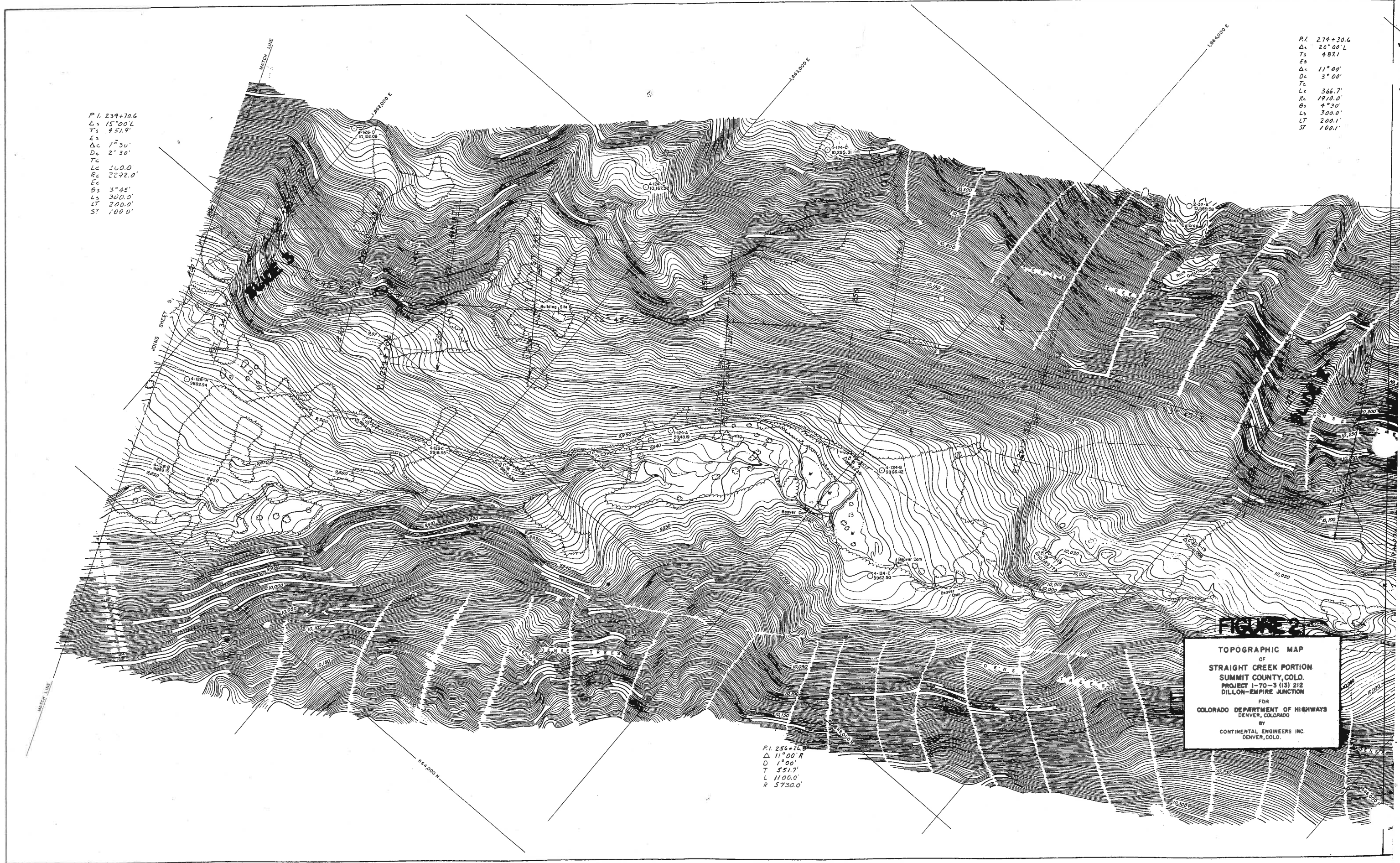


P.I. 239+70.6  
 Δs 15°00' L  
 Ts 451.9'  
 Es  
 Δc 17°30'  
 Dc 2°30'  
 Tc  
 Lc 100.0'  
 Rc 2292.0'  
 Ec  
 Gs 3°45'  
 Ls 300.0'  
 Lt 200.0'  
 St 100.0'

P.I. 274+30.6  
 Δs 20°00' L  
 Ts 487.1'  
 Es  
 Δc 11°00'  
 Dc 3°00'  
 Tc  
 Lc 366.7'  
 Rc 1910.0'  
 Ec 4°30'  
 Ls 300.0'  
 Lt 200.1'  
 St 100.1'

P.I. 254+14.8  
 Δ 11°00' R  
 D 1°00'  
 T 551.7'  
 L 1100.0'  
 R 5730.0'

**FIGURE 2**  
**TOPOGRAPHIC MAP**  
 OF  
**STRAIGHT CREEK PORTION**  
 SUMMIT COUNTY, COLO.  
 PROJECT 1-70-3 (13) 212  
 DILLON-EMPIRE JUNCTION  
 FOR  
 COLORADO DEPARTMENT OF HIGHWAYS  
 DENVER, COLORADO  
 BY  
 CONTINENTAL ENGINEERS INC.  
 DENVER, COLO.



EXPLANATION

- R Rubble
- ta Talus
- b Boulder train
- g Granite
- m Migmatite (mixed)
- p Pegmatite
- gn Gneiss
- (d) Decomposed rock
- Area of abundant outcrop
- Contact
- Sheared material along fault
- Fault
- Foliation
- Joint
- Surface crack
- Landslide scarp with amount of vertical displacement and dip of scarp
- Roll in soil
- Spring
- Swamp
- Culvert



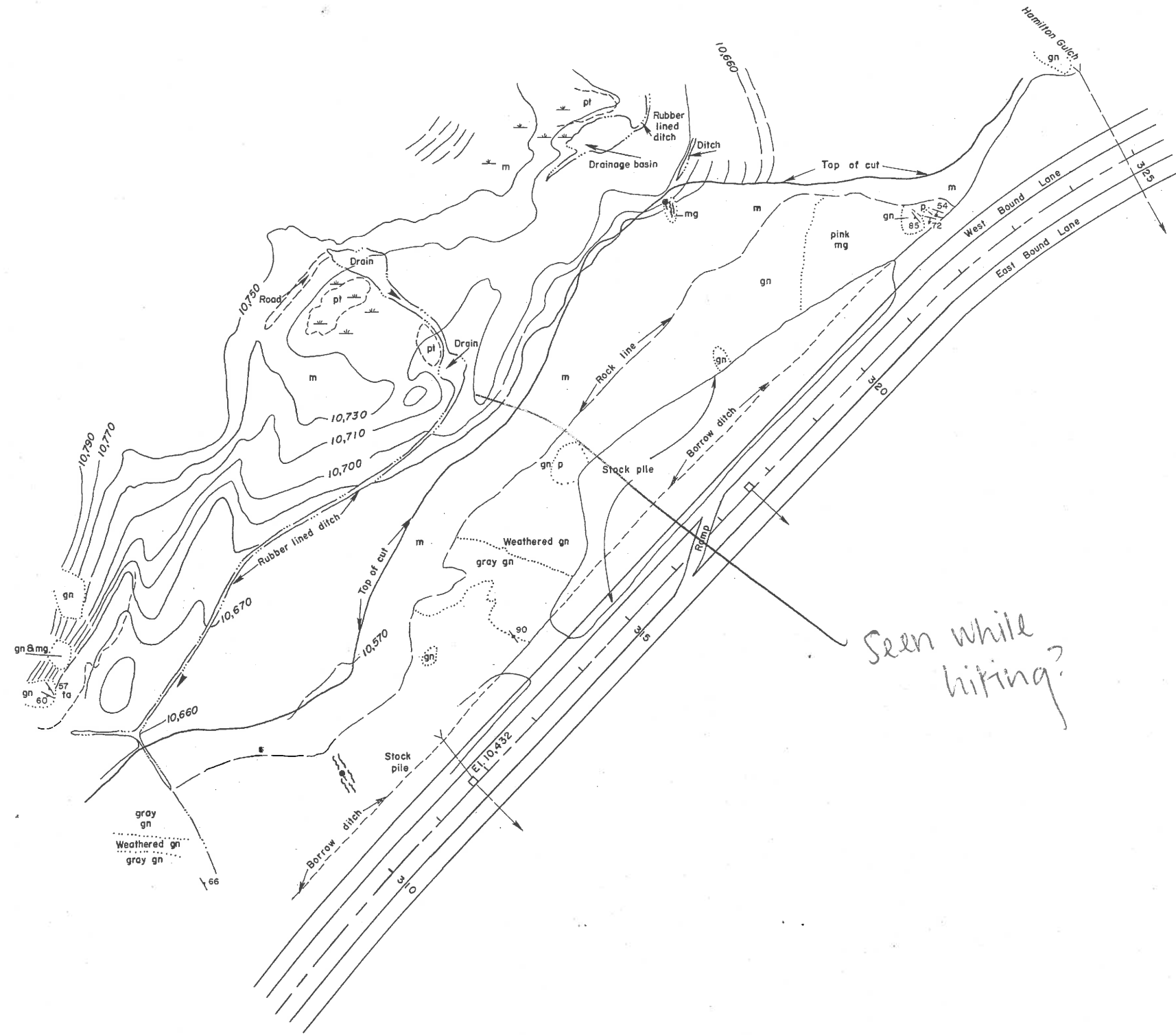
**COLORADO DEPARTMENT OF HIGHWAYS**  
**GEOLOGIC SKETCH MAP-SLIDE A, STRAIGHT CREEK SLIDE AREA, SUMMIT COUNTY, COLORADO**

COLORADO DEPARTMENT OF HIGHWAYS  
 AND  
 ROBINSON & ASSOCIATES  
 GEOLOGY BY D.M. COCHRAN  
 AUGUST, 1971

100 0 100 200 300 400 500 FEET

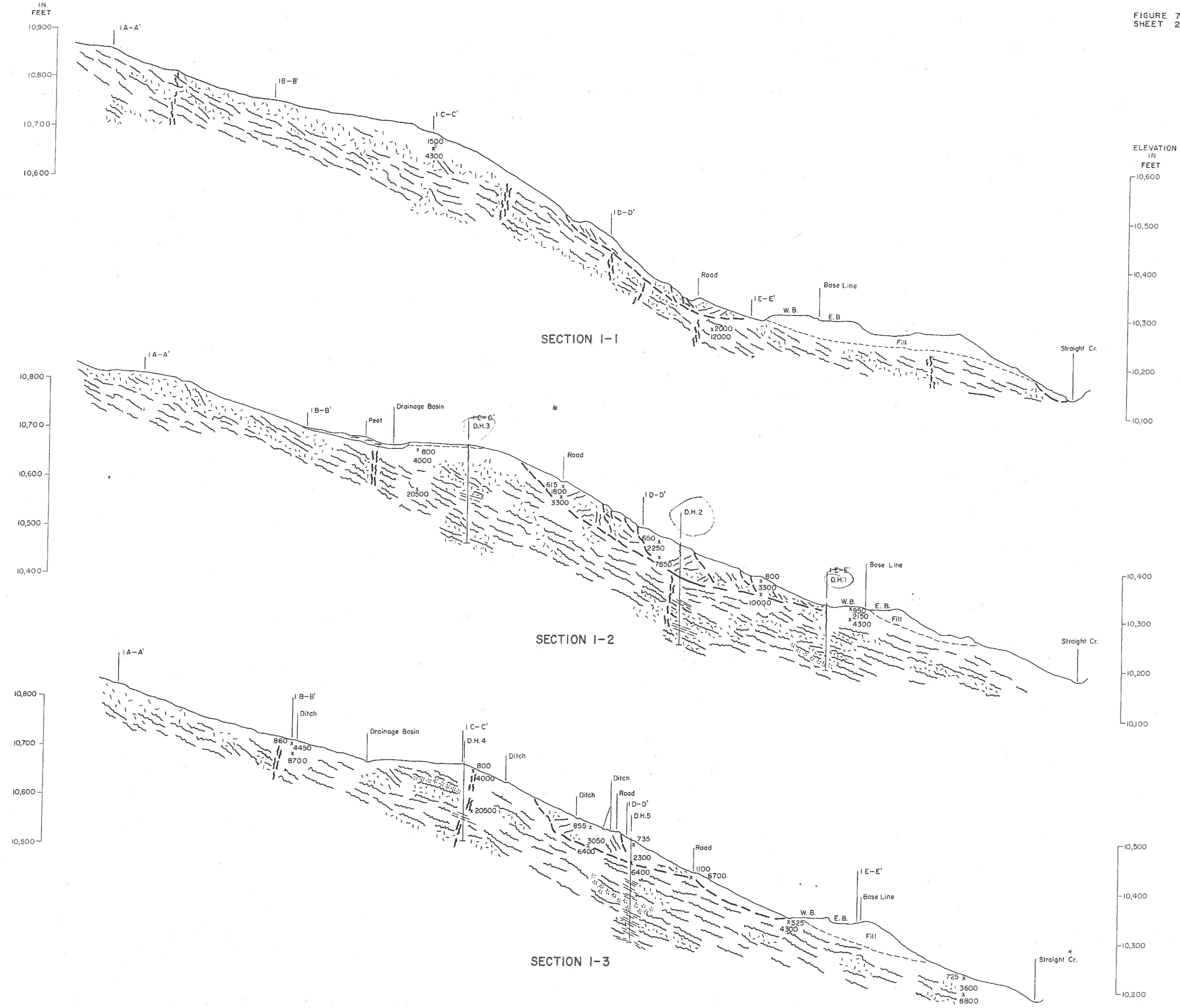
EXPLANATION

- pt  
Peat
- m  
Moraine
- mg  
Migmatite
- p  
Pegmatite
- gn  
Gneiss
- Area of abundant outcrop
- Shear Zone
- Contact
- Strike and dip of joint
- Strike and dip of foliation
- Strike and dip of fault
- Vertical foliation
- Swamp
- Spring
- Culvert

