

Appendix 2B. Figures

Figure 2-1. General Area Map

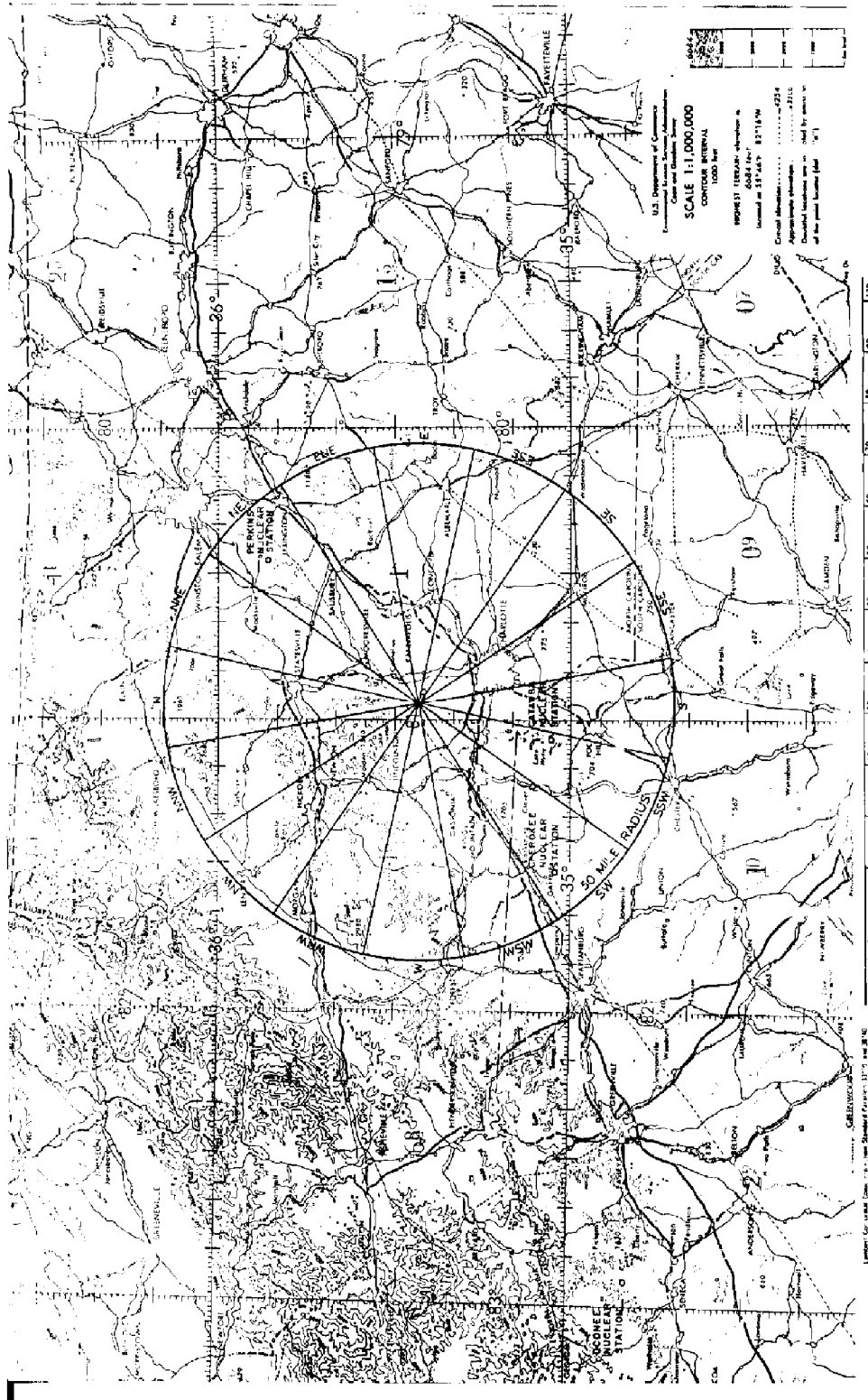


Figure 2-2. Universal Transverse Mercator Grid Coordinates

| UNIVERSAL TRANSVERSE MERCATOR GRID COORDINATES | | | | | | | | | | | |
|---|------------------|---------|----------|--|------------------------------------|--------------------------------------|--|---------------------|------------------------------|--------------|--------------|
| Station | McGUIRE (Duke) | | Location | | Mecklenburg County, North Carolina | | | Unit | | Meter | |
| Zone | 17 | | Spheroid | | Clark 1866 | | | | | | |
| Latitude Φ | 35-25-58.971 | | p | | 0.0185185 | | | Longitude λ | | 80-56-54.815 | |
| Tabular (IV) (Even minute of Φ) | 252 | 191 | 102 | p ² | | 0.00034293 | | | Central Meridian λ_0 | | 81-00-00.000 |
| Interpolation for seconds of Φ | | -51 | 051 | p ³ | | 0.00000635 | | | $\Delta\lambda$ | | 00-03-05.185 |
| Δ (IV) from graph | | 0 | 000 | p ⁴ | | 0.00000011 | | | | | |
| Tabular (V) (Even minute of Φ) | 252 | 140 | 051 | | | Tabular (I) (Even minute of Φ) | | | 3 919 | 052 | 604 |
| Interpolation for seconds of Φ | | 32 | 733 | | | Interpolation for seconds of Φ | | | 1 | 816 | 652 |
| | | -0 | 060 | | | | | | (I) | 3 920 | 869 256 |
| Tabular (VI) (Even minute of Φ) | 32 | 673 | | Tabular (II) (Even minute of Φ) | | 3542 760 | | | | | |
| Interpolation for seconds of Φ | 4 | 669 | 256 | Interpolation for seconds of Φ | | 0 707 | | | | | |
| From graph B_s | | 0 | 000 | (II) | | 3543 467 | | | (II)p ² | 1 | 215 |
| + East - West | | 0 | 000 | (III) | | 2 090 | | | (III)p ⁴ | 0 | 000 |
| False Easting | FE | 500 000 | 00 | | | from graph | | | As | 0 | 000 |
| | E | 504 | 669 256 | | | | | | N | 3 920 | 870 471 |
| Date Computed: | 12/11/70 | | By: | | M. B. G. | | | Checked by: | | | |

Figure 2-3. Site Topography 5 Mile Radius

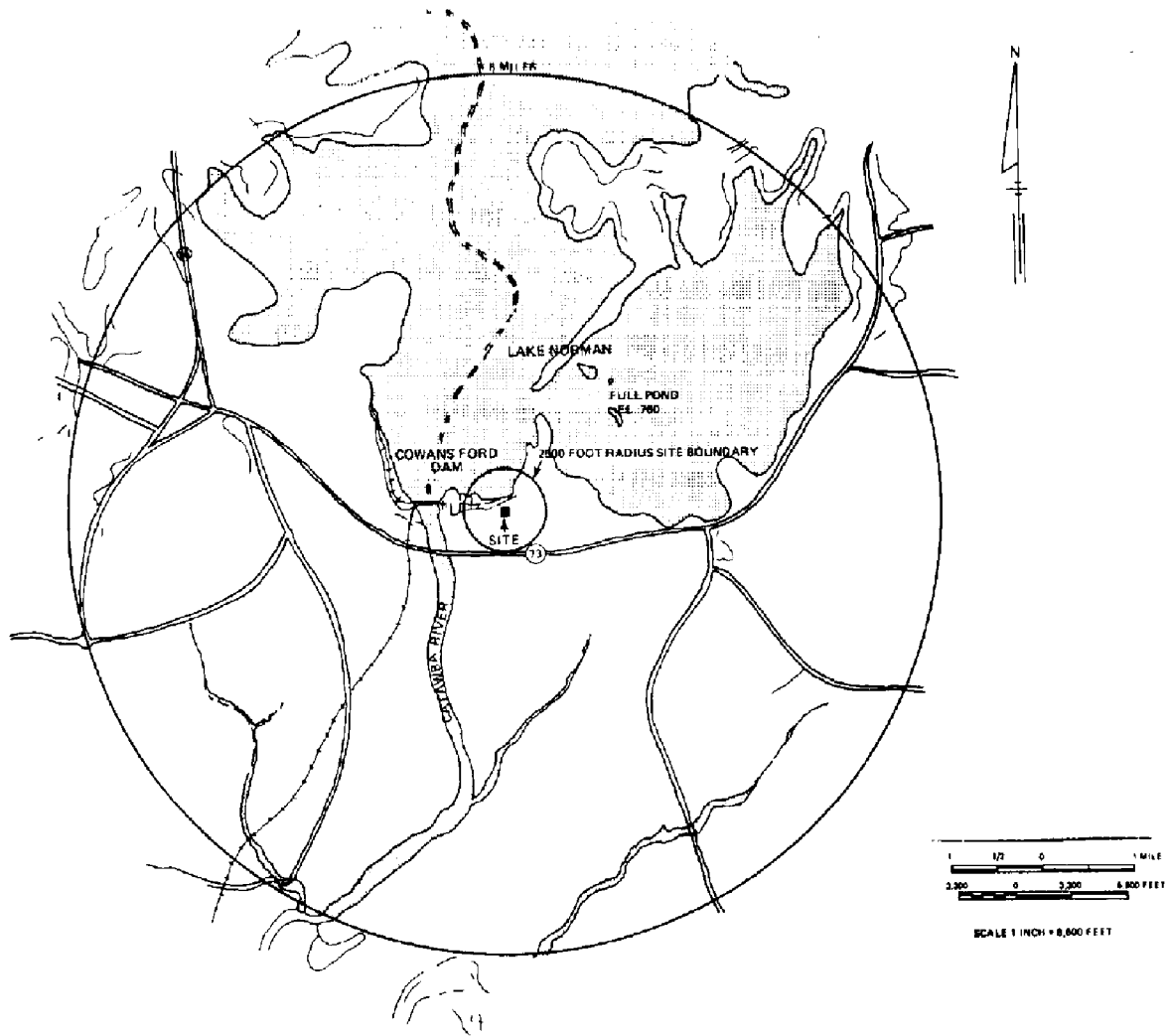
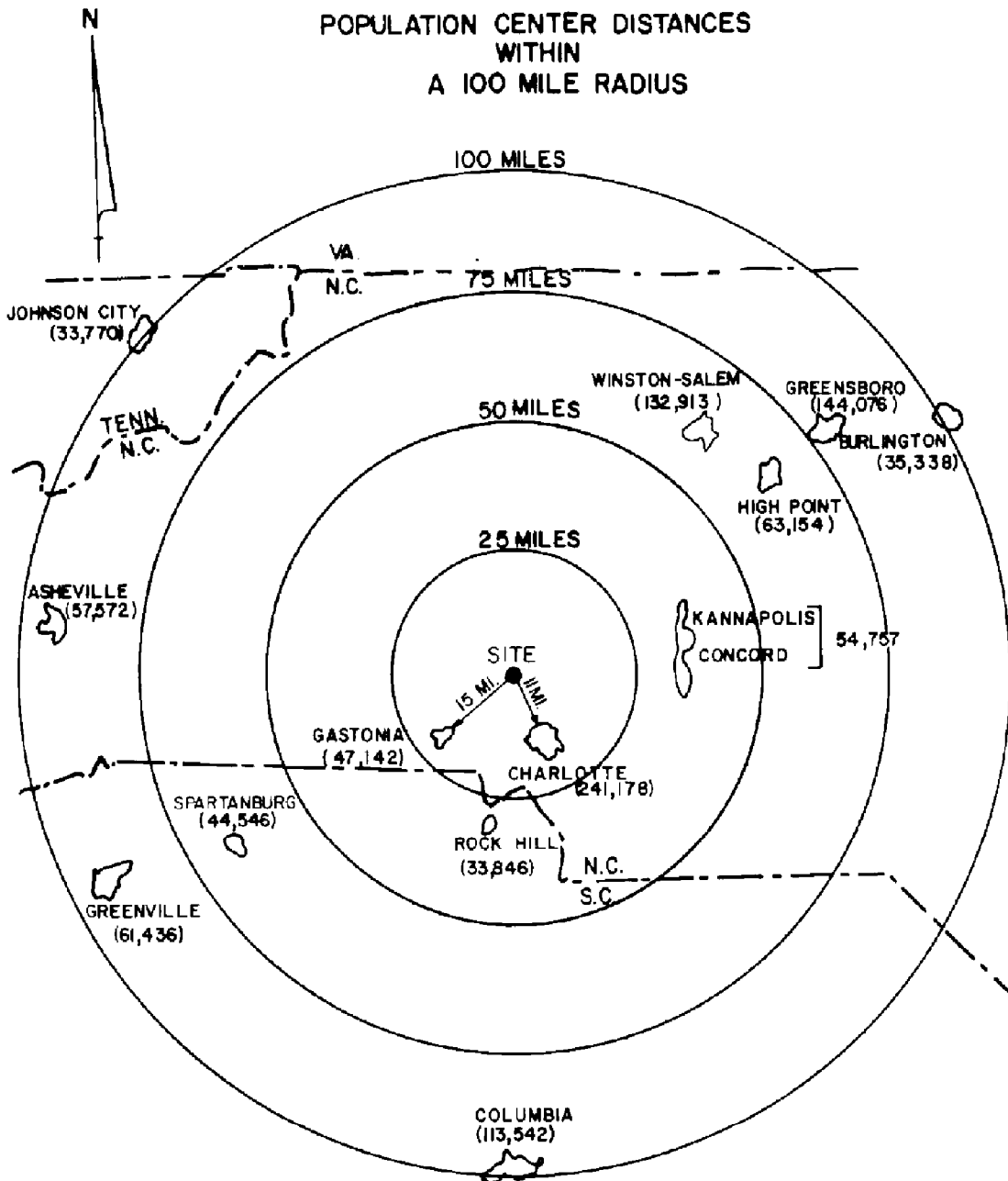


Figure 2-4. Plot Plan and Site Area

Figure 2-5. Distances from Release Points to the Exclusion Area [Historical information, not required to be revised.]

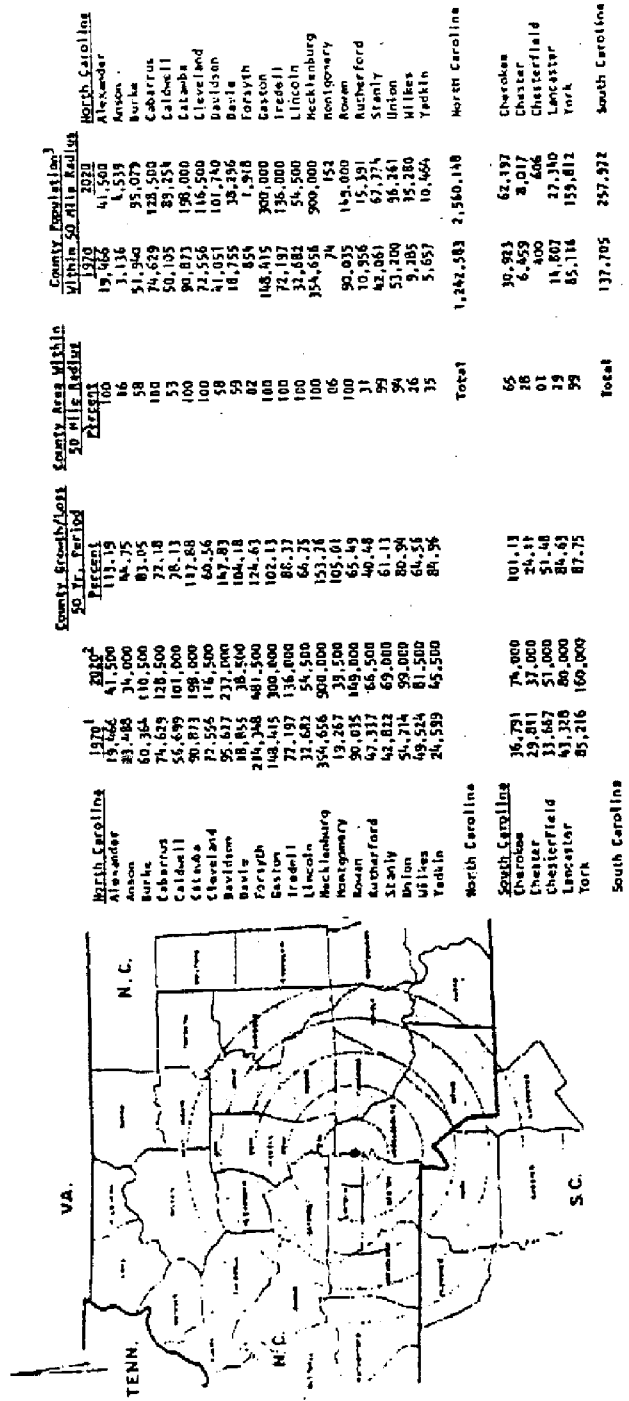


Figure 2-6. Population Center Distances within a 100 Mile Radius [Historical information, not required to be revised.]



SOURCE: 1970 CENSUS OF POPULATION

Figure 2-7. Population of Counties within a 50 Mile Radius [Historical information, not required to be revised.]



Total population within the 50 mile radius

1 United States Census 1970 Final Count.

2 Projected population growth taken from: Population by county, historic (1940-1970) and projected (1980-2020), Region IV, Environmental Protection Agency, Atlanta, Georgia, July, 1972.

