

SURVEY CONTROL DATA IN QUADRANGLE 215

AYERS (NORTH CAROLINA HIGHWAY DEPT., 1969; Watauga County, North Carolina)
 Located approximately 4.7 miles southwest of Boone. To reach station proceed from the intersection of NC 105 and SR 1112 on the south side of Watauga River, go west on SR 1112 for 0.2 mile to gravel road going left (Ayers Castle Mountain), follow gravel road uphill for 0.95 mile to "Y" intersection of lane to home of Mr. Hollolan and road to home of Mr. Potter. Station is in the middle of the "Y". Station is a standard North Carolina Brass Traverse disk, stamped "AYERS 1969", set in the top of a concrete cylinder, the top of which is flush with the surface of the ground. Station is also 40.7 feet north of north end of circle of hedge bushes, 54.1 feet north of lamp post inside circle of hedge bushes in yard, 178.6 feet northeast of power pole on north side of road, and with aluminum reference tag, 8.0 feet west of center of road and 9.4 feet east of center of road.

GEODETIC POSITION: Lat. = 36°11'16.194"; Long. = 81°45'03.246" (HWY-2)
 Geodetic Azimuth Distance
 To Station Azimuth Back Azimuth Log. Meters Miles
 Triplet 85°47'28.6"
 GRID POSITION (North Carolina): X = 1,188,263.94; Y = 898,499.63 (HWY-2)
 Grid Azimuth to Triplet: 87°22'45"
 ELEVATION: 3325 feet or 1013.4 meters (HWY-5)

BANNER (NORTH CAROLINA HIGHWAY DEPT., 1969; Avery County, North Carolina)
 Located approximately 1.2 miles south-southeast of Banner Elk. To reach station, proceed from the intersection of NC 184 and NC 194 in Banner Elk, go south on NC 184 for 1.5 miles to intersection of NC 184 and dirt road to right, take dirt road across wood bridge and go 0.15 mile to driveway of the Banner home on right. Station is embedded in rock on the southeast edge of the yard. A standard North Carolina Brass Traverse disk, stamped "Banner 1969" embedded in a rock which is flush with the ground. Banner is a North Carolina Geodetic Survey Traverse Station established in the vicinity of Boone, North Carolina. Station is 116.0 feet east southeast of southeast corner of a 2 story frame house with shingle siding; 64.8 feet east southeast of 24 inch maple in front yard of house; 80.2 feet southeast of 24 inch maple in front yard of house; 148.6 feet east northeast of power pole with dusk to dawn light, and with aluminum reference tag; and 135.9 feet northeast of 12 inch pear tree in front of house trailer.

GEODETIC POSITION: Lat. = 36°08'43.296"; Long. = 81°51'43.248" (HWY-2)
 Geodetic Azimuth Distance
 To Station Azimuth Back Azimuth Log. Meters Miles
 Grandfather 323°56'50.4"
 GRID POSITION (North Carolina): X = 1,155,040.30; Y = 883,971.58 (HWY-2)
 Grid Azimuth to Grandfather: 325°35'57"
 ELEVATION: 3727 feet or 1136 meters (no check) (HWY-5)

BEECH (USGS, 1934; Watauga County, North Carolina)
 Located about 1.8 miles northwest of Banner Elk on the highest point of Beech Mountain. Best approached by turning north at D&P filling station in Banner Elk. Car can be driven to saddle west of high knob. Foot trail leads to top. Excellent view in all directions except to low points to north and east. Station mark is a standard USGS tablet stamped "Beech 1934" and set in top of boulder on highest point. References are drill holes in ledges respectively N 55° W, 8.2 feet N 9° E, 10.5 feet; N 84° 45' E, 7.8 feet.

GEODETIC POSITION: Lat. = 36°11'01.912"; Long. = 81°52'53.712" (HWY-2)
 Geodetic Azimuth Distance
 To Station Azimuth Back Azimuth Log. Meters Miles
 Banner 337°35'31.9"
 GRID POSITION (North Carolina): X = 1,149,670.11; Y = 898,150.05 (HWY-2)
 Grid Azimuth to Banner: 339°15'19"
 ELEVATION: 5506 feet or 1678.1 meters (HWY-5)

BM 2636.8 (USGS, 1934; Watauga County, North Carolina)
 Located 6.6 miles west of Vilas, 7.0 miles southeast of Beech Creek, about 300 feet upstream from Antioch Church, and 10 feet west from center of road. Station is a chiseled square on southeast corner of old store building, painted "BM 2636.8".
 ELEVATION: 2636.14 feet (T-3)

BM 2700.1 (USGS, 1934; Avery County, North Carolina)
 Located 4.3 miles southeast of Beech Creek, 12 feet southeast of center of temporary Route 603. Station is a chiseled square, painted "BM 2700.1", on rock outcrop in cut.
 ELEVATION: 2699.27 feet (G-3)

BM 3284.9 (USGS, 1934; Avery County, North Carolina)
 Located 1.1 miles northeast of Heaton, 30 feet northwest of center of North Carolina Highway 194, 62 feet N 20° E of old road intersection, 160 feet north of northwest corner of two-story white house on southeast side of road. Station is a chiseled square, painted "BM 3284.9" on top of large boulder.
 ELEVATION: 3284.48 feet (G-3)

BM 3319.5 (USGS, 1934; Avery County, North Carolina)
 Located 2.0 miles east of Frank, 25 feet south of centerline of road, 75 feet north of former house, 7 feet below surface of road.
 NOTE: Searched for, but not found August 1960.
 ELEVATION: 3318.90 feet (G-3)

BM 3508.9 (USGS, 1934; Carter County, Tennessee)
 Located 5.0 miles northeast of Shell Creek, 45 feet east of center of Walnut Mountain Road, on bottom of southwest concrete steps of former Laurel Fork School. Station is a chiseled square.
 NOTE: Schoolhouse torn down, but steps still intact.
 ELEVATION: 3508.90 feet (G-3)

BM 3587.5 (USGS, 1934; Avery County, North Carolina)
 Located 4.4 miles southeast of Pineola, 1.0 mile east of Overhead Bridge School, 100 feet northwest of western entrance to Daniel Boone Wildlife Management Area, and 50 feet north of centerline of road. Station is a 1 inch square cut in boulder.
 ELEVATION: 3587.53 feet (G-3)

BM 3627.7 (USGS, 1934; Avery County, North Carolina)
 Located 2.0 miles south of former Idenville Depot, 100 feet south of highway bridge, 150 feet southwest of dam, 35 feet southeast of centerline of old highway, at road intersection. Station is a square cut, painted "BM 3627.7" on rock outcrop.

