

SUMMMARY REPORT
REHABILITATION WORK PERFORMED ON
THE M-6 HILLSLOPES, BRIDGE CREEK

UNIT 87-4

BY

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REDWOOD N. P.
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South Operations Center

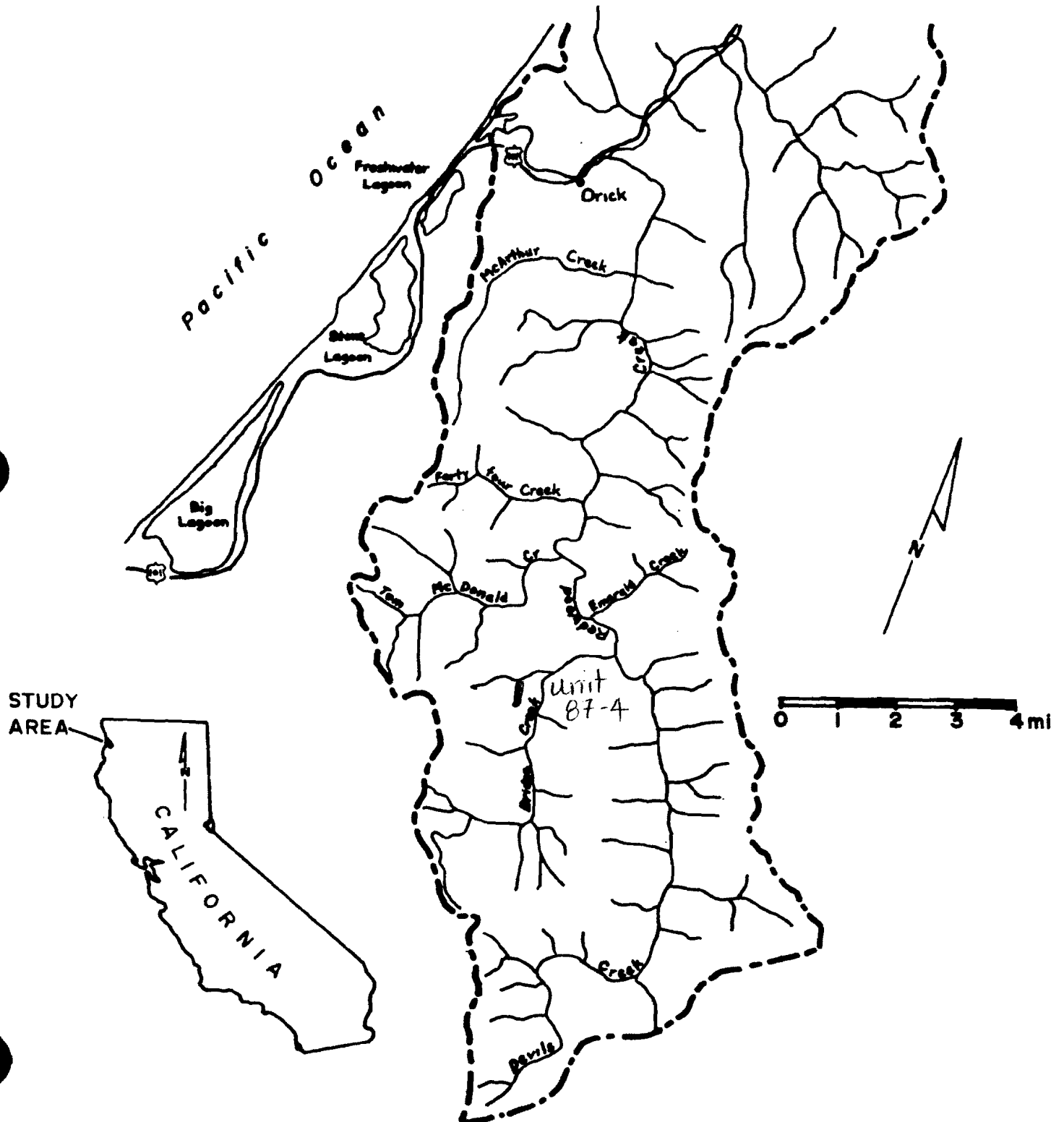
Unit 87-4; M-6 Slopework

Unit 87-4 entailed the excavation of 11 skid trail crossings containing a total of 4,250 yd³ of fill. Located between the M-Line and the M-6 Road, This 30 acre unit is drained by three, first-order, intermittent streams. Most of the crossings were still intact at the time of treatment; diversion potentials existed at three of the crossings. Heavy equipment work was performed under rental agreement between July 27 and August 3, 1987. Greg Bundros was the project supervisor for this unit.