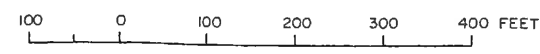


**COLORADO DEPARTMENT OF HIGHWAYS**  
 SKETCH MAP-SLIDE B, STRAIGHT CREEK SLIDE AREA, SUMMIT COUNTY, COLORADO









COLORADO DEPARTMENT OF HIGHWAYS  
 AND  
 ROBINSON & ASSOCIATES  
 MAPPED BY D.M. COCHRAN  
 AUGUST, 1971









STRAIGHT CREEK SLIDE AREA-SLIDE I









### EXPLANATION

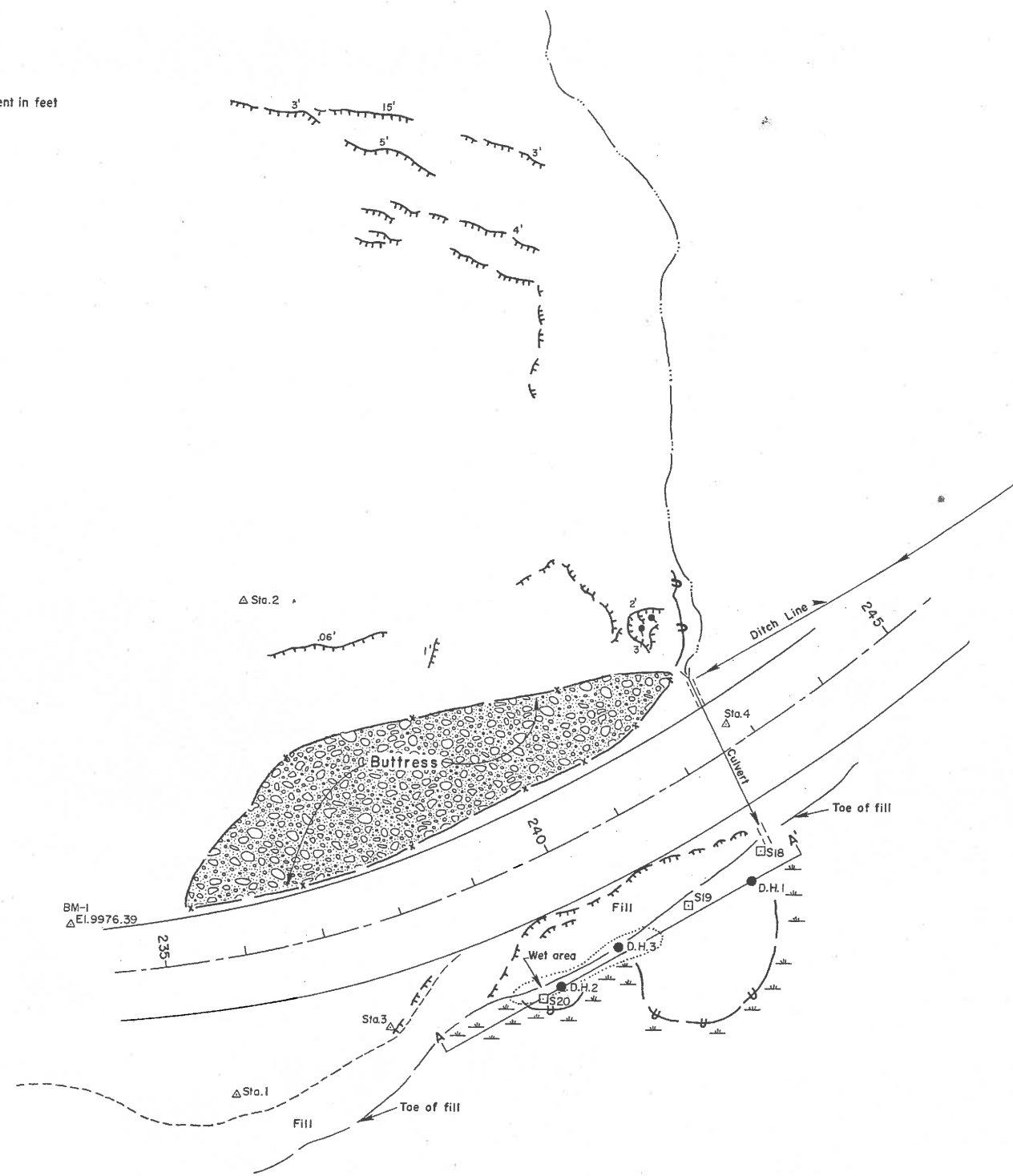
-   
Road Fill
-   
Peat
-   
Clay, gravel and boulders
-   
Moraine
-   
Pegmatite
-   
Granite
-   
Gneiss
-   
Clay Zones

-   
Faults
-   
Surface crack and slip planes projected
-   
Swamp
-   
Spring
-   
D.H. 2  
Drill Hole
-   
860  
4450  
Depth and velocity determined by seismograph

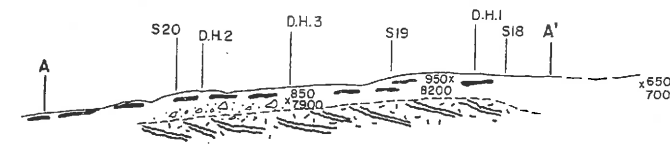


**EXPLANATION**




-  Landslide scarp and displacement in feet
-  Roll in soil
-  Swamp
-  Spring
-  D.H.1  
Drill Hole
-  S19  
Seismic Shot Point



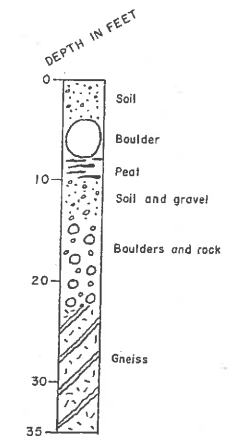
**PROFILE ALONG TOE OF FILL**



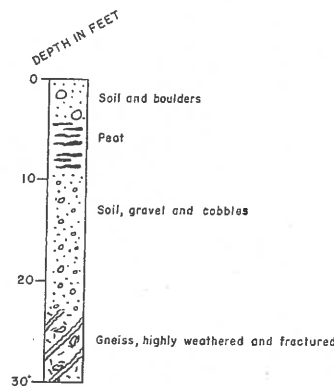
**EXPLANATION**

-  Peat
-  Soil, gravel and boulders
-  Gneiss

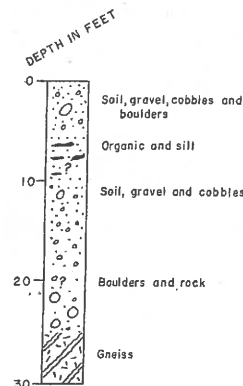
**DRILL HOLE 1**



**DRILL HOLE 3**



**DRILL HOLE 2**



**COLORADO DEPARTMENT OF HIGHWAYS**  
**MAP OF SLIDE 3 AND FILL TOE FAILURE, STRAIGHT CREEK SLIDE AREA, SUMMIT COUNTY, COLORADO**



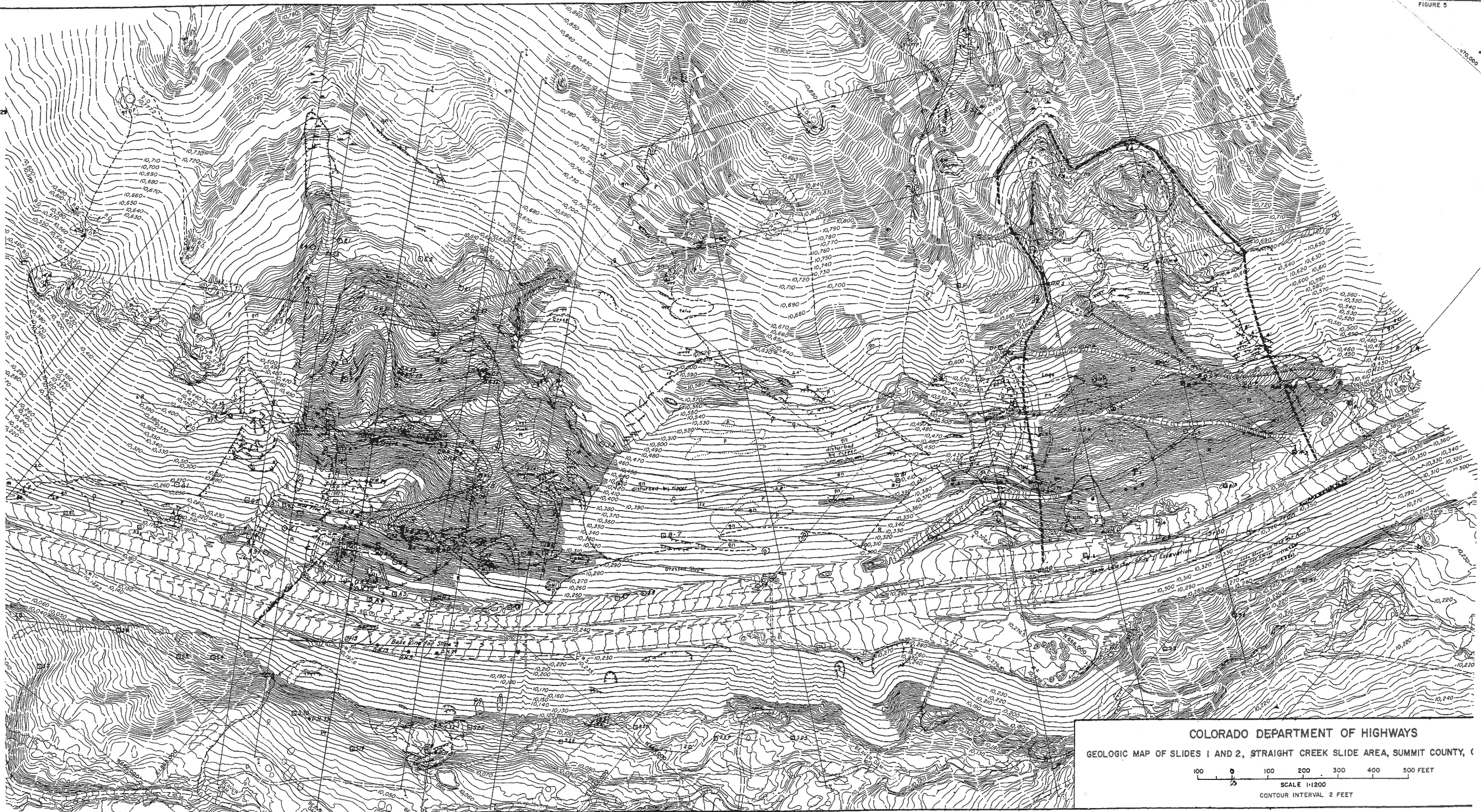
COLORADO DEPARTMENT OF HIGHWAYS  
 AND  
 ROBINSON & ASSOCIATES  
 MAPPED BY M.W. WEST and D.M. COCHRAN  
 AUGUST, 1971

### EXPLANATION

Shear Strip 1, 3, 6, 6, 14, 19, 20, 21, 22, 23, 24

Piezometer 10, 12, 13, 15, 16, 17, 18, 25, 26, 27, 28, 29

- R Rubble
- Pl Peat
- m Moraine
- p Pegmatite
- gn Gneiss
- (d) Decomposed rock
- /// Shear zone with fault gouge
- Area of abundant outcrop
- Contact
- DH 1 Drill Holes
- SP Seismic point
- S 10 Strike and dip of fault
- S 20 Strike and dip of foliation
- S 30 Strike and dip of joints
- L 100 Landslide scarp with amount of vertical displacement and dip of scarp
- R 10 Reef in soil
- S Swamp
- S Springs
- Enclosed depression
- A Adit
- B Proposed borrow area



DRILL HOLES AND SEISMIC POINTS LOCATED BY PLANE TABLE, M.W. WEST and D.M. COCHRAN

GEOLOGY BY D.M. COCHRAN

TOPOGRAPHY BY FALCON AIR MAPS DIVISION  
THE KEN R. WHITE COMPANY  
OCTOBER 16, 1970

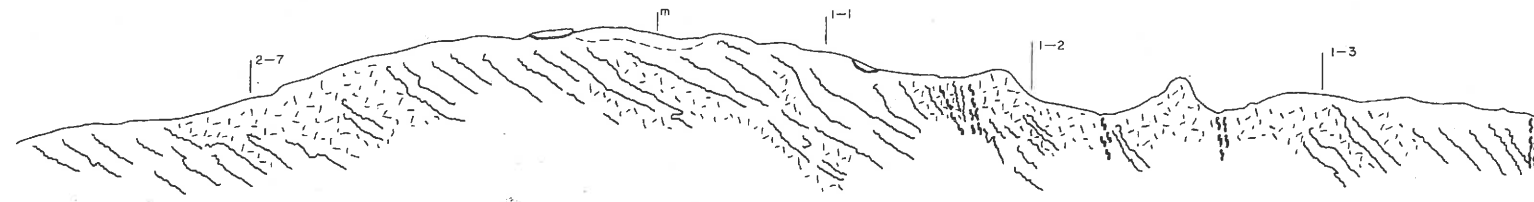
HORIZONTAL CONTROL BASED ON PREVIOUS CONTROL ESTABLISHED BY CONTINENTAL ENGINEERS, INC.

**COLORADO DEPARTMENT OF HIGHWAYS**

**GEOLOGIC MAP OF SLIDES 1 AND 2, STRAIGHT CREEK SLIDE AREA, SUMMIT COUNTY, CO**

SCALE 1:1200  
CONTOUR INTERVAL 2 FEET

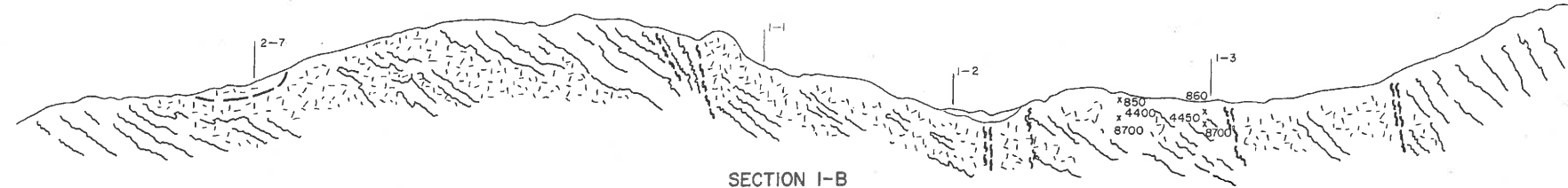
ELEVATION  
 IN  
 FEET  
 10,900  
 10,800  
 10,700



