

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Third-order leveling

Bull. 646, pg. 53  
by W.S.D. Moore 1899  
Recopied: 6/17/54 jmr

S.L.D. of 1929

Third-order leveling; supplementary to first order by U.S.G.S. in Bull. 646 corrected and second-order line up Mt. Mitchell

FROM OLD FORT SOUTHWEST ALONG ROADS TO BROAD RIVER (part of single spur) (by W.S.D. Moore, 1899)

Broad River, 600 ft. S. of fork of Old Fort and Black Mountain Roads, 100 ft. S. of ford of Broad River, 10 ft. W. of center of rd.; iron post stamped "2517 ASH" 2516.469

FROM NEAR BILTMORE, ASHEVILLE QUADRANGLE, EAST ALONG SOUTHERN RAILROAD TO SWANNANOA (by F. B. Neary, 1929; Book B3541) (fitted to first-order line over same route and checking elevations used for Swannanoa for second-order line to Mt. Mitchell)

Biltmore Station, 2.7 mi. E. of, on W. side of N. abutment of Southern Railroad overhead bridge over State Highway 20; chiseled square 2083.60

Biltmore Station, 3.6 mi. E. of, 0.9 mi. W. of Azalea, 60 ft. S. of center line of railroad track, 40 ft. W. of small stream, 75 ft. W. of trail, in rock ledge; standard tablet stamped "N 5 1929" 2053.840

Reference mark, 140 ft. N. 45° E. of tablet, on ledge; square cut 2047.81

Azalea, 6 rails E. of station, 5 ft. N. of N. rail, in concrete base of mail crane; chiseled square 2052.72

Azalea, 1.2 mi. E. of, 10 ft. N. of track, in concrete base of signal stand; chiseled square 2114.72

Azalea, 1.9 mi. E. of, 2.6 mi. W. of Swannanoa, 10 ft. E. of switch box post, 12 ft. N. of railroad track, in ledge; standard tablet stamped "N 6 1929" 2172.926

Reference mark, 20 ft. W. of tablet, in ledge; square cut 2171.68

Azalea, 2.9 mi. E. of, 1.7 mi. W. of Swannanoa, 0.3 mi. E. of Wilson Siding, 25 ft. S. of S. rail, on pointed rock; chiseled square 2242.83

Swannanoa, 1 mi. W. of, 10 ft. S. of track, at private rd. crossing, on W. headwall of culvert; square cut 2213.46

SWANNANOA QUADRANGLE  
Bk. B3541  
by F. B. Neary, 1929  
Recopied: 6/17/54 jmr (Cont'd. P. 3) S.L.D. of 1929

Black Mountain, 1.23 mi. E. of, 20 ft. NE. of intersection of Mt. Mitchell Road with N.C. Highway 10, on W. end of N. coping of concrete bridge; square cut, painted "EM" 2420.02

Mt. Mitchell Road, 0.8 mi. N. of hwy., 300 ft. N. of toll gate, 20 ft. N. of rd. at N. end of loop, 6 ft. W. of trail W., in ledge; standard tablet stamped "N 9 1929", painted "USPEM 2646" 2645.910

Reference mark, 150 ft. S. of tablet, W. edge of rd., on boulder; chiseled square 2639.98

Mount Mitchell Road, 1.93 mi. N. of hwy., E. edge of toll rd., at bend, on boulder; chiseled square, painted "USEM" 2933.76

Mount Mitchell Road, 2.06 mi. N. of toll gate, 0.3 mi. S. of Rainbow Gap, 60 ft. N. of water barrel at junction of switchback, NE. edge of rd., at foot path, on ledge; chiseled square 3171.87

Mount Mitchell Road, 2.34 mi. N. of toll gate, 15 ft. NW. of forks of rd. at Rainbow Gap, in ledge; standard tablet stamped "N 11 1929", painted "USPEM 3249" 3249.896

Reference mark, 8 ft. S. 45° W. of tablet, on ledge; square cut 3247.63

Mount Mitchell Road, 1. mi. N. of Rainbow Gap, E. edge of abandoned rd. at trail fork E. to Buck Flat Gap, on ledge; square cut 3468.80

