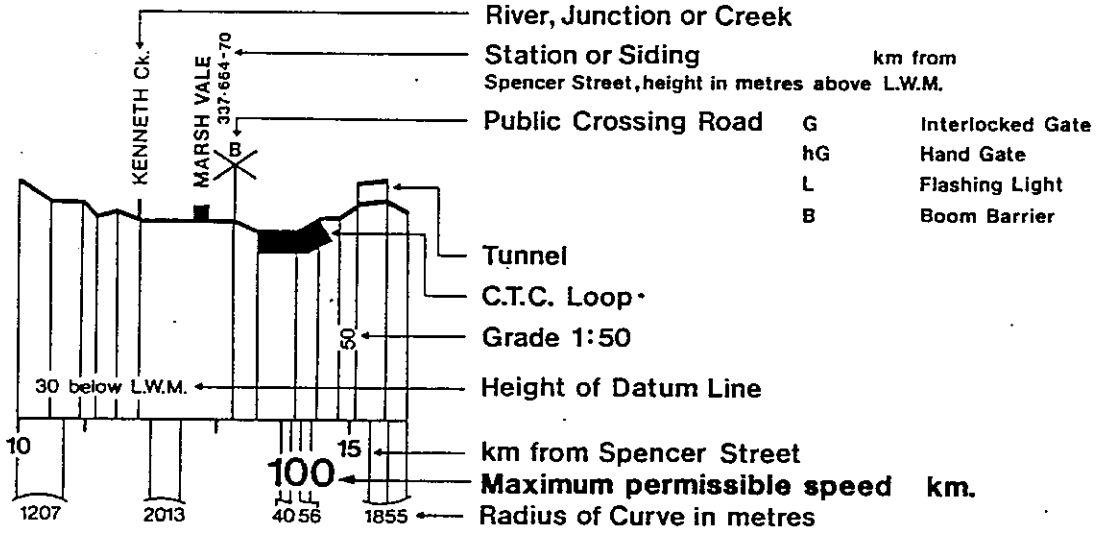


# **Railway Gradients & Curves**

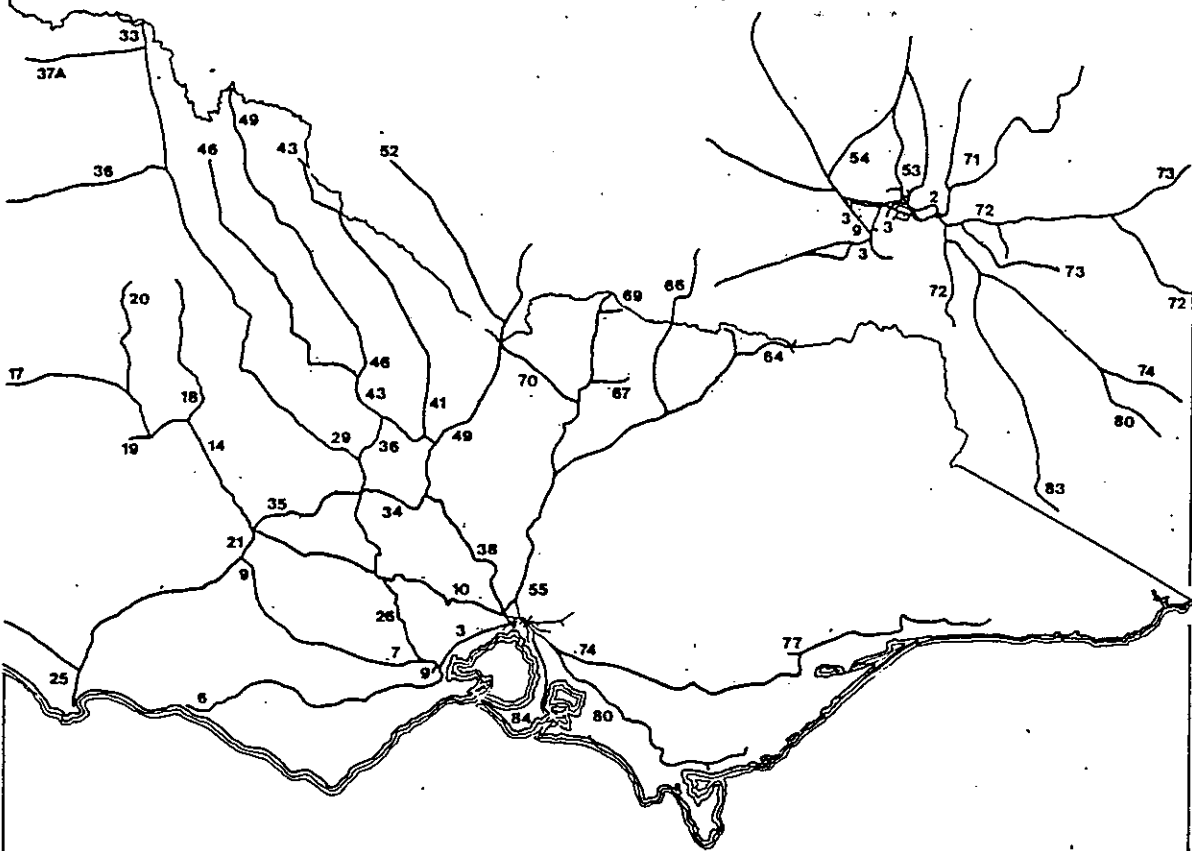
T.O.D.- Project Management Dpt.  
**STATE TRANSPORT AUTHORITY**  
VICTORIA  
1987

### LEGEND



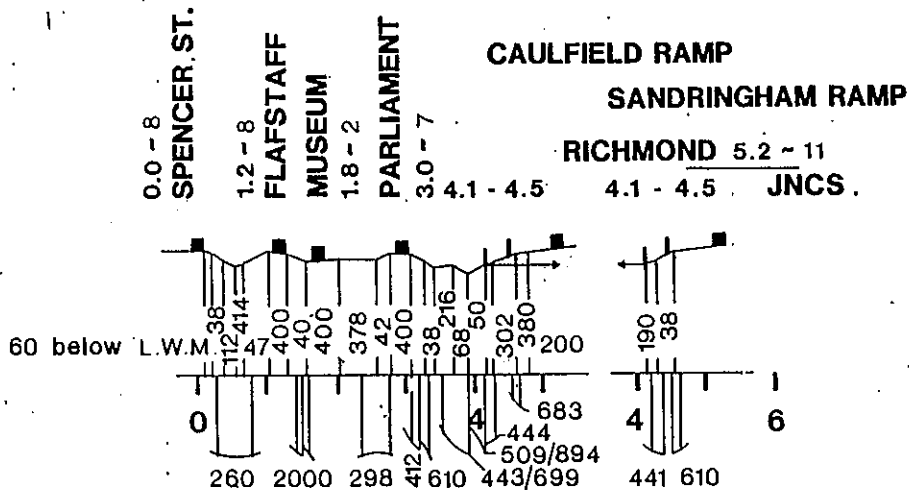
Approx. Scale: Vertical 1:2500  
 Horizontal 1:60000

Graphic Design 8/1987

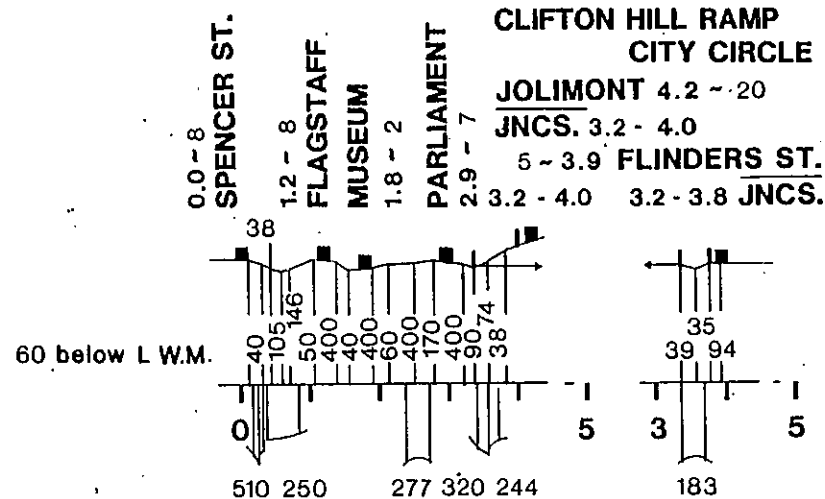


MELBOURNE UNDERGROUND LOOPS 1982

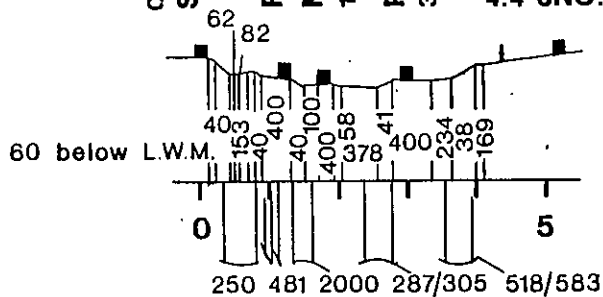
UPPER OUTER LOOP



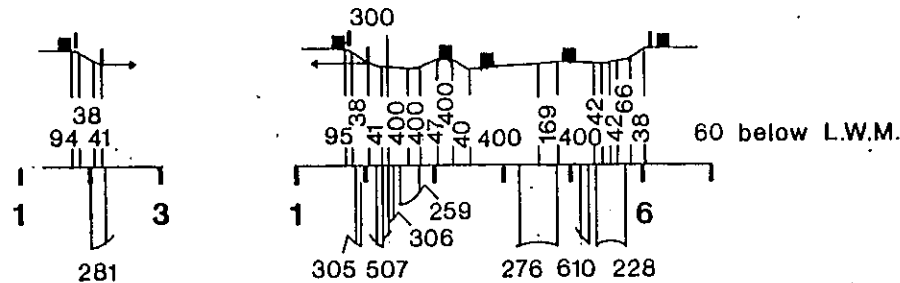
CLIFTON HILL - CITY CIRCLE UPPER INNER LOOP

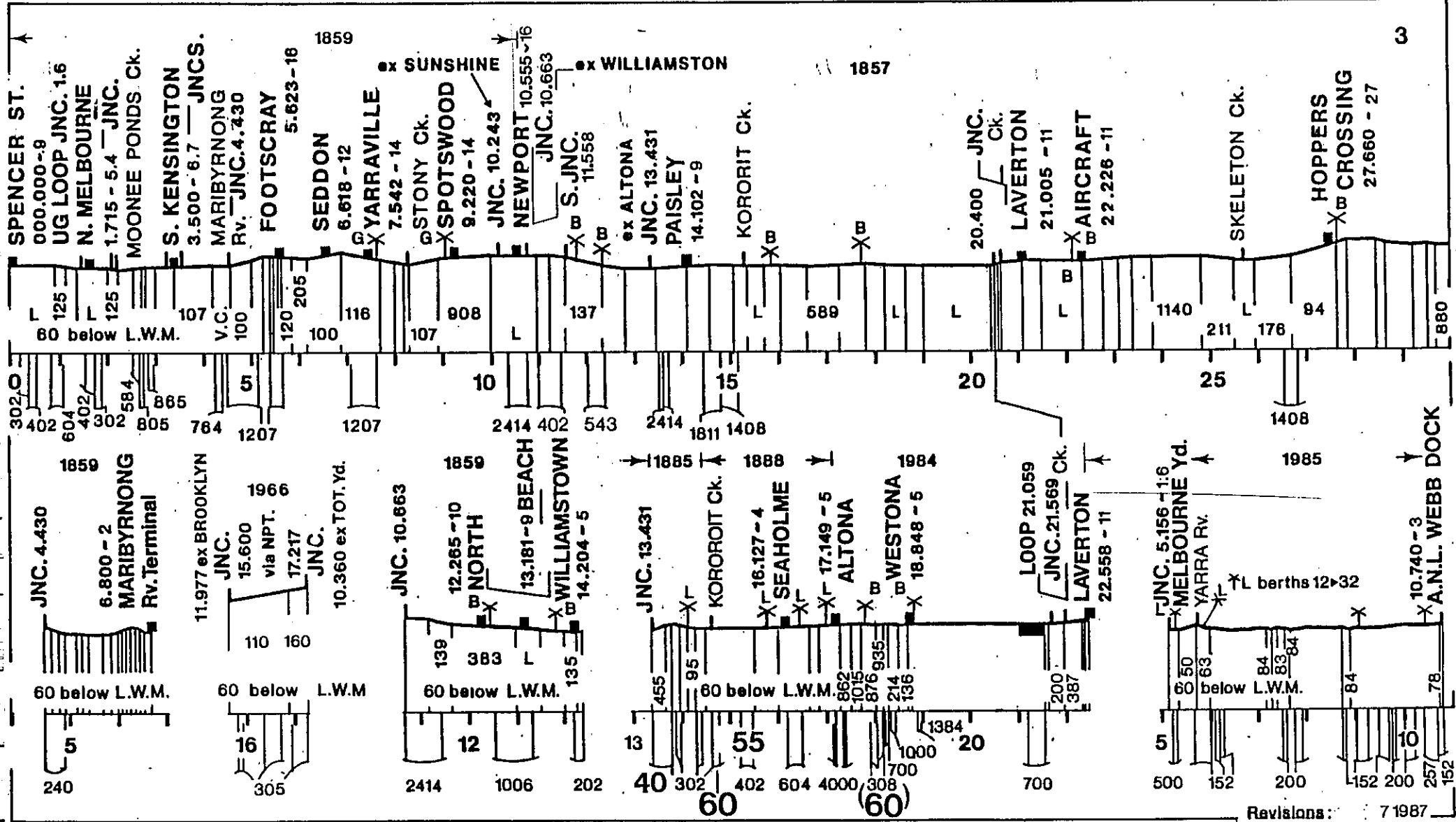


BURNLEY RAMP LOWER OUTER LOOP



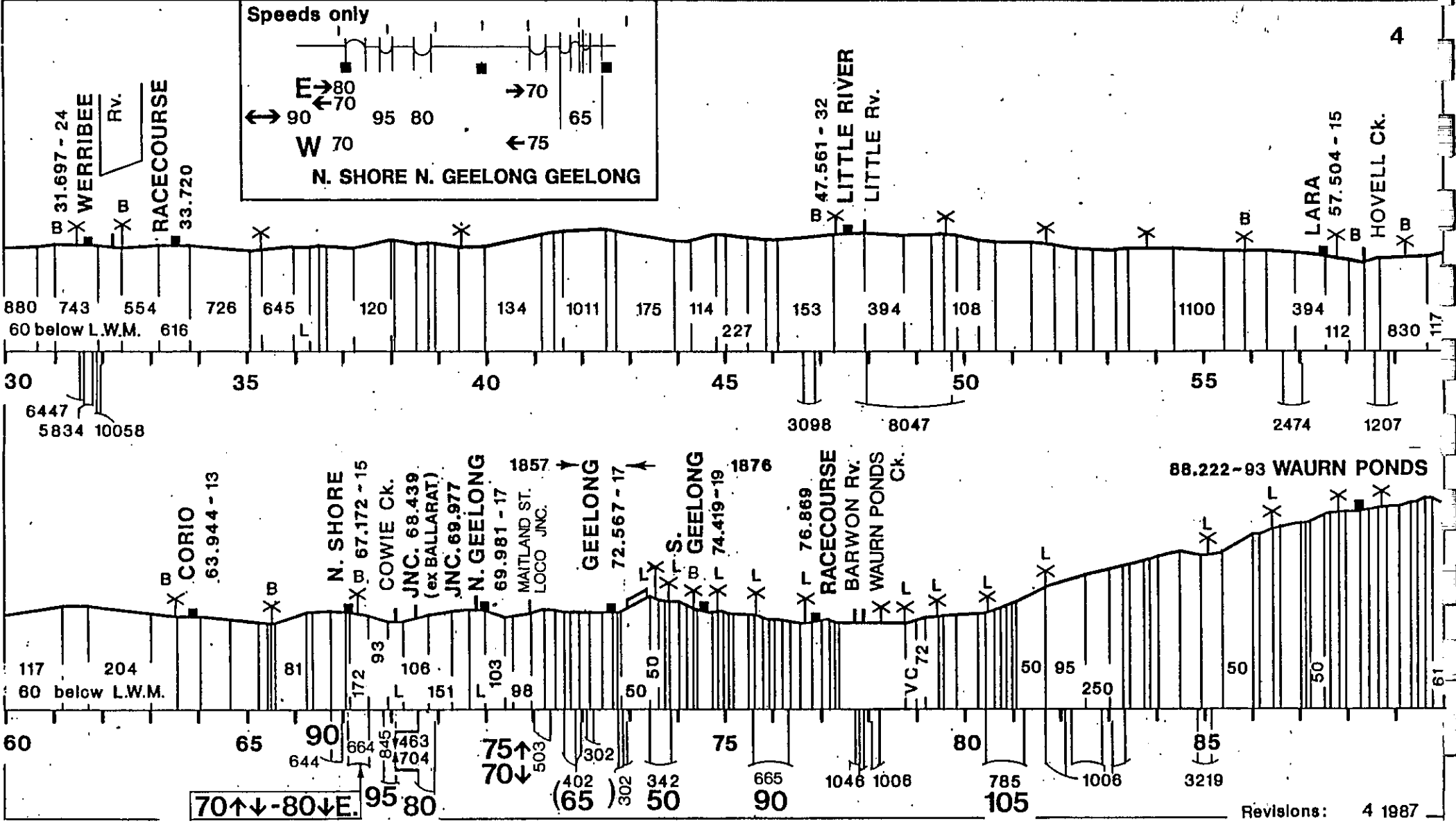
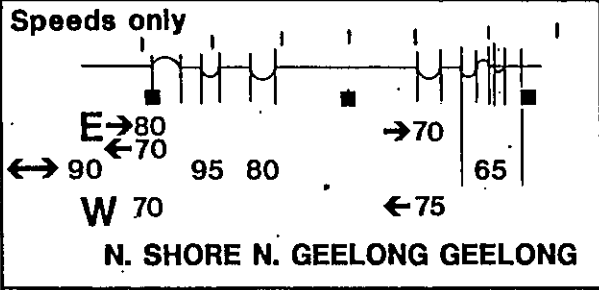
N. MELBOURNE W. RAMP  
 N. MELBOURNE E. RAMP  
 NORTHERN LOWER INNER LOOP