SECTION I-A

ELEVATION  
 IN  
 FEET  
 10,900  
 10,800  
 10,700

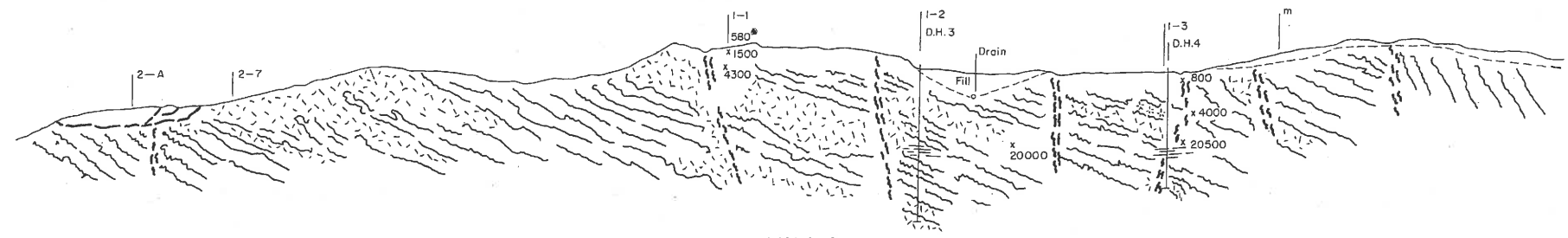
10,800  
 10,700  
 10,600



SECTION I-B

10,900  
 10,800  
 10,700

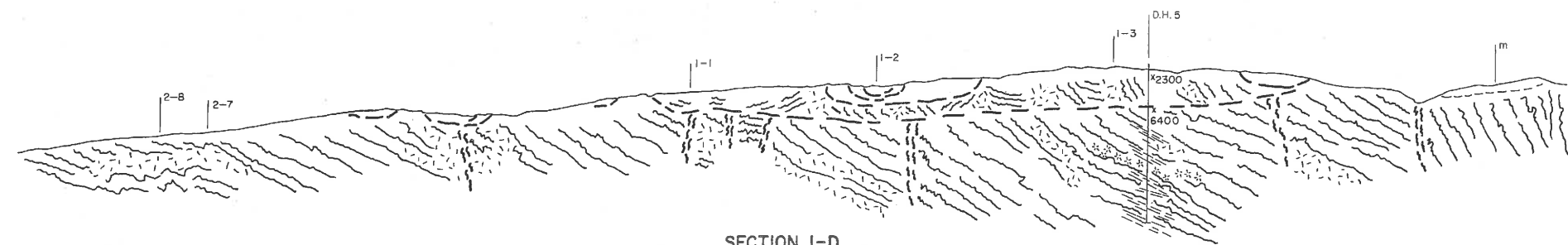
10,600  
 10,500



SECTION I-C

10,700  
 10,600  
 10,500

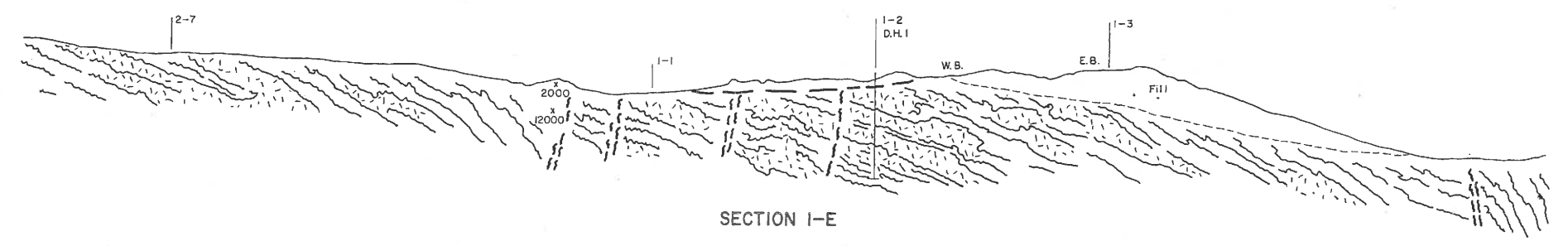
10,500  
 10,400  
 10,300



SECTION I-D

10,500  
 10,400  
 10,300

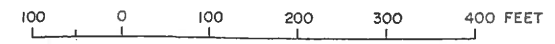
10,400  
 10,300  
 10,200



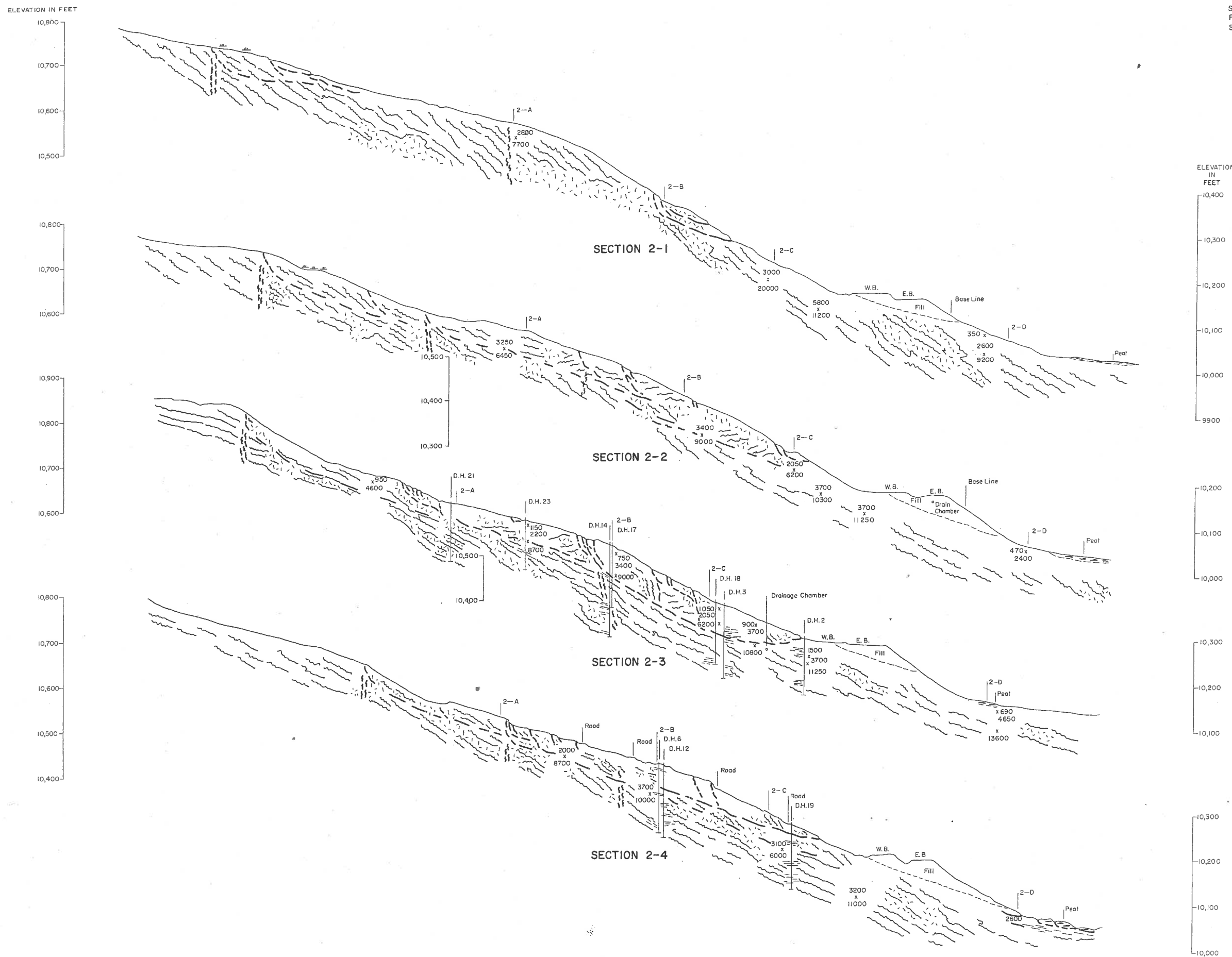
SECTION I-E

10,400  
 10,300  
 10,200  
 10,100

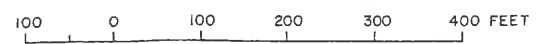
STRAIGHT CREEK SLIDE AREA—SLIDE 1

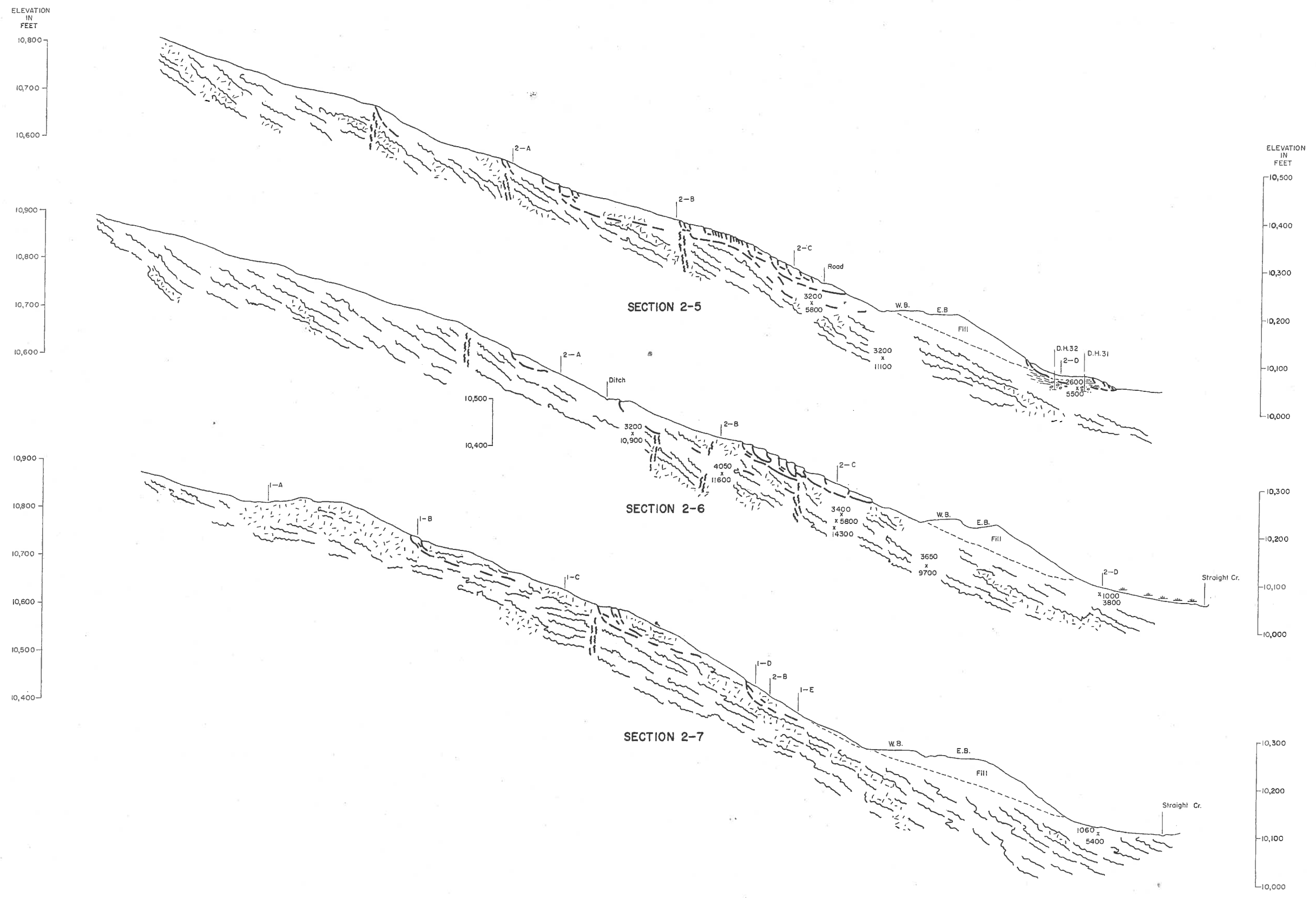




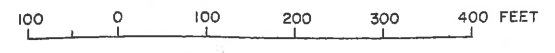


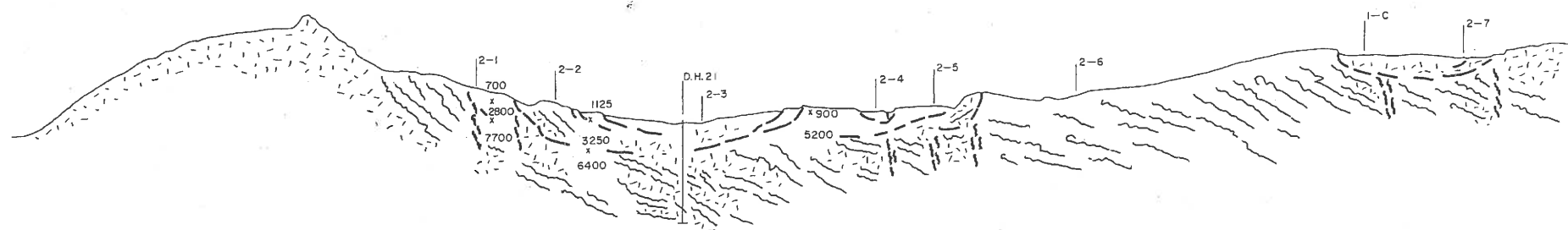
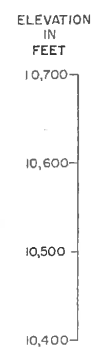
STRAIGHT CREEK SLIDE AREA - SLIDE 2



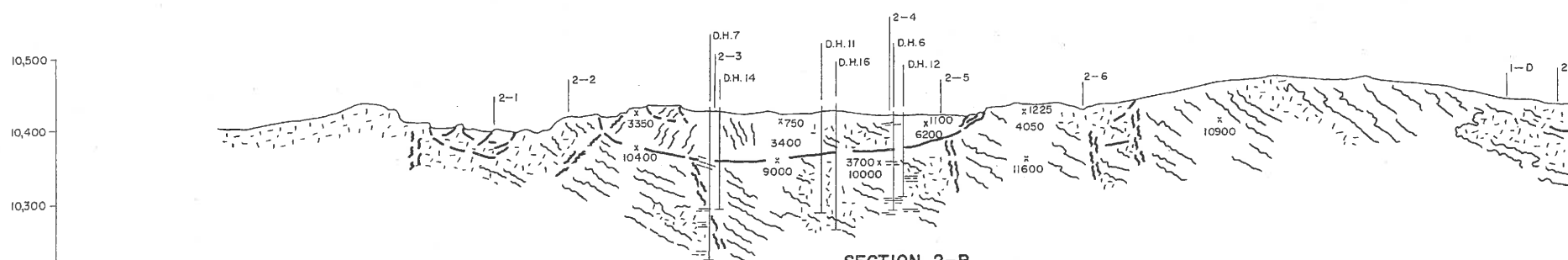
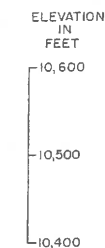


STRAIGHT CREEK SLIDE AREA-SLIDE 2

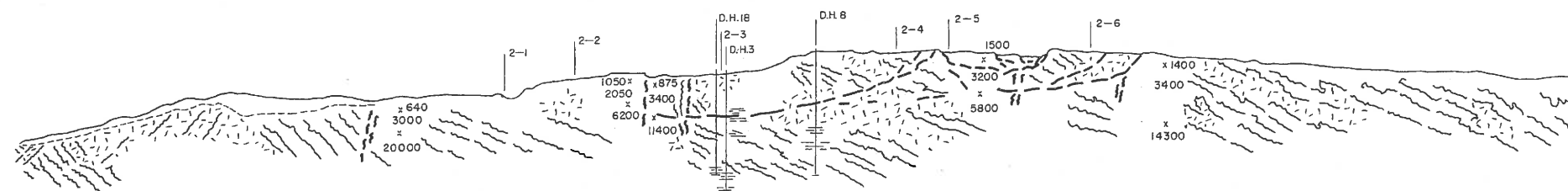
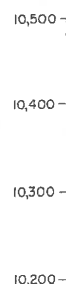




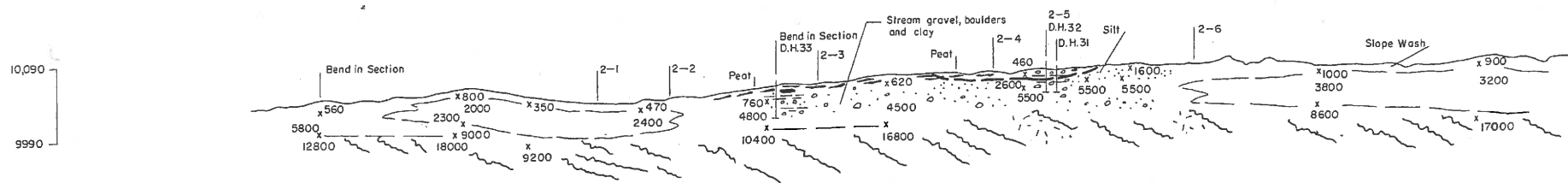
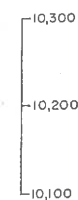
SECTION 2-A



