

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
1	CG-PT-R2-1	72	Cave Gulch	-	CG-PT-R2-1	Actively incising reach between two sinkholes	Recontour 50 ft of roadway and replace drop inlet. Add new concrete drop structure. Grade out headcut and create rock-lined channel inside gully, 20' wide x 50' long. Add additional drop structure midway down channel. Install 100 LF 24" pipe under road crossing to connect upper sinkhole to rock-lined channel. Uphill of upper sinkhole, place 3 waterbars along NW SE trending road to direct runoff to north side.
2	CG-PST-R1-1	40	Cave Gulch	Pump Station Tributary	CG-PST-R1-1	Channel incision downstream of pump station driveway	Divert flow coming down Empire Grade - Reinforce 40 ft of shoulder and install 200 SF rock lining off Empire Grade. Install 2 diversion structures each 2' W x 6'L and anchored to channel. Protect receiving channel below culvert outfall with rock energy dissipation apron (15' long x 4' wide)
3	JG-EF-R2-1	52	Jordan Gulch	East Fork	JG-EF-R2-1	Sloping nickpoint, 4' drop	2 check dams and redwood planting - plant seedlings in riparian zone
4	JG-EG-R2-3	52	Jordan Gulch	East Fork	JG-EF-R2-3	2'-high nickpoint	1 check dam and redwood planting - plant seedlings in riparian zone
5	JG-EF-R2-4	52	Jordan Gulch	East Fork	JG-EF-R2-4	Six- to eight-foot high root mass stabilizing roughly 100 feet of channel as well as large sediment stores upstream (JG-ER-R1-5)	Armor 8' wide x 4' high nickpoint below root mass with large rock. Also reinforce root mass with 5 downstream checkdams: 2 would be 11 ft wide by 1.5 ft high, 3 would be 8 ft wide by 1.5 ft high
6	JG-EF-R2-6	52	Jordan Gulch	East Fork	JG-EF-R2-6	Redwood tree in channel, channel splits around	Install 1-2 check dams or downed logs to divert flow away from redwood tree. Check dams would be roughly 6 ft wide and 1.5 ft high.
7	JG-EF-R2-7	52	Jordan Gulch	East Fork	JG-EF-R2-7	Shallow layer of sediment, may have originated from Spring Road, currently stabilized by annual vegetation	Revegetate with sedges, if sediment appears to be moving. 100' long x 30' wide
8	JG-EF-R2-8	52	Jordan Gulch	East Fork	JG-EF-R2-8	Sinkhole east of Colleges 9/10 and west of Crown Merrill - with lots of clay from ground surface to 5' below ground surface (augured 12/03)	Increase depth of sinkhole by boring away sediments. Assume 6' deep sinkhole by 50' diameter. Excavate 3750 cu-ft of sediment, re-contour w/ 1000 SF of rock lining. Revegetate with sedges.
9	JG-EF-A	44	Jordan Gulch	East Fork	College Nine Apartments	S. End Bldg. #5	Modify Hatches
10	JG-EF-B	52	Jordan Gulch	East Fork	College Nine Apartments	N. Side of Facility corner of Parking lot	Modify Hatches
11	JG-EF-C	52	Jordan Gulch	East Fork	Social Science I & II	Coll. 9 Loading Dock-Turnaround	Modify Hatches
12	JG-EF-D	52	Jordan Gulch	East Fork	Social Science I & II	Coll. 9 Meadow-just off sidewalk	Modify Hatches
13	JG-EF-E	52	Jordan Gulch	East Fork	Social Science I & II	Coll. 9 Serv. Rd.-first from Circle	Modify Hatches
14	JG-EF-F	52	Jordan Gulch	East Fork	Social Science I & II	Coll. 9 Serv. Rd.-second from Circle	Modify Hatches
15	JG-EF-G	52	Jordan Gulch	East Fork	Social Science I & II	McLaughlin-Above Jordan Gulch	Modify Hatches
16	JG-EF-H	52	Jordan Gulch	East Fork	College 9 Res Hall	E. side of R1 & R2	Modify Hatches
17	JG-EF-I	52	Jordan Gulch	East Fork	College 9 Res Hall 2 locations	W. side flows to two existing Settling Tanks adjacent to Dining Hall Loading Dock E.	Modify Hatches
18	JG-EF-J	60	Jordan Gulch	East Fork	JG-EF-J	Runoff from Chinquapin sinkhole overflow and Chinquapin Drive contributes to erosion in JG MS.	Divert runoff from Chinquapin sinkhole overflow and Chinquapin Drive to Upper Quarry sinkholes. Provide 150 LF culvert to divert water at Chinquapin/McLaughlin Intersection. Provide pipe diversion devices to redirect upper quarry flow to expanded armored V ditch 3' deep for 500 LF behind stage and to Northern sinkhole. Re-grade 1000 SF adjacent to intersection and add 200 SF of rock lining at inlet and 500 SF at outlet.