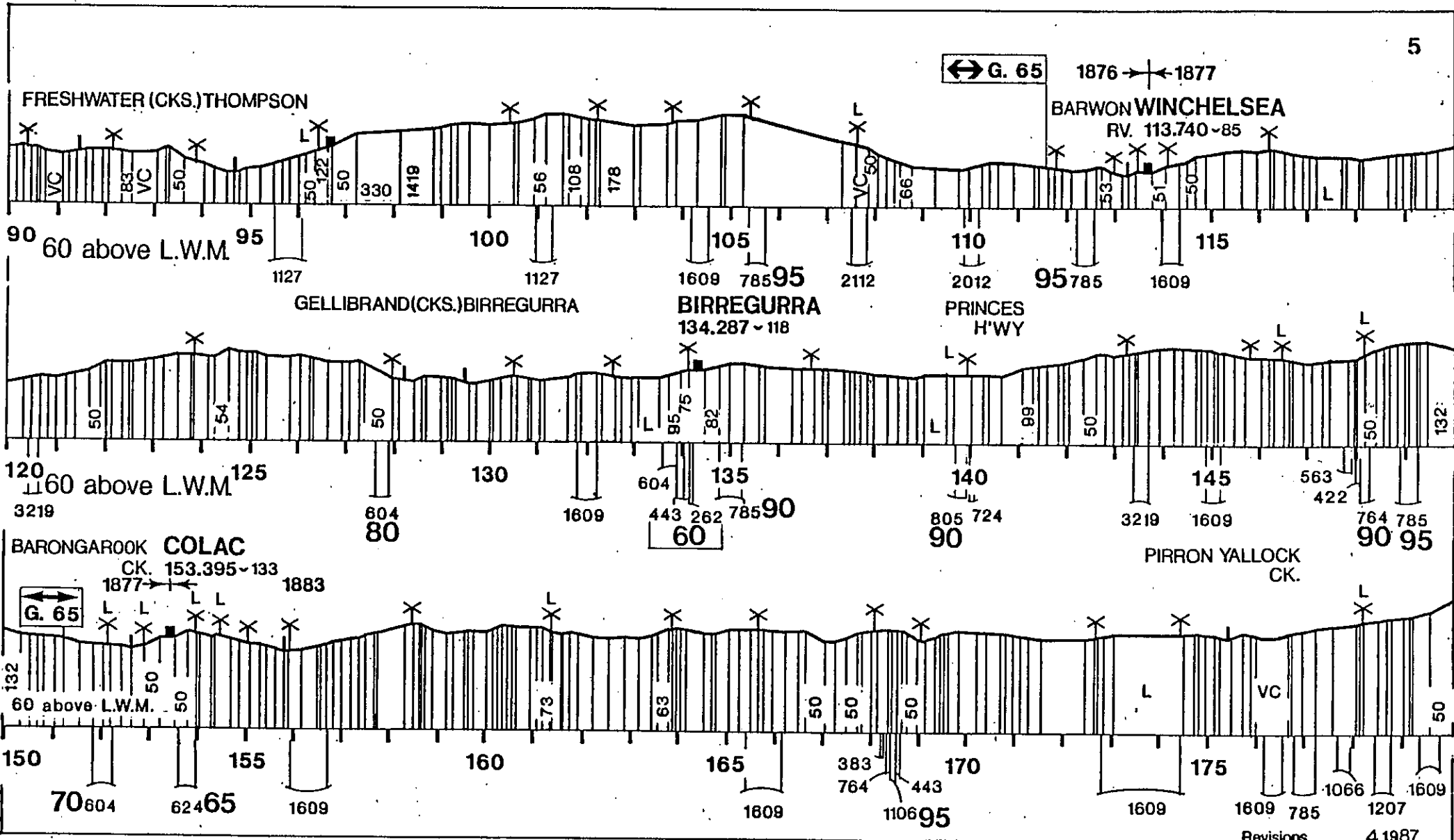


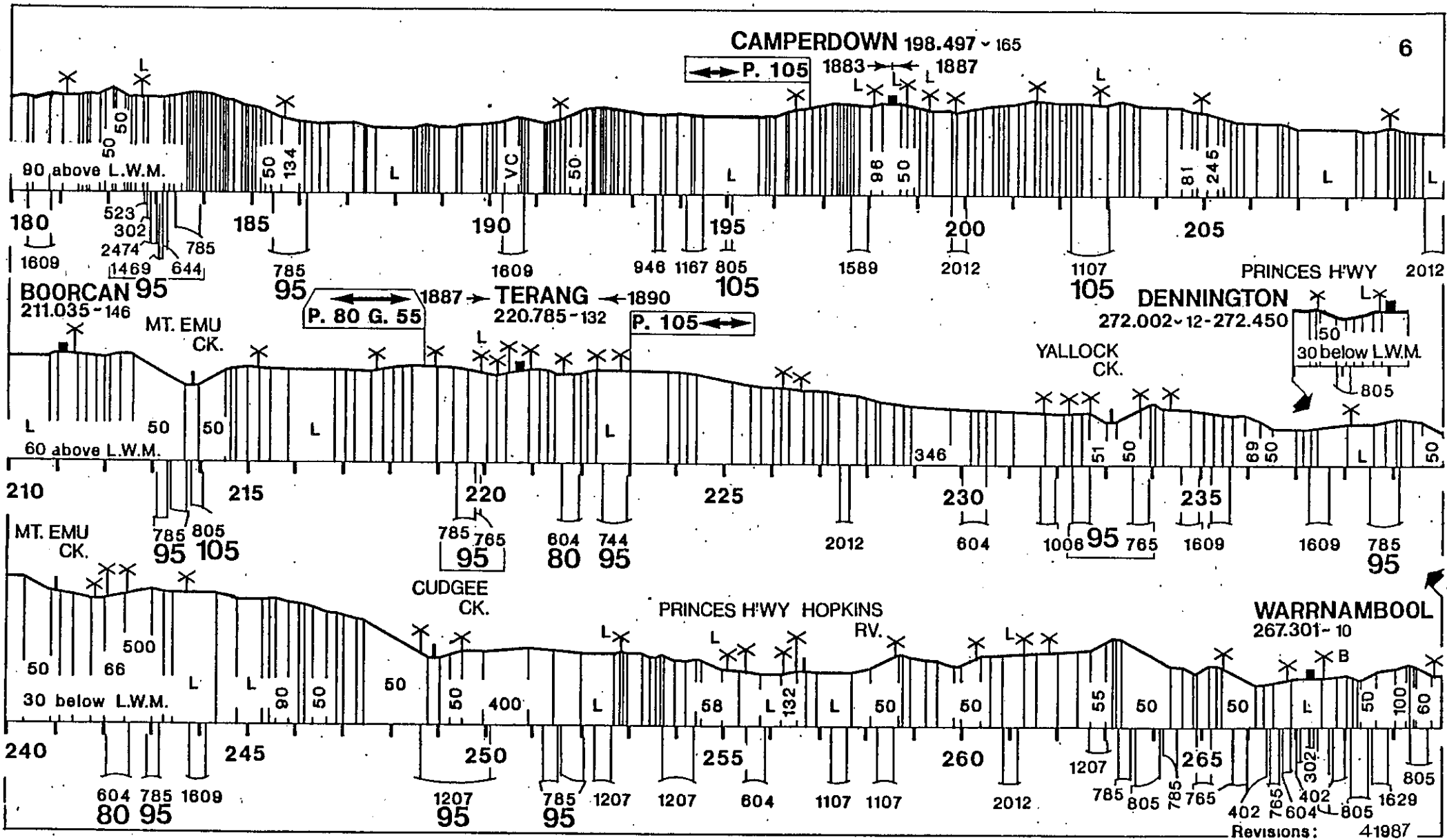


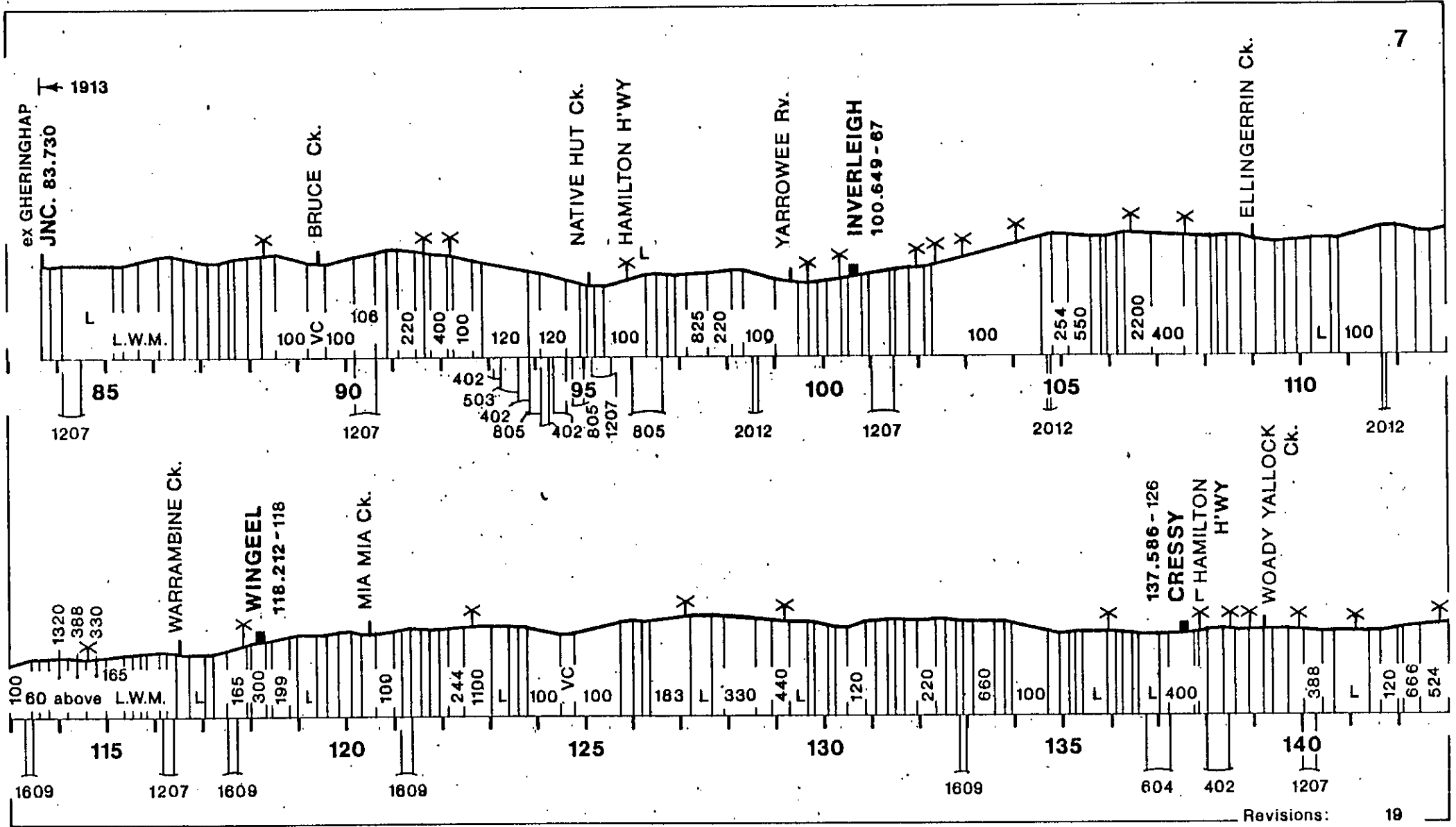
T't'm - Sns page 9

Revisions: 7 1987

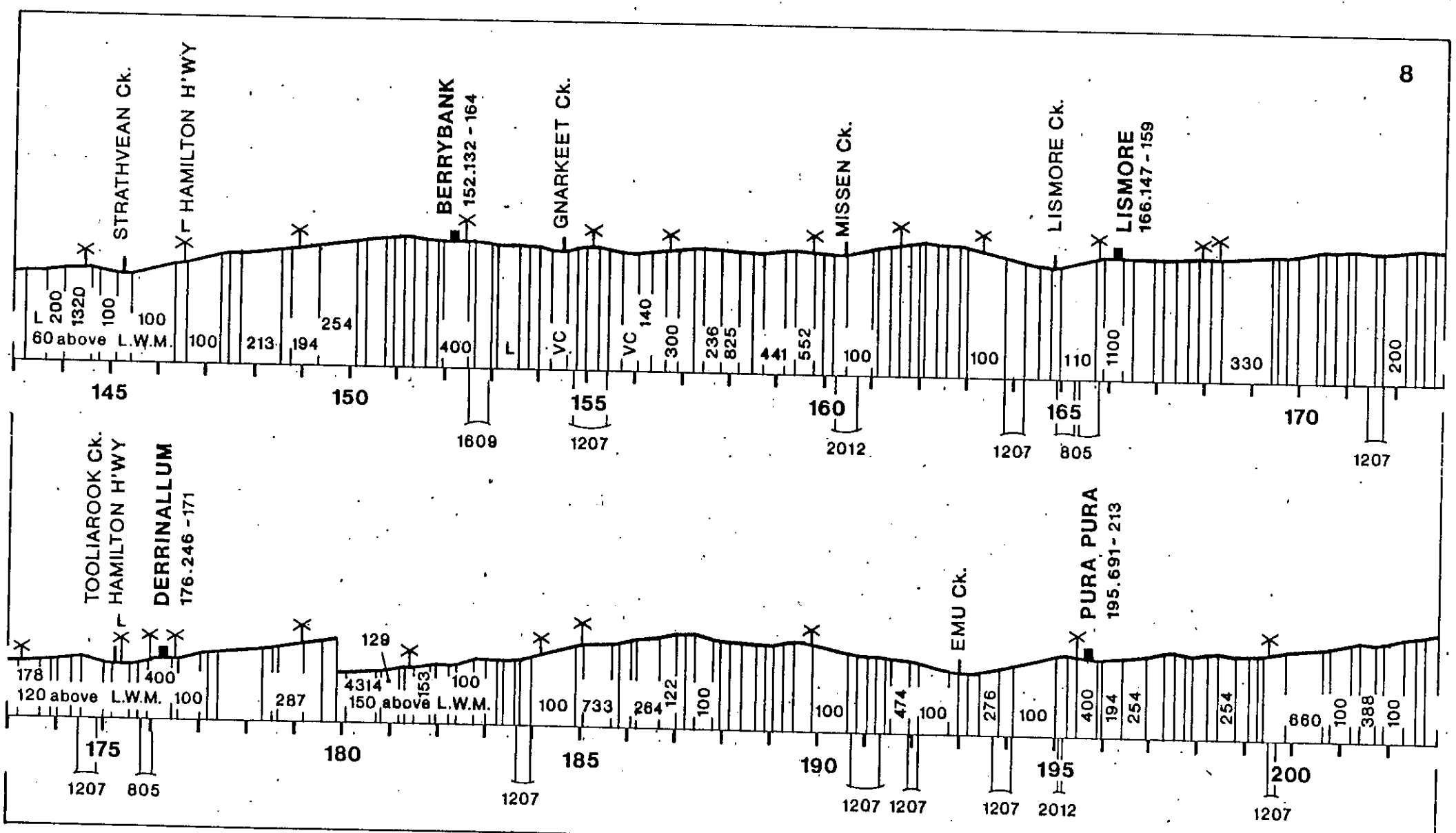


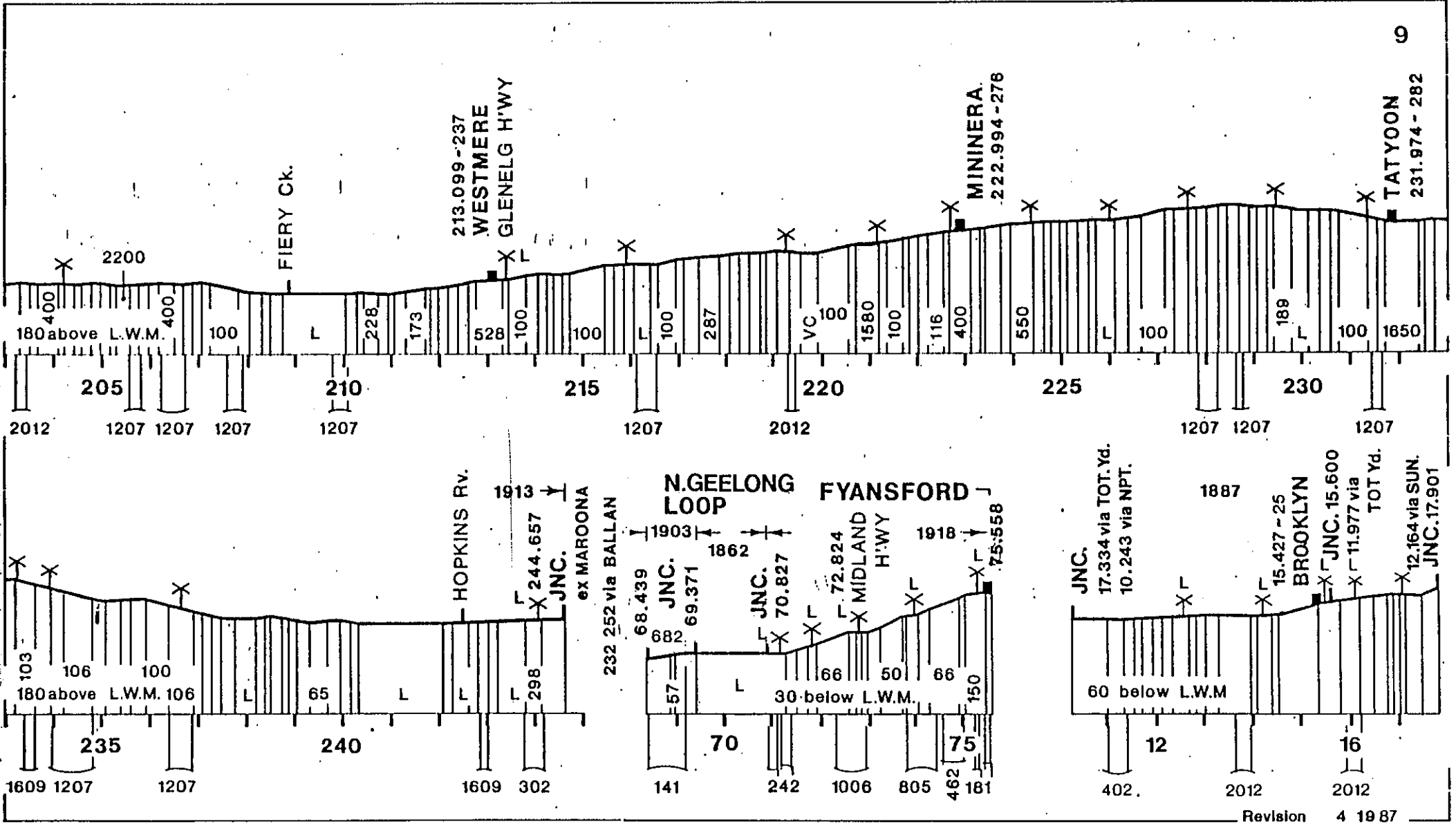


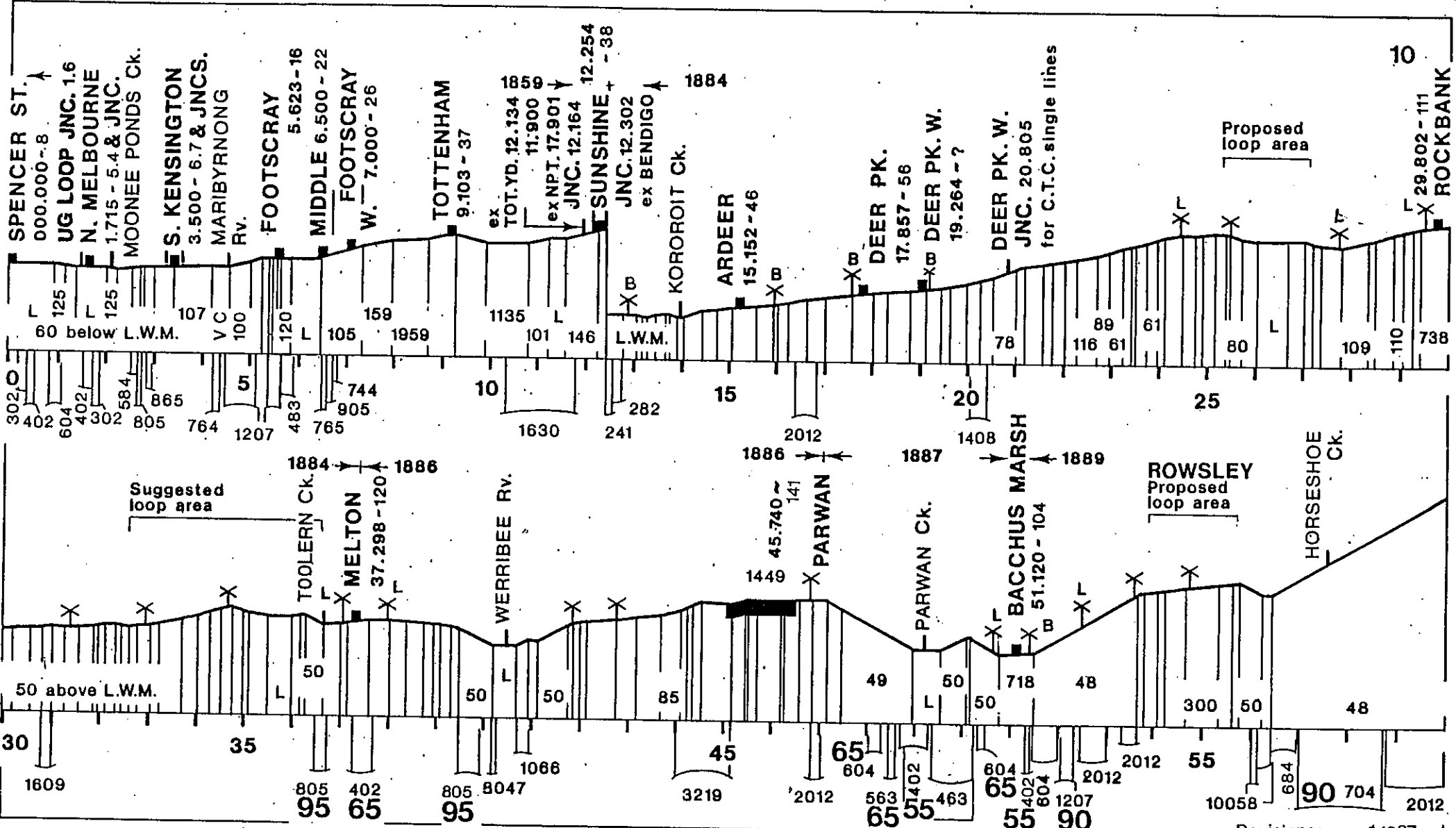






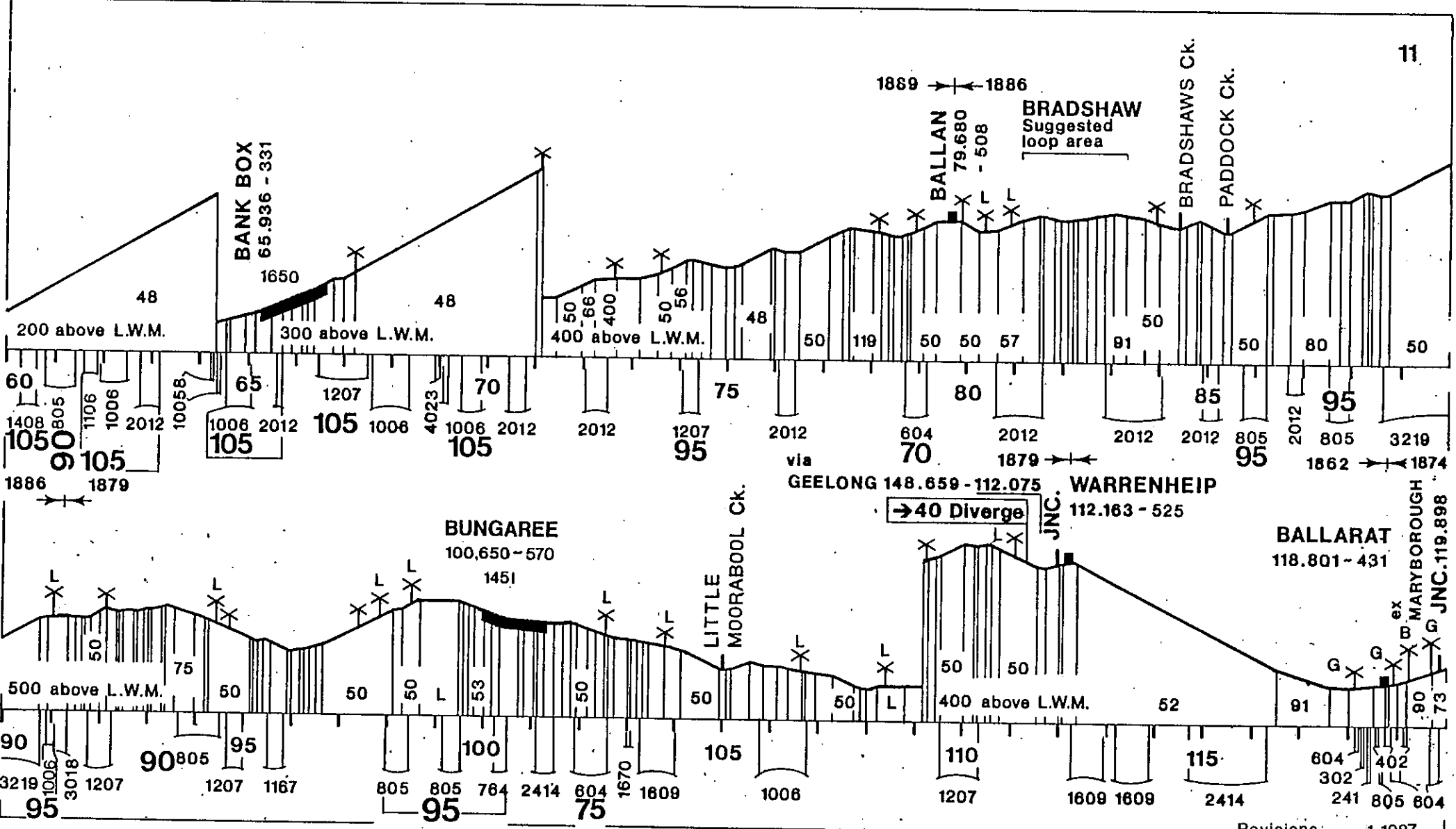


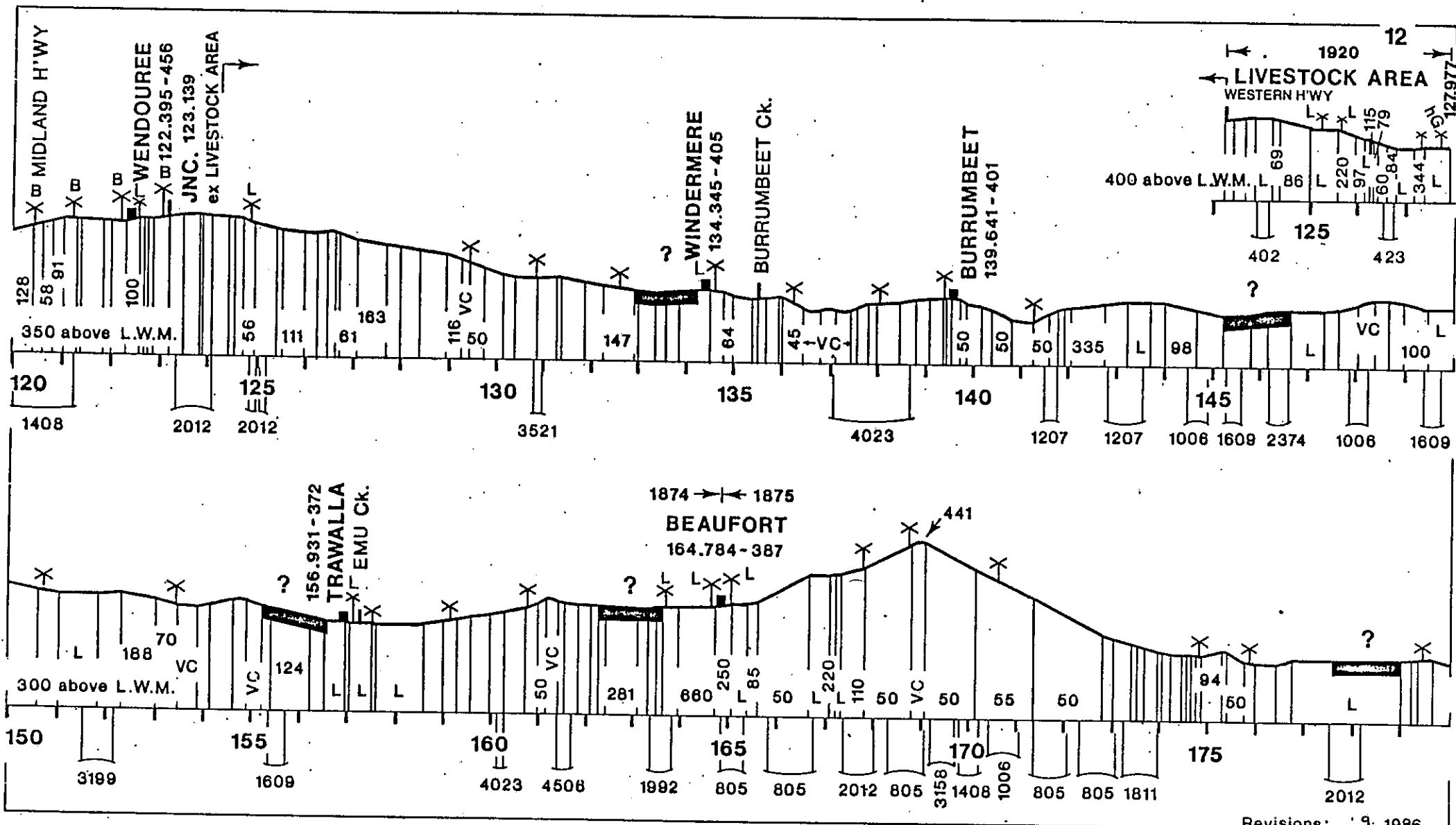


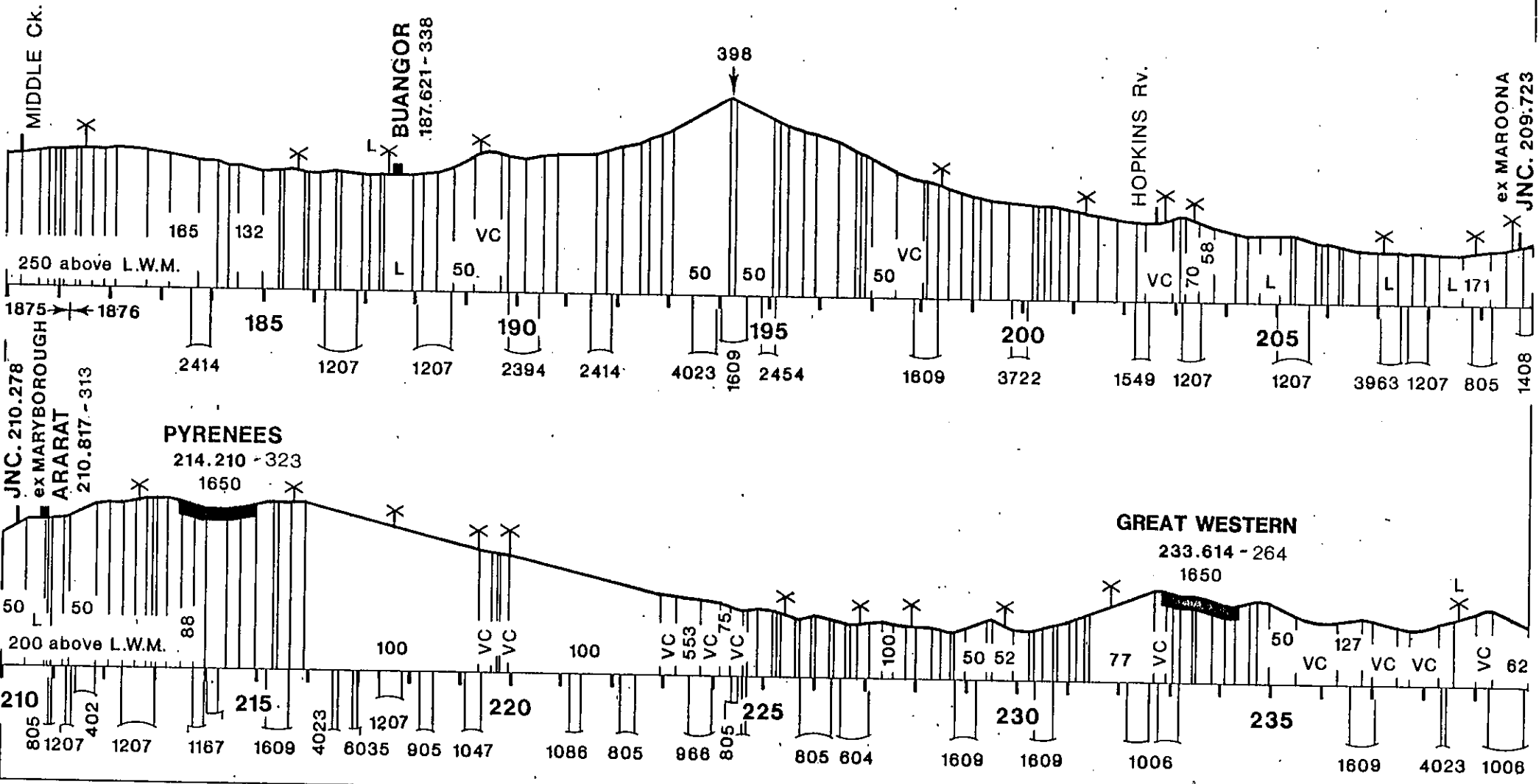


SPENCER ST. 000.000 - 8  
 UG LOOP JNC. 1.6  
 N. MELBOURNE 1.715 - 5.4 & JNC.  
 MOONEE PONDS CK.  
 S. KENSINGTON 3.500 - 6.7 & JNCs.  
 MARIBYRNONG Rv.  
 FOOTSCRAY 5.623 - 16  
 MIDDLE 6.500 - 22  
 FOOTSCRAY W. 7.000 - 26  
 TOTTENHAM 9.103 - 37  
 ex TOT. YD. 12.134 1859  
 11.900  
 ex NPT. 17.901  
 JNC. 12.164 12.254  
 SUNSHINE - 38  
 JNC. 12.302  
 ex BENDIGO 1884  
 KOROROIT CK.  
 ARDEER 15.152 - 46  
 DEER PK. 17.857 - 56  
 DEER PK. W. 19.264 - ?  
 DEER PK. W. JNC. 20.805  
 for C.T.C. single lines  
 Proposed loop area  
 29.802 - 111  
 ROCKBANK

302.0  
 402  
 604  
 302  
 584  
 805  
 764  
 1207  
 483  
 765  
 744  
 905  
 10  
 1630  
 241  
 282  
 15  
 2012  
 20  
 1408  
 25  
 89  
 116 61  
 61  
 80  
 109  
 110  
 738  
 50 above L.W.M.  
 50  
 50  
 50  
 85  
 49  
 50  
 50  
 718  
 48  
 300  
 50  
 48  
 30  
 1609  
 35  
 805  
 402  
 805  
 8047  
 3219  
 2012  
 65  
 604  
 563  
 1402  
 55  
 463  
 65  
 604  
 55  
 402  
 604  
 1207  
 2012  
 2012  
 55  
 10058  
 684  
 90  
 704  
 2012  
 Suggested loop area  
 TOOLERN CK. 1884  
 MELTON 37.298 - 120 1886  
 WERRIBEE Rv.  
 PARWAN 1449  
 45.740 ~ 141  
 PARWAN CK.  
 BACCHUS MARSH 51.120 - 104  
 1886  
 1887  
 1889  
 ROWSLEY Proposed loop area  
 HORSESHOE CK.







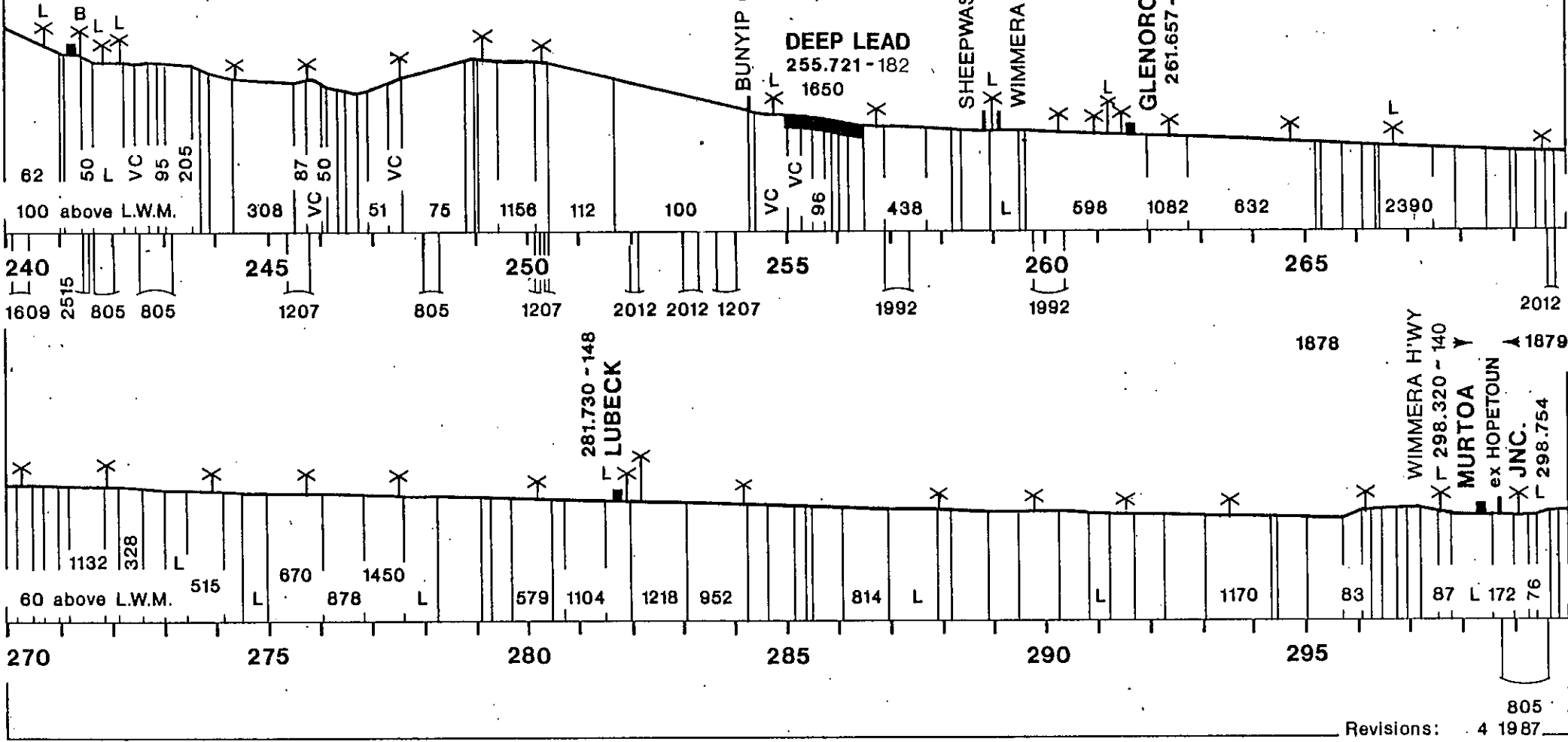
1876  $\nabla$  1878  
STAWELL  
241.214 - 232

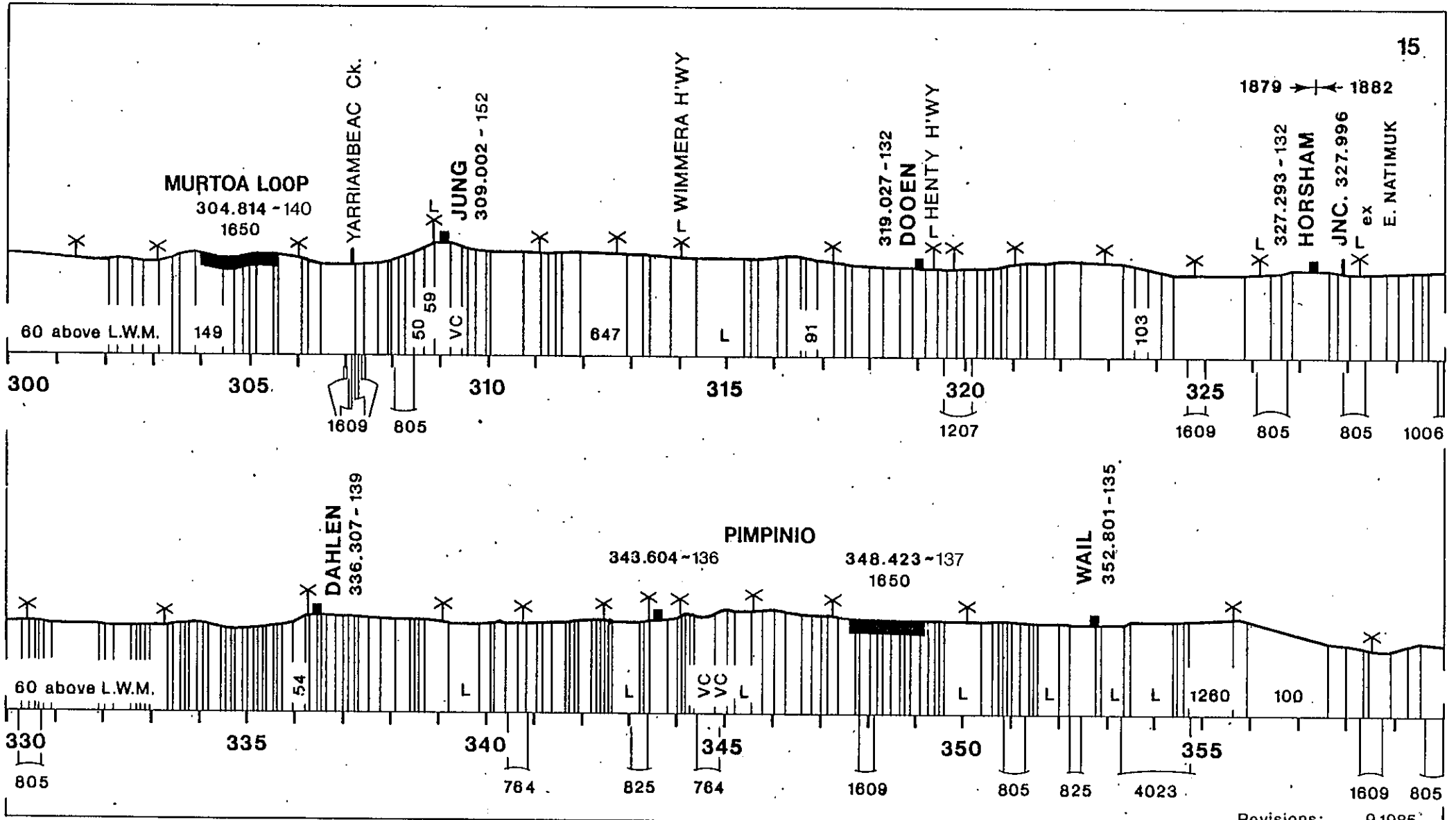
DEEP LEAD  
255.721 - 182  
1650

GLENORCHY  
261.657 - 173

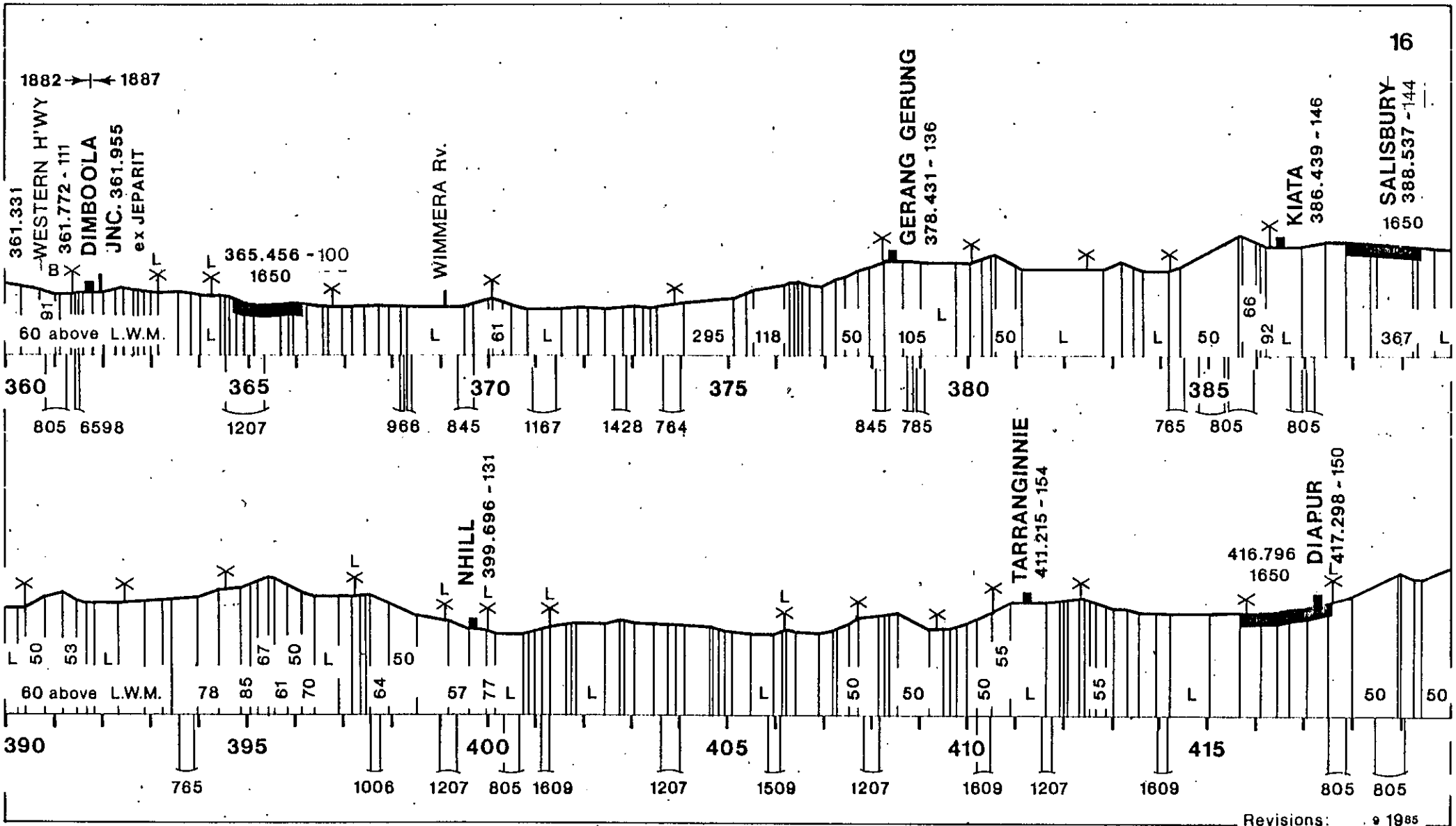
281.730 - 148  
LUBECK

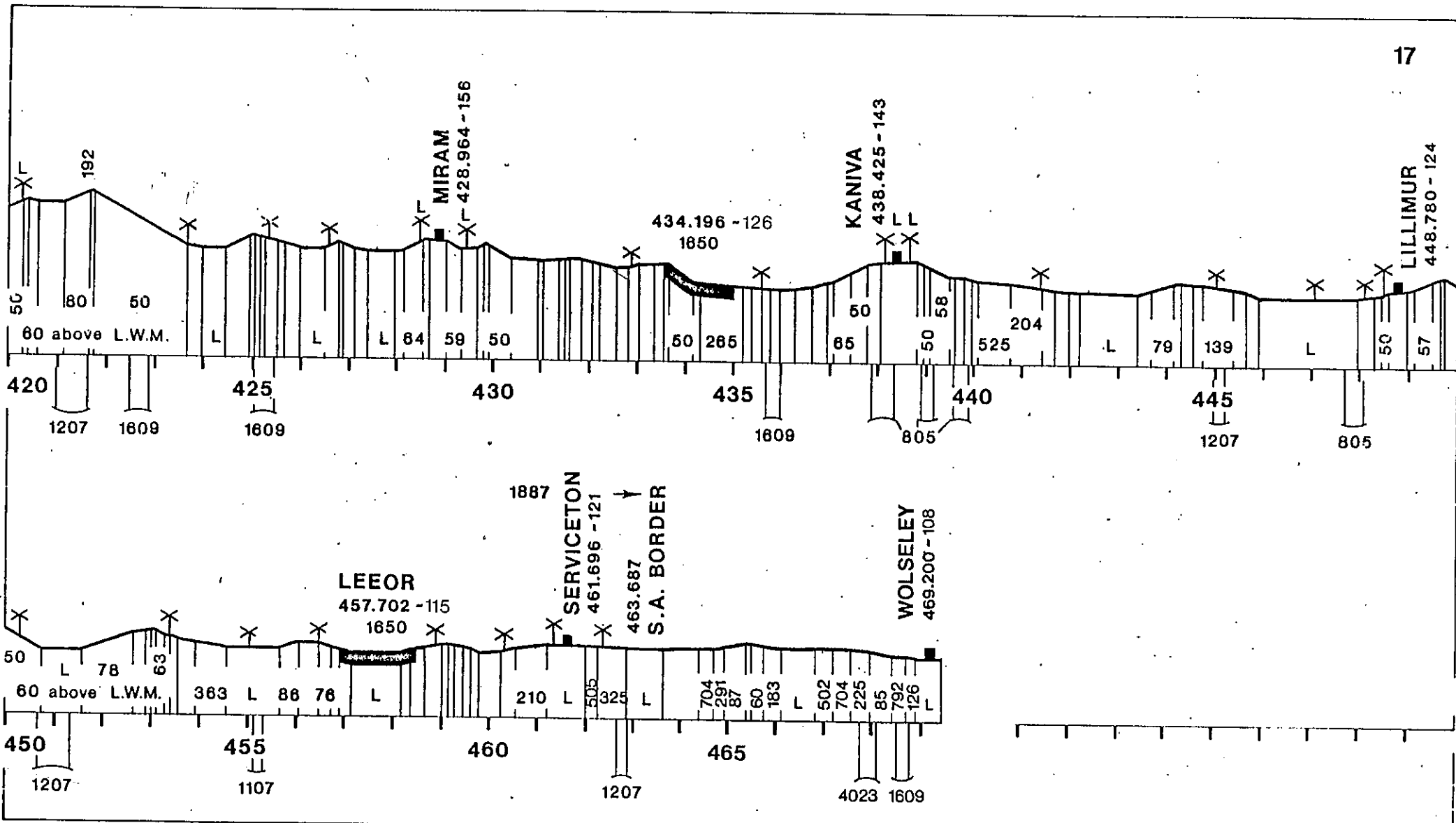
WIMMERA H'WY  
MURTOA  
ex HOPETOUN  
JNC.