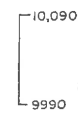
SECTION 2-B



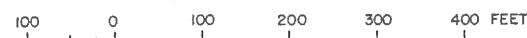
SECTION 2-C

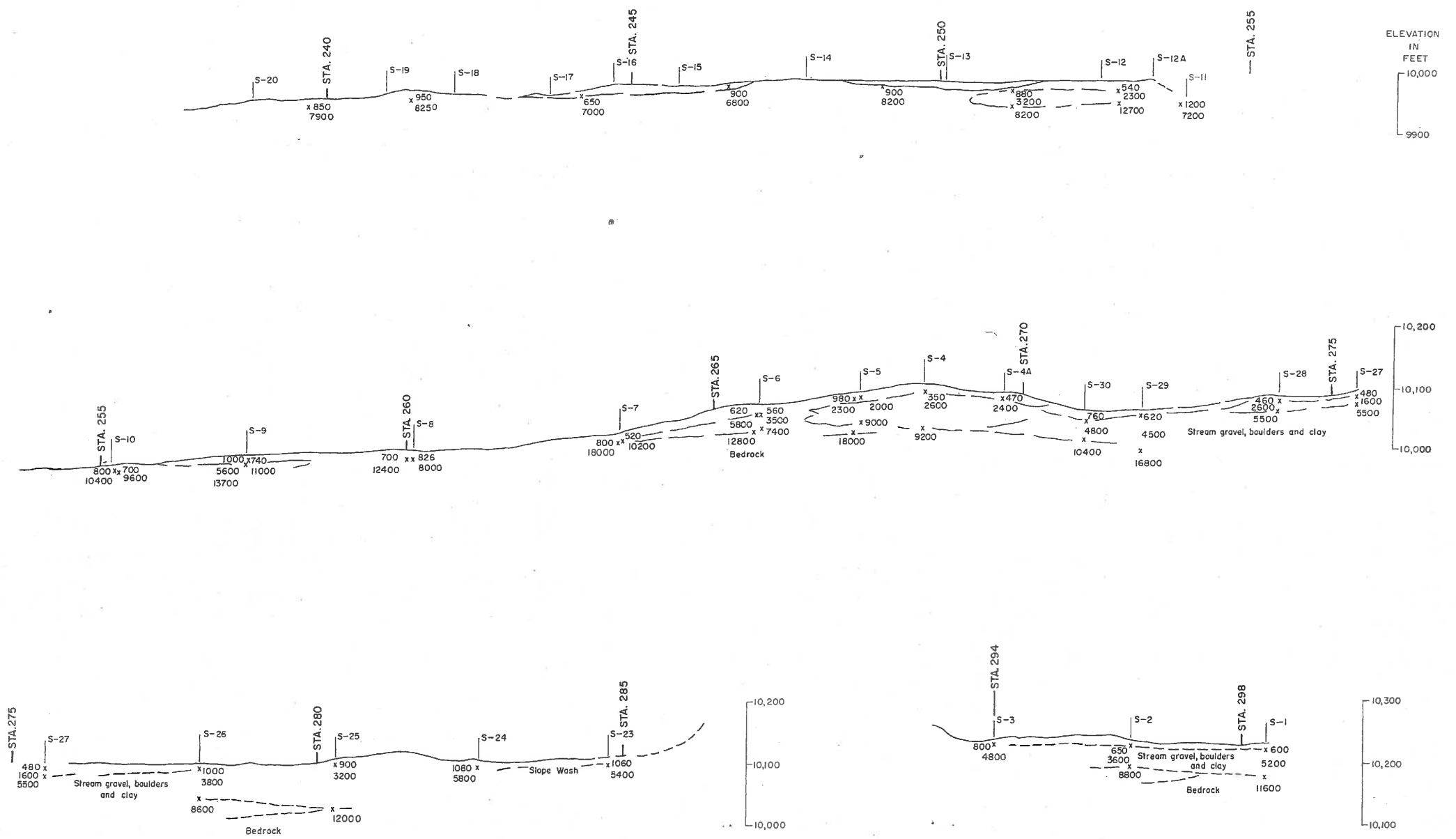


SECTION 2-D



STRAIGHT CREEK SLIDE AREA - SLIDE 2





STRAIGHT CREEK SLIDE AREA, SEISMIC PROFILE ALONG TOE OF EAST BOUND LANE, STATION 238 TO STATION 298

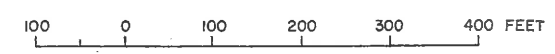




FIGURE 9

# I 70-3 (13)

Straight Creek Slides

8-19-77

Slide 2 Scale 1"=20'

Station 0+15 on Baseline  
Ground Line from P. R. White  
Topography Oct 70

Slip Plane Determined by  
"Shear Strips"

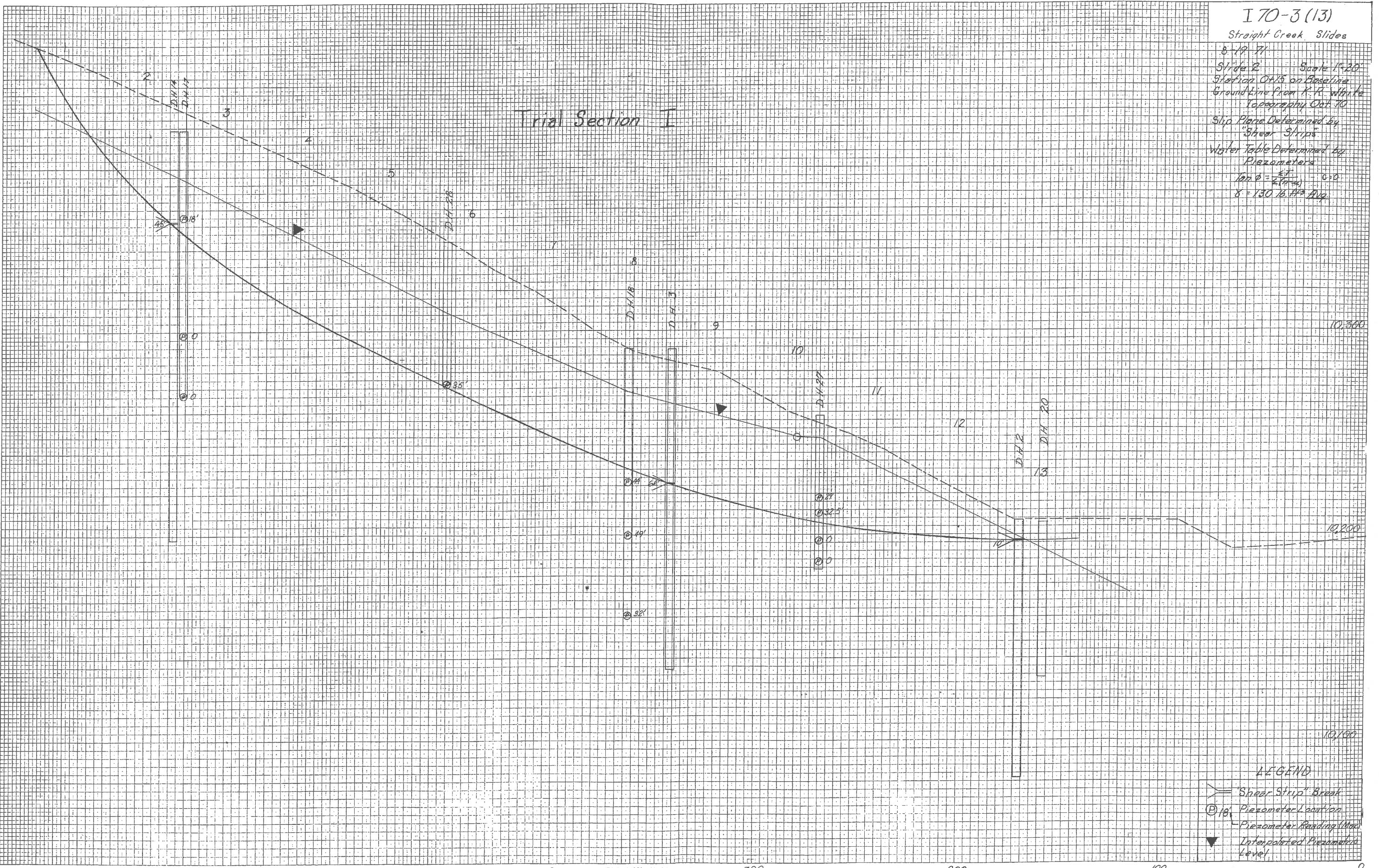
Water Table Determined by  
Piezometers

$\tan \phi = \frac{c}{\sigma} = 0.0$   
 $\delta = 130 \text{ lb./ft.}^2 \text{ Avg.}$

## Trial Section I

FINAL SURVEY	SURVEYED	DATE
NO.	BY	
AREAS CHECKED		
AREAS CHECKED		
AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	DATE
NO.	BY	
AREAS CHECKED		
AREAS CHECKED		
AREAS CHECKED		



- LEGEND**
- Shear Strip Break
  - ⊙ 18' Piezometer Location
  - Piezometer Reading (ft)
  - ▼ Interpolated Piezometric Level

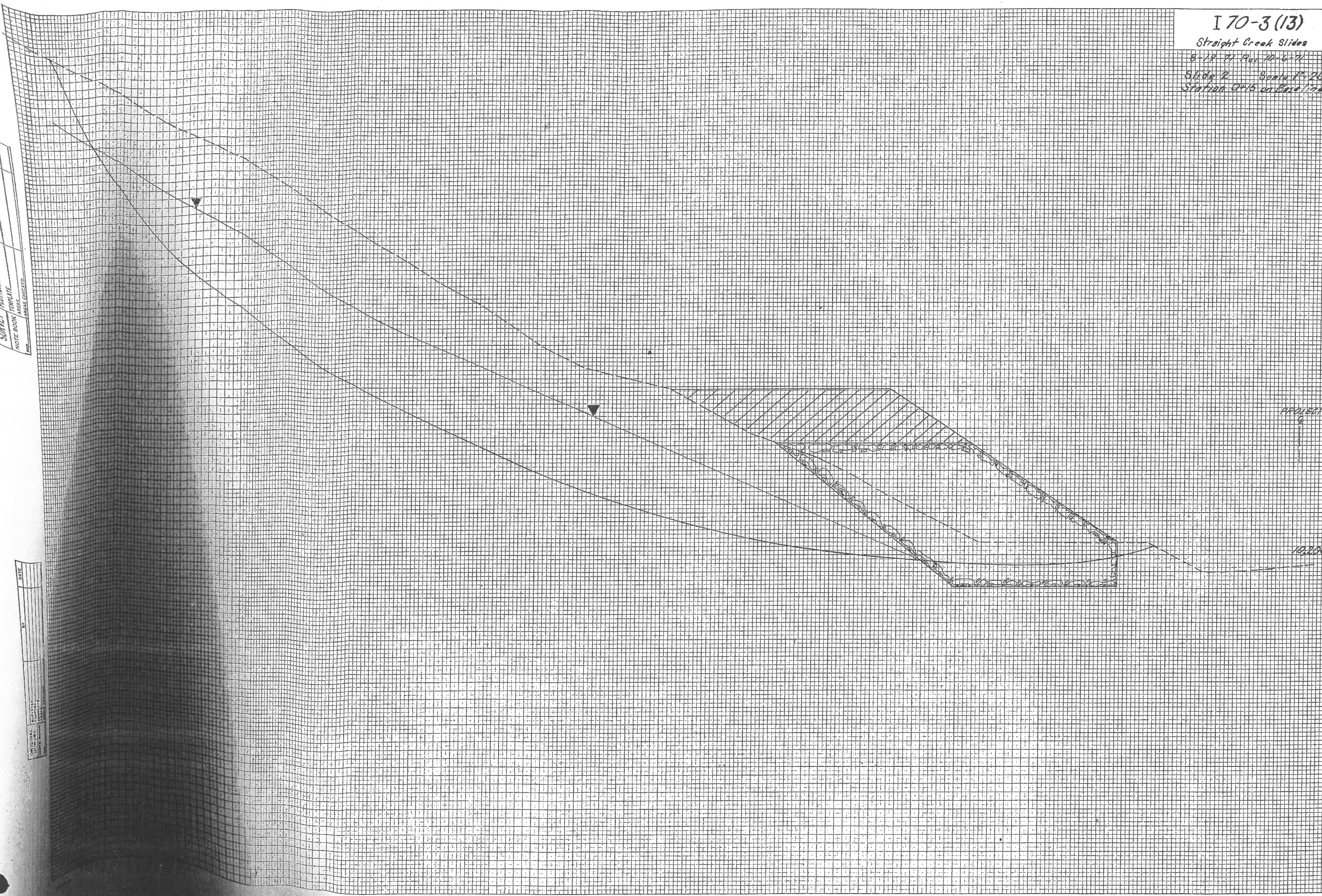


I 70-3 (13)

Straight Creek Slides

8-17-77 Rev. 10-6-77

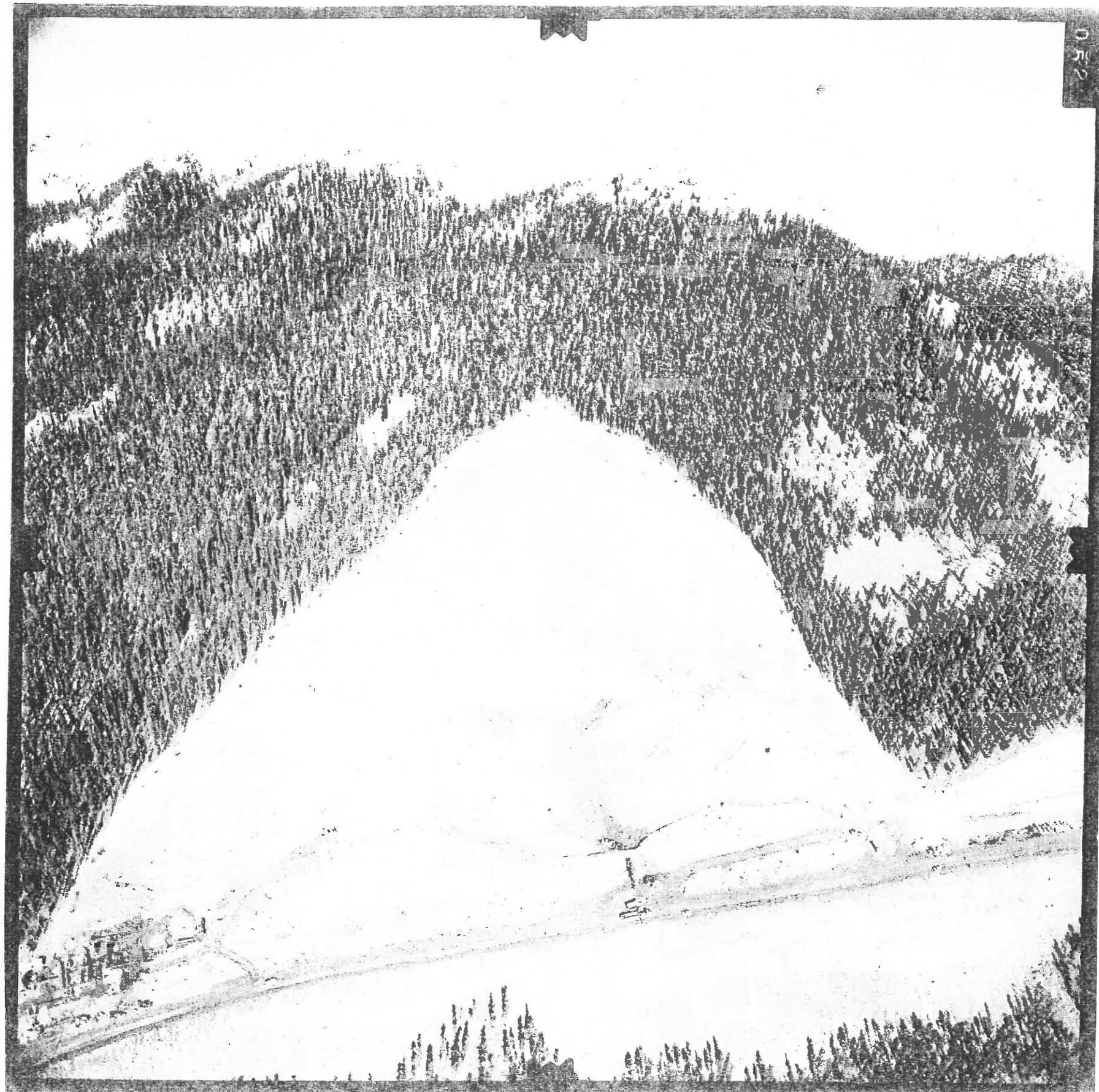
Slide 2 Scale 1" = 20'  
Station 0+15 on Baseline



SURVEY PLATE  
NOTE BOOK TEMPLATE  
AREA CHECKED  
NO.

