt3	10YR 4/4 / 10YR 4/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	few ~~to common~~ CF; effervescent
101-120	Btk1	7.5YR 4/6 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	many CF; common to thin discontinuous carbonate on clasts strong
120-140	Btk2	7.5YR 6/6 / 7.5YR 6/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	common to many CF, discontinuous carbonate on clasts; matrix beginning - violent
140-180+	Bkm	7.5YR 6/4 / 7.5YR 6/8	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	~~common to many CF~~; carbonate as cementing agent coatings on clasts discontinu
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	lower side of clasts thicker than unit above - violent
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp	lo; vfr; fr; fi; vfi; efi	lo; so; sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-3 CHL

LOCATION: APACHE WASH - IMM. D/S PARADISE WASH CONF.

DATE: 3-24-99

TIME: (BEGIN/END) 10:45

FIELD CREW: JF JR TH (FCD)

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		Z-10 look d/s	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	Z 11 top	
	IN SHADE	Z-12 all	
SPOIL PILE MATERIALS		Z-14	
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES: (LIST) boulders chl, wider than d/s trees taller on banks, slightly less brush on banks, chl clear		Z-13 - look u/s @ profile	
PIT LOCATION AFTER BACKFILL		Z 15	

3. PLOT LOCATION OF TEST PIT

- [ ] ON USGS QUADRANGLE _____ (NAME)
- [x] ON RECENT AERIAL PHOTOGRAPH Ariz C 3-B (NUMBER)
- [ ] ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- [x] VEGETATION PV, mq, Creosote - bank veg is fair — [ ] PHOTOGRAPH
- [ ] SURFACE SOIL MATERIAL gravel & boulders; d_{50}: CG max = 2' — [ ] PHOTOGRAPH
- [ ] DESERT PAVEMENT N/A — [ ] PHOTOGRAPH
- [ ] DESERT VARNISH N/A — [ ] PHOTOGRAPH
- [ ] ARCHAEOLOGICAL ARTIFACTS No — [ ] PHOTOGRAPH

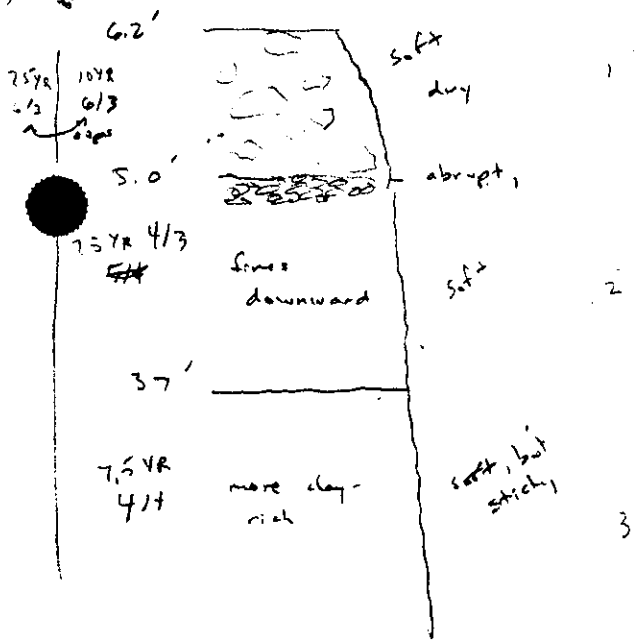
AW-3
3-24 JEF

- bank lost vertically higher than λ1 } incision
- banks lost veg'n
- coarse bed material

straight, uniform chl (SEE PHOTOS

chl ran: 1) possible incision of ~4'?
2) is b/p now perched?

see photos



layered, no x-bed

boulders, dry surface unit
cobbles, boulders, + gravel
loose + soft, but stiffer than upper unit of AW 1 + 2

clay films cont clasts as main distinction from upper layer

gravel w/ few large clasts
more granular
no apparent bedding
" " "

pebbly w/ more clay
incipient platy structure
v. sticky, some decomposed clasts

all layers too coarse for structure
good clay films on units 2 + 3

2 + 3 aren't resistant to erosion

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-3 ROB 1

LOCATION: APACHE WASH imm. D/S CONFL W/ D HILLS PARADISE

DATE: 3-23-99

TIME: (BEGIN/END) 12:40 pm.