3 For the 17 counties partially within the 50 mile radius, the population shown here have been adjusted according to indicators (density of roads, etc.) as revealed by a large scale map.

4 United States Census 1990.

Figure 2-8. Population 0-10 Mile Radius - 1970

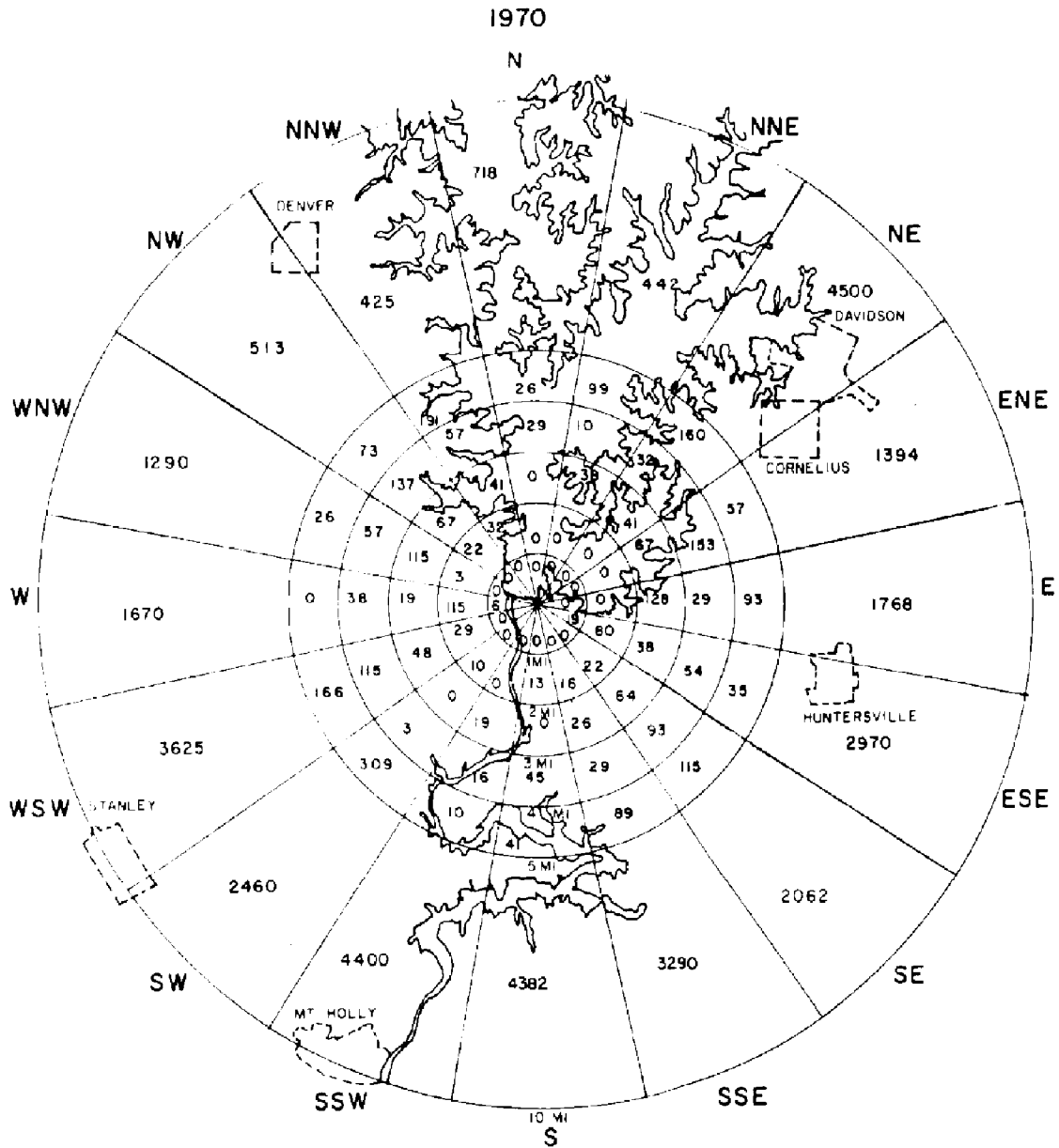


Figure 2-9. Population 0-10 Mile Radius - 1980

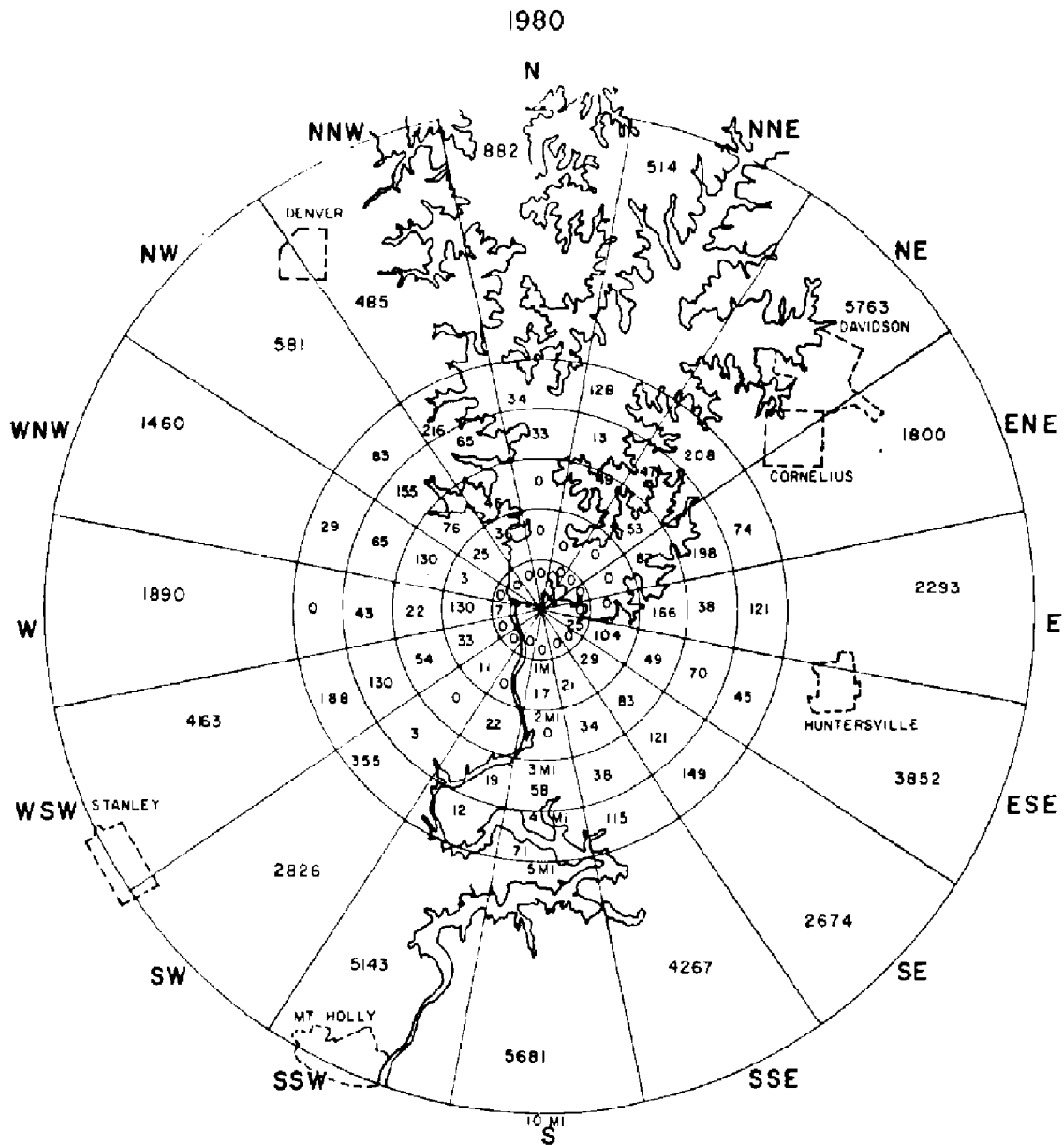


Figure 2-10. Population 0-10 Mile Radius - 1990

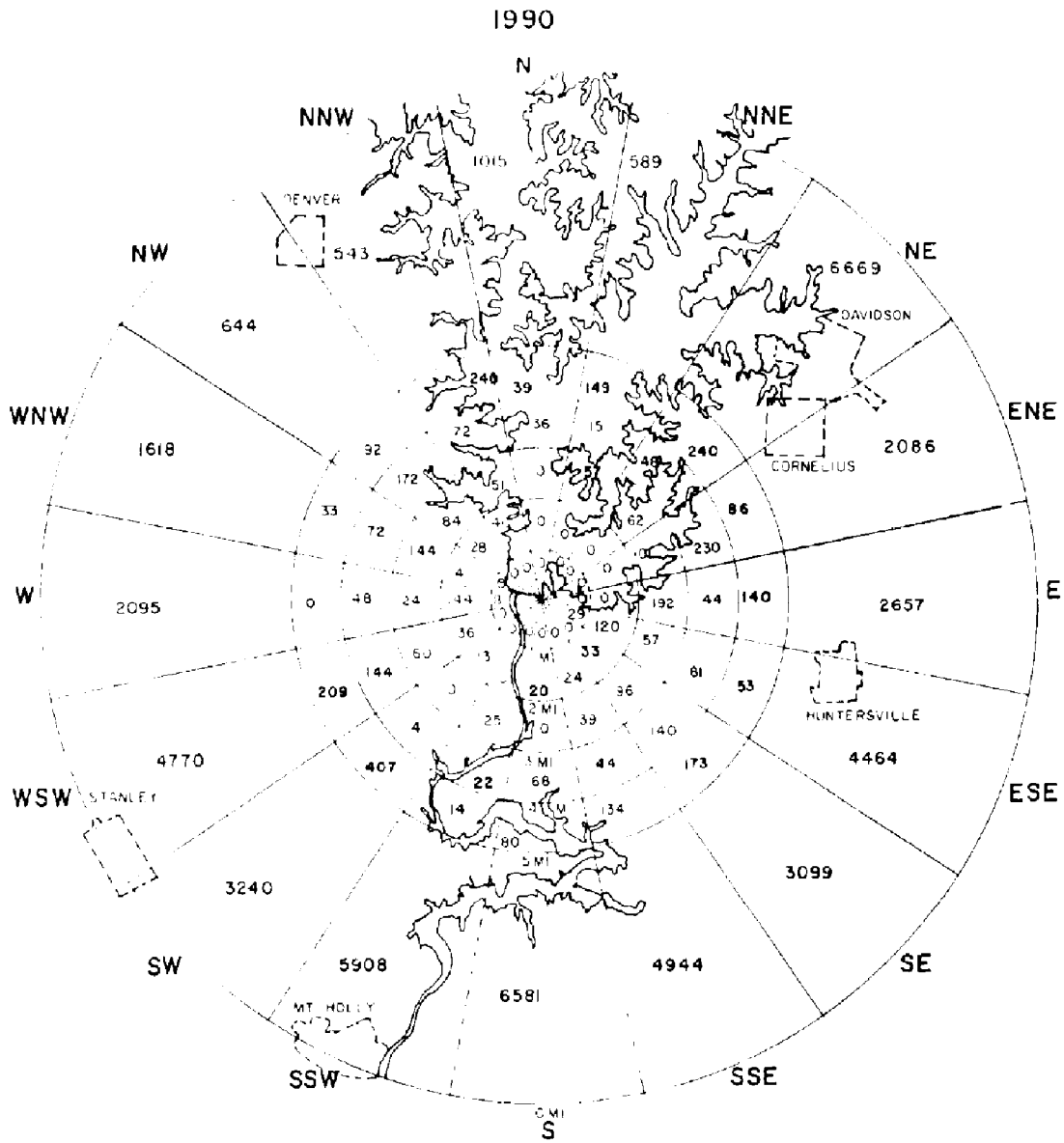


Figure 2-11. Population 0-10 Mile Radius - 2000

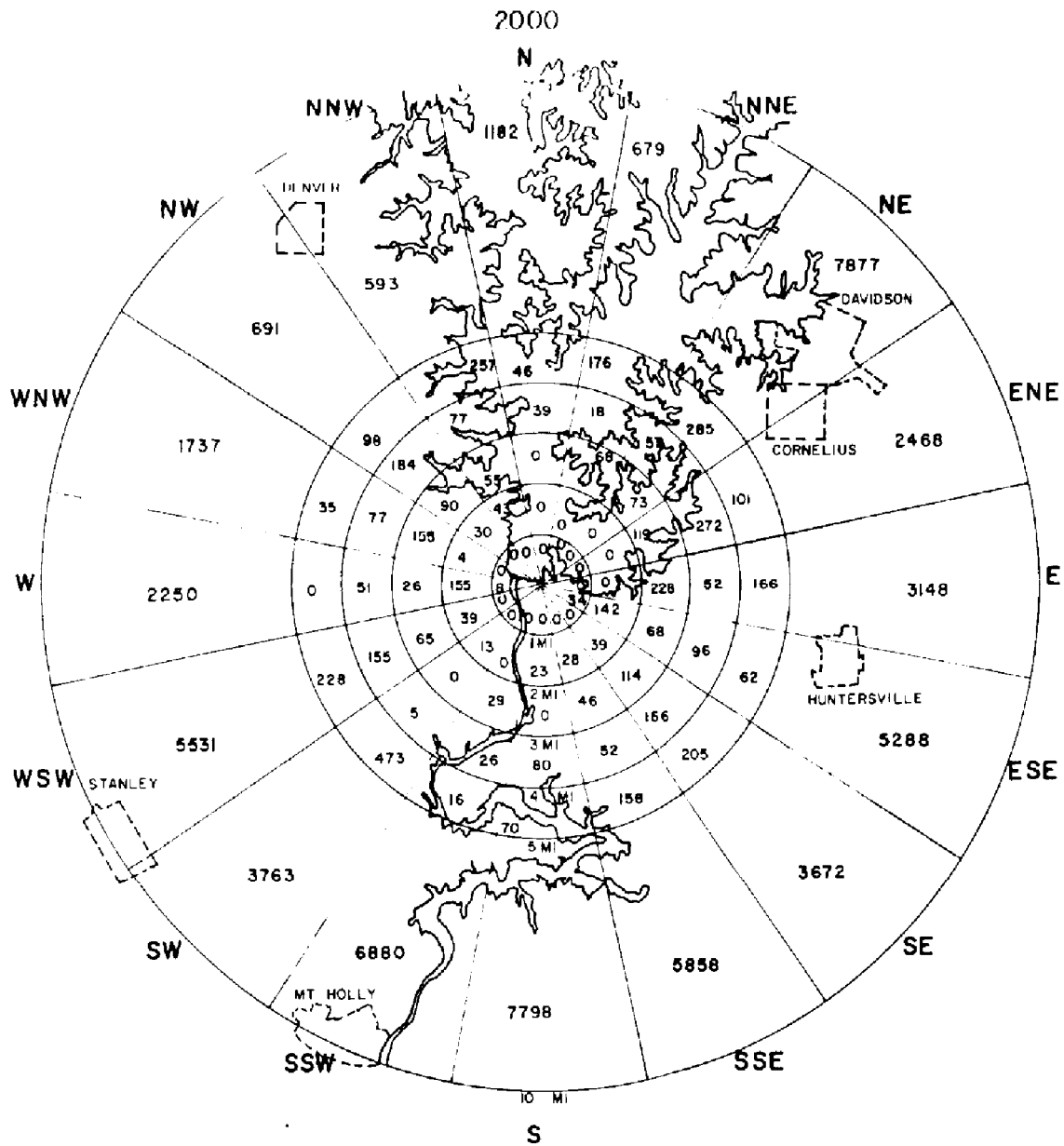


Figure 2-12. Population 0-10 Mile Radius - 2010

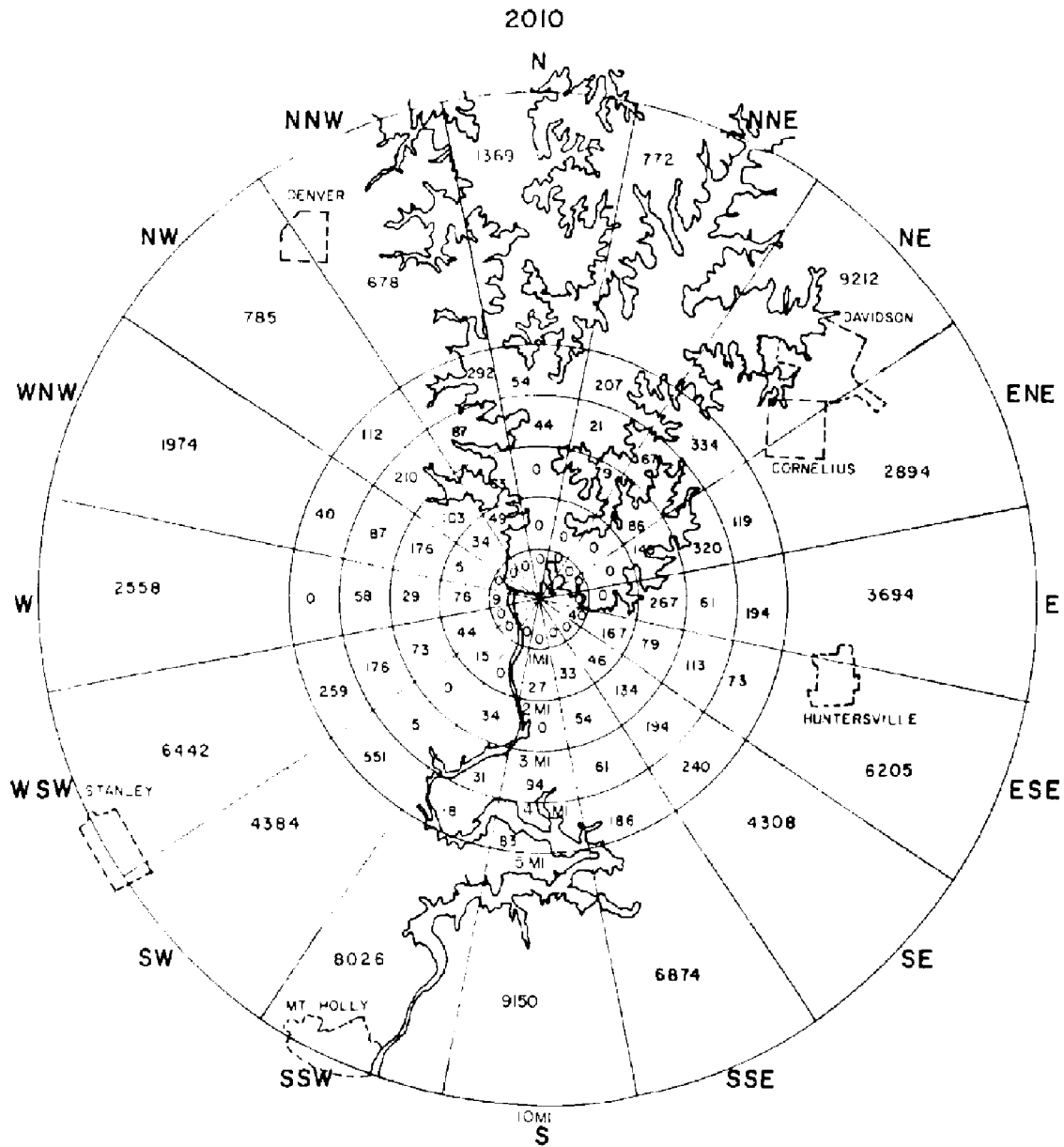


Figure 2-13. Population 0-10 Mile Radius - 2020

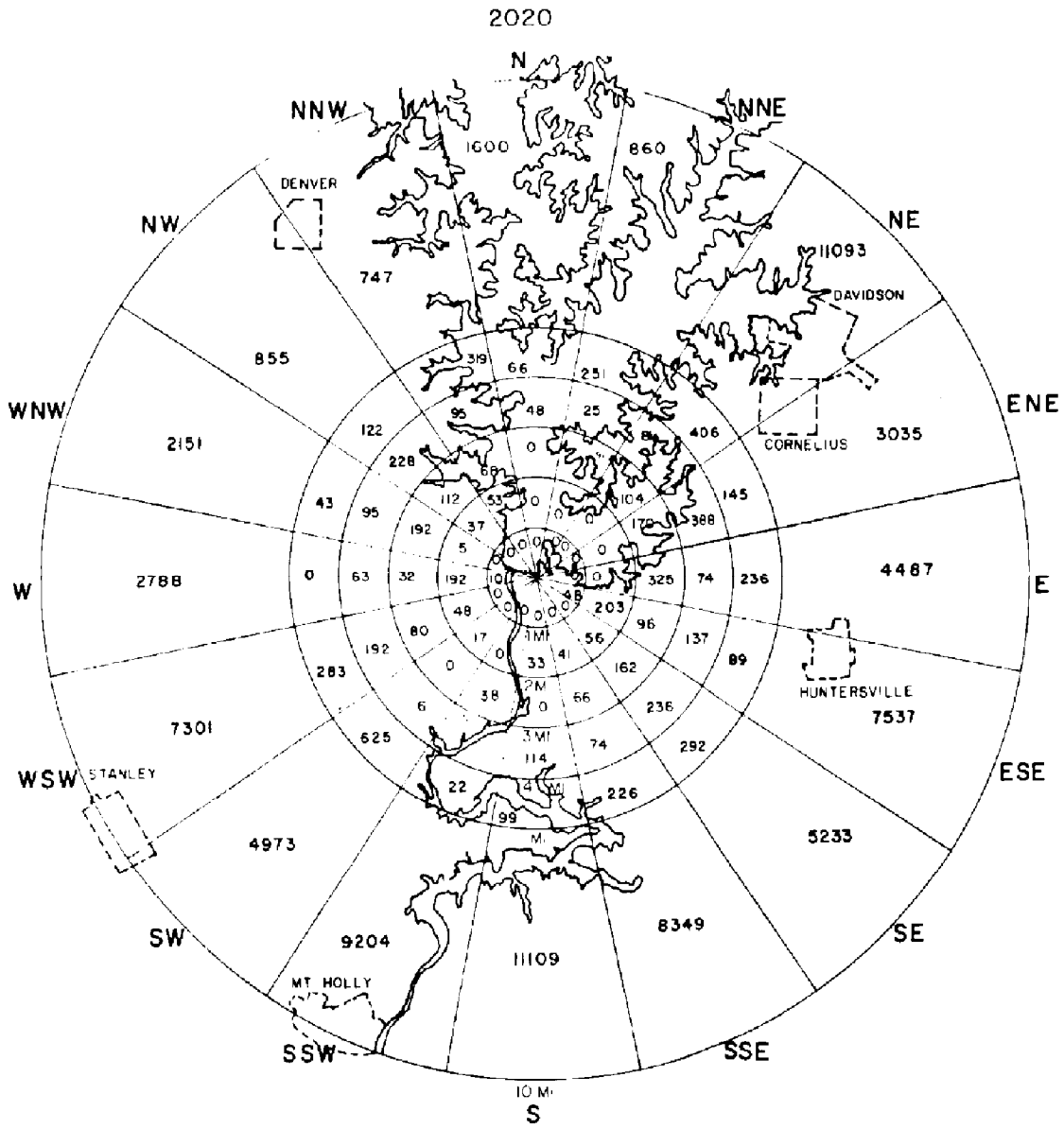


Figure 2-14. Population 10-50 Mile Radius - 1970

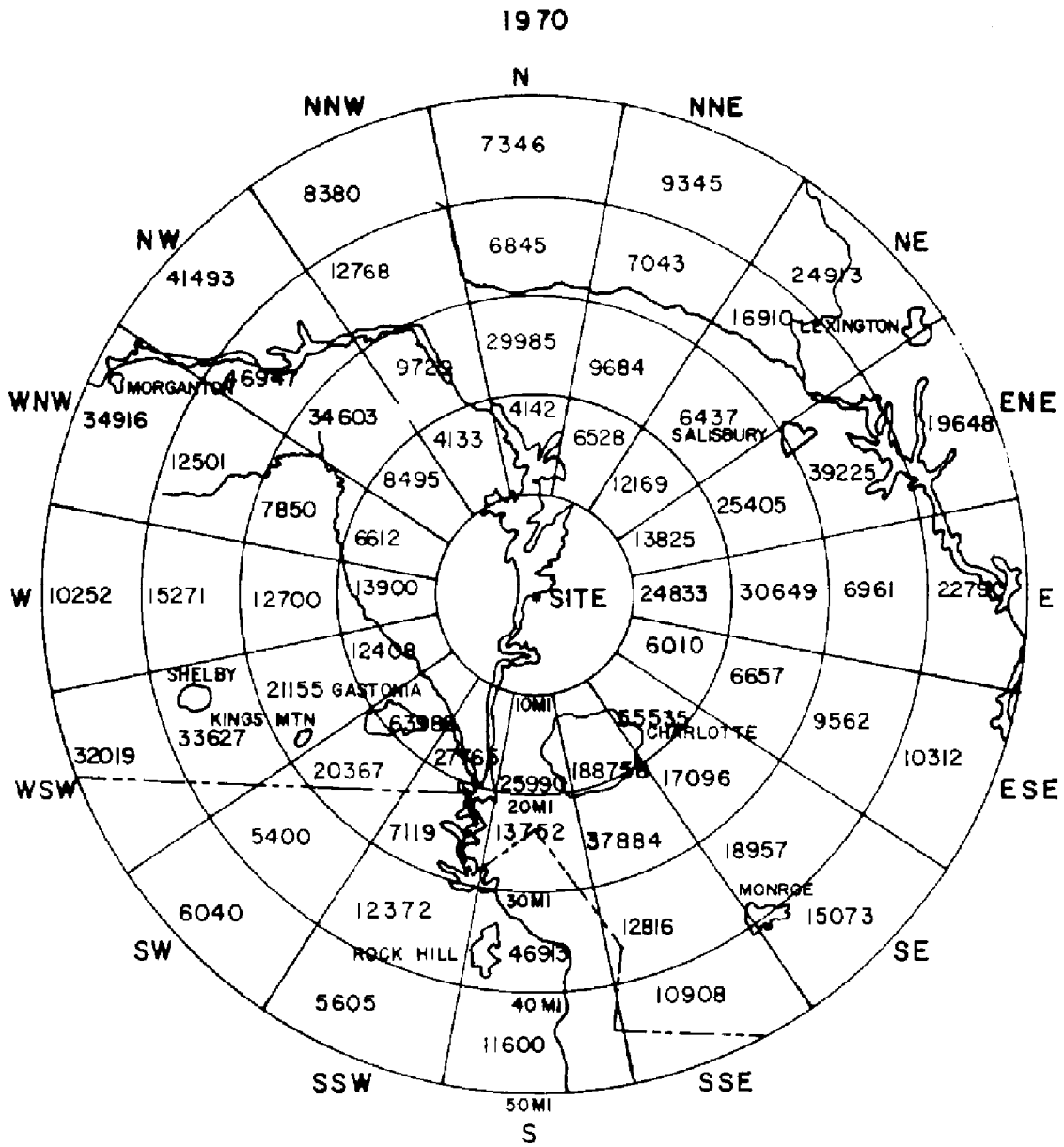


Figure 2-15. Population 10-50 Mile Radius - 1980