DATE  
BY  
DRAWN BY  
CHECKED BY  
DATE





OBLIQUE PHOTO

SLIDE A

This photo, taken in October, 1970, shows the areal extent of the cut at Slide A. Cracks were observed nearly 600 feet behind the top of the cut. The text describes the geology.

The equipment in the photo is constructing a 1 1/2:1 corrective cut slope and gathering material for crushing as recommended by the Ken R. White Co. in 1969.

The crusher is visible in the lower left corner.



OBLIQUE PHOTO

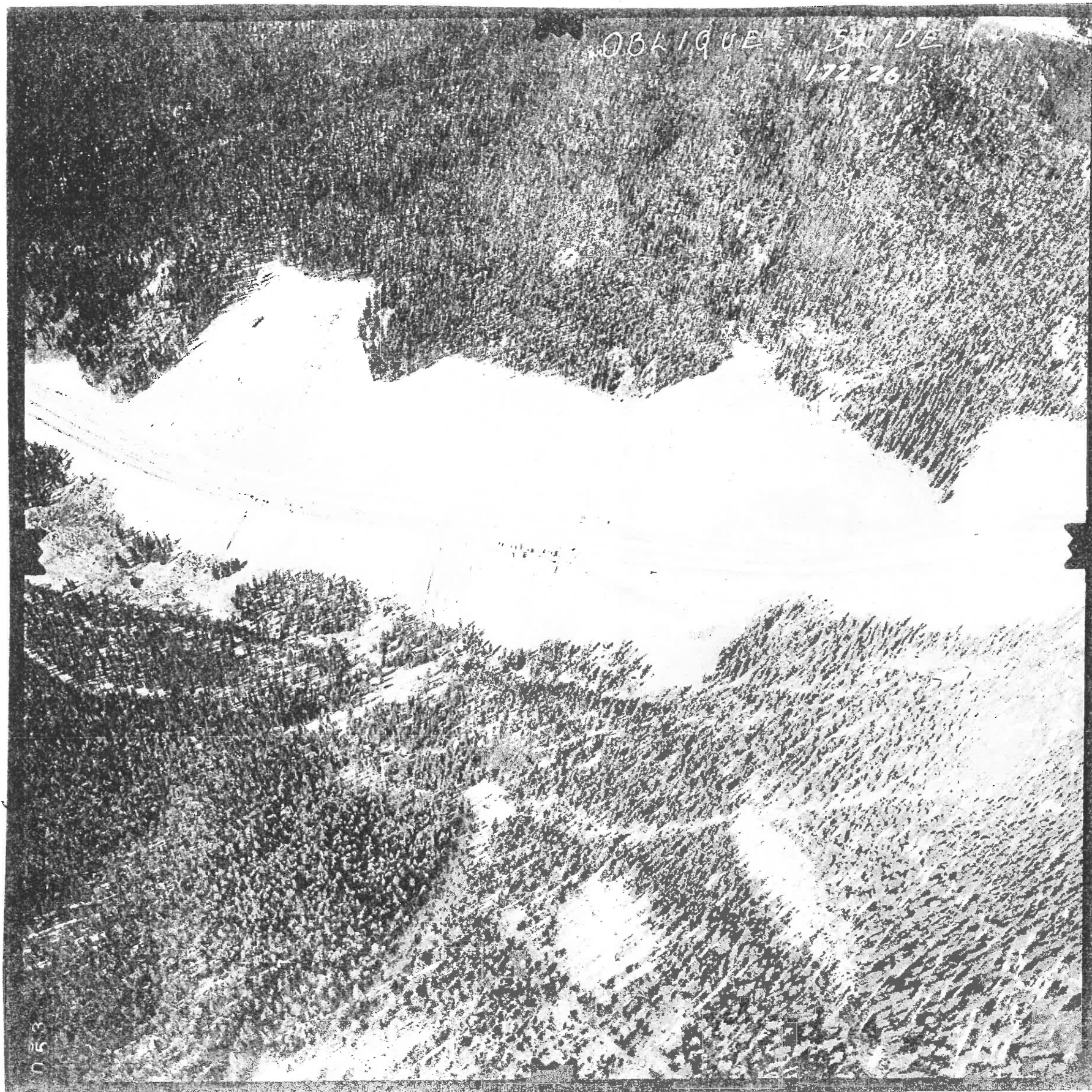
SLIDE B

The area known as Slide B is located at the aggregate stockpile in the upper center of the photo.

Hamilton Gulch is right of the slide area, and the crusher is visible immediately right of Hamilton Gulch.

The light colored area on the east (right) side of Slide B can be used as a rock source, if needed.





OBLIQUE PHOTO

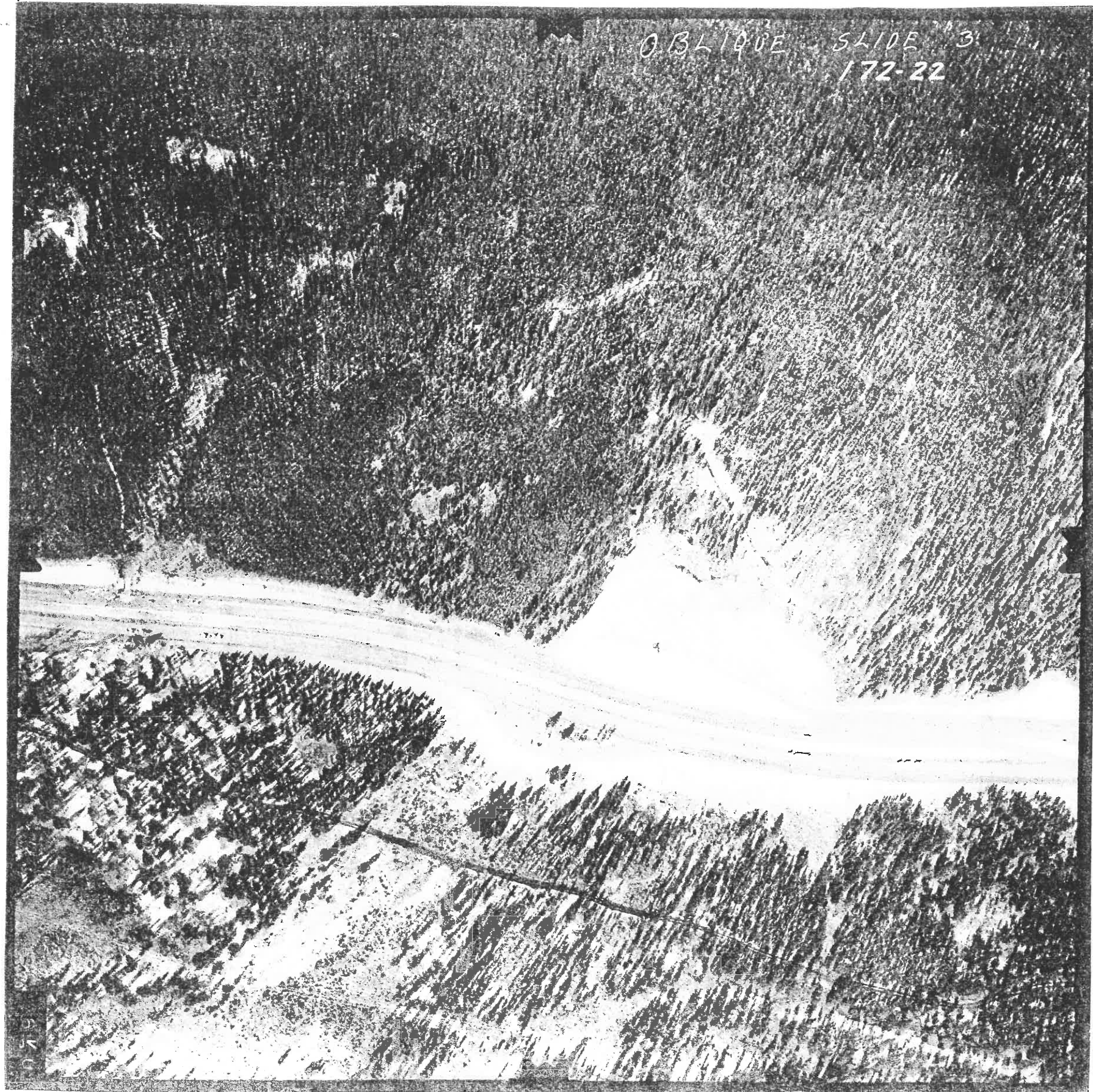
Slides 1 and 2

This photo covers approximately the same area as the topographic map of Slides 1 and 2, Figure 3. Slide 1 is located in the right center of the photo, and Slide 2 in the left center.

The area of toe distress at Slide 1 is located below the additional fill area on the right (near) side of the lanes at Slide 1.

The area of toe distress at Slide 2 is located in the fill and natural ground below the center of Slide 2.





OBLIQUE PHOTO

SLIDE 3

Visible in this October, 1970 photo is the buttness and drainage system installed at Slide 3. The area of recent cracking is higher and right of the existing cut area.

The area of toe distress is located in the fill and natural ground east (right) of the pullout area, and across from the east end of the buttness.

PROJECT I-70-3 (13)

HOLE NO. 1

STRAIGHT CREEK SLIDES

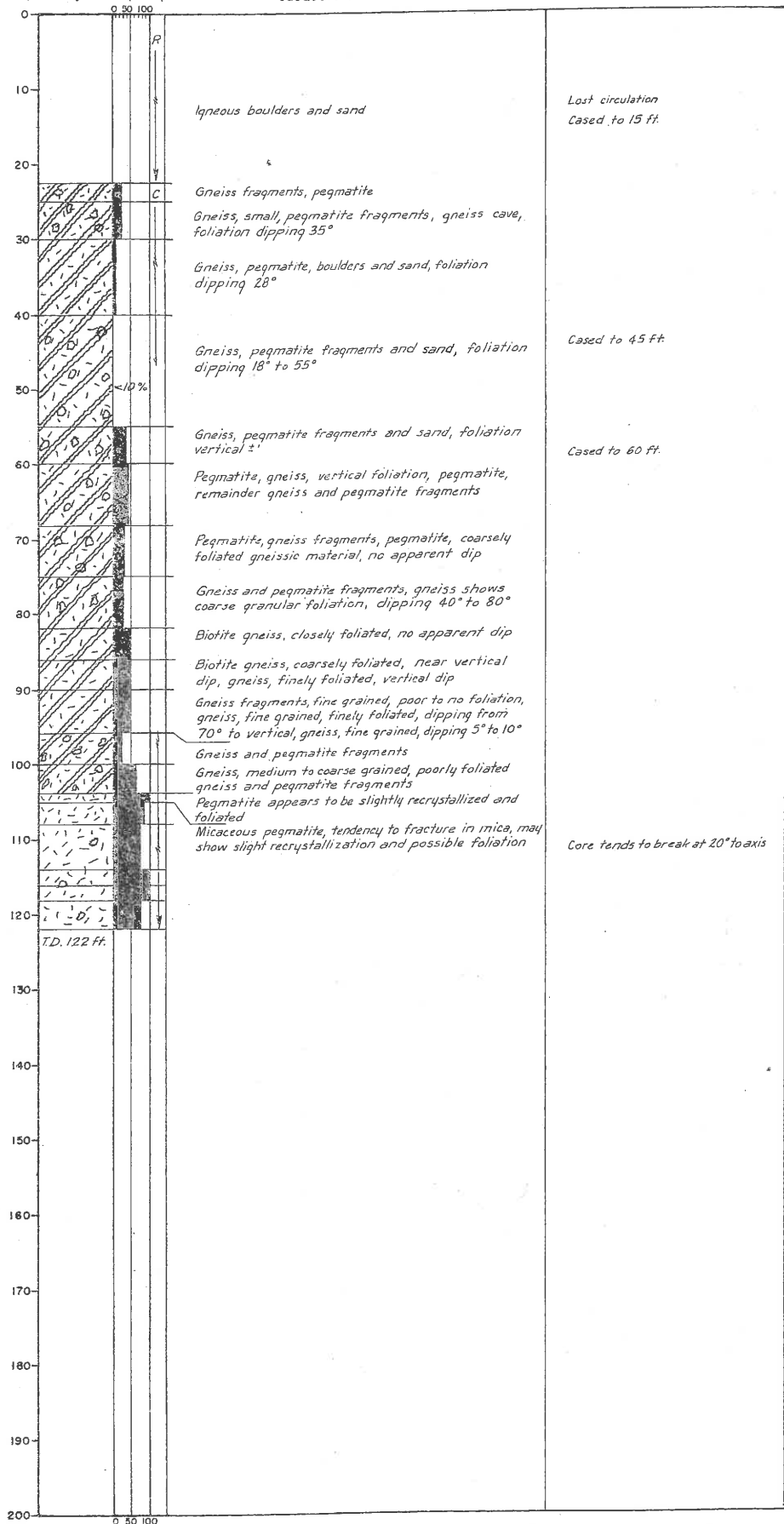
COORDINATES: N 666,940  
E 1,865,288

ELEVATION: 10,220.5

DATE COMPLETED: 3-25-71

GEOLOGIC DESCRIPTION

REMARKS



PROJECT I-70-3(13)