FIELD CREW: JF, JR, TH (FCD)

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		Roll 1 #11 - Look S-N away from wash	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	3-19 top	
	IN SHADE	3-20 bottom 3-21	
SPOIL PILE MATERIALS		3-18	
GENERAL VIEW OF GEOMORPHIC SURFACE		3-18	
NOTABLE FEATURES:	(LIST)	small many trees	
PIT LOCATION AFTER BACKFILL		Roll D2-5	

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☑ ON RECENT AERIAL PHOTOGRAPH 3-10 Am c (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION creosote (6-8') good cover mg to 12' pencil cholla ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL sandy loam, like perched a ... ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT No ☐ PHOTOGRAPH
- ☐ DESERT VARNISH No ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

young surface

AZGS, Q_{lr} - late Pleistocene river terraces (10-250ka)

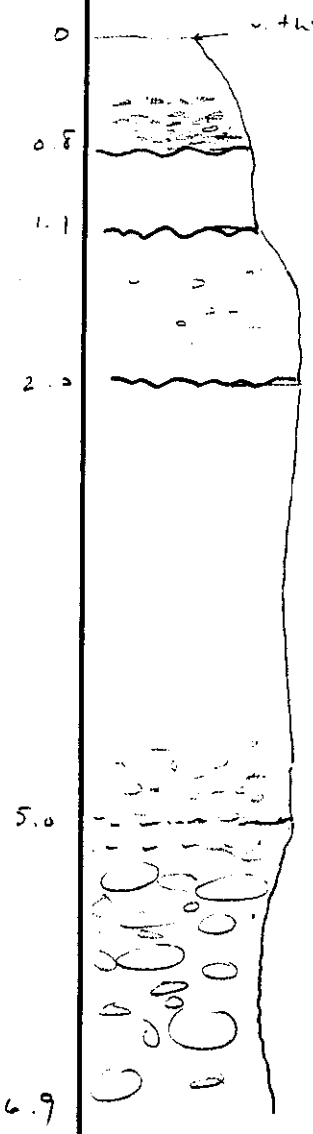
JF) Seems younger much younger than 2ROB2 which is mapped as Qa

#: AW 3 DATE: 3/25 INITIALS: JEF
ROB 1

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



HAMMER TEST

- at base layered gravel w/ silt bands - local silt cap may be perched chl - disks out to R side of pit. Loose & soft — SOFT
- massive, slightly stiff, stands vert. soft — soft
- few gravel grains massive — moderately hard
- massive, few gravel grains, sandy — soft to mod. hard
- v. gravelly loose — mod. hard

Table A-2.—Work sheet for recording soil properties in the field
[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____
Pavement, varnish development: _____

Soil Description: **Location** ARACHE WASH
Site No. AW3 **Date** 3-25-99 **Time** _____ **Vegetation** _____
Elevation 2081 **Slope** _____ **Aspect** _____ **Geomorphic Surface** _____
Parent Material(s) _____ **Described by** PP / JEF

Depth (cm) (ft)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
6.9' 0.8		7.5YR 4/4 ..... 7.5YR 5/4	m vf NA gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl N/A efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	Strong eff. No visible $CaCO_3$
6.1 1.1		7.5YR 4/3 ..... 7.5YR 6/4	m vf NA gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; *Notes → sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	effervescent occ. v. thin discontin $CaCO_3$ *Breaks into 1 med sub any b/...
5.8 2.0		7.5YR 4/3 ..... 7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; *Notes → sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	strongly effervescs. thin discontinous $CaCO_3$ *Breaks into 2 med sbk
4.9 4.1		7.5YR 5/4 ..... 7.5YR 6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; *Notes sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	strong effer thin discontinous $CaCO_3$ *Breaks to 1m sbk
0 6.9		7.5YR 4/4 ..... 7.5YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	violent effer. thin discontinous $CaCO_3$
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fl vfl efl / lo so sh h vh eh	S SiCL; LS SIL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-5 CAL

LOCATION: APACHE WASH DIS of CAREFREE HWY

DATE: 3-24-99

TIME: (BEGIN/END) 1:15 - 2:00 pm

FIELD CREW: JF JR TH (FCD)