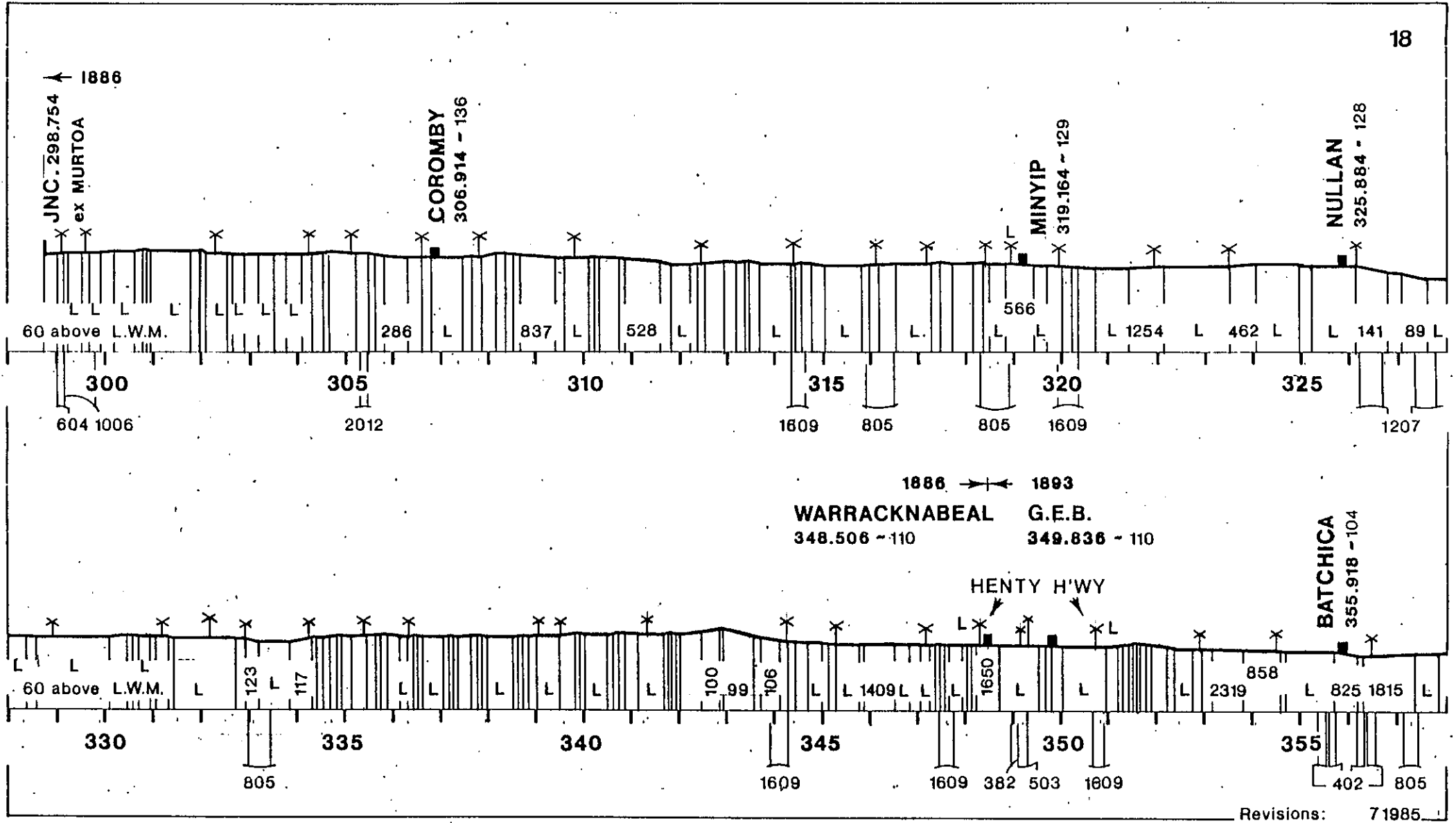


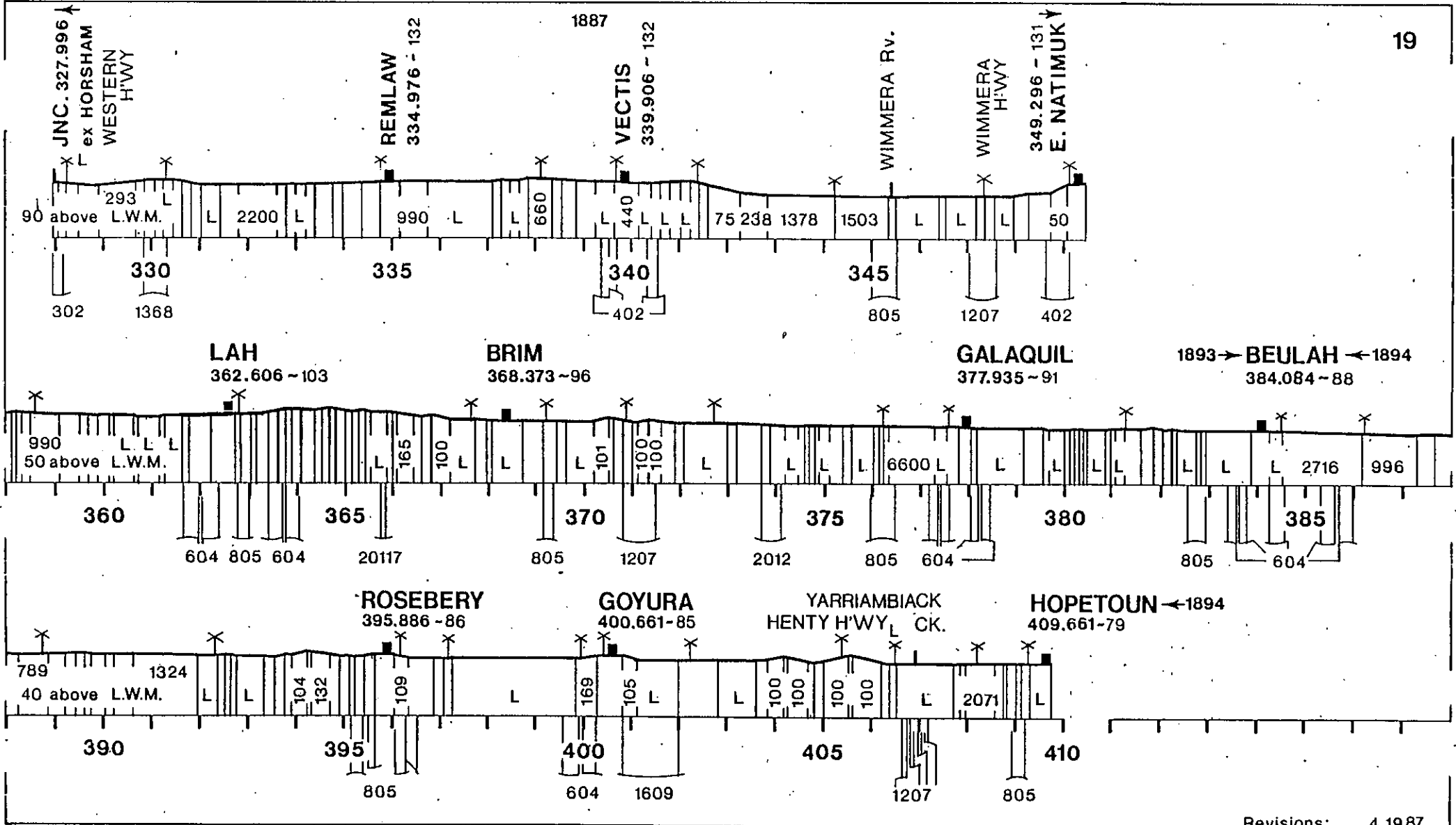










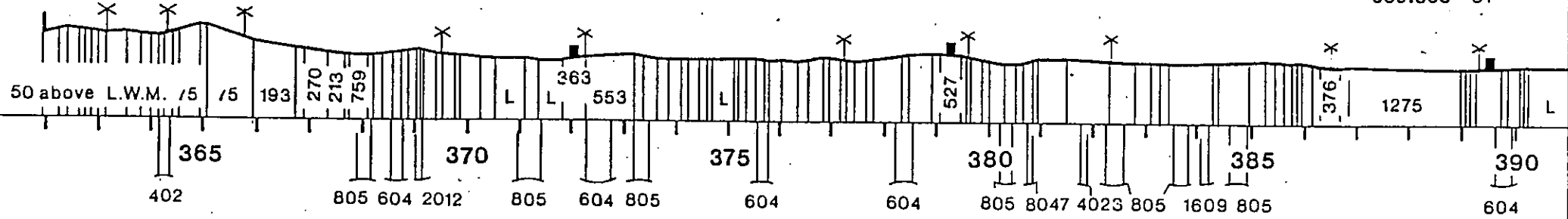


JNC. 361.955 ← 1894  
ex DIMBOOLA

ARKONA  
372.094 - 95

ANTWERP  
379.265 - 99

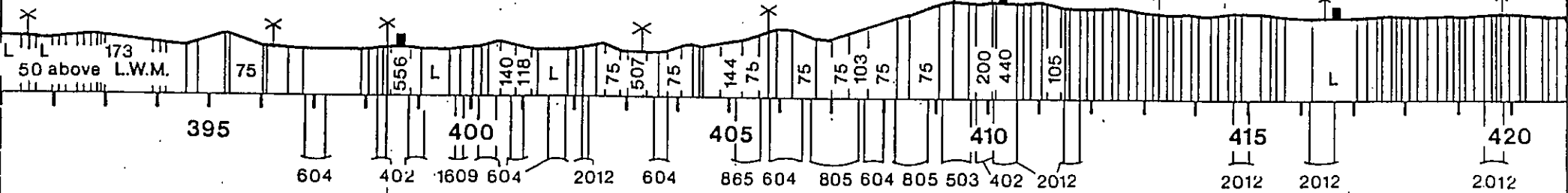
TARRANYURK  
389.583 ~ 91



JEPARIT  
398.692 ~ 84

ELLAM  
410.283 ~ 117

PULLUT  
416.793 ~ 106



26-27

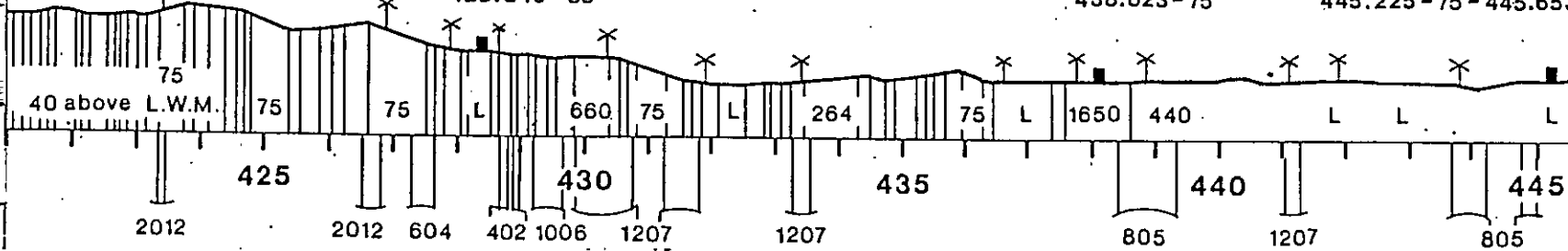
1899 → ←

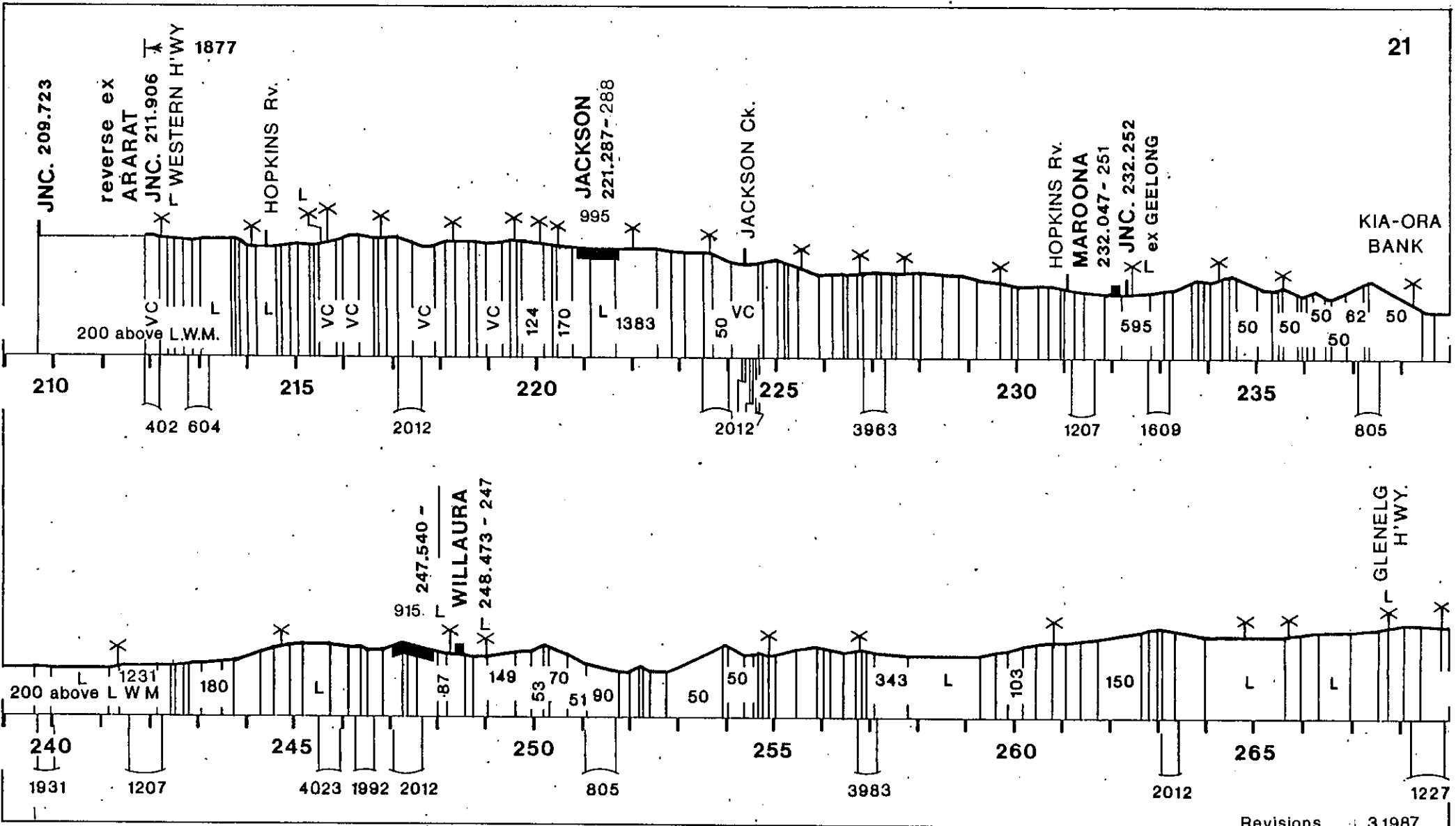
RAINBOW  
428.349 - 89

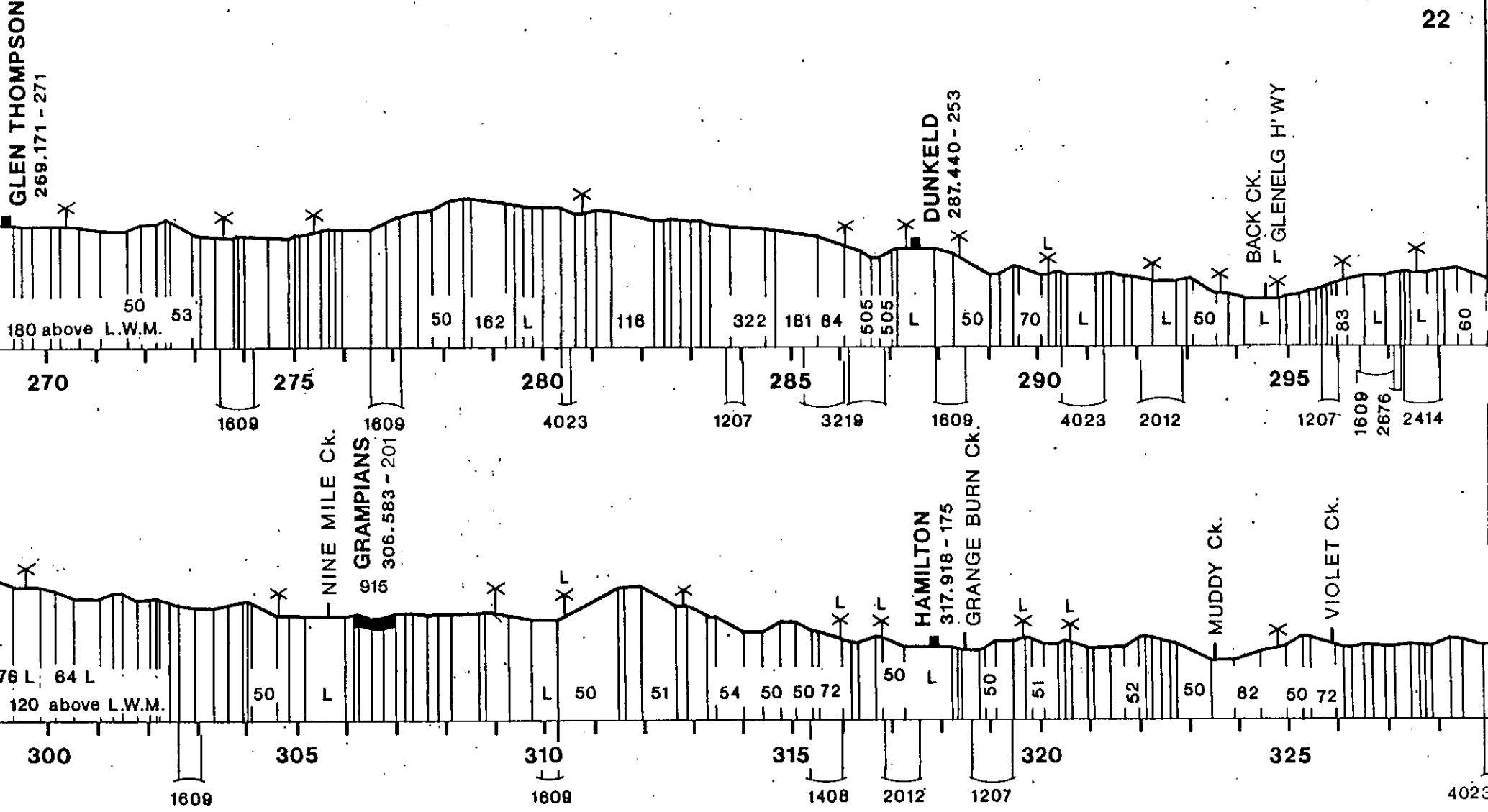
1914 →

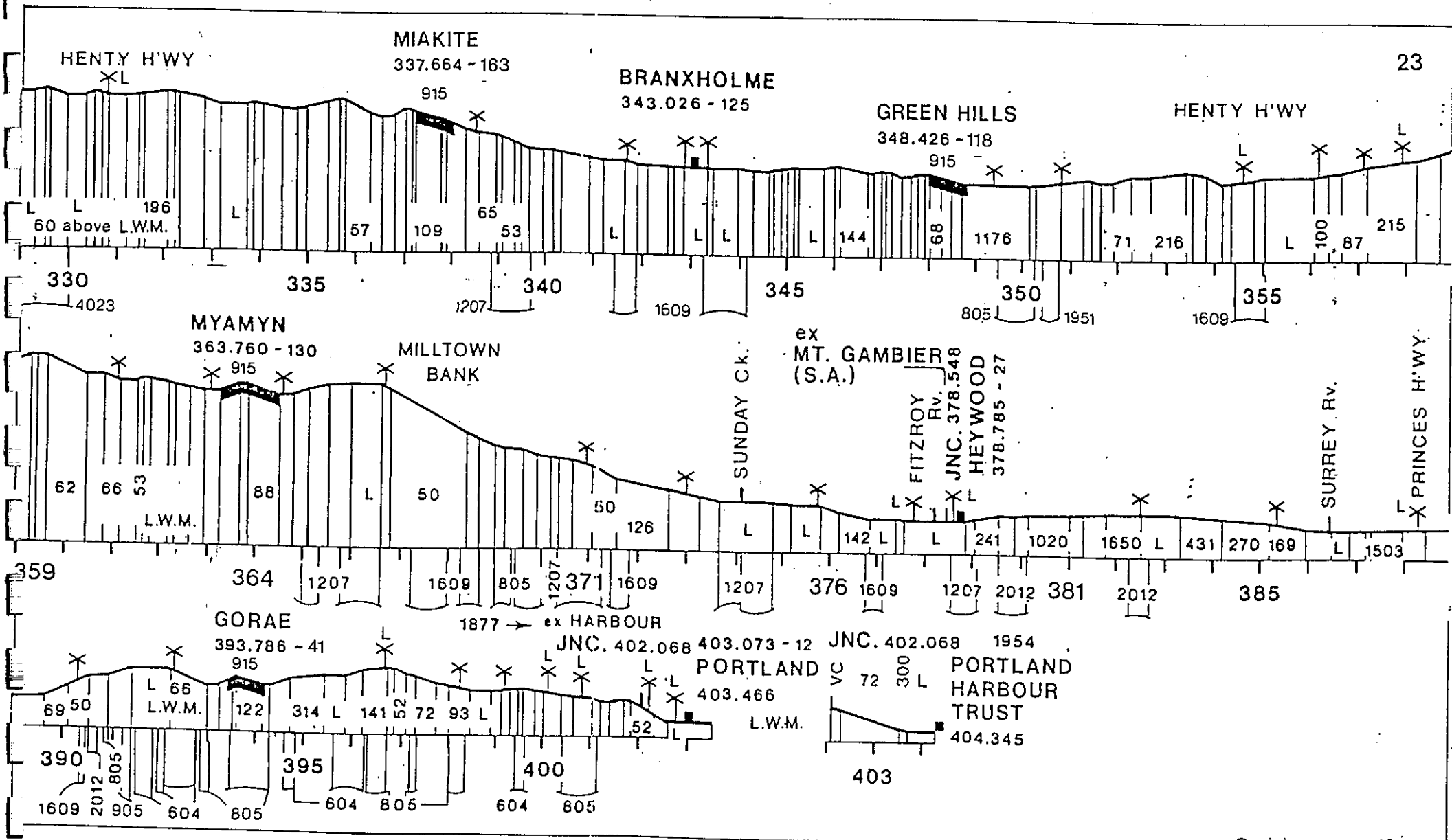
ALBACUTYA  
438.023 - 75

YAAPEET  
445.225 - 75 - 445.653











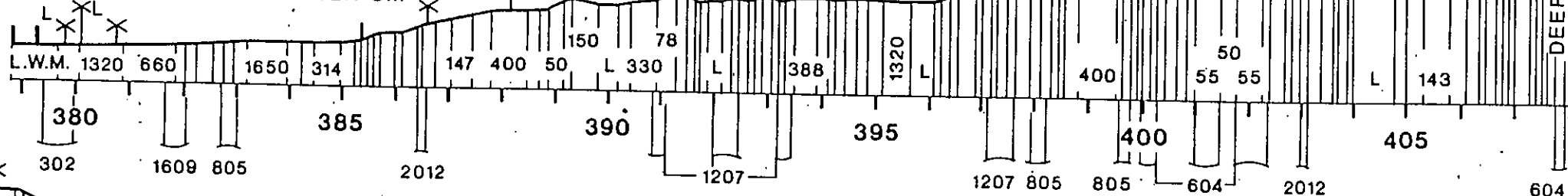
← 1916  
 ex HEYWOOD  
 JNC. 378.548

FITZROY Rv.  
 PRINCES H'WY HUNTER Ck.

24-25

SPRING Ck.

DEEP Ck.

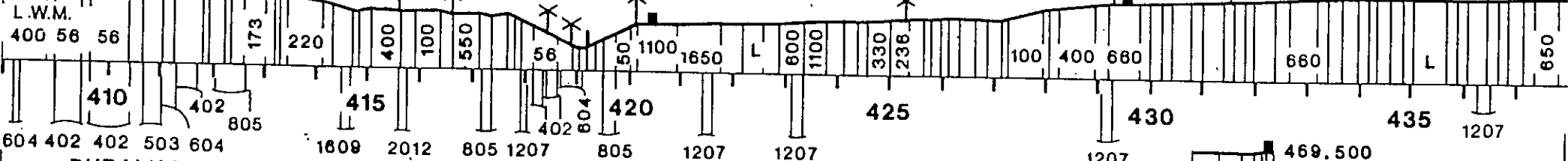


1916 ↔ 1917

DARTMOOR  
 420.446 - 34

MARP  
 429.519 - 55

GLENELG Rv.

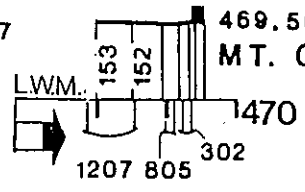
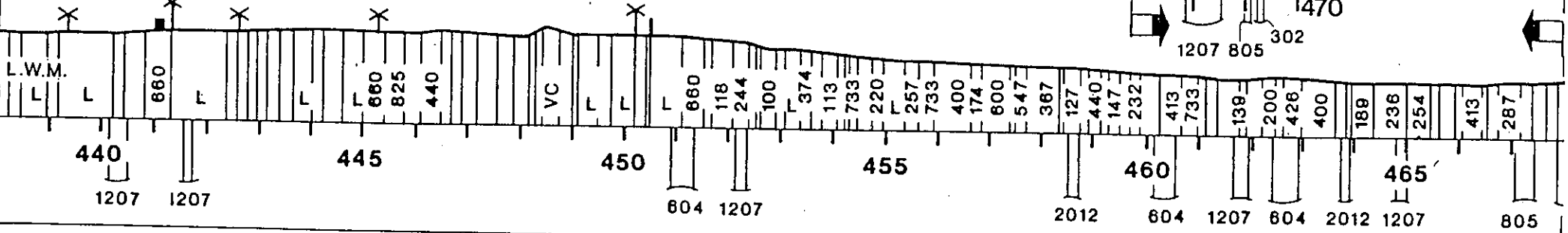


PURALKA  
 441.067 - 85

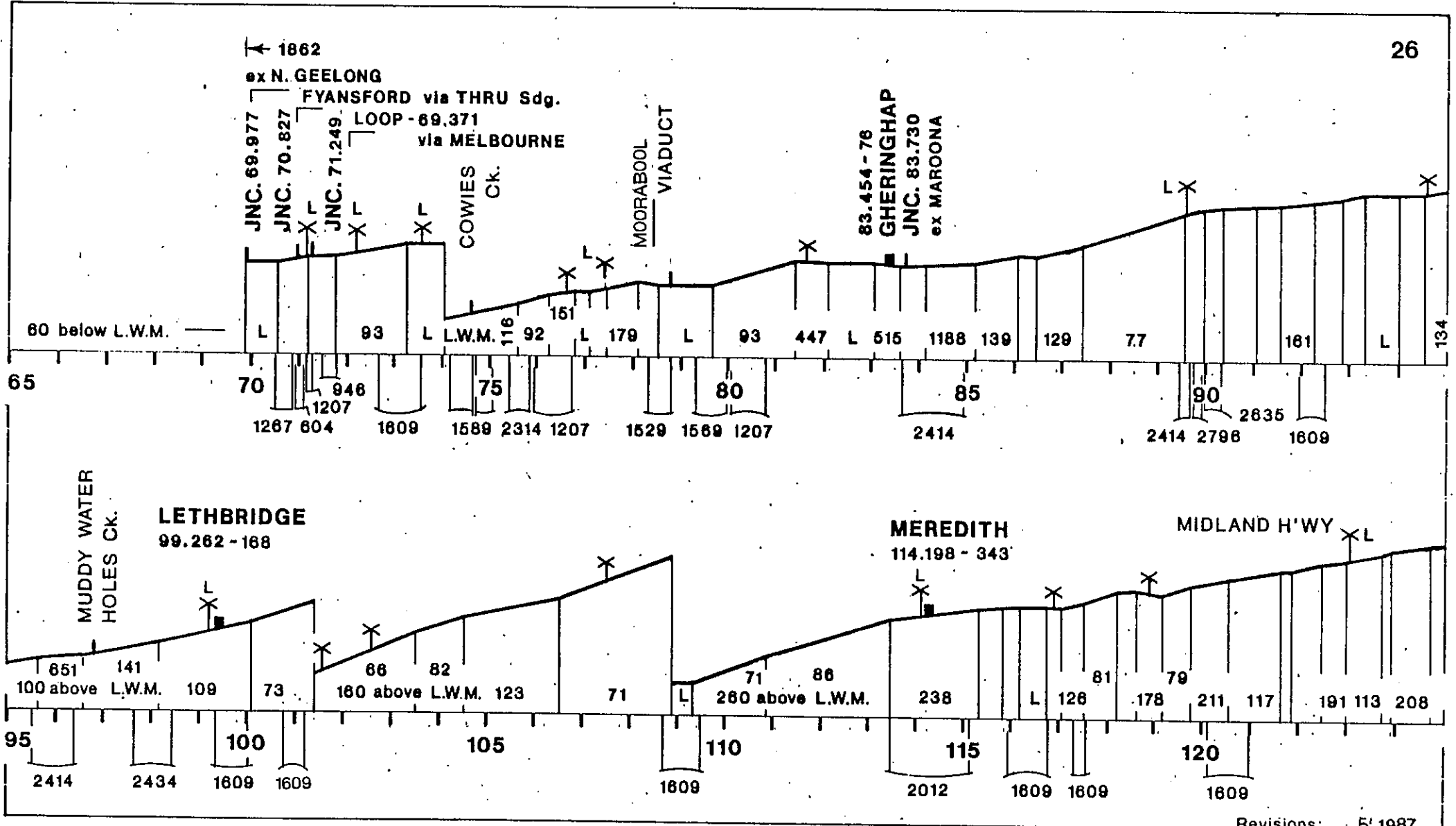
1917 → STATE BOUNDARY  
 450.429

S. AUSTRALIA

469.500  
 MT. GAMBIER



Revisions 1987



40 Diverge

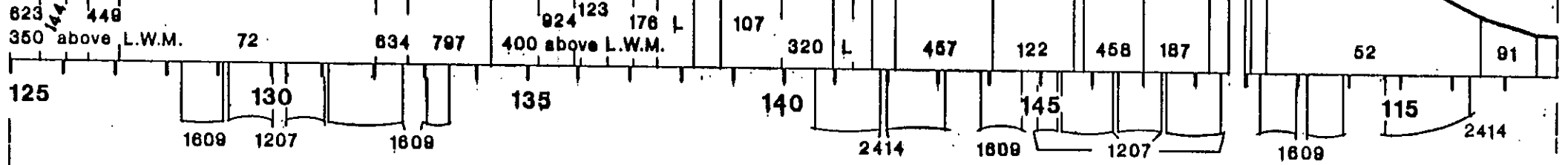
via BALLAN 112.075 - 148.659

P.F.G. 40

JNC. WARRENHEIP 112.163 - 525

P. 80

LAL LAL 134.758 - 487



CRESWICK 137.479 - 438

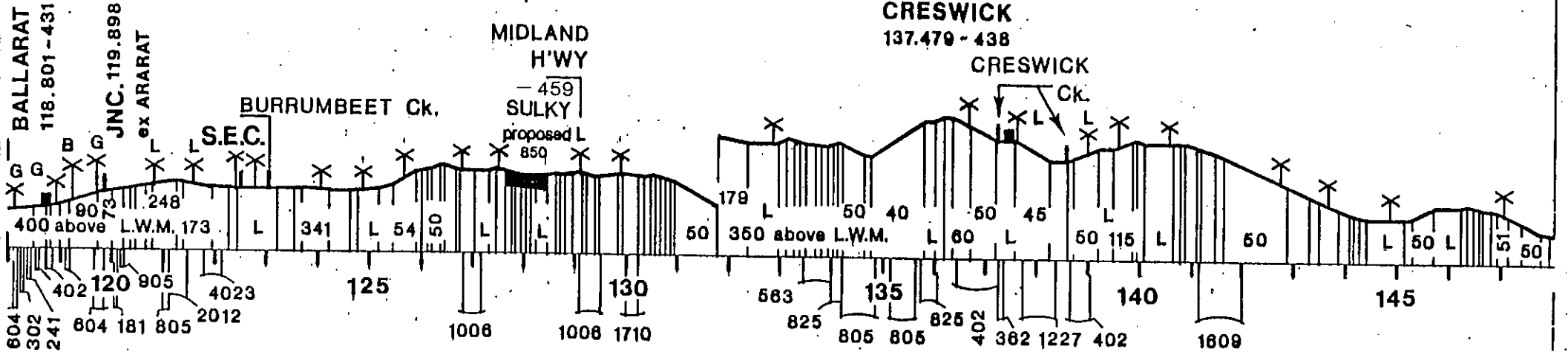
CRESWICK CK.

MIDLAND H'WY

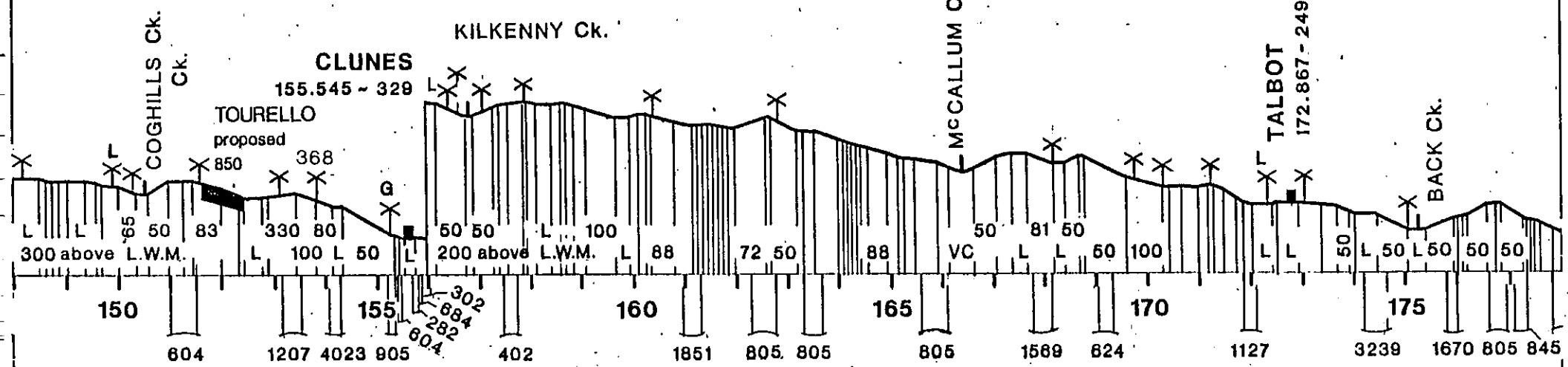
- 459  
SULKY  
proposed L  
850

BURRUMBEET Ck.

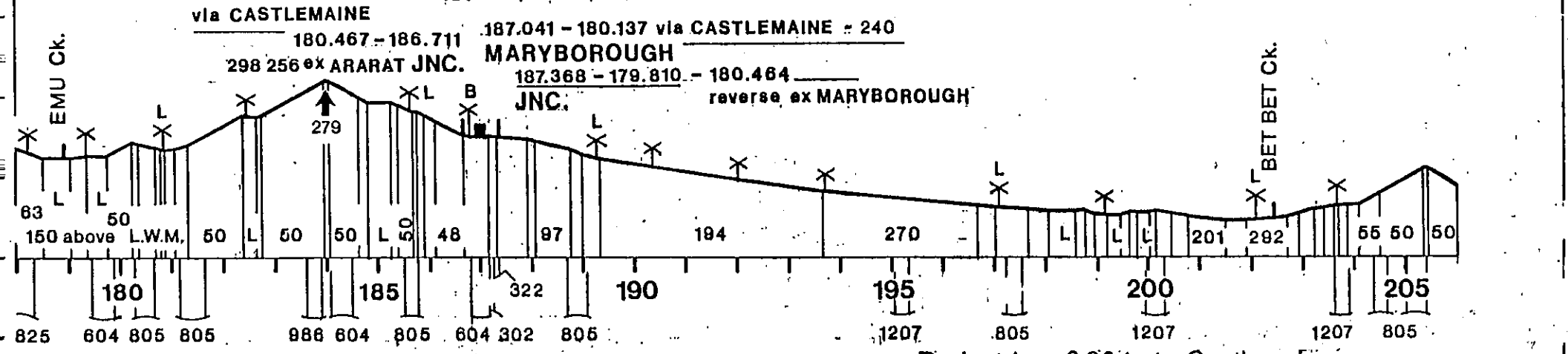
S.E.C.



