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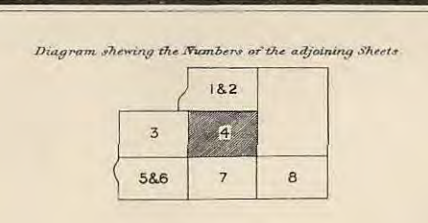


- Blown Sand
- Alluvium
- Corallian Beds
- Oxford Clay with Kellaways Rock
- Cornbrash
- Great & Inferior Oolite Series
- Upper Lias
- Middle Lias
- Lower Lias
- Keuper Marl (with Rhaetic)
- Keuper & Bunter Sandstones
- Sandstone Marl &c.
- Magnesian Limestone
- Coal Measures
- Millstone Grit
- Limestone Series
- Basement Conglomerate
- Conistone Flags, Stockdale Shales &c.
- Conistone Limestone
- Skiddaw Slates
- Andesites & Tuffs (Borrowdale Series)
- Basalt & Dolerite In Sheets (D)
- In Dykes (M)
- Faults

RECENT  
 JURASSIC  
 TRIASSIC  
 PERMIAN  
 CARBONIFEROUS  
 SILURIAN  
 ORDOVICIAN  
 IGNEOUS

Roads, First Class  
 Second Class  
 Third Class  
 Railways  
 County Boundaries  
 Church

Redrawn from the One-Inch (New Series) Map of the Geological Survey 1896.  
 Published 1907. J. H. Teall, M.A., D.Sc., F.R.S., Director.  
 3rd Edition 1882. W. J. Pugh, O.B.E., D.Sc., F.R.S., Director.  
 1,000/52.



Scale of Four Miles to One Inch 1:253,440

Index to the One Inch Maps in this Sheet

13	14	15
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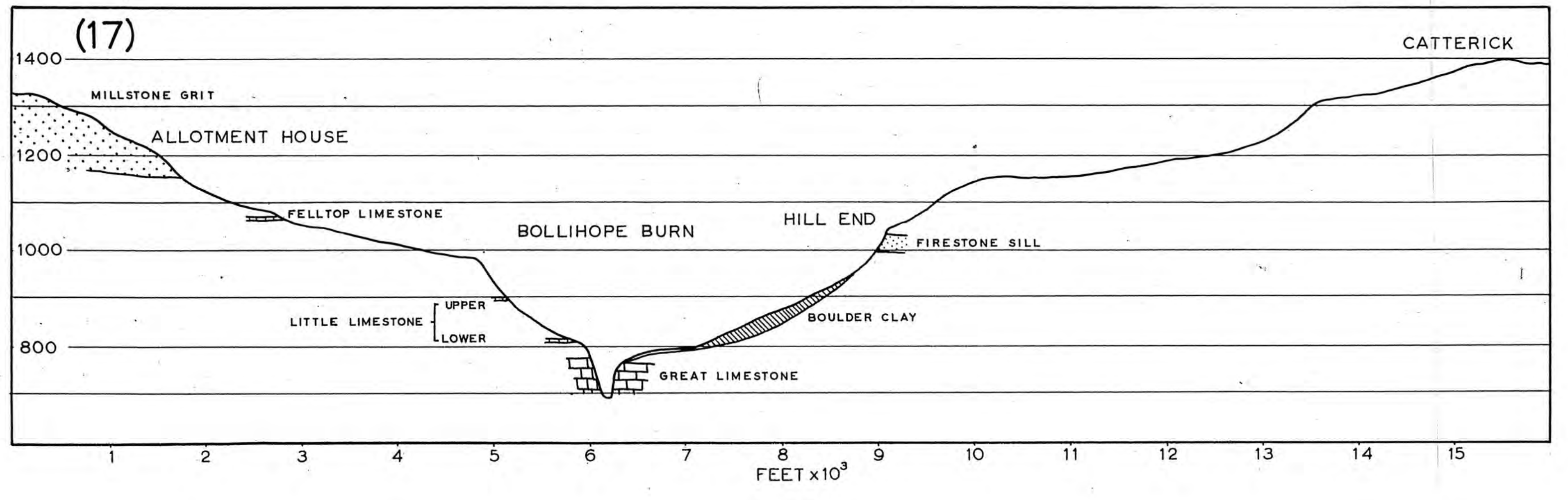
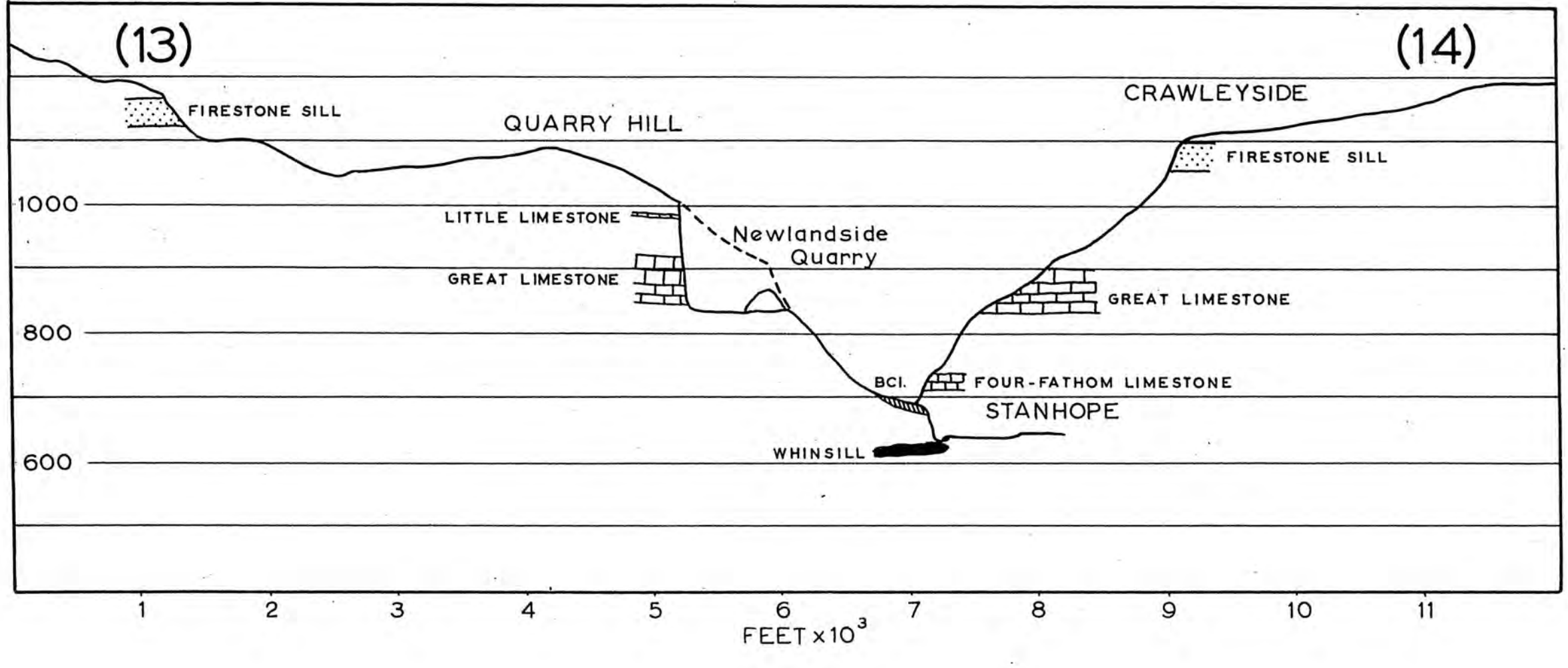
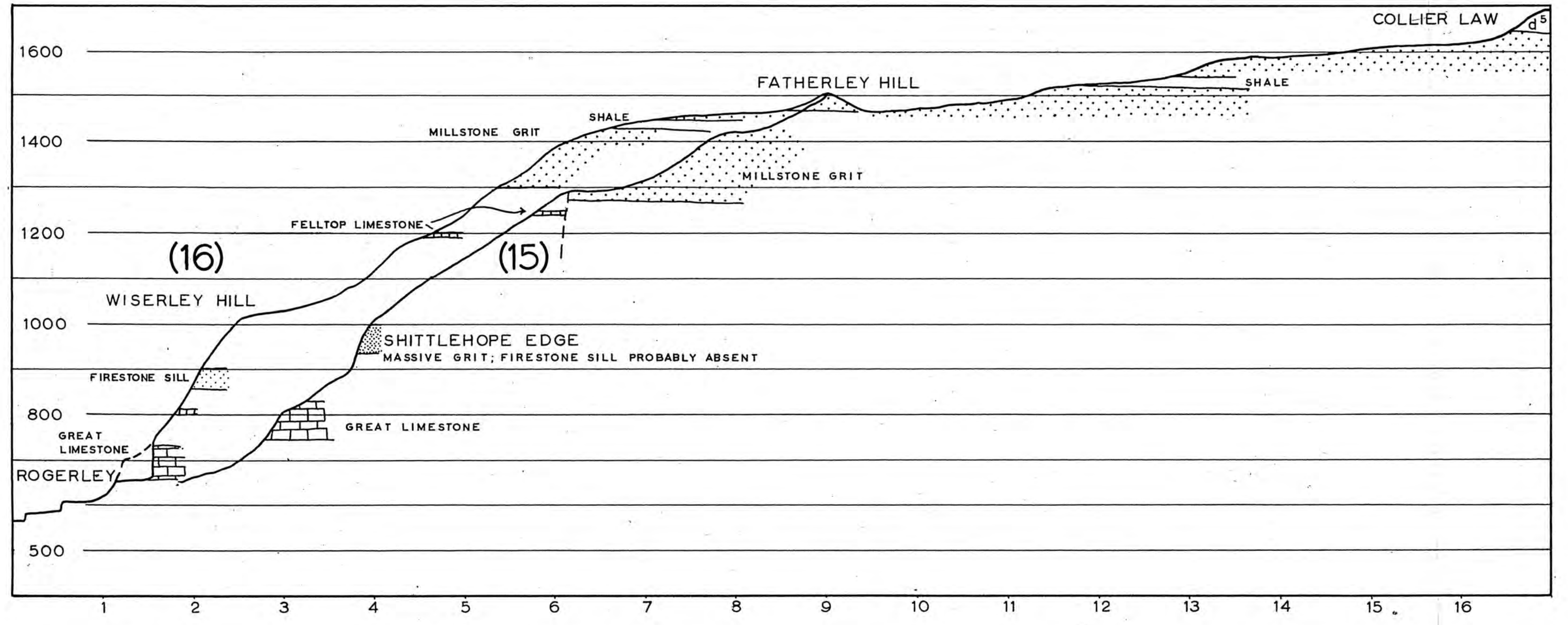
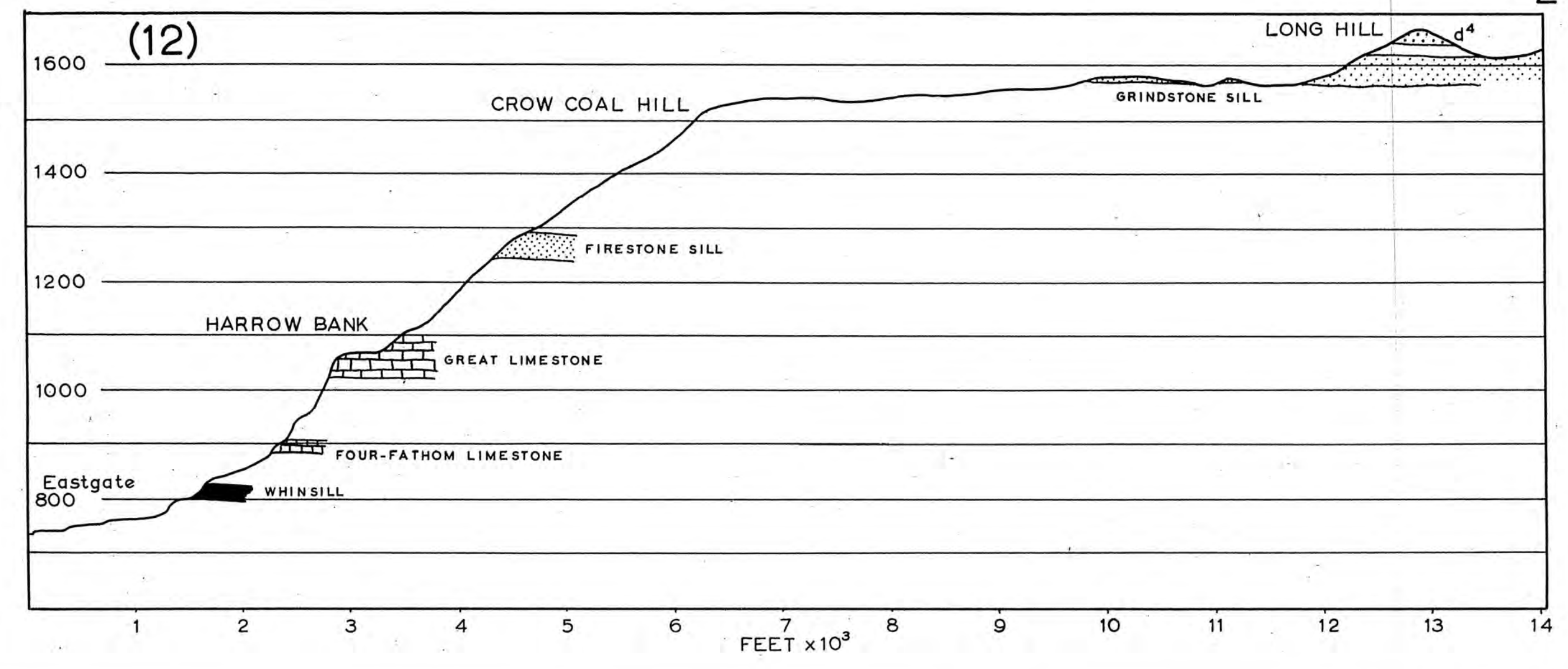
New Series

Engraved and Published at the Ordnance Survey Office, Southampton, 1900.  
 Reduced from the One Inch Map.  
 Revised 1894-97.  
 Railways inserted to October 1905.  
 N.B. The representation on this map of a fault is an evidence of the existence of a right of way.  
 Printed and Published by the Director General of the Ordnance Survey, Chislington, Surrey, 1852.

LOWER WEARDALE  
 INTERFLUVE AND SPUR PROFILES  
 VERTICAL EXAGGERATION x5

- (12) BASED ON O.S. DATA; SOME TRIGNOMETRIC CONTROL
- (13) BASED ON O.S. DATA ONLY
- (14) " " " " " "
- (15) SURVEYED BY PLANE-TABLE
- (16) " " " "
- (17) " " " "