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		3-21 look u/s	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	3-22 whole profile	
	IN SHADE	3-23 from dist	
SPOIL PILE MATERIALS		3-24 Tony + upper pit	
GENERAL VIEW OF GEOMORPHIC SURFACE		3-25 - Spoil pile	
NOTABLE FEATURES: (LIST) Stage II - III $CaCO_3$ in RB, LB is sandy silt v. rock material excavated			
PIT LOCATION AFTER BACKFILL		3-26	

3. PLOT LOCATION OF TEST PIT

- [ ] ON USGS QUADRANGLE _____ (NAME)
- [x] ON RECENT AERIAL PHOTOGRAPH AMC - 3-12 (NUMBER)
- [ ] ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- [ ] VEGETATION Creosote + Small mg chl clear Bank veg'n poor to fair [ ] PHOTOGRAPH
- [ ] SURFACE SOIL MATERIAL Coarse sand w/ subangular boulders to max ≈ 1' [ ] PHOTOGRAPH
- [ ] DESERT PAVEMENT } N/A [ ] PHOTOGRAPH
- [ ] DESERT VARNISH } N/A [ ] PHOTOGRAPH
- [ ] ARCHAEOLOGICAL ARTIFACTS No [ ] PHOTOGRAPH

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW - 5 ROB 1	
LOCATION: APACHE WASH	
DATE: 3-23-99	TIME: (BEGIN/END) 1:40
FIELD CREW: JF JR TA (FCD)	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		ROLL 1 - #13 -	look NW
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE		
SPOIL PILE MATERIALS		SPOIL OTHER	
GENERAL VIEW OF GEOMORPHIC SURFACE		COVER SHEET	
NOTABLE FEATURES:	(LIST)		mtns in background
PIT LOCATION AFTER BACKFILL		ROLL D2 - 2	

moved pit

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☒ ON RECENT AERIAL PHOTOGRAPH 3-12 (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT ☐ PHOTOGRAPH
- ☐ DESERT VARNISH ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH

CAVE CREEK WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW 5-R013 1

LOCATION: APACHE WASH P/S GATEWAY HWY

DATE: 3-25-99

TIME: (BEGIN/END) 12:45

FIELD CREW: JF & PP

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION (RECORD PHOTO # & TIME)

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		SEE OTHER SHEET	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	4-4	
	IN SHADE	4-2, 4-3	
SPOIL PILE MATERIALS		4-1	
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES:	(LIST)		
PIT LOCATION AFTER BACKFILL			

3. PLOT LOCATION OF TEST PIT

☐ ON USGS QUADRANGLE _____ (NAME)

☑ ON RECENT AERIAL PHOTOGRAPH Ame _____ (NUMBER)

☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

☒ VEGETATION — Creosote, bursage — ☐ PHOTOGRAPH

☐ SURFACE SOIL MATERIAL — gravels in silty sand matrix — ☐ PHOTOGRAPH

☐ DESERT PAVEMENT — weak, discontinuous — ☐ PHOTOGRAPH

☐ DESERT VARNISH — wk orange on clast undersides — ☐ PHOTOGRAPH

☐ ARCHAEOLOGICAL ARTIFACTS — No — ☐ PHOTOGRAPH

AZGS · Qlr - Late Pleistocene river terraces (10-250 ka)

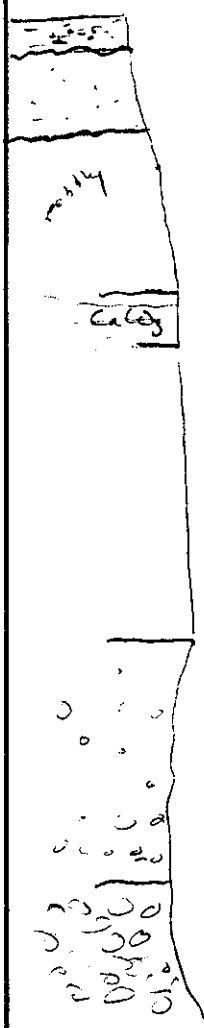
#: AW-5 DATE: 3-25 INITIALS: JEF

Rob,

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



HAMMER TEST

w/ fine gravel
- sandy cap patchy locally, absent locally — Pr soft
- sandy some minor clay harder than ' — soft