Mount Mitchell Road, 4.2 mi. N. of toll gate, 275 ft. N. of rd. forks at Sourwood Gap, W. edge of rd., in rock ledge; standard tablet stamped "N 11 1929", painted "USPEM 3662" 3662.574

Reference mark, 20 ft. due S. from tablet, on E. edge of rd., on boulder; square cut 3658.12

Mount Mitchell Road, 5.06 mi. N. of toll gate, at Long Gap, 100 ft. N. of forks of rd., 20 ft. E. of rd., root of 20-in. white oak; copper nail and washer 3702.19

Mount Mitchell Road, 0.9 mi. N. of Birch Springs, 2.2 mi. S. of Blue Ridge Siding, along abandoned railroad grade, 20 ft. SW. of center of stream crossing, on boulder; chiseled square 3911.39

Second-order leveling; supplementary to first and second-order leveling by U.S.C. & G.S. (see also third-order by U.S.G.S.)

FROM SWANNANOA STATION EAST ALONG SOUTHERN RAILROAD TO BLACK MOUNTAIN STATION, THENCE NORTH ALONG MT. MITCHELL HIGHWAY TO MT. MITCHELL (by F. B. Neary, 1929) Note: The marks near Mt. Mitchell are given in list for Democrat quadrangle. This line was run in the period of November 22 to December 9, inclusive, and for the special purpose of determining the height of Mt. Mitchell. The results are the corrected mean of the two runs with wye level and two one-piece wooden rods.

Swannanoa, 50.6 ft. S. of N. rail, on W. side of ticket office; iron post stamped "2222" (Bull. 646, pg. 14) 2220.543

Reference mark, 50 ft. N. of tablet, on concrete curbing; square 2220.21

Swannanoa, 1 mi. E. of, 10 ft. N. of track, at public rd. crossing, on W. head wall of concrete culvert; square cut 2253.30

Swannanoa, 1.9 mi. E. of, N. side of E. abutment on railroad bridge over Flat Creek; square cut 2242.33

Black Mountain, 2 mi. W. of, 300 ft. W. of rd. crossing, in concrete base of S. signal light post; standard tablet stamped "N 7 1929" 2288.766

Reference mark, 15 ft. N. of tablet, in concrete base of N. signal light post; square cut 2287.84

Black Mountain Station, 0.6 mi. W. of, 50 ft. E. of milepost No. 126, 7 ft. N. of center line of railroad track, on S. end of rock wall at rd. crossing; chiseled square 2330.73

Black Mountain, opposite telegraph window of Southern Railroad station; top of rail 2367.2

Black Mountain, 50 ft. S. of intersection of State and Broadway Streets, in face of NE. corner of Black Mountain Drug Company building, 5.75 ft. above sidewalk; standard tablet stamped "N 8 1929" 2400.115

Reference mark, 60 ft. W. of station, 25 ft. E. of railroad crossing, 5 ft. N. of track, on concrete curbing; chiseled square 2367.86

Black Mountain, 0.7 mi. E. of, 10 ft. S. of track, in E. end of cut, on ledge; square cut 2397.86

SWANNANOA QUADRANGLE  
Bk. B3541  
by F. B. Neary, 1929  
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Blue Ridge Siding, 1 mi. S. of, 0.18 mi. S. of junction of switchback in abandoned rd., S. of stream crossing, on W. edge of rd., on boulder; square cut 4243.56

Mount Mitchell Road, 10 ft. NW. of junction of rds. at Blue Ridge Siding, top of rock ledge; standard tablet stamped "N 12 1929", painted "USPEM 4524" 4525.268

Reference mark, 25 ft. S. of tablet, on boulder; chiseled square 4522.81

Mount Mitchell Road, 1 mi. N. of Blue Ridge Siding, on S. edge of rd., at W. end of "Turnbill Curve", on boulder; square cut 4815.02

Camp Alice, 6.02 mi. S. of, S. of Continental Divide, W. edge of rd. near gap, on boulder; square cut 4973.91