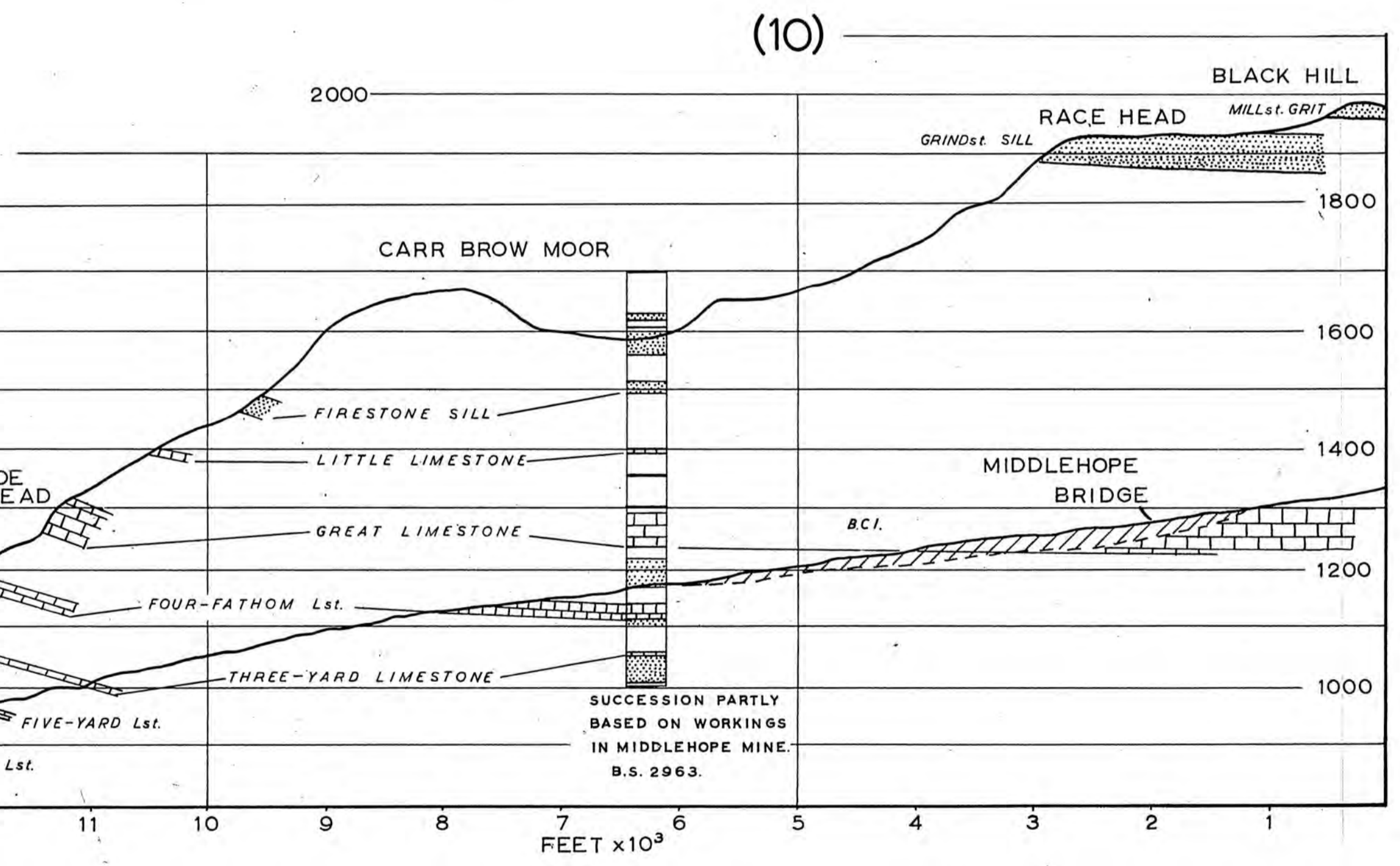
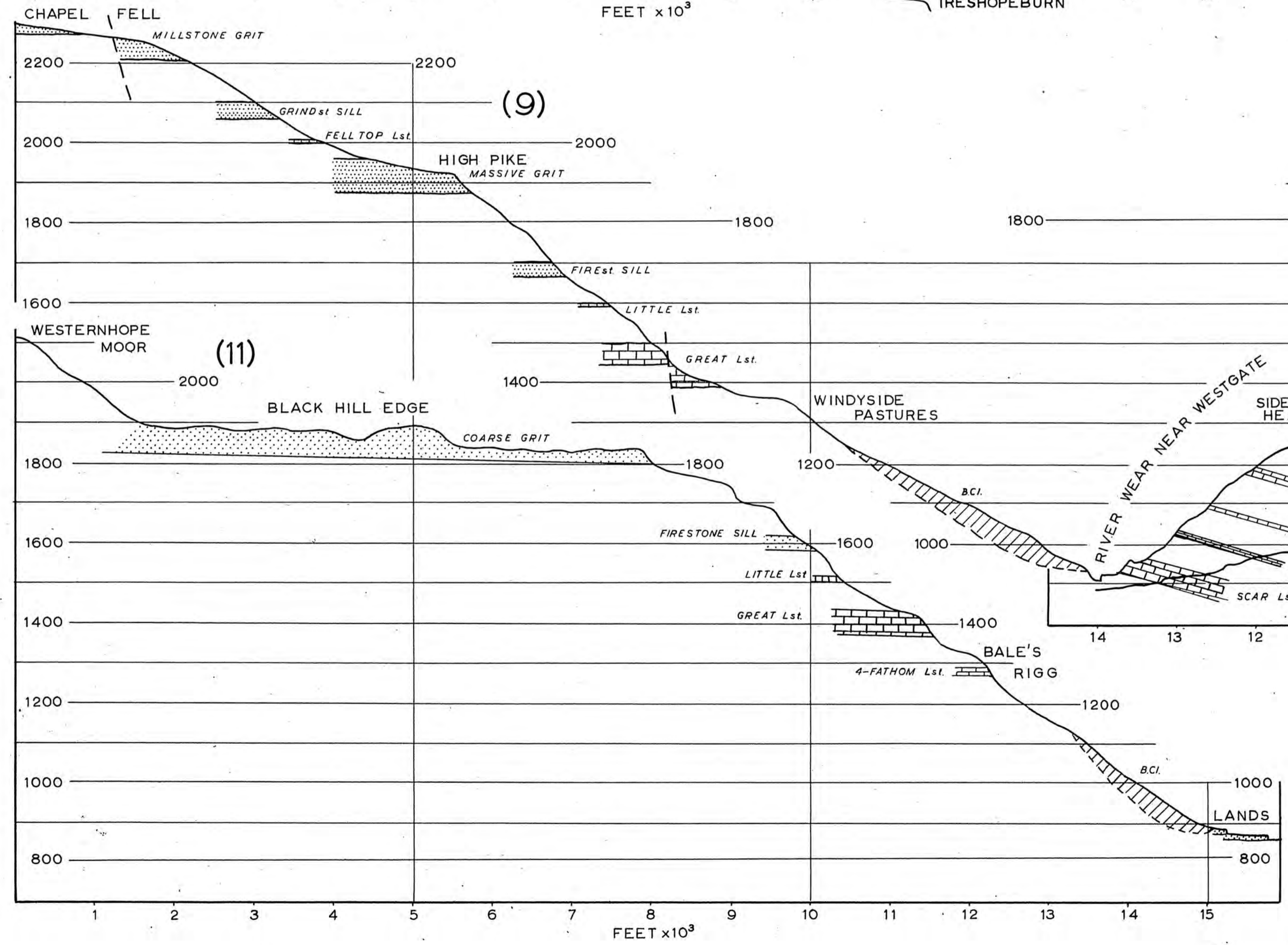
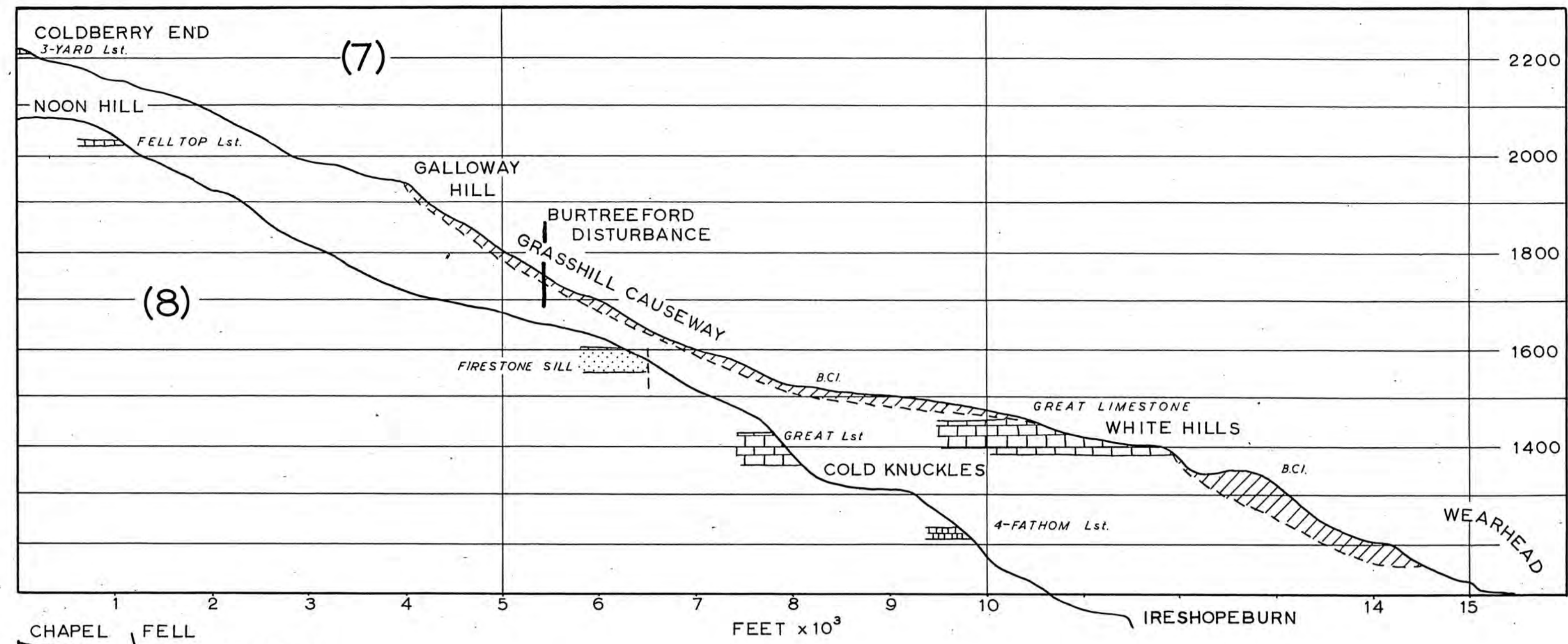
GEOLOGICAL HORIZONS FROM PRIMARY SURVEY  
 DURHAM SIX-INCH SHEETS: XXIII, XXIV, XXXII



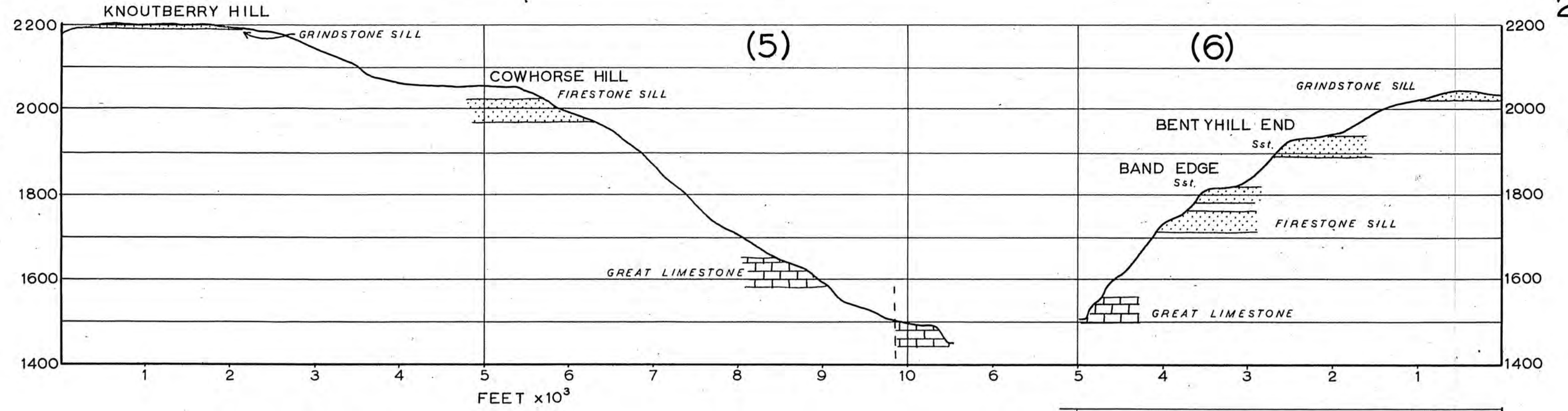
## UPPER WEARDALE INTERFLUVE AND SPUR PROFILES VERTICAL EXAGGERATION x 5

- (7) SURVEYED BY ANEROID WITH O.S. CONTROL.
- (8) BASED ON O.S. DATA ONLY.
- (9) SURVEYED BY ANEROID WITH O.S. CONTROL
- (10) " " " " TRIGNOMETRIC CONTROL.  
(LONGITUDINAL PROFILE OF MIDDLEHOPE BURN MEASURED BY  
LEVELLING.)
- (11) BASED ON O.S. LEVELLING.

GEOLOGICAL HORIZONS FROM PRIMARY SURVEY. DURHAM 6-INCH,  
SHEETS XXII, XXIII, XXX & XXXI.



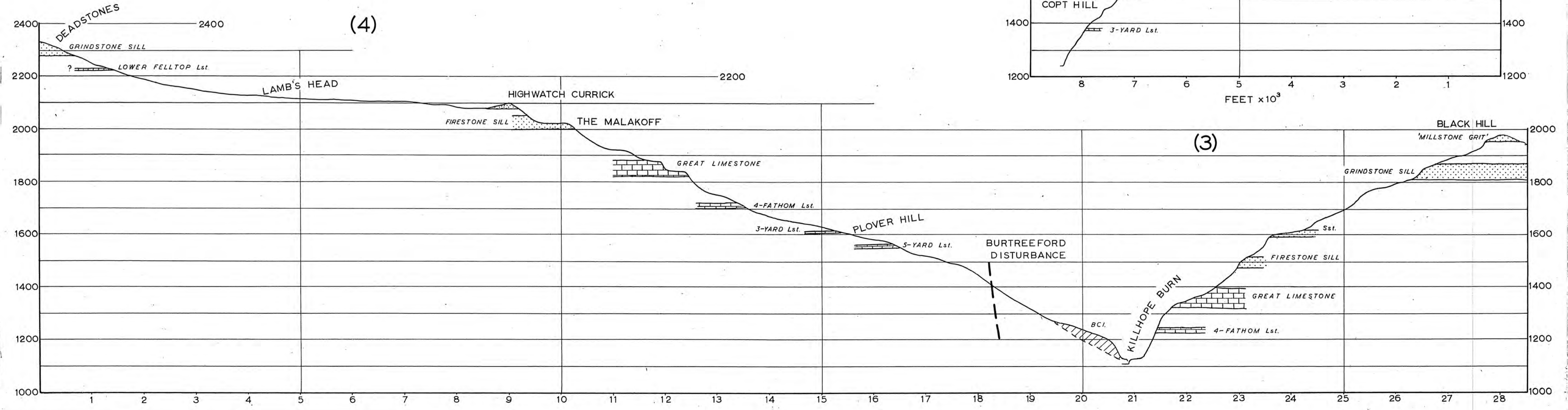
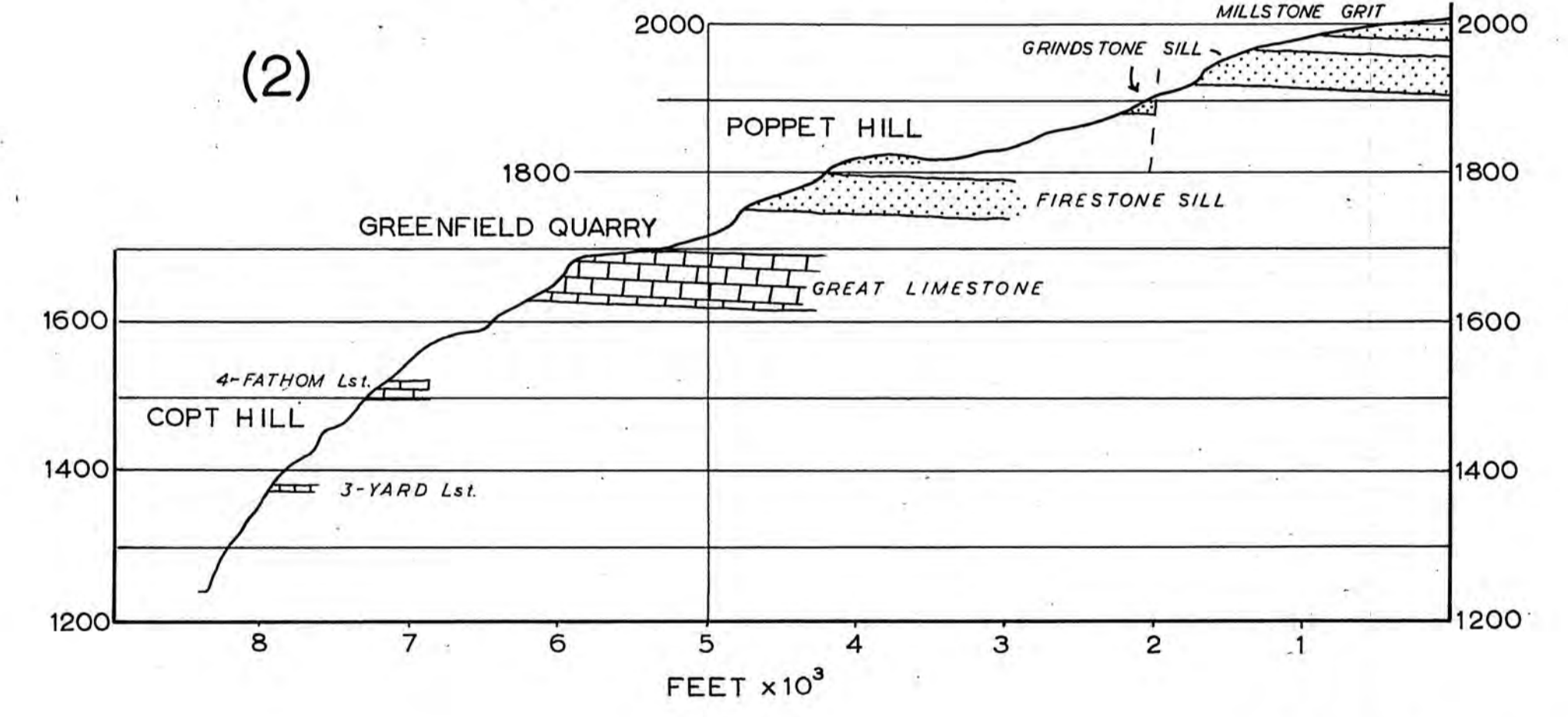
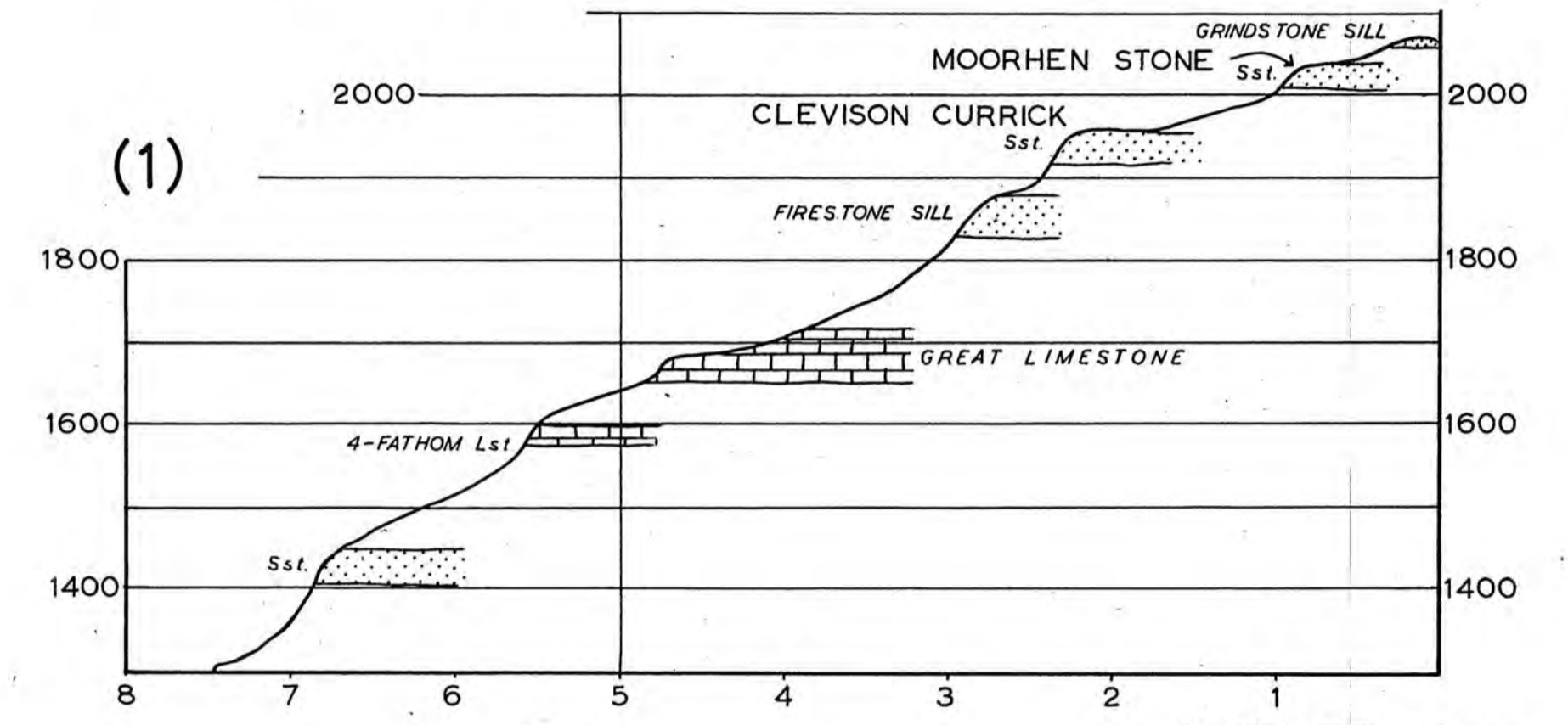
SUCCESSION PARTLY  
BASED ON WORKINGS  
IN MIDDLEHOPE MINE.  
B.S. 2963.