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
19	JG-MS-GMT-R1-3 to 4	81	Jordan Gulch	GMT	JG-MS-GMT-R1-3 to 4	Sinkhole and eroding entrance channel ( aka Sites 1A and 1B)	Install buried storm drain pipe with rock stilling basin and rock-lined channel to connect to sinkhole. Banks (but not bottom) of the sinkhole will be lined with filter fabric.
20	JG-MS-GMT-R1-5	82	Jordan Gulch	GMT	JG-MS-GMT-R1-5	3'- high nickpoint (aka Site 2)	Install rock chute drop structure.
21	JG-MS-GMT-R1-8	82	Jordan Gulch	GMT	JG-MS-GMT-R1-8	Paved bike trail threatened by bank erosion (aka Site 3)	Install gabion retaining wall.
22	JG-MS-GMT-R1-9	82	Jordan Gulch	GMT	JG-MS-GMT-R1-9	4.5'- high nickpoint (aka Sites 4A and 4B)	Install rock chute drop structure.
23	JG-MS-GMT-R1-12 to 13	89	Jordan Gulch	GMT	JG-MS-GMT-R1-12 to 13	Steep eroding gully (aka Site 6)	Install buried storm drain pipe, a concrete stilling box at the pipe outlet, and a grouted-rock channel to connect to the existing storm drain system
24	JG-MS-GMT-A	74	Jordan Gulch	GMT	Music Detention outfall	Runoff from Arts areas is piped to JG GMT and contributes to erosion	Divert Music detention water 450 LF to the northeast to sheet flow across meadow for infiltration and treatment. Provide 200 LF armored channel from doline depression to JG-MS-GMT-R1-4 sinkhole.
25	JG-MS-GMT-B	74	Jordan Gulch	GMT	Visual Arts Painting	Runoff from Visual Arts painting studio contributes to erosion in JG GMT	Divert multiple (approx. 800 LF total) downspout connections to stormdrain piping to splash block distribution to promote infiltration on hillslope below painting studio
26	JG-MS-RI-1	68	Jordan Gulch	Main Stem	JG-MS-R1-1	Channel scour at end of riprap apron.	Add rock stilling basin. Design outlet to protect downstream redwood clump.
27	JG-MS-R1-2	68	Jordan Gulch	Main Stem	JG-MS-R1-2	Discharge from Cowell Infill detention pipe to JG-MS-R1-2	Extend 24 in dia pipe 100 ft to channel and provide energy dissipation apron at discharge into channel
28	JG-MS-R1-3	68	Jordan Gulch	Main Stem	JG-MS-R1-3	Root mass stabilizing upstream reach	Construct 1 - 2 check dams downstream of root mass. Check dams(s) to be 4 ft wide by 1.5 ft high
29	JG-MS-R1-4 to 6	68	Jordan Gulch	Main Stem	JG-MS-R1-4 to 6	Root masses stabilizing upstream reach	Construct 1 - 2 check dams downstream of each root mass: 4 ft wide by 1.5 ft high (2 - 4 total)
30	JG-MS-R1-10	75	Jordan Gulch	Main Stem	JG-MS-R1-10	Ten to twelve foot high knickpoint migrating upstream in fill material (associated with railway?) ~ twenty-five foot drop over 50 feet	Single large concrete drop structure with rock-lined berm or multiple concrete or rock check dams . Assumed 3 check dams.
31	JG-MS-R1-7	75	Jordan Gulch	Main Stem	JG-MS-R1-7	Sloping nickpoint, 4' drop	2 Check dams in channel (8 ft wide x 1.5 ft deep) and 4 ft. drop structure OR rock armoring and gradual step down
32	JG-MS-R2-1	75	Jordan Gulch	Main Stem	JG-MS-R2-1	Sloping nickpoint, 4.5' drop, broad channel bed downcutting	Log and boulder drop structure (may benefit from project at JG-MS-R1-6a) or concrete or rock chute drop structure. Construct in tandem with JG-MS-R1-10.