Camp Alice, 5.16 mi. S. of, 800 ft. N. of gate at entrance to Game Preserve, 20 ft. SW. of rd. fork on ton of divide, in ledge; standard tablet stamped "N 13 1929" 5190.269

Reference mark, 40 ft. E. of tablet, on boulder; chiseled square 5190.71

Camp Alice, 4.36 mi. S. of, 15 ft. W. of trail fork to Rangers Cabin at Bald Knob, on ledge; square cut 5185.77

Camp Alice, 3.4 mi. S. of, 0.5 mi. S. of Clingmans Bridge, on W. side of rd., in ledge; chiseled bench, painted "One Mile High U.S.G.S. B.M." 5281.29

Camp Alice, 3.1 mi. S. of, 30 ft. W. of center of Clingmans Bridge, on N. side of rd., in rock outcrop; standard tablet stamped "N 14 1929" 5429.075

Camp Alice, 2.1 mi. S. of, 1 mi. N. of Clingmans Bridge, 65 ft. W. of center of bridge over small stream, NW. edge of rd., on ledge; square cut 5576.34

Camp Alice, 0.94 mi. S. of, 50 ft. N. of wooden culvert, W. edge of rd. at bend, on ledge; chiseled square 5596.69

NGVD 29  
Elevations

UPPER FRENCH BROAD BENCH MARKS

Tennessee Valley Authority

Fourth Order

The UFB bench marks are filed with the TVA control booklets. The designations range from UFB-1 through UFB-315 and are listed in this order.

This cover sheet is placed with USGS Quads to inform that additional BM's are available in the listed quads.

<u>USGS</u>	<u>TVA</u>
87	194
88	185
123	202
124	193
✓160	201
161	192
194	200
195	191
196	182

NGVD 29  
Elevations

N3530-W8215/15  
NORTH CAROLINA

No. 160  
SWANNANOA QUADRANGLE

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Azalea, 1.2 mi. E. of, 10 ft. N. of track, in concrete base of signal stand; chiseled square 2114.72

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## SWANNANOVA QUADRANGLE

NORTH CAROLINA

Bk. B3541

by F. B. Neary, 1929

Recopied: 6/17/54 jmr

(Cont'd. P. 2)

S.L.D. of 1929

Second-order leveling; supplementary to first and second-order leveling by U.S.C. & G.S. (see also third-order by U.S.G.S.)

FROM SWANNANOVA STATION EAST ALONG SOUTHERN RAILROAD TO BLACK MOUNTAIN STATION, THENCE NORTH ALONG MT. MITCHELL HIGHWAY TO MT. MITCHELL (by F. B. Neary, 1929) Note: The marks near Mt. Mitchell are given in list for Democrat quadrangle. This line was run in the period of November 22 to December 9, inclusive, and for the special purpose of determining the height of Mt. Mitchell. The results are the corrected mean of the two runs with wye level and two one-piece wooden rods.

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Swannanoa, 1.9 mi. E. of, N. side of E. abutment on railroad bridge over Flat Creek; square cut	2242.33
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Mount Mitchell Road, 2.34 mi. N. of toll gate, 15 ft. NW. of forks of rd. at Rainbow Gap, in ledge; standard tablet stamped "N 11 1929", painted "USPBM 3249" <i>ERRONEOUSLY</i>	3249.896 ✓
Reference mark, 8 ft. S. 45° W. of tablet, on ledge; square cut	3247.63 ✓
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<i>R.M., 75 FT. S. 45° W. OF TABLET, ON LEDGE, CHISELED SQUARE</i>	<i>5427.55</i>
Camp Alice, 2.1 mi. S. of, 1 mi. N. of Clingmans Bridge, 65 ft. W. of center of bridge over small stream, NW. edge of rd., on ledge; square cut	5576.34 ✓
Camp Alice, 0.94 mi. S. of, 50 ft. N. of wooden culvert, W. edge of rd. at bend, on ledge; chiseled square	5596.69 ✓

NGVD 29  
Elevations