NOTE: Elevation close to final value but use with caution. Since additional leveling may require a readjustment of the line.
 ELEVATION: 3627.332 feet or 1105.613 meters (C-2)

BM 3783.0 (USGS, 1934; Avery County, North Carolina)
 Located 0.8 mile east of Bowers Gap, 0.7 mile west of former Matney Post Office, on east end of north head wall of concrete culvert. Station is a square cut "BM 3783.0".
 ELEVATION: 3782.85 feet (G-3)

BM 3784.0 (USGS, 1934; Avery County, North Carolina)
 Located 1.8 miles east of Newland, 1.8 miles north of Montezuma, 15 feet west of Sugar Mountain Road No. 1 to Banner Elk, on top of 40- by 15- by 7-foot boulder. Station is a square cut, painted "BM 3784.0".
 ELEVATION: 3783.68 feet (G-3)

BM 3810.4 (USGS, 1934; Avery County, North Carolina)
 Located 3.2 miles northwest of Crossnore, 530 feet south of road intersection, 23 feet east of centerline of road. Station is a square cut, painted "BM 3810.4" on rock outcrop.
 ELEVATION: 3810.11 feet (G-3)

BM 3881.9 (USGS, 1934; Watauga County, North Carolina)
 Located 8.5 miles southwest of Blowing Rock, 15 feet west of centerline of U. S. Highway 221, 30 feet east of waterfall over large ledge, on northwest corner of west head wall of concrete highway bridge. A chiseled square, painted "USBM 3881.9".
 ELEVATION: 3881.53 feet (G-3)

BM 3921.5 (USGS, 1934; Caldwell County, North Carolina)
 Located 4.7 miles northwest of former Gragg Post Office, 40 feet southwest of centerline of bridge, 15 feet south of stream, 30 feet west of centerline of highway top of large boulder. Station is a chiseled square, marked "USGS".
 ELEVATION: 3921.50 feet (G-3)

BM 3973.0 (USGS, 1934; Caldwell County, North Carolina)
 Located 10.6 miles southwest of Blowing Rock, 20 feet north of road intersection, 150 feet northeast of Avery-Caldwell County line, 15 feet northwest of centerline of U. S. Highway 221, on end of concrete headwall of drain pipe. Station is a chiseled square, painted "USBM 3973.0".
 ELEVATION: 3972.70 feet (G-3)

BM 4000.6 (USGS, 1934; Avery County, North Carolina)
 Located 11.8 miles southwest of Blowing Rock, 75 feet east of road intersection, 15 feet northeast of center line of U. S. Highway 221, on east end of masonry head wall of drain pipe. Station is a chiseled square, painted "USBM 4000.6".
 ELEVATION: 4000.31 feet (G-3)

BM 4273.8 (USGS, 1934; Avery County, North Carolina)
 Located 3.3 miles northeast of Linville, 40 feet northeast of centerline of U. S. Highway 221, 30 feet northeast of drain pipe, on highest point of boulder. Station is a chiseled square, painted "USBM 4273.8".
 ELEVATION: 4273.45 feet (G-3)

BM 4417.2 (USGS, 1934; Avery County, North Carolina)
 Located 6 miles north of Montezuma, 3.4 miles south of Banner Elk, 50 feet northeast of Sugar Mountain Road No. 1, 150 feet northwest of face of high cliff, 0.5 mile northwest of highest peak of Sugar Mountain, 40 feet east of high pointed ledge in cultivated field, 3 feet above ground and 8 inches below top of small vertical outcrop, in east face. Station is a square cut, "BM 4417.2".
 ELEVATION: 4416.94 feet (G-3)

C 61 (USCGS, 1934; Avery County, North Carolina)
 Located about 4.0 miles north along U. S. Highway 221 from Linville Falls, Burke County, at the south end of a long tangent, about 10 yards south of the centerline of a driveway leading to a farm, about 13 yards east of the centerline of the highway, and 2 feet west of pole 993. Station is a standard disk stamped "C 61 1934" and set in the top of a concrete post.
 NOTE: Use elevation with caution. Additional leveling may require readjustment.
 ELEVATION: 3270.512 feet or 996.854 meters (C-2)

D 61 (USCGS, 1934; Avery County, North Carolina)
 Located about 2.2 miles west along U. S. Highway 221 from Pineola, about 0.3 mile northeast of the junction of a road at Crossnore, about 1.2 miles south-west of the junction of State Highway 194, at the south end of a tangent, about 22 yards north of the centerline of the driveway leading to the garage of a 2-story frame house, about 13 yards south of a 24 inch corrugated iron pipe culvert, about 13 yards east of the centerline of the highway, and at a fence corner. Station is a standard disk stamped "D 61 1934" and set in the top of a concrete post.
 NOTE: While the elevations are quite close to their final values, they should be used with caution since additional leveling in this area may require a readjustment of the line.
 ELEVATION: 3345.485 feet or 1019.706 meters (C-2)

ELDERS (NORTH CAROLINA HIGHWAY DEPT., 1969; Watauga County, North Carolina)
 Located about 1.9 miles west of Matney and 2.6 miles south of Rominger. To reach station proceed from intersection of NC 194 and NC 184 in Banner Elk, go west on NC 194 for 1.6 miles to SR 1335 (Lee Gaultney Road), turn left on SR 1335 and go 0.75 mile to "Y" intersection, keep to left for 0.4 mile to "Y" intersection, take road to right around sharp curve and follow road uphill for 0.9 mile to farm road leading left, take farm road for 0.25 mile to station on right of farm road, on south edge of bare hill overlooking valley. Station is 82.0 feet east northeast of center of road leading up mountain; 168.6 feet south southeast of south end fence post, fence runnign north and south, and with aluminum reference tag; 99.0 feet northwest of edge of slope; 38.0 feet southwest of edge of slope. A standard North Carolina Brass Traverse disk, stamped "ELDERS 1969", set in top of concrete cylinder, the top of which is 2 inches below surface of ground.
 GEODETIC POSITION: Lat. = 36°11'13.965"; Long. = 81°50'58.780" (HWY-2)
 Geodetic Azimuth Distance
 To Station Azimuth Back Azimuth Log. Meters Miles
 Thomas 48°20'46.0"
 GRID POSITION (North Carolina): X = 1,159,123.40; Y = 899,096.40 (HWY-2)
 Grid Azimuth to Thomas: 49°59'27"
 ELEVATION: 4760 feet or 1450.8 meters (HWY-5)

ELK PARK 1 (USGS, 1934; Watauga County, North Carolina)

Located about 1.7 miles west of Valle Crucis on highest point of Rocky Face Mountain. A drill hole in triangle chiseled in bedrock directly under signal. Signal is flag in 16 inch oak tree bearing triangle blaze.

GEODETIC POSITION: Lat. = 36°12'25.581"; Long. = 81°48'41.092" (G-3) (No Check)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Hanging Rock	11°21'03.0"	191°20'35.0"	3.780 174	3.7
Rich	251 36 17.6	71 40 01.1	3.997 937	6.2

GRID POSITION (Tennessee): X = 3,235,400.8; Y = 687,152.9 (G-3)
ELEVATION: 4218 feet (G-5)

ELK PARK 2 (USGS, 1934; Watauga County, North Carolina)

Located 6 miles northeast of Elk Park; 1/4 mile north of Whaley Post Office on bar ridge, 21 feet S55°W, of Y-fence. Signal with drill hole under it.

