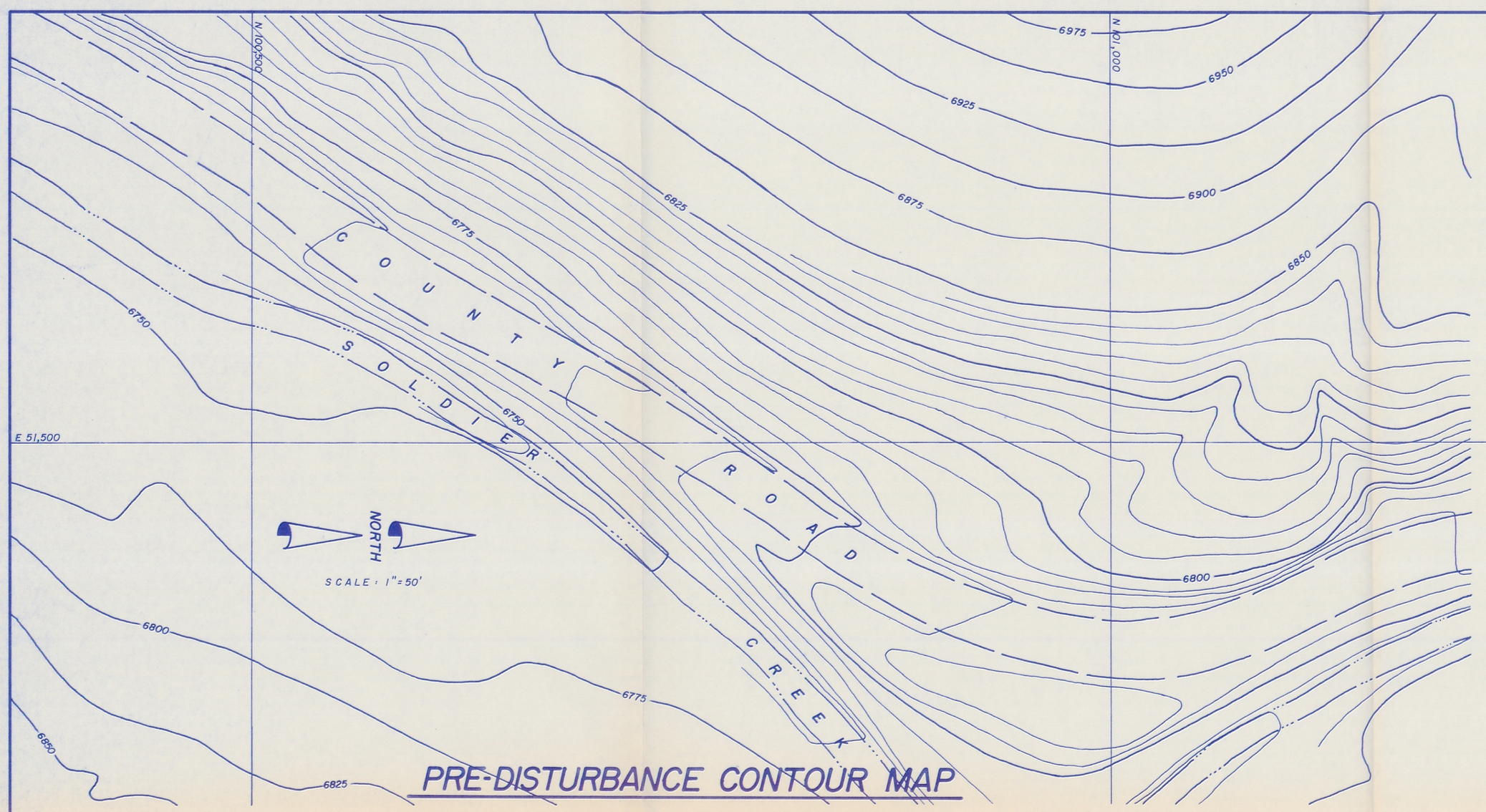
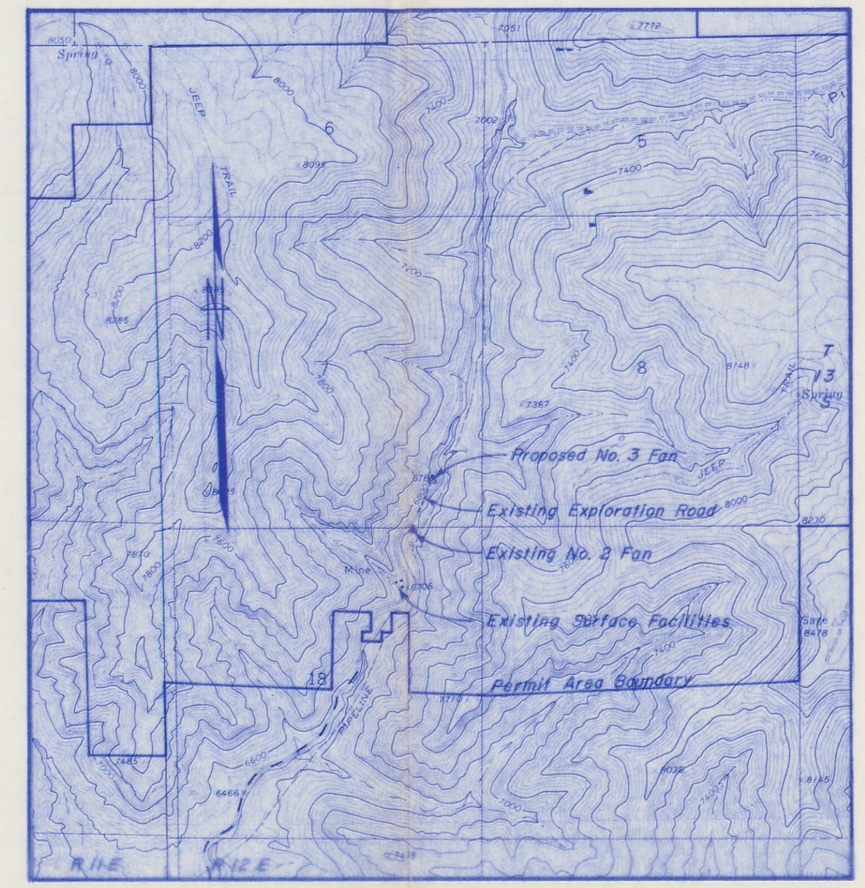