$CaCO_3$ accumulating, gravelly loam — soft

"laminated" structure is massive $CaCO_3$ layer - but not v. hard — hard
may be buried soil, may not be present in all of pit - eroded near entrance ramp. Not obvious on N side.

disseminated $CaCO_3$ layer — hard

less $CaCO_3$ than above (visually) but ↑ amount of gravel soft — mod. hard

hard gravel coarse layer — hard to ex hard

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location APACHE WASH

Site No. AW5 Date 3-25-99 Time 1 PM Vegetation _____

Elevation ROB 1 Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) _____ Described by PP

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
6.4' 0.2		7.5 YR 3/4 / 7.5 YR 5/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	no eff. No Carbonate
6.2' 1.2		7.5YR 4/4 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	no eff No Carbonate
5.2' 2.4		7.5YR 4/4 / 7.5YR 4/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	effervescent thin discont on pebbles
4.0' 2.8		10YR 8/4 / 10YR 8/2	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	N/A; so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	violently eff ~95% $CaCO_3$
2.4' 4.0		10YR 4/4 / 10YR 6/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	strong eff $CaCO_3$ whitens matrix thru + nodule + vertical concreti several cm across
1.0 5.4		7.5YR 4/6 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b	strongly eff discontinuous $CaCO_3$ films on pebbles
0 6.4		7.5YR 4/6 / 7.5YR 5/3	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; None	a s; c w; g i; d b; N/A	violent eff many clasts w/ continuous $CaCO_3$ some w/ well dev'd pendants local areas of + $CaCO_3$
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
			m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr fr fi vfi efi / lo so sh h vh eh	S SiCL; LS SIL; SL SI; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

may be old soil stripped to $CaCO_3$ & redeposited

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: ~~Aw-4~~ DHW-1 CM (RENAMED PIT)

LOCATION: DESERT HILLS WASH U/S STOCK POND

DATE: 3-24-99 | TIME: (BEGIN/END) 11:45

FIELD CREW: JF, JR TH (FCD)

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		2-16 look u/s	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	2-17 top	
	IN SHADE	2-18 bottom	
SPOIL PILE MATERIALS		2-19 look d/s	
GENERAL VIEW OF GEOMORPHIC SURFACE			
NOTABLE FEATURES: (LIST) Incised narrow chl, w/ vert cut banks & geotextile veg'n on both banks, exposed roots			
PIT LOCATION AFTER BACKFILL		2-20	

3. PLOT LOCATION OF TEST PIT

- [ ] ON USGS QUADRANGLE _____ (NAME)
- [x] ON RECENT AERIAL PHOTOGRAPH AMC 3-10 (NUMBER)
- [ ] ON FCDMC TOPOGRAPHY _____ (SHEET #)