GEODETIC POSITION: Lat. = 36°14'20.549"; Long. = 81°56'00.618" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Hump	32°45'23.9"	212°42'37.2"	4.115 676	8.1
Buck Ridge	147 16 08.4	327 15 30.1	3.476 068	1.9
Beech	322 39 14.1	142 41 04.5	3.886 431	4.8

GRID POSITION (Tennessee): X = 3,198,929.0; Y = 697,249.7 (G-3)
ELEVATION: 3731 feet (G-5)

ELK PARK 4 (USGS, 1934; Avery County, North Carolina)

Located about 4 miles northeast of Elk Park on bare top 1/4 mile east of Fall Creek Church. Station is a drill hole in rock.

GEODETIC POSITION: Lat. = 36°12'14.12"; Long. = 81°56'00.48" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Hump	44°56'31.27"	224°53'44.48"	4.0000 982	6.2
Sugar	329 36 41.82	149 38 43.58	4.0000 940	6.3

ELK PARK 5 (USGS, 1934; Watauga County, North Carolina)

Located about 1.6 miles southwest of Valle Crucis on summit of Valle Mtn.; signal in 20 inch chestnut tree bearing triangle blaze. Drill hole in triangle chiseled on stone set in position directly under signal.

GEODETIC POSITION: Lat. = 36°11'46.53"; Long. = 81°48'06.81" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Hanging Rock	23°27'58.70"	203°27'10.46"	3.7101 381	3.2
Rich	243 10 21.88	63 13 45.08	3.9833 697	6.0

ELK PARK 7 (USGS, 1934; Avery County, North Carolina)

Located about 3.0 miles northeast of Elk Park, 1/4 mile north of Banner Elk road, 30 feet S10°E, of top of wooded knoll. Flag in 24 inch white oak tree. Reference Mark is N 52° E, 7.0 feet of white oak.

GEODETIC POSITION: Lat. = 36°10'40.94"; Long. = 81°55'54.78" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Beech	261 20 27.62	81 28 44.51	3.8600 133	2.8
Sugar	319 44 54.65	139 46 53.01	3.8901 734	4.8

GRID POSITION (North Carolina): X = 1,134,769.7; Y = 896,464.8 (G-3)

ELK PARK 8 (USGS, 1934; Avery County, North Carolina)

Located about 1.5 miles north of Elk Park; flag is 69.0 feet, S 65°E, from top of hill in apple orchard. A drill hole in rock set at base of pole. Reference point is drill hole in rock set about 6 inches above ground.

GEODETIC POSITION: Lat. = 36°10'22.99"; Long. = 81°59'02.90" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Hump	34°24'27.36"	214°23'28.25"	3.6466 798	2.8
Sugar	298 54 52.23	118 58 41.54	4.0455 418	6.9

GRID POSITION (North Carolina): X = 1,119,298.5; Y = 895,110.0 (G-3)

ELK PARK 9 (USGS, 1934; Avery County, North Carolina)

Located 1 1/4 miles S 30° W of Elk Park, signal is a flag on pole on bare rocky top known as Little Hump. Station is a drill hole in rock under signal.

GEODETIC POSITION: Lat. = 36°08'18.21"; Long. = 81°59'27.50" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Beech	242°49'28.10"	62°53'20.46"	4.0437 920	6.9
Sugar	278 22 50.44	98 26 54.18	4.0190 472	6.5

GRID POSITION (North Carolina): X = 1,116,902.3; Y = 882,558.5 (G-3)

ELK PARK 10 (USGS, 1934; Avery County, North Carolina)

Located 1.3 miles east of Cranberry, 1500 feet west of Smoky Gap, 30 feet south of woods edge along top of ridge in top of 10 inch locust tree, flag. Station is under signal.

GEODETIC POSITION: Lat. = 36°08'01.34"; Long. = 81°56'23.22" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Beech	223°14'29.42"	43°16'33.04"	3.8832 684	4.7
Sugar	279 58 08.38	100 00 23.41	3.7647 195	3.6

GRID POSITION (North Carolina): X = 1,131,961.1; Y = 880,401.8 (G-3)

ELK PARK 11 (USGS, 1934; Avery County, North Carolina)

Located 1.6 miles west of Montezuma on the highest point of Spanish Oak Mountain. The summit is cleared and signal was fastened to a fence post. Station mark is a drill hole in triangle chiseled on rock set in position under signal.

GEODETIC POSITION: Lat. = 36°04'04.28"; Long. = 81°56'23.76" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Elk Park 16	04°00'36.74"	184°00'28.62"	3.693 9914	3.1
Elk Park 18	34 41 11.57	214 39 15.66	3.938 2361	5.4
Grandmother	273 38 33.06	93 41 58.57	3.942 2049	5.4
Jonas	342 49 23.37	162 50 50.43	4.099 1257	7.8
Elk Park 17	355 22 16.32	175 22 21.08	3.388 2918	1.6

ELK PARK 12 (USGS, 1934; Avery County, North Carolina)

Located in the southwest edge of Linville on the highest point of Pixie Knob. Signal is in a 14 inch chestnut tree bearing triangle blaze. Station is a drill hole in triangle chiseled on ledge S 00°30'E, 15.2 feet distant.

GEODETIC POSITION: Lat. = 36°03'41.82"; Long. = 81°52'37.35" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Sugar	180°39'12.23"	00°39'14.11"	3.8445 010	4.3
Grandfather	227 49 04.82	47 51 00.00	3.8195 744	4.1

ELK PARK 14 (USGS, 1934; Avery County, North Carolina)

Located about 3.5 miles east of Linville, 1/2 mile south of House Gap, on wooded top, flag and target. Mark is drill hole on rock set 2.3 feet S 30° E from center of the 12 inch pine tree signal is on. Reference Mark is 60.4 feet S 27° W from station mark, on rock edge; drill hole.

GEODETIC POSITION: Lat. = 36°03'27.22"; Long. = 81°48'41.72" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Blowing Rock	241°32'17.64"	61°37'20.70"	4.1654 013	9.1
High Knob	310 38 01.92	130 40 21.38	3.9106 003	5.1

ELK PARK 15 (USGS, 1934; Avery County, North Carolina)

Located about 2 miles west, northwest of Edgemont, on highest point of knob near east end of Little Lost Cove Cliff. Signal is a flag in 14 inch pine tree bearing triangle blaze. Station is a drill hole in triangle chiseled on stone set in place directly under signal.

GEODETIC POSITION: Lat. = 36°00'12.07"; Long. = 81°49'42.53" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Jonas	52°37'42.54"	232°35'13.80"	3.9021 538	5.0
High Knob	264 41 17.06	84 44 17.79	3.8883 168	4.8

ELK PARK 16 (USGS, 1934; Avery County, North Carolina)

Located about 1 mile northwest of Crossnore on the highest part of the south end of Soapstone Knob. Signal is a flag in 18 inch chestnut bearing triangle blaze. Station is a drill hole in triangle chiseled on stone set in place directly under signal.

GEODETIC POSITION: Lat. = 36°01'24.29"; Long. = 81°56'37.56" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Elk Park 11	184°00'28.62"	04°00'36.74"	3.6939 914	3.1
Grandmother	244 16 40.13	64 20 13.55	4.0034 910	6.3

ELK PARK 18 (USGS, 1934; Avery County, North Carolina)

Located about 3.8 miles northwest of Altamont and about 2.1 mile southeast of Plum Tree on the highest point of Buck Hill. Summit is clear. Signal is a flag on pole set on ground. Station is a drill hole in triangle chiseled on rock ledge directly under signal.

