



**ROLLINS,
BROWN AND
GUNNELL,
INC.**

1435 WEST 820 NORTH
PROVO, UTAH 84601
(801) 374-5771

July 30, 1987

Plateau Mining Company
P.O. Drawer PMC
Price, UT 84501

Attn: Ben Grimes

Dear Mr. Grimes:

As you have requested we have completed the stability analysis for the backfilled area in the reclamation project at Plateau Mine. The work has been performed in accordance with an agreement with your organization dated July 16, 1987.

Attached hereto is a typical cross-section of the proposed backfill areas. It will be observed from the cross-section that the general slope is slightly steeper than 1.5 horizontal to 1 vertical. It should also be observed that the roadway cut has a slope of 1 horizontal to 2.5 vertical. It is our understanding that the cut will be filled to a slope that will approximate the general slope.

The shear strength parameters used for analysis are also shown on the figure. As indicated above the roadway cut has a slope of approximately 1 horizontal to 2.5 vertical. The slope has been stable over the past several years since its construction. It is our opinion that any stable slope this steep will have a cohesion of at least 600 psf and most likely two or three times this value. A cohesion of 600 psf and a friction angle of 34 degrees were therefore used as the shear strength parameters for natural materials on the slope. The shear strength parameters for the backfill materials were based upon typical characteristics of sands and gravels

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placed in a relatively uncompacted state. We believe that the shear strength parameters used in the analysis are conservative which will therefore provide conservative results.

The computations for the stability analysis were performed using a computer model based on the Modified Bishop's Method. The results of the computations indicate a critical failure surface as shown on the cross section. This failure surface has a factor of safety of 1.37 which is greater than 1.3 required by the Division of Oil, Gas and Mining. It is therefore our opinion that the backfilled areas will be stable with an adequate factor of safety. We recommend however that the final slopes of the backfill be no steeper than 1.5 horizontal to 1 vertical which is approximately the slope of repose for the type of material proposed for backfill material.

If you have any questions with regards to the information contained herein, please contact us.

Sincerely,

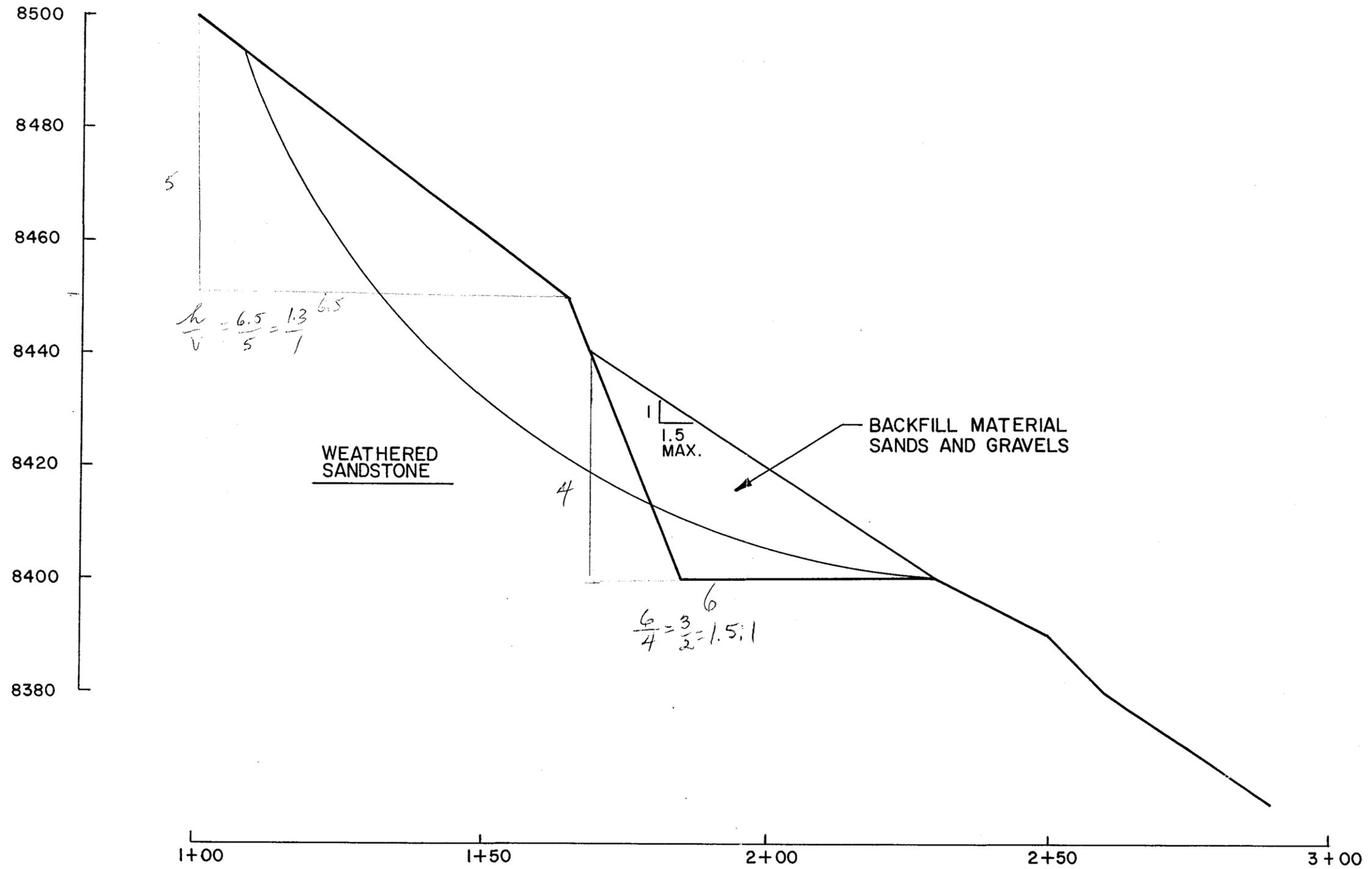
ROLLINS, BROWN AND GUNNELL, INC.