A Cat D8 with winch and a Case 220 hydraulic excavator (3yd³) performed this work. For the most part, the equipment was well suited for these tasks, though, at times, the hydraulic excavator was too large for some of the smaller worksites. Work space was always the limiting factor.

For a complete description of logging history, erosion features and the unit's morphology, refer to summary report for Unit 87-3.

87-4: M-6 SLOPES WATERSHED REHABILITATION UNIT



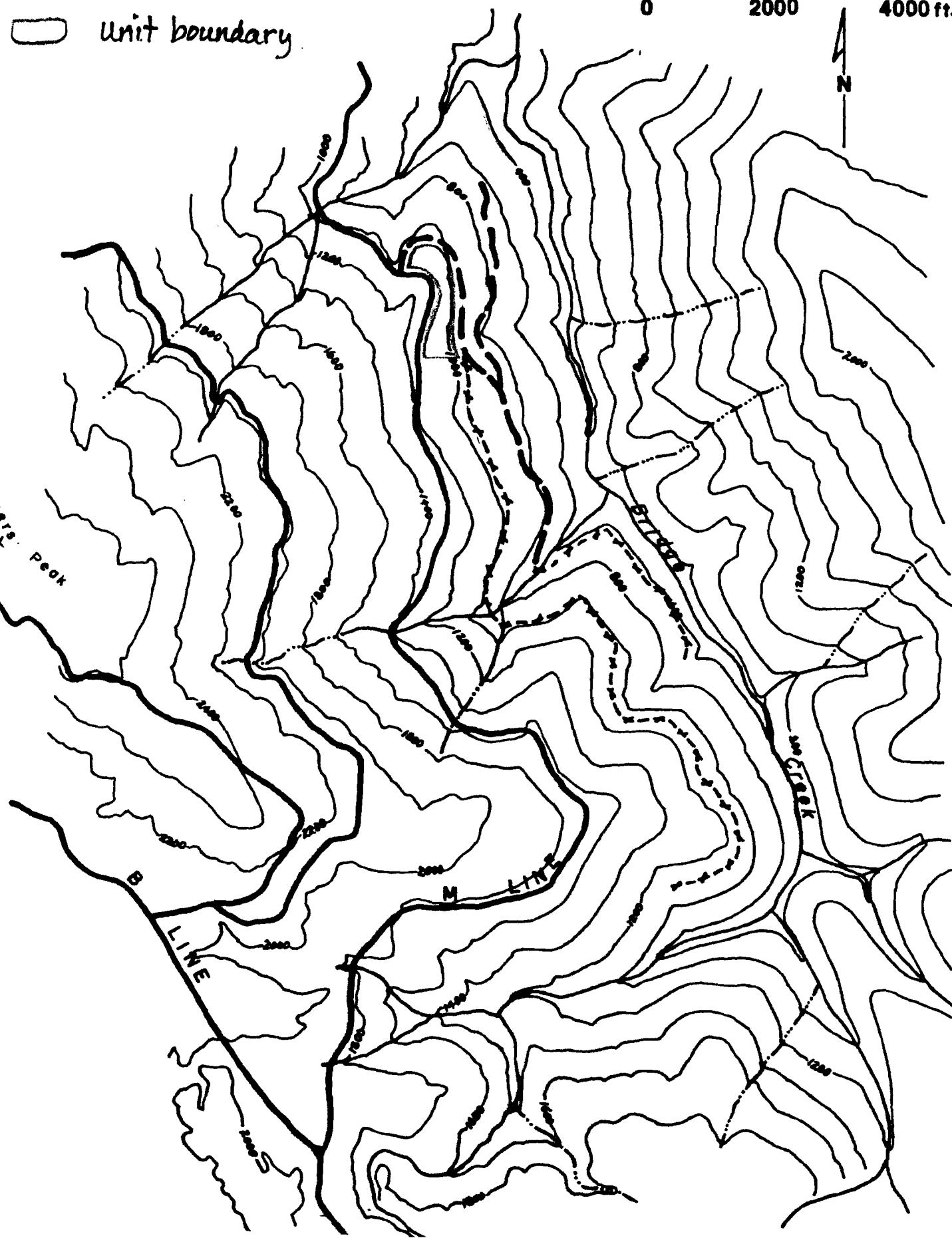
87-4: M-6 SLOPES
WATERSHED REHABILITATION UNIT

MAP B: TOPOGRAPHY

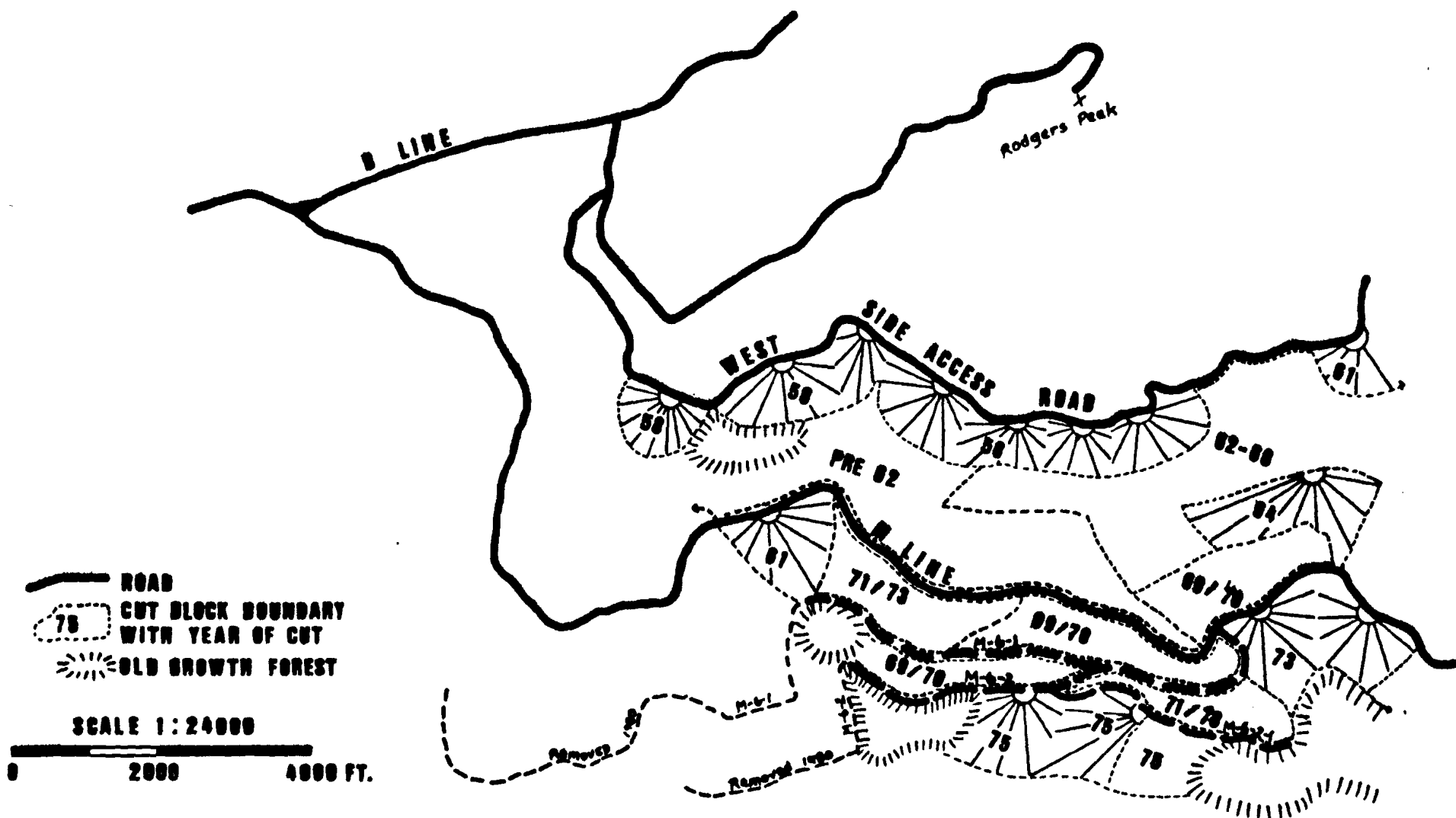
 Unit boundary

SCALE 1:24000

0 2000 4000 ft.