GEODETIC POSITION: Lat. = 36°00'12.80"; Long. = 81°59'40.86" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Elk Park 11	214°39'15.66"	34°41'11.57"	3.9382 361	5.4
Grandmother	244 16 49.18	64 22 10.48	4.1810 476	9.4

F 61 (USGS, 1934; Avery County, North Carolina)

Located at Pineola, near the Linville River Railway station, in the yard of a 1-story frame house, about 27 yards east of the center line of the east track, and about 15 yards north of the centerline of U.S. Highway 221. Station is a standard disk stamped "F 61 1934" and set in the top of a concrete post.

NOTE: While the elevation is quite close to its final value, it should be used with caution since additional leveling in this area may require a readjustment of the line.

ELEVATION: 3508.628 feet or 1069.432 meters (G-2)

PH 1 (USGS, 1934; Avery County, North Carolina)

Located 3.0 miles north of Heaton, 15 feet west of center of former road, on saddle of three forks ridge. A standard tablet stamped "3603 PH 1 1934" and set in concrete post, projecting 4 inches above ground; painted "BM 3603 on fence post, 5.5 feet southeast of tablet.

NOTE: Searched for, but not recovered July 8, 1960.

ELEVATION: 3602.22 feet (G-3)

PH 2 (USGS, 1934; Avery County, North Carolina)

Located 6.5 miles north of Heaton, 14 feet northeast of center of road, 18 feet north of small drain, 8 feet south of small boulder painted "PBM 4036.9". Station is a standard tablet stamped "4037 PH 2 1934" in rock outcrop.

Reference Mark is 455 feet northwest of tablet, 17 feet west of center of road, in root of 16 inch chestnut tree; copper nail and washer, 7.0 feet higher than tablet.

NOTE: Searched for but not recovered, July 5, 1960.

ELEVATION: 4036.46 feet (G-3)

PH 3 (USGS, 1934; Avery County, North Carolina)

Located at Heaton, 61 feet west from southwest corner of Heaton Christian Church, 60 feet northwest from intersection of State Highway 194 and Whaley Road, 15 feet southeast from southeast corner of store. Station is a standard tablet stamped "3036 PH 3 1934" and set in concrete post, projecting 3 inches above ground.

Reference Mark is 160 feet southeast of tablet, 60 feet southeast of southeast corner of Heaton Christian Church, 30 feet south from center of N. C. Highway 194, in knot 4 feet above base on 12-inch locust tree 5.599 feet higher than tablet.

ELEVATION: 3035.67 feet (G-3)

PH 4 (USGS, 1934; Carter County, Tennessee)

Located 4.2 miles northwest of Whaley, 130 feet northeast of center of road, 180 feet northeast of northeast corner of Poga Christian Church, set in bottom step on south corner of Poga School. Station is a standard tablet stamped "2714 PH 4 1934".

Reference Mark is 180 feet southwest of tablet, 36 feet south of center of road, on northeast corner stone of Poga Christian Church; chiseled square 9.790 feet lower than tablet.

ELEVATION: 2716.53 feet (G-3)

PH 7 (USGS, 1934; Avery County, North Carolina)

Located on Lees-McRae's college campus, Banner Elk, 40 feet east of center of entrance, 4 feet north of northeast corner of North Carolina Building.

Reference Mark 1 is 1210 feet northeast of tablet, 16 feet south of center of North Carolina Highway 194, on northeast corner of Banner Elk, Bank platform; chiseled square 36.65 feet lower than tablet.

Reference Mark 2 is 5 feet north of tablet, on ledge; knob painted and 17.15 feet higher than tablet.

Reference Mark 3 is 500 feet east of tablet, 30 feet southeast of Newland Road, 100 feet southwest of fork to Sugar Mountain, in root on west side of 24 inch hemlock tree. Copper nail and washer 25.50 feet higher than tablet.

ELEVATION: 3739.37 feet (G-3)

PH 10 (USGS, 1934; Watauga County, North Carolina)

Located 1800 feet southeast of Rominger, 50 feet south of T-road north. Station is a standard tablet stamped "3379 PH 10 1934" painted "RM 3379.3" and set in top of boulder.

Reference Mark is 240 feet southeast of tablet, 35 feet southwest of center of Beech Mountain Road, on flat boulder; chiseled square 9.56 feet higher than tablet.

ELEVATION: 3378.48 feet (G-3)

G 46 (USC&GS, 1933; Avery County, North Carolina)

Located at Elk Park, 360 feet west of the abandoned East Tennessee and Western North Carolina Railroad station, 50 feet north of the old roadbed, 25 feet north of the centerline of U.S. Highway 19 E., at a building known locally in 1934 as the Millard Teester building owned by the Consolidated Realty Corporation, Asheville, North Carolina. Station is a standard disk, stamped "3175.053 G 46 1933" and set vertically in the southwall, 1 foot east of the entrance, and 4.5 feet above the sidewalk.

ELEVATION: 3174.872 feet or 967.703 meters (C-1)

G 61 (USC&GS, 1934; Avery County, North Carolina)

Located about 1.8 miles southwest along U. S. Highway 221 from Linville, about 0.3 mile southwest of a 2 span bridge over Grandmother Creek, about 28 yards north of the centerline of the driveway leading to Camp No-We-No-Ca, about 9 yards east of the centerline of the highway, and about 3 yards north of pole 1180. Station is a standard disk stamped "G 61 1934" and set in the top of a concrete post.

NOTE: While the elevations are quite close to their final values, they should be used with caution since additional leveling in this area may require a readjustment of the line.

ELEVATION: 3588.392 feet or 1093.744 meters (C-2)

GL 7 (USGS, 1934; Avery County, North Carolina)

Located 1.2 miles northwest of Pineola, 410 feet north of junction of old North Carolina Highway 194 and old U. S. Highway 221, 115 feet east of centerline of North Carolina Highway 194, 5 feet below surface of road, on east bank of Mill Timber Creek. Station is a standard tablet stamped "GL 7 1934 3437", painted "USBM 3436.7" and set in rock ledge.

Reference Mark is 160 feet south of tablet, 250 feet northeast of junction of old North Carolina Highway 194 and old U. S. Highway 221, on east bank of Mill Timber Creek, on rock ledge; square cut 2.98 feet lower than tablet.

ELEVATION: 3436.24 feet (G-3)

GL 9 (USGS, 1934; Avery County, North Carolina)

Located 0.3 mile northeast of Hughes former post office, 3.8 miles east of Frank, 55 feet southwest of bridge over small stream, 75 feet northeast of east bank of Squirrel Creek, 4.5 feet below surface of road. Station is a standard tablet stamped "GL 9 1934 3758", painted "USBM 3758.4" on rock ledge.

Reference Mark is 32 feet west of tablet, 70 feet southwest of bridge, 60 feet northeast of east bank of Squirrel Creek, on rock ledge; square cut 7.66 feet lower than tablet.