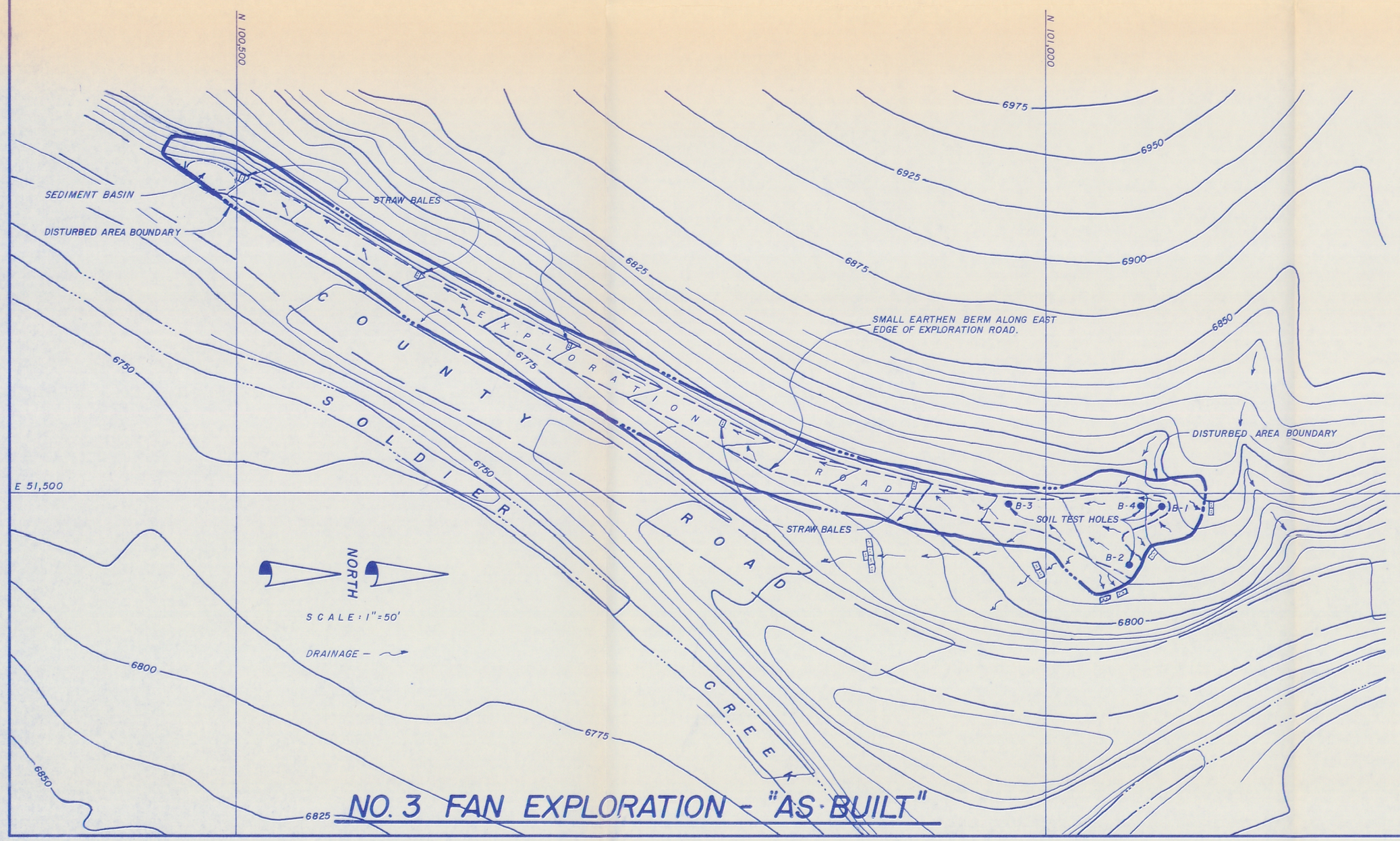