33	JG-MS-R2-2	75	Jordan Gulch	Main Stem	JG-MS-R2-2	Large log jam in channel poses threat to sanitary sewer line due to streamflow re-directed towards bank	Reposition logs to armor bottom of bank, field call about additional measures to take once the logs are removed. 1 day of equipment, operator, and 2 laborers.
34	JG-MS-R2-3	75	Jordan Gulch	Main Stem	JG-MS-R2-3	Eroding bank caused by deflected streamflow immediately downstream of sanitary sewer - sewer line in danger	Reposition stones/boulders. 1 day of equipment, operator, and 2 laborers
35	JG-MS-R2-4	75	Jordan Gulch	Main Stem	JG-MS-R2-4	Bank slip threatens sewer cradle foundation	Cut trees, reposition stones/boulders. 2 days of equipment, operator, and 2 laborers.
36	JG-MS-R3-3	90	Jordan Gulch	Main Stem	JG-MS-R3-3	Sinkhole filled with sediment and debris, upstream of Village housing, auguring found 2.5 to 4.2' of sediment (coarse marble debris), cleaned w/in last few years	Enhance sinkhole capacity. Excavate 14,130 cu-ft ( assume 5 ft. deep sediment, 60 ft. diameter.)

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
37	JG-MS-R3-5	82	Jordan Gulch	Main Stem	JG-MS-R3-5	75 feet downstream of start of Reach 3: small scarp formed on inside of meander - start of bank failure	Stabilize toe of evolving bank failure by placing logs roughly 10 to 12 long. Logs would need to be secured into the bed and bank.
38	JG-MS-A	69	Jordan Gulch	Main Stem	Parking from Athletic Facilities draining to JG-MS-R1-8	Discharges from parking to JG-MS may have potential water quality impacts	Water quality improvements through mechanical oil/water/sediment separator. Assume 6.0 cfs Vortech Stormwater Treatment System.
40	JG-MS-B	68	Jordan Gulch	Main Stem	Hahn Student Svcs - Parking East	Discharges from parking to JG-MS may have potential water quality impacts	Divide flow at 8" culvert at south end of parking lot with coir logs. Assume 3 20 LF coir logs, 1 hour labor time, 2 laborers to stake coir logs.
41	JG-MS-C	75	Jordan Gulch	Main Stem	JG-MS-R3 - 4 downstream	Trash rack for existing inlet structure	Fabricate and install trash rack to existing inlet structure
42	JG-MS-D	114	Jordan Gulch	West Fork	Parking from Physical Planning and Construction	Parking may have water quality impacts	Revegetate parking lot islands for water quality. Assume 300 LF x 10 ft wide = 3,000 SF reveg area. 3 drop inlets and manifold
43	JG-MF-R1-7	51	Jordan Gulch	Middle Fork	JG-MF-R1-7	Sinkhole - 1' sediment to rock when augured 12/03	Clean out sinkhole and redirect upstream channel flow to sinkhole & prevent bypass by building up berm (2' high by 50 LF), stabilize channel where it comes into the sinkhole by rock lining and protecting the floor at the sinkhole entrance.
44	JG-MF-R1-7a (NEW)	59	Jordan Gulch	Middle Fork	JG-MF-R1-7a (new)	Runoff from culverts at intersection of McLaughlin Dr. and Science Library Road is released onto slope creating a large rill.	Collect discharge from 2 culverts and convey via pipe 240 LF to Middle Fork Channel and construct energy dissipation apron.
45	JG-MF-R1-9	60	Jordan Gulch	Middle Fork	JG-MF-R1-9	Shallow swale at end of asphalt diverts flow to east over face of quarry wall	Increase height of berm w/ concrete to about 1-ft for 15 ft to better direct flow into the Upper Quarry sinkhole
46	JG-MF-R2-2	68	Jordan Gulch	Middle Fork	JG-MF-R2-2	Minor surface erosion downstream of footbridge crossing	Monitor effects of project at JG-MF-R1-9 and if necessary, extend the culvert outfall 75 LF to beneath the footbridge and construct a dissipation basin below footbridge
47	JG-MF-R2-3	68	Jordan Gulch	Middle Fork	JG-MF-R2-3	Minor channel incision occurring	Construct 2.5 ft. drop structure with dissipation apron.