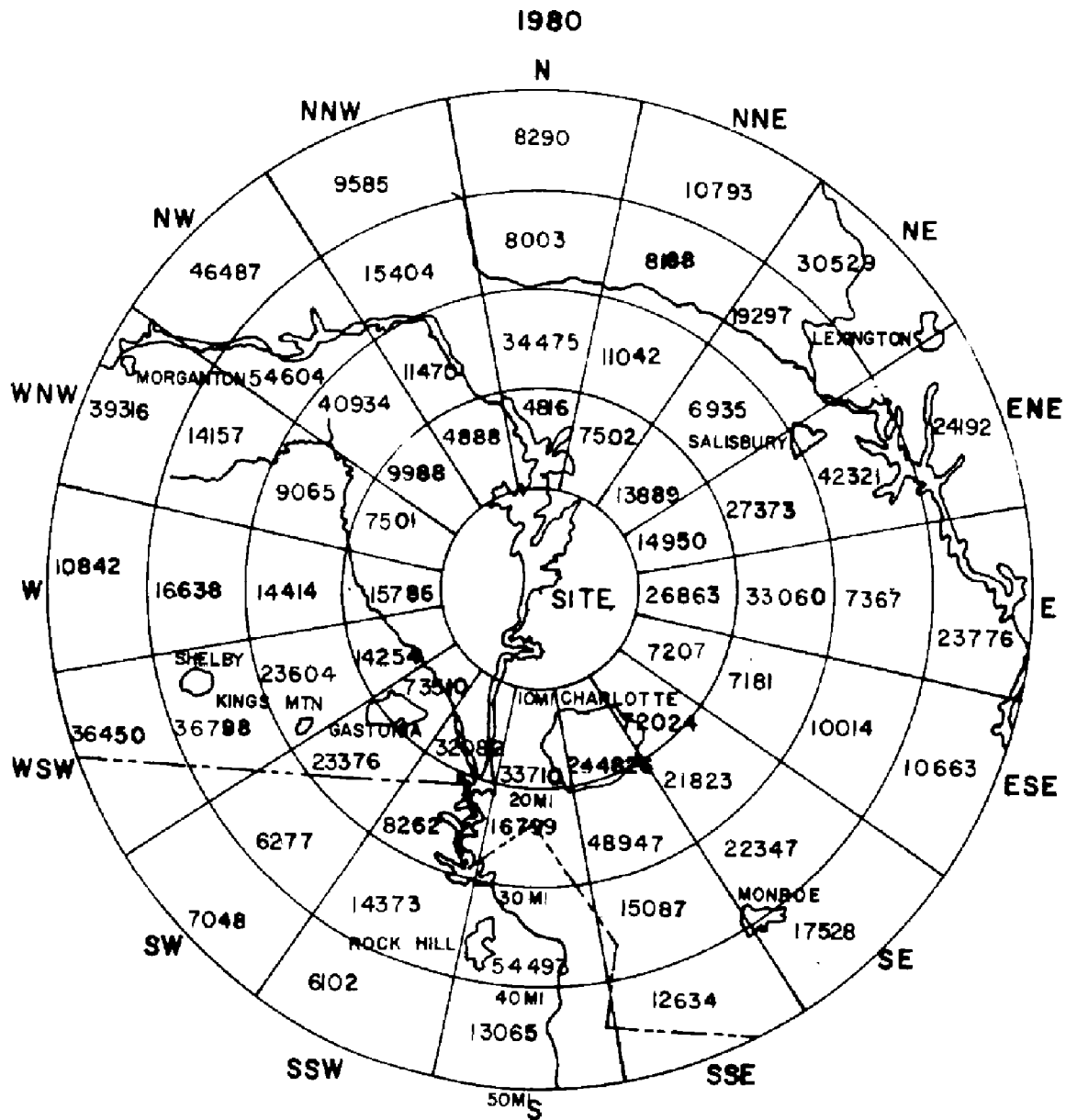


Figure 2-17. Population 10-50 Mile Radius - 2000

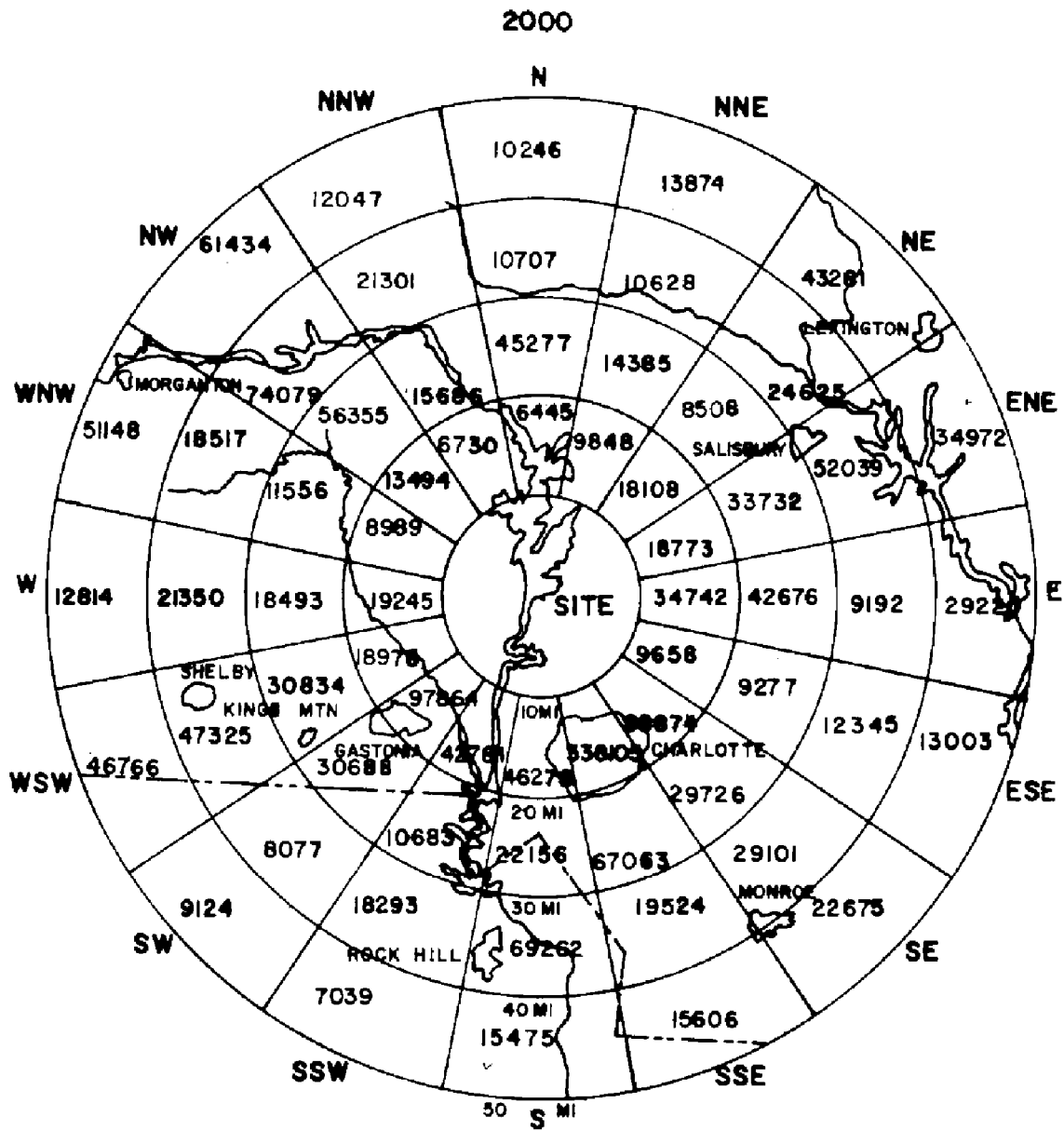


Figure 2-18. Population 10-50 Mile Radius - 2010

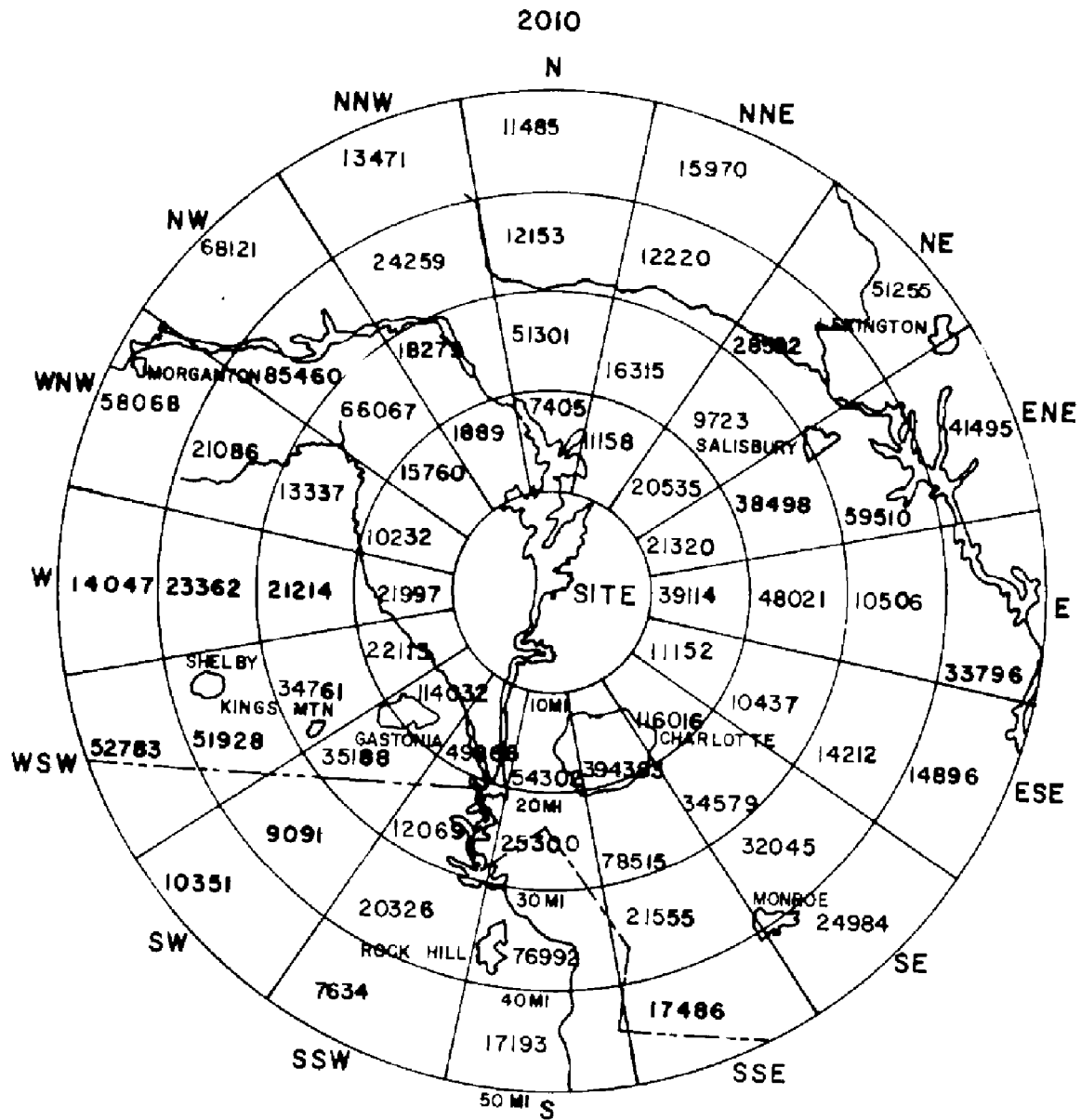


Figure 2-19. Population 10-50 Mile Radius - 2020

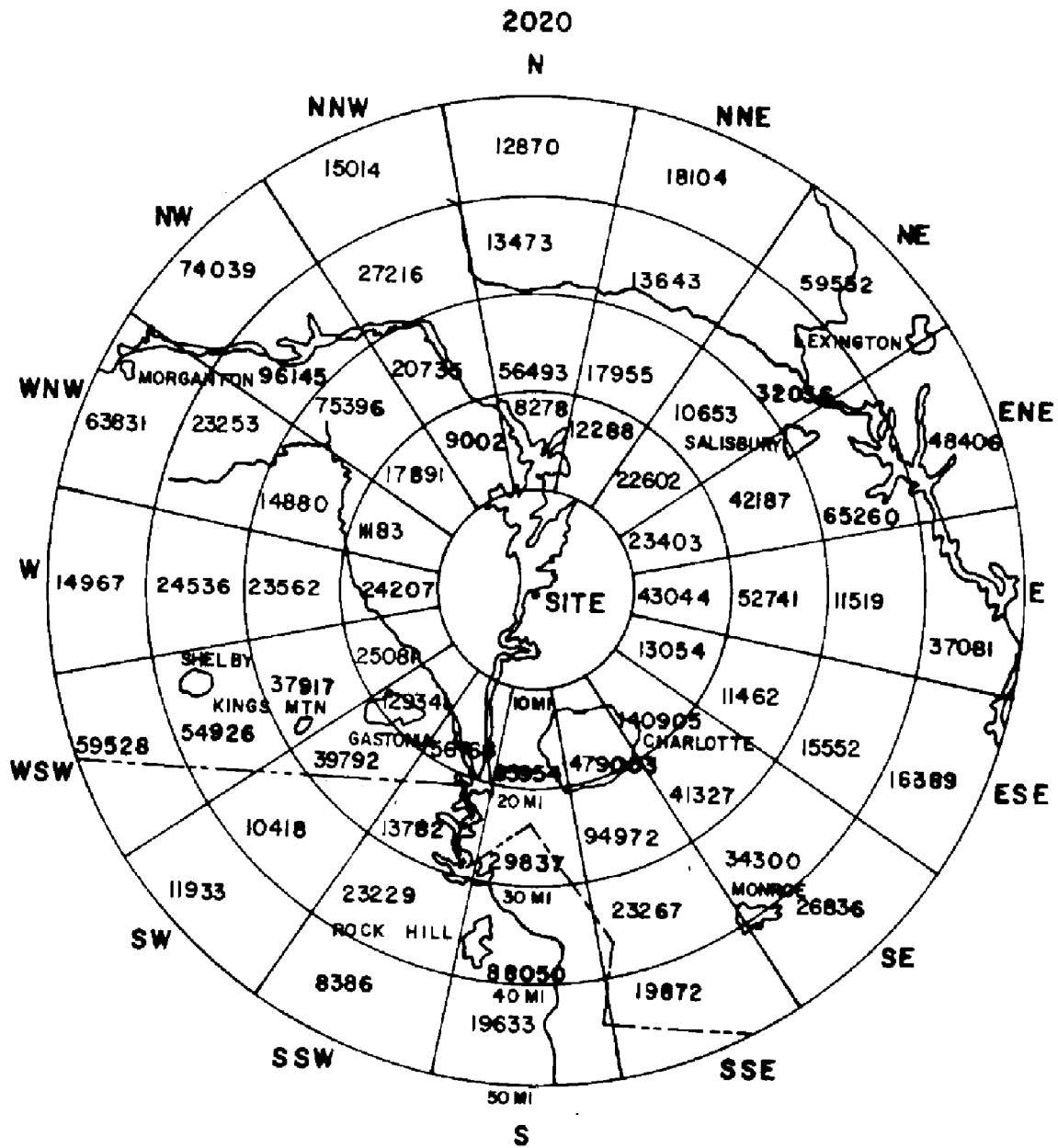


Figure 2-20. Low Population Zone - 5.5 Mile Radius - 1970

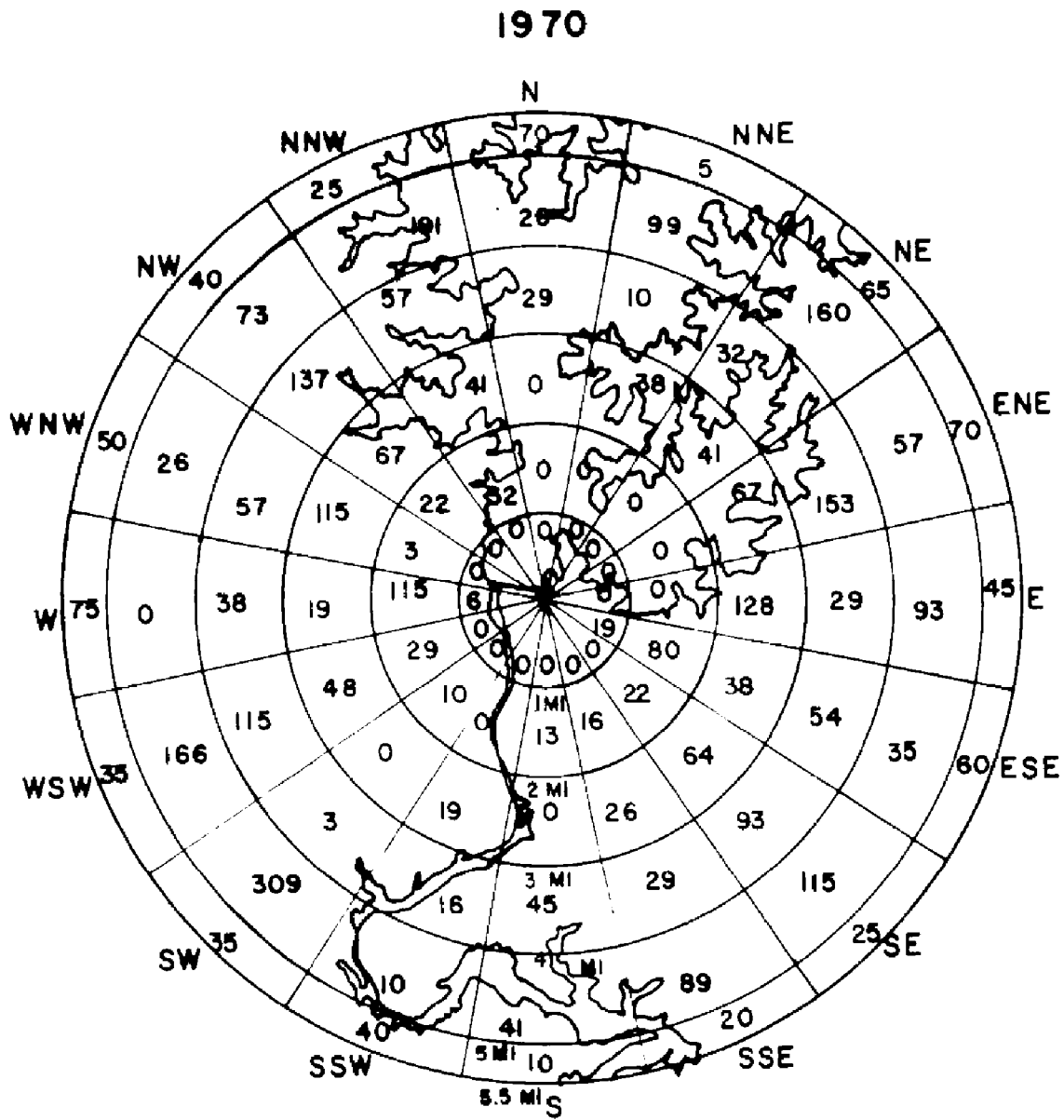


Figure 2-21. Low Population Zone - 5.5 Mile Radius - 1980

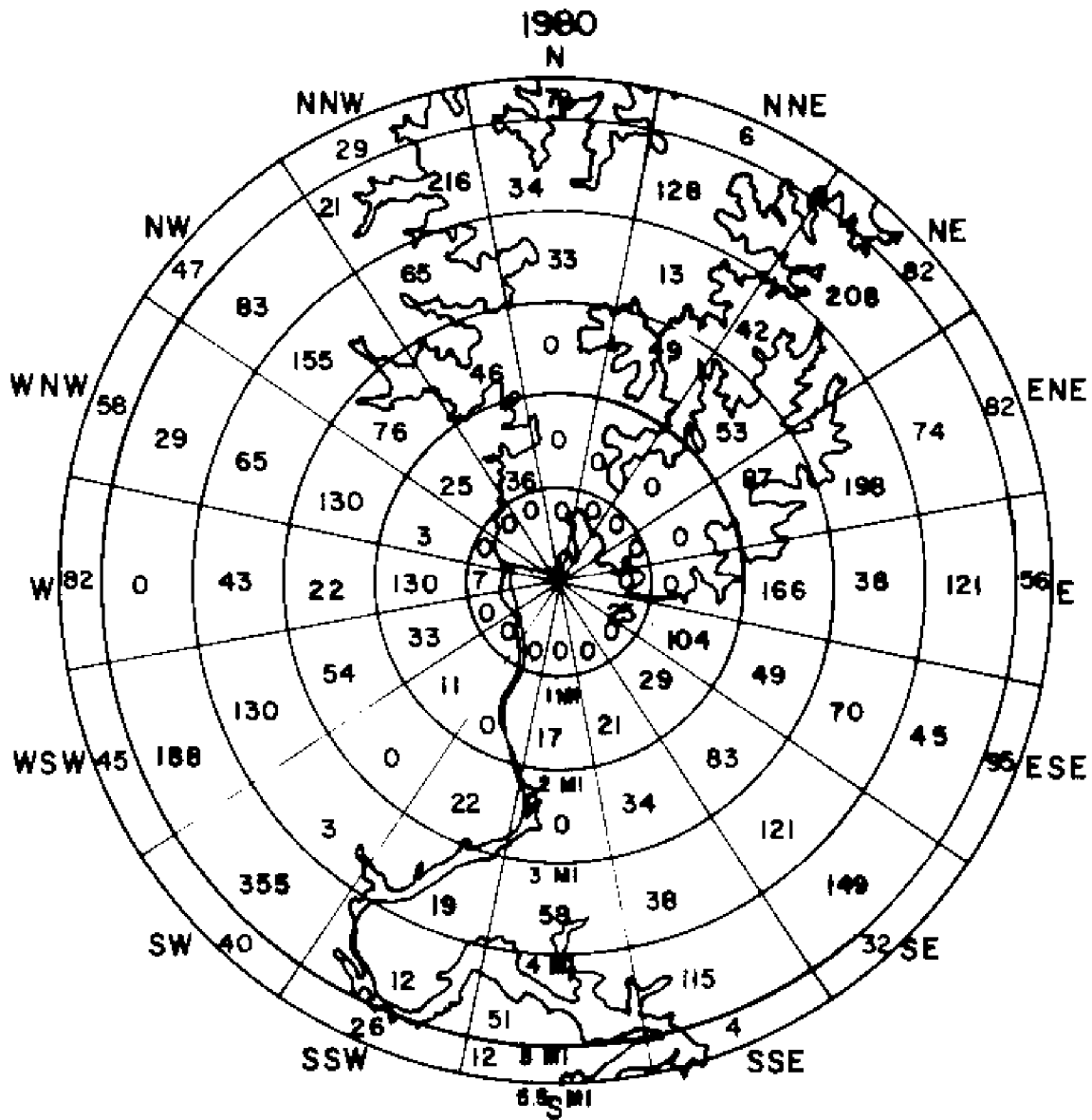


Figure 2-22. Low Population Zone - 5.5 Mile Radius - 1990

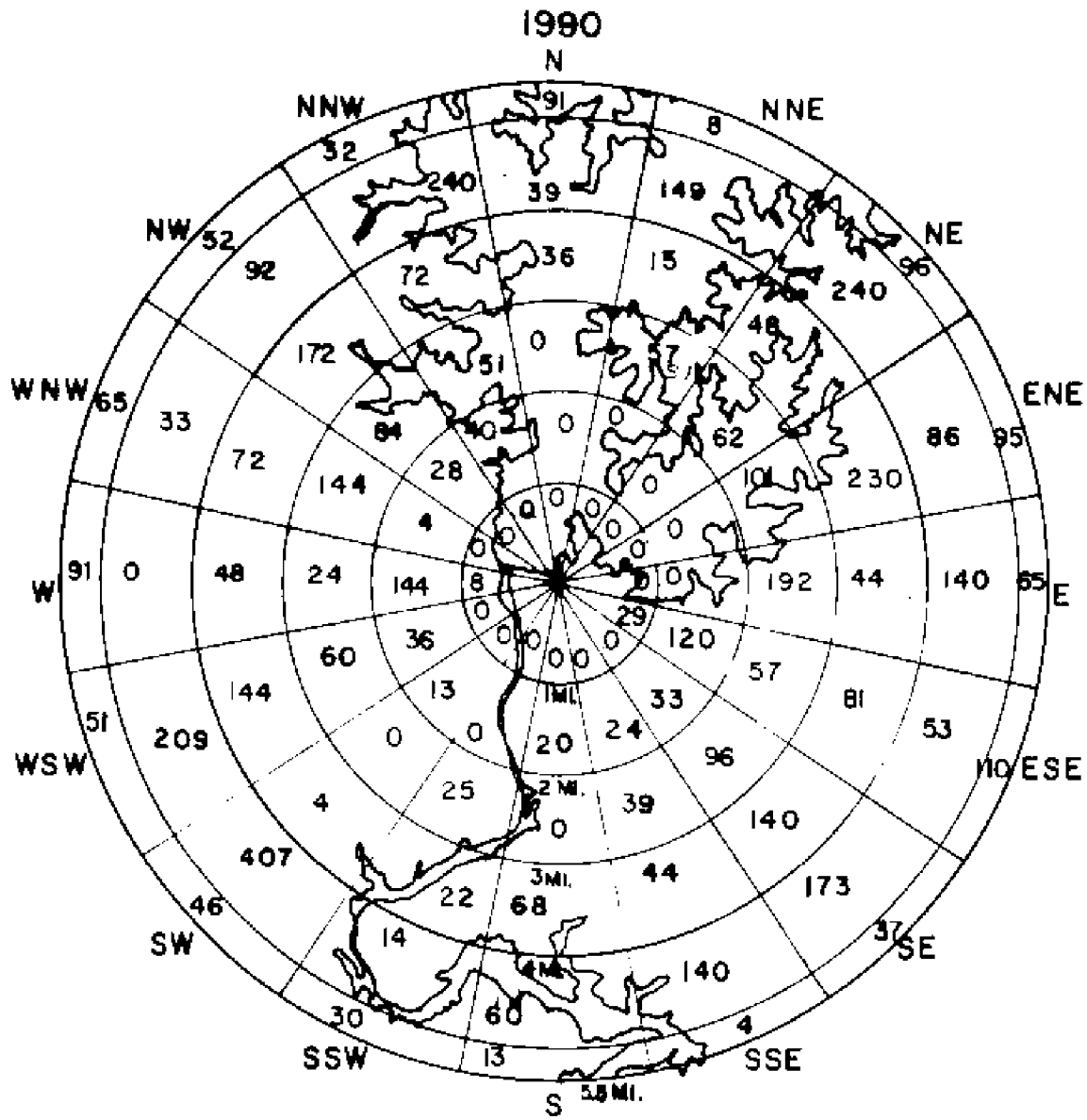


Figure 2-24. Low Population Zone - 5.5 Mile Radius - 2010

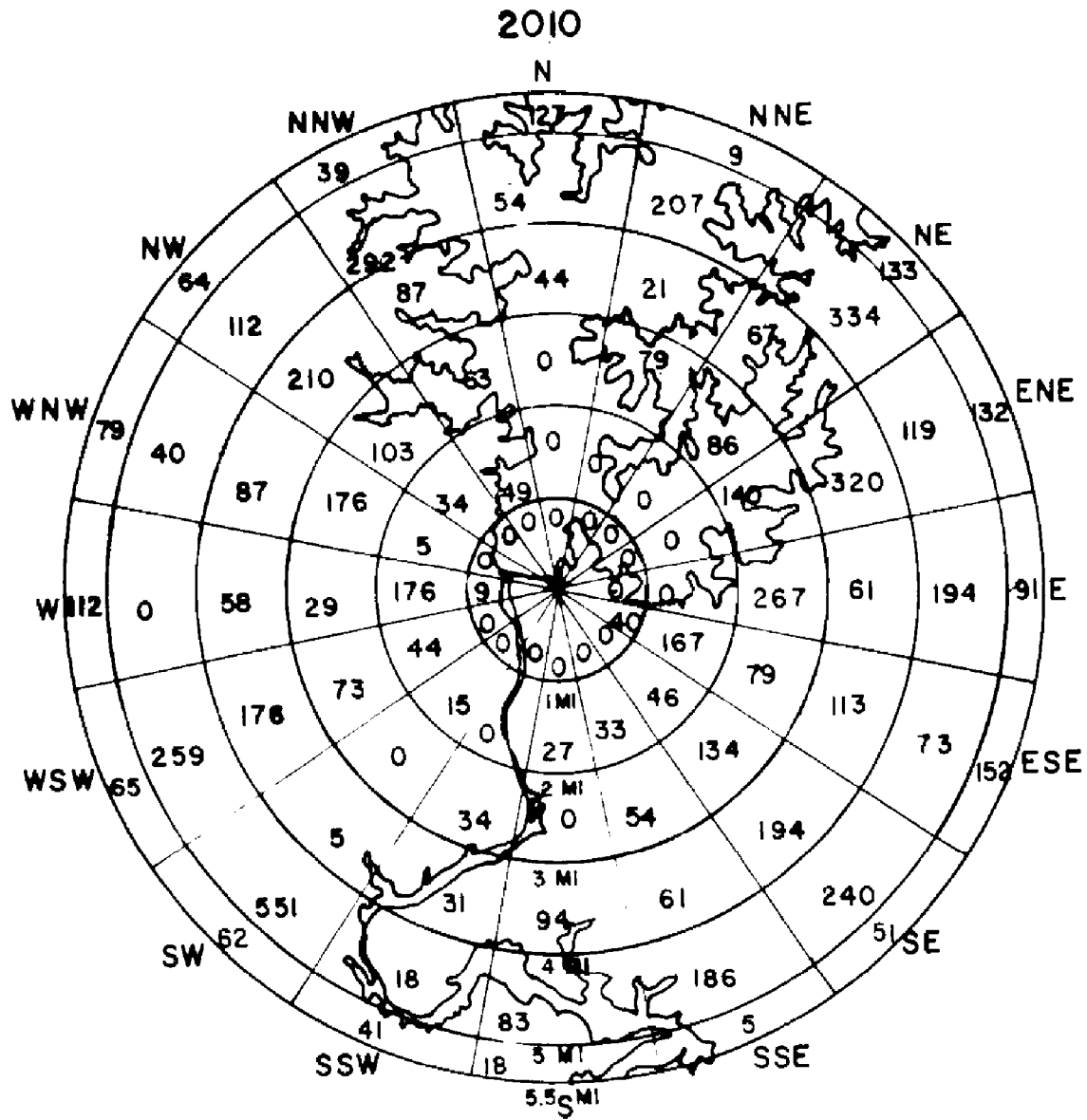


Figure 2-25. Low Population Zone - 5.5 Mile Radius - 2020

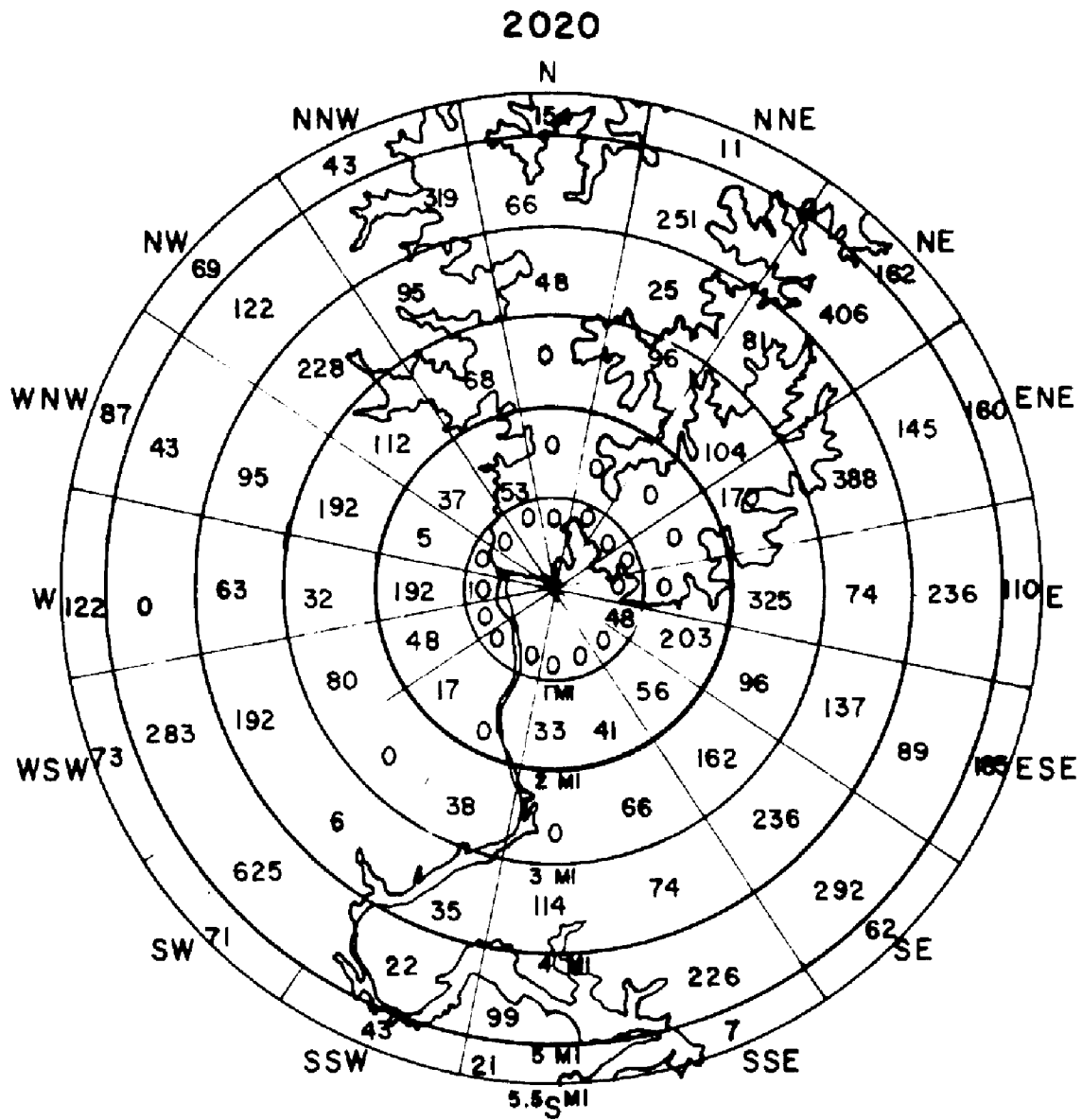
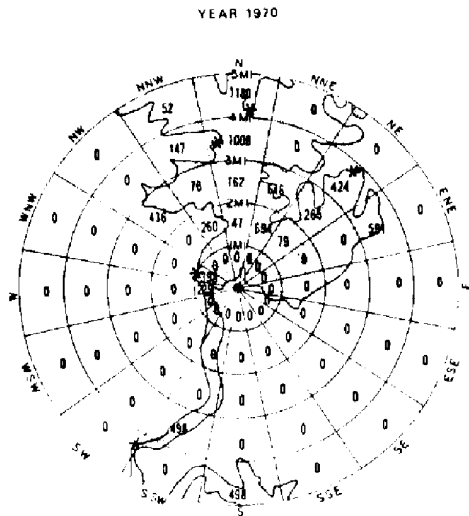
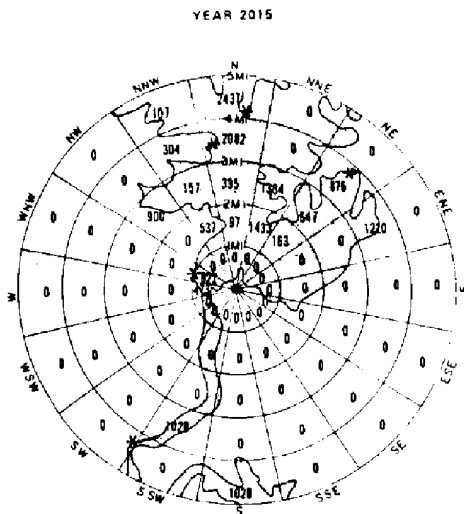