Ralph L. Rollins
Ralph L. Rollins

SLS/slv

cc: Lowell Braxton
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

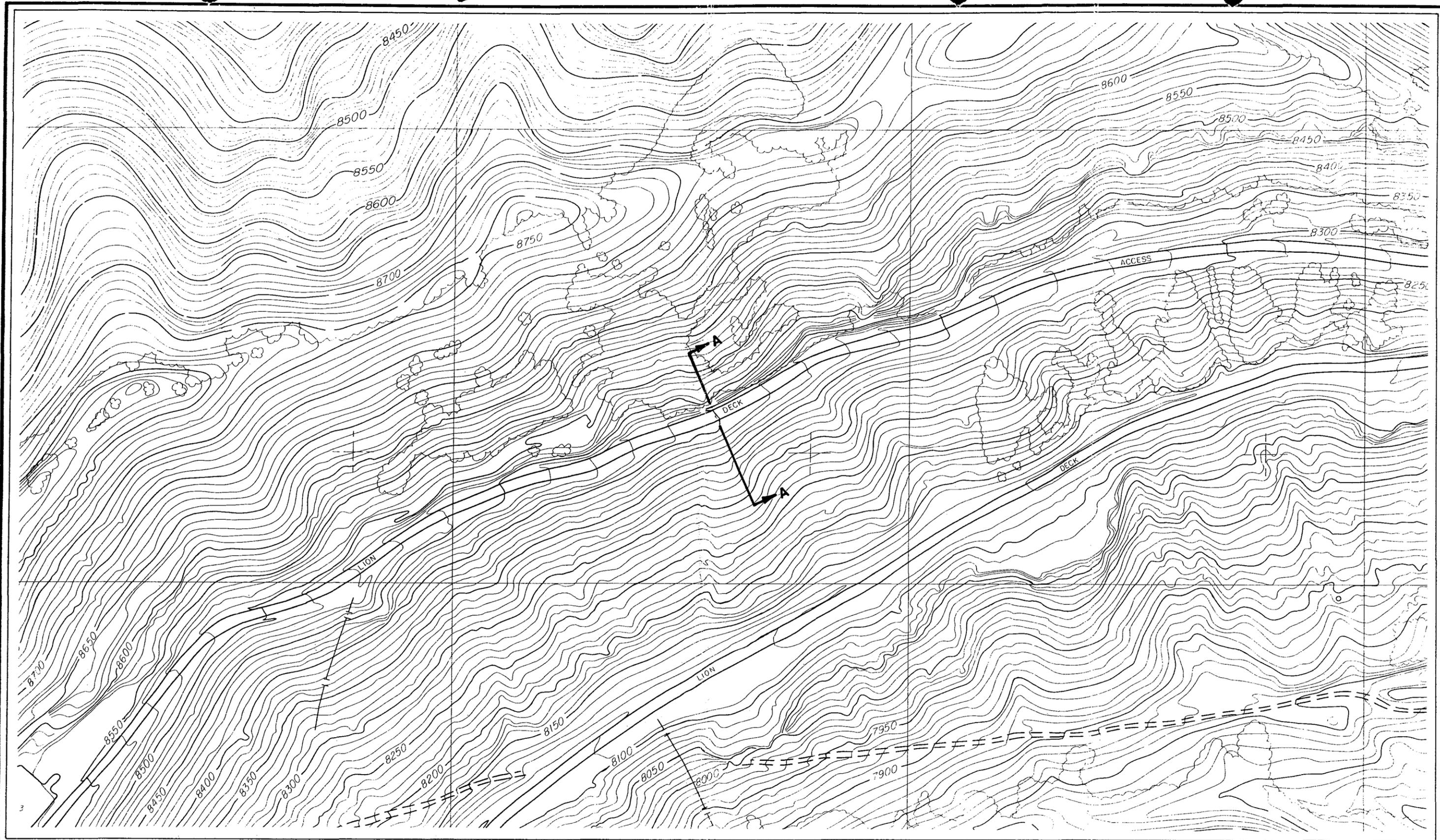
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PLATEAU MINING: SECTION A-A, STABILITY ANALYSIS

FIGURE NO.



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PLATEAU MINING: HAUL ROAD STABILITY INVESTIGATION

FIGURE
NO.