### THE HEADWATERS OF THE RIVER WEAR INTERFLUVE AND SPUR PROFILES

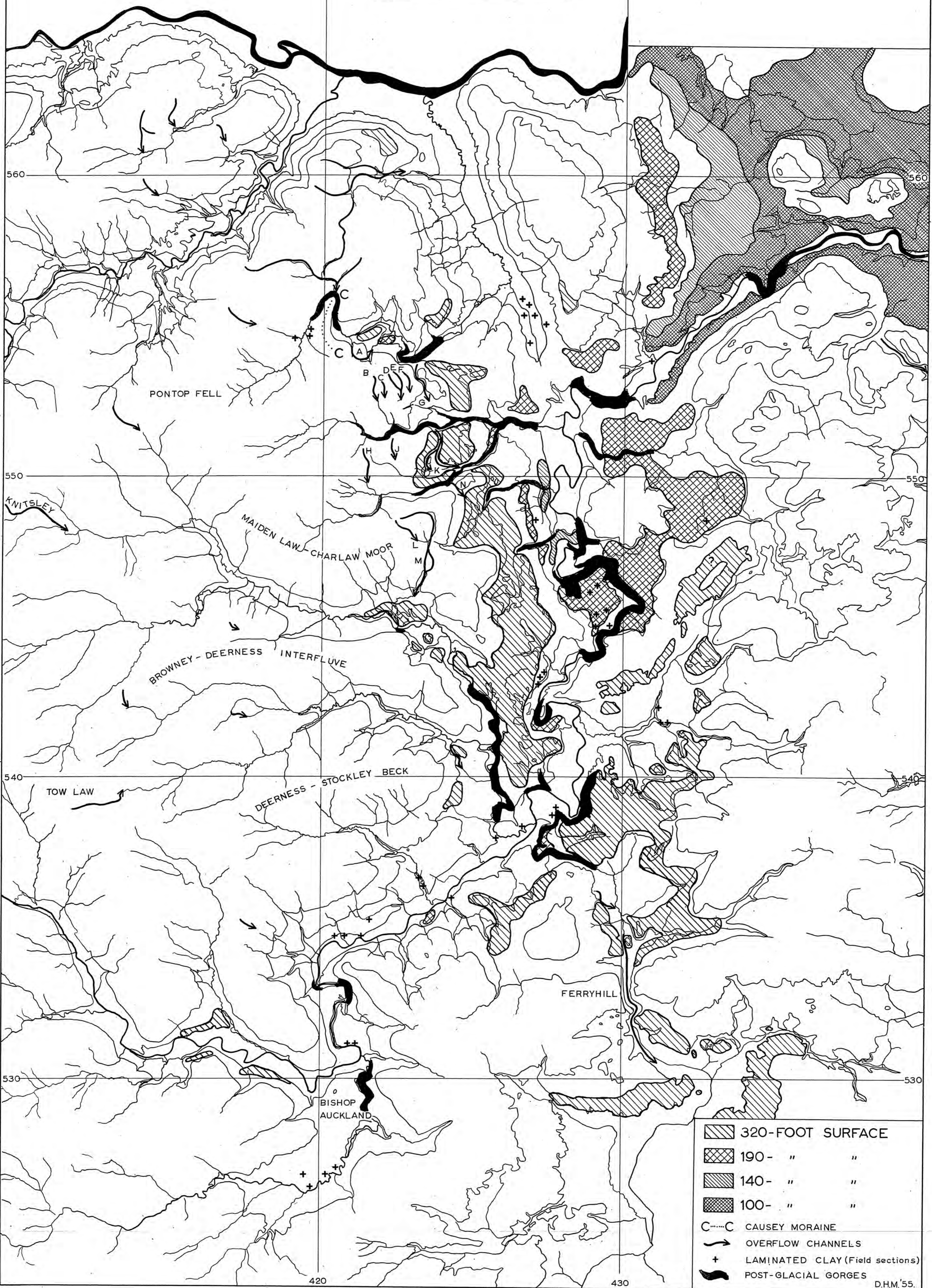
VERTICAL EXAGGERATION x 5

- (1) SURVEYED BY ANEROID WITH O.S. CONTROL ONLY
  - (2) " " " WITH TRIGNOMETRIC CONTROL
  - (3) " " " " " "
  - (4) " " " " O.S. CONTROL ONLY
  - (5) BASED ON O.S. DATA ONLY
  - (6) PART SURVEYED BY ANEROID
- GEOLOGICAL HORIZONS FROM PRIMARY SURVEY: DURHAM 6-INCH SHEET XXII.



# THE POST-GLACIAL SURFACES OF THE WEAR VALLEY

0 1 mile 2 3 4

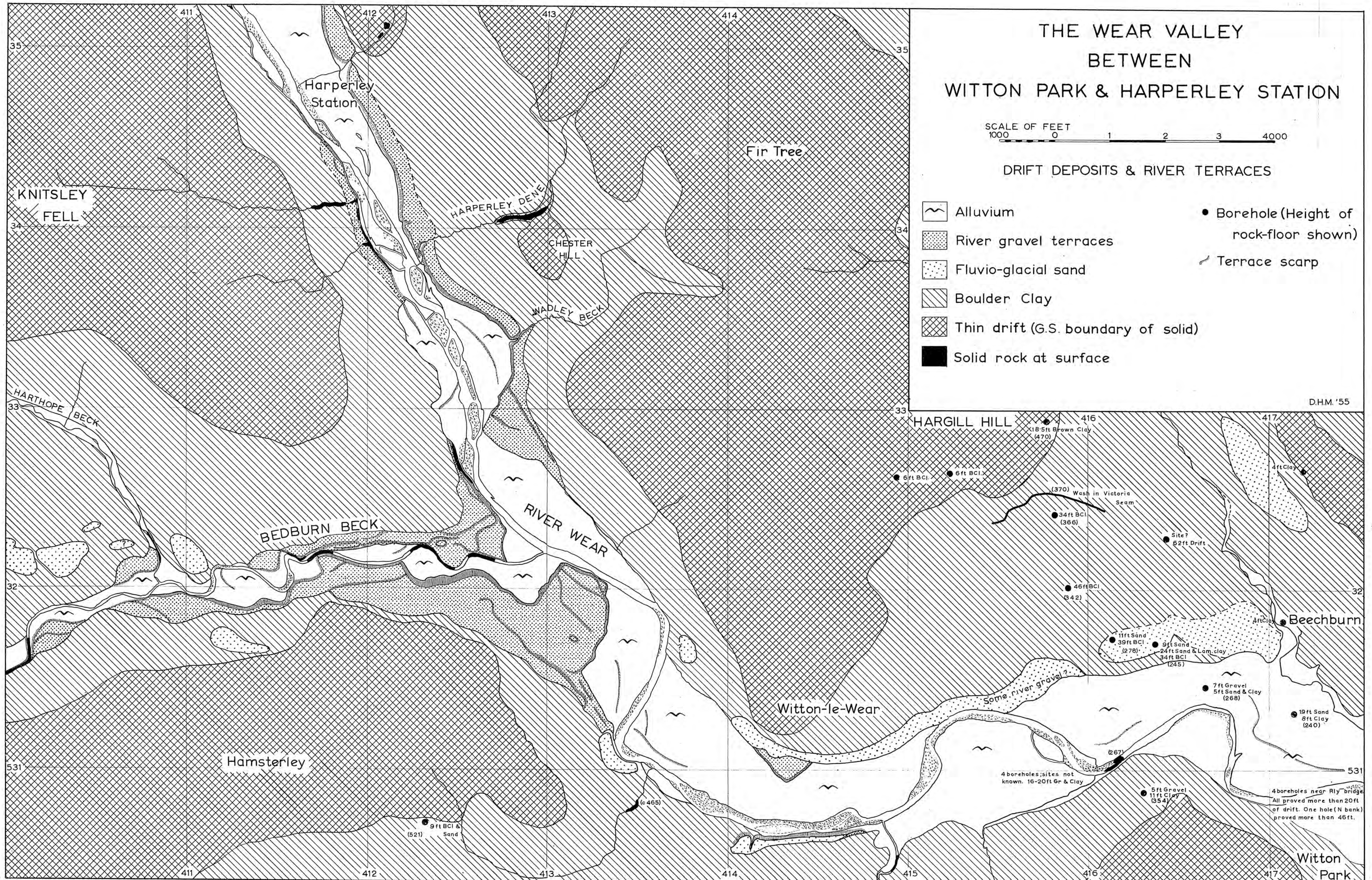


	320-FOOT SURFACE
	190- " "
	140- " "
	100- " "
	C.....C CAUSEY MORAINE
	OVERFLOW CHANNELS
	LAMINATED CLAY (Field sections)
	POST-GLACIAL GORGES

420

430

D.H.M.'55.



THE WEAR VALLEY  
BETWEEN  
WITTON PARK & HARPERLEY STATION

SCALE OF FEET  
1000 0 1 2 3 4000

DRIFT DEPOSITS & RIVER TERRACES

- Alluvium
- River gravel terraces
- Fluvio-glacial sand
- Boulder Clay
- Thin drift (G.S. boundary of solid)
- Solid rock at surface
- Borehole (Height of rock-floor shown)
- Terrace scarp

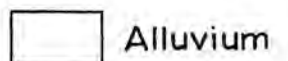
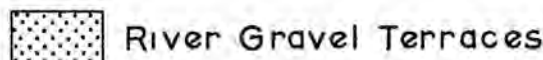

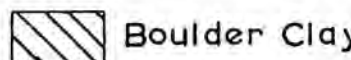
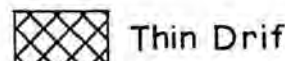
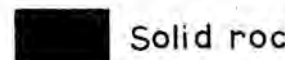

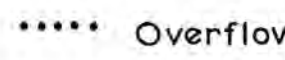

D.H.M. '55

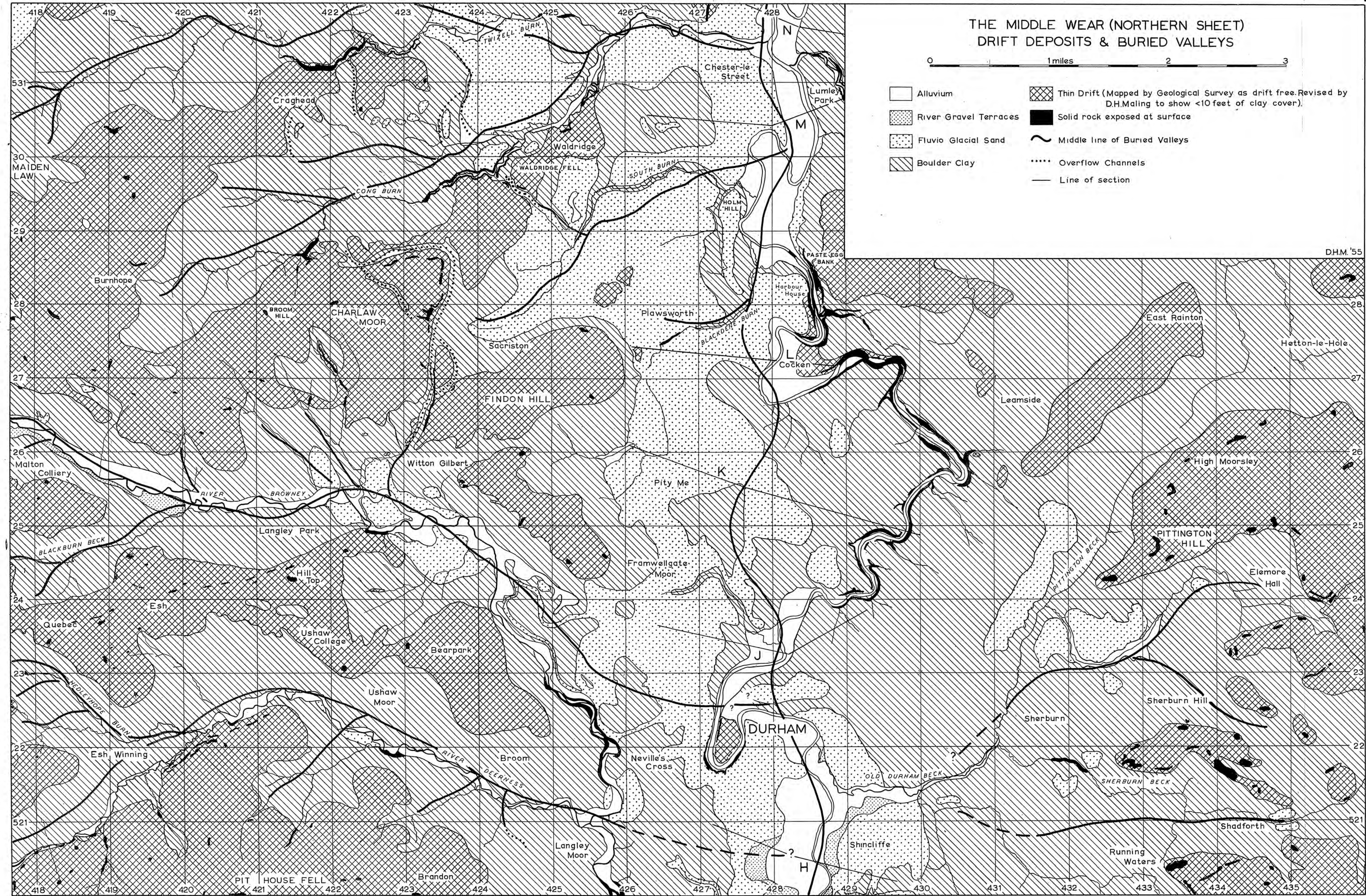
4 boreholes, sites not known. 16-20ft Gr & Clay

4 boreholes near Rly bridge. All proved more than 20ft of drift. One hole (N bank) proved more than 46ft.