Figure 2-26. Peak Attendance - Recreation Areas 0-5 Miles [Historical information, not required to be revised.]



YEAR 1970'

| SECTOR | RADIUS (MI) | | | | | |
|--------------|-------------|--------------|--------------|--------------|--------------|--------------|
| | 0.1 | 1.2 | 2.4 | 3.6 | 4.8 | 5.0 |
| N | 0 | 47 | 162 | 1,008 | 1,180 | 2,397 |
| NNE | 0 | 694 | 646 | 0 | 0 | 1,340 |
| NE | 0 | 79 | 285 | 424 | 0 | 768 |
| ENE | 0 | 0 | 0 | 591 | 0 | 591 |
| E | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 498 | 498 |
| SSW | 0 | 0 | 0 | 498 | 0 | 498 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 229 | 0 | 0 | 0 | 0 | 229 |
| WNW | 398 | 0 | 0 | 0 | 0 | 398 |
| NW | 0 | 0 | 438 | 0 | 0 | 438 |
| NNW | 0 | 280 | 76 | 147 | 52 | 535 |
| TOTAL | 627 | 1,080 | 1,565 | 2,668 | 1,730 | 7,690 |



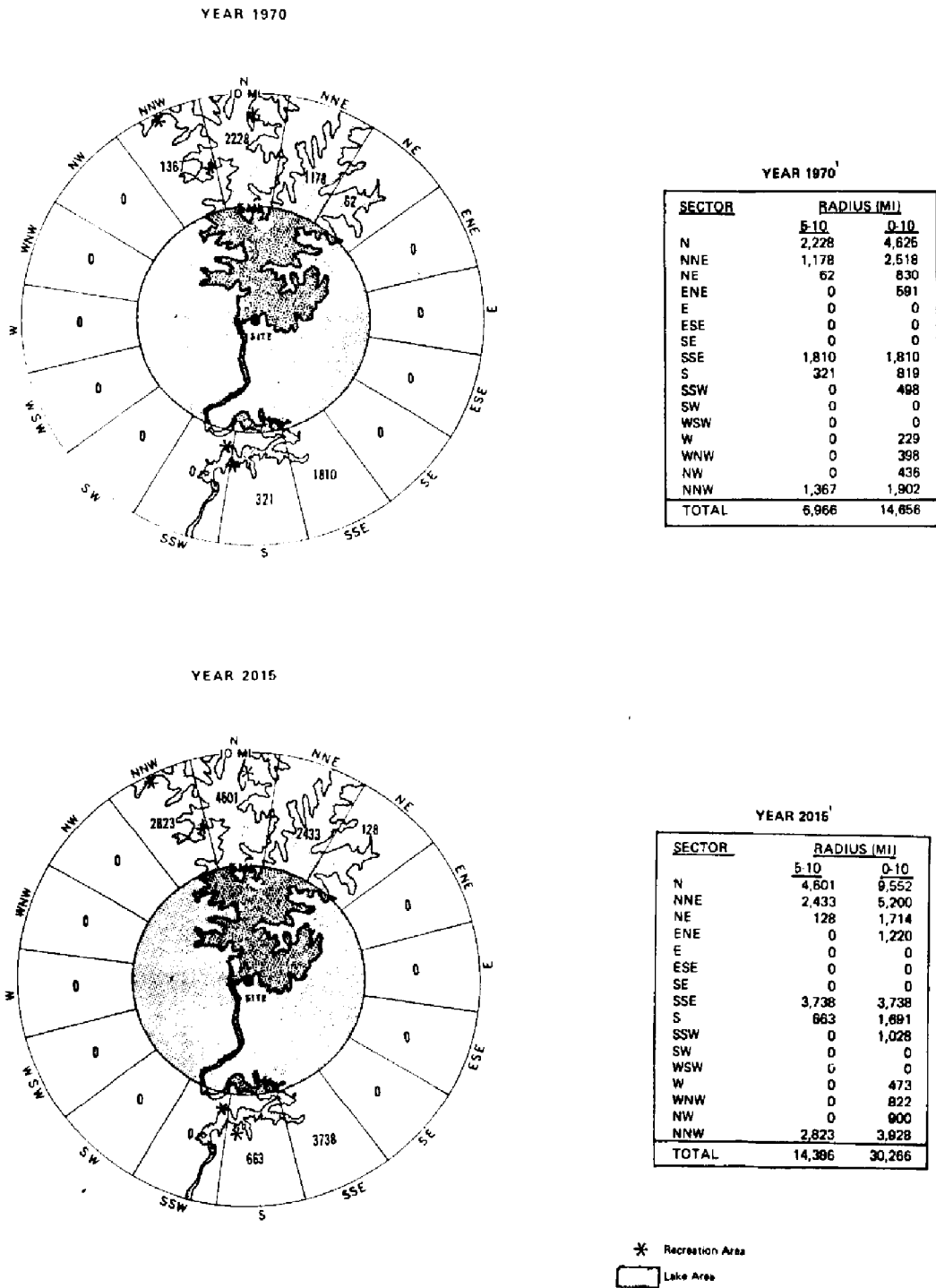
YEAR 2015'

| SECTOR | RADIUS (MI) | | | | | |
|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| | 0.1 | 1.2 | 2.4 | 3.6 | 4.8 | 5.0 |
| N | 0 | 97 | 335 | 2,082 | 2,437 | 4,951 |
| NNE | 0 | 1,433 | 1,334 | 0 | 0 | 2,767 |
| NE | 0 | 163 | 547 | 878 | 0 | 1,586 |
| ENE | 0 | 0 | 0 | 1,220 | 0 | 1,220 |
| E | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 1,028 | 1,028 |
| SSW | 0 | 0 | 0 | 1,028 | 0 | 1,028 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 473 | 0 | 0 | 0 | 0 | 473 |
| WNW | 822 | 0 | 0 | 0 | 0 | 822 |
| NW | 0 | 0 | 900 | 0 | 0 | 900 |
| NNW | 0 | 537 | 157 | 304 | 107 | 1,105 |
| TOTAL | 1,296 | 2,200 | 3,273 | 5,510 | 3,672 | 15,880 |

* Recreation Area
 ■ Lake Area

Estimated peak use comprised of attendance at public access areas and by guests and owners of vacation homes and permanent homes in near proximity to the site. Projection made by UFGU personnel based on historical records.