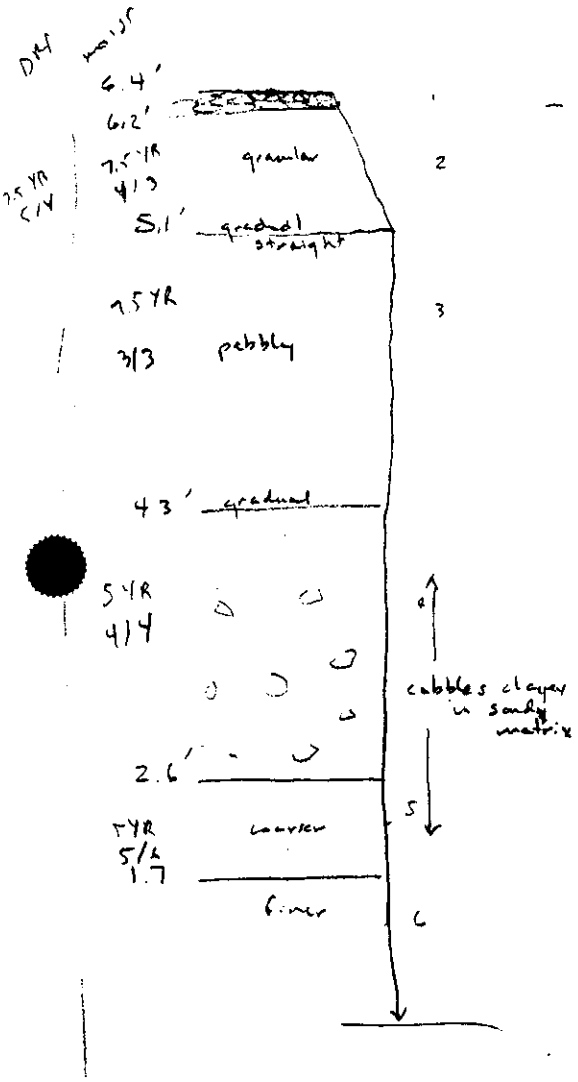
2. DESCRIPTION OF GEOMORPHIC SURFACE

- [ ] VEGETATION - Mq, minimal brush {- fair bank cover, chl clear} [ ] PHOTOGRAPH
- [ ] SURFACE SOIL MATERIAL cobbles - incipient armor layer, 2 d_{50} thick d_{50} = 2" [ ] PHOTOGRAPH
- [ ] DESERT PAVEMENT N/A Poor Armor [ ] PHOTOGRAPH
- [ ] DESERT VARNISH N/A [ ] PHOTOGRAPH
- [ ] ARCHAEOLOGICAL ARTIFACTS No [ ] PHOTOGRAPH

~~[illegible]~~

DHW - 1
CHL
3-24
JEF

CHL - v. straight, grab entrenched, possibly armored



HAMMER TEST

1 — subangular small to med. cobble layer - dry active v. soft

2 looser, slight reddening & f. grained material — SOFT

3 cobbly clay loam
$CaCO_3$ nodules up to 5mm — M. HARD TO SOFT

loose/soft layers intermixed

Nodules to 10 m — M. HARD

4

5 $CaCO_3$ disseminated - v. hard unit
+ many small nodules — V. HARD
lighter tone than layers above

6 red color — V. HARD (almost rings)

- All boundaries are indistinct
- material @ depth is more rounded
- upper layers 1-3 are more angular
- color red % ↑ with depth
- no bedding throughout

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: AW-~~4~~ ROB 1 DHW-1

LOCATION: DESERT HILLS WASH U/S OF STOCK POND

DATE: 3-23-99 | TIME: (BEGIN/END) 1:05 PM

FIELD CREW: JF, JR, TH

RECORDS CHECK BY: (NAME, DATE)

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE	STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION	Roll 1 - #12 Look W to E @ 2-stake	
SOIL PROFILE IN PIT (WITH SCALE) - IN SUN	Roll 3-#22 - view from above	
IN SHADE	#23 - view of lower profile	
SPOIL PILE MATERIALS	#24 - view of pit	
GENERAL VIEW OF GEOMORPHIC SURFACE		
NOTABLE FEATURES: (LIST) Soil mounds around creosote vegetation wash adjacent to pit is incised 5-8 ft depositional features in lee of plants esp. creosote		pounded on pit
PIT LOCATION AFTER BACKFILL	RD2-3 - W to E	

3. PLOT LOCATION OF TEST PIT

- [ ] ON USGS QUADRANGLE _____ (NAME)
- [x] ON RECENT AERIAL PHOTOGRAPH AMC #3-10 (NUMBER)
- [ ] ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- [ ] VEGETATION Creosote, mesquite, paloverde (in swales + drainages) christmas cactus — [ ] PHOTOGRAPH
- [ ] SURFACE SOIL MATERIAL fine grained — mainly sand + silt — [ ] PHOTOGRAPH
- [ ] DESERT PAVEMENT nonexistent — [ ] PHOTOGRAPH
- [ ] DESERT VARNISH nonexistent — [ ] PHOTOGRAPH
- [ ] ARCHAEOLOGICAL ARTIFACTS — [ ] PHOTOGRAPH