### THE MIDDLE WEAR (NORTHERN SHEET) DRIFT DEPOSITS & BURIED VALLEYS

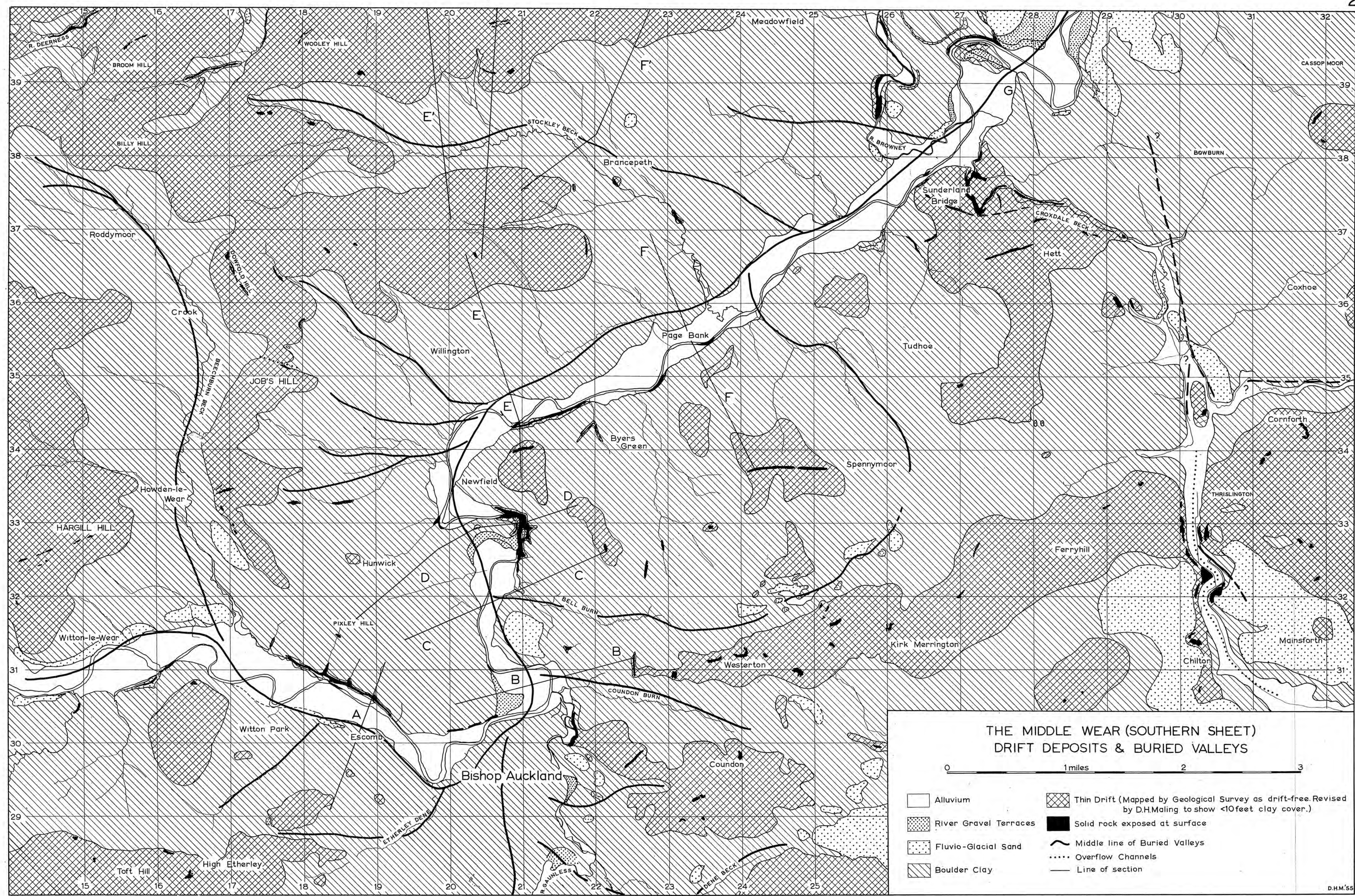


-  Alluvium
-  River Gravel Terraces
-  Fluvio Glacial Sand
-  Boulder Clay
-  Thin Drift (Mapped by Geological Survey as drift free. Revised by D.H.Maling to show <10 feet of clay cover).
-  Solid rock exposed at surface
-  Middle line of Buried Valleys
-  Overflow Channels
-  Line of section



DHM '55



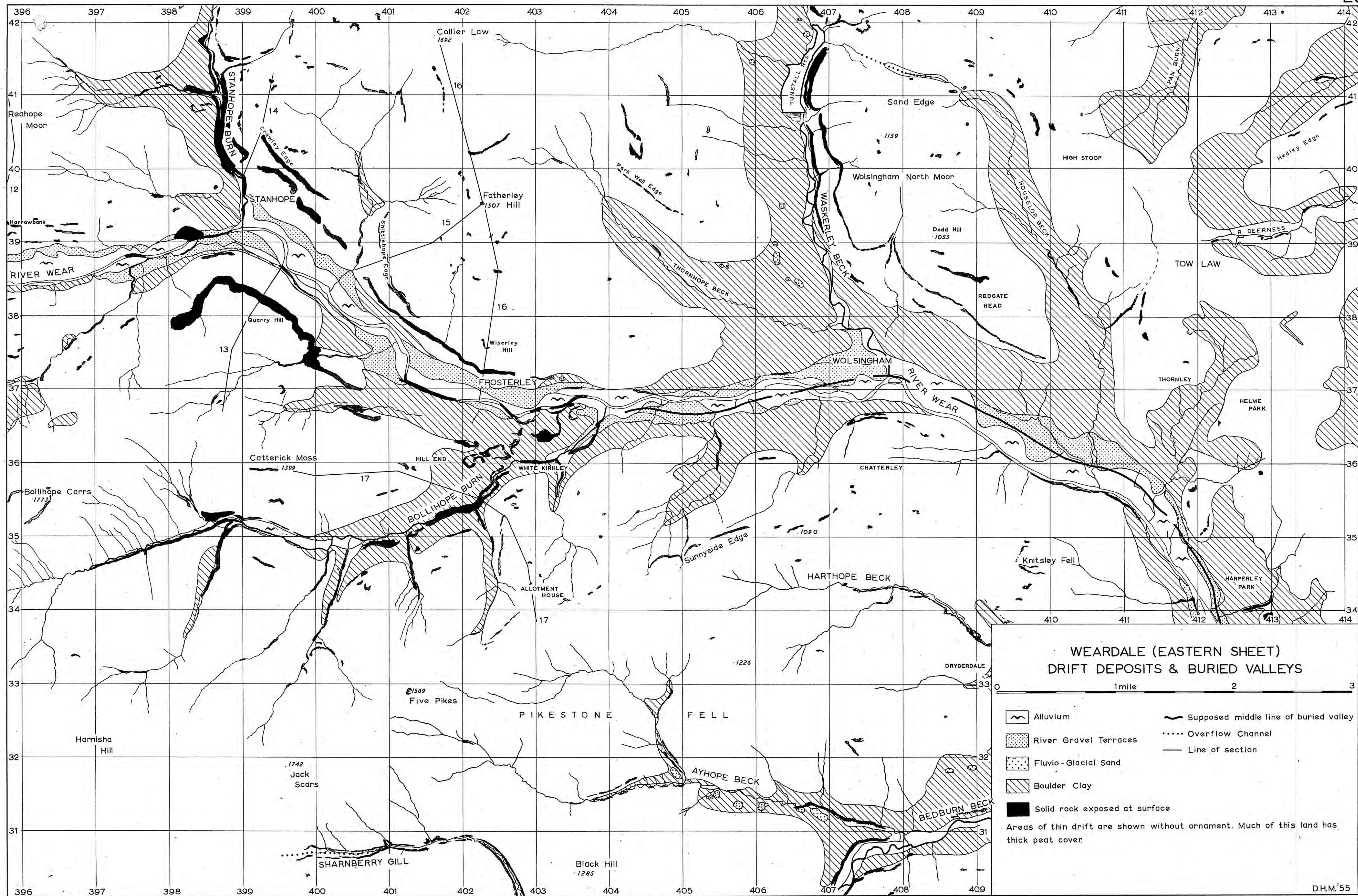


**THE MIDDLE WEAR (SOUTHERN SHEET)  
DRIFT DEPOSITS & BURIED VALLEYS**

0 1 miles 2 3

Alluvium	Thin Drift (Mapped by Geological Survey as drift-free. Revised by D.H.Maling to show <10 feet clay cover.)
River Gravel Terraces	Solid rock exposed at surface
Fluvio-Glacial Sand	Middle line of Buried Valleys
Boulder Clay	Overflow Channels
	Line of section

D.H.M.55

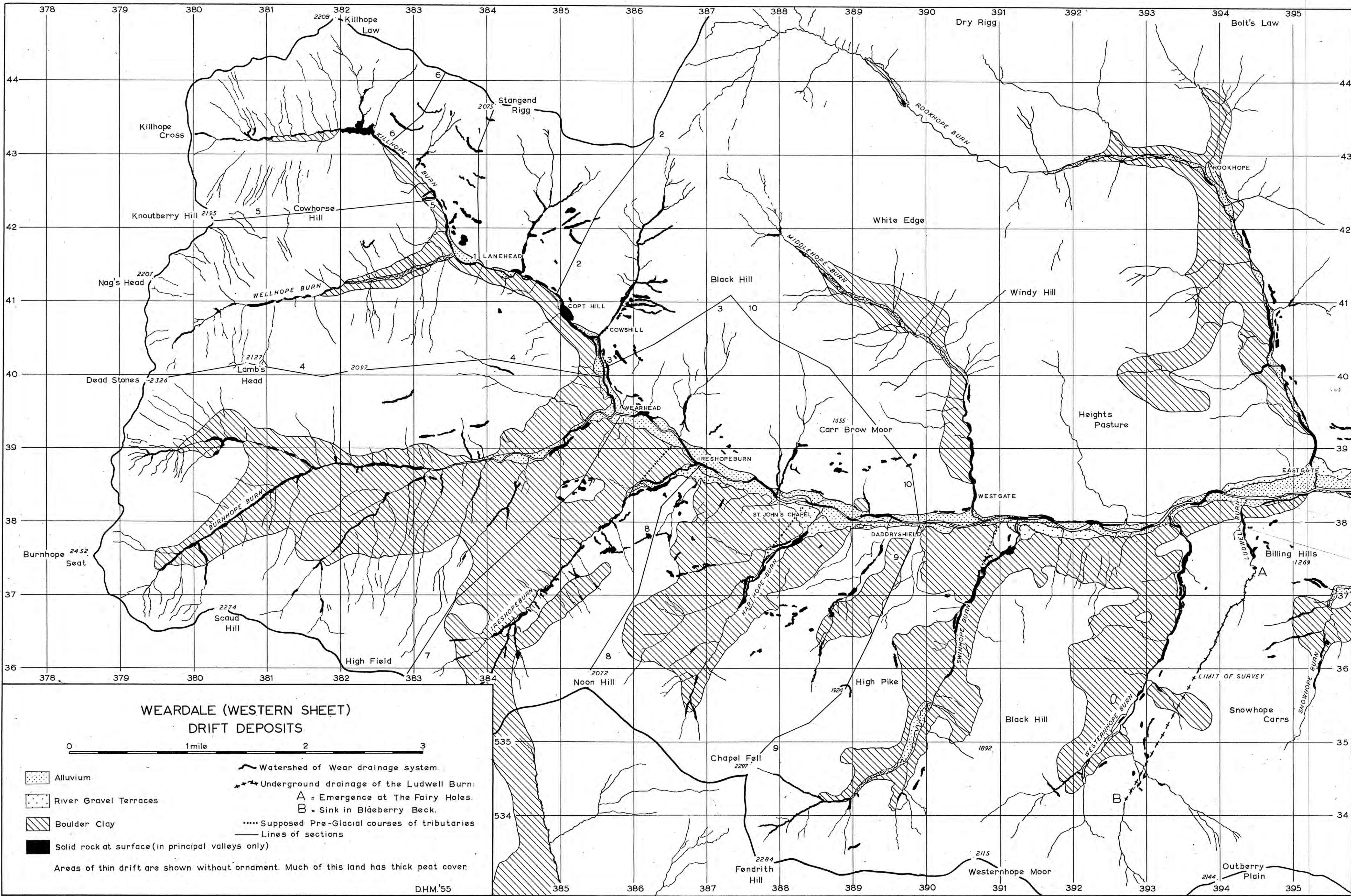


**WEARDALE (EASTERN SHEET)  
DRIFT DEPOSITS & BURIED VALLEYS**

1mile 2 3

- Alluvium
- River Gravel Terraces
- Fluvio-Glacial Sand
- Boulder Clay
- Solid rock exposed at surface
- Supposed middle line of buried valley
- Overflow Channel
- Line of section

Areas of thin drift are shown without ornament. Much of this land has thick peat cover.



**WEARDALE (WESTERN SHEET)  
DRIFT DEPOSITS**

0 1 mile 2 3

- Alluvium
- River Gravel Terraces
- Boulder Clay
- Solid rock at surface (in principal valleys only)
- Watershed of Wear drainage system.
- Underground drainage of the Ludwell Burn:
  - A = Emergence at The Fairy Holes.
  - B = Sink in Bläberry Beck.
- Supposed Pre-Glacial courses of tributaries
- Lines of sections

Areas of thin drift are shown without ornament. Much of this land has thick peat cover.

D.H.M. '55

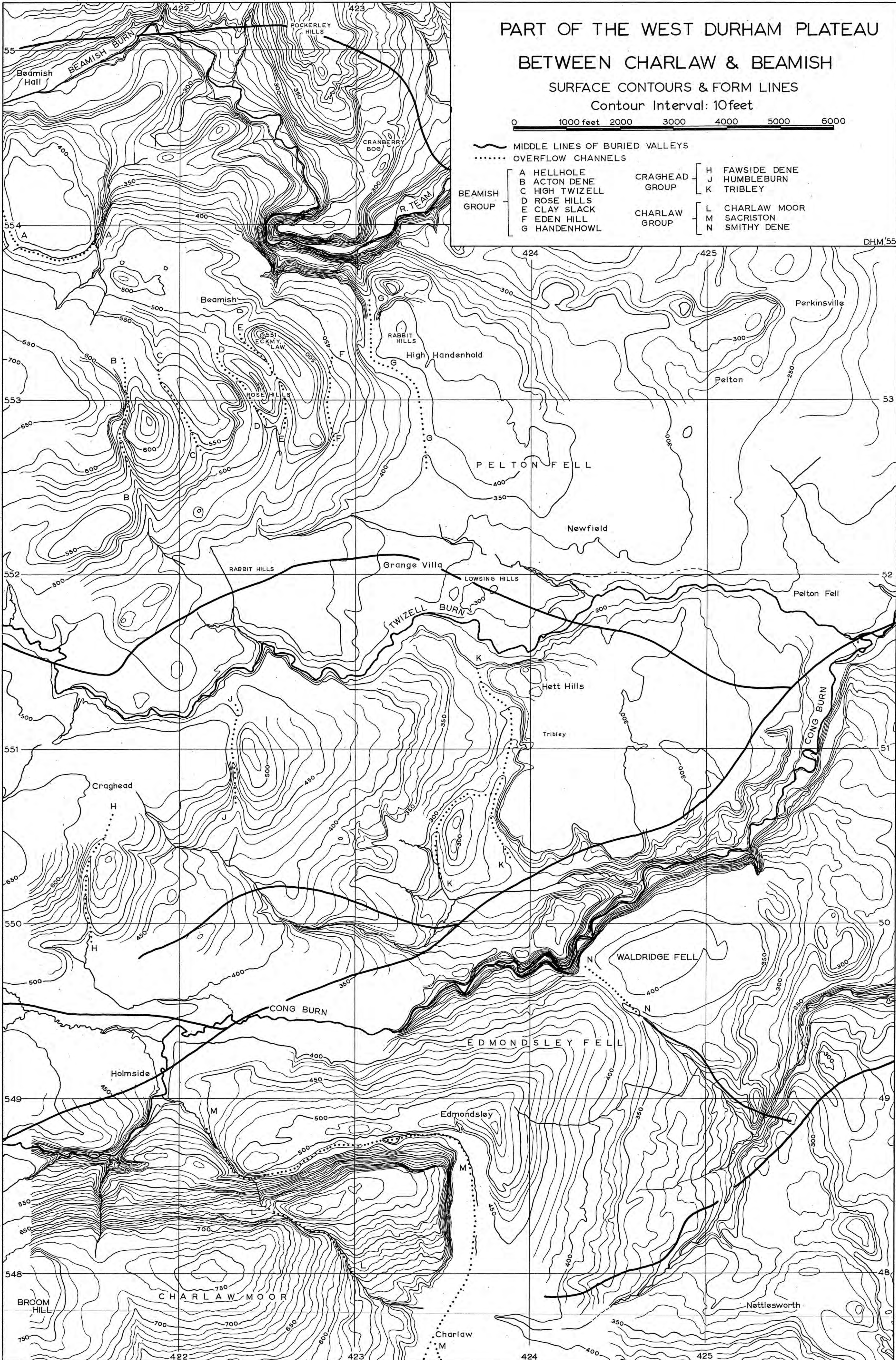
PART OF THE WEST DURHAM PLATEAU  
 BETWEEN CHARLAW & BEAMISH  
 SURFACE CONTOURS & FORM LINES  
 Contour Interval: 10 feet

0 1000 feet 2000 3000 4000 5000 6000

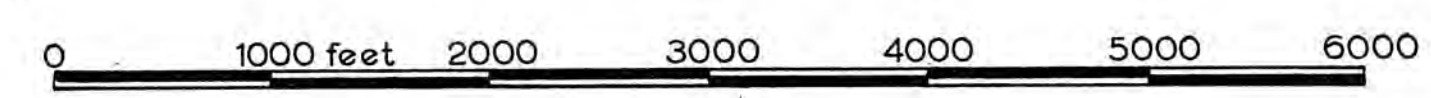
— MIDDLE LINES OF BURIED VALLEYS  
 ..... OVERFLOW CHANNELS

- |               |                |                |                |
|---------------|----------------|----------------|----------------|
| BEAMISH GROUP | A HELLHOLE     | CRAGHEAD GROUP | H FAWSIDE DENE |
|               | B ACTON DENE   |                | J HUMBLEBURN   |
|               | C HIGH TWIZELL |                | K TRIBLEY      |
| D ROSE HILLS  | CHARLAW GROUP  | L CHARLAW MOOR |                |
| E CLAY SLACK  |                | M SACRISTON    |                |
| F EDEN HILL   |                | N SMITHY DENE  |                |
| G HANDENHOWL  |                |                |                |