1874 ↔ 1875

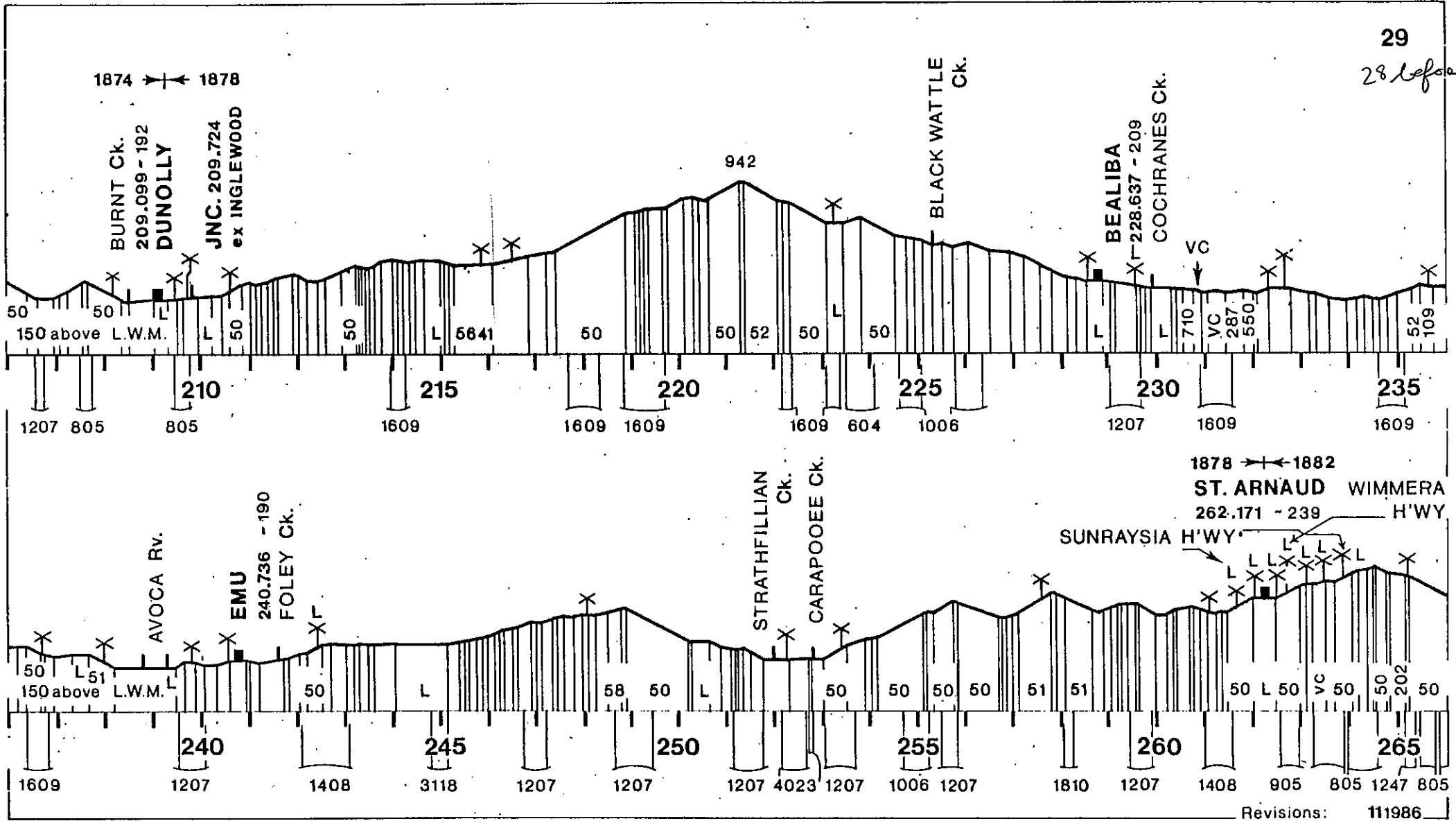


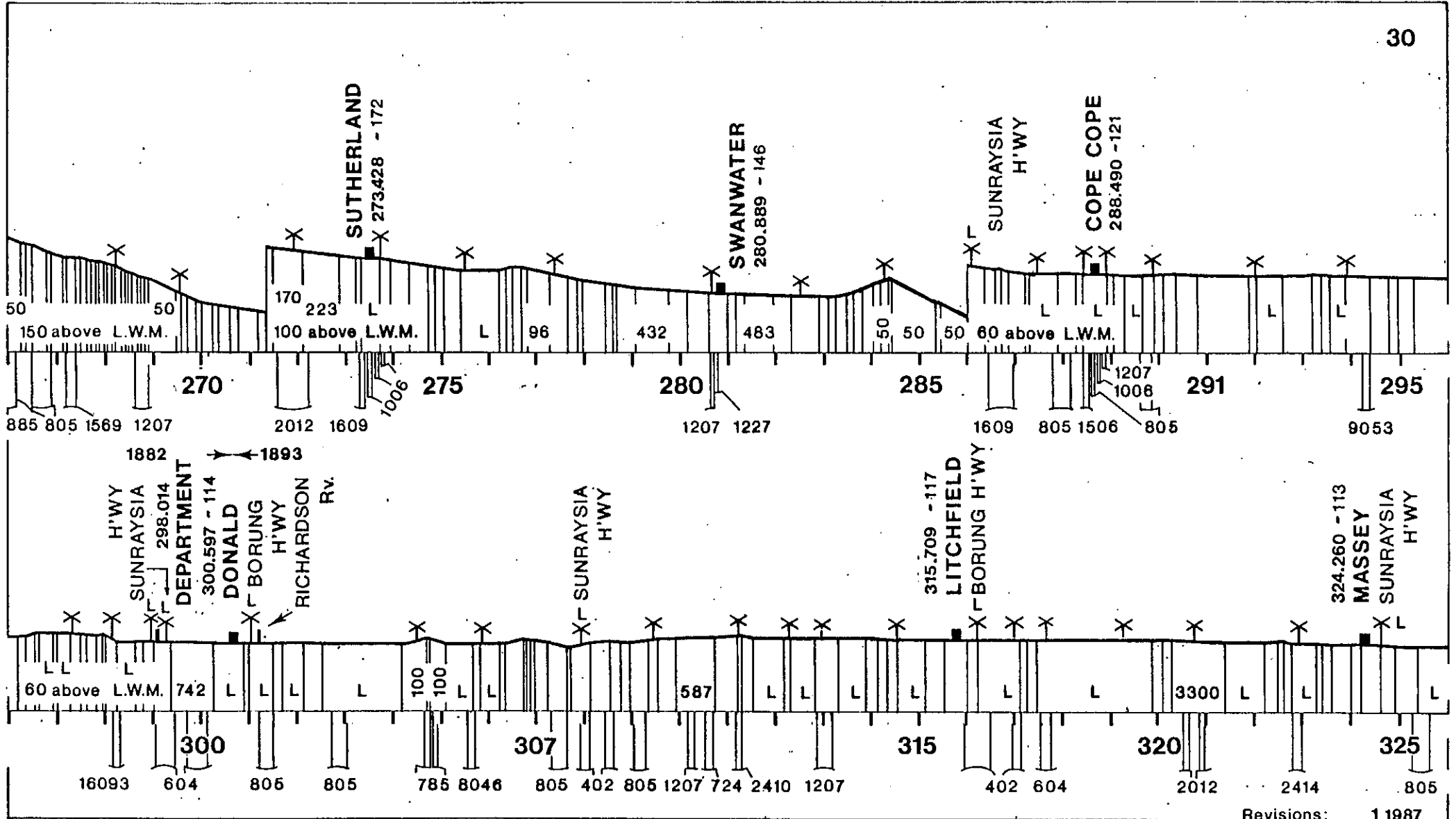
1875 ↔ 1874

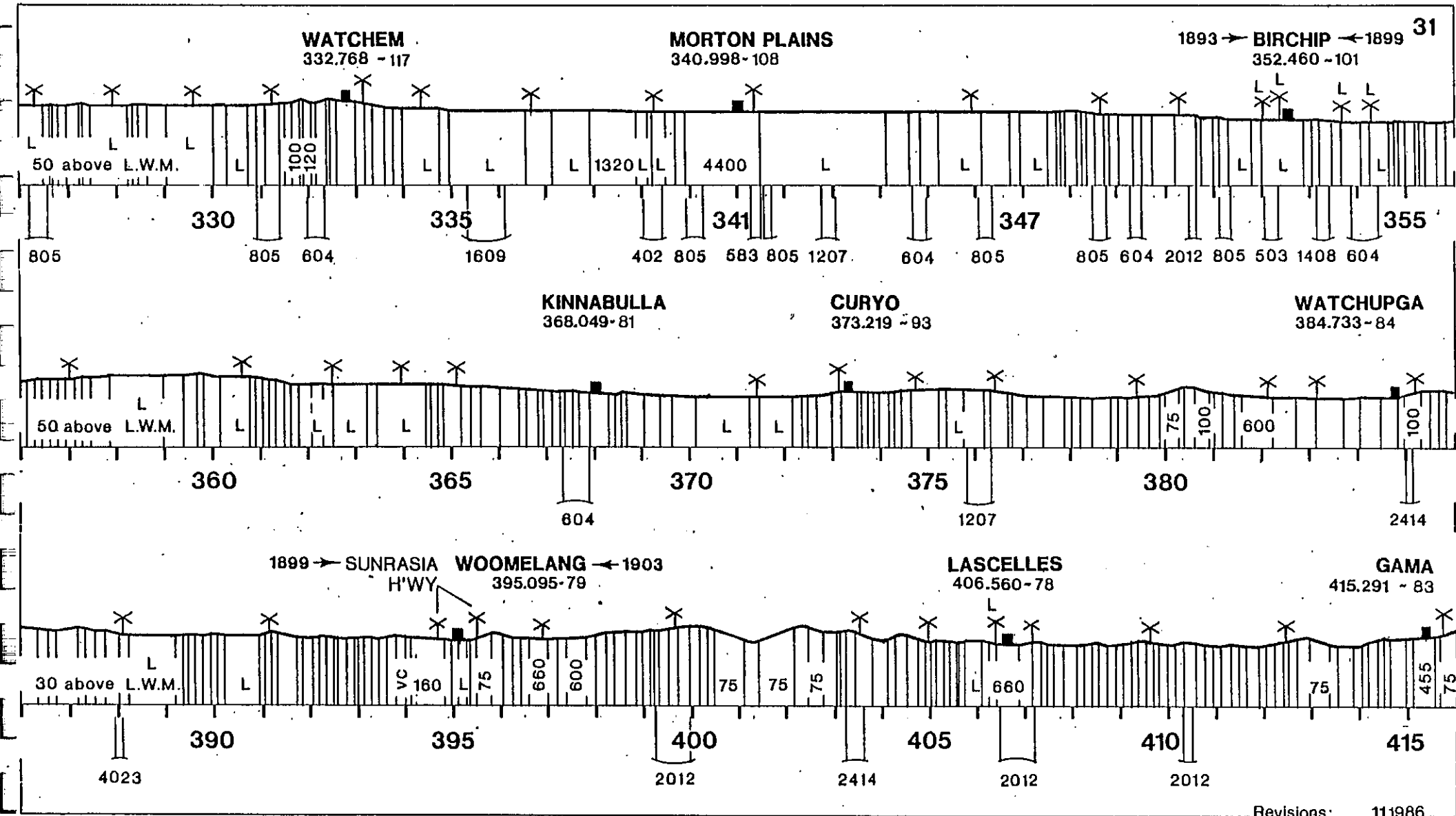


Deduct km. 6.904 via Castlemaine Revisions: 11 1986

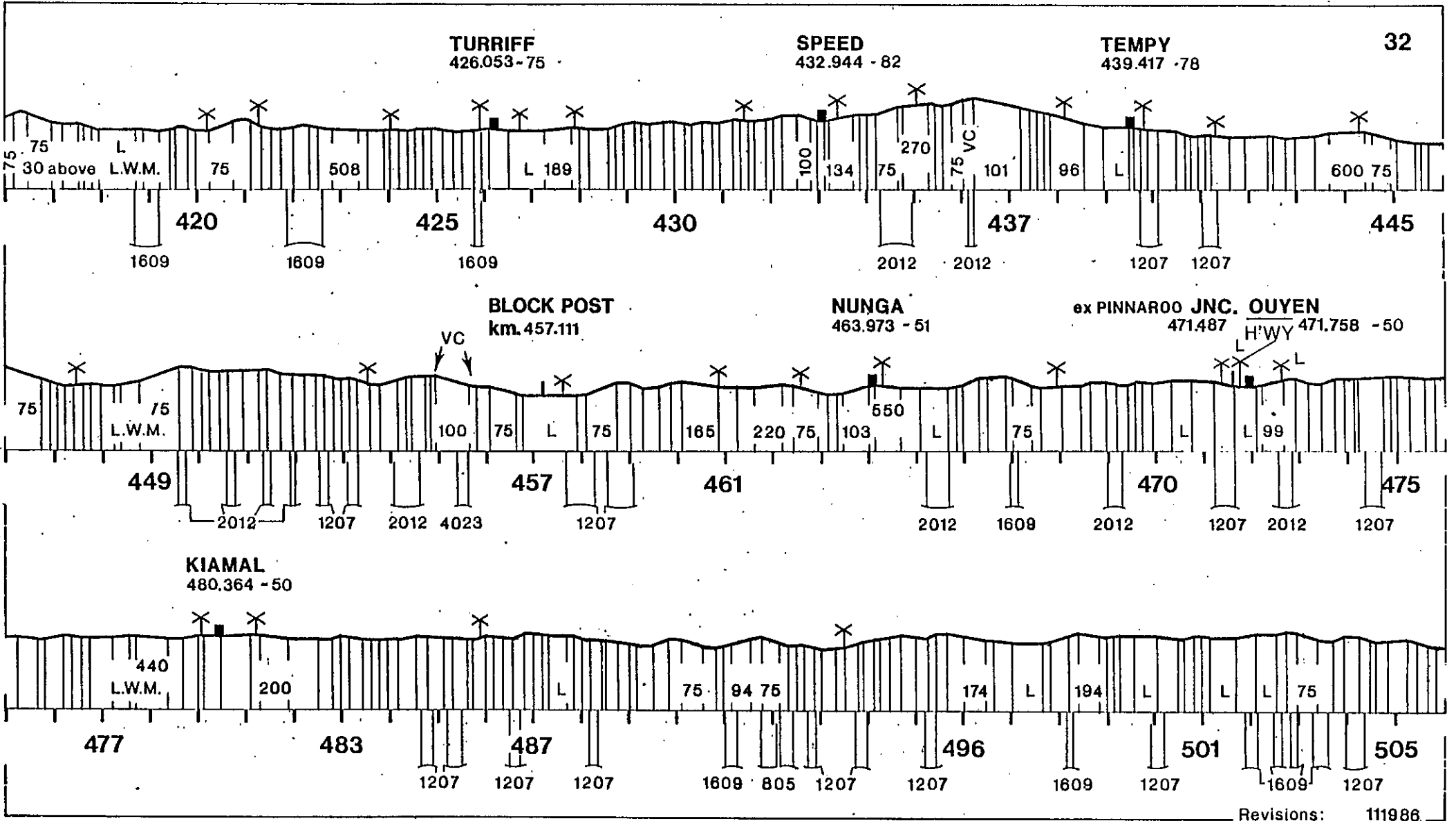
28 before 27







Revisions: 111986

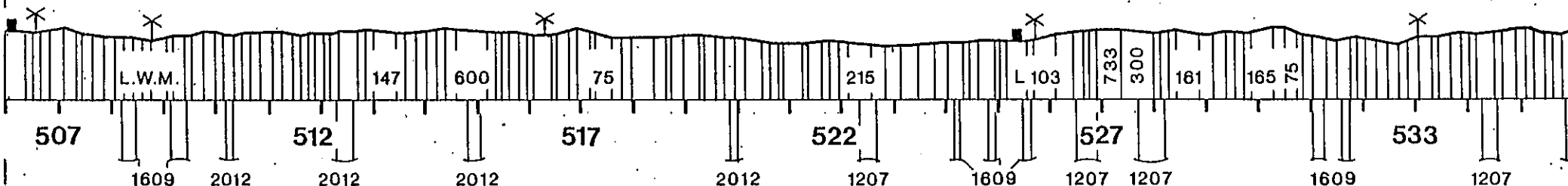




HATTAH  
506.018~48

NOWINGI  
525.265~41

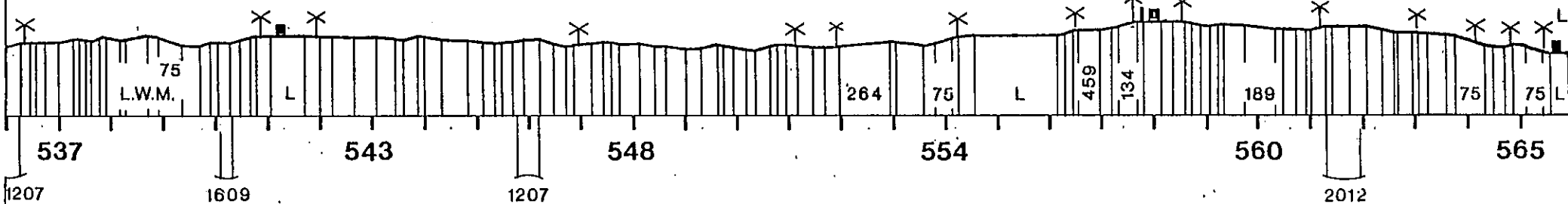
33



CARWARP  
541.108~57

EX MERINGUR JNC. REDCLIFFS  
557.806 557.955~67

IRYMPLE  
565.635~44

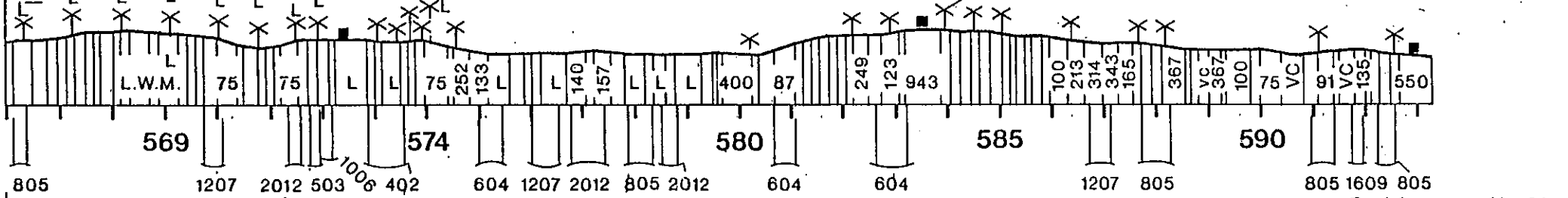


CALDER  
H'WY

STURT MILDURA  
H'WY 572.323~46

MERBEIN CALDER  
56~583.510 H'WY

YELTA  
592.900~36

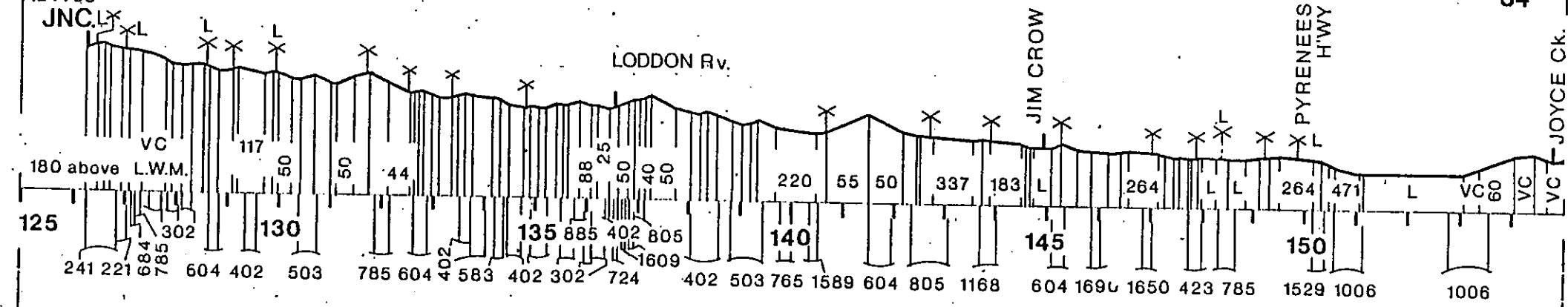


Revisions,

111986

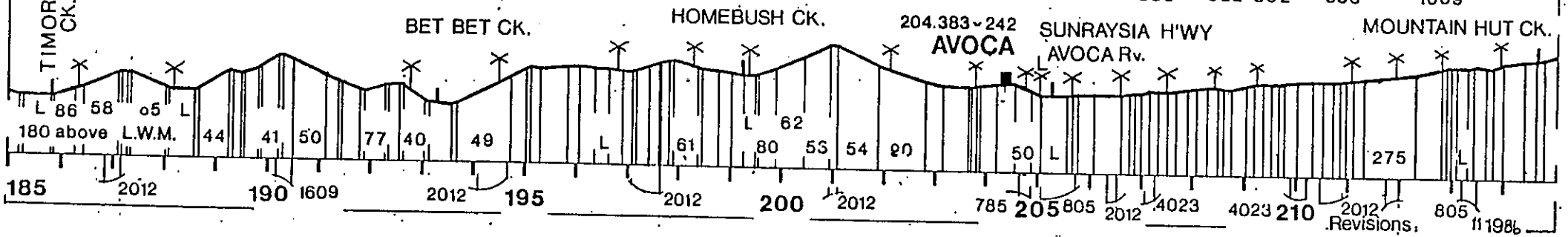
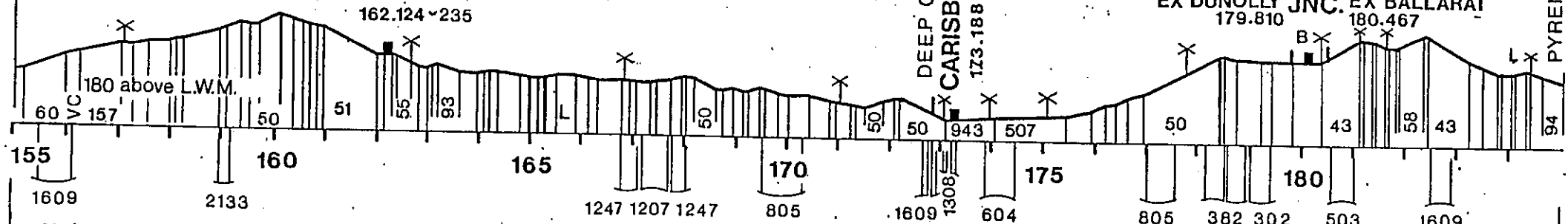
126 209 REVERSE EX CASTLEMAINE  
124 760