HOLE NO. 2

STRAIGHT CREEK SLIDES

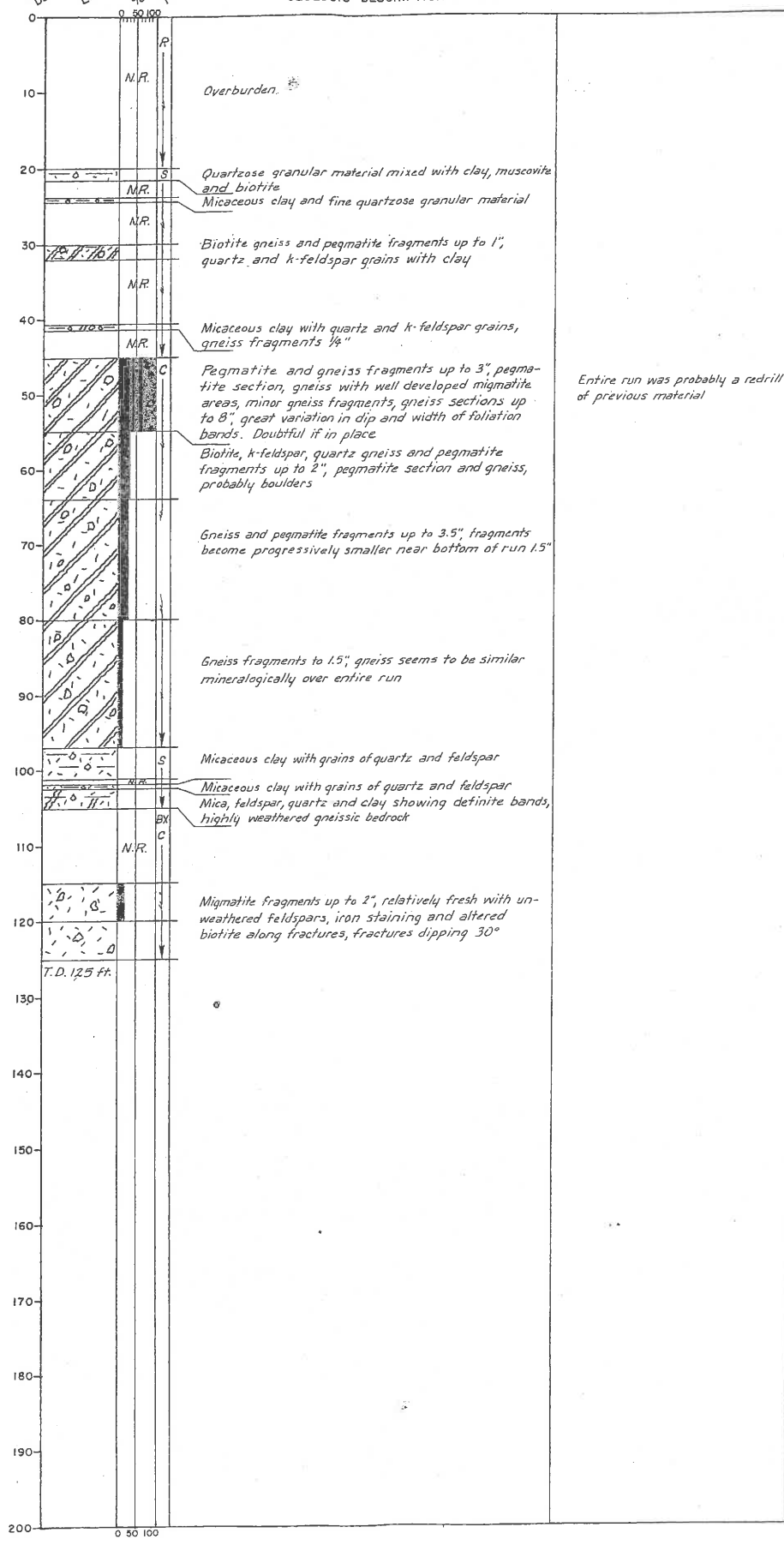
COORDINATES: N 666,820  
E 1,865,078

ELEVATION: 10,207.3

DATE COMPLETED:

GEOLOGIC DESCRIPTION

REMARKS



PROJECT I-70-3(13)