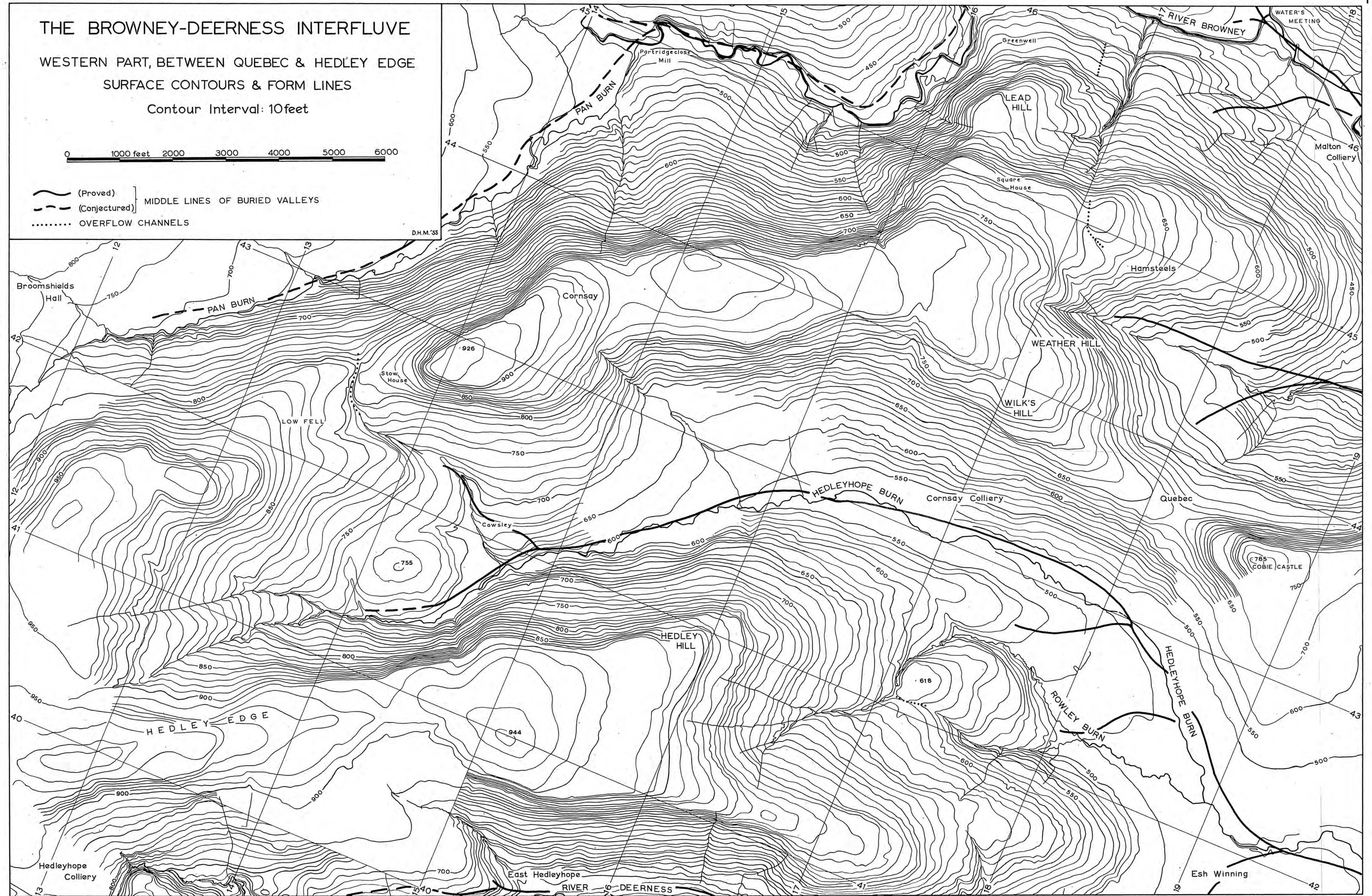
DHM '55



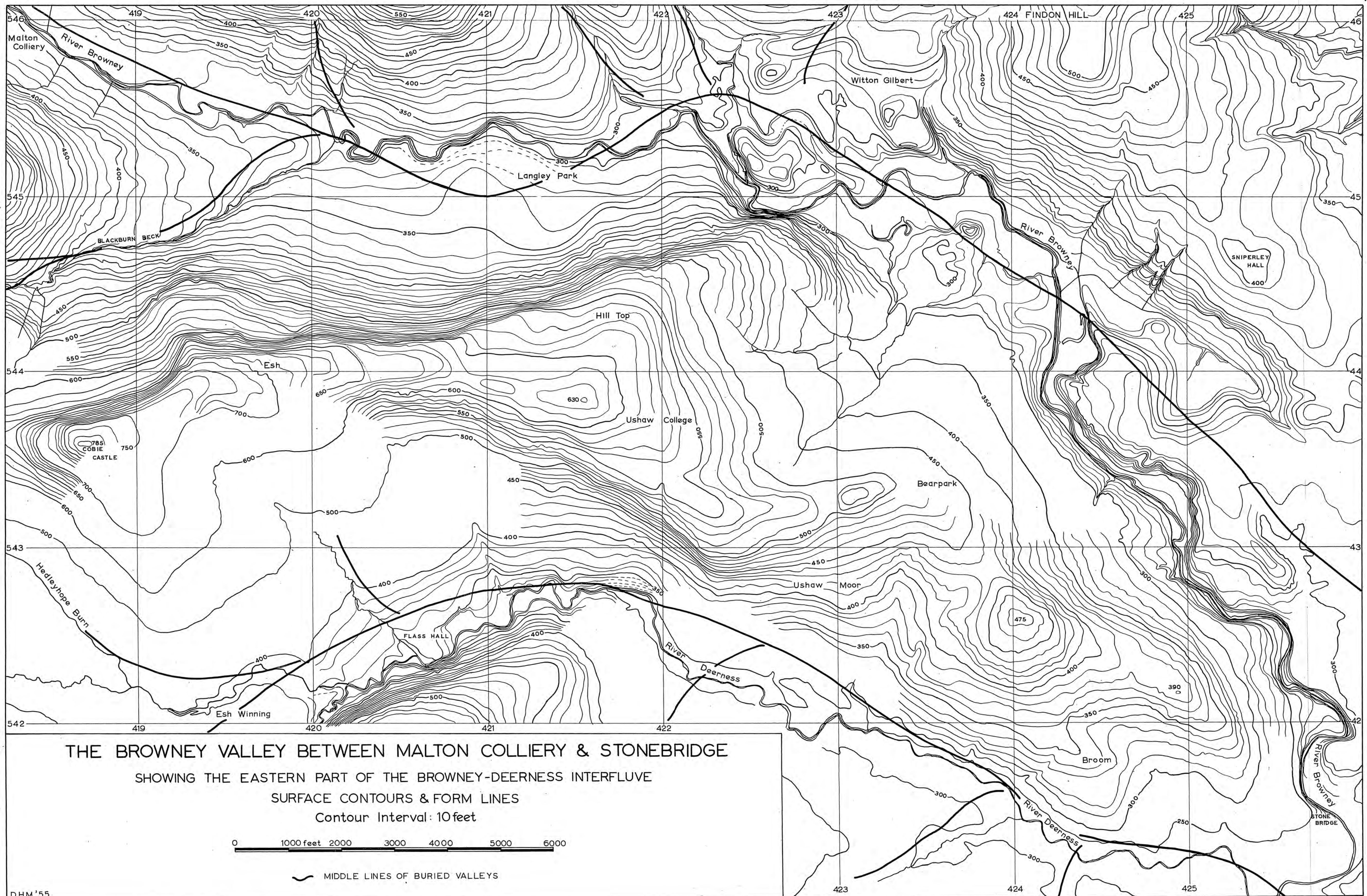
THE BROWNEY-DEERNESS INTERFLUVE  
 WESTERN PART, BETWEEN QUEBEC & HEDLEY EDGE  
 SURFACE CONTOURS & FORM LINES  
 Contour Interval: 10 feet



(Proved) } MIDDLE LINES OF BURIED VALLEYS  
 (Conjectured) }  
 ..... OVERFLOW CHANNELS



D.H.M.'55

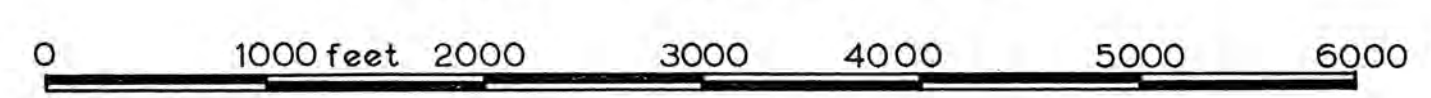


THE BROWNEY VALLEY BETWEEN MALTON COLLIERY & STONEBRIDGE

SHOWING THE EASTERN PART OF THE BROWNEY-DEERNESS INTERFLUVE

SURFACE CONTOURS & FORM LINES

Contour Interval: 10 feet



— MIDDLE LINES OF BURIED VALLEYS

# THE WEAR VALLEY NEAR LAMBTON CASTLE

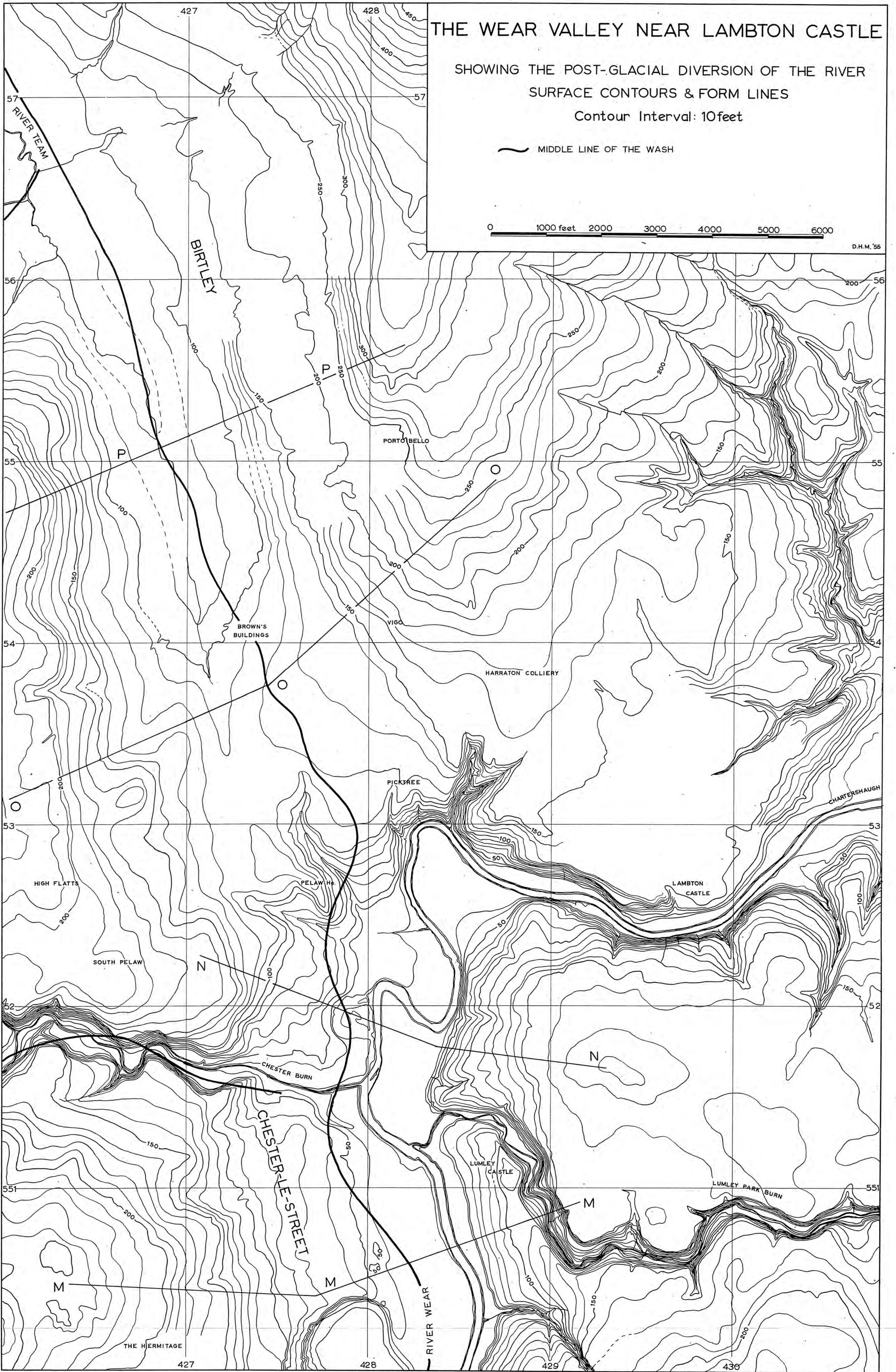
SHOWING THE POST-GLACIAL DIVERSION OF THE RIVER  
SURFACE CONTOURS & FORM LINES

Contour Interval: 10 feet

— MIDDLE LINE OF THE WASH


0 1000 feet 2000 3000 4000 5000 6000

D.H.M. '55

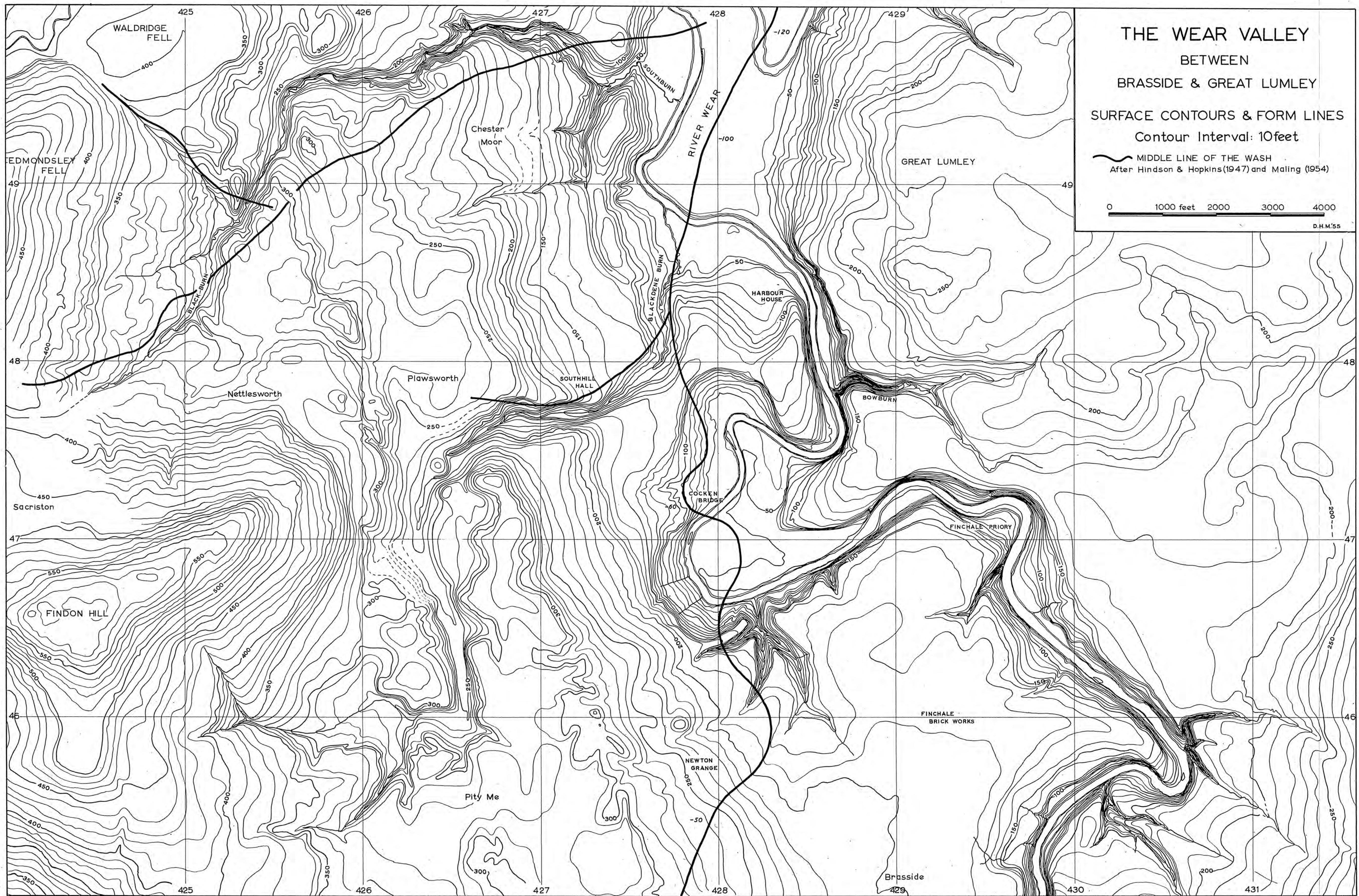


**THE WEAR VALLEY**  
**BETWEEN**  
**BRASSIDE & GREAT LUMLEY**

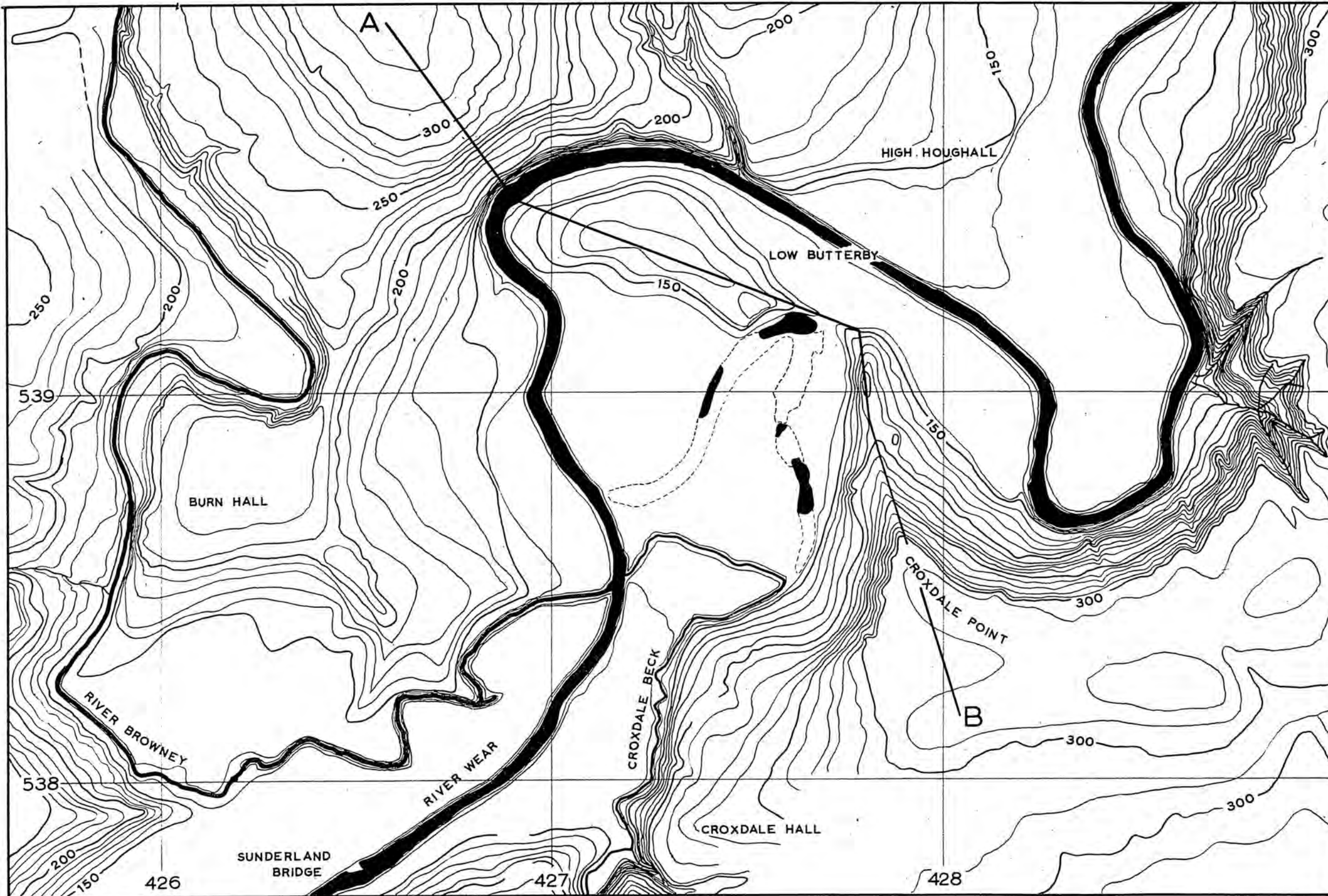
**SURFACE CONTOURS & FORM LINES**  
 Contour Interval: 10feet