Figure 2-27. Peak Attendance - Recreation Areas 5-10 Miles [Historical information, not required to be revised.]



¹ Estimated peak use comprised of attendance at public access areas and by guests and owners of vacation homes and permanent homes in near proximity to lake. Projection made by DPCo based on historical records.

Figure 2-28. Public Facilities and Institutions [Historical information, not required to be revised.]

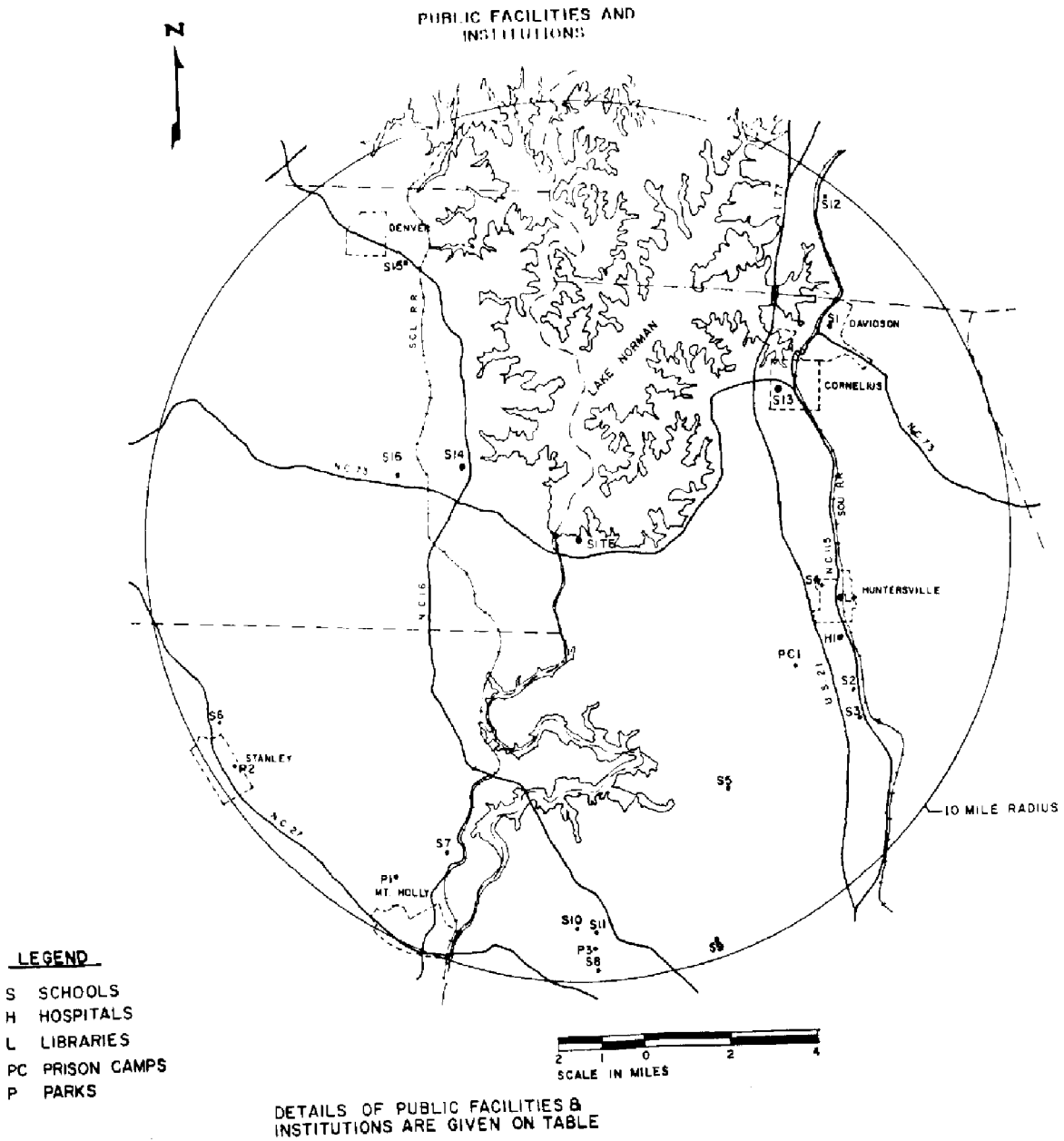
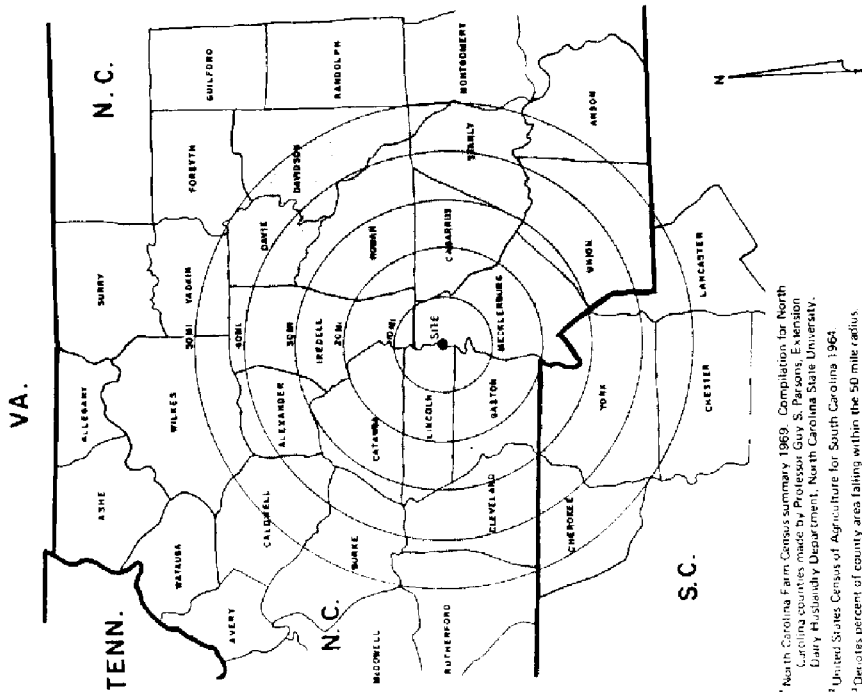


Figure 2-29. Land Use (Acres) within a 50 Mile Radius

LAND USE (ACRES) WITHIN A 50 MILE RADIUS

| County | % Area ² | CROPLAND | | | | All Other Land |
|-----------------------------------|---------------------|---------------------|---------|----------|------------|----------------|
| | | Harvested | Idle | Improved | Unimproved | |
| Alexander | 100 | 14,709 | 11,595 | 18,140 | 6,553 | 64,347 |
| Anson | 16 | 34,383 | 20,185 | 24,273 | 4,154 | 131,412 |
| Burke | 58 | 13,010 ³ | 12,489 | 10,726 | 4,642 | 90,316 |
| Cabarrus | 100 | 35,257 | 20,248 | 27,265 | 9,333 | 86,387 |
| Caldwell | 53 | 5,524 | 19,056 | 6,808 | 8,506 | 104,286 |
| Catawba | 100 | 37,616 | 31,332 | 27,664 | 5,896 | 86,303 |
| Cleveland | 100 | 42,873 | 65,757 | 37,719 | 5,121 | 101,172 |
| Davidson | 98 | 39,443 | 46,367 | 22,974 | 11,959 | 136,362 |
| Davie | 100 | 23,968 | 18,487 | 28,166 | 5,213 | 77,285 |
| Forsyth | 02 | 24,959 | 24,532 | 15,581 | 5,856 | 86,620 |
| Gaston ⁴ | 100 | 20,077 | 23,003 | 15,282 | 6,968 | 60,303 |
| Iredell | 100 | 55,279 | 45,059 | 55,720 | 11,549 | 132,098 |
| Lincoln | 100 | 33,903 | 29,003 | 14,508 | 5,455 | 66,316 |
| Mecklenburg | 100 | 20,155 | 38,399 | 20,503 | 13,294 | 93,354 |
| Montgomery | 06 | 16,622 | 9,164 | 5,745 | 1,767 | 96,138 |
| Rowan | 100 | 58,131 | 37,828 | 35,791 | 16,464 | 98,493 |
| Rutherford | 31 | 19,396 | 36,214 | 20,657 | 6,182 | 141,097 |
| Stanly | 99 | 46,370 | 25,859 | 30,890 | 4,563 | 92,139 |
| Union | 94 | 89,049 | 40,874 | 49,448 | 11,808 | 169,981 |
| Wilkes | 26 | 26,520 | 13,895 | 27,105 | 12,552 | 197,546 |
| Yadkin | 35 | 51,465 | 19,384 | 19,810 | 5,803 | 101,262 |
| | | 710,549 | 568,750 | 514,563 | 163,700 | 2,210,708 |
| SOUTH CAROLINA⁵ | | | | | | |
| Cherokee | 65 | 20,554 | 10,622 | 28,545 | 15,653 | 44,036 |
| Chester | 28 | 24,068 | 7,770 | 60,557 | 43,339 | 73,595 |
| Lancaster | 29 | 12,130 | 3,375 | 34,194 | 20,873 | 44,177 |
| York | 100 | 31,420 | 12,101 | 62,461 | 34,847 | 75,789 |
| | | 88,172 | 33,868 | 185,767 | 114,512 | 237,587 |

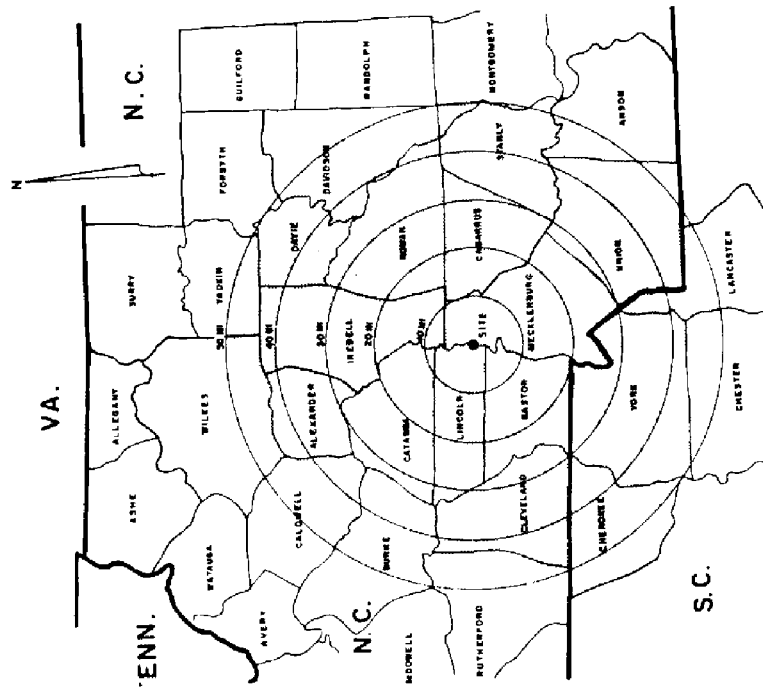


¹North Carolina Farm Census summary 1969. Compilation for North Carolina counties made by Professor Guy S. Pagnon, Extension Early Husbandry Department, North Carolina State University.
²United States Census of Agriculture for South Carolina 1964.
³Denotes percent of county area falling within the 50 mile radius.
⁴North Carolina and USDA crop reporting service. 1967 crop year.
⁵Tabulation gives the total land use acreage for each county, although 14 counties are only partially within the 50 mile radius.

Figure 2-30. Milk Cows within a 50 Mile Radius

MILK COWS WITHIN A 50 MILE RADIUS¹

| North Carolina - January 1, 1968 | | | South Carolina - January 1, 1968 | | |
|----------------------------------|---------------------|--------------------|----------------------------------|---------------------|------------------|
| County | % Area ² | Number | County | % Area ² | Number |
| Alexander | 16 | 2,850 | Cherokee | 65 | 900 ³ |
| Anson | 58 | 1,700 ⁴ | Chester | 28 | 3,400 |
| Burke | 100 | 3,300 | Lancaster | 29 | 300 |
| Catawba | 53 | 1,600 | York | 100 | 2,000 |
| Catawba | 100 | 4,800 | | | 6,500 |
| Cleveland | 100 | 4,700 | | | |
| Davidson | 58 | 4,060 | | | |
| Davie | 100 | 5,500 | | | |
| Forsyth | 02 | 2,600 | | | |
| Forsyth | 100 | 3,100 | | | |
| Gaston | 100 | 12,150 | | | |
| Greene | 100 | 3,150 | | | |
| Lincoln | 100 | 3,450 | | | |
| Mecklenburg | 06 | 900 | | | |
| Montgomery | 100 | 8,350 | | | |
| Rowan | 31 | 2,150 | | | |
| Rutherford | 99 | 3,650 | | | |
| Steeny | 94 | 5,500 | | | |
| Union | 26 | 2,750 | | | |
| Wilkes | 35 | 4,300 | | | |
| Yadkin | | 81,850 | | | |



¹North Carolina Agricultural Statistics
²South Carolina Livestock and Poultry Statistics
³Figures compiled by Professor Guy S. Parsons, Extension
⁴Statistical Services Department, North Carolina State University.
⁵Surry County area falling within the 50 mile radius.
⁶Mecklenburg County area falling within the 50 mile radius.
⁷Union County area falling within the 50 mile radius.