34

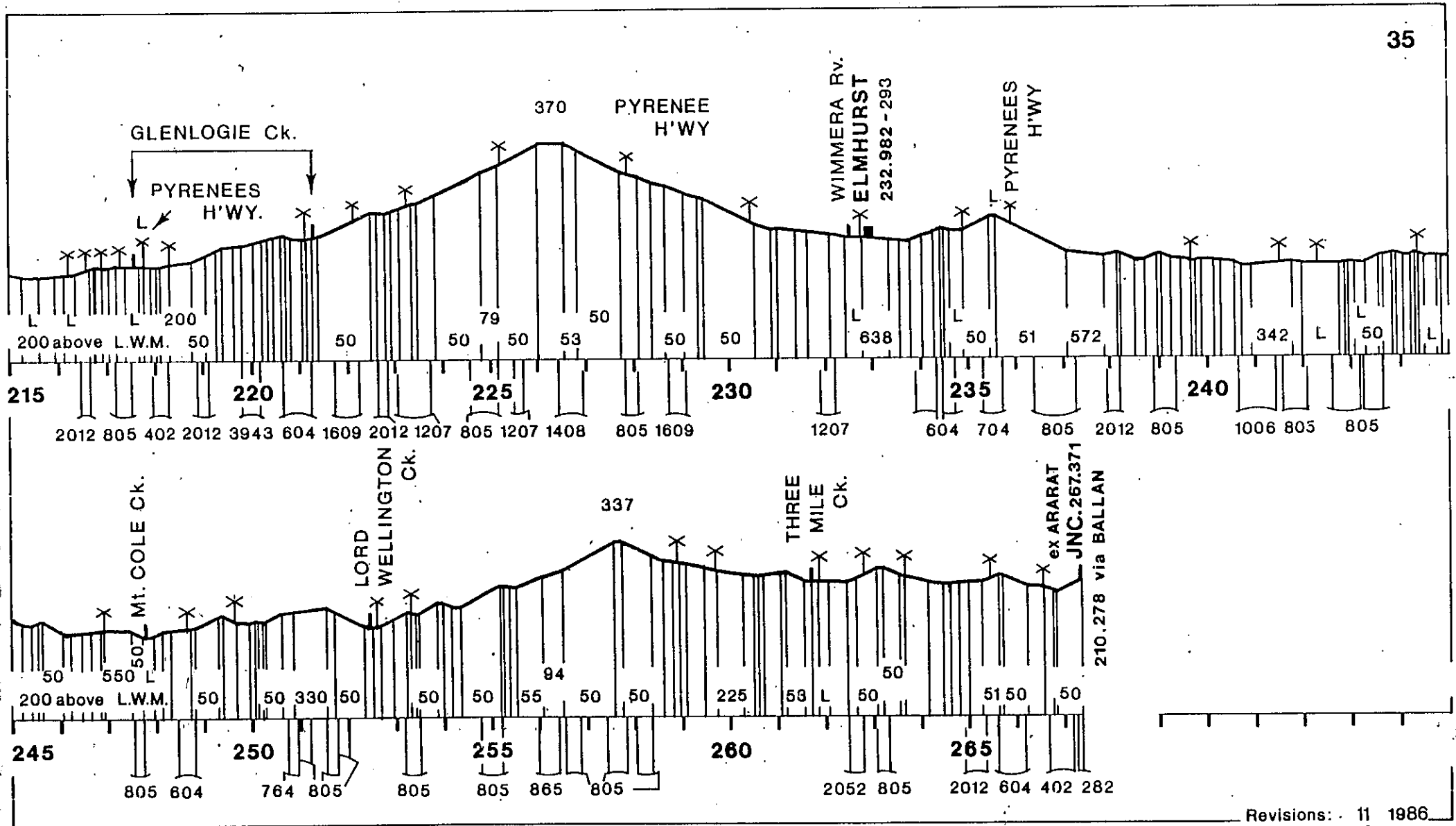


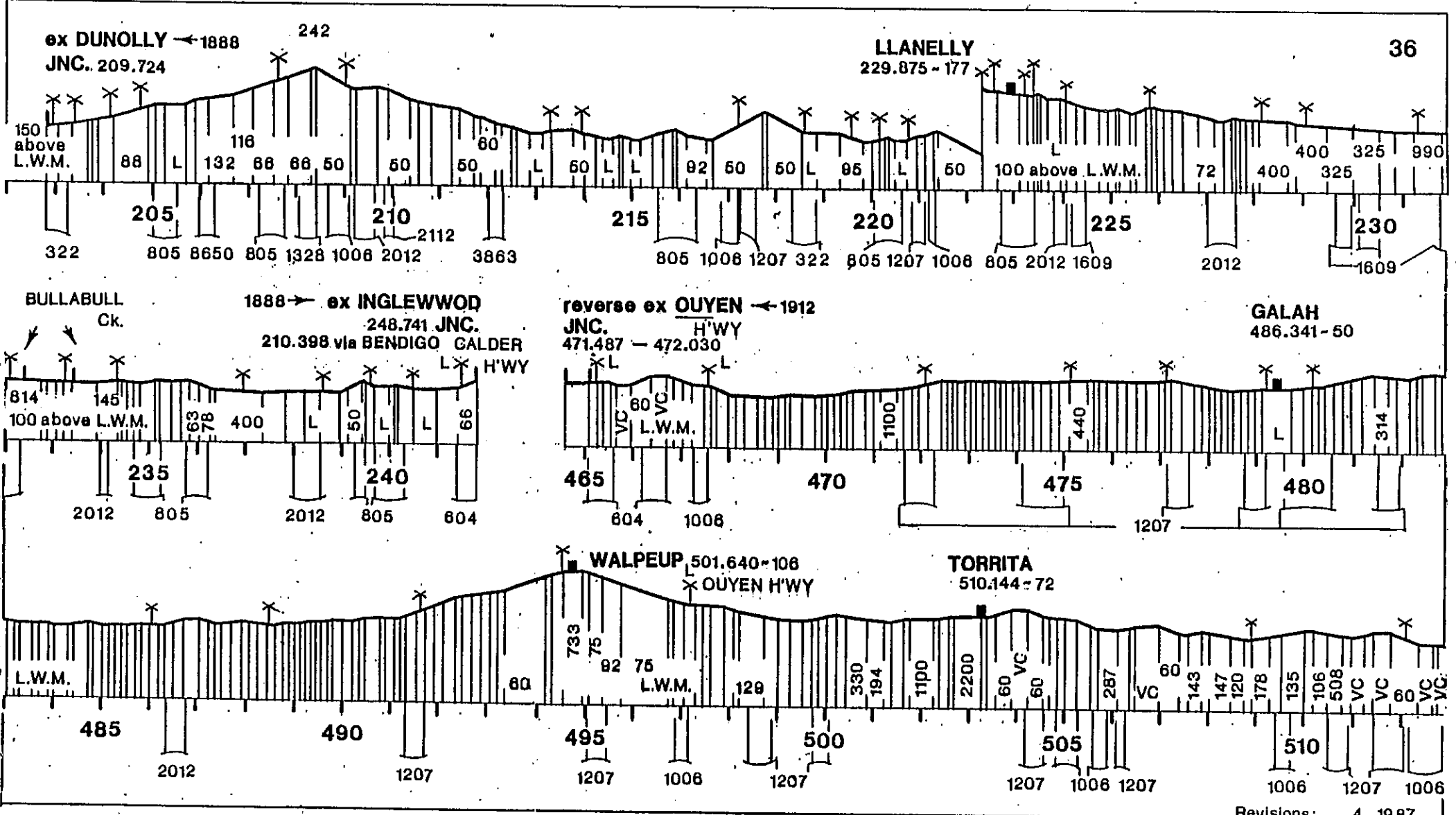
**MOOLORT**  
162.124 ~ 235

180.137-187 041 EX BALLARAT  
**MARYBOROUGH**  
EX DUNOLLY JNC. EX BALLARAT  
179.810 180.467

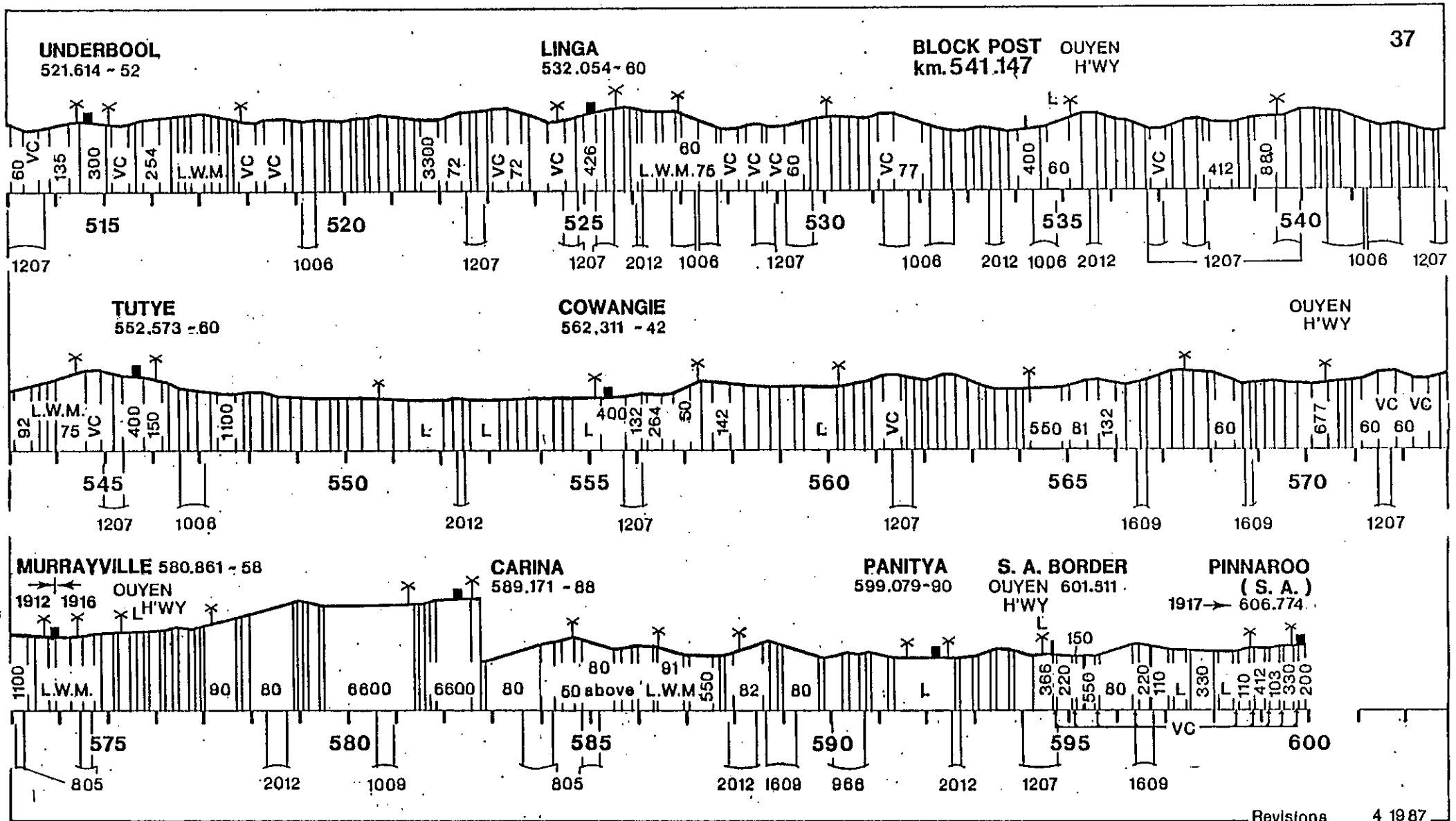


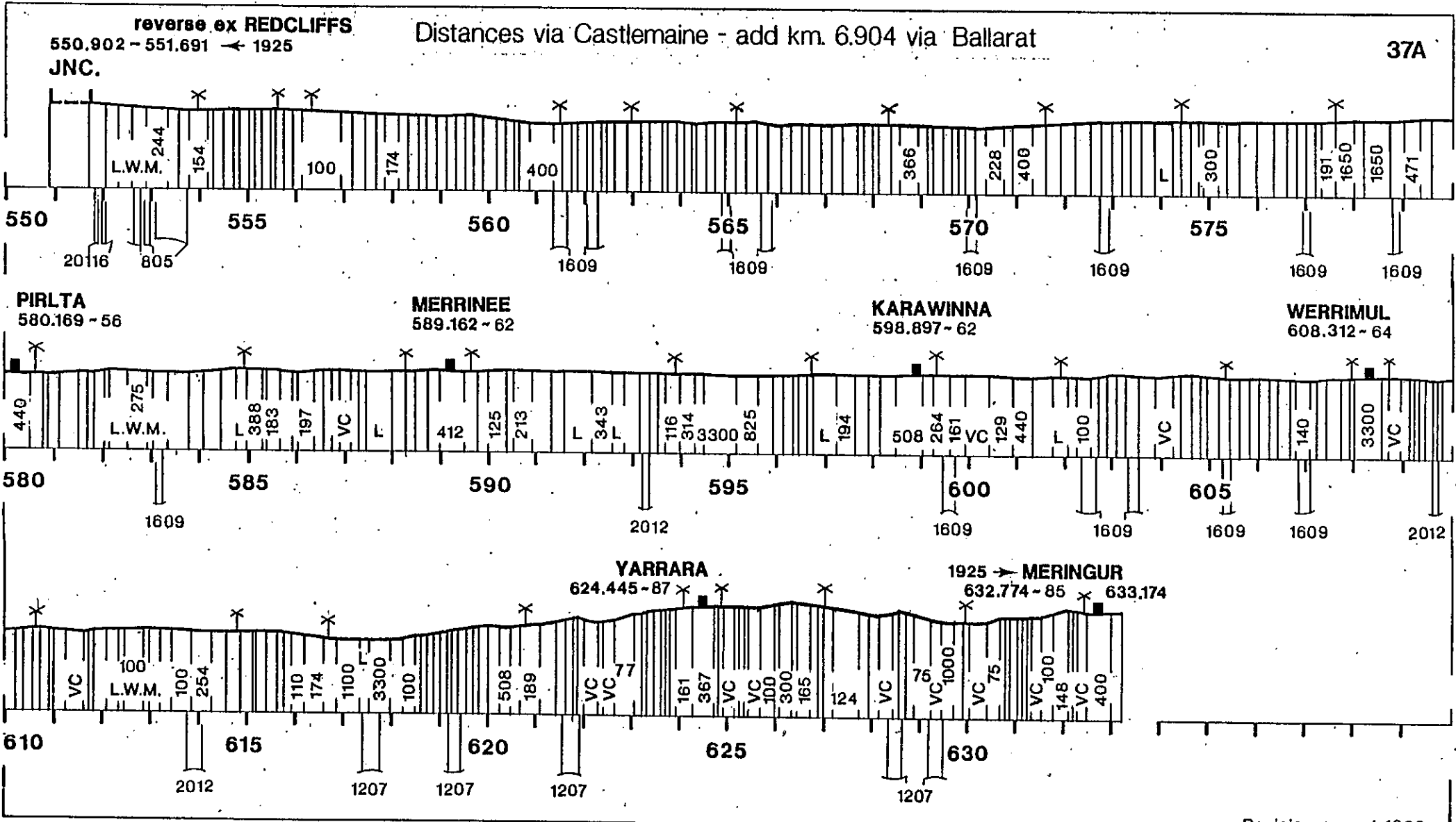
Revisions, 2012 11986

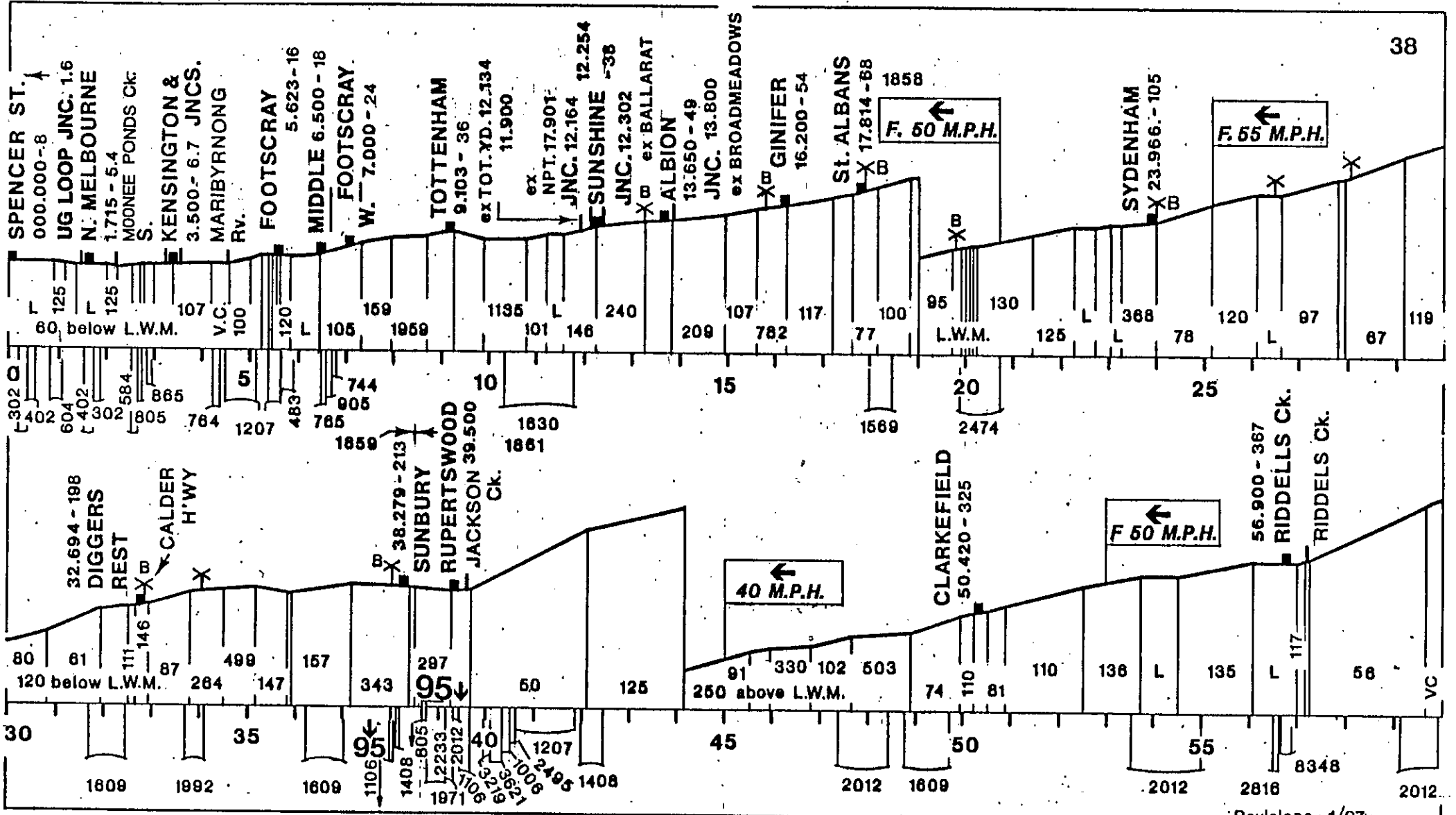


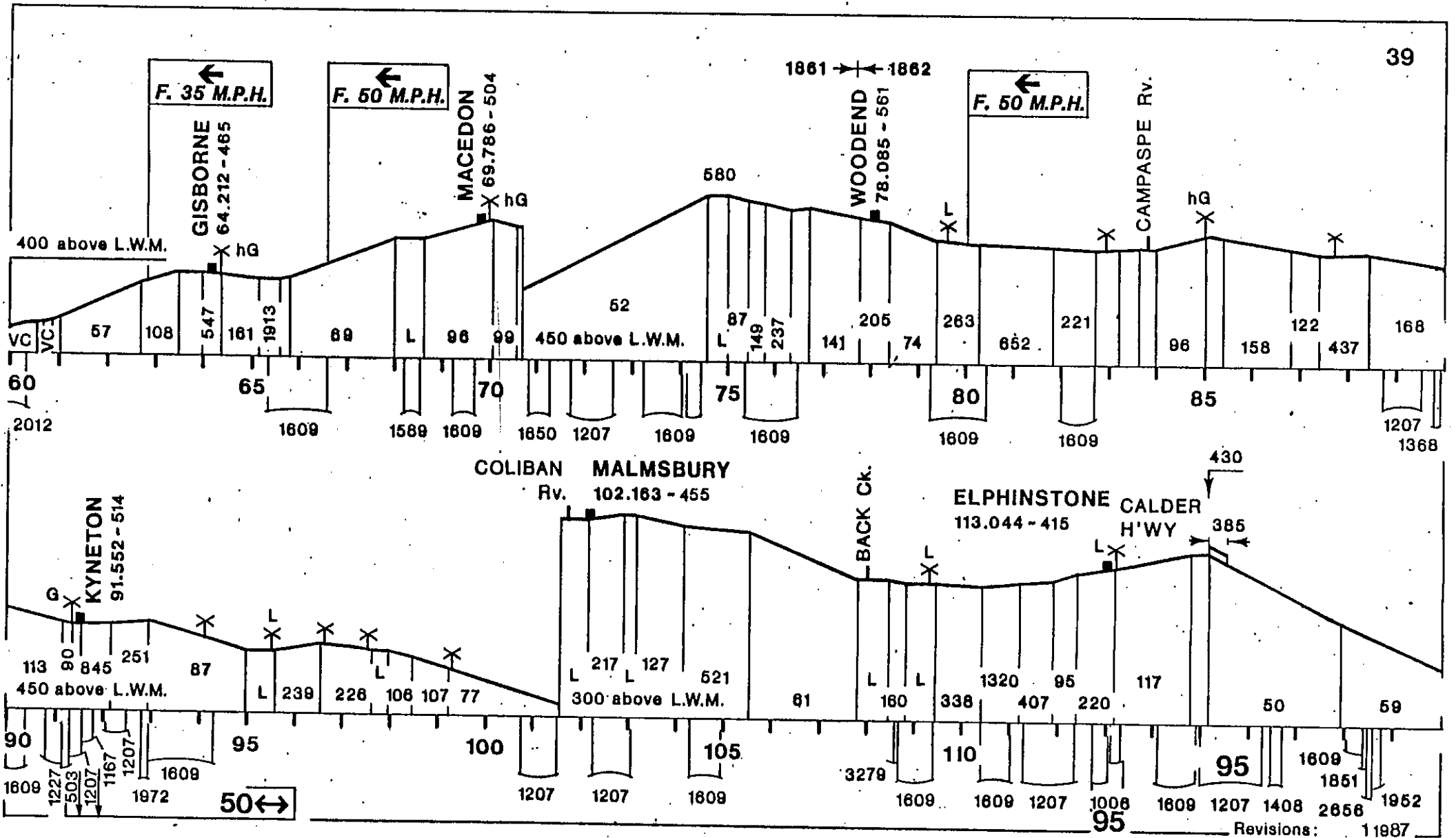


Revisions: 4 1987







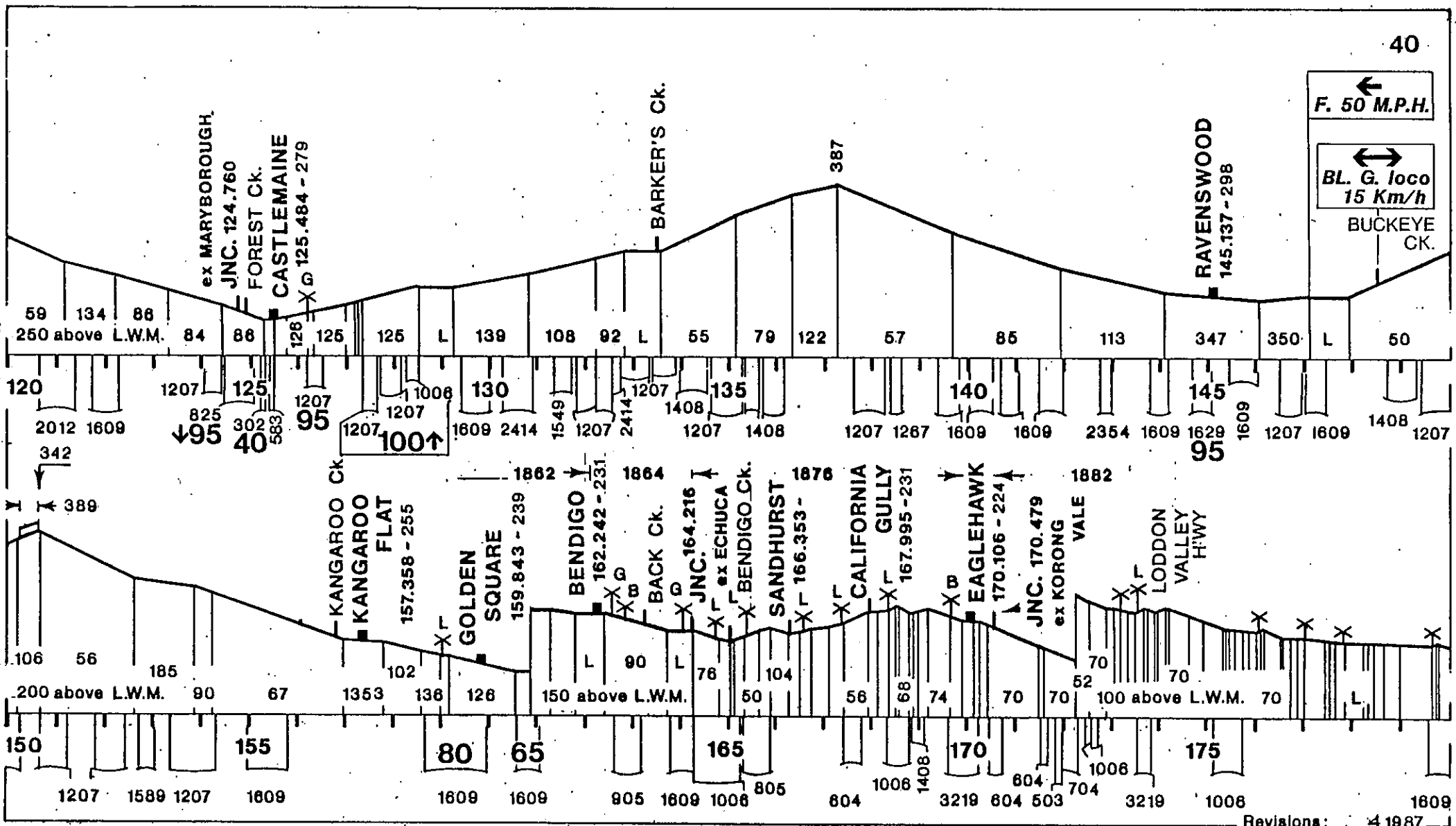


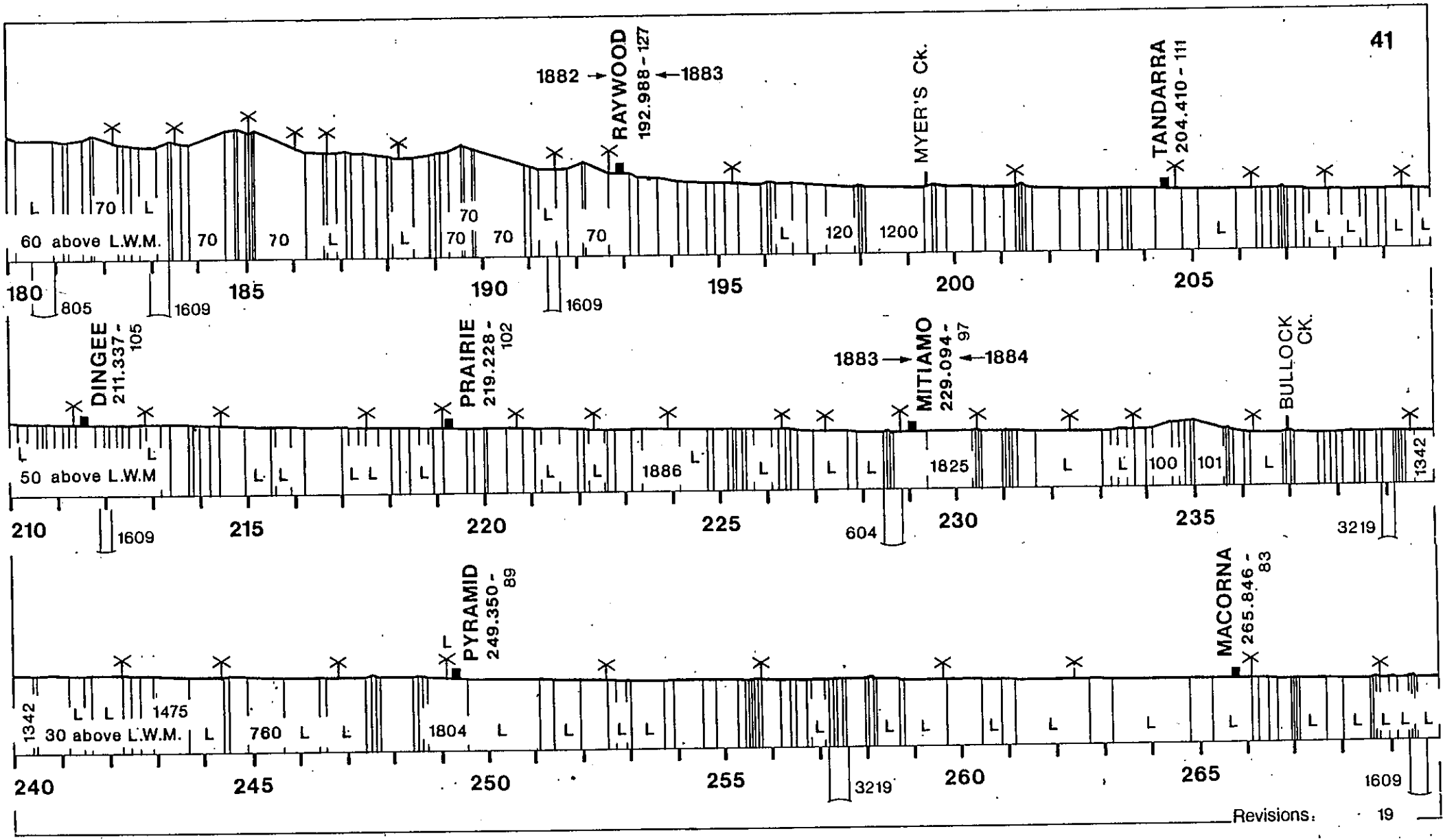


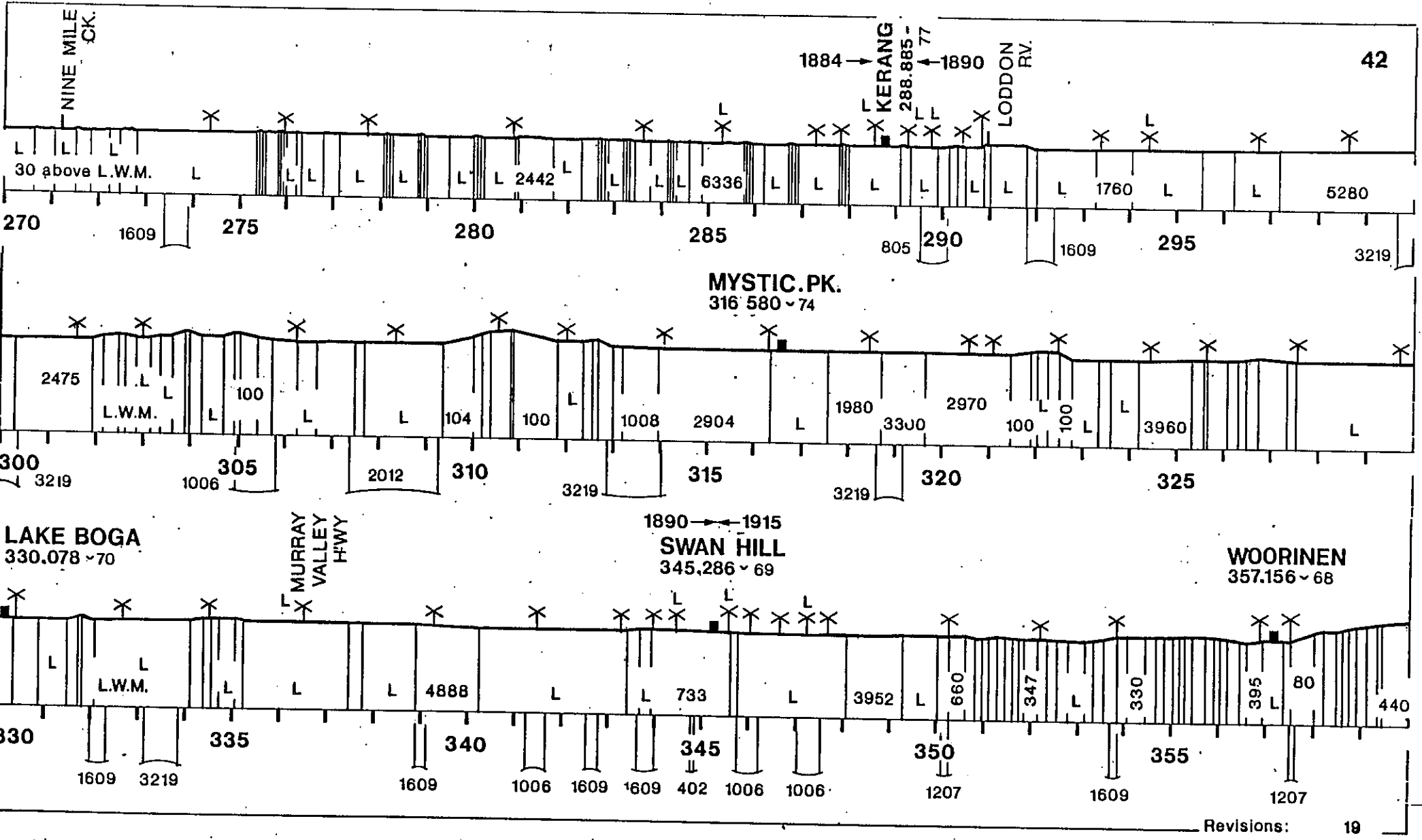
F. 50 M.P.H.

BL. G. loco  
15 Km/h

BUCKEYE CK.







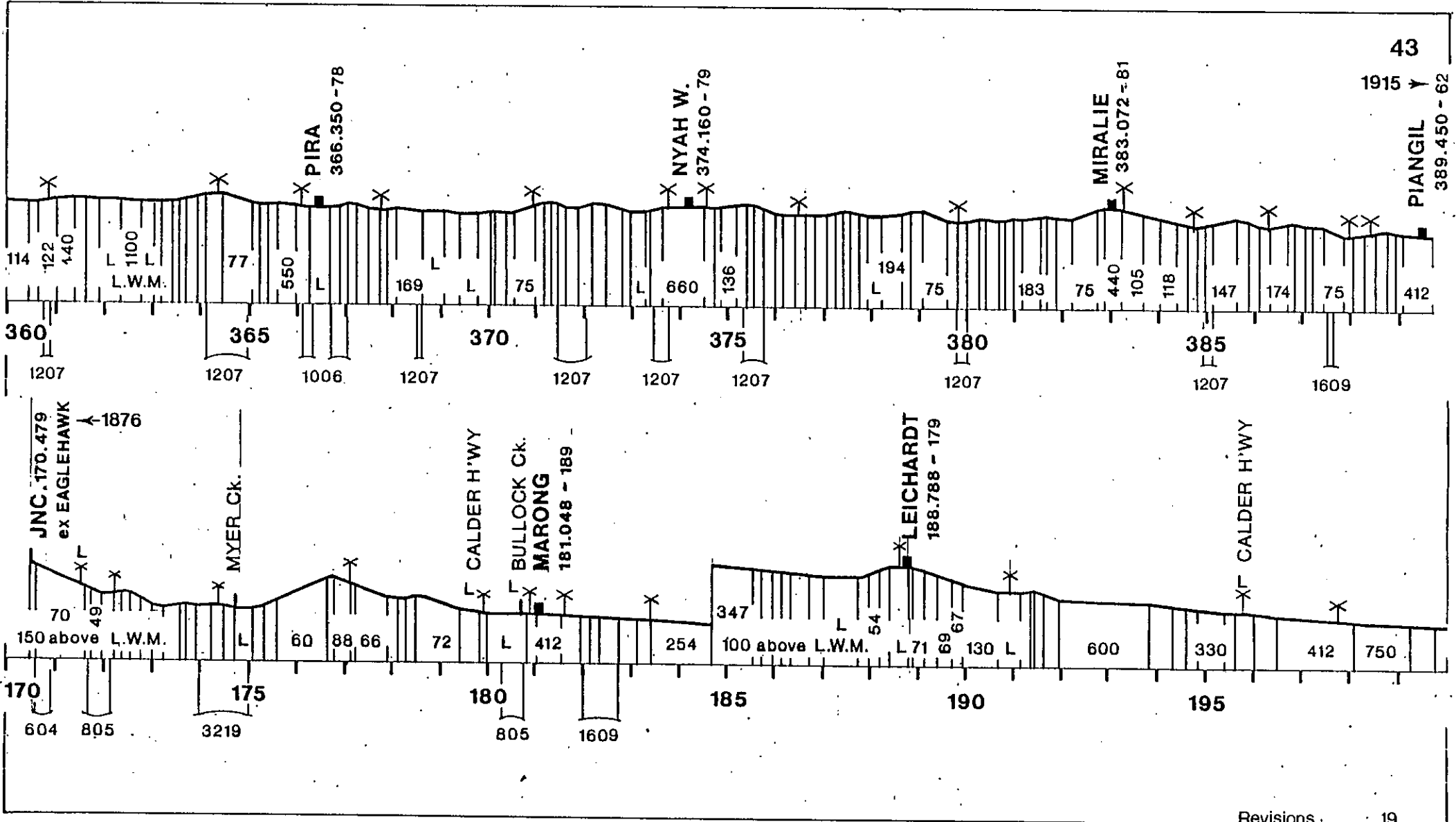
42

270 1609 275 280 285 805 290 1609 295 3219

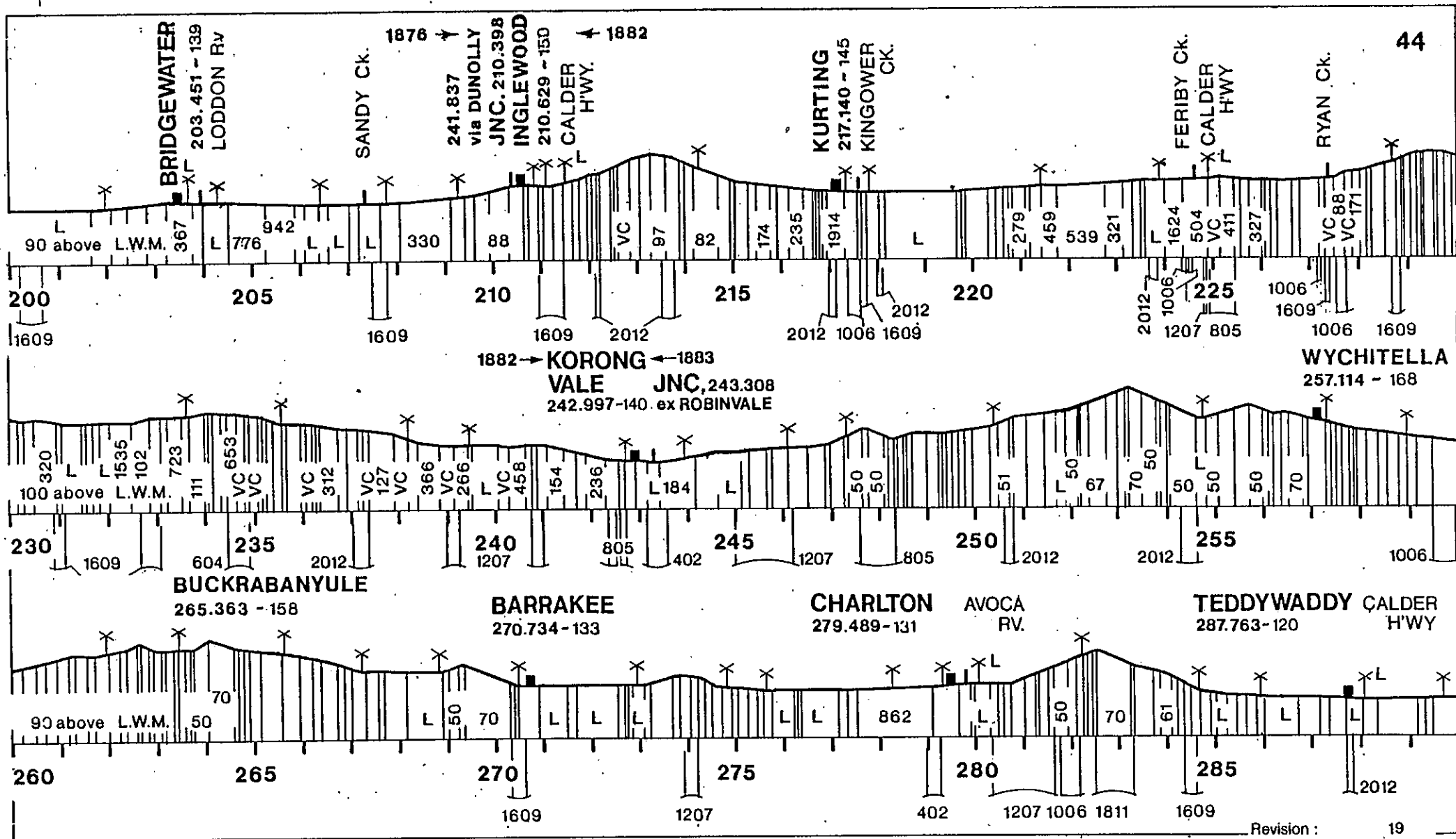
300 3219 305 1006 2012 310 3219 315 3219 320 325

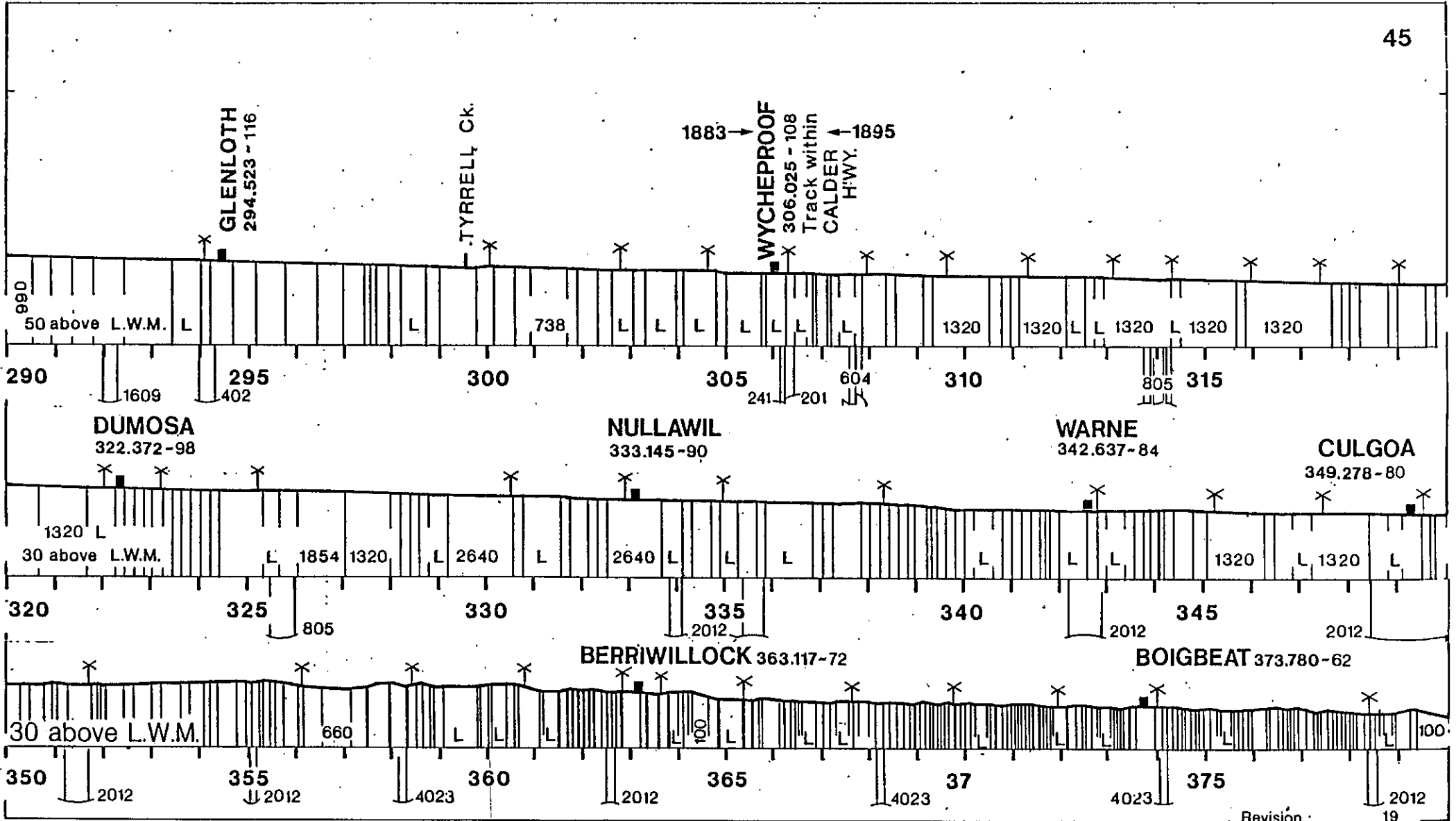
330 1609 3219 335 1609 340 1006 1609 1609 402 1006 1006 350 1207 355 1609 1207

Revisions: 19

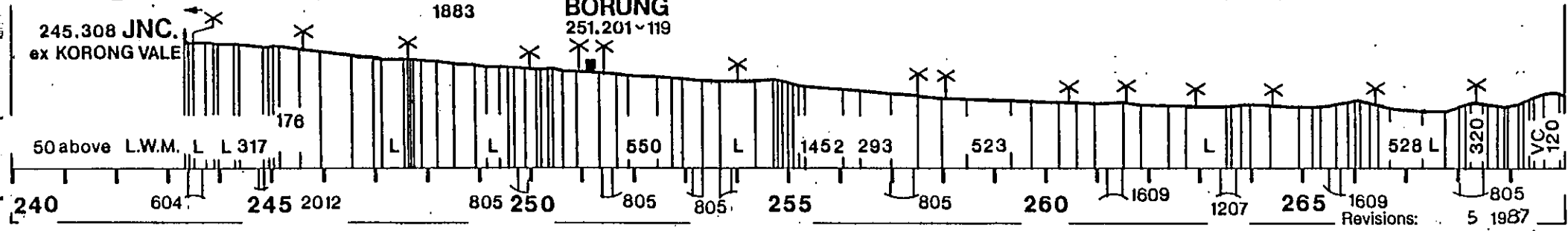
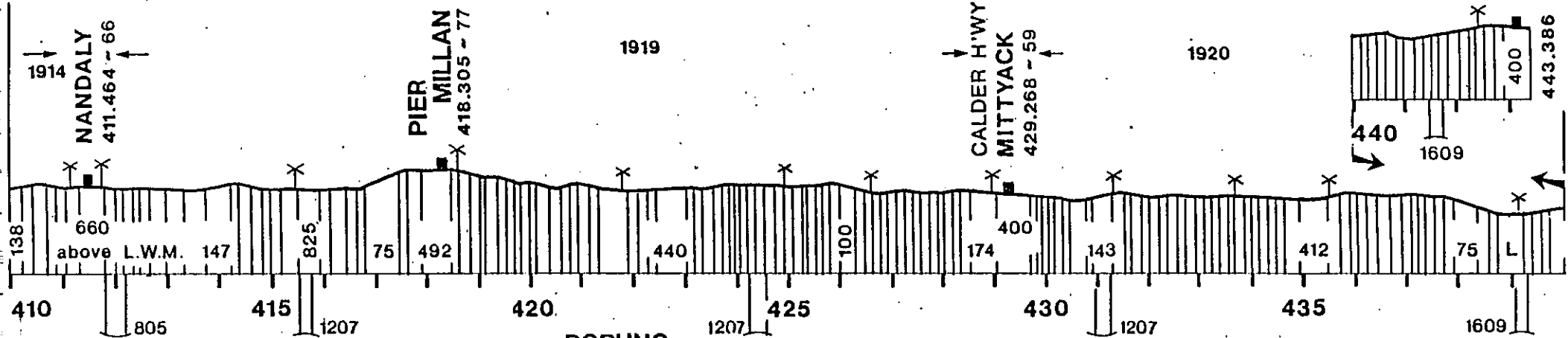
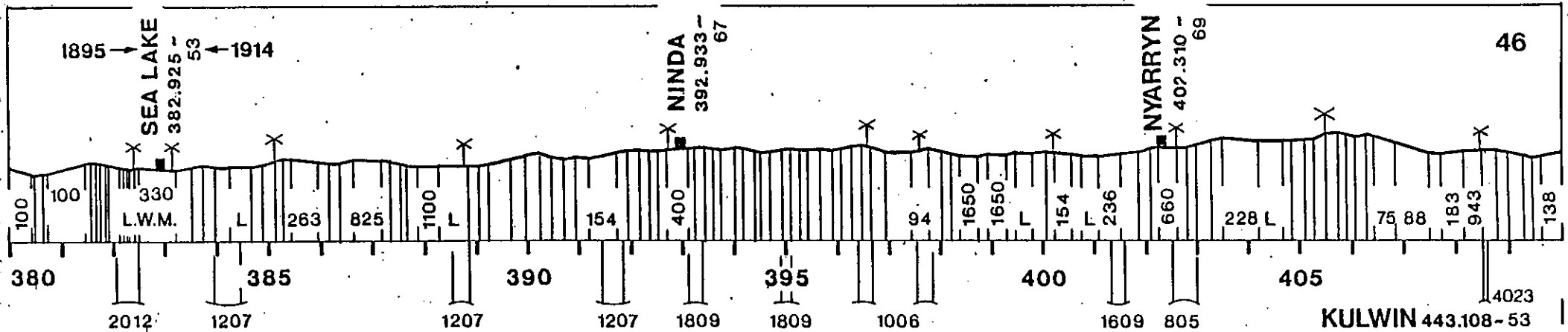


43  
 1915 → 62  
 PIANGIL  
 389.450 - 62

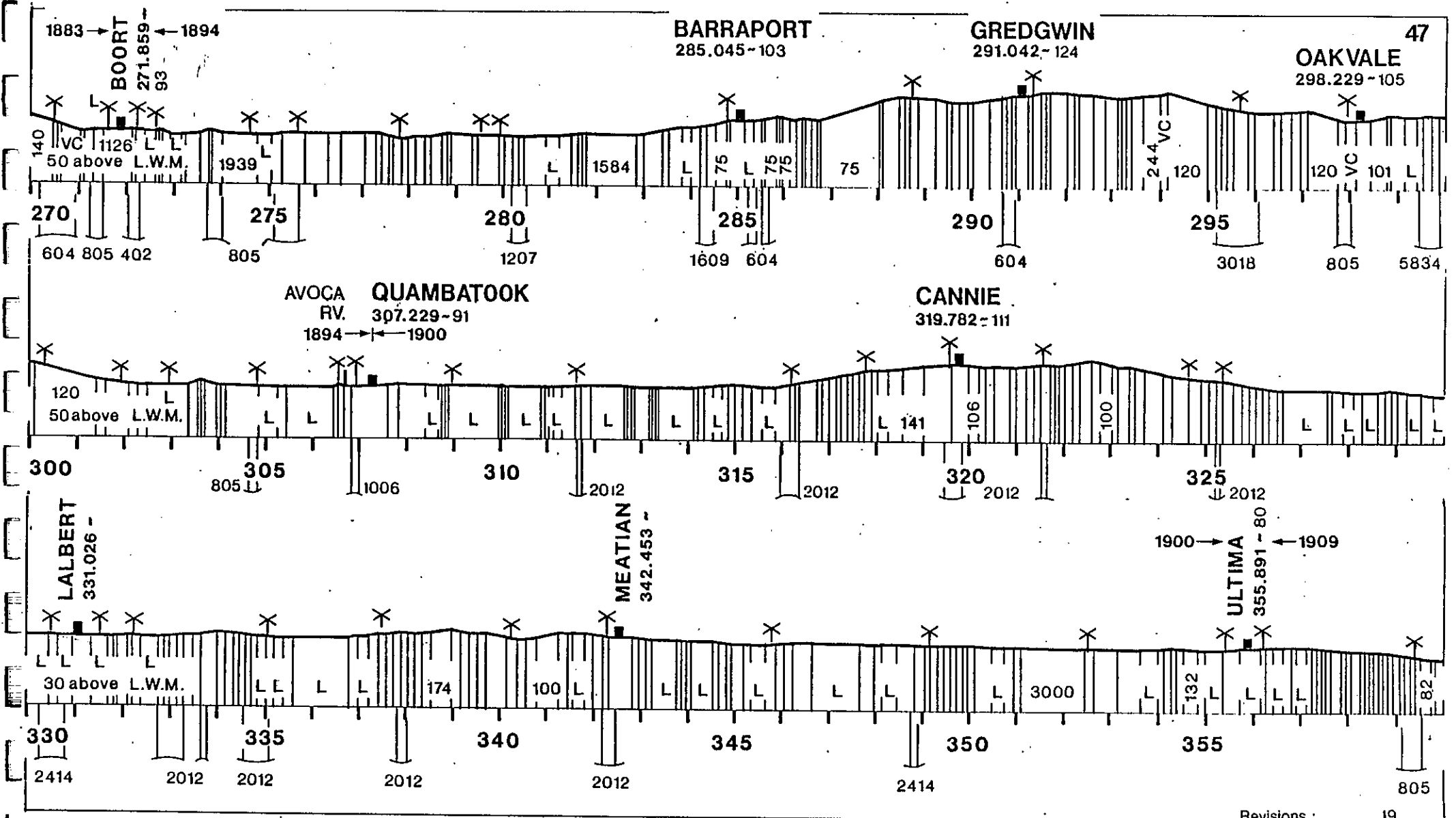




Revisión : 19



Revisions: 5 1987

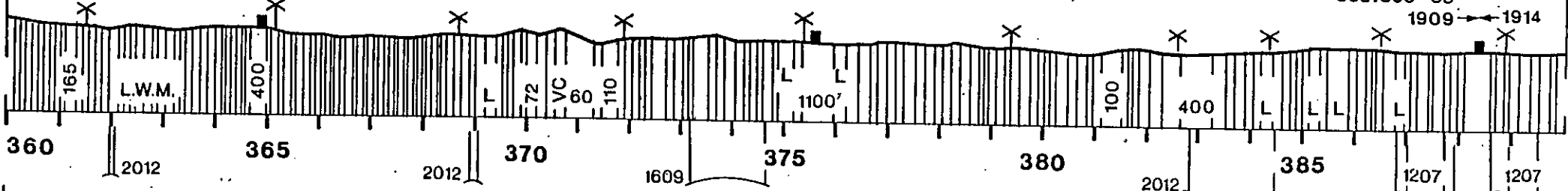




**GOWANFORD**  
364.934-85

**WAITCHIE**  
375.611-55

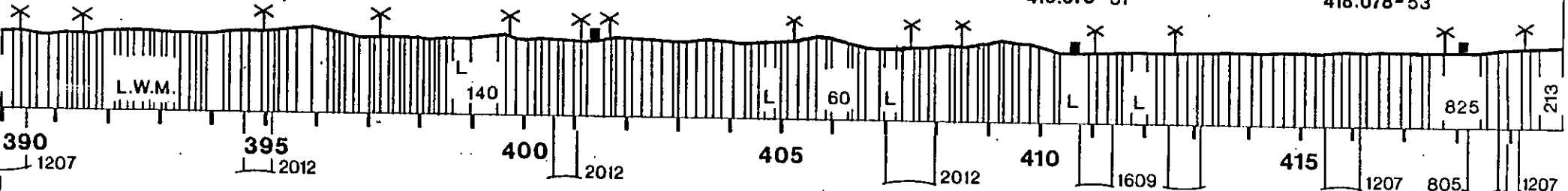
**CHILLINGOLLAH**  
388.360-55  
1909 → 1914