 MIDDLE LINE OF THE WASH  
 After Hindson & Hopkins(1947) and Maling (1954)

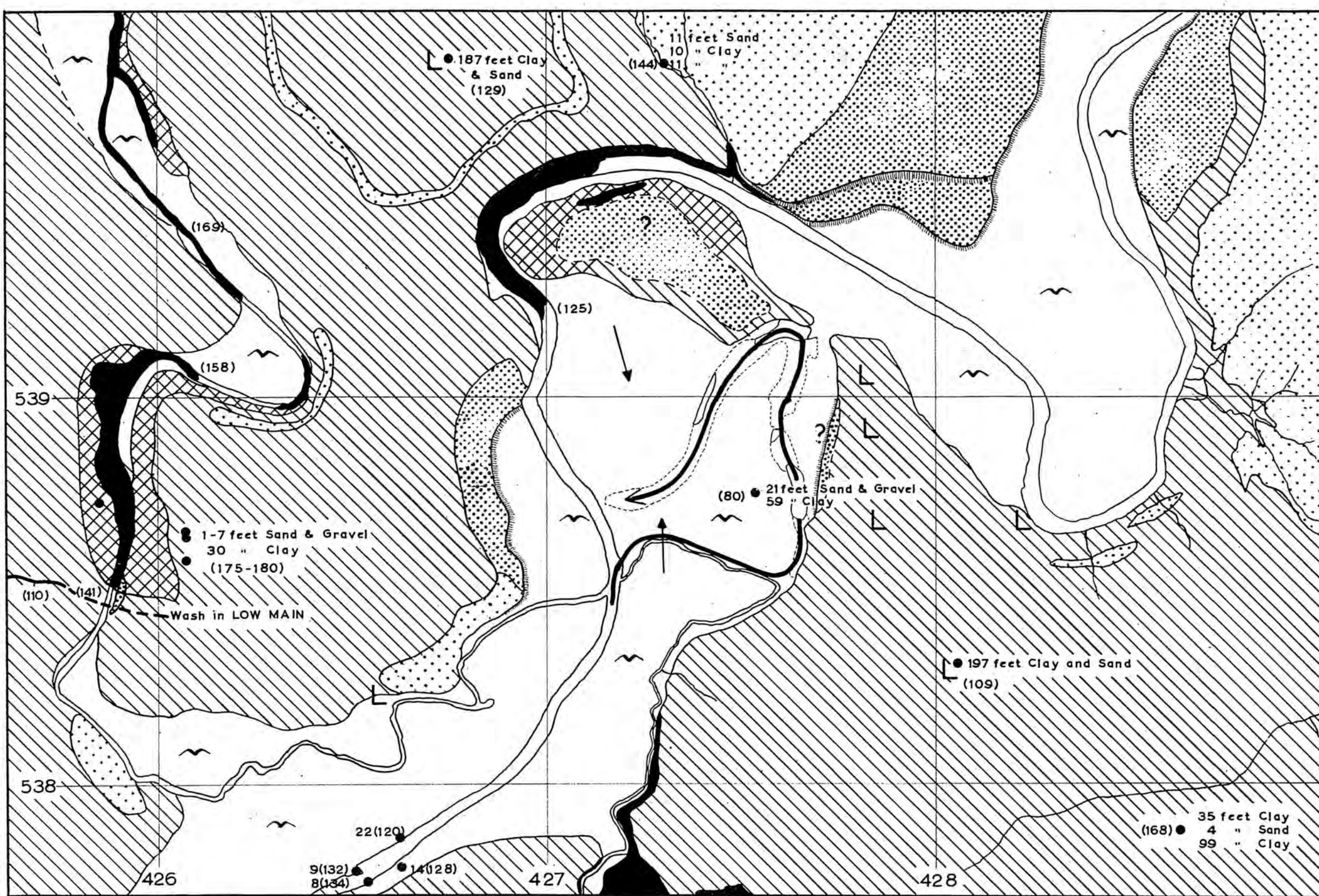
0 1000 feet 2000 3000 4000  
 D.H.M.'55





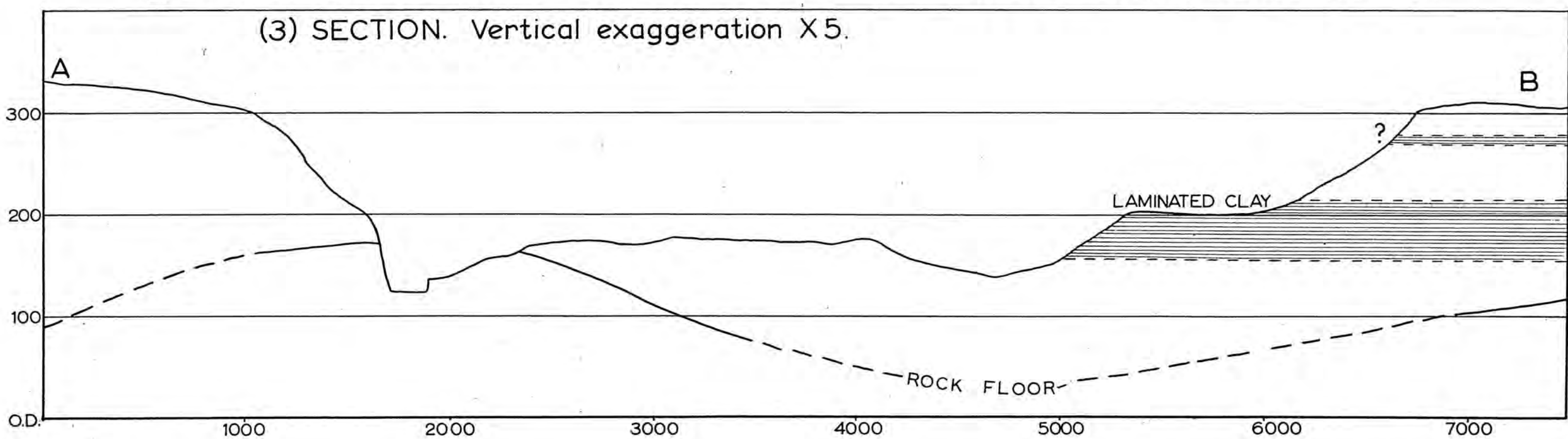


(1) SURFACE CONTOURS & FORM LINES. Contour interval: 10 feet.  
Based upon plane-table survey and flood-plain levels, 1953-1954.



(2) DRIFT DEPOSITS & RIVER TERRACES

- |   |   |                             |
|---|---|-----------------------------|
| ALLUVIUM                                    | BOULDER CLAY                            | THIN DRIFT                  |
| RIVER TERRACE GRAVEL                        | FLUVIO-GLACIAL SAND                     | SOLID ROCK AT SURFACE       |
| BOREHOLE (Height of rock floor in brackets) | TERRACE SCARP                           | FORMER COURSE OF RIVER WEAR |
| LAMINATED CLAY EXPOSED OR PROVED BY BORING  | APPARENT DIRECTION OF MEANDER MIGRATION |                             |



(3) SECTION. Vertical exaggeration X5.

THE WEAR VALLEY BETWEEN SUNDERLAND BRIDGE & HIGH HOUGHALL



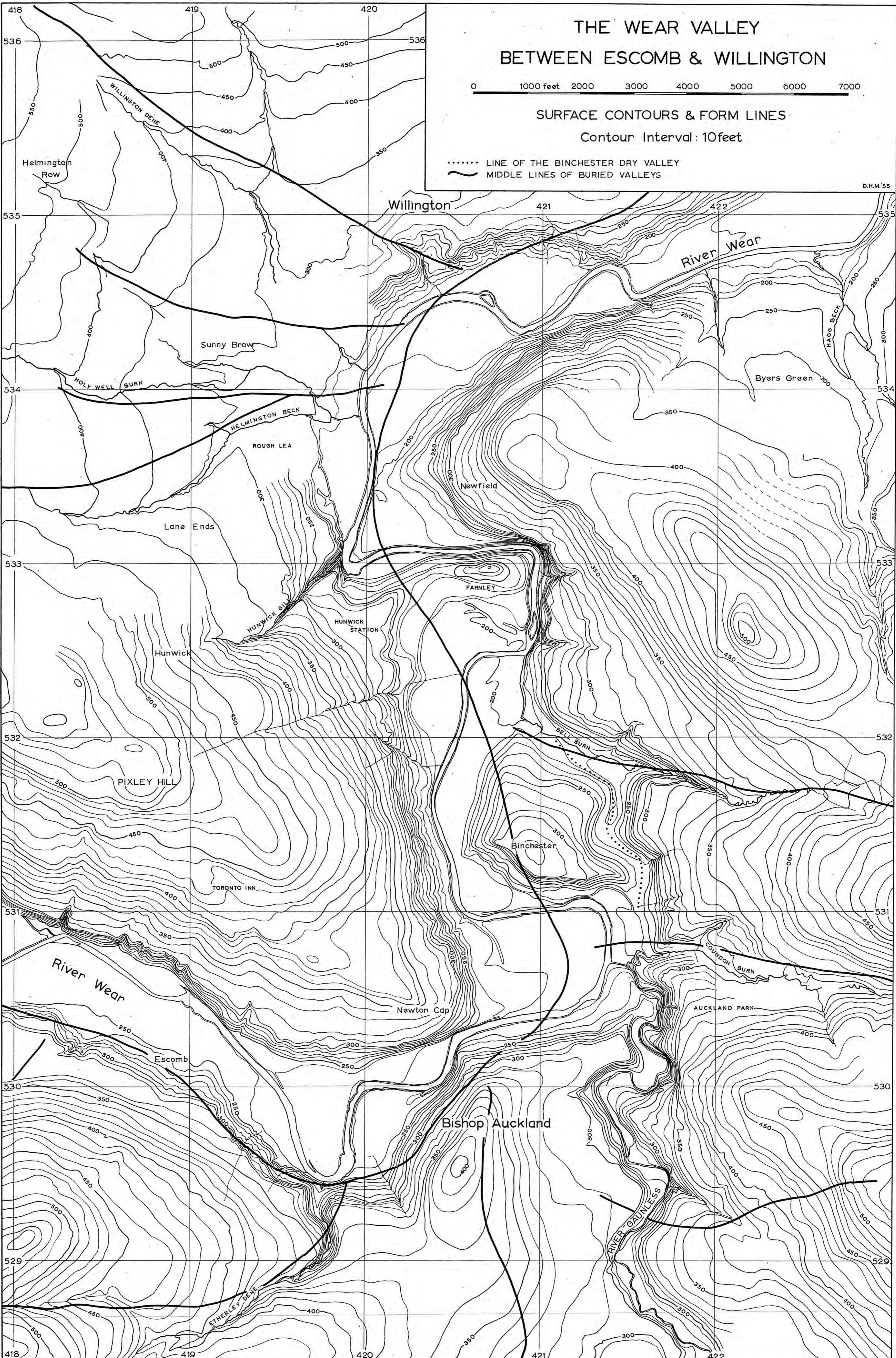
# THE WEAR VALLEY BETWEEN ESCOMB & WILLINGTON

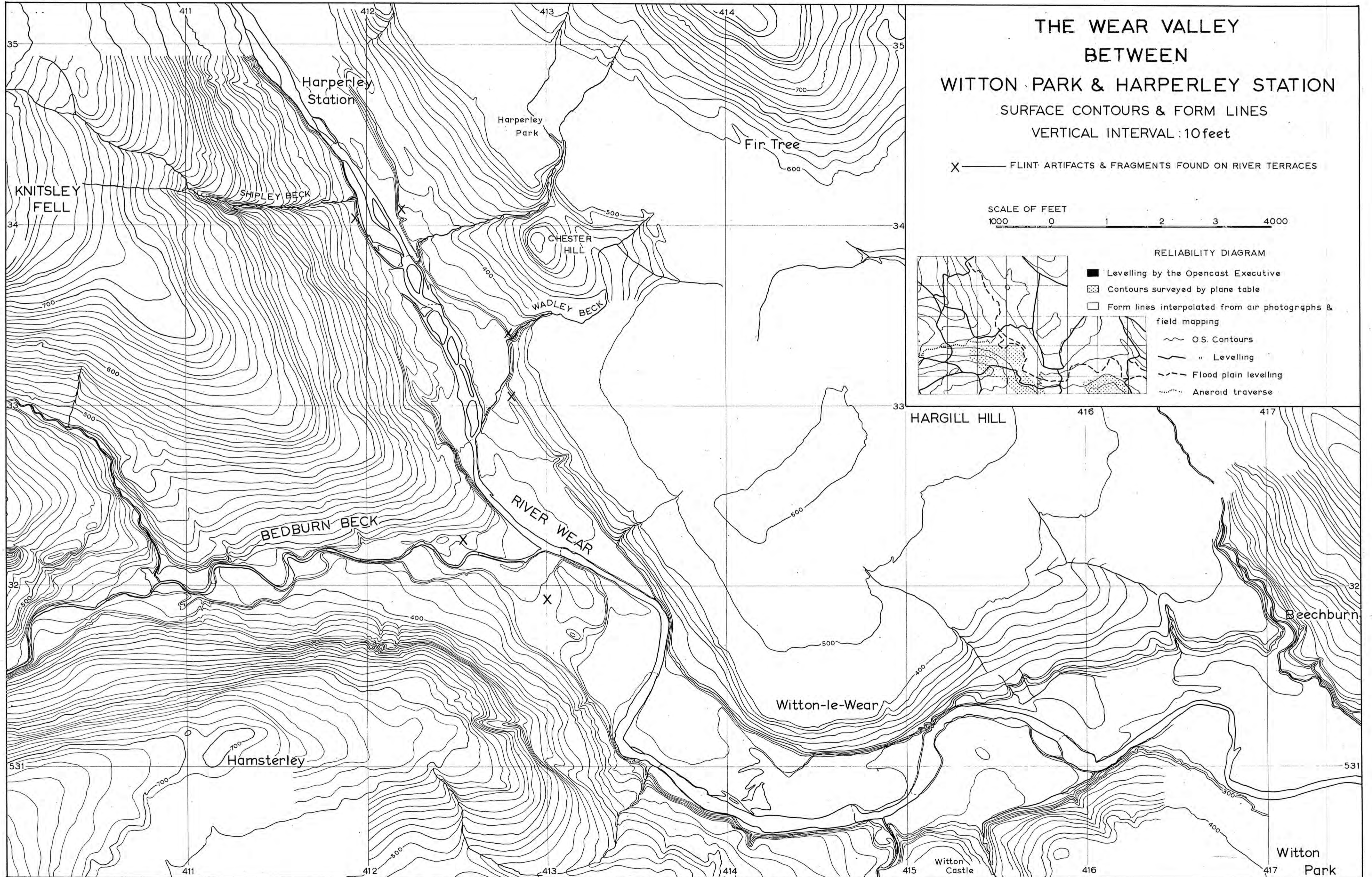
0 1000 feet 2000 3000 4000 5000 6000 7000