48	JG-MF-R2-4	68	Jordan Gulch	Middle Fork	JG-MF-R2-4	McHenry Library roof runoff causing twin gullies on slope below and an incised reach within the main channel threatening a sewerline manhole.	Extend the two 8" pipes into one larger pipe a distance of ca. 100 ft. to Middle Fork channel. Release onto dissipation apron downstream of sewer manhole. Backfill the incised section of channel (54 ft. long x 5 ft. wide x 1.5 ft. deep) with compacted material and cover with erosion control blanket.
49	JG-MF-R3-1	75	Jordan Gulch	Middle Fork	JG-MF-R3-1	Sloping nickpoint, 3.0' drop	Construct either one large drop structure or several smaller drop structures, perhaps using rock from immediate area, wingwall may be constructed from compacted earth w/ filter fabric and rocks and logs for the drop structure (see GMT drawings for concept)
50	JG-MF-A	44	Jordan Gulch	Middle Fork	College Nine Apartments	In parking lot NW Soc. Sci II	Modify Hatches
51	JG-MF-B	52	Jordan Gulch	Middle Fork	Social Science I & II	Coll. 10 HandiCap Parking	Modify Hatches
52	JG-MF-C	52	Jordan Gulch	Middle Fork	Social Science I & II	Coll. 10 Prking Lot across from Dock	Modify Hatches
53	JG-MF-D	52	Jordan Gulch	Middle Fork	Social Science I & II	Coll. 10 Prking Lot @ Rwd Retainer	Modify Hatches
54	JG-MF-E	52	Jordan Gulch	Middle Fork	Social Science I & II	Coll. 10 Serv. Rd. @ Small Retainer	Modify Hatches
55	JG-MF-F	52	Jordan Gulch	Middle Fork	Social Science I & II	Coll. 10 Knoll above McLaughlin	Modify Hatches
56	JG-MF-G	52	Jordan Gulch	Middle Fork	Social Science I & II	Coll. 10 Serv. Rd. @ McLaughlin	Modify Hatches
57	JG-MF-H	52	Jordan Gulch	Middle Fork	College 10 Res Hall	SD at south end	Modify Hatches

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
58	JG-WF-I	60	Jordan Gulch	Middle Fork		Runoff from Colleges 9/10 causes sinkhole to overflow which contributes to channel erosion	Divert runoff from College 9/10 to Health Center sinkhole by installing a larger culvert (assume 48") under McLaughlin Dr. and armoring the channel between McLaughlin Dr. and the Health Center sinkhole (about 175 LF)
59	JG-WF-CO-R1-1 (NEW)	67	Jordan Gulch	West Fork	JG-WF-CO-R1-1 (new)	Downstream of CFAO detention basin minor incision occurring to a 20% channel slope	Install approximately 5 check dams (4 ft wide x 1 ft high) or upstream dispersion
60	JG-WF-CO-R1-2 (NEW)	67	Jordan Gulch	West Fork	JG-WF-CO-R1-2 (new)	Open space vegetated w/ grasses as well as some redwood, underlain by schist	Potential retention/detention basin upstream of sinkhole. Redirect Kerr Hall Flow to new detention basin. Carry outflow to sinkhole in existing Kerr Hall pipe, but extend to sinkhole at end. (Assume existing Discharge pipe to McHenry Library) grade and create embankment + overflow structure embankment keep less than 25. Ft. Embankment assumed 150'x20'wx20'h Reveg cost,
61	JG-WF-R1	67	Jordan Gulch	West Fork	JG-WF-R1	Reach 1 - From Steinhart Way to sinkhole southwest of library (450 feet), receives discharge from McHenry Library west	Part of McHenry Library Addition - Northern discharge may be able to be dispersed, southern pipe may need to be directed to the sinkhole via pipe flume (see MC EF Middle Reach report for flume concept), or customized "design and build" rock cascade.
62	JG-WF-R1-1	67	Jordan Gulch	West Fork	JG-WF-R1-1	McHenry Library Sinkhole	Part of McHenry Library addition: repair headcut at north end of sinkhole and incising channel at south end of sinkhole(will be combined with JG-WF-R1 project): Also, improve sinkhole capacity.
63	JG-WF-R2-1 (new)	74	Jordan Gulch	West Fork	JG-WF-R2-1 (new)	Erosion starting downstream of Learning Center discharge	Use concrete or rocks to build drop structure at existing nickpoint.