ELEVATION: 3758.06 feet (G-3)

GRANDFATHER (USC&GS, 1933; Avery County, North Carolina)

Located on Grandfather Mountain, on property of J.R. McRea. It is on what is locally known as Third Peak, near center of south edge of rock peak. To reach, go west from Blowing Rock 17.6 miles on Route 28 to J.A. MacRae's store, go 2 miles northeast to slope of first peak. A standard tablet wedge in drill hole in outcropping bedrock surrounded by triangle chiseled in rock.

Reference Mark 1 is disk in boulder 19.45 feet from station in azimuth 133°46'. Reference Mark 2 is disk in rock outcrop, 11.61 feet from station in azimuth 272°28'.

GEODETIC POSITION: Lat. = 36°06'05.574"; Long. = 81°49'21.798" (C-1)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Sugar	118°01'40.83"	297°59'47.48"	3.7363 142	3.4
Beech	149°54'09.34"	329°52'04.36"	4.0236 340	6.6
Hanging Rock	178°19'55.80"	358°19'51.81"	3.7638 259	3.6
Flat Top	242°44'18.73"	62°40'28.07"	4.1688 193	9.2
Blowing Rock	261°24'27.40"	81°28'41.20"	4.1469 110	8.7
Moses Knob	290°56'43.39"	111°08'49.91"	4.5145 612	20.3
High Knob	324°48'08.14"	144°50'56.92"	4.0954 569	7.7
Stone	167°56'19.7"	169°33'56"		
Blowing Rock				
Mayview Manor				
Cupola	255°28'42"			

GRID POSITION (North Carolina): X = 1,166,183.92; Y = 867,697.08 (C-1)

ELEVATION: 5846 feet or 1782 meters (C-5)

GRANDMOTHER (USGS, 1934; Avery County, North Carolina)

Located 1.5 miles east of Linville. A drill hole and triangle on solid rock. Another drill hole is 16.7 feet N 49°W.

GEODETIC POSITION: Lat. = 36°03'46.09"; Long. = 81°50'34.67" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Jonas	23°45'37.70"	203°43'39.51"	4.006 9830	7.8
Elk Park 16	64°20'13.55"	244°16'40.13"	4.003 4910	6.3
Elk Park 18	64°22'10.48"	244°16'40.13"	4.181 0476	9.4
Elk Park 17	77°13'39.61"	257°10'18.91"	3.982 1274	5.4
Elk Park 11	93°41'58.57"	273°38'33.06"	3.982 2049	5.4
High Knob	303°08'10.71"	123°11'42.26"	4.031 5858	6.7

H 46 (USC&GS, 1933; Avery County, North Carolina)

Located at Elk Park, 20 feet north of centerline former U.S. Highway 19 E, 50 feet north of former E.T. & W.N.C. Railroad, 15 feet east of former Elk Park Depot, in south wall of J.M. Dearmin building, 6 feet east of entrance, 4 feet above sidewalk. Station is a standard USC&GS disk stamped "H 46 1933".

ELEVATION: 3182.070 feet or 969.897 meters (C-1)

H 61 (USC&GS, 1934; Avery County, North Carolina)

Located at Linville, at the junction of U.S. Highway 221 and State Highway 181, about 14 yards north of centerline State Highway 181, and 14 yards west of prolongation of centerline of U.S. Highway 221. A standard disk stamped "H 61 1934" and set in the top of a concrete post.

NOTE: While this elevation is quite close to final value, it should be used with caution, since additional leveling in area may require readjustment of line.

ELEVATION: 3638.467 feet or 1109.007 meters (C-2)

HANGING ROCK (USGS, 1934; Watauga County, North Carolina)

Located about 2.8 miles southeast by east of Banner Elk, about 3.0 miles west of Pascoe, and about 4.3 miles southwest of Valley Crucis on the highest point of Mountain, by same name. Summit is bare rock and affords excellent view in all directions. Best approach is from Valle Crucis by driving to the end of road up Dutch Creek and thence by foot trail to top. Station is a drill hole in

triangle chiseled on rock on the approximate highest point. Instrument and signal directly over mark.

GEODETIC POSITION: Lat. = 36°09'13.830"; Long. = 81°49'28.554" (G-3)

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Beech	123°02'03.3"	303°00'02.2"	3.786 386	3.8
Flat Top	265°53'23.9"	95°58'37.4"	4.124 351	8.3
Grandfather	358°19'54.2"	178°19'58.2"	3.763 790	3.6

GRID POSITION (Tennessee): X = 3,232,341.7; Y = 667,614.8 (G-4)

ELEVATION: 5218 feet (G-5)

J 46 (USC&GS, 1933; Avery County, North Carolina)

Located at Cranberry, on the abandoned East Tennessee and Western North Carolina Railroad, 165 feet north of a water tank, 20 feet east of the old roadbed, in the top of a rock, and 2 feet above the old roadbed. Station is a disk, stamped "3201.808 J 46 1933."

ELEVATION: 3201.631 feet or 975.859 meters (C-1)

J 61 (USC&GS, 1934; Avery County, North Carolina)

Located at Montezuma, about 34 yards south of the Linville River Railway Station, in the southeast corner of the yard of a bark-covered bungalow, about 8 yards west of the centerline of the track, about 1 yard west of a fence, and about 1 yard north of another fence. Station is a standard disk stamped "J 61 1934" and set in the top of a concrete post.

ELEVATION: 3809.097 feet or 1161.015 meters (C-2)

K 26 (USGS, 1934; Avery County, North Carolina)

Located 2.7 miles northwest of former Gragg Post Office, 25 feet east of dim road fork west, 110 feet southeast of galvanized culvert, 20 feet east of centerline of road, on bank. Station is a standard tablet stamped "K 26 1934" and set in concrete post.

Reference Mark is 100 feet north of tablet, in root on west side of 14 inch poplar tree; copper nail and washer 6.08 feet higher than tablet.

ELEVATION: 3391.40 feet (G-3)

K 30 (USGS, 1934; Avery County, North Carolina)

Located 2.8 miles west of Edgemont, 10.3 miles east of Pineola, 40 feet north of centerline of road, at small turnout to north. Station is a standard tablet stamped "K 30 1934", painted "US 2360.4 PBM" and set in concrete post.

Reference Mark is 50 feet southeast of tablet, in root on west side of 18 inch oak tree; copper nail and washer 1.948 feet lower than tablet.

GEODETIC POSITION: Lat. = 36°00'02.30"; Long. = 81°47'54.12" (G-3)

ELEVATION: 2360.37 feet (G-3)

K 31 (USGS, 1934; Avery County, North Carolina)

Located 6.8 miles southeast of Pineola, 3.0 miles east of Overhead Bridge School, 15 feet southwest of 30 inch poplar tree, and 40 feet south of centerline of road. Station is a standard tablet stamped "K 31 1934" painted "US 3050.1 PBM" and set in concrete post.

Reference Mark is 35 feet northeast of tablet, in root on north side of 10 inch stump 4 feet high; copper nail and washer 6.39 feet lower than tablet.