PRE-DISTURBANCE CONTOUR MAP

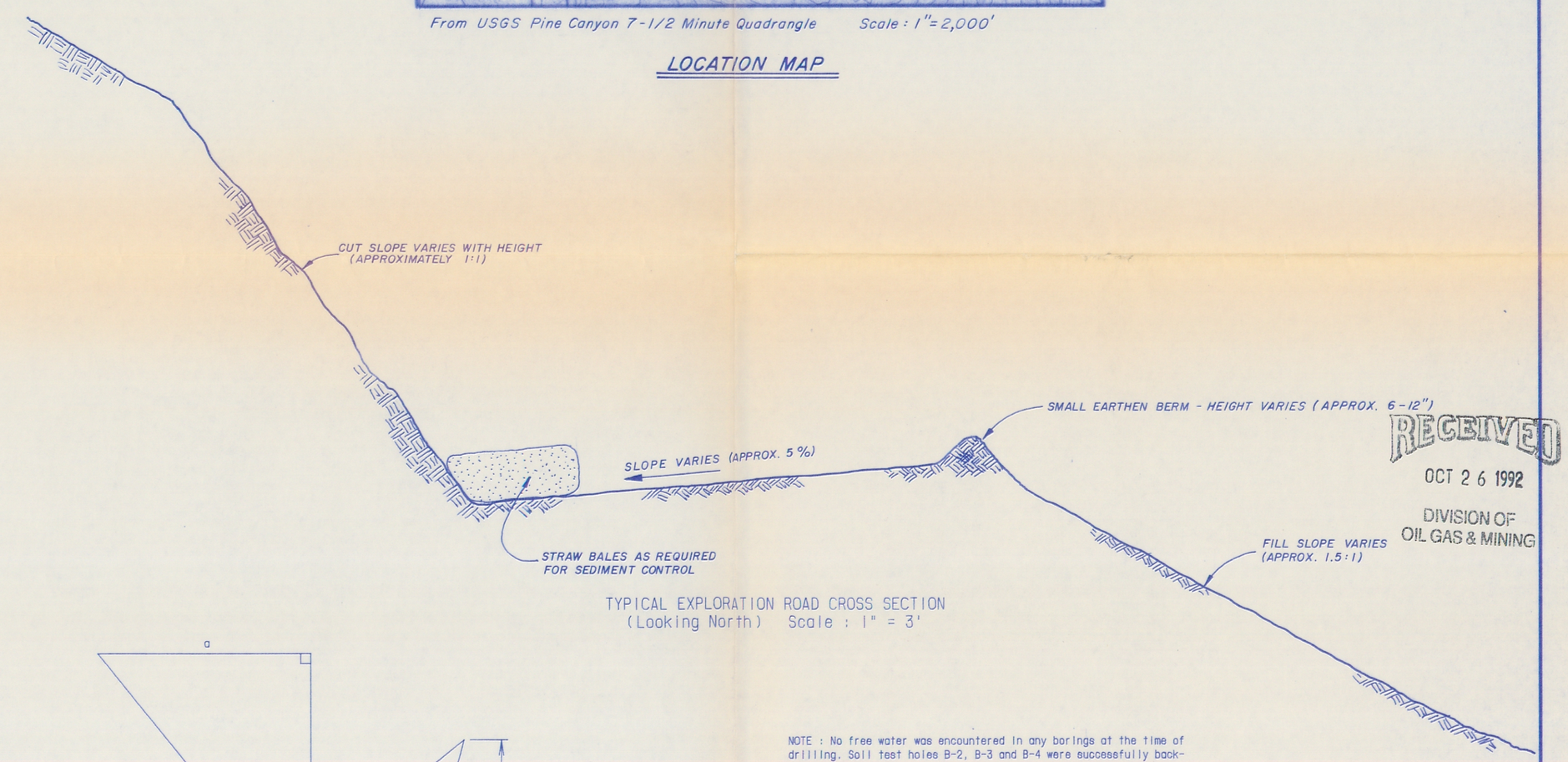


From USGS Pine Canyon 7-1/2 Minute Quadrangle Scale : 1" = 2,000'