AZ: Q_{lr} Late Pleistocene

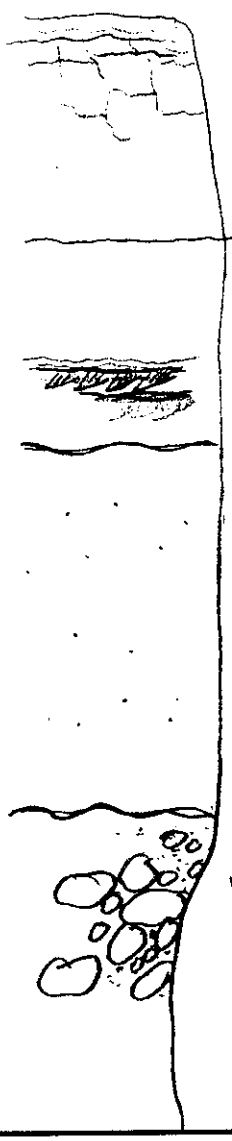
Phil: appears older than AW3LOB, but similar

#: AW-4 DATE: 3/24/99 INITIALS: TWL
ROB 1

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH



0

bright brown course mix of subangular blocky & platy structural loam soft (hammer test)

11.5" (1')

soft wheel.t test

yellowish brown weakly developed medium subangular blocky sandy clay loam
Event complets w/ crossbedded sands and silty caps noticeable in lower portions ~ 0.1' per complet

23.5" (2')

soft

bright brown weakly developed coarse subangular blocky silty clay loam
some carbonate flecks
better indurated than unit 2 above

53.5"

very soft

bright brown, single grain gravels from very course sand to cobbles soft to loose caving in loamy sand

76.5" = Bottom of pit

ph.l: appear older than AW3 & 0B, but similar

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissections: _____

Pavement, varnish development: _____

Soil Description: Location AW-4 ROB-1 Desert Hills Wash

Site No. AW-4 Date 3/24/99 Time 10:45 am Vegetation _____

Elevation ROB 1 Slope _____ Aspect _____ Geomorphic Surface floodplain / overbank

Parent Material(s) _____ Described by JK, TL

in Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
26.5 0-11.5	Bw	7.5YR 4/6 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	no visible $CaCO_3$; slightly to strongly eff.
65 11.5-23.5	Bt	10YR 4/6 / 10YR 5/8	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr; none	a s; c w; g i; d b	very thin + discont. carbonate coatings on clasts – slight; strongly eff. v discont.
53 23.5-53.5	Btk	7.5YR 5/6 / 7.5YR 6/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	flecks, v thin carb coatings on clasts; strongly eff
23 53.5-76.5	Bk	7.5YR 5/6 / 7.5YR 5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	some discontinuous films but not great amounts; violently eff
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr; fi; vfi; efi / lo so; ss sh; h; vh; eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: PW-1 LOB 1	
LOCATION: PARADISE WASH	
DATE: 3-23-99	TIME: (BEGIN/END) 2:10 pm
FIELD CREW: JF JR TH (FCD)	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		Roll 1-#14	look W toward wash
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN	Roll 4-#5+6 top + bottom	
	IN SHADE	of profile in pit	
SPOIL PILE MATERIALS		#7 - pit from above	
GENERAL VIEW OF GEOMORPHIC SURFACE		#8 - spoil pile + surrounding area	
NOTABLE FEATURES: (LIST) topography → rises slightly toward channel from pit and drops gradually lower away from pit toward oldest terrace			
PIT LOCATION AFTER BACKFILL		Roll D2-1	look W

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☒ ON RECENT AERIAL PHOTOGRAPH AMC #2-11 (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

- ☐ VEGETATION creosote, brittlebush, palo Verde immature saguaro small forbes ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL gravelly sand ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT patchy small cobbles + gravel ☐ PHOTOGRAPH
- ☐ DESERT VARNISH sporadic lyon cobbles of moderate development ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS ☐ PHOTOGRAPH

AZ GS - Qm middle Pleistocene alluvium (250-750 ka)

#: PW-1 DATE: 3-24-99 INITIALS: TWL
LOB-1

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

STRATIGRAPHY	☐ PHOTOGRAPH
GRAIN SIZE	☐ PHOTOGRAPH
COLOR	☐ PHOTOGRAPH
CROSS BEDDING	☐ PHOTOGRAPH
CARBONATE CONTENT	☐ PHOTOGRAPH
SOIL STRUCTURE	☐ PHOTOGRAPH
SOIL HORIZONS	☐ PHOTOGRAPH

weak coarse subang blocky brown sandy loam w/ very few thin clay films & no visible carbonate

weak fine subang blocky brown loamy sand w/ very few thin clay films & thin discontinuous carbonate coatings on clasts 50% gravel

single grain bright brown loam w/ very few thin clay films and discont. to nearly continuous carb. coatings on clasts. extremely gravelly; gradual wavy basal contact

single grain reddish brown loamy sand w/ moderately developed medium thick clay films and none to thin discontinuous carbonate coatings