64	JG-WF-A	75	Jordan Gulch	West Fork	Academic Resources Center	Runoff from ARC contributes to erosion in JG WF	Divert runoff to sheet flow for increased infiltration. Annex building downspouts to be diverted toward JG GMT. Other existing stormwater pipes to be diverted to 3 separate surface manifolds that discharge to hillslope to the north of ARC. Assume 500 LF 8-inch diameter PVC manifold
65	MC-EF-BT-R1-10	58	Moore Creek	Baskin Tributary	MC-EF-BT-R1-10	Sinkhole with down trees and loose rock and soil at risk of sliding in. Channel entrance is eroding 10- - 12 ft high nickpoint to be treated in conjunction with this (EF-BT-R1-8).	Clear out down trees and other debris from immediate vicinity. Increase sinkhole capacity by building up berm downstream by 12"-18" high by 20'long with 30" long x 4" high concrete.
66	MC-EF-BT-R-1-2 to 4	66	Moore Creek	Baskin Tributary	MC-EF-BT-R-1-2 to 4	Series of knickpoints	From end of rock-lined section of Core West Parking Structure Bridge, pipe flow through buried 18 - 24 " dia pipe 200+-' feet to flat area OR customized "design and build" rock cascade channel and gradually step down
67	MC-EF-BT-R1-7	58	Moore Creek	Baskin Tributary	MC-EF-BT-R1-7	Knickpoints in channel above headcut below confluence with SHT	Grade stabilization structures - 4 - 5 checkdams. Checkdams to be 8 feet wide by 2 feet high.
68	MC-EF-BT-R1-8	58	Moore Creek	Baskin Tributary	MC-EF-BT-R1-8	Migrating knickpoint at head of sinkhole MC-EF-BT-R1-10, knickpoint has migrated 17 feet since 1999	Modify existing drainage turn-out on east side of Heller Drive south of MC-EF-BT-A by redesigning to capture all street flow from curb. Use coir logs to spread water below the V-ditch outlet.
68.2	MC-EF-BT-A	66	Moore Creek	Baskin Tributary	MC-EF-BT-A	South of Bus Stop on Heller Drive	Install new drainage turn-out in east side curb of Heller Drive, just south of bus stop. Convey water 150 LF in 18" CMP on surface to hillside where 100 LF of 18" surface water spreader manifold can be used

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
68.4	MC-EF-BT-B	66	Moore Creek	Baskin Tributary	MC-EF-BT-B	V-ditch south of Bus Stop on Heller Drive	Modify existing drainage turn-out on east side of Heller Drive south of MC-EF-BT-A by redesigning to capture all street flow from curb. Use coir logs to spread water below the V-ditch outlet.
69	MC-EF-BT-C	58	Moore Creek	Baskin Tributary	Thimann Lecture and parts of Lab Building	Runoff from Thimann Lab and Lecture Hall contributes to overflow of MC EF BT sinkhole	Divert storm piping from Thimann Lecture and East side of Thimann Labs to new culvert that discharges in surface manfolds south of Steinhart. This will to promote infiltration and sheet flow toward new Kerr detention basin. Assume 200 LF 24-inch culvert, 150 LF 8-inch flow dispersion
69.5	MC-EF-BT-D	66	Moore Creek	Baskin Tributary	MC-EF-BT-D	18" CMP culvert from Steinhart Way located SW of Theimann Building	Modify culvert outlet to be a water spreader manifold on hillside above Baskin Tributary
107	MC-EF-BT-E	73	Moore Creek	Baskin Tributary	Performing Arts Building	Runoff from Performing Arts Buildings A,B,C is piped to MC EF and contributes to erosion	Divert piped stormwater runoff from south portion of Performing Arts Building A,B,C to surface dissipation manifold for infiltration. Assume 130 LF total dispersion pipeline.
70	MC-EF-BT-SHT-R1-1	58	Moore Creek	Science Hill Tributary	MC-EF-BT-SHT-R1-1	Small initial knickpoints	2-3 coconut fiber or simple check dams
71	MC-EF-BT-SHT-R1-3	58	Moore Creek	Science Hill Tributary	MC-EF-BT-SHT-R1-3	Actively incising reach roughly 180 feet in length, channel bed is devoid of large clasts or organic debris and is eroded to soil	10 + check dams (similar to JG) or logs and rock channel lining, make improvement on Sinheimer Lab and Parking Detention then evaluate need for in-channel improvements (checkdams would be 4 ft wide by 1.5 feet high)
72	MC-EF-BT-SHT-A	59	Moore Creek	Science Hill Tributary	Sinheimer Lab and Parking	Thimann Labs	Install ~300 LF 12-inch piping to redirect runoff from southern Thimann Lab to new detention basin (see JG-WF-CO-R1-2 (NEW)).