HOLE NO. 3

STRAIGHT CREEK SLIDES

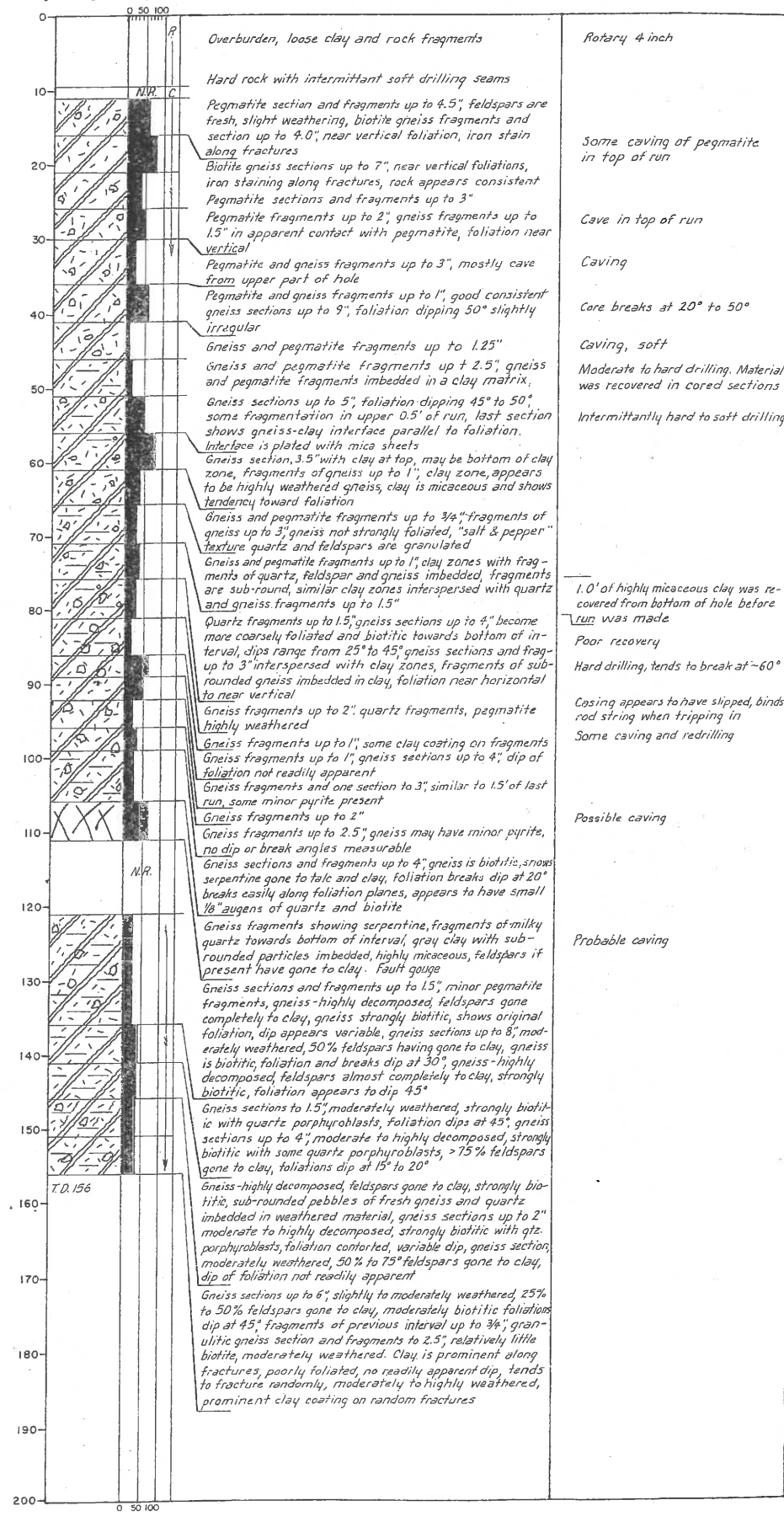
COORDINATES: N 666,970  
E 1,864,990

ELEVATION: 10,290.9

DATE COMPLETED: 4-24-71

GEOLOGIC DESCRIPTION

REMARKS



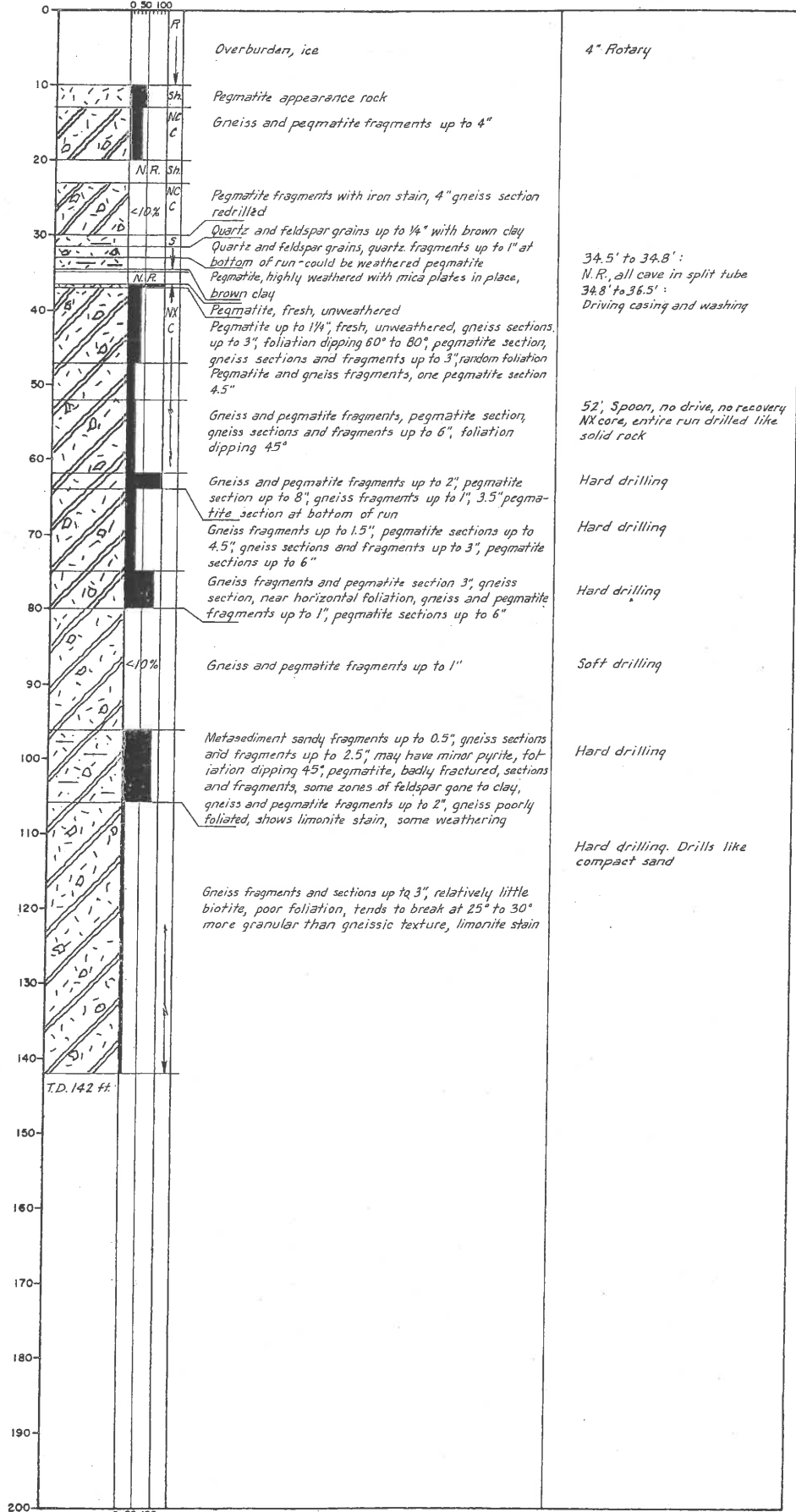
COORDINATES: N 667,062  
E 1,865,220

ELEVATION: 10,292.8

DATE COMPLETED: 4-16-71

GEOLOGIC DESCRIPTION

REMARKS



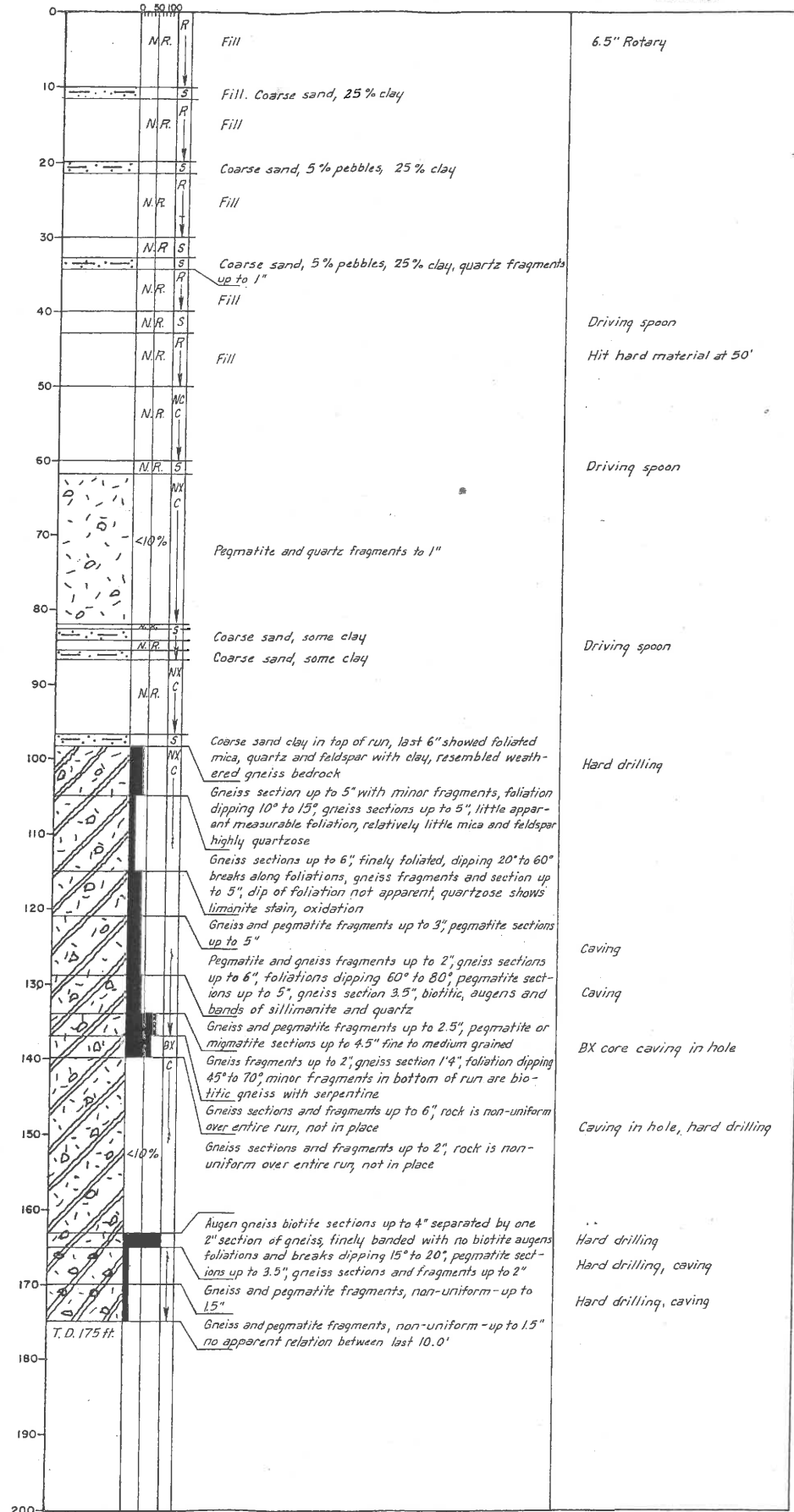
COORDINATES: N 666,775  
E 1,865,325

ELEVATION: 10,210.5

DATE COMPLETED: 4-23-71

GEOLOGIC DESCRIPTION

REMARKS



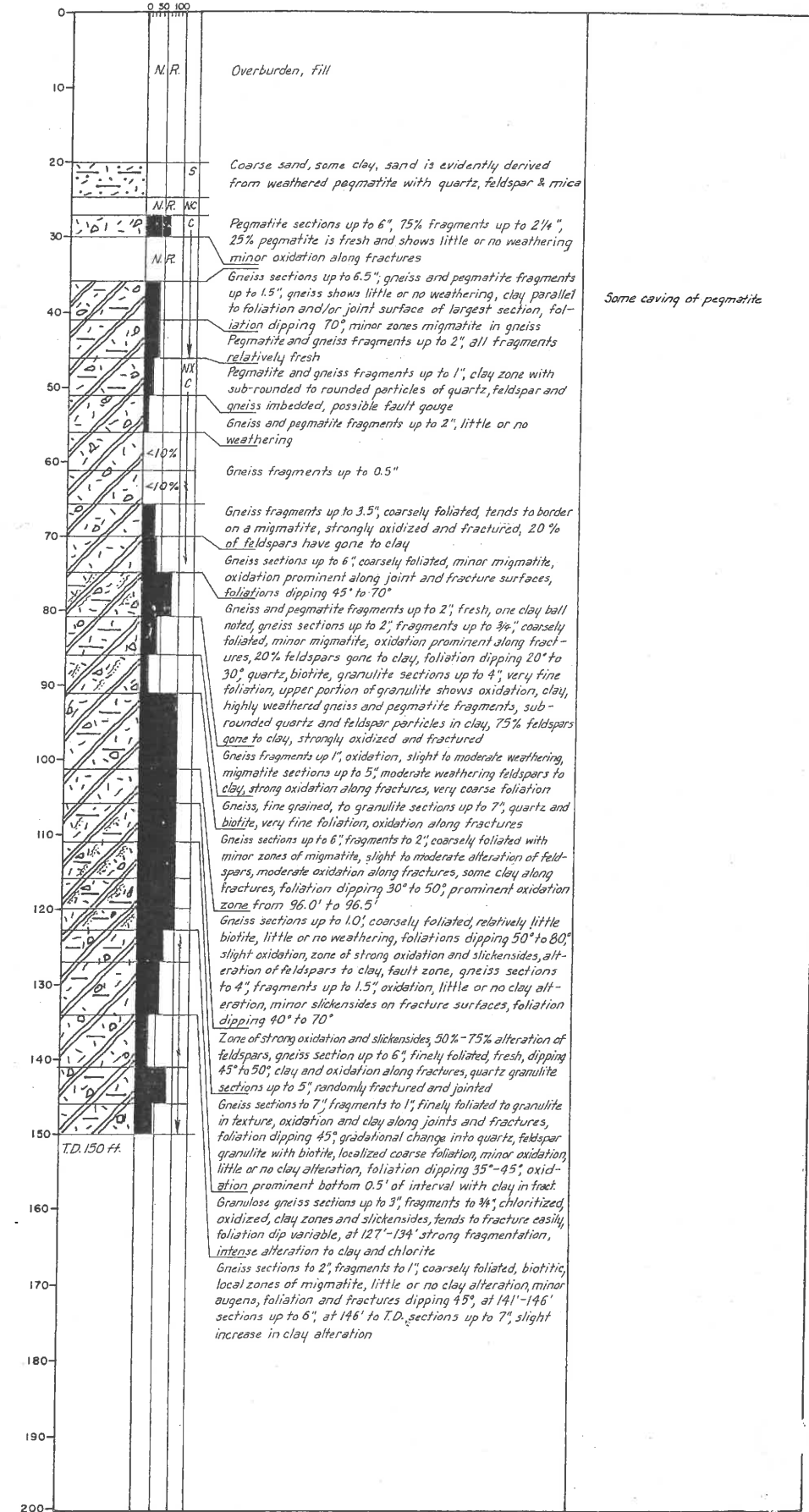
COORDINATES: N 667,302  
E 1,865,070

ELEVATION: 10,426.8

DATE COMPLETED: 5-12-71

GEOLOGIC DESCRIPTION

REMARKS







COORDINATES: N 667,180  
E 1,864,868

ELEVATION: 10,399.4

COORDINATES: N  
E

ELEVATION:

COORDINATES: N  
E

ELEVATION:

DEPTH IN FEET  
LITHOLOGY  
% CORE RECOVERY  
TYPE DRILL

GEOLOGIC DESCRIPTION

REMARKS

DEPTH IN FEET  
LITHOLOGY  
% CORE RECOVERY  
TYPE DRILL

GEOLOGIC DESCRIPTION

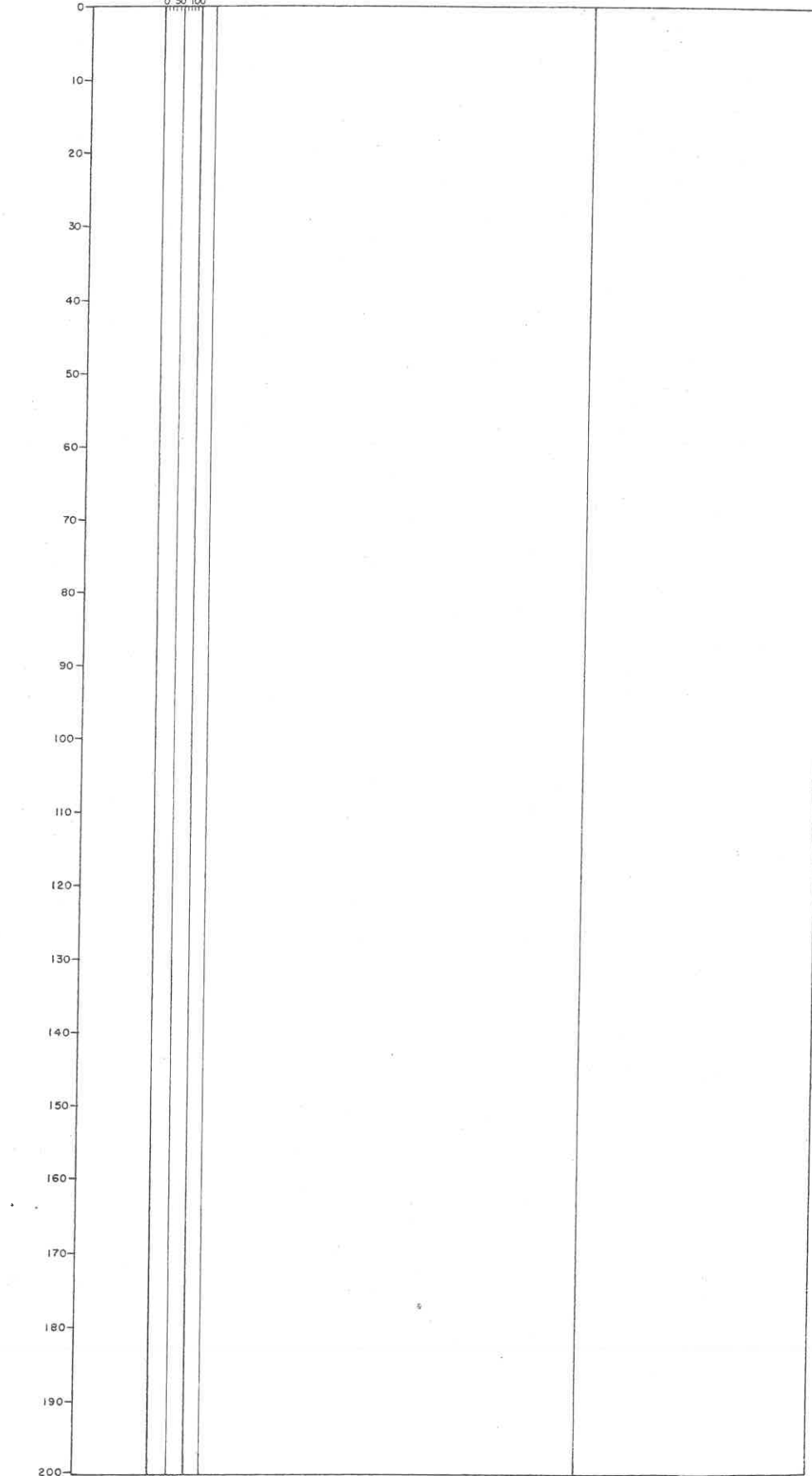
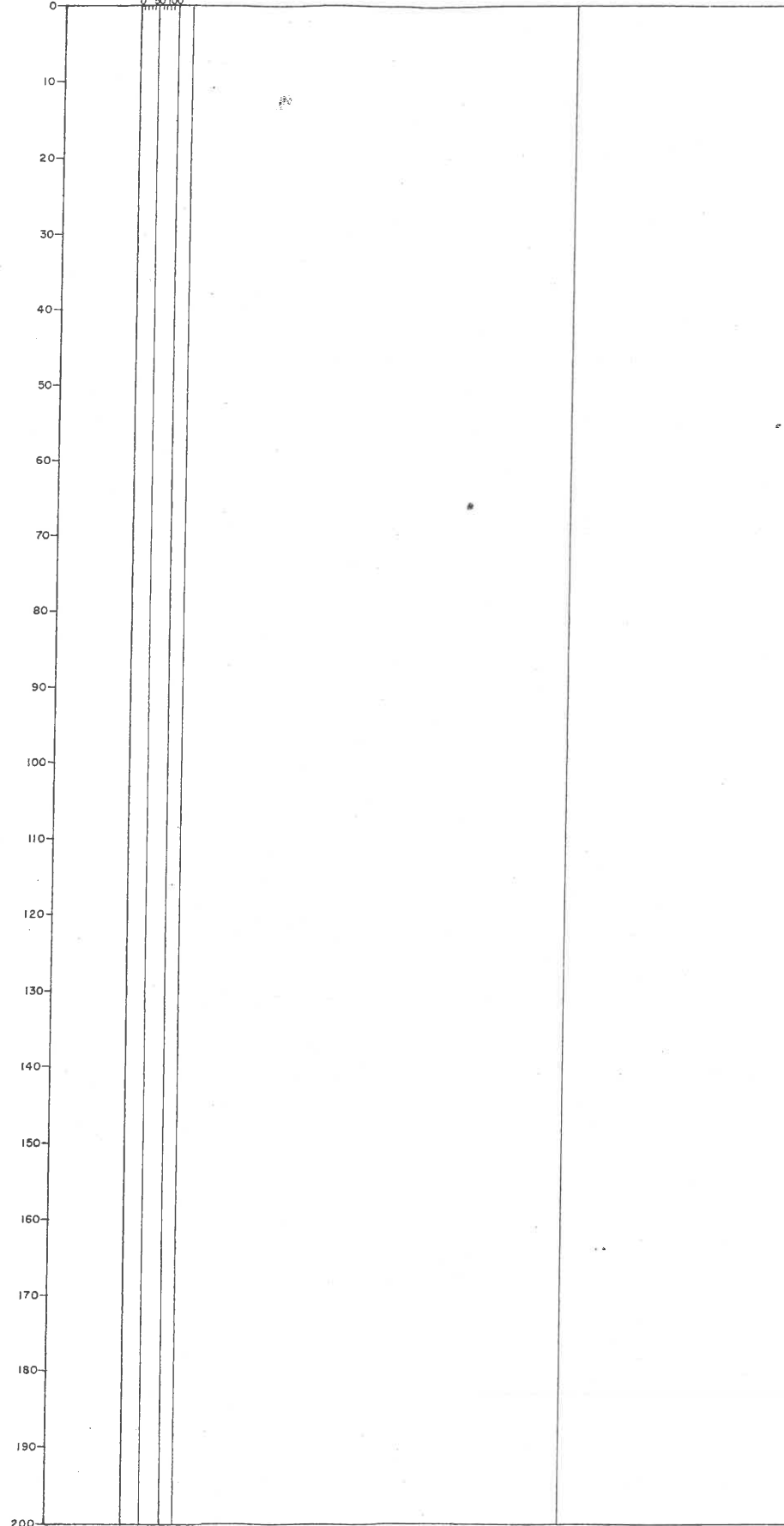
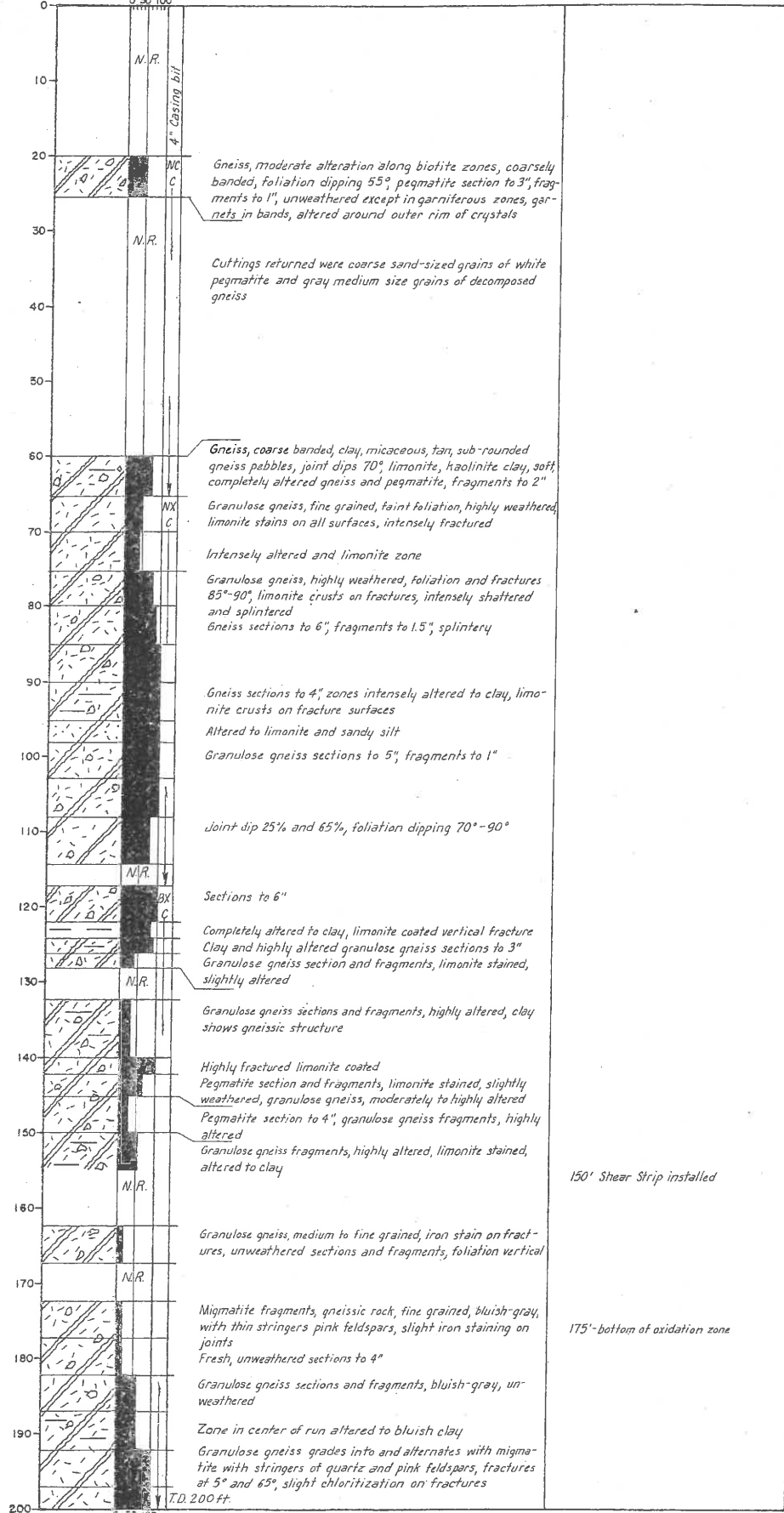
REMARKS

DEPTH IN FEET  
LITHOLOGY  
% CORE RECOVERY  
TYPE DRILL

GEOLOGIC DESCRIPTION

DATE COMPLETED:

REMARKS



PROJECT I-70-3(13)