Table A-2.—Work sheet for recording soil properties in the field

[In the note column, one can record properties not universal to all soils. Courtesy of D. Jorgenson, 1989]

Surface smoothness/dissection: _____

Pavement, varnish development: _____

Soil Description: Location PW-1 LOB-1

Site No. PW-1 Date 3-24-99 Time 1250 Vegetation _____

Elevation _____ Slope _____ Aspect _____ Geomorphic Surface _____

Parent Material(s) gravels Described by JK, TL

Depth (cm)	Horizon	Color moist / dry	Structure	Gravel %	Consistence Wet / Moist / Dry	Texture	pH	Clay films	Boundaries	Carbonate notes eff; rinds; cement.
75" 0- 11"		7.5YR4/4 / 7.5YR6/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		vf 1 pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	none none effervescent
64" 11"- 27"		7.5YR4/6 / 7.5YR5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		vf 1 pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	thin discontinuous strongly eff.
48" 27"- 55"		7.5YR5/6 / 7.5YR6/4	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		vf 1 pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	violently eff. discontinuous to nearly continuous thin coatings one last; sg structure predominant, but in some places of more fine gr. material struc clays hold gra together in a blocky struc
28" 55"- 75"		5YR4/8 / 5YR5/6	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 1 pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	none to thin discontinuous strongly eff. same comment as above
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	
		.....	m vf gr; sg f pl; 1 m pr; 2 c cpr; 3 vc abk; sbk	0 50; <10 75; 10 >75; 25	so po; ss ps; s p; vs vp / lo vfr; fr fi; vfi efi / lo so; sh h; vh eh	S SiCL; LS SiL; SL Si; SCL SiC; L C; CL SC		v1 1 f pf; 1 po; 2 d br; 3 co; p cobr	a s; c w; g i; d b	

APACHE WASH / PARADISE WASH WATERCOURSE MASTER PLAN
FIELD CHECK LIST - GEOMORPHOLOGY
SOIL TEST PITS

TEST PIT #: PW1 CHL	
LOCATION: PARADISE WASH - d/s of trib conf ~ 50'	
DATE: 3-23-99	TIME: (BEGIN/END) 2:30 pm
FIELD CREW: JF, JR, TH (FCD)	
RECORDS CHECK BY: (NAME, DATE)	

NOTE: EVERY GEOMORPHIC CHARACTERISTIC NOTED ON FORMS SHOULD BE PHOTOGRAPHED

1. PHOTO-DOCUMENTATION **(RECORD PHOTO # & TIME)**

DATA TYPE		STILL PHOTOGRAPH	CAMCORDER
PIT LOCATION BEFORE EXCAVATION		Roll 1 - #15 look -/5	
SOIL PROFILE IN PIT (WITH SCALE) -	IN SUN		
	IN SHADE	1-16 top, 1-17 bottom	
SPOIL PILE MATERIALS		18	
GENERAL VIEW OF GEOMORPHIC SURFACE		N/A	
NOTABLE FEATURES: (LIST) v. bouldery loose material subsurface (> 1.5' is red, clay rich)		19 - entire pit	
PIT LOCATION AFTER BACKFILL			

3. PLOT LOCATION OF TEST PIT

- ☐ ON USGS QUADRANGLE _____ (NAME)
- ☐ ON RECENT AERIAL PHOTOGRAPH AMC (2-11) (NUMBER)
- ☐ ON FCDMC TOPOGRAPHY _____ (SHEET #)