73	MC-EF-BT-SHT-B	59	Moore Creek	Science Hill Tributary	Thimann Labs Parking	Thimann Labs	E end of Thimann Labs building will be dispersed and detained at proposed Sector 67 DB (see project JG-WF-CO-R1-2 (NEW) above); In-ground vault for parking and Sinheimer Lab Parking above
74	MC-EF-KT-R1-1 to 3	50	Moore Creek	Kresge Tributary	MC-EF-KT-R1-1 to 3	Active channel incision and channel jumping under Heller Dr. Bridge	Install 100 LF of channel / rock lining - 4 ft. wide - 30 CY
75	MC-EF-KT-R1-4	50	Moore Creek	Kresge Tributary	MC-EF-KT-R1-4		Check dam
76	MC-EF-KT-R1-5	50	Moore Creek	Kresge Tributary	MC-EF-KT-R1-5	Active channel incision in area of high use from pedestrians and mtn. bikes	Check dam
77	MC-EF-KT-R1-6	50	Moore Creek	Kresge Tributary	MC-EF-KT-R1-6	Active channel incision and headcut migration where footpath intersects channel	Check dam
78	MC-EF-KT-R1-7	58	Moore Creek	Kresge Tributary	MC-EF-KT-R1-7		Check dam
79	MC-EF-KT-R2-3	66	Moore Creek	Kresge Tributary	MC-EF-KT-R2-3	Active channel incision occurring at redwood cluster - rw's in danger of undercutting and subsequent falling	Check dam
80	MC-EF-KT-R3-1	66	Moore Creek	Kresge Tributary	MC-EF-KT-R3-1	5' headcut to North, field evaluation to ID whether flow goes to larger channel to left (north) which is R3-1	Install drop structure (rock or log with filter fabric and rock dissipation structure)
81	MC-EF-KT-R3-5	66	Moore Creek	Kresge Tributary	MC-EF-KT-R3-5	Kresge Sinkhole	Bore sinkhole to improve capacity. Assume 5 ft. deep, 30 ft. diameter
82	MC-EF-KT-A	50	Moore Creek	Kresge Tributary	North Remote Parking	North Remote Parking Lot	Install pipe to capture flow from parking at either Camper Park road or at Kresge Road Bridge and run in pipe to Cave Gulch drainage and disperse

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
83	MC-EF-R1-3	73	Moore Creek	East Fork	MC-EF-R1-3	2.5'- high nickpoint	Upstream of R1-3, demonstration for step -pool formation through material introduction to the channel along 25'- 30' length. 1 day of labor, 2 person crew.
84	MC-EF-R1-6 to R1-7	80	Moore Creek	East Fork	MC-EF-R1-6 to R1-7	Channel bed downstream of bedrock control point MC-EF-R1-6 is incising into weathered schist	½ of 36" CMP flume to capture upstream flow down 25' plunge into large pool (20'x 40'), 4.5' wide channel at this location
85	MC-EF-R1-11 to 13	80	Moore Creek	East Fork	MC-EF-R1-11 to 13	Two active knickpoints undermining redwood grove, knickpoint has migrated 7 feet since 1999	Series of concrete drop structures.
86	MC-EF-R1-14 to 16	80	Moore Creek	East Fork	MC-EF-R1-14 to 16	Three active nickpoints totalling about 6 feet of elevation loss.	Series of wood or concrete drop structures.
87	MC-EF-R1-18 to 19	81	Moore Creek	East Fork	MC-EF-R1-18 to 19	Two very important grade control points cumulative height of ~ 12 feet. Upper supported by roots lower by bedrock	Flume (supported on right bank) or rock check dams and armoring for upper nickpoint. Check with biologist for allowable modification of pool at base of upper nickpoint.