GEODETIC POSITION: Lat. = 36°00'42.49"; Long. = 81°50'35.26" (G-3)

ELEVATION: 3050.40 feet (G-3)

K 32 (USGS, 1934; Avery County, North Carolina)

Located 3.4 miles southeast of Pineola, about 1000 feet north of Overhead Bridge School, 50 feet north of intersection of T-road south of Jonas Ridge, on north side of road. Station is a standard tablet stamped "K 32 1934", painted "US 3791.8 PBM" and set in concrete post.

Reference Mark is 20 feet east of tablet, in root on west side of 6 inch oak tree; copper nail and washer 2.02 feet lower than tablet.

ELEVATION: 3792.47 feet (G-3)

K 61 (USC&GS, 1934; Avery County, North Carolina)

Located at Montezuma, Avery County, 1 block east of the Linville River Railway station, in the southeast corner of the yard of a cement-block church, 11 yards north of the centerline of State Highway 181, 4 yards east of the church, and 3 yards north of the corner of a stone fence. Station is a standard disk, stamped "K 61 1934" and set in the top of a concrete post.

ELEVATION: 3836.561 feet or 1169.386 meters (C-1)

LR 58 (TVA, 1937; Carter County, Tennessee)

Located 150 feet southwest of high knob at left of road. To reach from Butler, Tennessee, set speedometer at 0.00 at Watauga River bridge and drive west on Hampden road; 0.1 T-intersection, turn left on Elk River road; 7.2 miles cross Elk River at brick school and turn right; 8.8 miles cross Elk River and turn right; 10.0 miles cross Elk River; 11.1 miles hairpin turn to left, transmission line crosses road. Station is a 1" x 1" x 1/4" angle iron.

Reference Mark 1 is 4.57 feet S 40° W to 12 inch pine.
Reference Mark 2 is 14.42 feet S 66° E to 6 inch pine.
Reference Mark 3 is 14.89 feet N 22° E to 10 inch pine stump.

GRID POSITIONS (Tennessee): X = 3,187,176; Y = 697,895 (T-4)

ELEVATION: 2876 feet (T-5)

LR 68 (TVA, 1937; Avery County, North Carolina)

Located on bald knob 6.8 miles north of Elk Park, North Carolina, on property of Nelly Steppe. To reach from Whaley Post Office, drive north on graveled road 0.6 mile to gap, then continue north on old road 0.3 mile to cultivated field. Point is about 500 feet northeast on fence line, about 450 feet southeast of highest point. A punched hole in 1" x 1" x 1/4" angle iron.

Reference Mark 1 is 6.61 feet N 77° E to cross on rock.
Reference Mark 2 is 3.76 feet N 42° W to 5 inch oak.

GRID POSITION (Tennessee Lambert): X = 3,199,779; Y = 700,222 (T-4)

ELEVATION: 3750 feet (T-5)

LR 70 (TVA, 1937; Avery County, North Carolina)

Located on top of knob in Avery County, North Carolina on property of Nelly Steppe and stamped "LR-70 1937". Station is a punched hole in a 1" x 1" x 1/4" angle iron.

GRID POSITION (Tennessee): X = 3,200,232; Y = 700,243 (T-4)

ELEVATION: 3790 feet (T-5)

LR 72 (TVA, 1937; Watauga County, North Carolina)

Located 9.5 miles west of Boone, North Carolina. To reach from Sugar Grove, North Carolina, drive southwest on North Carolina Highway 603, 2.4 miles to Watauga River Bridge. Turn right at south end of bridge 0.1 mile to Y-intersection. Bear left 1.0 mile to 1-story frame house on nose of ridge on left.

Station is on north side of 30 inch maple tree 300 feet east of house. Station is a punched hole in a 1" x 1" x 1/4" angle iron and stamped "TVA-IR-72-1934".

Reference Mark 1 is 2.77 feet S 68° E to tack in root.

Reference Mark 2 is 2.49 feet S 30° W to 30 inch maple.

GRID POSITION (Tennessee): X = 3,228,292; Y = 697,160 (T-4)

ELEVATION: 3230 feet (T-5)

LR 74 (TVA, 1937; Watauga County, North Carolina)

Located in Watauga County, 2.9 miles east of Sugar Grove, North Carolina. To reach from Sugar Grove, drive east on State Highway 421 2.2 miles to Linville Creek Road. Turn north on Linville Creek road 0.7 mile to right hand 90° turn. Turn right 1000 feet to fence line north. Then follow fence line 1000 feet to top of knob. Center of trunk of 8 inch maple in North-South rail fence, 20 feet north of wire T-fence east. Tree is most northerly of group of three. Station is a punched hole in a 1" x 1" x 1/4" angle iron.

Reference Mark is 2.55 feet S 20° E to 8 inch maple tree.

GRID POSITION (Tennessee): X = 3,252,088; Y = 703,351 (T-4)

ELEVATION: 2990 feet (T-5)

M 46 (USCGS, 1933; Avery County, North Carolina)

Located 2.0 miles west along the abandoned East Tennessee and Western North Carolina Railroad from Newland, Avery County, 180 feet east of a bridge over a stream, 10 feet north of the centerline of the old roadbed, in the face of a rock cliff, and 3.5 feet above the old roadbed. A standard disk, stamped "3513.713 M 46 1933" and set vertically.

ELEVATION: 3513.940 feet or 1070.929 meters (C-1)

MAGNETIC STATION SOUTH (USCGS, ???; Avery County, North Carolina)

Located at Newland, 90 feet east of northeast corner of courthouse, 75 feet west of jail, and 10 feet south of south edge of sidewalk. Station is a USCGS standard disk stamped "Magnetic Station", stamped "South Newland" and set in concrete post, 4 inches above grade.

ELEVATION: 3616.230 feet or 1102.229 meters (C-1)

MAGNETIC STATION NORTH (USCGS, ???; Avery County, North Carolina)

Located at Newland, in north end of park across the street, in front of Newland Courthouse, 9 feet west of path running north and south through center of park, 140 feet south of Presbyterian Church. Station is a standard USCGS disk stamped "Magnetic Station, Newland North BM 3621.187 feet", set in concrete post 6 inches above grade.

ELEVATION: 3621.023 feet or 1103.690 meters (C-1)

MR-1 (USGS, 1934; Avery County, North Carolina)

Located 3.5 miles north of Montezuma, along Sugar Mountain Road No. 1, opposite Toe River Gap north of Loggy Ridge, 350 feet northeast of T-road west, in south end of high ledge in former Banner pasture. Station is a standard tablet stamped "38833 MR 1 1934" and painted on ledge "USBM 3832.8".

Reference Mark 1 is 340 feet southwest of tablet, 10 feet northeast of T-road, on sloping ledge. Square cut around knot marked with arrow pointing to tablet and 9.089 feet lower than tablet.

Reference Mark 2 is 600 feet northwest of tablet, 35 feet west of road, on large slaty boulder. Square cut 23.849 feet lower than tablet.