MAP C: Logging History



MAP D: REHABILITATION TREATMENTS

UNIT 87-4

M-6 SLOPES

⊗ SKID TRAIL CROSSING

scale in feet
0 500 1000

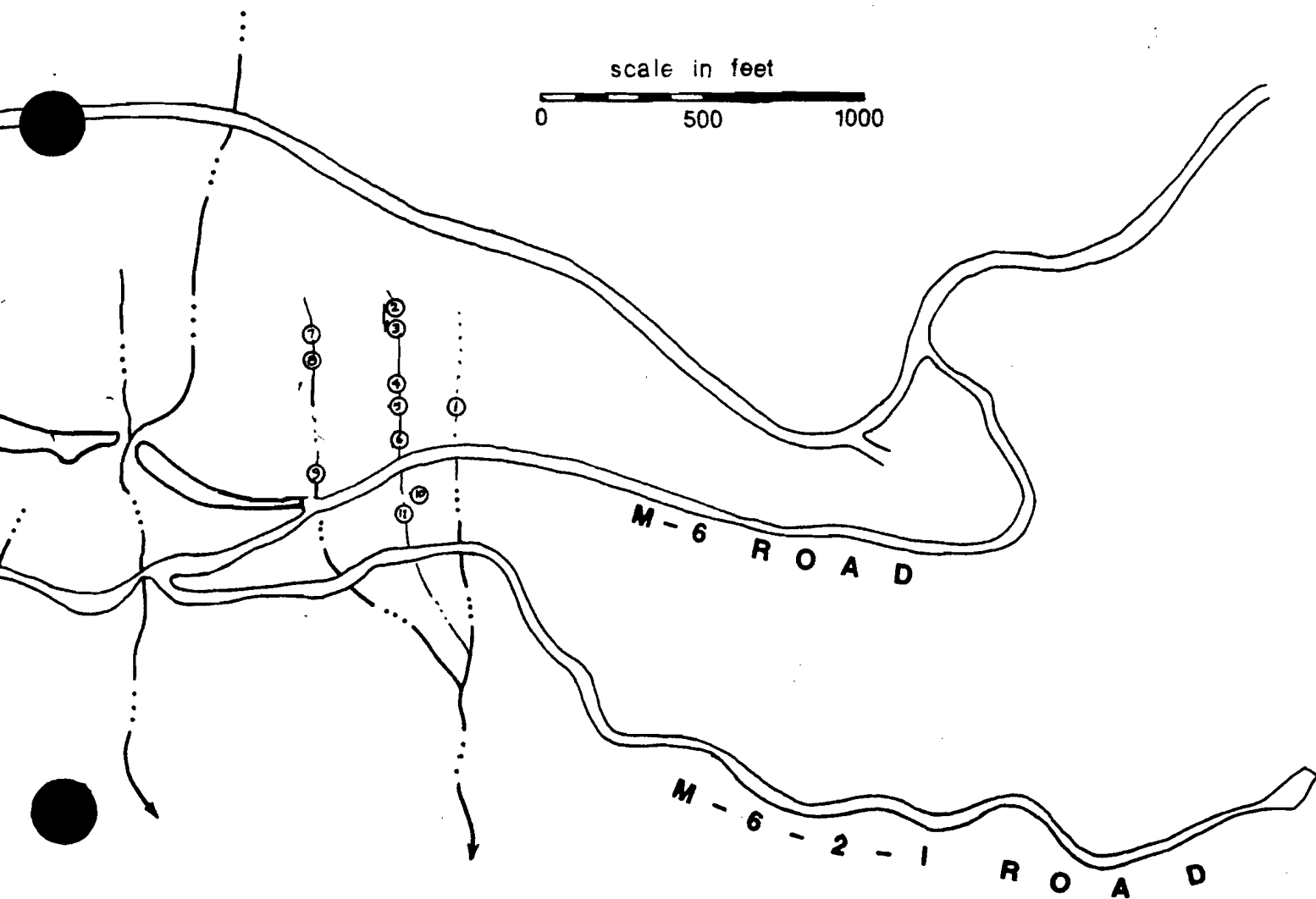


Table 1

REHABILITATION WORK COST SUMMARY

Unit 87-4; M-6 Slope work

Treatment	Total Quantity	Total Cost	<u>Average Unit Cost</u>
HEAVY EQUIPMENT WORK ¹			
<u>Primary Treatments</u>			
Skid trail crossing	4,250 yds ³	\$6,501	\$1.53/yd ³
<u>Secondary Treatments</u> -			
	none		
<u>Miscellaneous Costs</u>			
Item ²	-.-	1,726	-.-
Move in/out	-.-	1,000	-.-
M-Line culverts	2	973	\$487/ea.
TOTAL HEAVY EQUIPMENT COST =		<u>\$10,200</u>	