**CHINKAPOOK**  
401.421-57

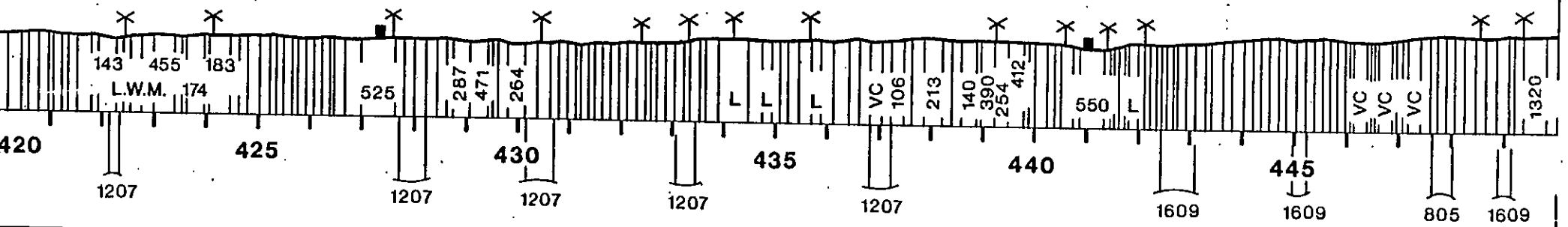
**COCAMBA**  
410.675-51

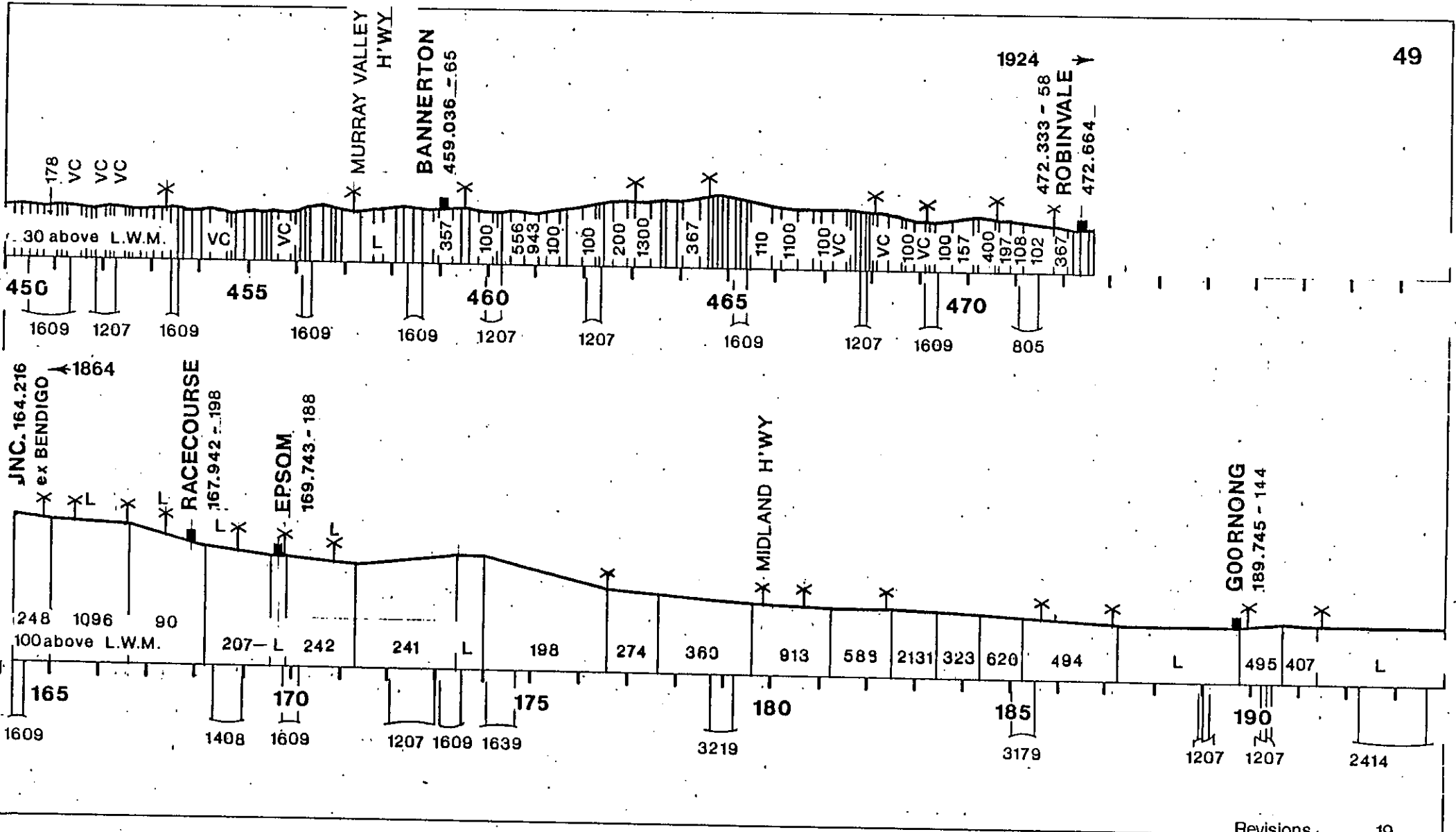
**MANANGATANG**  
418.078-53

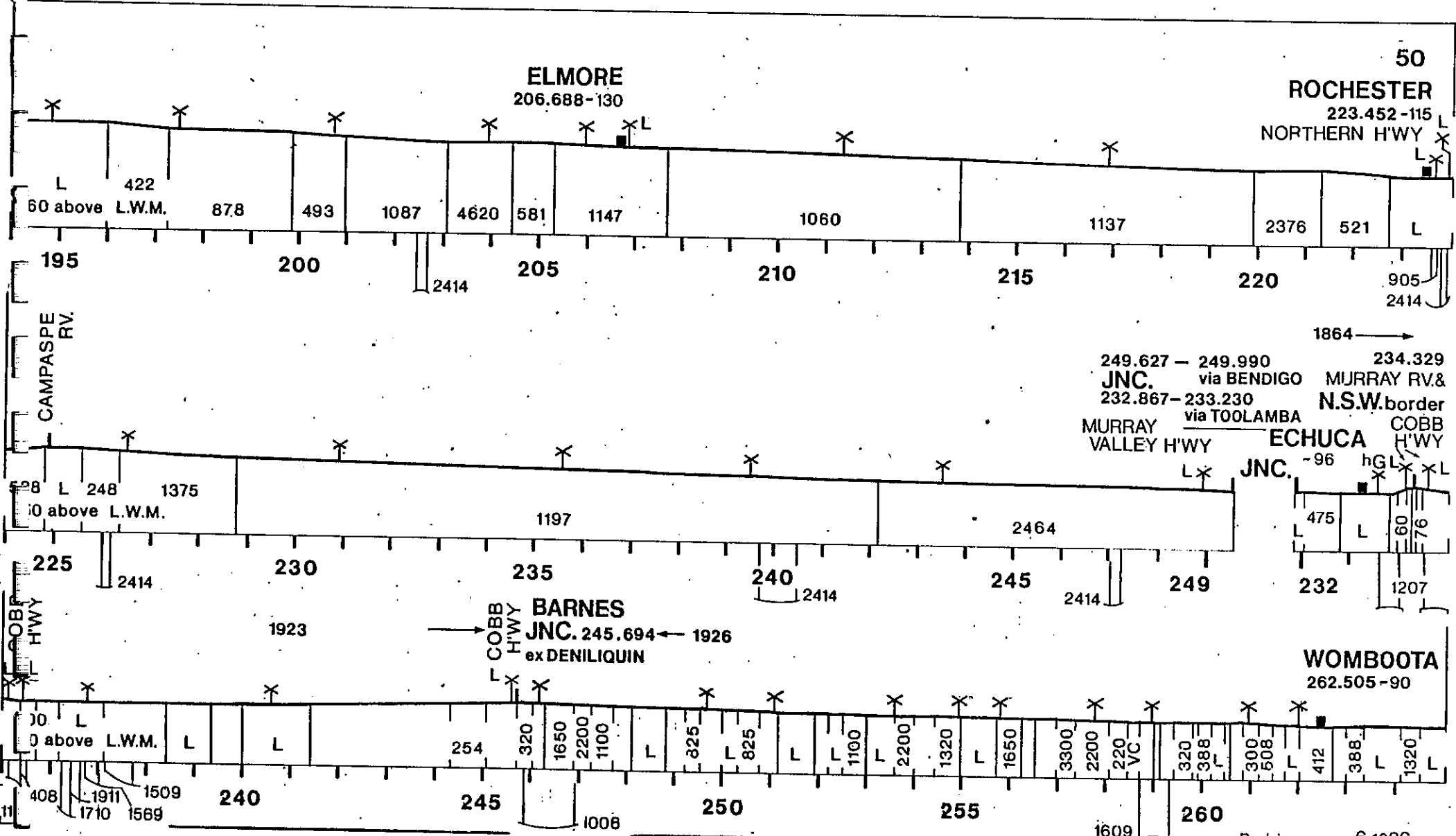


**BOLTON**  
427.352-55

1921 → **ANNUELLO** ← 1924  
441.031-52





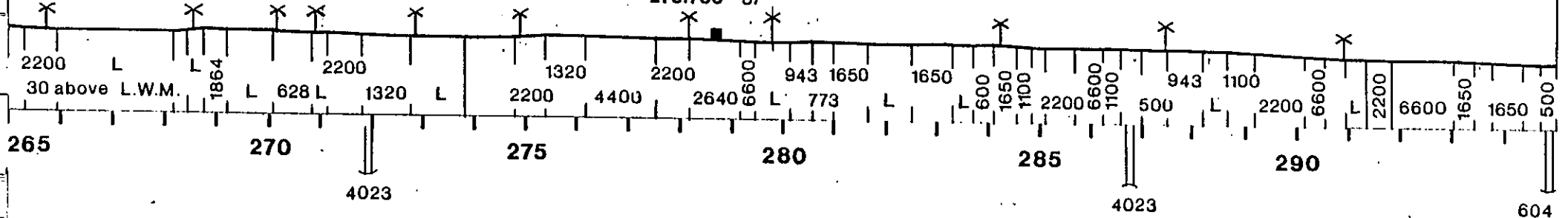


Revisions : 6 1986

**BUNNALOO**

278.700 - 87

51



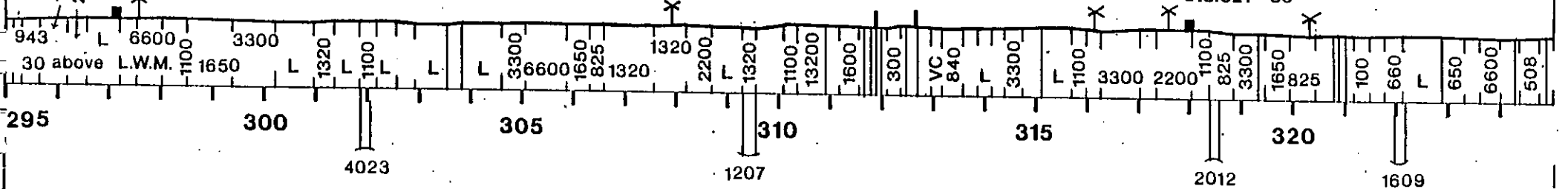
**CALDWELL**

297.127 - 81

**WAKOOL**

318.021 - 80

COBRAM Ck. WAKOOL Rv.



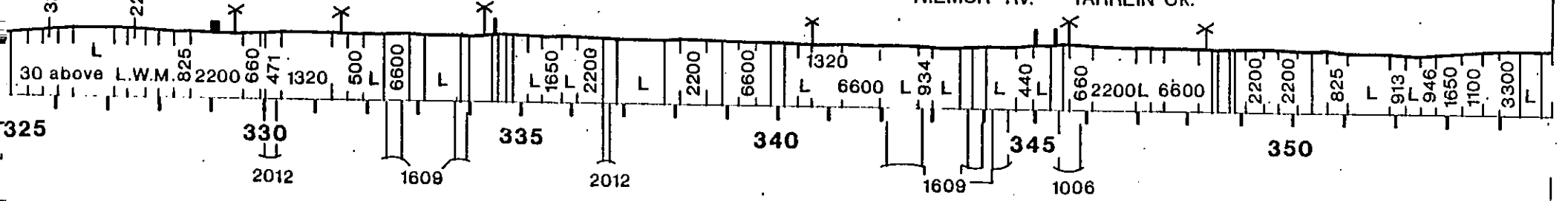
**BURRABOI**

329.065 - 77

JIMARINGLE Ck.

NIEMUR Rv.

MURRAIN YARREIN Ck.



MURRAIN YARREIN Ck.

MURRAIN YARREIN Ck.

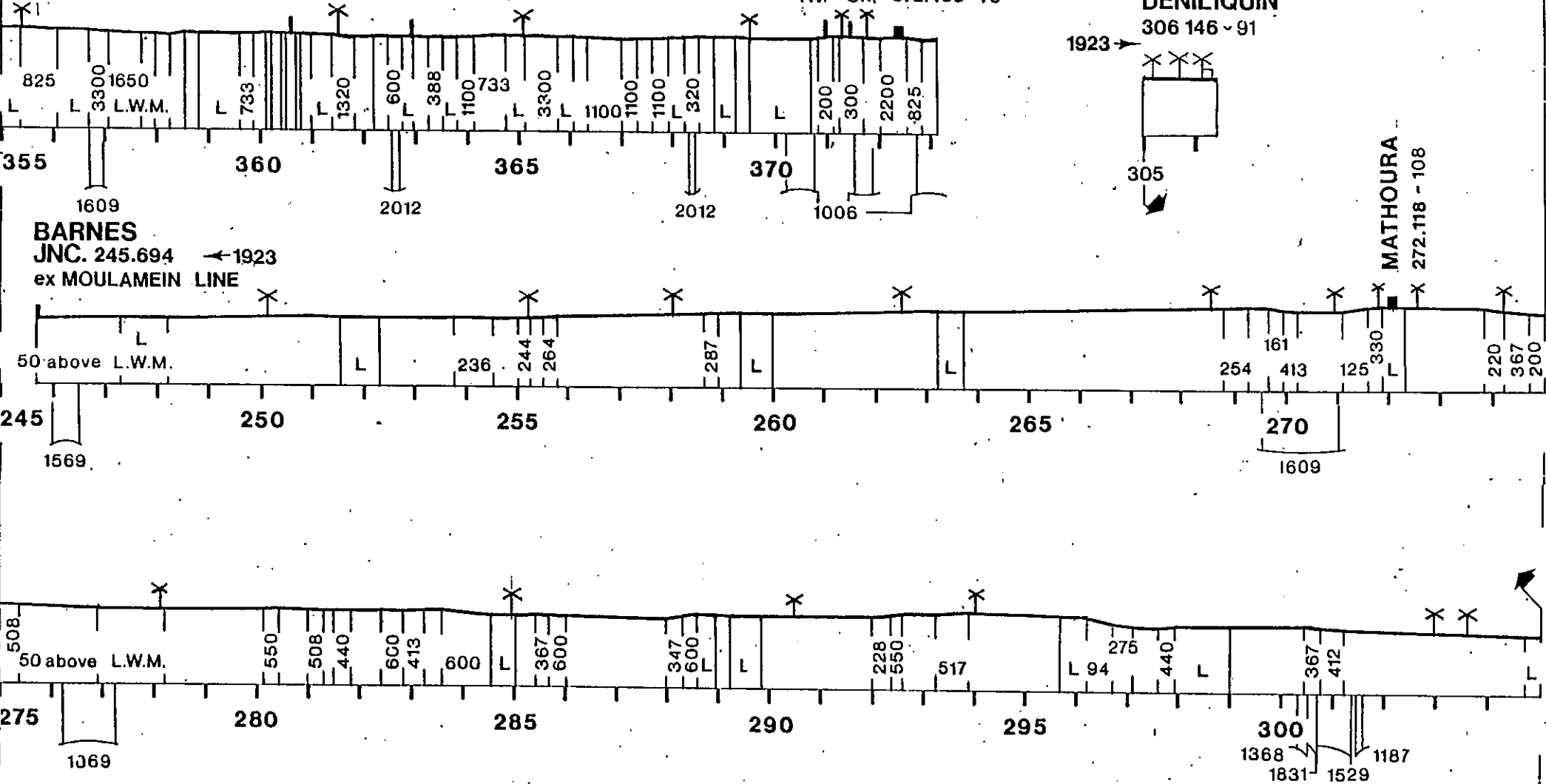
EDWARD Rv. Ck. MOULAMEIN 372.408 - 70

DENILQUIN

306 146 - 91

MATHOURA

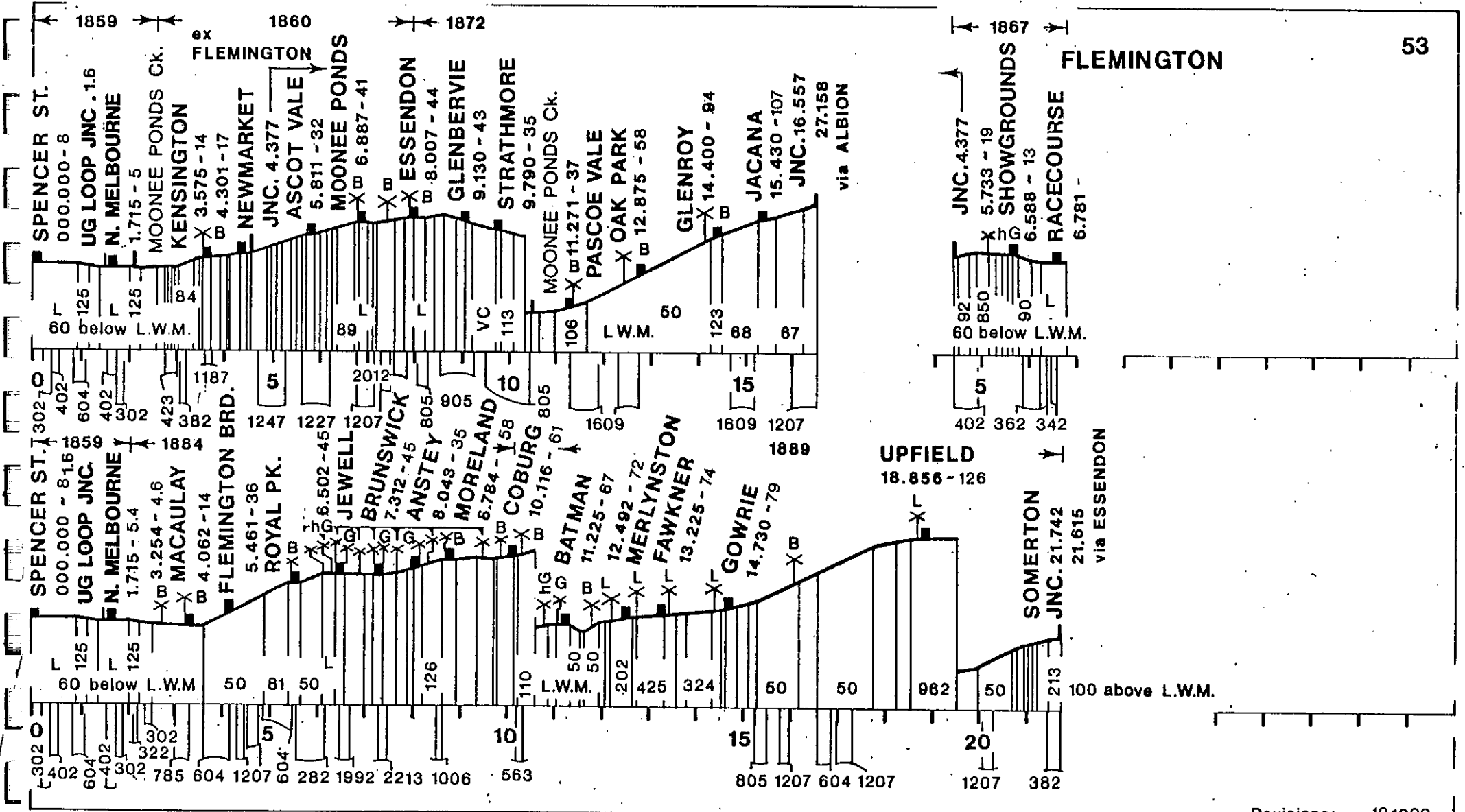
272.118 - 108

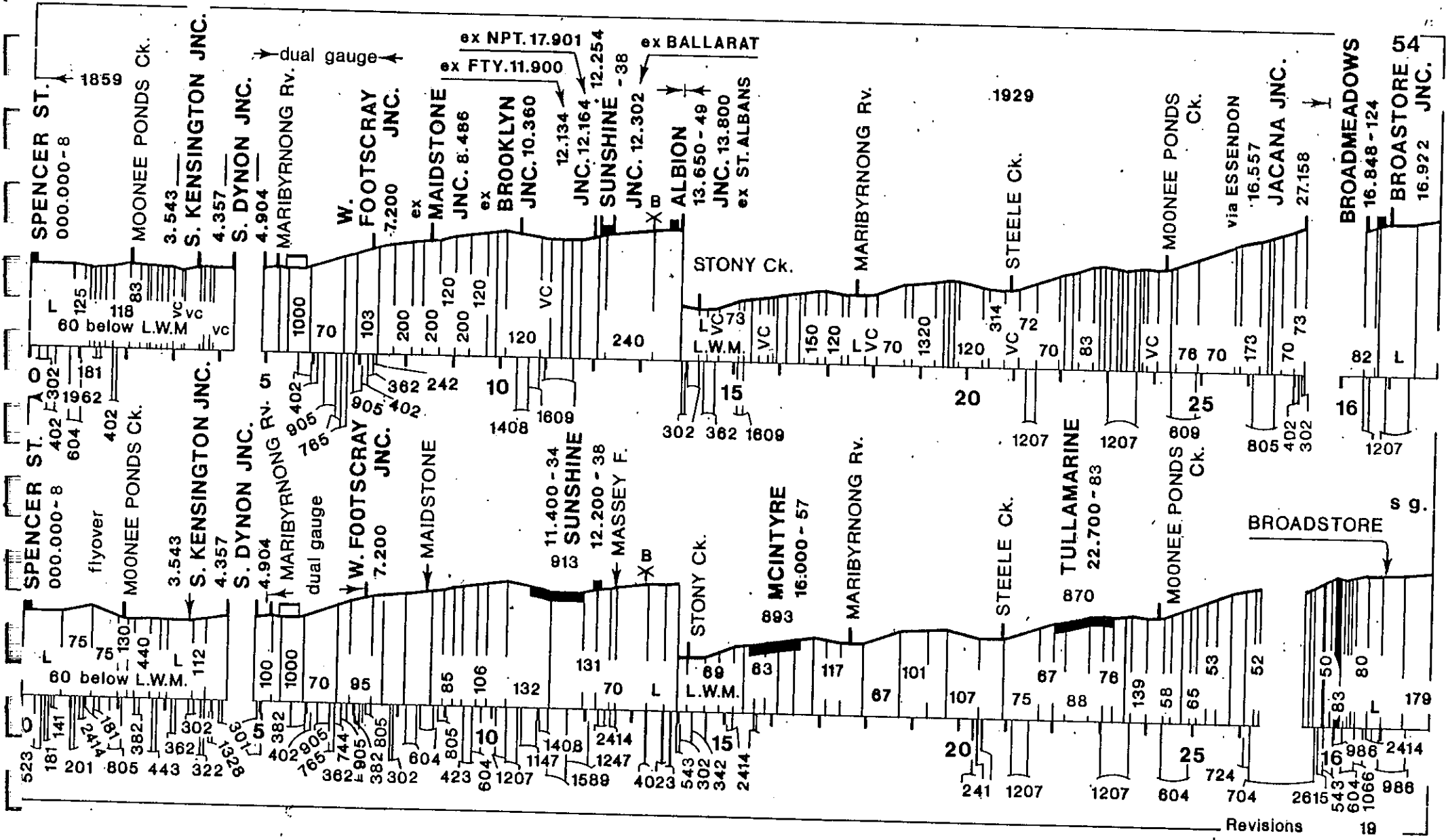


BARNES JNC. 245.694 ex MOULAMEIN LINE

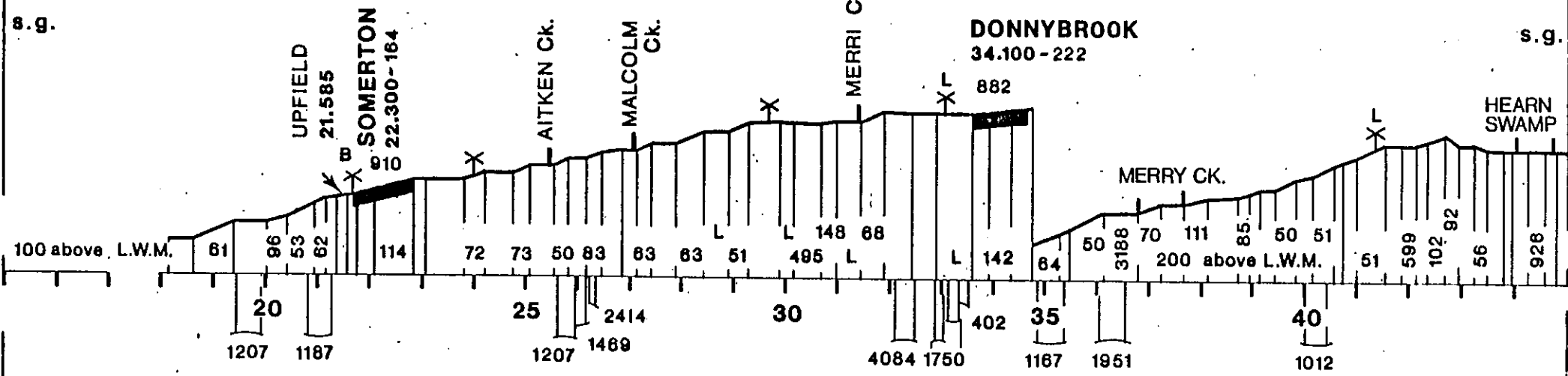
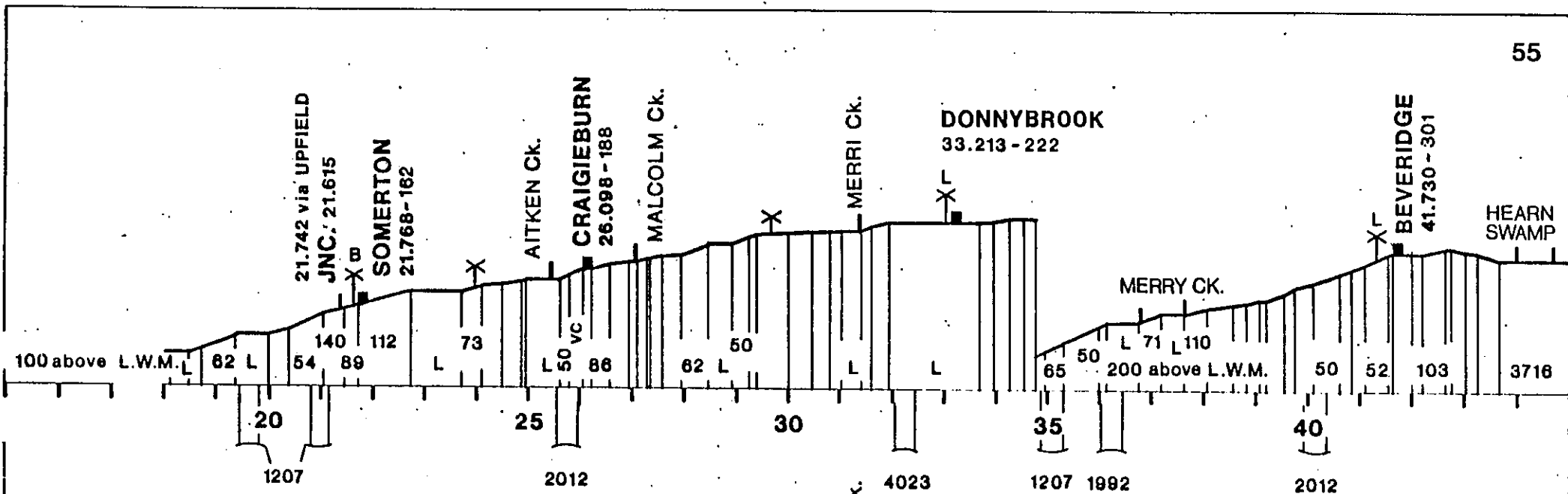
← 1923

305

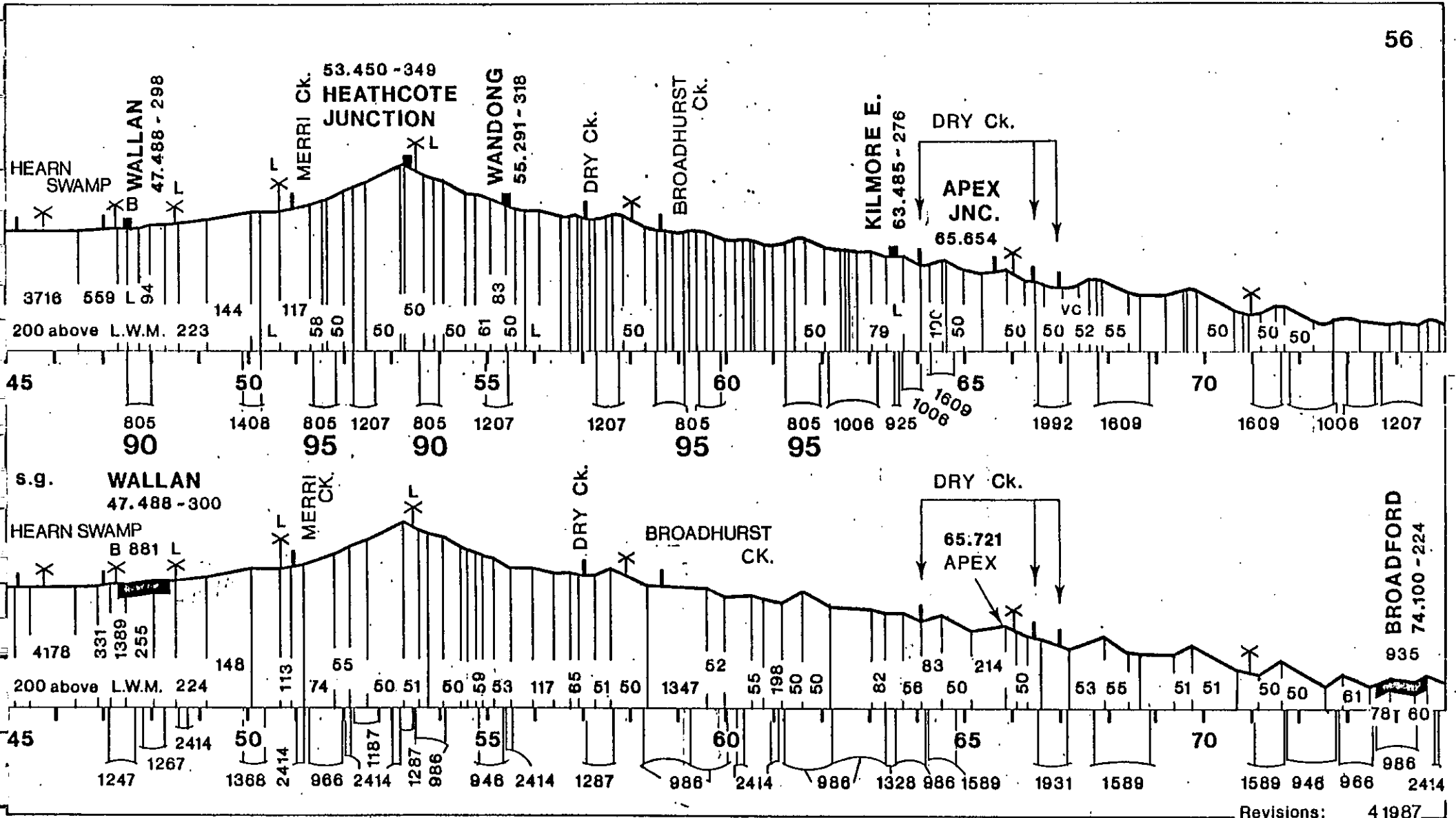




Revisions 18







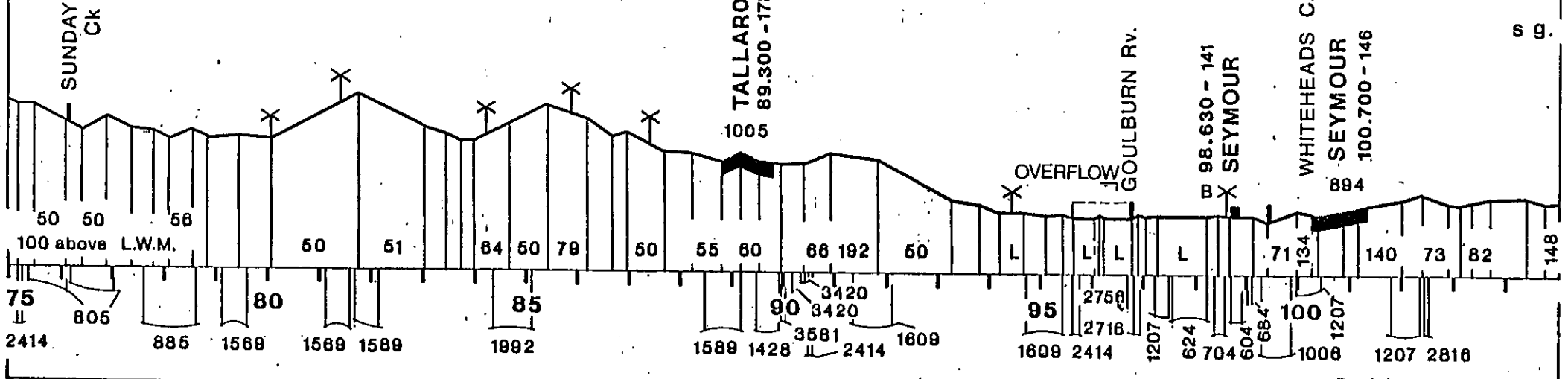
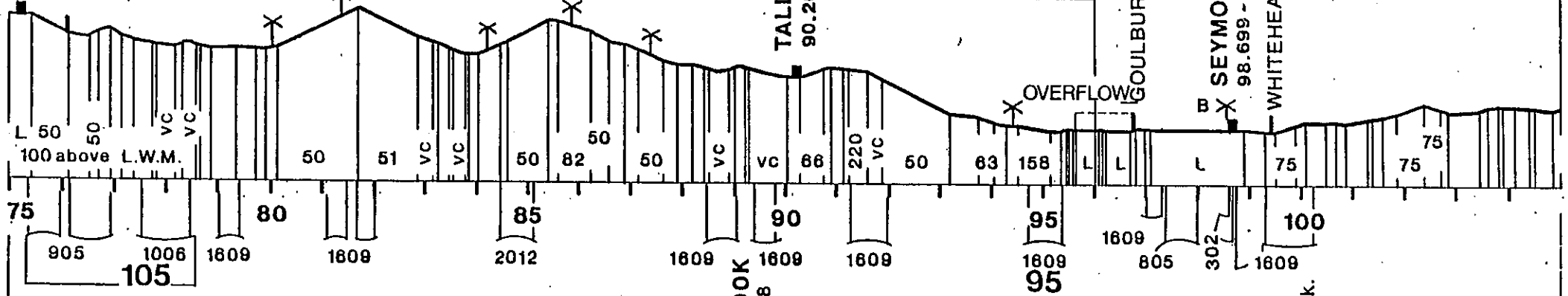
BROADFORD  
75.168 - 221  
SUNDAY Ck.

TALLAROOK  
90.208 - 178

65 Diverge →

SEYMOUR  
98.699 - 141

WHITEHEADS Ck.



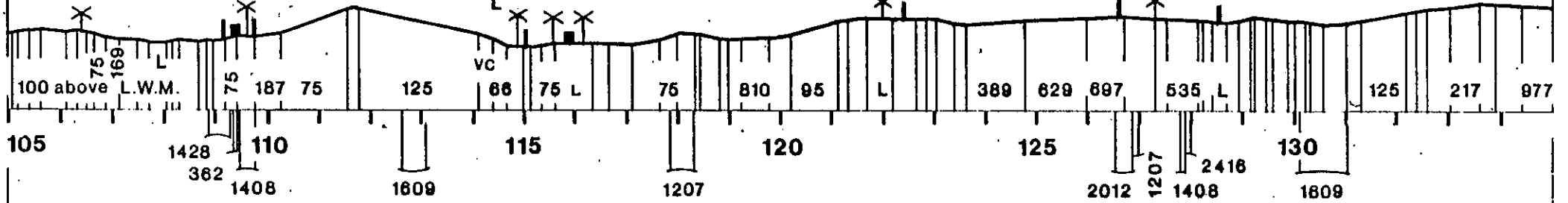
ex SHEPPARTON  
JNC. 109.190  
MANGALORE  
109.343 - 151  
EIGHT MILE Ck.

HUGHES Ck.  
AVENEL  
115.967 - 149

THREE MILE  
Ck.

BURNT Ck.

SANDY Ck.



s.g.

DEFENCE  
EIGHT MILE Ck.

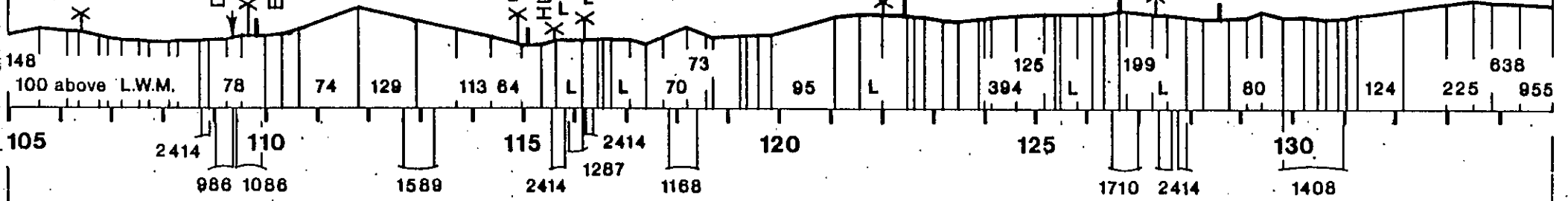
HUGHES Ck.

THREE MILE  
Ck.

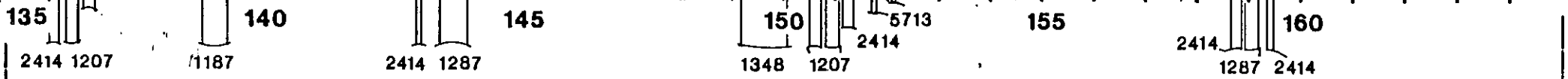
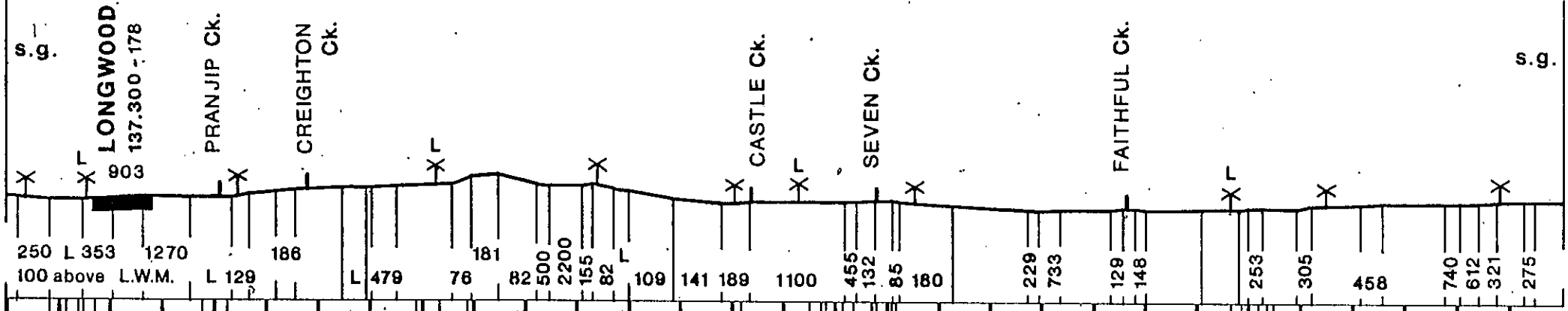
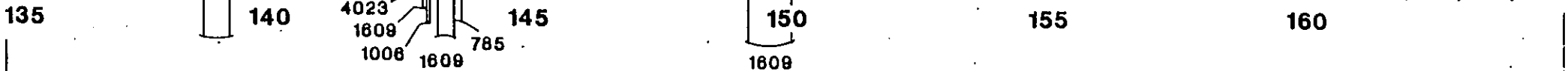
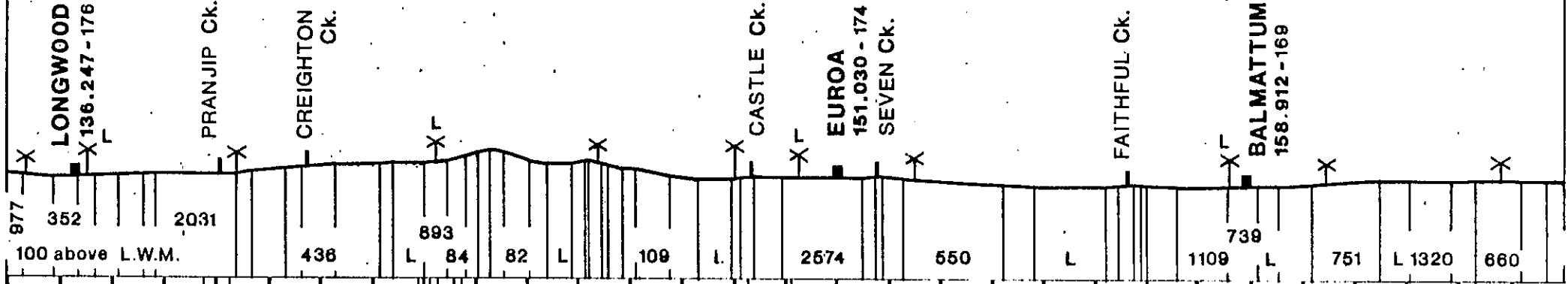
BURNT Ck.