2. DESCRIPTION OF GEOMORPHIC SURFACE

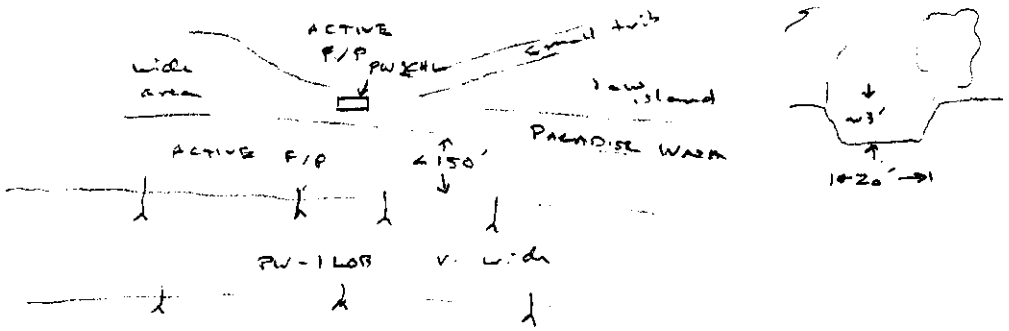
- ☑ VEGETATION pv, mg, fc - chl is clear some rabbit brush ☐ PHOTOGRAPH
- ☐ SURFACE SOIL MATERIAL cobbly gravel w/ some boulders to 2.5' ☐ PHOTOGRAPH
- ☐ DESERT PAVEMENT N/A } chl ☐ PHOTOGRAPH
- ☐ DESERT VARNISH N/A } chl ☐ PHOTOGRAPH
- ☐ ARCHAEOLOGICAL ARTIFACTS No ☐ PHOTOGRAPH

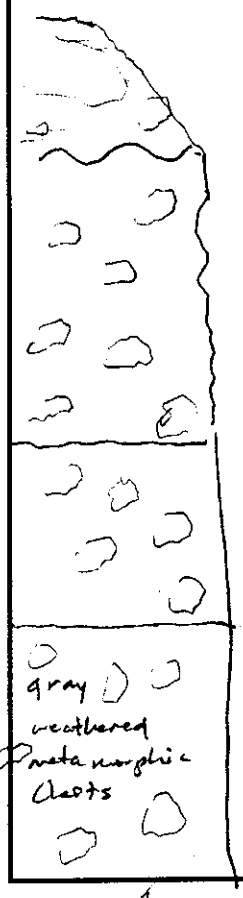
#: PW-1 CHL DATE: 3-23 INITIALS: JEF

3. SOIL DESCRIPTIONS

☐ DRAW REPRESENTATIVE SOIL PROFILE — NOTE THE FOLLOWING FOR EACH UNIT:

✓ STRATIGRAPHY		☐ PHOTOGRAPH
✓ GRAIN SIZE		☐ PHOTOGRAPH
COLOR		☐ PHOTOGRAPH
CROSS BEDDING		☐ PHOTOGRAPH
CARBONATE CONTENT	- No acid effervescing - no flocks	☐ PHOTOGRAPH
SOIL STRUCTURE	- clay accumulation	☐ PHOTOGRAPH
SOIL HORIZONS		☐ PHOTOGRAPH





HAMMER TEST

bedded, layered, cross bedded — v. SOFT

f. gravel matrix w/ cobbles — subangular

v. loose — v. wavy boundary - but distinct / sharp

No apparent bedding below 5.9'

m. HARD (STIFF)

stiff gravelly clay loam (pockets of uniform clay between matrices)
(stands nearly vertical, but irregular)

smooth transitional boundary, v. gradual

v. stiff gravelly clay loam
(stand vertical

smooth, v. gradual boundary

m. HARD

gravelly clay loam
stands vertical

hammer test - blade goes in 2" - slightly softer at base

Appendix C: Documentation of Geomorphic Assessment

- **Computations and Spreadsheet Printouts**

Note: *Spreadsheets used in the geomorphic analysis are provided digitally on the CD which accompanies this report. Hard copies of the spreadsheets are on file at JE Fuller/ Hydrology & Geomorphology, Inc.*

Appendix D: Documentation of Engineering Assessment

- **Computations and Spreadsheet Printouts**

Note: *Spreadsheets used in the engineering analysis are provided digitally on the CD which accompanies this report. Hard copies of the spreadsheets are on file at JE Fuller/ Hydrology & Geomorphology, Inc.*

Appendix E: Scanned Prints of Historical Aerial Photographs

Note: *Historical aerial photographs collected for this report are provided digitally on the CD which accompanies this report. Hard copies of the photographs are on file at JE Fuller/ Hydrology & Geomorphology, Inc.*