88	MC-EF-R2-1	81	Moore Creek	East Fork	MC-EF-R2-1	Left bank below and adjacent to concrete dam actively eroding	Armor left bank with rip-rap or build up the height of the left dam wall to divert flow towards the center of the channel - armor outfall
89	MC-EF-R2-7 to 8	88	Moore Creek	East Fork	MC-EF-R2-7 to 8	Active channel incision occurring below concrete sill, roughly 18 inches of bed scour below sill has occurred since 1999	6 - 7 checkdams about 4 - 11 ft. wide and 1.25 f high, excluding buried key dimensions.
90	MC-EF-R3	88	Moore Creek	East Fork	MC-EF-R3-1	Two check dams in succession, the downstream check dam is failing and the bed below the failing dam has scoured ~ 3.5 feet	Rebuild 2 existing check dams and add 2 - 3 more - 10 ft wide by 1.5 ft high - armor outfalls
91	MC-EF-A	67,73	Moore Creek	East Fork	New Detention Basin at MC-KT-R3 depression for Music and Arts - North and Porter College Flows	North of Meyer Drive and East of Heller Drive	Construct new DB and overflow structure at this location
92	MC-EF-B	73	Moore Creek	East Fork	College 8 Apartment #2	Runoff from College 8 Apartment #2 is piped to MC EF and contributes to erosion	Divert piped stormwater runoff from College 8 Apartment #2 downspouts ( 5 locations) to surface dissipation manifolds for infiltration. Assume 200' pipe staked to ground.
93	MC-EF-C	74	Moore Creek	East Fork	Performing Arts/Visual Arts Building	Runoff from Arts areas is piped to MC EF and contributes to erosion	Modify overflow catchbasin near Performing Arts entry drive to divert water to JG GMT rather than MC EF
94	MC-EF-D	95, 96	Moore Creek	East Fork	Moore Creek, East Fork Dam	North of Arboretum	Controlled Overflow per 12/4/92 Rutherford and Chekene report (Ref 2-1), See also Johnson (ref 1-6) Red-legged frog habitat
95	MC-HV-R1-I	104	Moore Creek	Highview Drive Tributary	MC-HV-R1-1	Soil slump at Empire grade culvert	Fit end of existing Empire Grade culvert with angle to redirect flow, extend culvert to channel and construct dissipation basin, stabilize toe of bank failure if merited, advise homeowners (with County) that Highview Drive Culvert should be upsized.
96	MC-MF-A	86,87	Moore Creek	Middle Fork	W. Remote Parking - east	Sand filter only	Divert flow from sand filter for eastern 1/3 of parking lot (or replace sand filter with grassy swale) and disperse on hillside to south. Assume 450 LF 12-inch culvert, 350 LF flow dispersion
97	MC-MF-B	80,87	Moore Creek	Middle Fork	MC-MF-B	Oakes College	Construct 10-ft. high by 70 ft. long earthen dam with riser manifold. Construct second riser manifold and excavate new detention basin. Redirect flow with LF 12-inch culvert.

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
98	MC-WEF-R2-1 to 2	86	Moore Creek	West Entrance Fork Tributary	MC-WEF-R2-1 to 2	Incising and widening channel at junction of WEF and 36" culvert draining Empire Grade and land below existing ball diamond	50 LF of Rock on both sides of bank; 130 yards of site regrading and reconfiguration; 2000 ft <sup>2</sup> of hydroseeding revegetation.
99	MC-WEF-R2-4	86	Moore Creek	West Entrance Fork Tributary	MC-WEF-R2-4	Large bank failure on west bank	100 LF of planting of willow cuttings on both sides of the bank and hydroseed 2000 ft <sup>2</sup> ; 200 LF of coir logs.
99.5	MC-WEF-R2-7	94	Moore Creek	West Entrance Fork Tributary	MC-WEF-R2-7	5.5' - high nickpoint advancing headward in channel	Install concrete or rock chute drop structure and dissipation apron.
100	MC-WEF-R2-8	94	Moore Creek	West Entrance Fork Tributary	MC-WEF-R2-8	Center of ca. 200' segment of deeply incised channel with near-vertical banks	400 LF of coir logs at toe of both sides of channel to provide bank stabilization.
101	MC-WEF-A	73	Moore Creek	West Entrance Fork Tributary	Porter College Parking	Runoff from Porter College parking lots is piped to MC EF and contributes to erosion	Divert flow from 50% of Porter parking lots to landscaped areas to promote infiltration. Assume 300 LF 12-inch shallow trench pipeline, 200 LF 8-inch flow dispersion pipeline.