SANDY Ck.

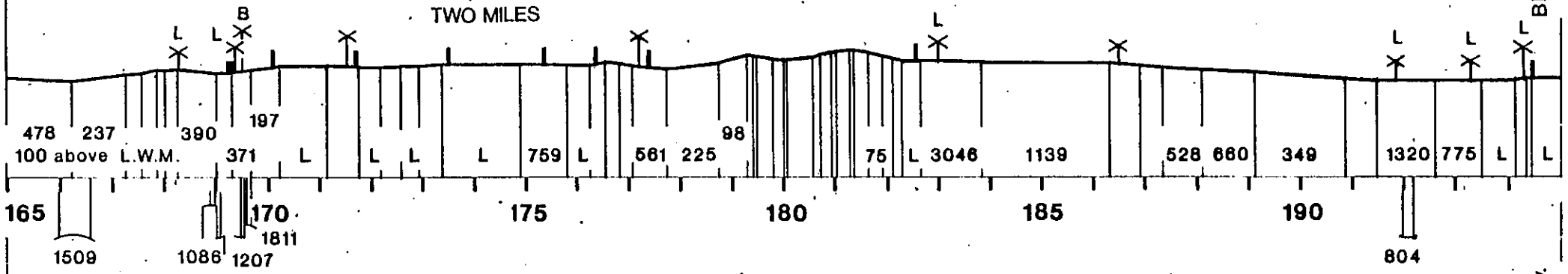
s.g.



1872  $\blacktriangleright$   $\blacktriangleleft$  1873

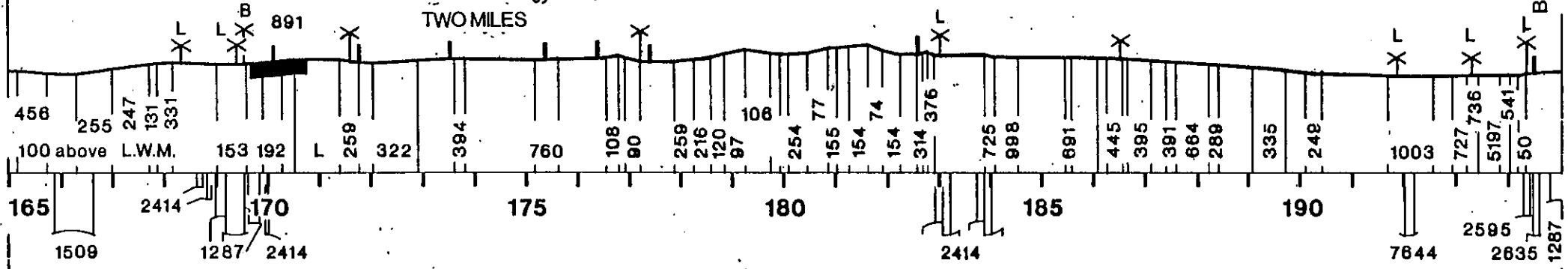


HONEYSUCKLE - ONE MILE  
VIOLET TOWN  
169.330 - 178

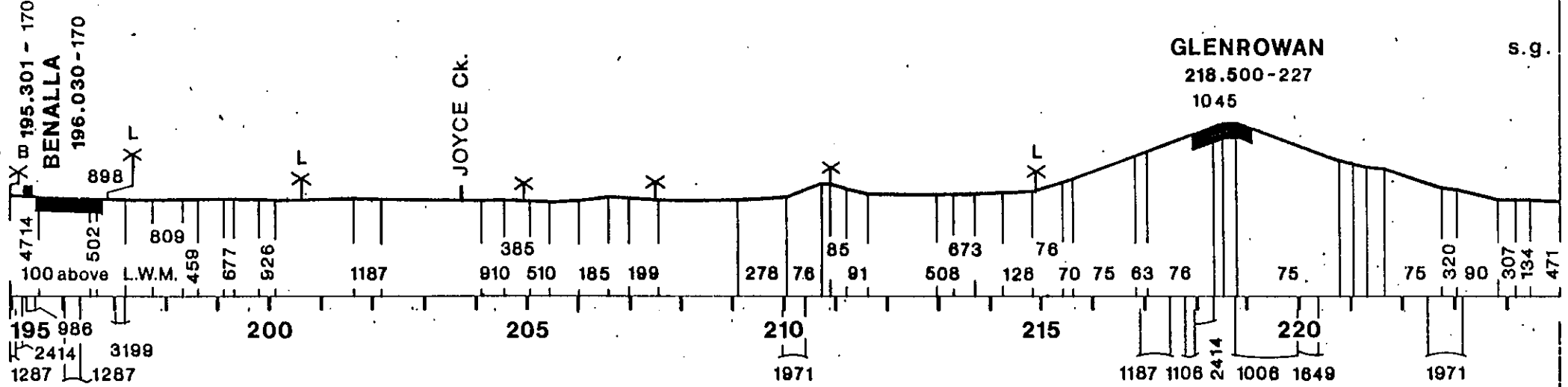
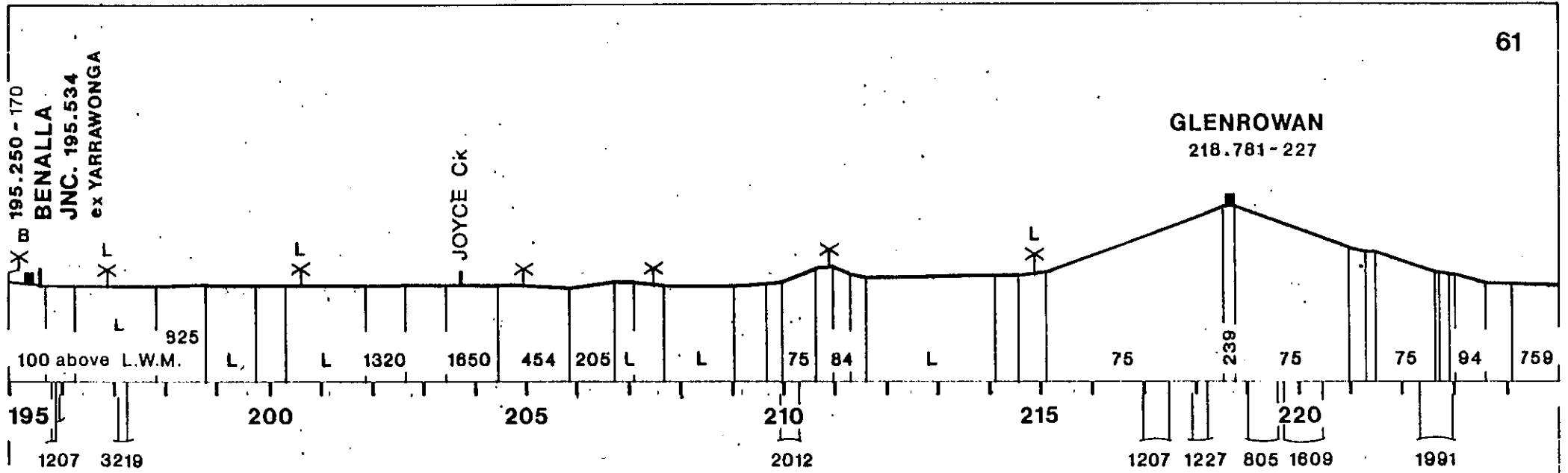


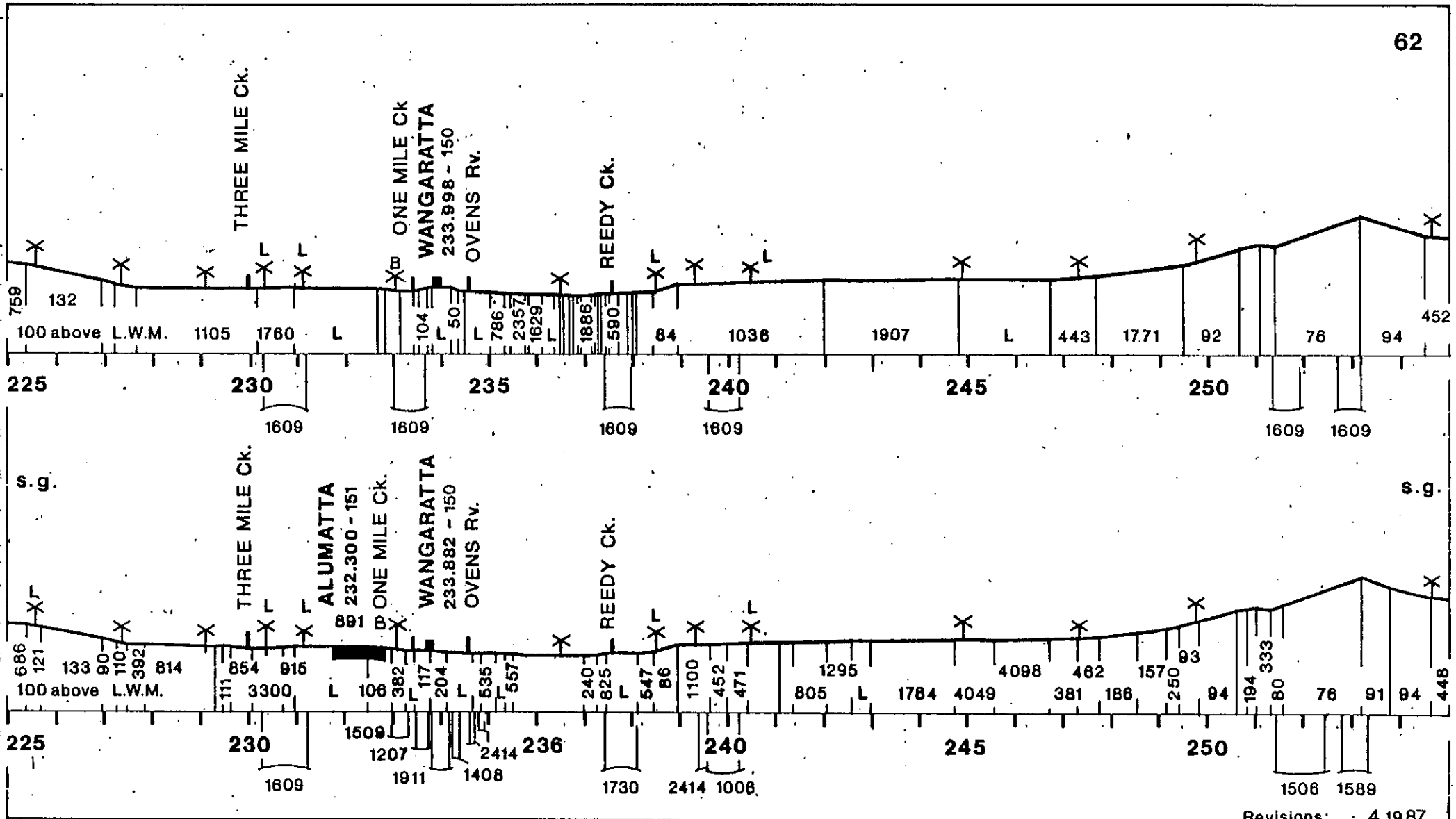
s.g.

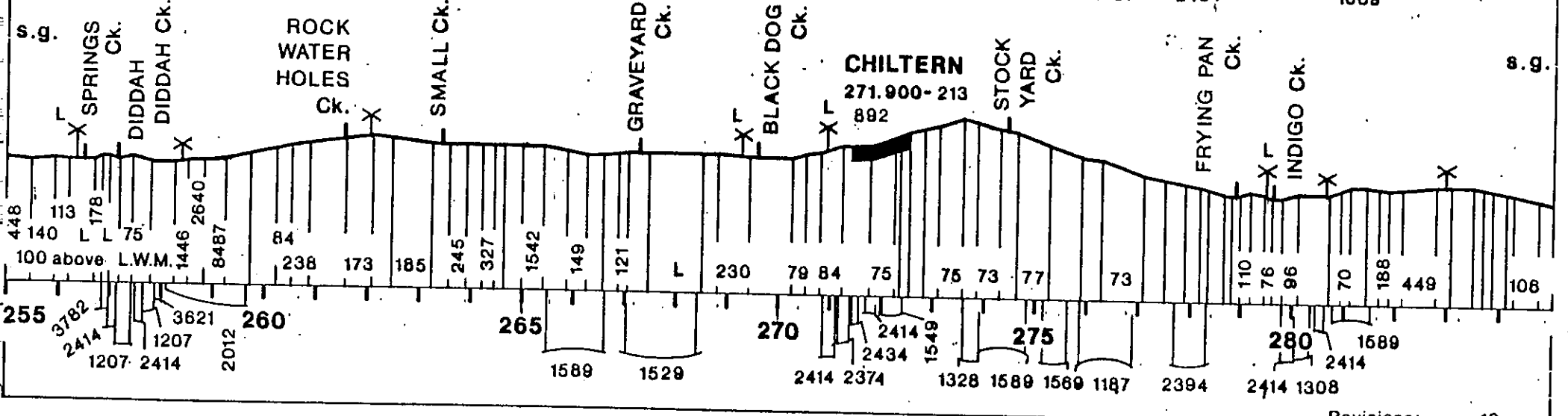
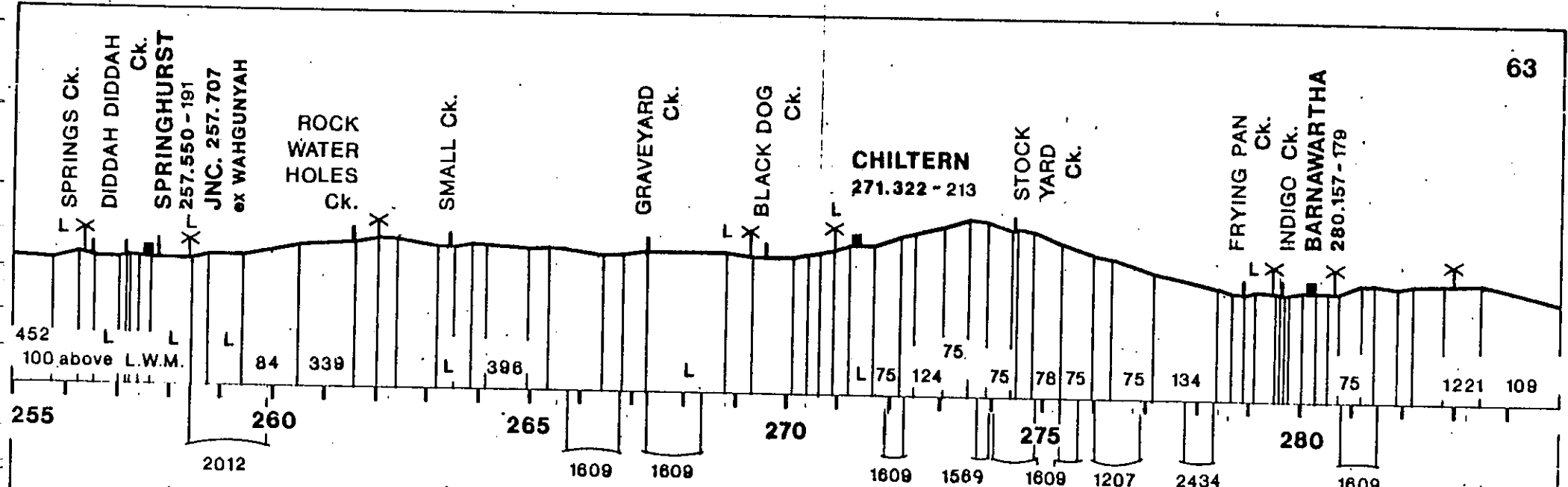
HONEYSUCKLE - ONE MILE  
VIOLET TOWN  
169.700 - 181



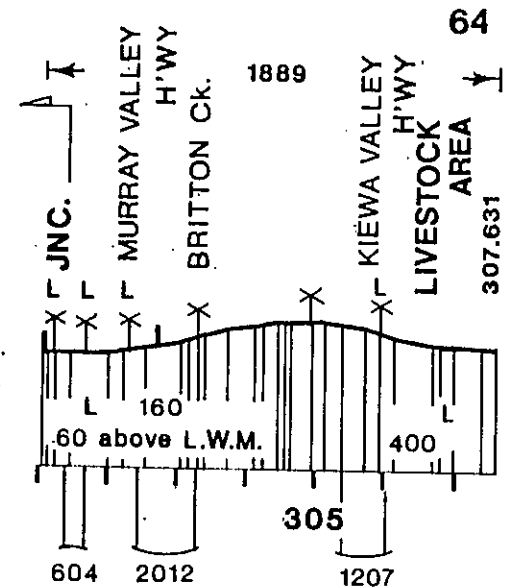
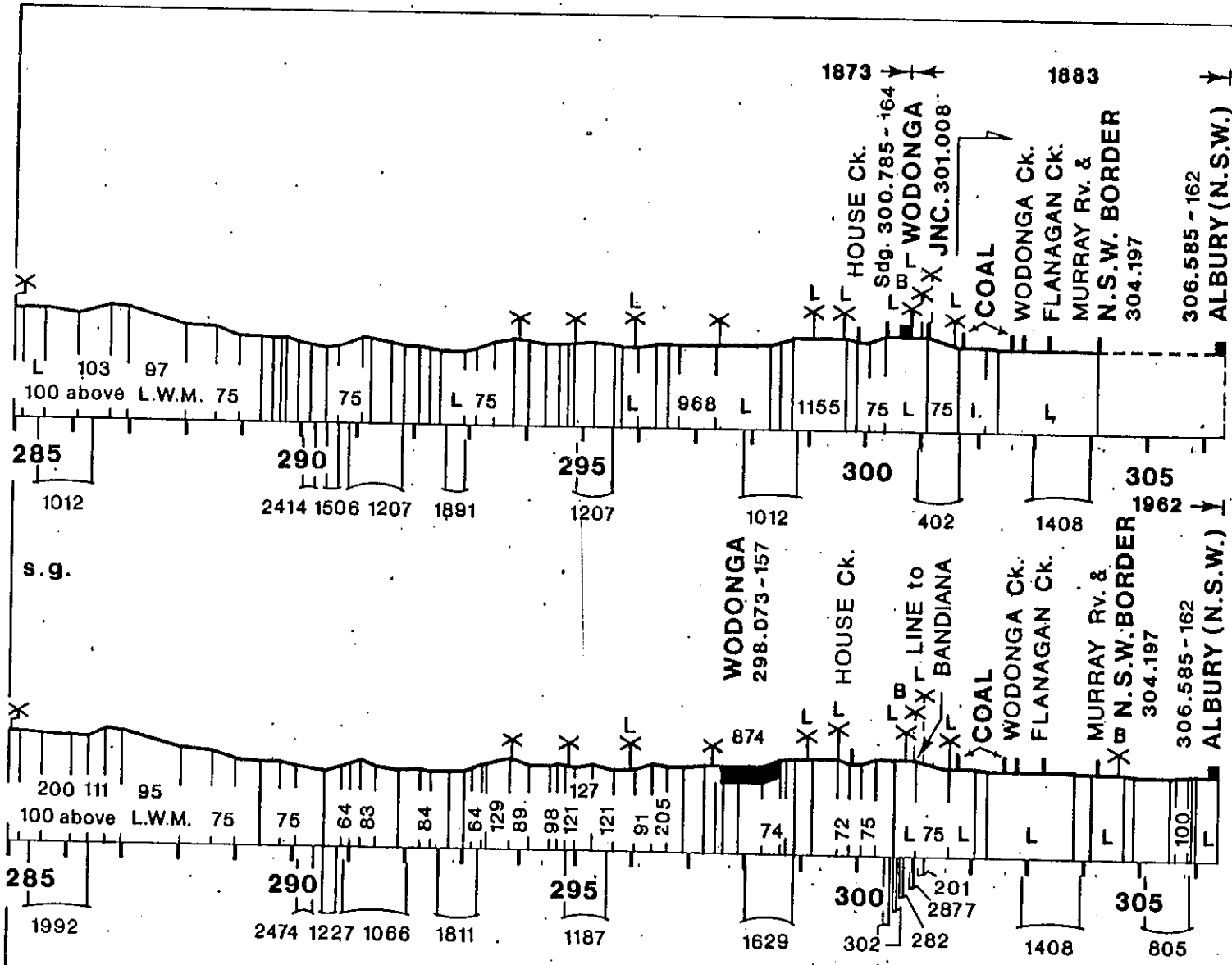
s.g.











**BANDIANA AREA**

s.g.

N.A.

JNC. 257.707  
ex SPRINGHURST

1879

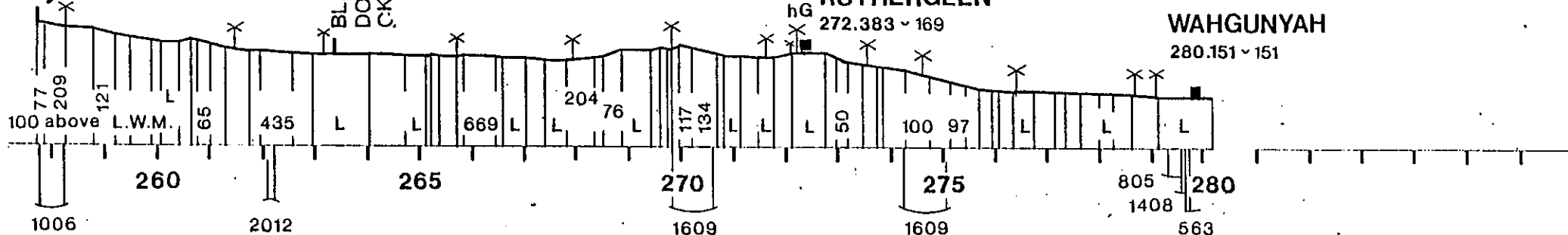
RUTHERGLEN

hG 272.383 ~ 169

WAHGUNYAH

280.151 ~ 151

BLACK  
DOG  
CK.



JNC. 195.534  
ex BENALLA

← 1883

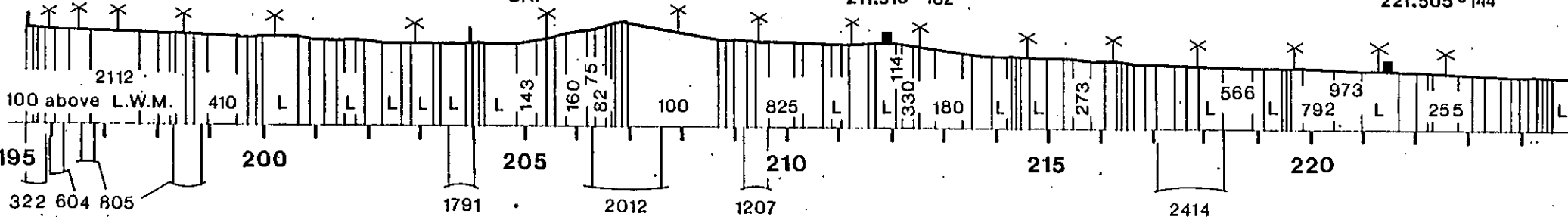
STOCKYARD  
CK.

GOORAMBAT

211.910 ~ 162

DEVENISH

221.505 ~ 144

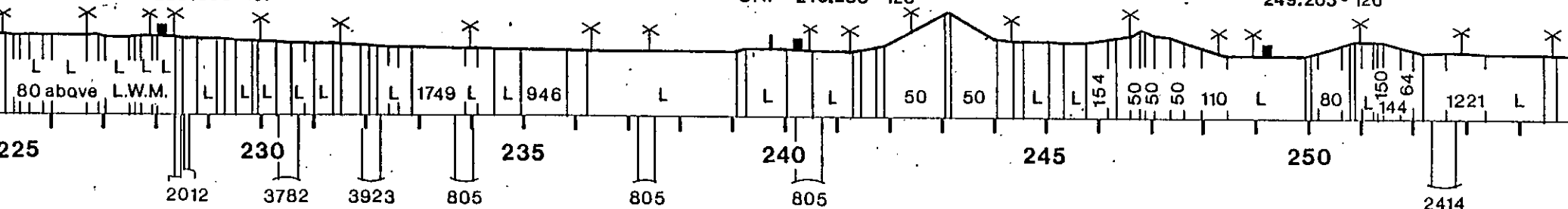


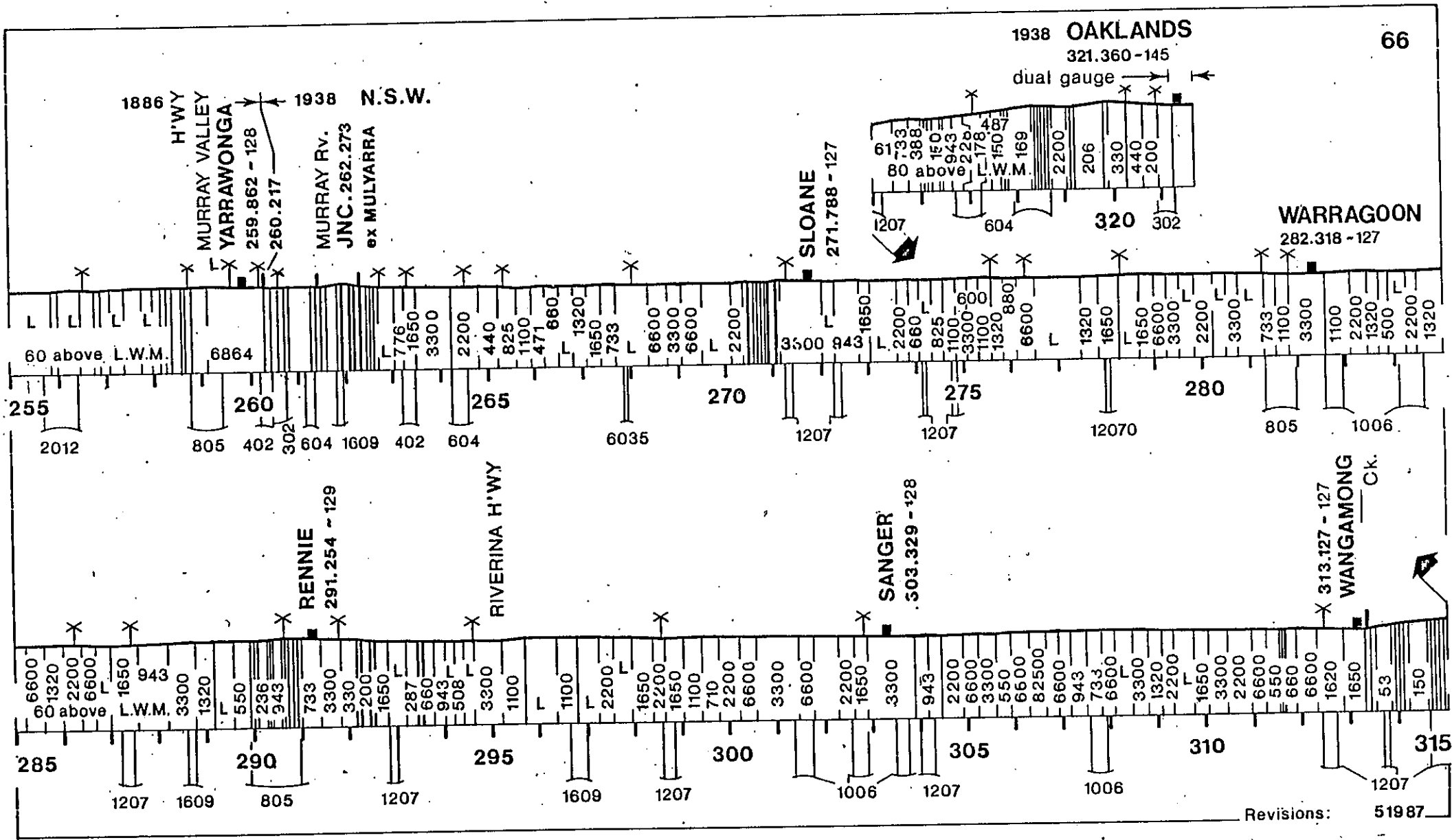
1883 → ST. JAMES ← 1886  
hG 228.083 ~ 137

BOOSEY TUNGAMAH  
CK. 240.200 ~ 128

TELFORD

249.205 ~ 126





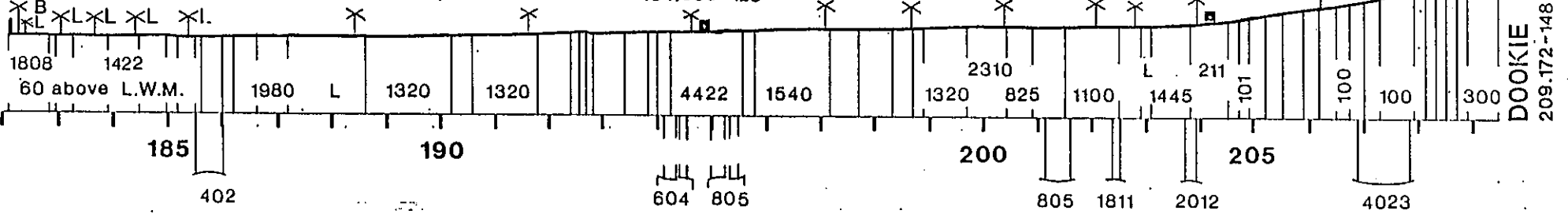
JNC. 182.045 ex SHEPPARTON  
MIDLAND H'WY

1888

PINE LODGE  
194.830 - 120

COSGROVE  
204.163 - 127

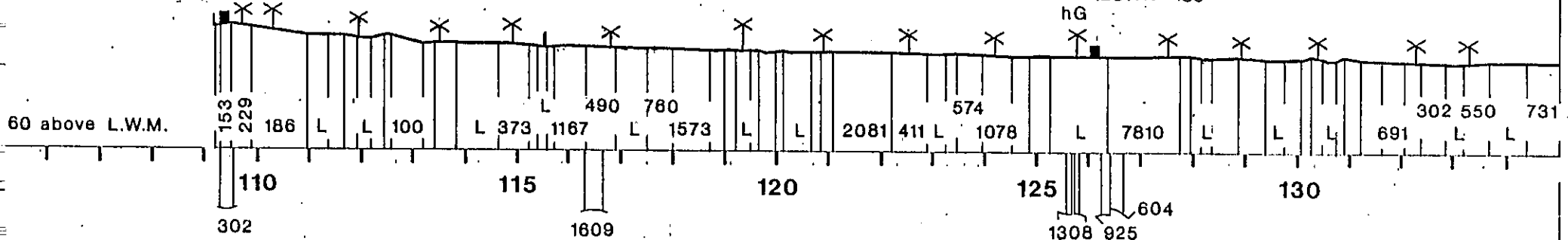
67



109.190 JNC. MANGALORE ← 1880  
ex SEYMOUR, 109.337 - 151

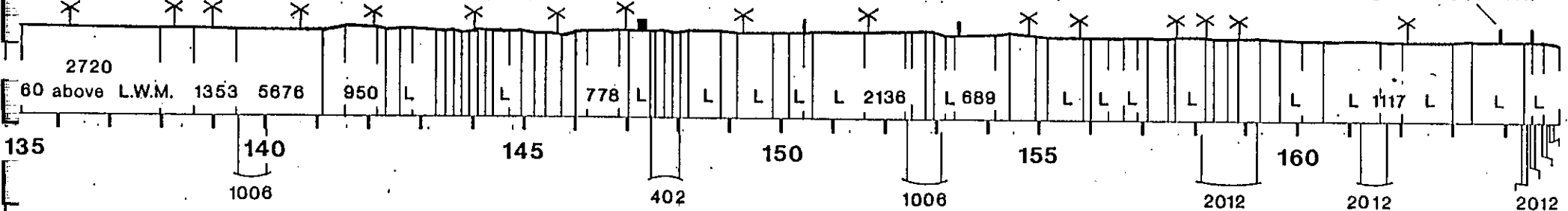
HUGHES  
CK.

NAGAMBIE  
126.115 - 130



MURCHISON E.  
L 147.245 - 122 FLYNN - MUDDY CKS.

GOULBURN  
OVERFLOW RV.



Revisions: 4 1987

TOOLAMBA  
166.052 - 117  
JNC 166.286  
ex ECHUCA

177.000 - 113  
MOOROPNA  
GOULBURN Rv.

BROKEN Rv.

GOULBURN  
VALLEY H'WY

SHEPPARTON  
181.847 - 113  
JNC. 182.045  
MIDLAND H'WY

CONGUPNA  
191.948 - 110

PINELODGE Ck.

1880 → 1881  
x DOOKIE

L 1690  
60 above L.W.M.

3620

2880

L 3790

L 1808

L 1422

L 1503

792

689

2400

L 990

L

165

170

175

180

185

190

4023

1620

302

805

805

1609

583

503

1881 → 1888

TALLYGAROPNA  
199.031 - 107

208.281 - 351  
WUNGHNU  
NINE MILE Ck.

GOULBURN  
VALLEY H'WY  
BEALA Ck.  
NUMURKAH  
215.201 - 95

L 1072 L1925 L  
80 above L.W.M.