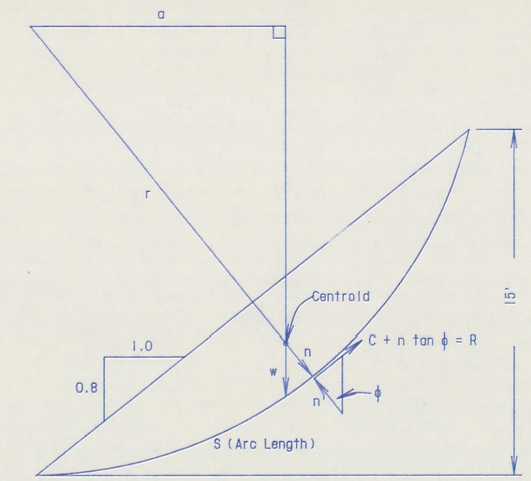
LOCATION MAP



NO. 3 FAN EXPLORATION - "AS BUILT"



TYPICAL EXPLORATION ROAD CROSS SECTION
(Looking North) Scale : 1" = 3'



SLOPE STABILITY ANALYSIS OF TYPICAL ROAD EMBANKMENT

FACTOR OF SAFETY CALCULATIONS

w = (Density).(Area).(Width)
= (113 lbs/ft3).(40.48 ft2).(1 ft)
= 4,574.35 lbs
C'(Total) = (Unit Cohesive Strength).(Arc Length).(Width)
= (1.99 lbs/in2).(144 in2/ft2).(24.70 ft).(1 ft)
= 4,944.71 lbs
n = n' = (cos 38°39'35").(w)
= (cos 38°39'35").(4,574.35)
= 3,571.97 lbs
Factor of Safety = (C + n'tan ϕ) / (w)
= (4,944.71 + (3,571.97).(tan 35°)) 28.43 / (4,574.35) (17.76)
Factor of Safety = 2.61

KNOWN VALUES

a = 17.76 ft
r = 28.43 ft
C'= 1.99 psi ※
ϕ = 35° ※
Soil Density = 113 lbs/ft3 ※※
S = 24.70 ft
Slip Circle Area = 40.48 ft2
Cord Length = 24.01 ft
Radius = 30 ft
Slope = 1.0H to 0.8V (worst case)

※ - Earthfax Engineering Inc. 1989. Slope Stability Analysis. Appendix A-3
※※ - Applied Geotechnical Engineering Consultants, Inc. 1991. Geotechnical Investigation, Proposed Ventilating Facility, Soldier Creek Coal Company, Near Price, Utah

NOTE : No free water was encountered in any borings at the time of drilling. Soil test holes B-2, B-3 and B-4 were successfully back-filled with available cuttings, while test hole B-1 remains open to monitor for potential free water. A schedule 40, 1-1/2" PVC pipe, randomly slotted with a hacksaw, was installed to the total depth of hole B-1 (TD = 45' penetrating Approx. 5' of bedrock). To date, no free water has been observed in the test hole, therefore, incorporation of the test hole into a formal monitoring plan is not proposed. The monitoring program will be reassessed, however, if a free water level is detected in the future. Monitoring results to date are as follows:
October 24, 1991 - DRY
November 22, 1991 - DRY
March 18, 1992 - DRY
July 25, 1992 - Dry

NOTE : Area of disturbance = Approx. 0.61 acres.

VOLUME 7 **FILE COPY**

Registered Professional Engineer No. 4153 J. BRYAN PALMER State of Utah

As Built

I, being a professional engineer hereby certify that this map was prepared by me or under my direct supervision and that all information contained thereon is true and correct to the best of my knowledge and information.

NOTE: PROJECT IS LOCATED IN THE SE 1/4, SEC.7, T13S, R12E, S.L.B.&M.

EXHIBIT 7.42-1

Soldier Creek Coal Company
SC3
a subsidiary of Sun Coal Company

TITLE: NO. 3 FAN EXPLORATION "AS-BUILTS"			
PROJECT: NO. 3 FAN			
DRAWN BY: B.L.P.	CHECKED BY:	APPROVED BY:	
DATE: JAN. 15, 1992	DATE:	DATE:	
SOLDIER CANYON MINE			

REVISIONS

NO.	DATE	BY
1	04/03/92	DGS
2	07/25/92	DGS
3		

SCALE: AS NOTED

DRAWING NO. D-344

VCAD - #3fanab.2D

RECEIVED
OCT 26 1992
DIVISION OF OIL GAS & MINING