Figure 2-31. Milk Cows within a 5 Mile Radius

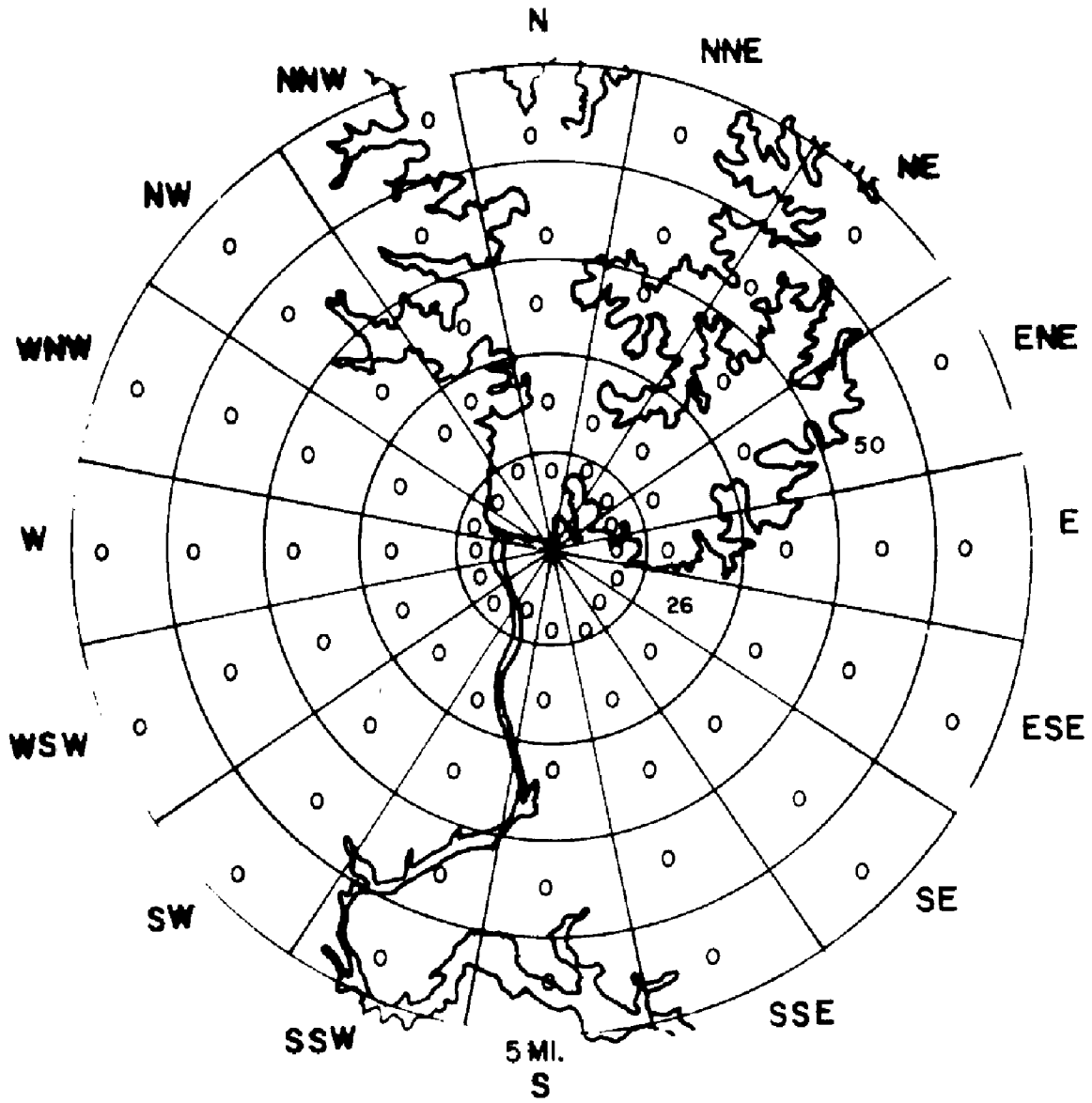


Figure 2-32. Existing Land Use 0-2 Miles

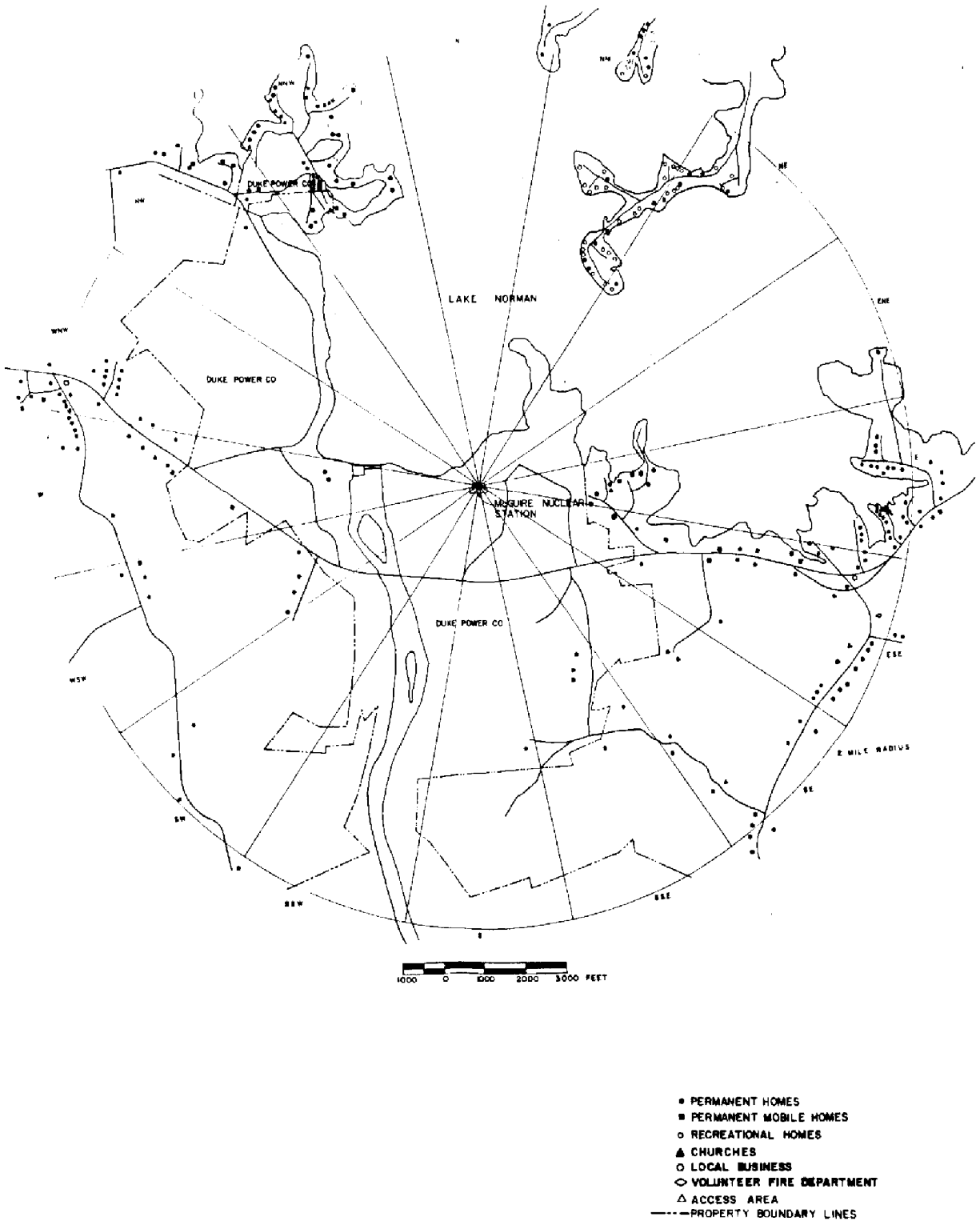


Figure 2-33. Duke Owned Land within Low Population Zone



Figure 2-34. Training and Technology Center Site Plan

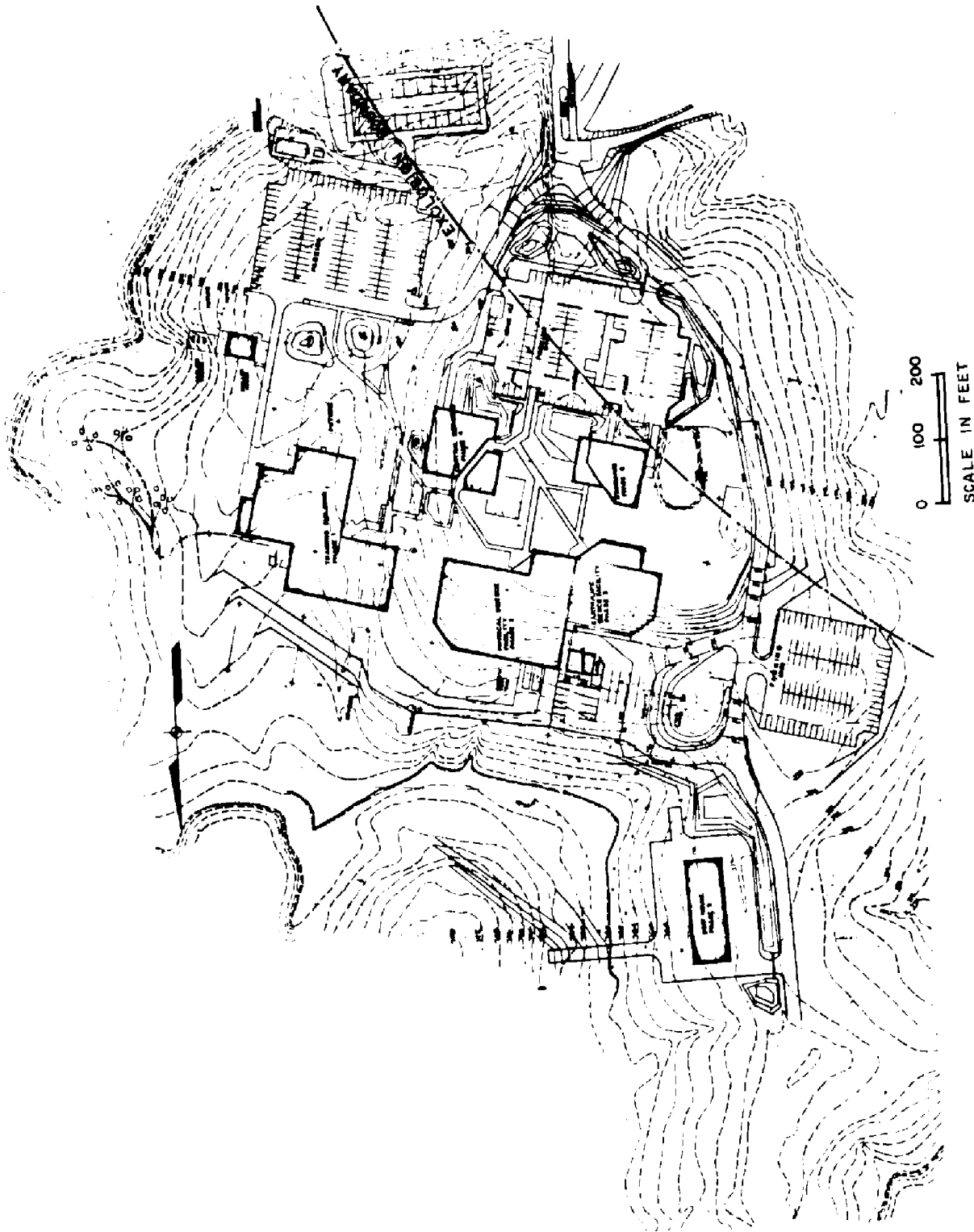


Figure 2-35. Routes, Locations, and Industries in Vicinity [Historical information, not required to be revised.]

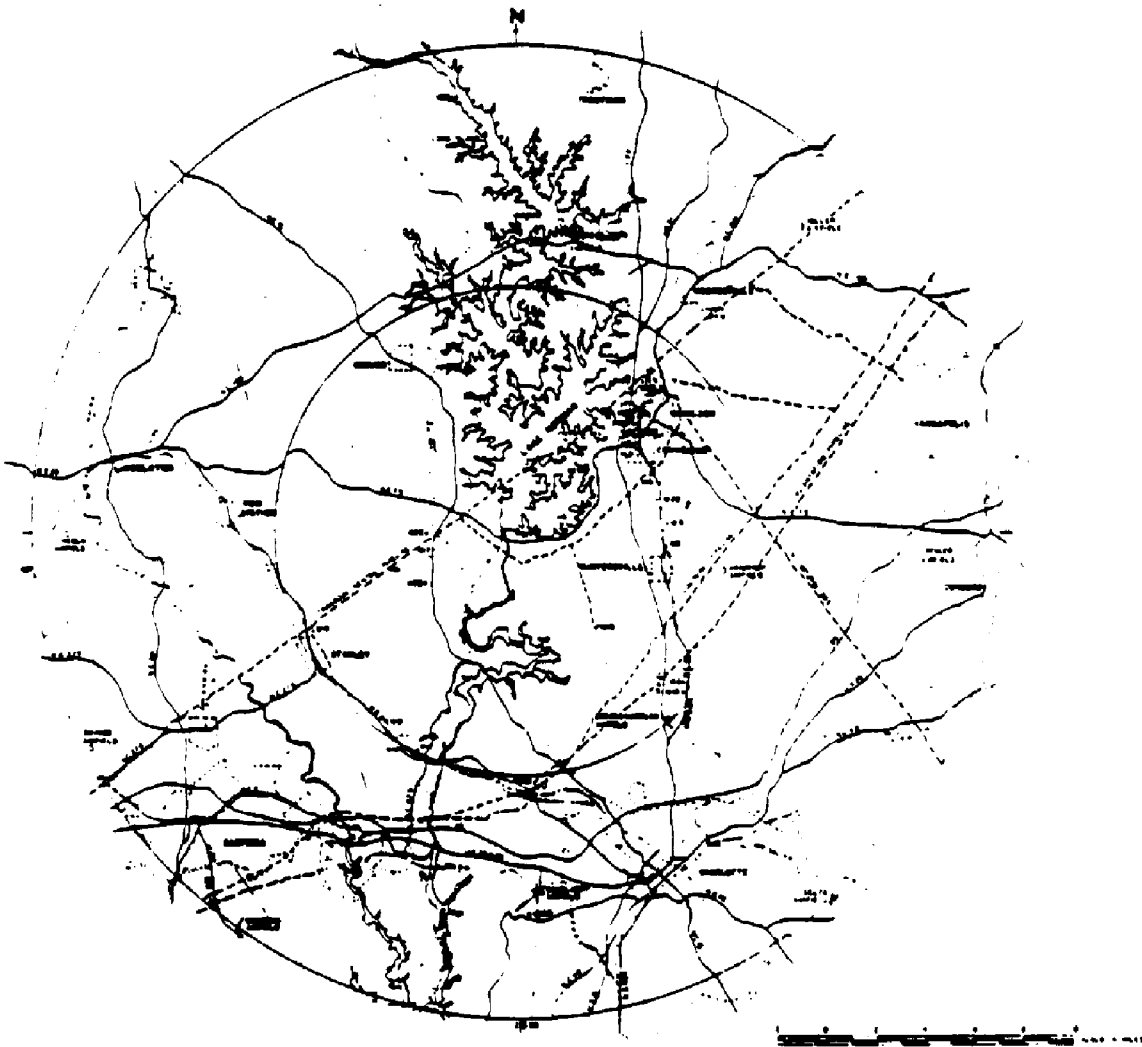


Figure 2-36. Pipeline Details

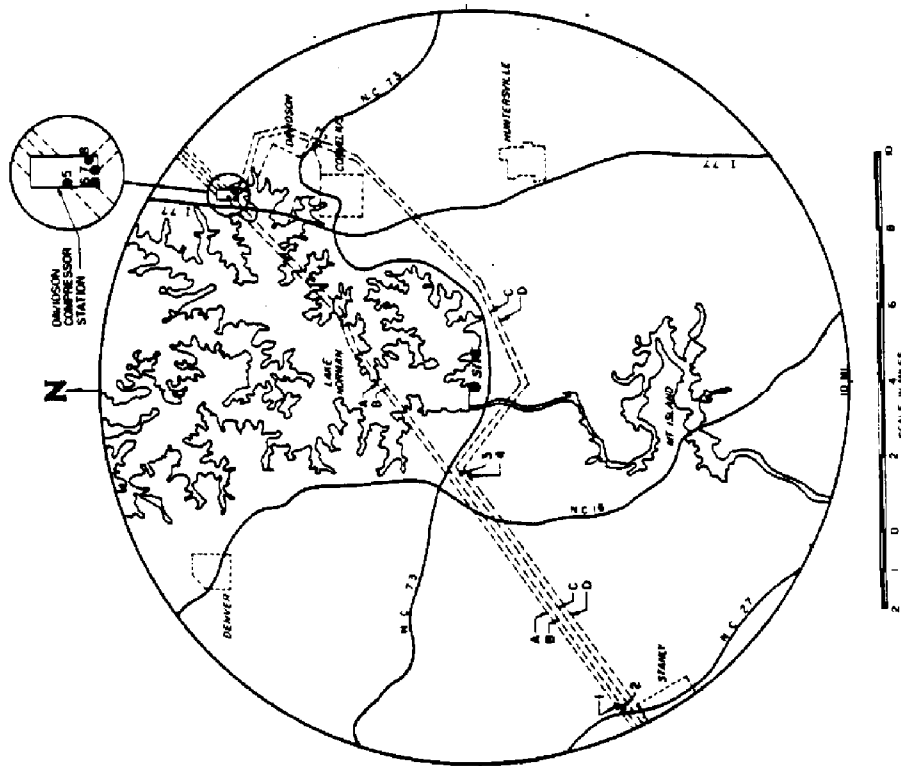
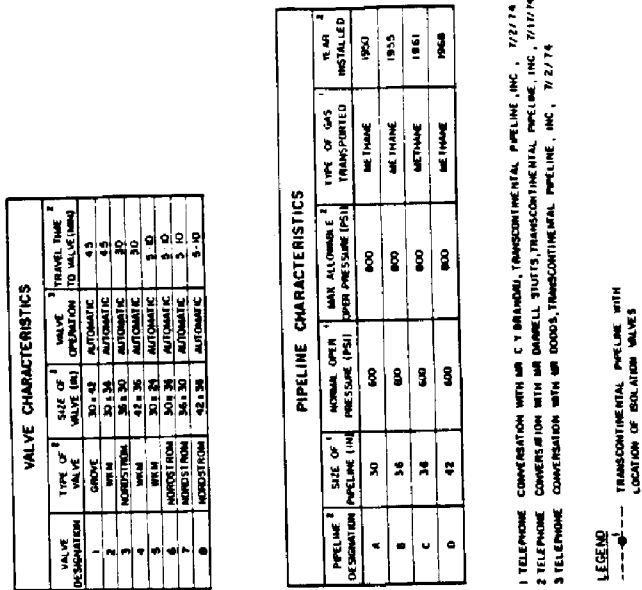
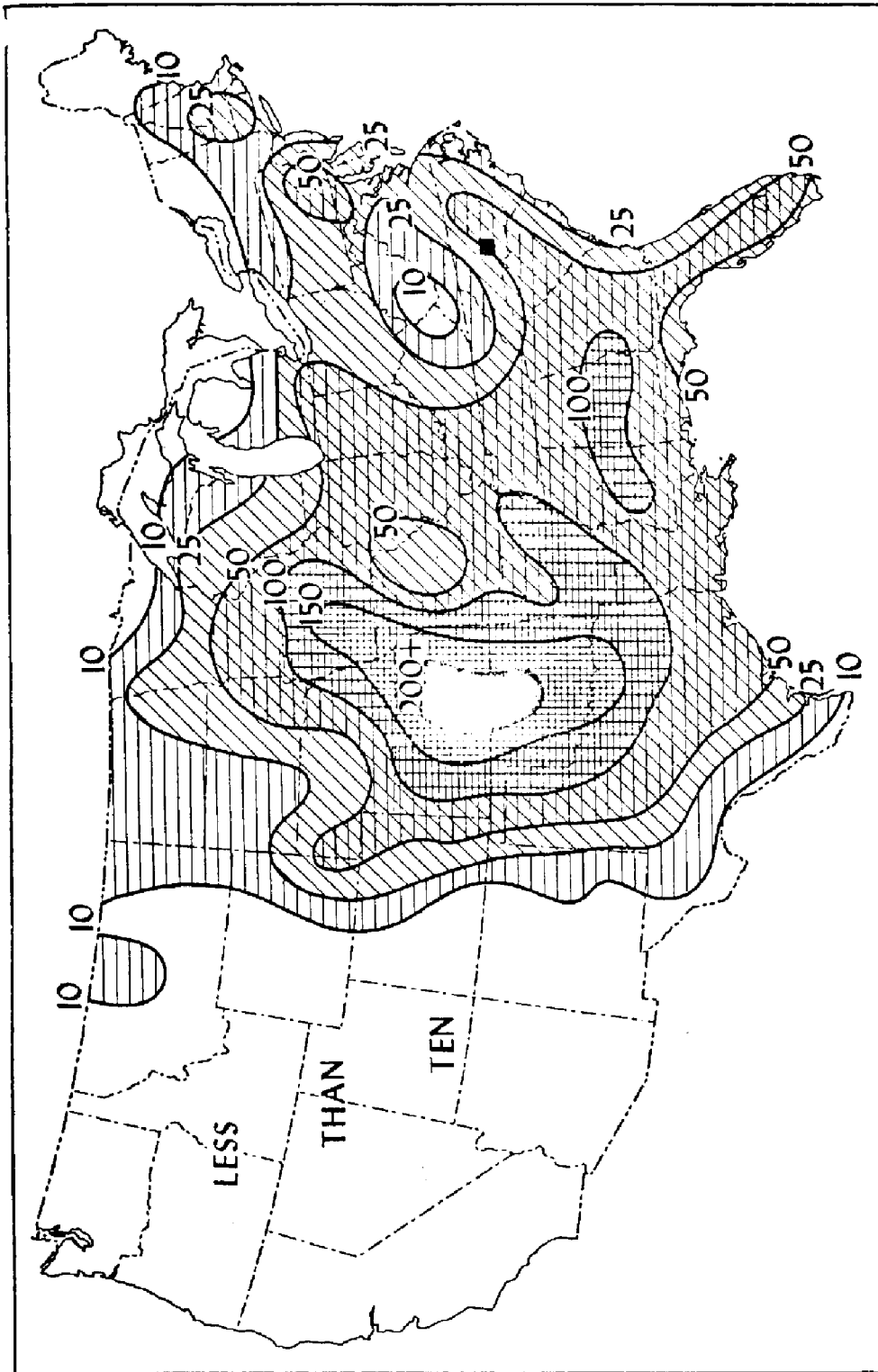