102	MC-WEF-B	73	Moore Creek	West Entrance Fork Tributary	Porter College Academic Building	Runoff from Porter College Academic Buildings is piped to MC EF and contributes to erosion	Divert piped stormwater runoff from south portion of Porter College Academic Building to surface dissipation manifold for infiltration toward Cave Gulch (requires deep trench). Assume 350 LF deep trench 12-inch pipeline to parking lot dispersion manifold.
103	MC-WEF-STAT	86	Moore Creek	West Entrance Fork Tributary	Heller Drive below Family Student Housing	Runoff from FSH and Heller Dr is piped to MC WEF and contributes to erosion	Widen V ditch along western side of Heller Drive. Divert water from existing eastern flowing culvert crossing to keep runoff in V ditch. Provide series of turnouts to new Heller drive detention basin. Assume 1000 LF V ditch work, 1 ft. excavation, 4 ft. wide. Block culvert.
104	MC-WEF-C	80	Moore Creek	West Entrance Fork Tributary	College 8 A Dorms	Runoff from College 8 A Dorms is piped to MC WEF and contributes to erosion	Divert piped stormwater runoff from A L and Garden dorms to surface dissipation pipe for infiltration. Assume cut and cap culvert. 100 LF total 8-inch dissipation pipeline
105	MC-WEF-D	79	Moore creek	West Entrance Fork Tributary	Family Student Housing	Runoff from FSH and Heller Dr is piped to MC WEF and contributes to erosion	Divert piped stormwater runoff from south east side of Family Student Housing to two surface dissipation manifolds. Assume 2 diversion manifolds, 200 LF total per manifold.
106	MC-WEF-E	86	Moore Creek	West Entrance Fork Tributary	Potential DB at West Entrance @ Heller Drive and Empire Grade	North of Heller Drive/Empire Grade intersection	Detention at existing depression for flow from Empire Grade and for potential reroute of flow from Family Student Housing. Assume 800 LF 8" pipe and 200 LF dissipation manifold.
108	MC-WEF-F	79	Moore Creek	West Entrance Fork Tributary	College 8 DB	Highly vegetated detention basin with potential red-legged frog habitat	Obtain permits, clean out and improve DB capacity
109	MC-WEF-G	86	Moore Creek	West Entrance Fork Tributary	West Remote Parking	Runoff from West Remote Parking is piped to MC WF and contributes to erosion and vehicle contaminant pollution	Install vegetated swale in median of parking lot, install catch basin and pipe water to dissipation manifold to the south (3 locations). Requires deep trench. Sheet flow to encourage infiltration and treatment.
110	MC-WEF-H	95	Moore Creek	West Entrance Fork	Moore Creek, West Fork Dam	West of Arboretum	Armor passthrough pipe and other improvements per 12/4/92 Rutherford and Chekene report (Ref 2-1), see also Johnson (Ref 1-6)
111	GC-A	83	San Lorenzo-Pogonip Drainage	Gully C	E. Remote Parking Lot Detention Basin	E. end of parking lot	Redirect flows from outlet to south of parking area and disperse,
114	GG-A	62	San Lorenzo-Pogonip Drainage	Gully G		Gully G Detention Basin Improvements	Gully G- Detention basin improvements, install rip-rap energy dissipation at end of pipe. See Bowman and Williams 1995 Ref 1-27.
115	Vactor Truck for maintenance		n/a		Vactor Truck for maintenance		Purchase Mid-sized Vactor Truck for cleaning of detention basins, catch basins, drop inlets, detention pipes/vaults

Table 8: Planned UCSC Campus Drainage Projects

Project #	Project ID	Map Sector	Main	Tributary	Site I.D.	Site Description	Project Description
116	GH-R1-1	53	San Lorenzo-Pogonip Drainage	Gully H: Draining the Crown / Merrill Apartments	Upstream of GH-R1-1 (Gully H)	Numerous active knickpoints starting ~ 200 feet downstream of outlets, parking may have potential water quality impacts	Install detention vault in lower parking lot upstream of GH-R1-1. Assume 50'x50' vault, 10 ft. deep. H20 Traffic-rated access hatch.
117	GH-R1-2	62	San Lorenzo-Pogonip Drainage	Gully H: Draining the Merrill College Dorms	GH-R1-2 (Gully H)	Active eroding gully entering channel from dormitories to the west, parking may have potential water quality impacts	Extend 12 in dia culvert 200 ft down hillslope and add energy dissipation apron at end