L 2249

3717

L 4340

4455

L

L

L 2347

L

L

2860

L

317

L 5280

L 660

L

195

200

205

210

215

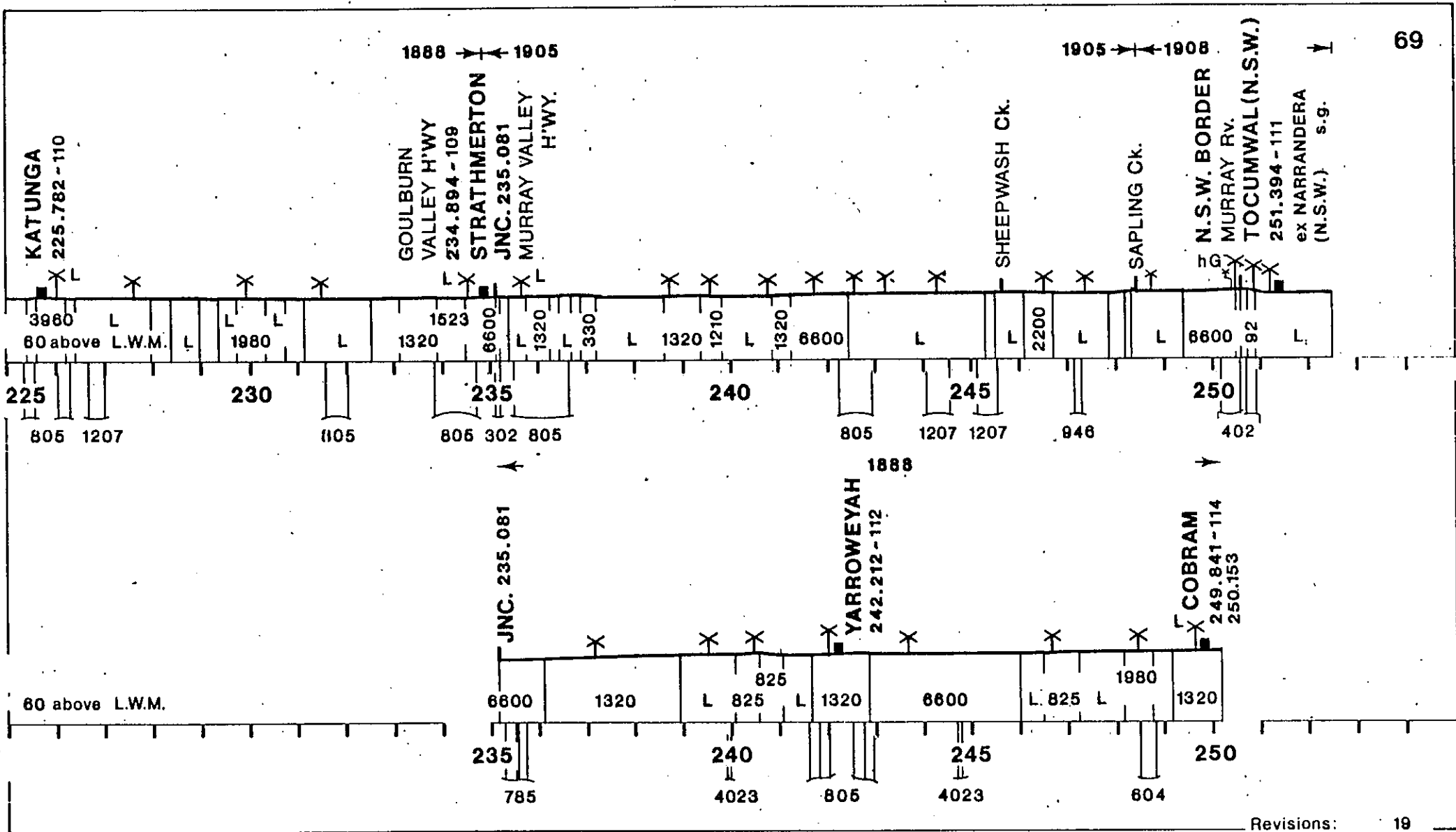
220

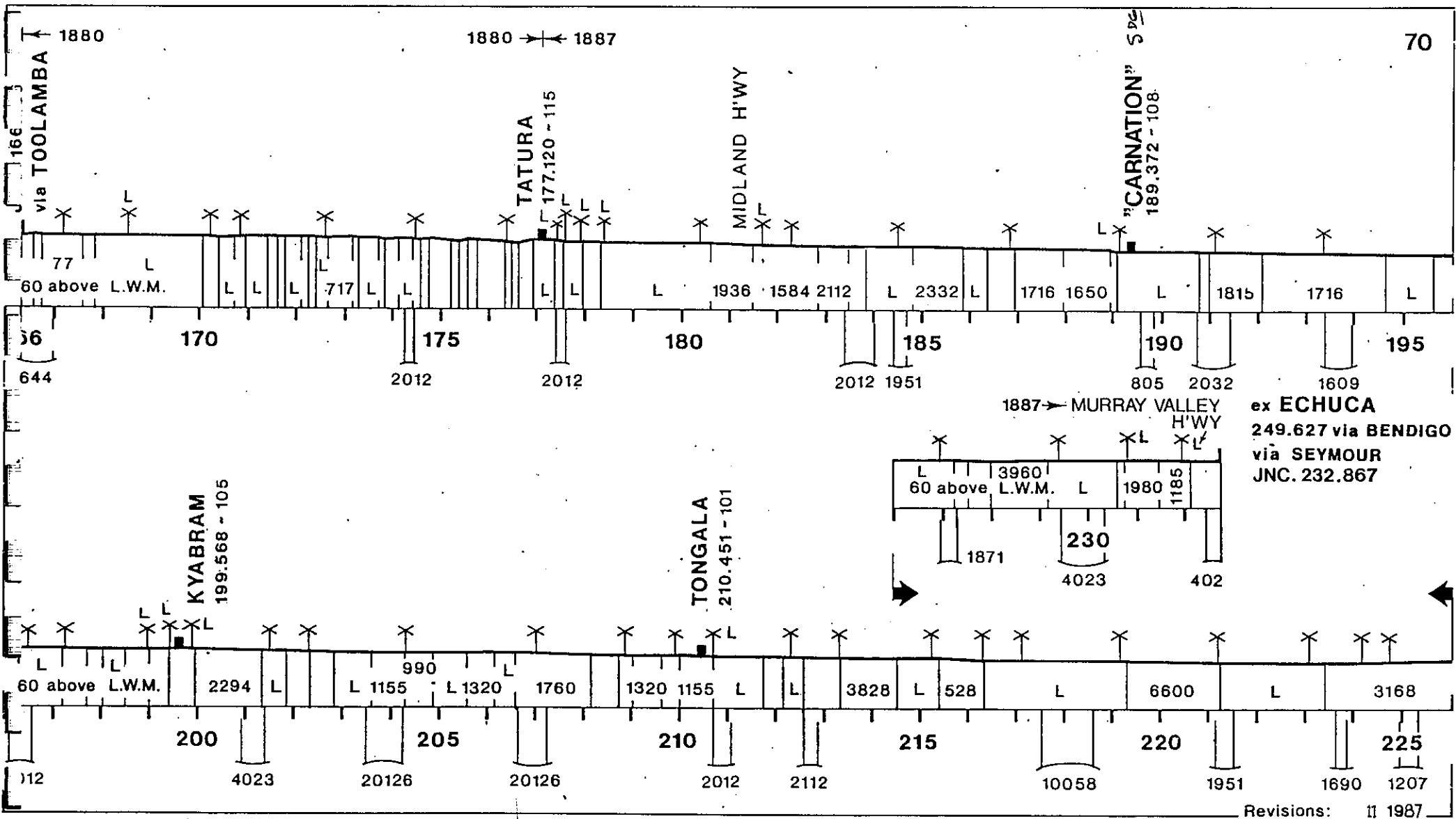
1609 362 302 1809

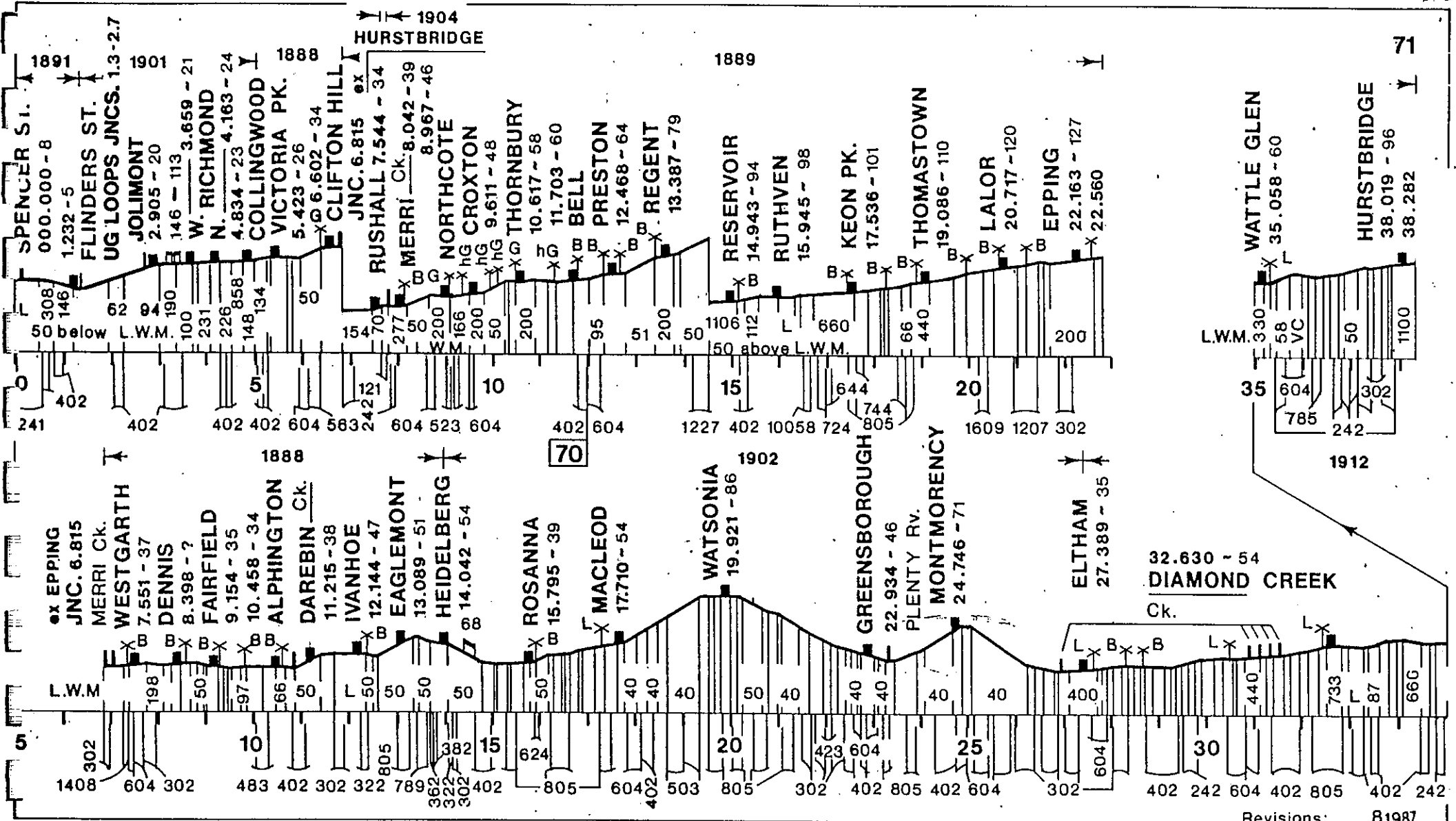
805 785 1026 1207

1207

1207

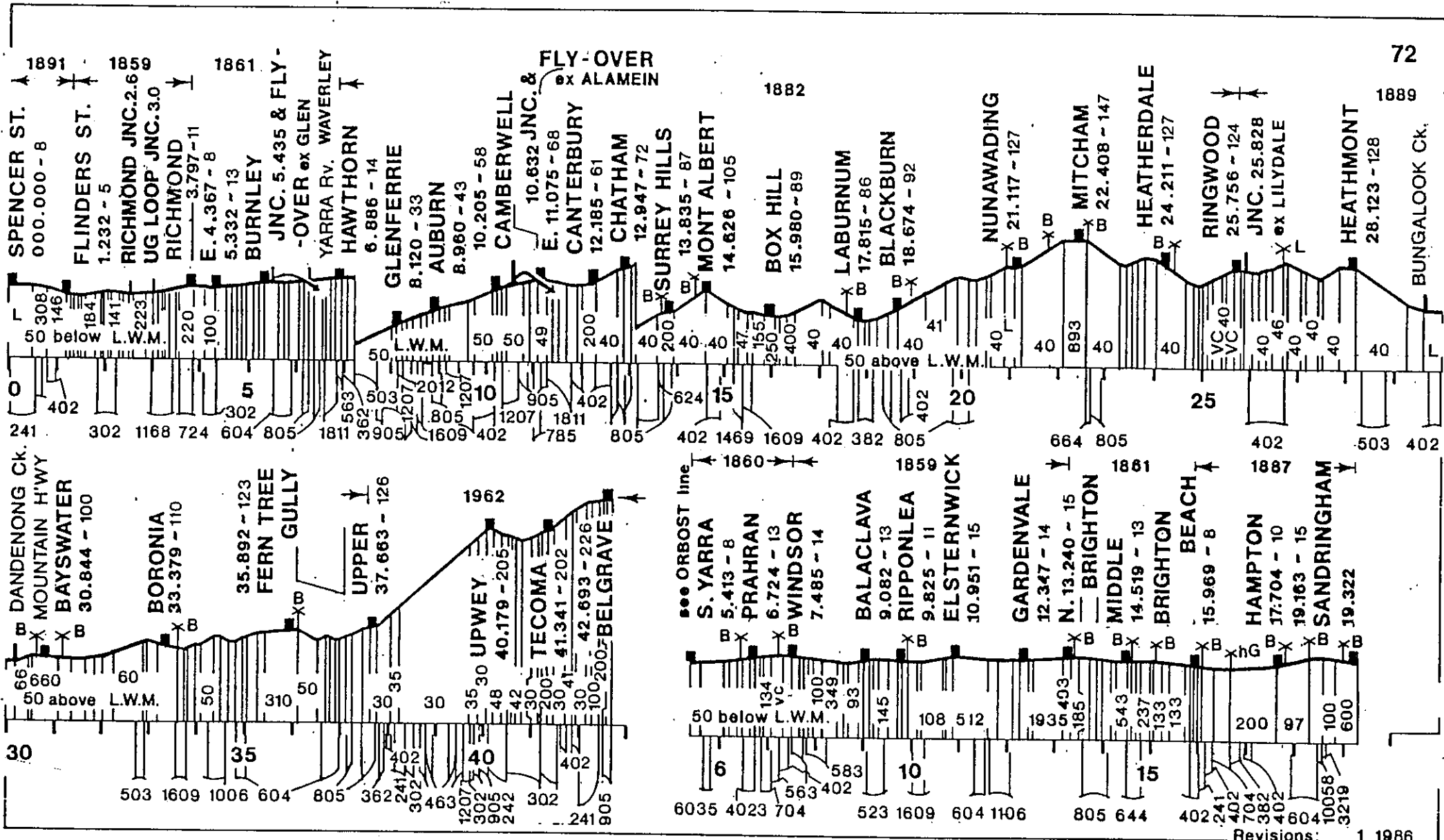




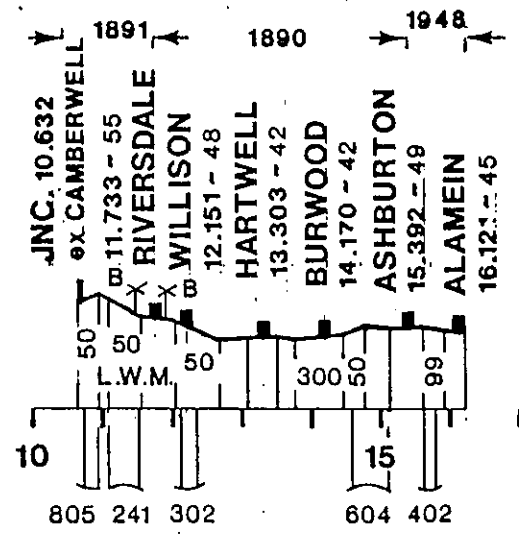
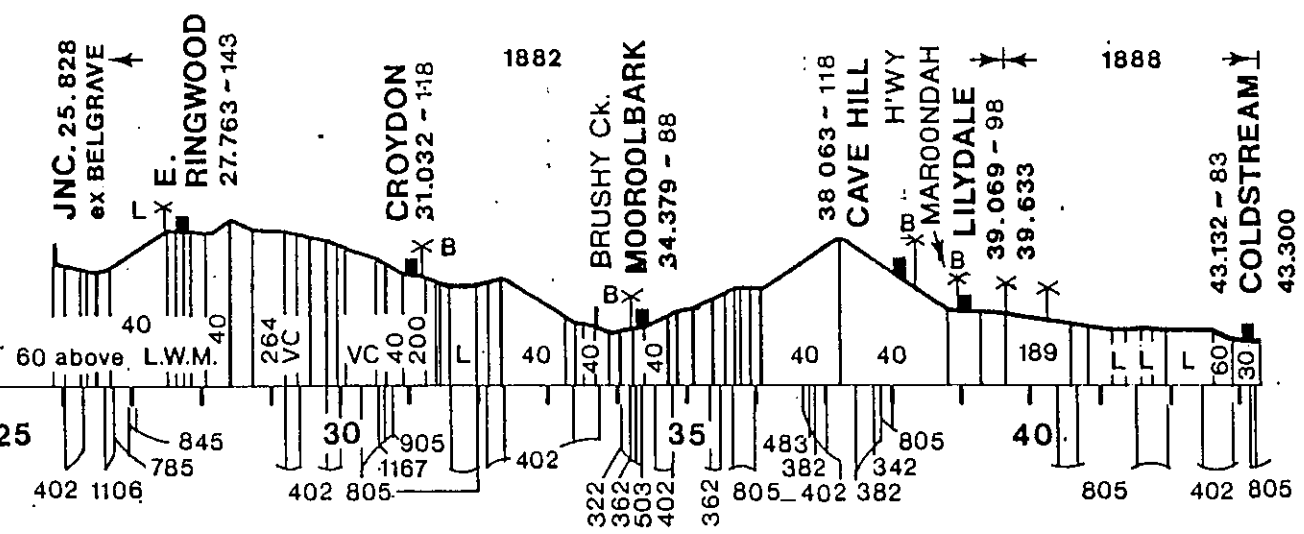
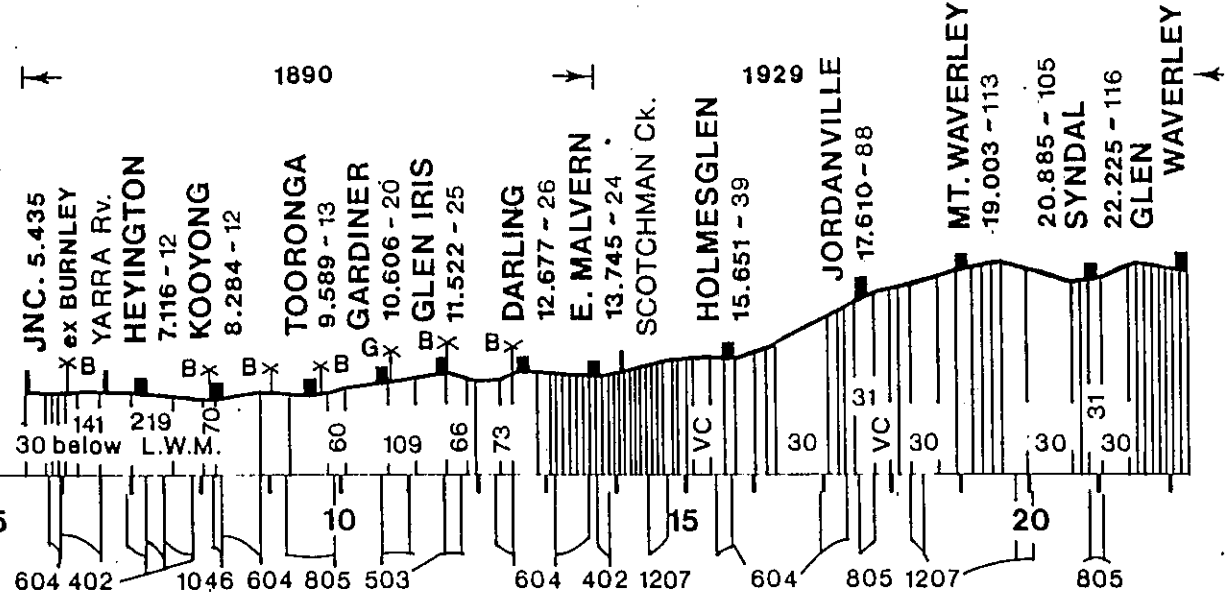


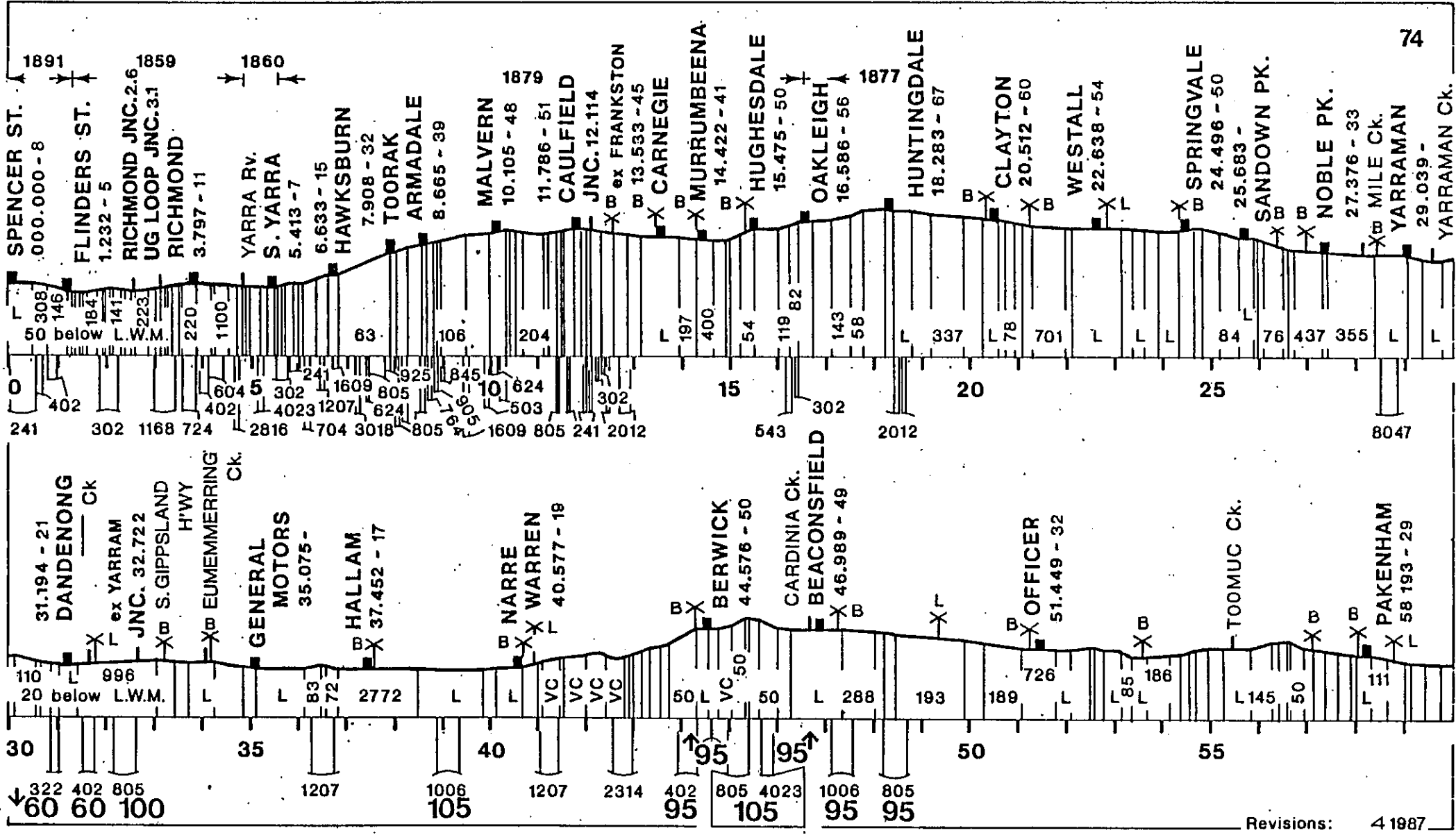
Revisions: 81987

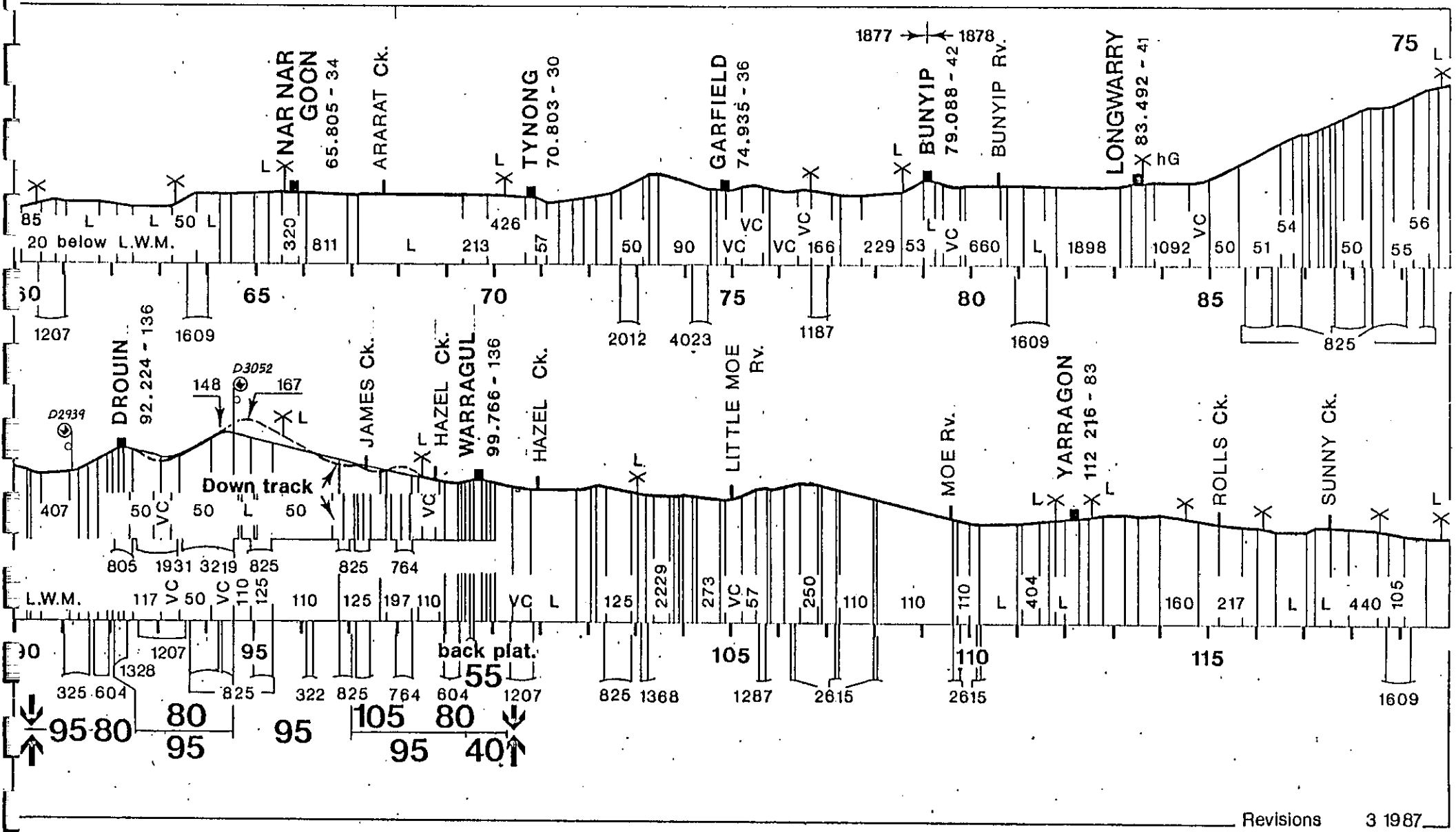




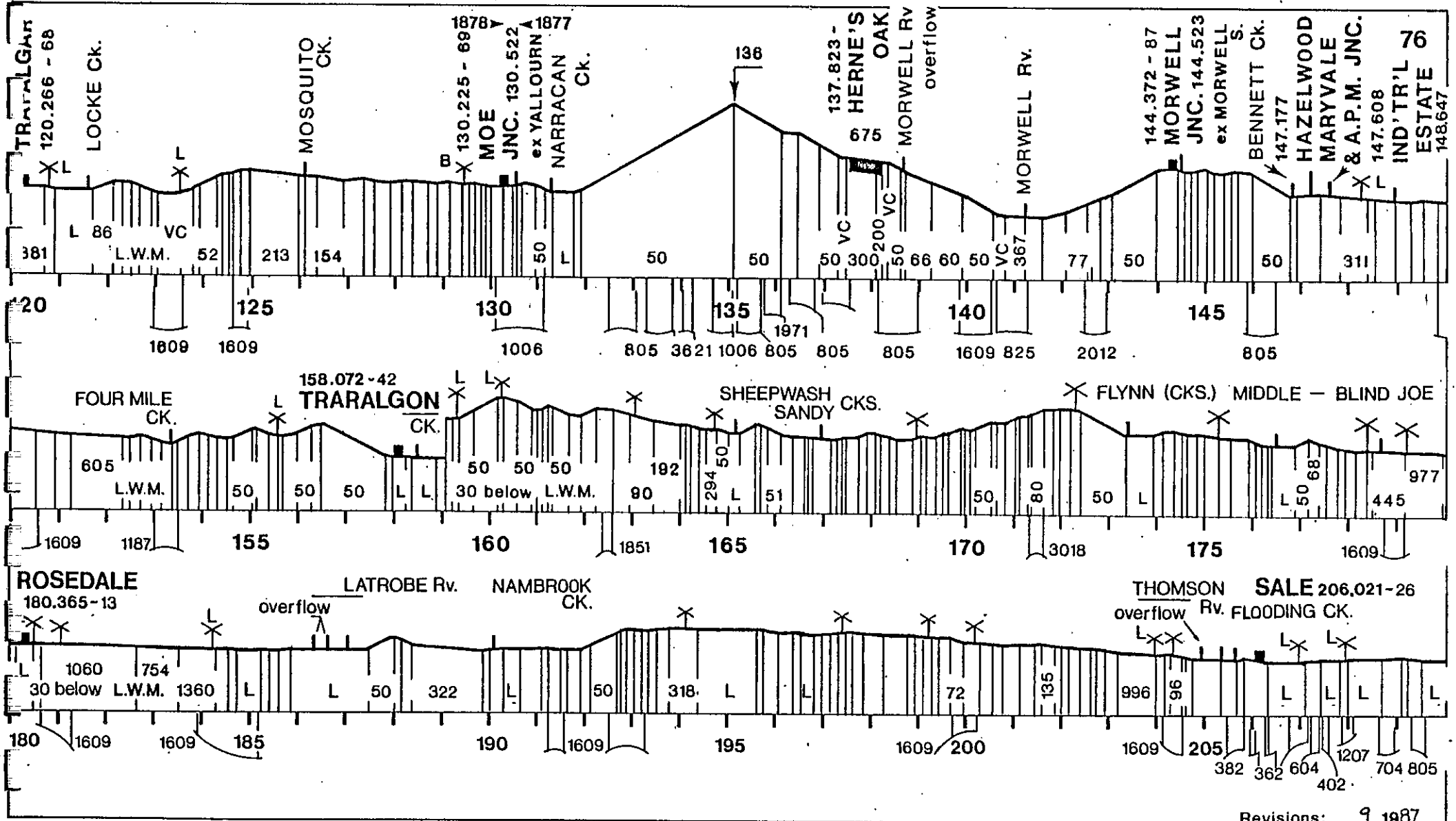
Revisions: 1 1986







Revisions 3 1987



Revisions: 9 1987

MAFFRA 228.747-18

NUNTIN Ck.

1887

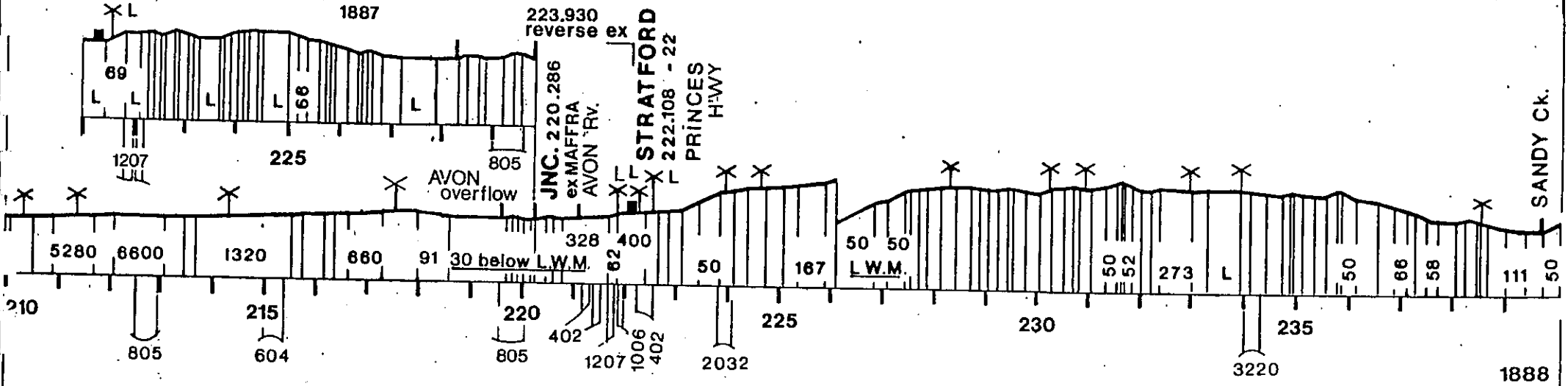
223,930 reverse ex

JNC. 220.286 ex MAFFRA AVON RV.

STRATFORD 222.108 - 22

PRINCES H'WY

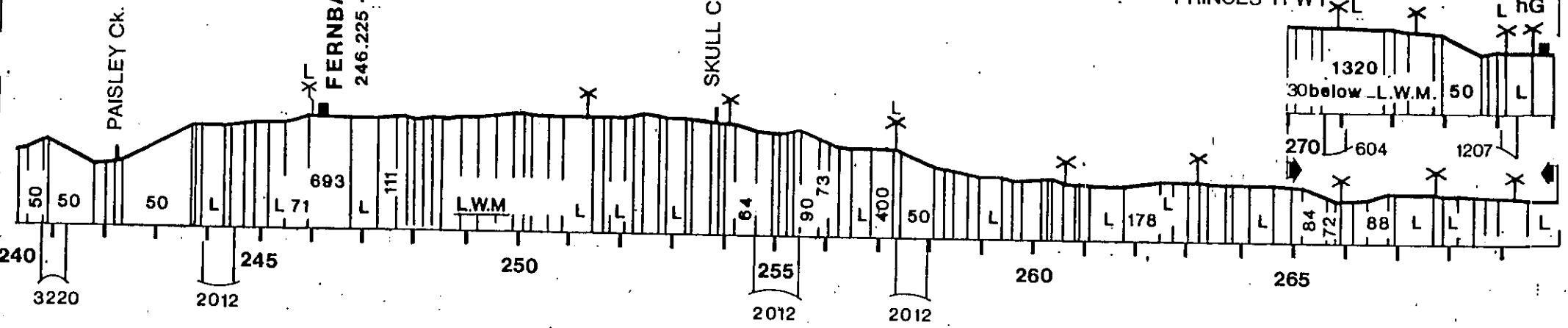
SANDY Ck.

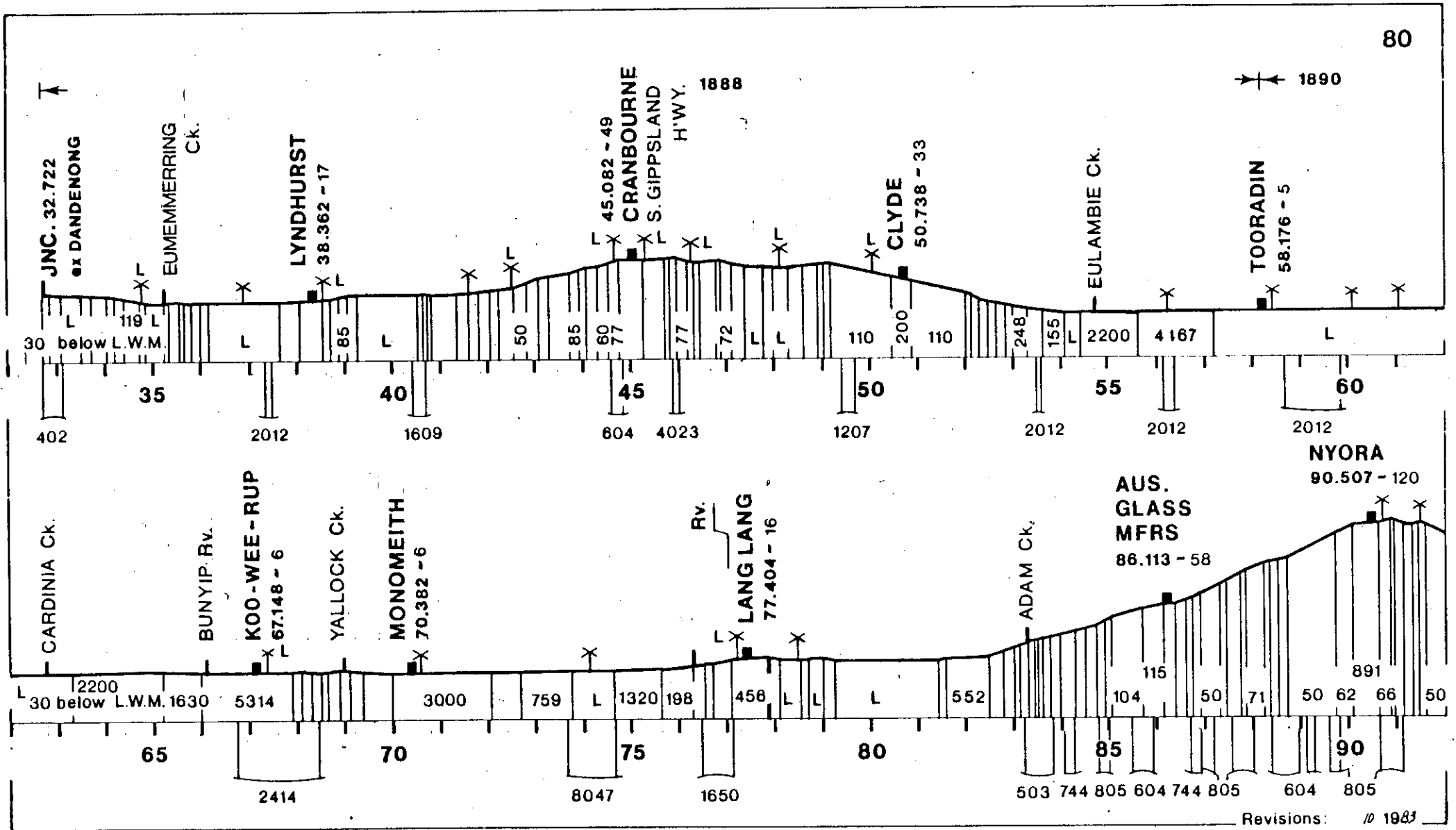


FERNBANK 246.225 - 82

SKULL Ck.

274.848-14 BAIRNSDALE PRINCES H'WY

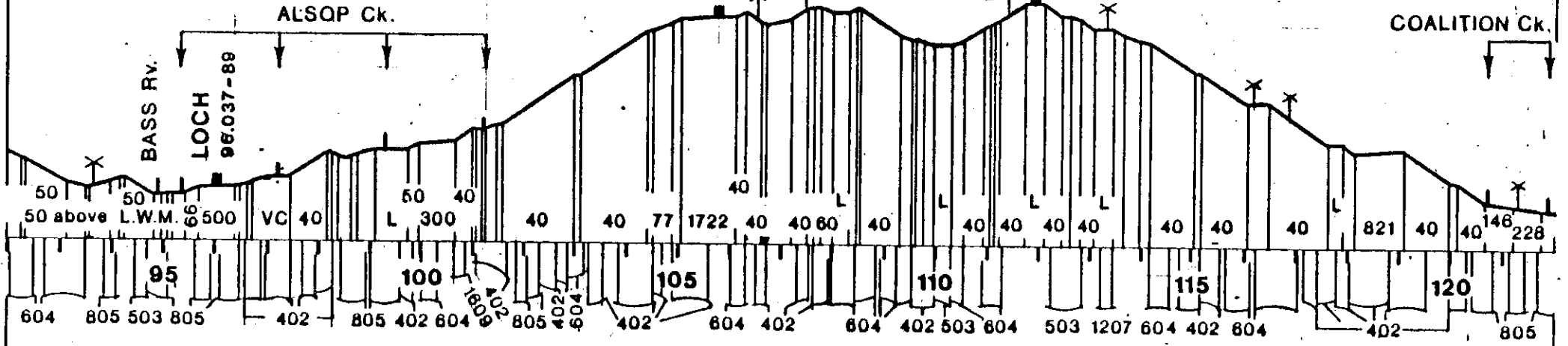




1890 1891

**BENA**  
105.792 - 214

**KORUMBURRA**  
111.896 - 227



1891 1892  
**LEONGATHA**  
126.735 - 83

GWYTHER CK.  
S. GIPPSLAND  
H'WY

BLACK SPUR CK.  
TARWIN RV.

TARWIN RV.

MEENIYAN  
142.809 - 24

STONY CK.  
LITTLE