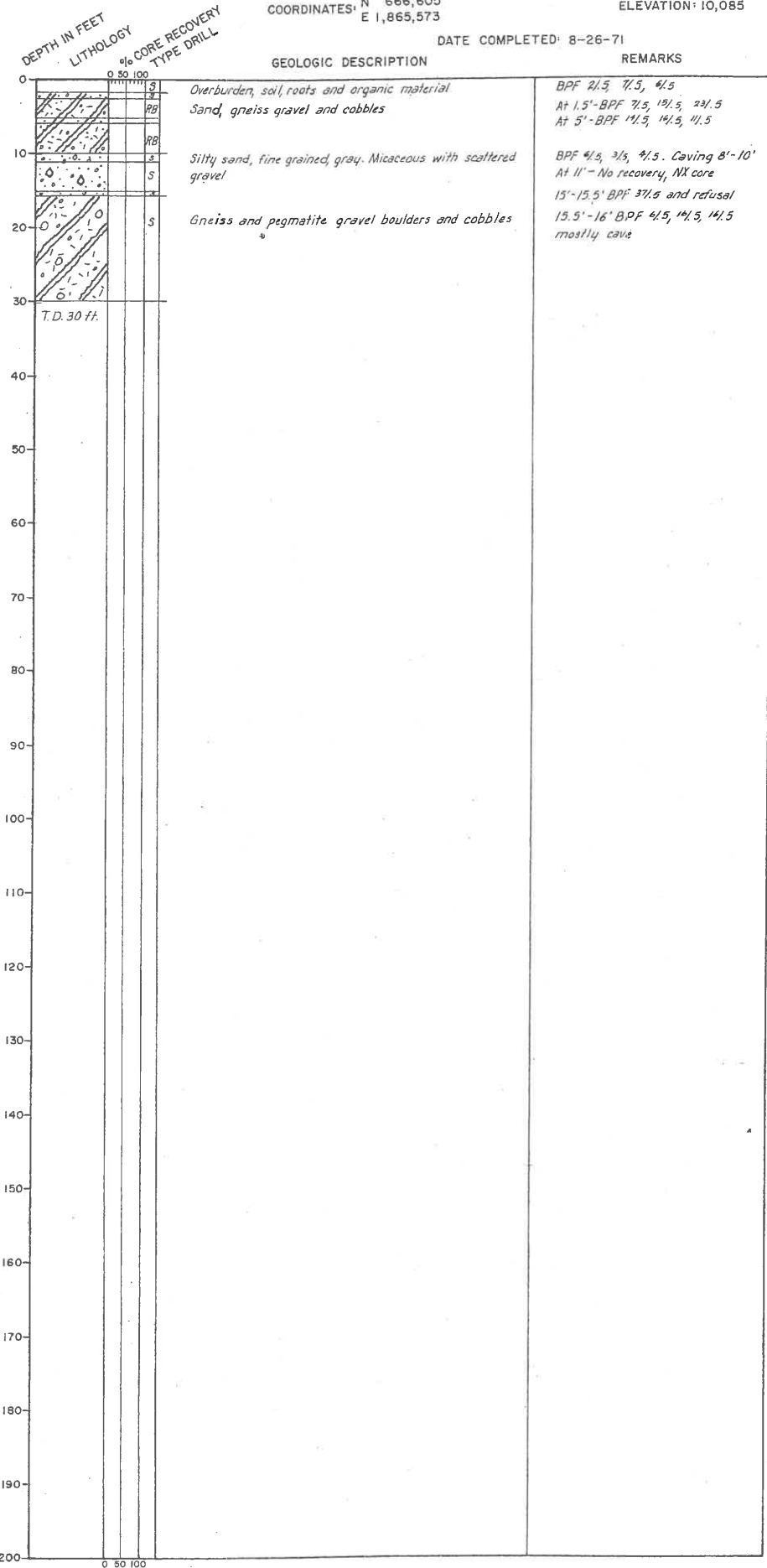
HOLE NO. 31

STRAIGHT CREEK SLIDES  
(SLIDE 2)

COORDINATES: N 666,605  
E 1,865,573

ELEVATION: 10,085

DATE COMPLETED: 8-26-71



PROJECT I-70-3(13)

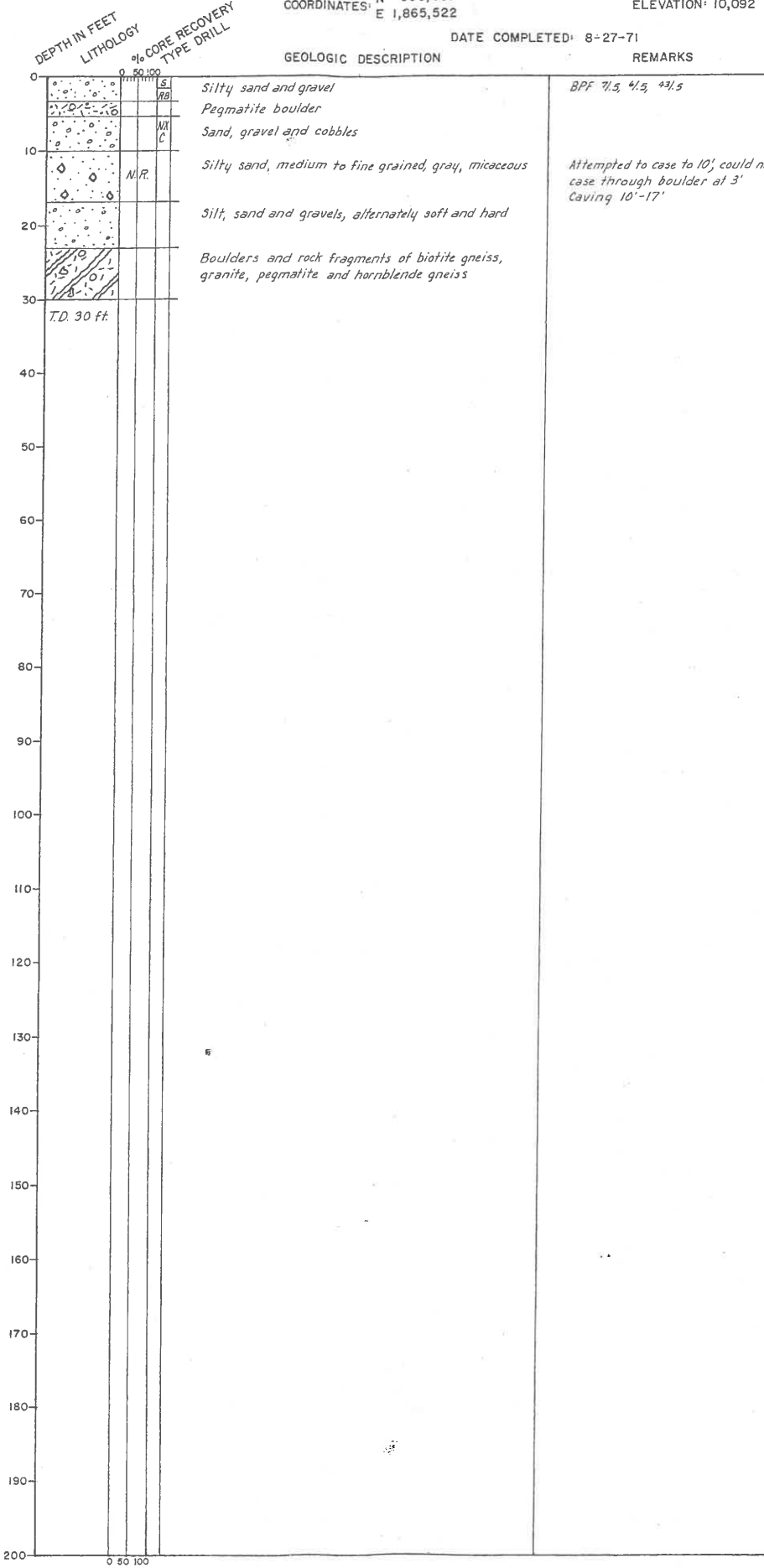
HOLE NO. 32

STRAIGHT CREEK SLIDES  
(SLIDE 2)

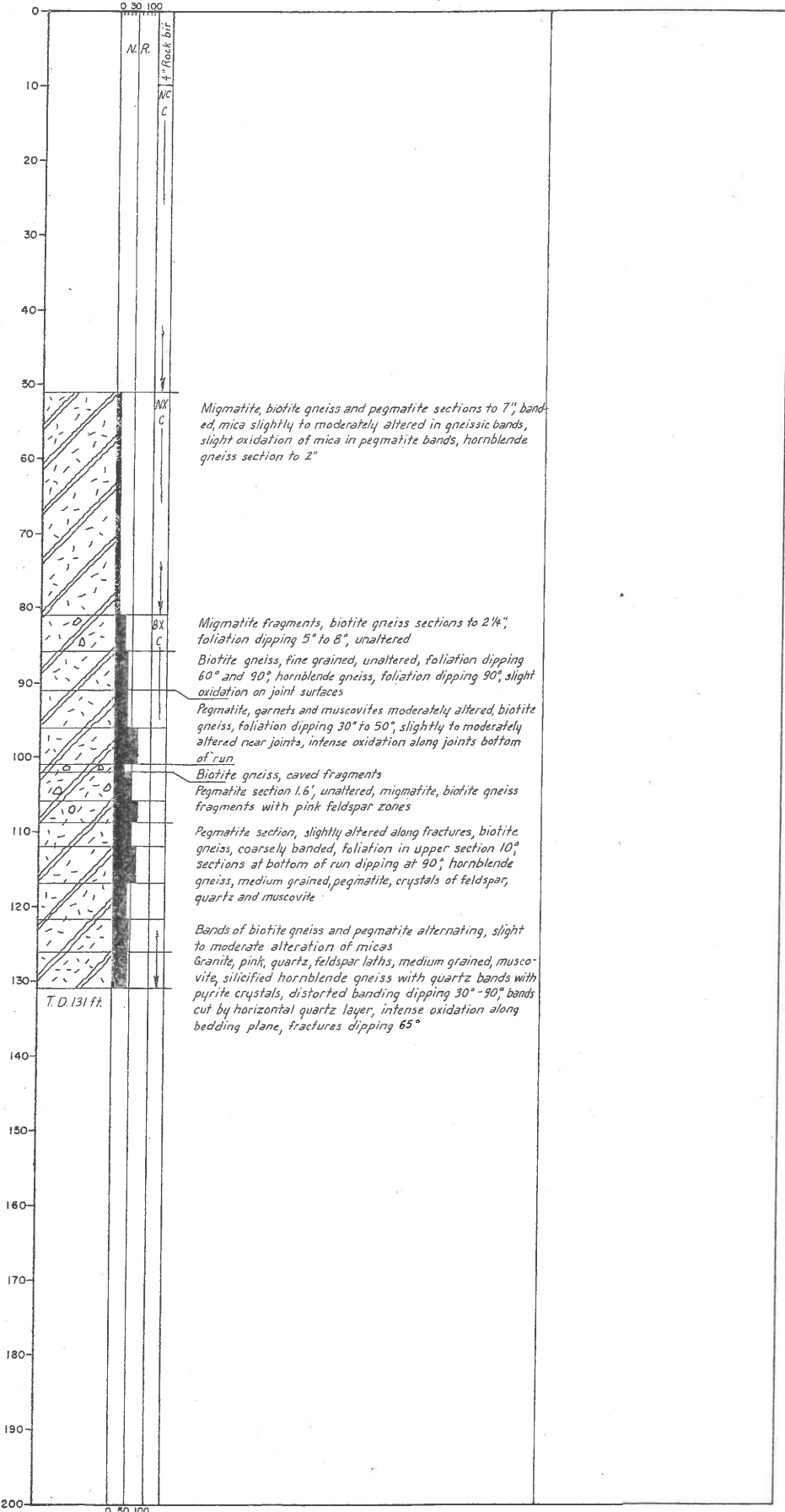
COORDINATES: N 666,651  
E 1,865,522

ELEVATION: 10,092

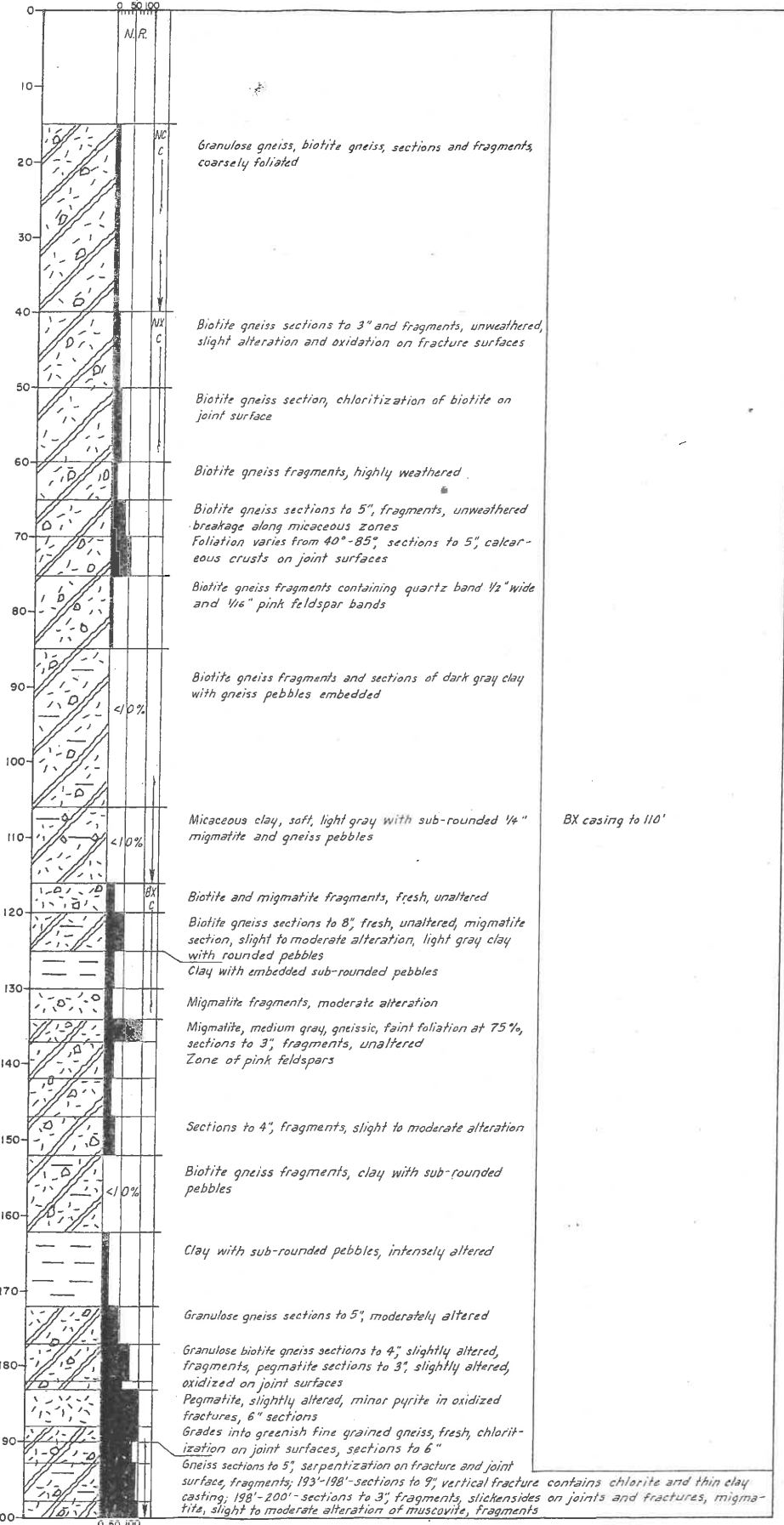
DATE COMPLETED: 8-27-71



DEPTH IN FEET  
LITHOLOGY  
% CORE RECOVERY  
TYPE DRILL



DEPTH IN FEET  
LITHOLOGY  
% CORE RECOVERY  
TYPE DRILL



DEPTH IN FEET  
LITHOLOGY  
% CORE RECOVERY  
TYPE DRILL