LABOR INTENSIVE WORK:			
<u>Miscellaneous</u>			
Brush skid trails	40 ph	\$ 511	\$12.77/ph
TOTAL LABOR INTENSIVE COST =		<u>\$ 511</u>	

Table 1 (cont'd)
REHABILITATION WORK COST SUMMARY

Unit 87-4; M-6 Slopework

Treatment	Total Quantity	Total Cost	<u>Average Unit Cost</u>
TECHNICAL WORK:			
<u>Evaluation of Rehab. Unit</u>			
Map unit -	assigned to Unit 86-4		
Prescribe treatments	30 ph	\$ 395	-.-
<u>Supervision of Work</u>			
Heavy equipment	60 ph	790	-.-
<u>Documentation</u>			
Photo points	30 ph	\$ 332	-.-
Summary report	35 ph	461	-.-
TOTAL TECHNICAL WORK =		<u>\$1,978</u>	
TOTAL PROJECT COST = <u>\$12,689</u>			

¹Heavy equipment work was performed by Jay Franke and Chris Hake under rental agreement, and was supervised by Greg Bundros.

²Items are listed in Table 3.

Table 2

SKID TRAIL CROSSING EXCAVATION COSTS

Unit 87-4; M-6 Slopework

Worksite	Actual Equipment Hours		Cost ¹ (\$)	Volume ² (yd ³)	Unit Price (\$/yd ³)	Excavation Rate (yd ³ /pc-hr)	Average Push Distance to Fillsite (ft.)
	D8W	220					
SX1	5.25	2.75	722	600	1.20	76	150
SX2	.25	.75	93	100	.93	100	50
SX3	.25	.50	69	50	1.38	92	50
SX4	5.25	3.75	818	700	1.17	91	100
SX5	1	2	278	200	1.39	93	70
SX6 ³	6.25	4.75	1,001	500	2.00	45	200
SX7	1	2	278	250	1.11	83	150
SX8 ⁴	4.25	2.75	635	400	1.59	57	150
SX9 ⁵	7.50	6.75	1,301	800	1.63	56	200
SX10	1	0	88	50	1.76	50	50
SX11	5.75	7.50	1,218	600	2.03	45	100
TOTALS	37.75	33.5	\$6,501	4,250yd ³	\$1.53/yd ³	60yd ³ /pc-hr	...

¹The following equipment (with rental rates) performed this work: Cat D8 with winch (\$87.94/hr.) and a Case 220 with 3yd³ bucket (\$95.00/hr.).

²Volumes are based on visual estimates.

³Unit price reflects altering the excavation design after several hours of work.

⁴Fill was saturated; D8 got stuck twice; large root wads.

⁵Flowing Stream, saturated materials, many large organics.

⁶Saturated materials; includes cost to place logs at potential headcut location.

Table 3

MISCELLANEOUS COSTS

Unit 87-4; M-6 Slope work

Category	<u>Actual Equipment Hours</u>		Cost (\$)
	D8W	220	
Travel	.50	4.25	\$ 448
Discussion	2.25	2	388
Maintenance	2.25	.5	245
Lunch	2.75	2.75	503
Standby	0	1.50	142
M-Line	3.25	7	973
Move in/out	-. -	-. -	1,000
TOTAL	11	18	\$3,699

¹As part of this work, two 48-inch culverts were installed on the M-Line to replace old, undersized culverts.



Unit:87-4 Date:10-29-1987, PP2, M-6, SX-9, UPSRT, 50mm, (GB+DAS)



Unit: 87-4 Date: 7-26-1988, PP2, 50mm



Unit: 87-4 Date: 10-29-1987, PP3, M-6, Intro AX-9, (GB+DAS)



Unit: 87-4 Date: 10-29-1987, PP4, M-6, SX-7, UPSTR., 35mm (GB+DAS)



Unit: 87-4 Date: 7-26-88, PP4, 35mm