SURFACE CONTOURS & FORM LINES  
Contour Interval: 10 feet

..... LINE OF THE BINCHESTER DRY VALLEY  
~ MIDDLE LINES OF BURIED VALLEYS

D.H.M.'55





# THE WEAR VALLEY & WASKERLEY BECK NEAR WOLSINGHAM

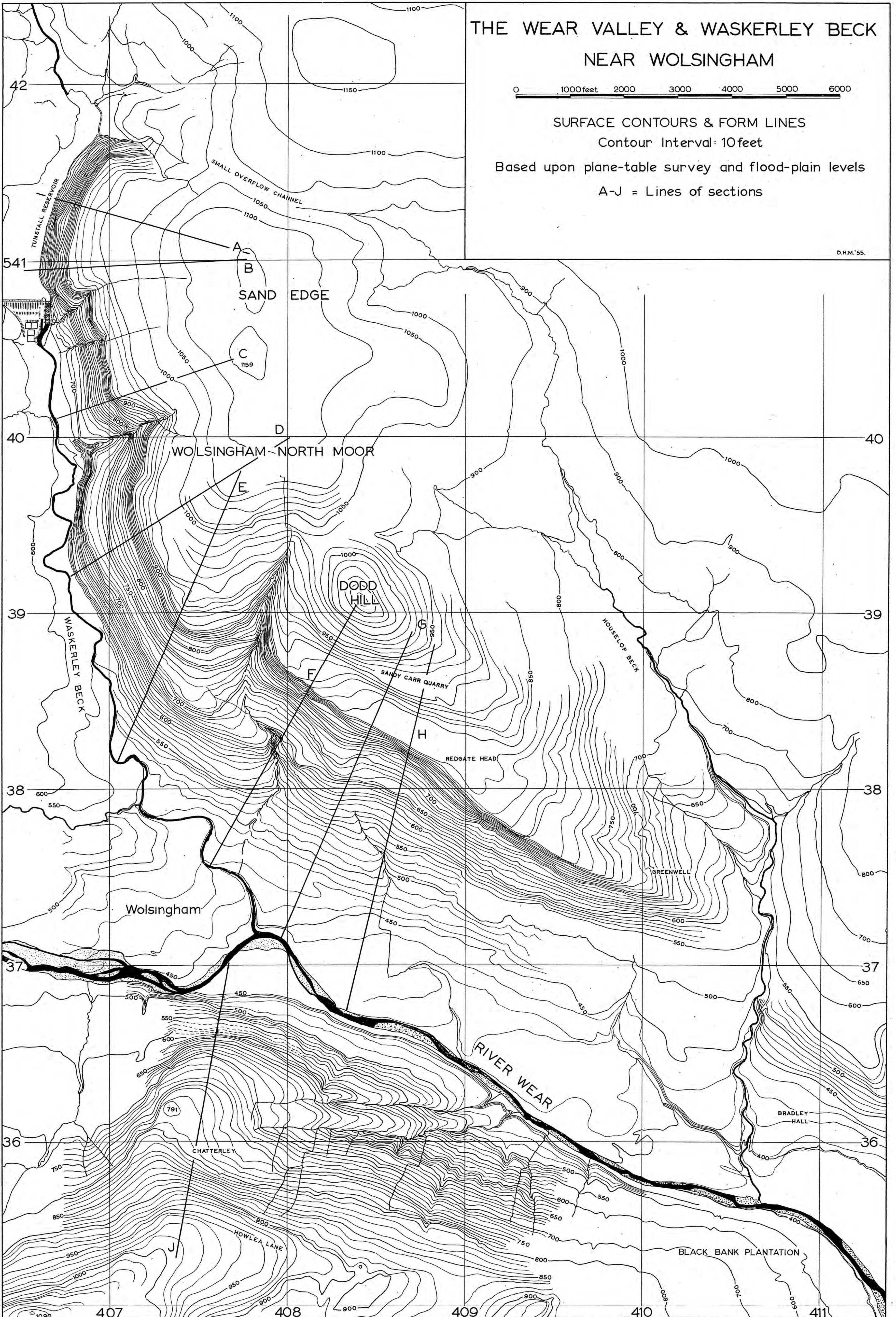
0 1000 feet 2000 3000 4000 5000 6000

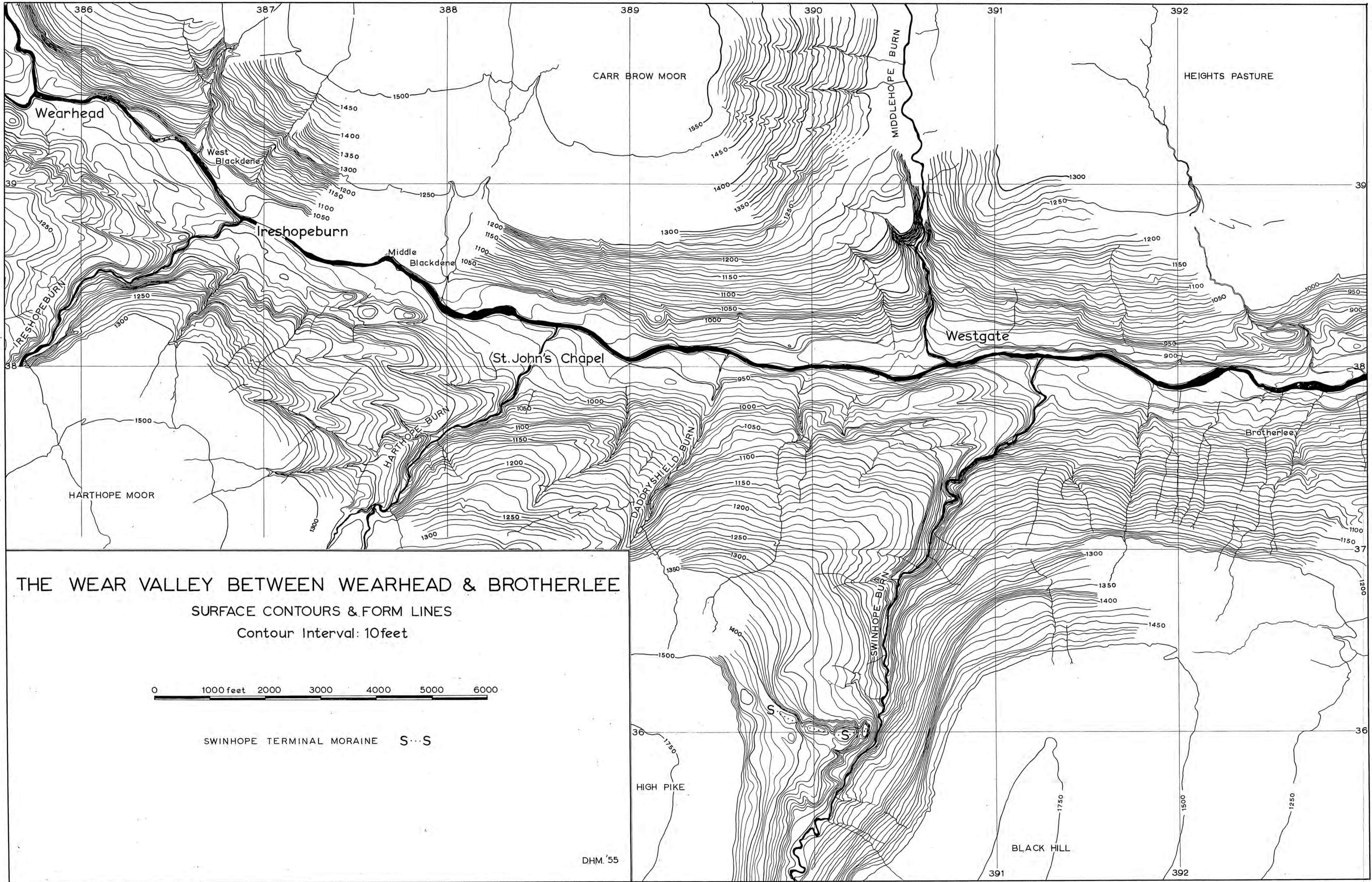
SURFACE CONTOURS & FORM LINES  
Contour Interval: 10 feet

Based upon plane-table survey and flood-plain levels

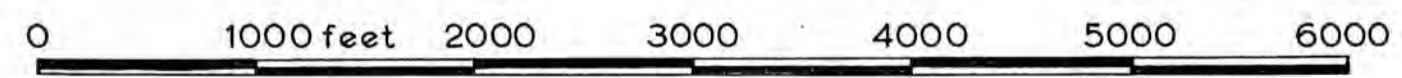
A-J = Lines of sections

D.H.M.'55.



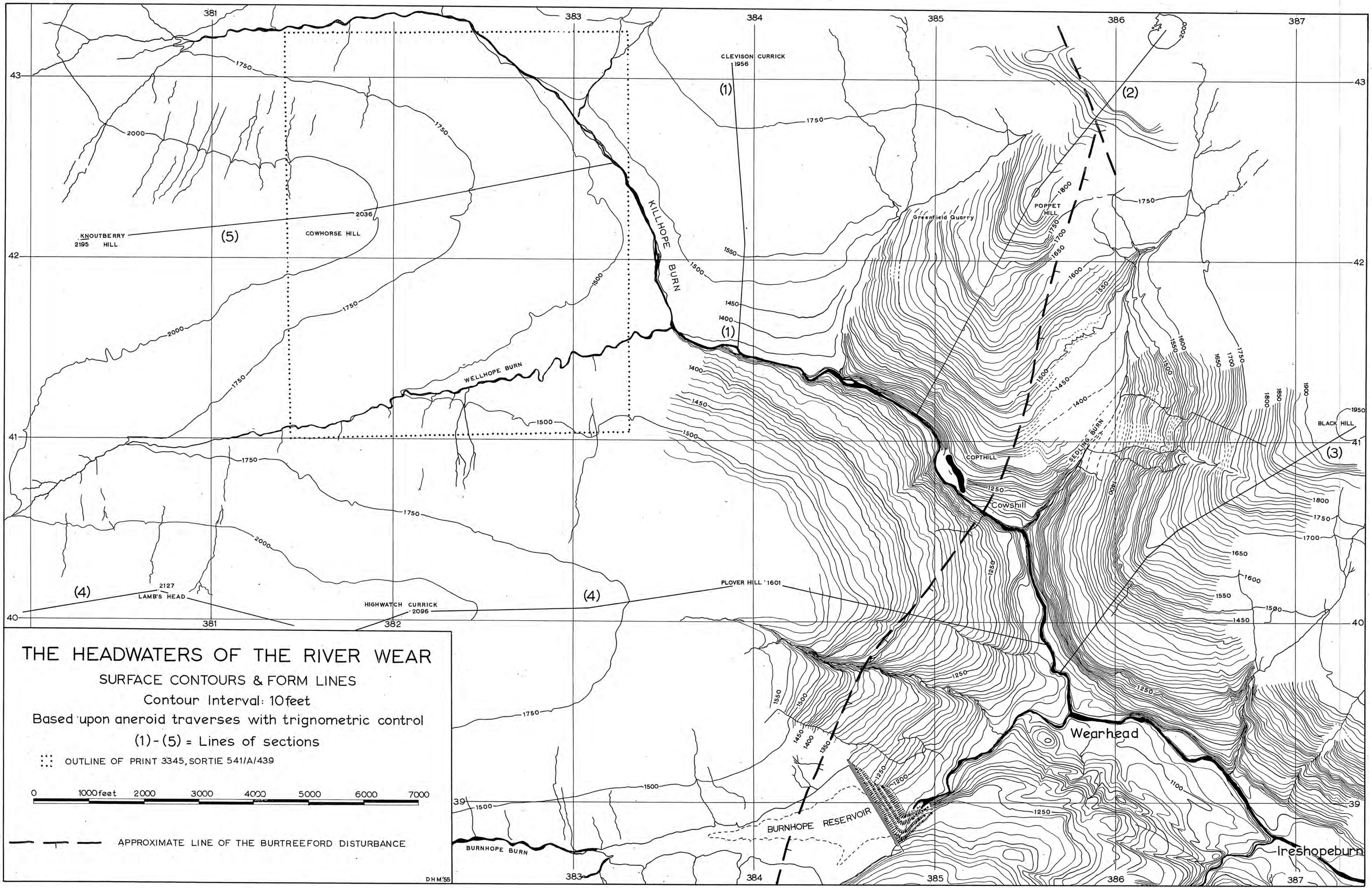


THE WEAR VALLEY BETWEEN WEARHEAD & BROTHERLEE  
 SURFACE CONTOURS & FORM LINES  
 Contour Interval: 10feet



SWINHOPE TERMINAL MORAINE S..S

DHM '55



**THE HEADWATERS OF THE RIVER WEAR**  
 SURFACE CONTOURS & FORM LINES  
 Contour Interval: 10 feet  
 Based upon aneroid traverses with trigonometric control  
 (1)-(5) = Lines of sections

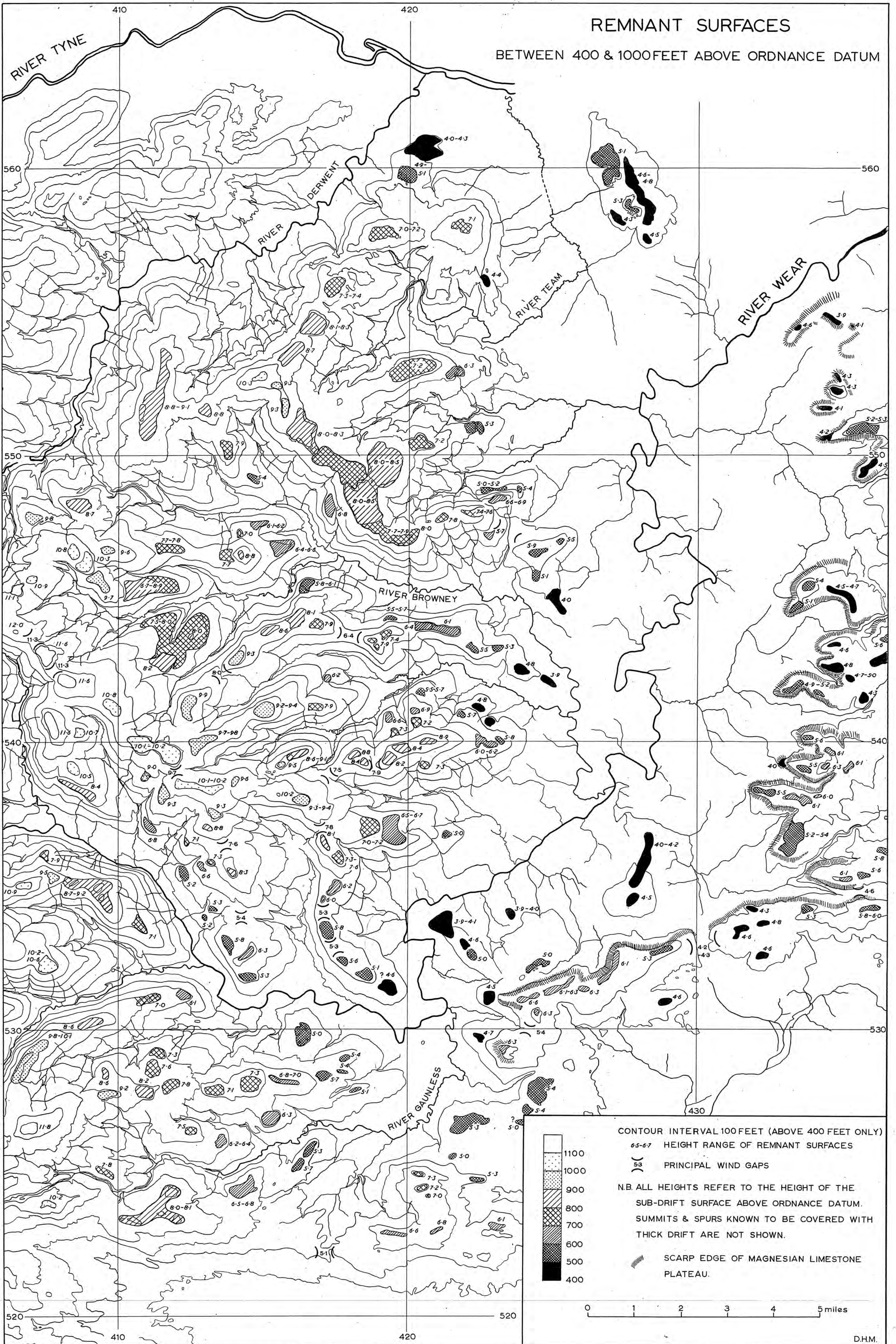
⋯⋯ OUTLINE OF PRINT 3345, SORTIE 541/A/439



--- APPROXIMATE LINE OF THE BURTREEFORD DISTURBANCE

# REMNANT SURFACES

BETWEEN 400 & 1000 FEET ABOVE ORDNANCE DATUM



CONTOUR INTERVAL 100 FEET (ABOVE 400 FEET ONLY)

6.5-6.7 HEIGHT RANGE OF REMNANT SURFACES

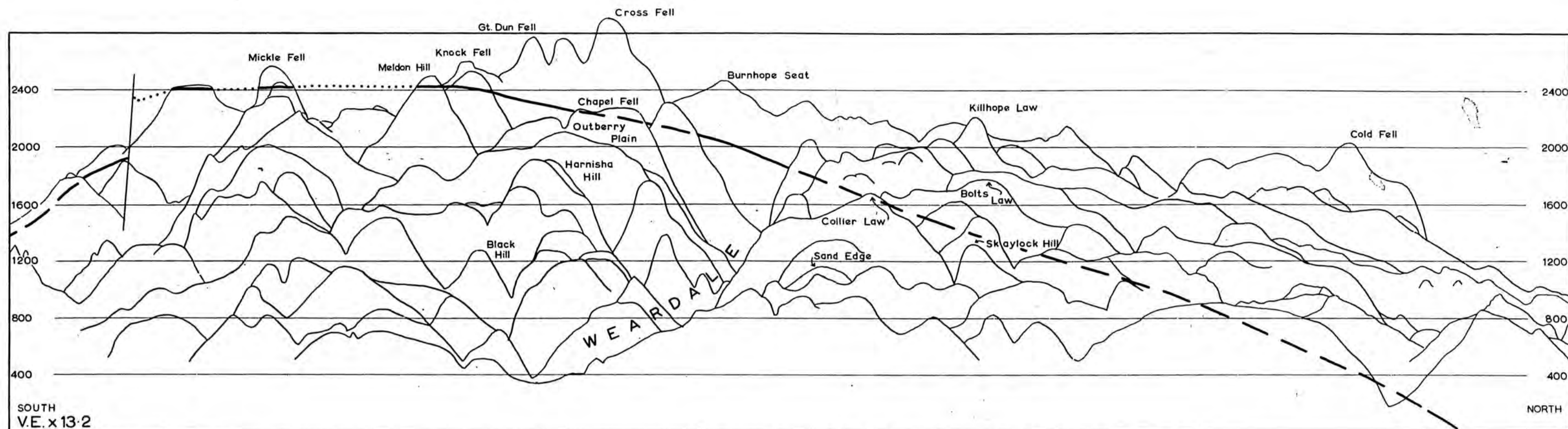
5.3 PRINCIPAL WIND GAPS

N.B. ALL HEIGHTS REFER TO THE HEIGHT OF THE SUB-DRIFT SURFACE ABOVE ORDNANCE DATUM. SUMMITS & SPURS KNOWN TO BE COVERED WITH THICK DRIFT ARE NOT SHOWN.