ELEVATION: 3832.53 feet (G-3)

MR 2 (USGS, 1934; Avery County, North Carolina)

Located 1.4 miles south of Banner Elk, 1000 feet southwest of Grandfather Home for Children, 500 feet west of road forks, 90 feet south of east end of dam. Station is a standard tablet stamped "3757 MR 2 1934" and set in bench in high ledge.

ELEVATION: 3756.61 feet (G-3)

MR 3 (USGS, 1934; Avery County, North Carolina)

Located 0.4 mile east of Balm, 0.5 mile west of Bowers Gap and county line, 100 feet southeast of T-road north to East Prospect of Beech Mountain, 160 feet east of Lee Greer's residence, in pasture, top of flat embedded boulder. Station is a standard tablet stamped "3970 MR 3 1934" painted on pole "USBM 3969.6".

Reference Mark is 80 feet northwest of tablet, 35 feet southwest of T-road north, on north end of embedded boulder; square cut 10.18 feet lower than tablet.

NOTE: Searched for in 1960, but not found.

ELEVATION: 3969.43 feet (G-3)

MR 5 (USGS, 1934; Watauga County, North Carolina)

Located at Valle Crucis, 500 feet northwest of concrete dam and bridge over Craborchard Creek, 33 feet west of old Mission House. Station is a standard tablet stamped "2772 MR 5 1934" and set in top of ledge.

Reference Mark is 90 feet southeast of tablet, on boulder; square cut 9.26 feet lower than tablet.

ELEVATION: 2771.59 feet (G-3)

MR 6 (USGS, 1934; Watauga County, North Carolina)

Located 0.75 mile southeast of Valle Crucis, 300 feet southeast of triangle of road forks to north, 15 feet south of road opposite west end of cultivated bottom land, top of ledge. Station is a standard tablet stamped "2708 MR 6 1934" painted "2708" on pole.

Reference Mark is 650 feet northwest of tablet, north of road at bend south, in root on south side of 36 inch oak tree; nail (old bench mark) 1.39 feet lower than tablet.

ELEVATION: 2707.68 feet (G-3)

MR 7 (USGS, 1934; Watauga County, North Carolina) *Good 11-02-90*

Located 1.5 miles northwest of Valle Crucis, 2.3 miles southwest of Vilas, 70 feet southwest of crossroads, 30 feet south of Bairds Creek, top of detached block of ledge. Station is a standard tablet stamped "2662 MR 7 1934" painted on rock "USBM 2662.4".

Reference Mark is 34 feet north of tablet, on northeast corner of west backwall of concrete bridge over Bairds Creek; square cut (old bench mark) 0.97 feet lower than tablet.

ELEVATION: 2662.29 feet (G-3)

MR 8 (USGS, 1934; Watauga County, North Carolina)

Located at Vilas, 500 feet northeast of T-road south (State Highway 194 at intersection with U. S. Highway 421), 300 feet north and 400 feet west of T-road north to Linville Creek, at north edge of bottom land, in top of ledge. Station is a standard tablet stamped "2761 MR 8 1934". "USBM 2760.9" painted on pole.

AREA GROWN OVER WITH BRUSH, BRIARS, & TREES 11-90

Reference Mark is 230 feet northwest of tablet, 350 feet northeast of intersection of highway routes, on ledge; square cut 0.38 feet lower than tablet.

ELEVATION: 2760.59 feet (G-3)

MR 10 (USGS, 1934; Watauga County, North Carolina)

Located 2 miles northwest of Matney, about 2 miles south of Rominger Post Office, 0.4 mile north of Bethany School, 300 feet north of Ed Yates residence, 100 feet west and 50 feet north of T-road, east, in top of large embedded boulder. Station is a standard tablet stamped "4060 MR 10 1934". "USBM 4060.2" painted on rock.

Reference Mark is 2 feet south of tablet, on same rock; circle cut and 0.23 foot higher than tablet.

NOTE: Searched for in 1960 but not found.

ELEVATION: 4060.09 feet (G-3)

N 46 (USCGS, 1933; Avery County, North Carolina)

Located at Newland, 340 feet northwest of former milepost 41, 135 feet northwest of former depot, 12 feet northwest of former centerline of main track and on level with base of former rail. Station is a standard USCGS disk stamped "N 46 1933" and set in concrete post, 4 inches above grade.

ELEVATION: 3589.491 feet or 1094.079 meters (C-1)

P 46 (USCGS, 1933; Avery County, North Carolina)

Located at Montezuma, Avery County, on the abandoned East Tennessee and Western North Carolina Railroad, 0.25 mile south of the station, 10 yards north of a dirt-road crossing, 18 feet east of the old roadbed, in the top of a rock in the side of a mountain, and 4.5 feet above the old roadbed. A standard disk, stamped "3797.069 P 46 1933".

ELEVATION: 3796.872 feet or 1157.289 meters (C-1)

Q 46 (USCGS, 1933; Avery County, North Carolina)

Located at Linville, Avery County, about 363 feet east of the East Tennessee & Western North Carolina Railroad station, about 20 feet south of the centerline of the track, about 15 feet east of a highway bridge over Linville River, and about 1/2 foot lower than the track, in the top of a rock. Station is a standard disk stamped "3623.205 Q 46 1933".

ELEVATION: 3623.031 feet or 1104.302 meters (C-1)

RPW 15 (USGS, 1934; Caldwell County, North Carolina)

Located 9.3 miles southwest of Blowing Rock, 250 feet south of intersection of former plank road west, 50 feet south of small drain crossing, 30 feet west of centerline of U. S. Highway 221. Station is a standard tablet stamped "RPW 15 1934 3972", painted "USPBM 3972.0", and set in top of boulder.

Reference Mark is 60 feet north of tablet, on northwest corner of concrete headwall of culvert; chiseled square 2.93 feet lower than tablet.

ELEVATION: 3971.57 feet (G-3)

RPW 16 (USGS, 1934; Caldwell County, North Carolina)

Located 6.5 miles northeast of Linville, at south edge of circular parking space on highway, 100 feet south of road. Station is a standard tablet stamped "RPW 16 1934 4006" painted "BM 4006.1", on the top of large rock.

Reference Mark is 40 feet northeast of tablet, on north end of flat rock; chiseled square 0.05 foot lower than tablet.

REPORT ON CONDITION: M.L.B., June 1955 - Cap missing from drill hole.

ELEVATION: 4005.84 feet (G-3)

RPW 17 (USGS, 1934; Avery County, North Carolina)

Located 2.6 miles northeast of Linville, 750 feet west of J. A. McRae's former store, 250 feet northeast of T-road south, 120 feet north of centerline of U. S. Highway 221 set in rock ledge. Station is a standard tablet stamped "RPW 17 4279 1934", painted "USPBM 4279.5".

Reference Mark is 30 feet south of tablet, on rock ledge; chiseled square 6.48 feet lower than tablet.

ELEVATION: 4278.95 feet (G-3)

S 474 (TVA, 1937; Watauga County, North Carolina)

Located at mile 61.0 Watauga River, left bank, 0.5 mile upstream from Greer Bridge, 6 feet landward from centerline of State Highway 603 and 300 feet downstream from house on right side of river, and 2.5 feet higher than road surface. A chiseled square on rock outcrop.