SCARP EDGE OF MAGNESIAN LIMESTONE PLATEAU.

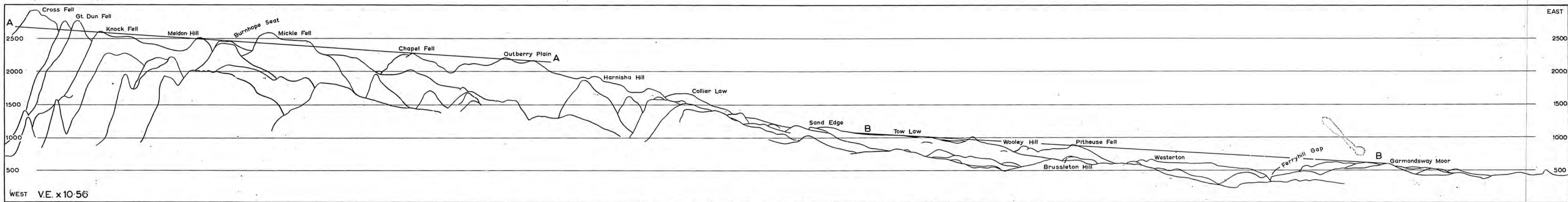
0 1 2 3 4 5 miles

D.H.M.

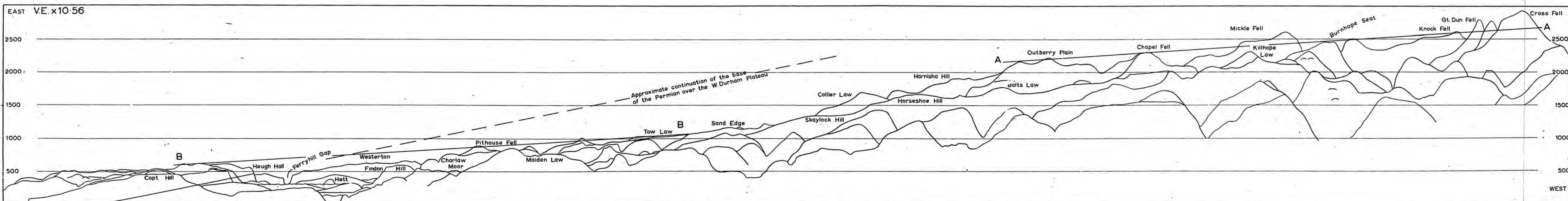


(1) PROJECTED PROFILE OF THE ALSTON BLOCK, VIEWED FROM 410 Kms. EAST. (NAT. GRID)

----- APPROXIMATE HORIZON OF GREAT LIMESTONE IN THE WESTERN HILLS (Section through Mickle Fell, Meldon Hill, Burnhope Seat & Killhope Law).

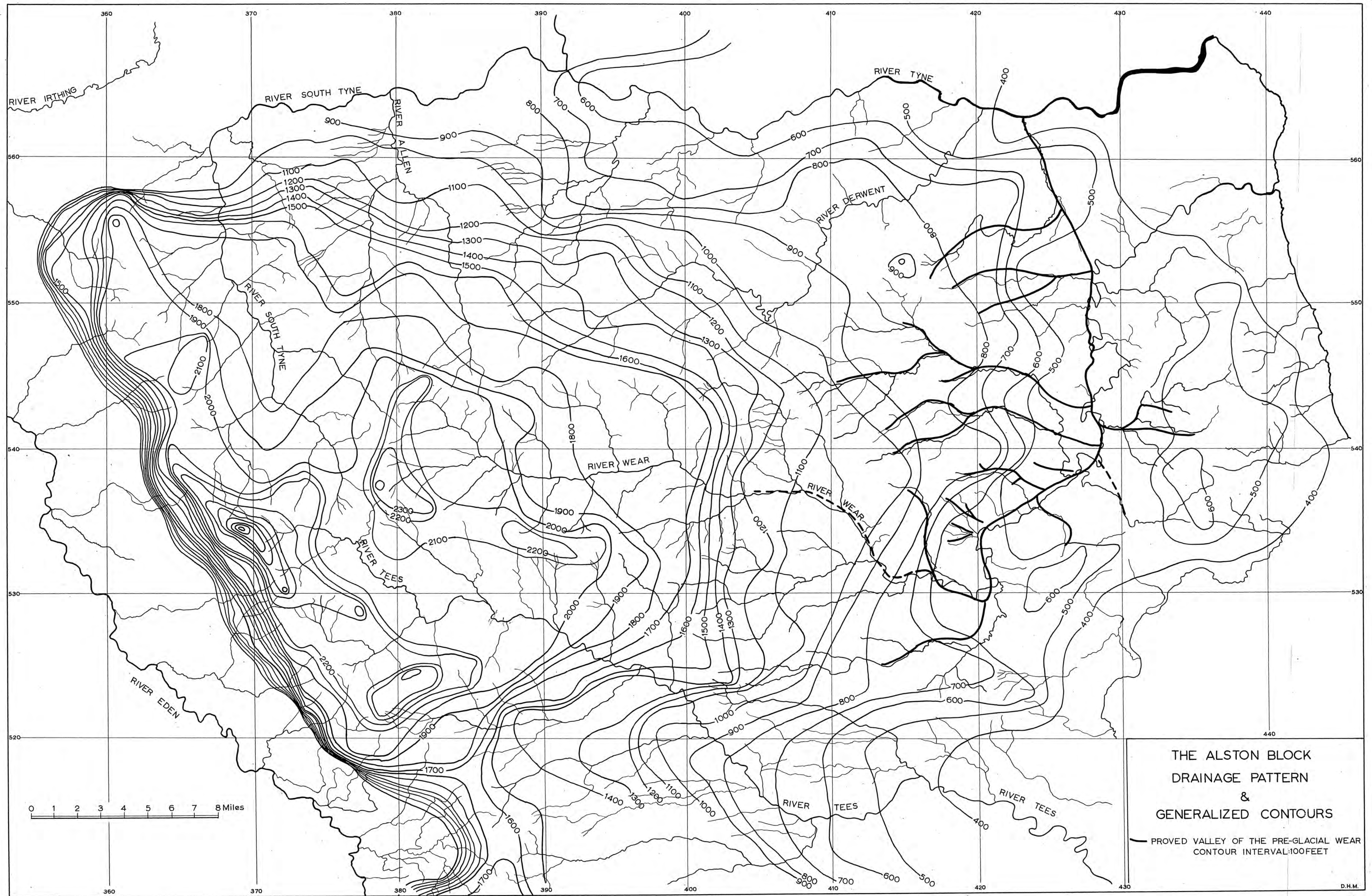


(2) PROJECTED PROFILE OF THE ALSTON BLOCK, VIEWED FROM SOUTH.



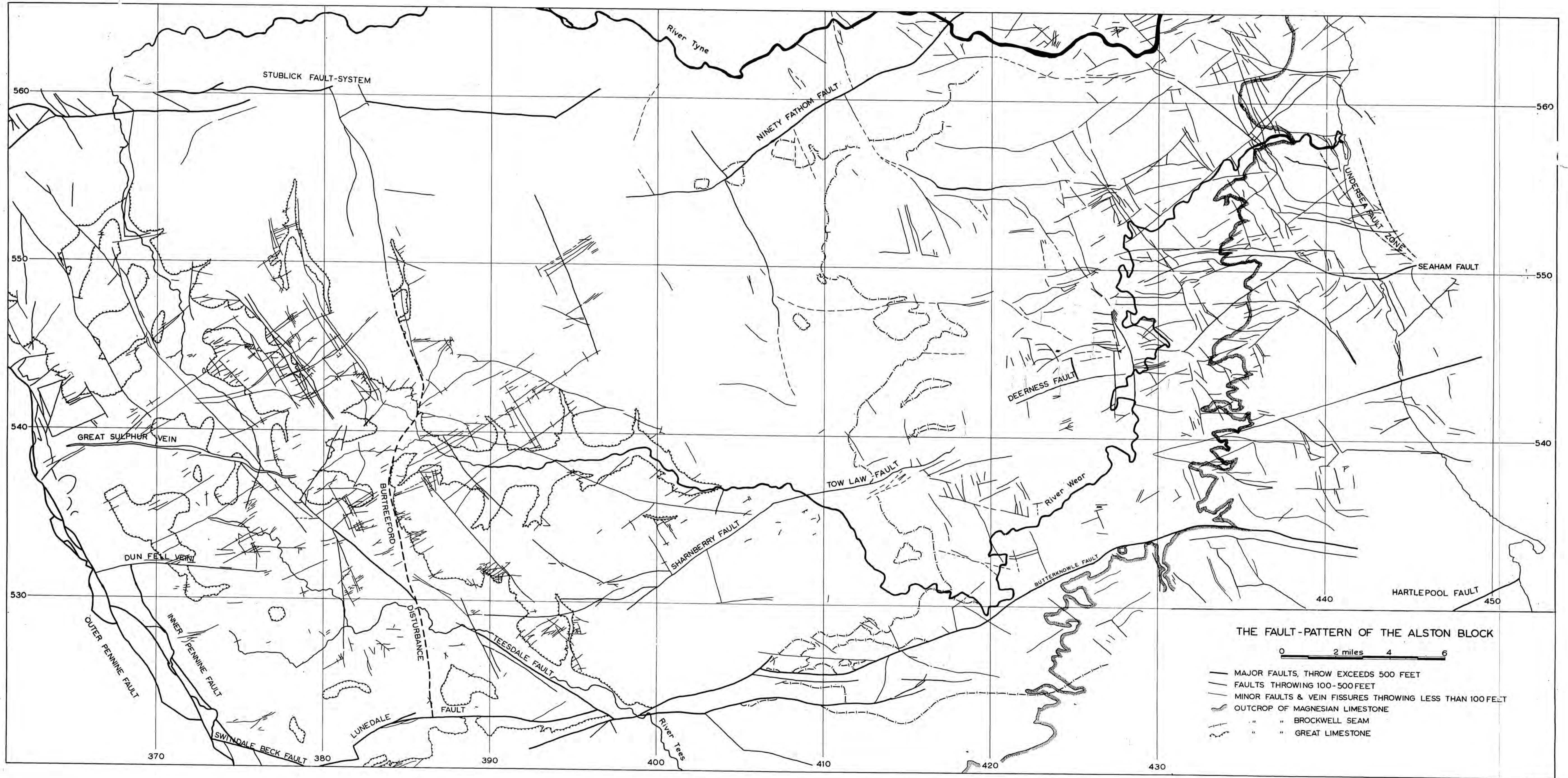
(3) PROJECTED PROFILE OF THE ALSTON BLOCK, VIEWED FROM 550 Kms. NORTH. (NAT. GRID)

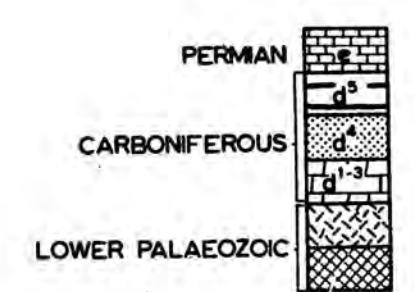
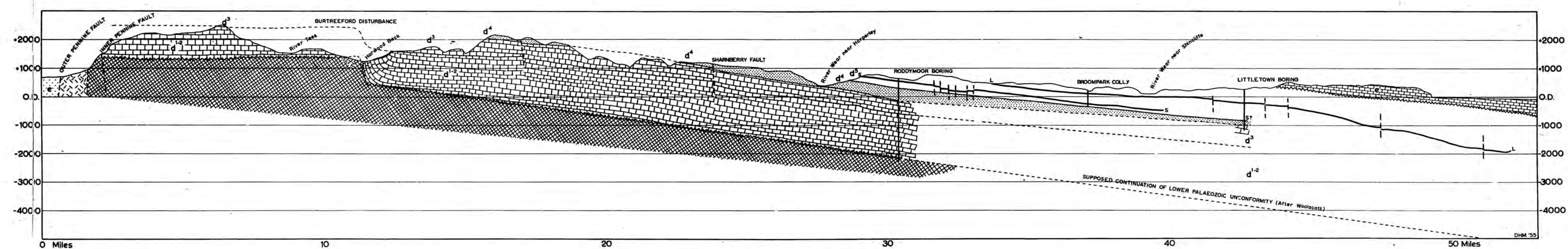
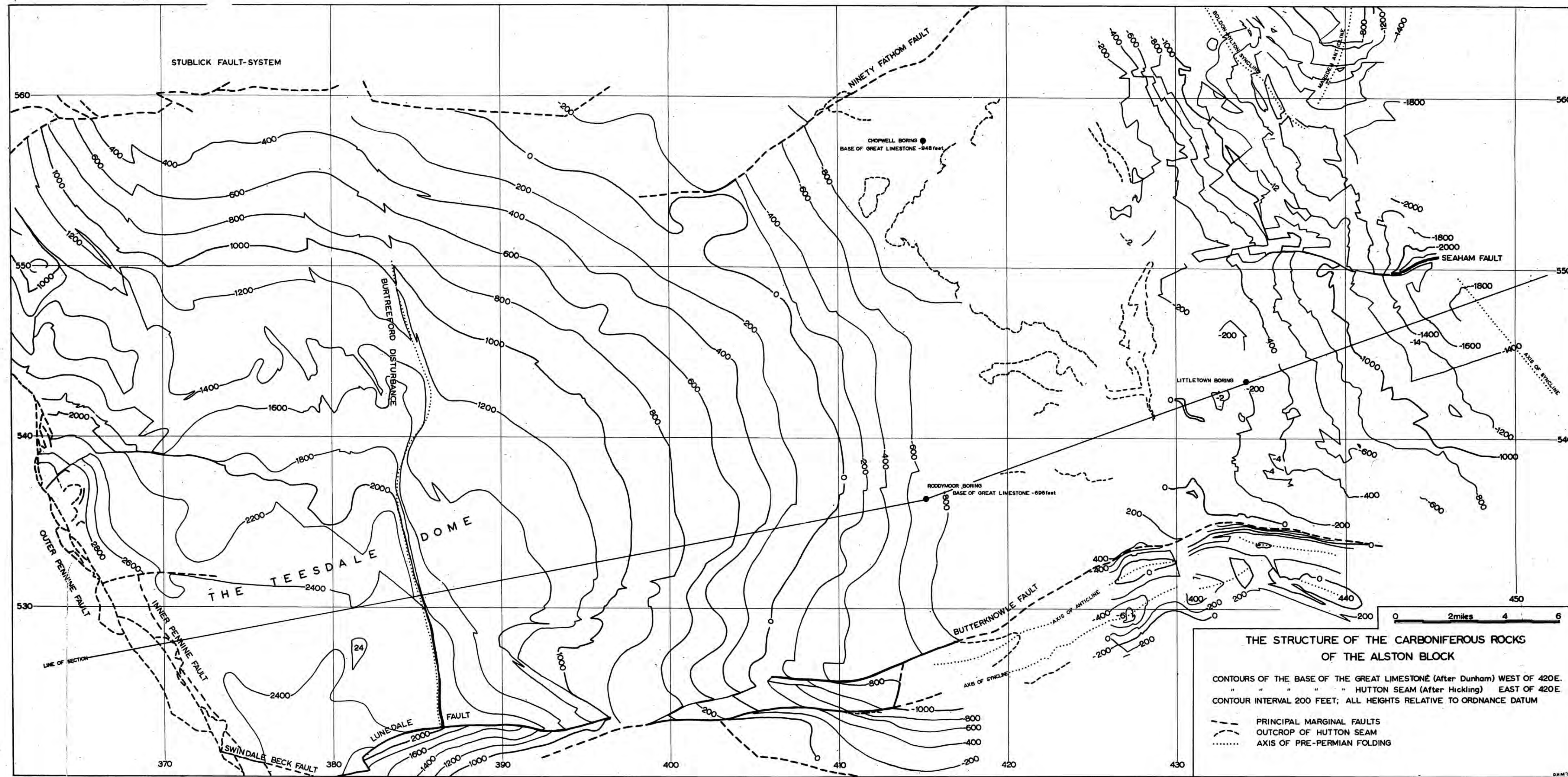






THE ALSTON BLOCK  
DRAINAGE PATTERN  
&  
GENERALIZED CONTOURS

— PROVED VALLEY OF THE PRE-GLACIAL WEAR  
CONTOUR INTERVAL: 100 FEET





# KEY TO DETAILED TOPOGRAPHICAL & GEOLOGICAL MAPS

-  DETAILED GEOLOGICAL SHEETS; PLATES 19-23
-  DETAILED TOPOGRAPHICAL SHEETS; PLATES 8-18

0 5 10 miles