ELEVATION: 2595.83 feet (T-3)

SUGAR (USGS, 1934; Avery County, North Carolina)

Located 2.5 miles south of Banner Elk, on rocky top of west end of summit of Sugar Mountain, 2 feet west and 2 feet below the highest point. Station is a standard BM tablet stamped "SUGAR 1934".

GEODETIC POSITION: Lat. = 36°07'28.60"; Long. = 81°52'34.15" (G-3)

	Geodetic Azimuth			Distance	
	To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Beech	175°44'46.44	355°44'34.89"		3.8191 037	4.1
Grandfather	297°59'47.48	118°01'40.83		3.7363 142	3.4

T 46 (USCGS, 1933; Avery County, North Carolina)

Located 6.3 miles northeast along the abandoned East Tennessee and Western North Carolina Railroad from Linville, 165 feet south of the old Jesters Siding Station, 40 feet west of the centerline of the old roadbed, in the top of a boulder between the old roadbed and a highway, in the top of the northwest corner of the boulder and level with the old roadbed. A standard disk, stamped "3747.804 T 46 1933".

ELEVATION: 3747.637 feet or 1142.282 meters (C-1)

THOMAS (NORTH CAROLINA HIGHWAY DEPT., 1969; Avery County, North Carolina)

Located approximately 1.0 mile north northeast of Banner Elk. To reach station proceed from the intersection of NC 194 and NC 184 in Banner Elk, go west on NC 194 for 0.35 mile to intersection of NC 194 and SR 1330 (Road to Beach Haven), turn right on SR 1330 and go 1.75 miles up mountain to entrance to Thomas and Bosbyshell Residence and dim road to right, take dim road around hill for 0.25 mile to fence and end of truck travel, follow fence line for about 500 feet to gate. Station is approximately 100 feet southeast of gate and on east side of rock pile. Station is a standard North Carolina brass traverse disk, stamped "THOMAS 1969" and set in the top of a concrete cylinder, the top of which is flush with the surface of the ground. Station is 98.4 feet west of 8 inch Twin Cherry tree on slope of hill, and with aluminum

reference tag; 57.6 feet south of wood fence post with barbed wire, and with aluminum reference tag, 53.7 feet southeast of wood fence post with barbed wire, and with aluminum reference tag, and 20.5 feet north of center of east end of rock pile approximately 3 feet high.

GEODETIC POSITION: Lat. = $36^{\circ}10'34.228''$; Long. = $81^{\circ}51'53.873''$ (HWY-2)
Geodetic Azimuth Distance

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Beech	$119^{\circ}42'58.0''$			

GRID POSITION (North Carolina): X = 1,154,492.93; Y = 895,209.70 (HWY-2)
Grid Azimuth to Beech: $121^{\circ}22'11''$

ELEVATION: 4377 feet or 1334.2 meters (HWY-5)

TRIPLETT (NORTH CAROLINA HIGHWAY DEPT., 1969; Watauga County, North Carolina)

Located in the vicinity of Boone, North Carolina, approximately 0.5 mile southeast of Matney and 4.3 miles west southwest of Boone. To reach station proceed from the intersection of NC 194 and SR 1122 in the community of Matney, go west on NC 194 for 0.55 mile to SR 1131 (Pigeon Roost Road), turn left on Pigeon Roost Road and go uphill for 0.35 mile to top of hill and double gate on left. Station is about 600 feet west of SR 1131 (Pigeon Roost Road), on top of bare hill. Station is 74.0 feet southeast of edge of slope, 45.0 feet northwest of edge of slope, 45.0 feet northwest of edge of slope, 6.0 feet southwest of edge of slope, 88.6 feet south southeast of tree stump, and 124.0 feet south of tree line. Station is a standard North Carolina Brass Traverse disk stamped "TRIPLETT 1969" and set in top of a concrete cylinder, the top of which is flush with the surface of the ground.

GEODETIC POSITION: Lat. = $36^{\circ}11'03.134''$; Long. = $81^{\circ}48'41.240''$ (HWY-2)
Geodetic Azimuth Distance

To Station	Azimuth	Back Azimuth	Log. Meters	Miles
Elder NCGS	$95^{\circ}33'35.0''$			

GRID POSITION (North Carolina): X = 1,170,363.05; Y = 897,680.06 (HWY-2)
Grid Azimuth to Elder NCGS: $97^{\circ}10'57''$

ELEVATION: 3914 feet or 1193.1 meters (HWY-5)

TT 58 FI (USGS, 1947; Avery County, North Carolina)

Located 1.9 miles south of Pineola, 81 feet north and 11 feet west of intersection of centerline of State Highway 181 and Blue Ridge Parkway, 27 feet west of centerline of parkway, about 3 feet lower than surface of parkway. Station is a standard tablet stamped "TT 58 FI 1947" and set in 7- by 7-inch concrete post.

GEODETIC POSITION: Lat. = $36^{\circ}00'19.52''$; Long. = $81^{\circ}53'26.18''$ (G-3)

TT 59 FI (USGS, 1947; Avery County, North Carolina)

Located 1.9 miles south of Pineola. To reach, go 1.0 mile northeast along parkway to crossroad, 17 feet north and 25 feet west of centerline of "TT 59 FI 1947" and set in 7- by 7 inch concrete post.

GEODETIC POSITION: Lat. = $36^{\circ}01'00.24''$; Long. = $81^{\circ}52'54.89''$ (G-3)

TT 60 FI (USGS, 1947; Avery County, North Carolina)

Located 7.9 miles west of Edgemont, 25 feet east of 30 inch spruce pine tree, 20 feet west of 20 inch oak tree, 29 feet northeast of centerline of road at horseshoe bend in road. Station is a standard USGS tablet stamped "TT 60 FI 1947" and set in 7- by 7-inch concrete post.

GEODETIC POSITION: Lat. = $36^{\circ}00'48.41''$; Long. = $81^{\circ}51'18.90''$ (G-3)

TT 61 FI (USGS, 1947; Avery County, North Carolina)

Located 5.4 miles west of Edgemont, 40 feet southwest of 30-inch poplar tree, 30 feet west of south end of culvert under road at sharp curve in road. Station is a standard tablet stamped "TT 61 FI 1947" and set in 7- by 7-inch concrete post.

GEODETIC POSITION: Lat. = $36^{\circ}00'42.10''$; Long. = $81^{\circ}49'37.18''$ (G-3)

U 46 (USC&GS, 1933; Watauga County, North Carolina)

Located about 9.3 miles northeast along the East Tennessee & Western North Carolina Railroad from Linville, Avery County, about 210 feet east of the station at Townsend, about 447 yards east of milepost 54, 8 feet north of the centerline of the track, and about 2 feet higher than the rail, in the top of a rock in the side of a cut. Station is a standard disk stamped "3213.750 U 46 1933".

Report on Condition: TVA, 6-24-60. Although description is obsolete in that railroad no longer exists, by local inquiry we found the boulder; however, as we had been told earlier by a local resident, the cap has been broken off and removed. We did find the imprint of the cap and the shank (stem) of BM still embedded in boulder.

ELEVATION: 3213.583 feet or 979.502 meters (C-1)