Figure 2-37. Tornadoes 1916-55



TORNADOES 1916-55
(Isolines based on total number by 2° squares, counting first point of contact with ground of 7,206 tornadoes.)

■ SITE LOCATION

Figure 2-38. Vicinity Topography - Plan View



Figure 2-39. Vicinity Topography - Profile

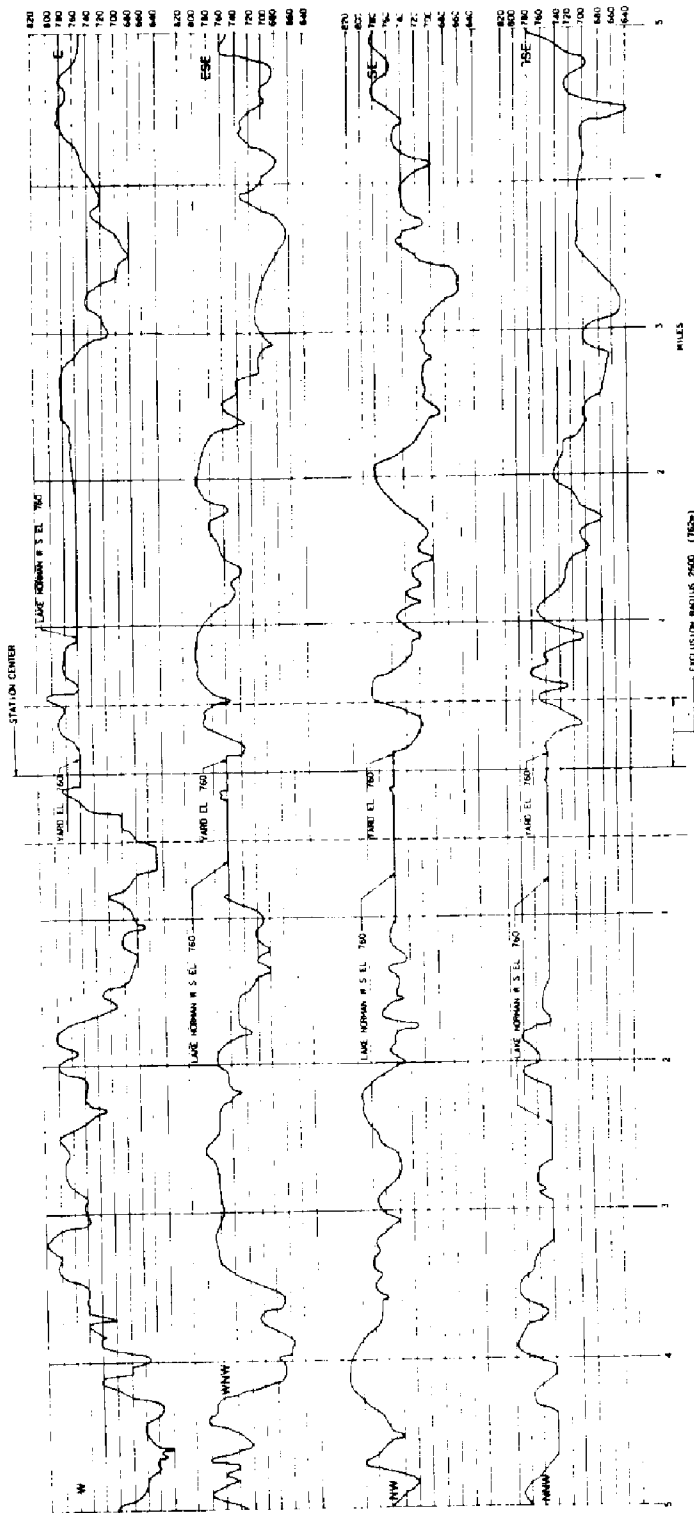


Figure 2-40. Vicinity Topography - Profile

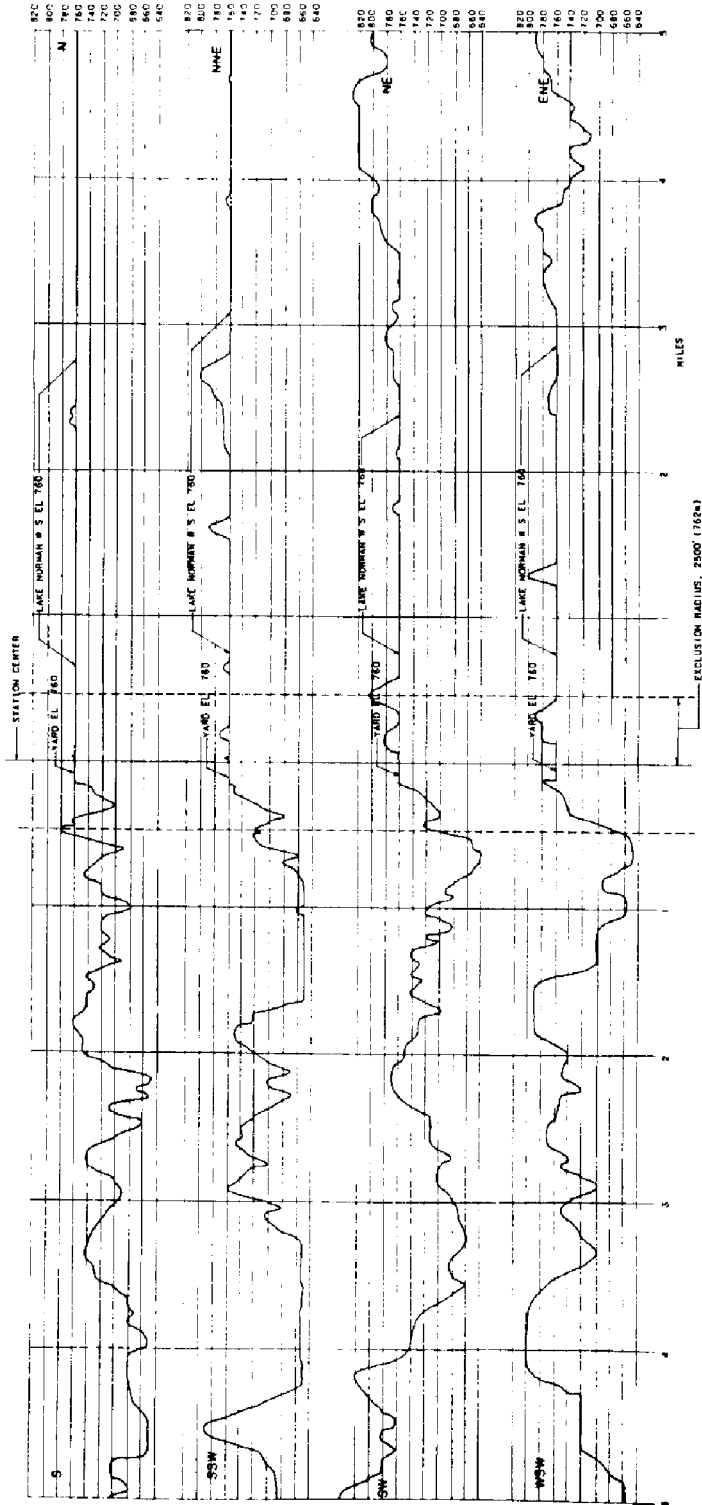


Figure 2-41. Plan View of Meteorological Instruments

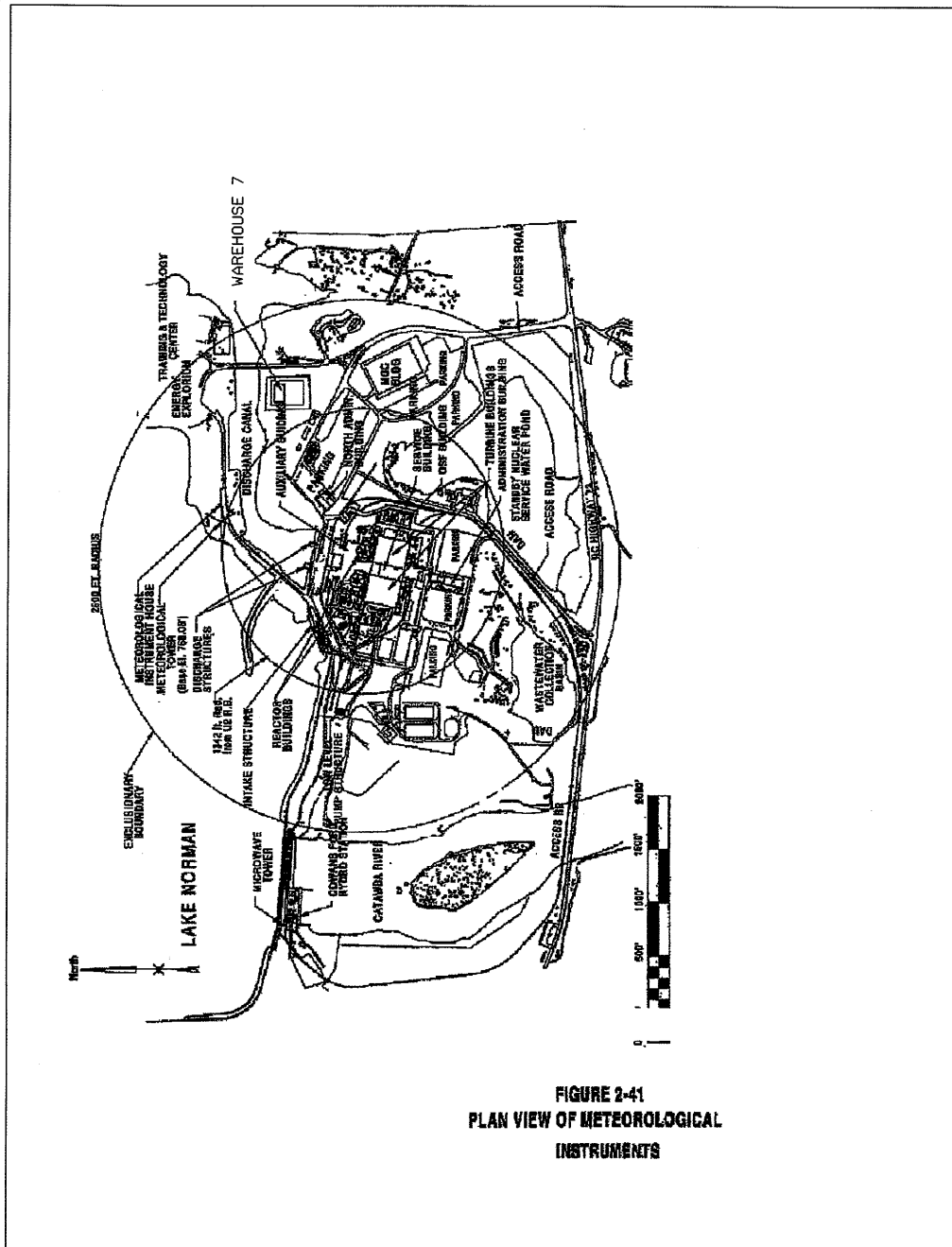


FIGURE 2-41
PLAN VIEW OF METEOROLOGICAL
INSTRUMENTS

Figure 2-42. Relative Elevations of Meteorological Instruments

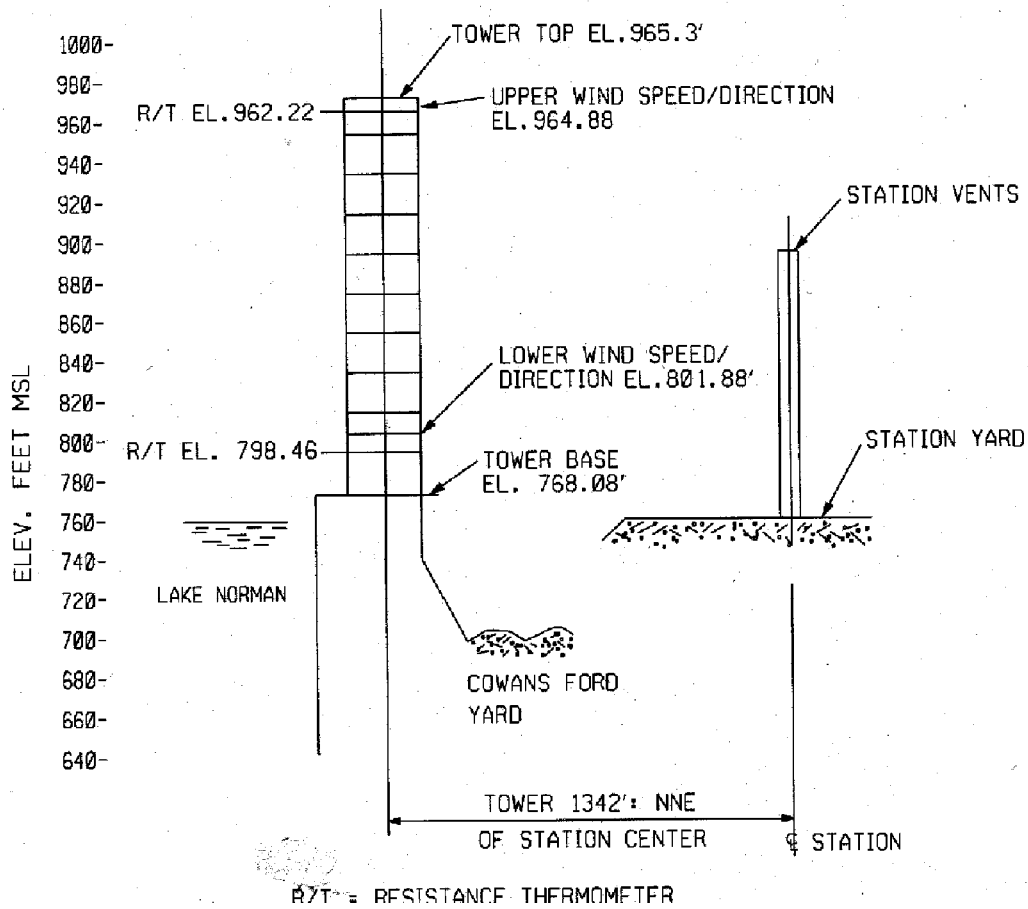


Figure 2-43. Relative Concentration Frequency Distribution - 762 Meters

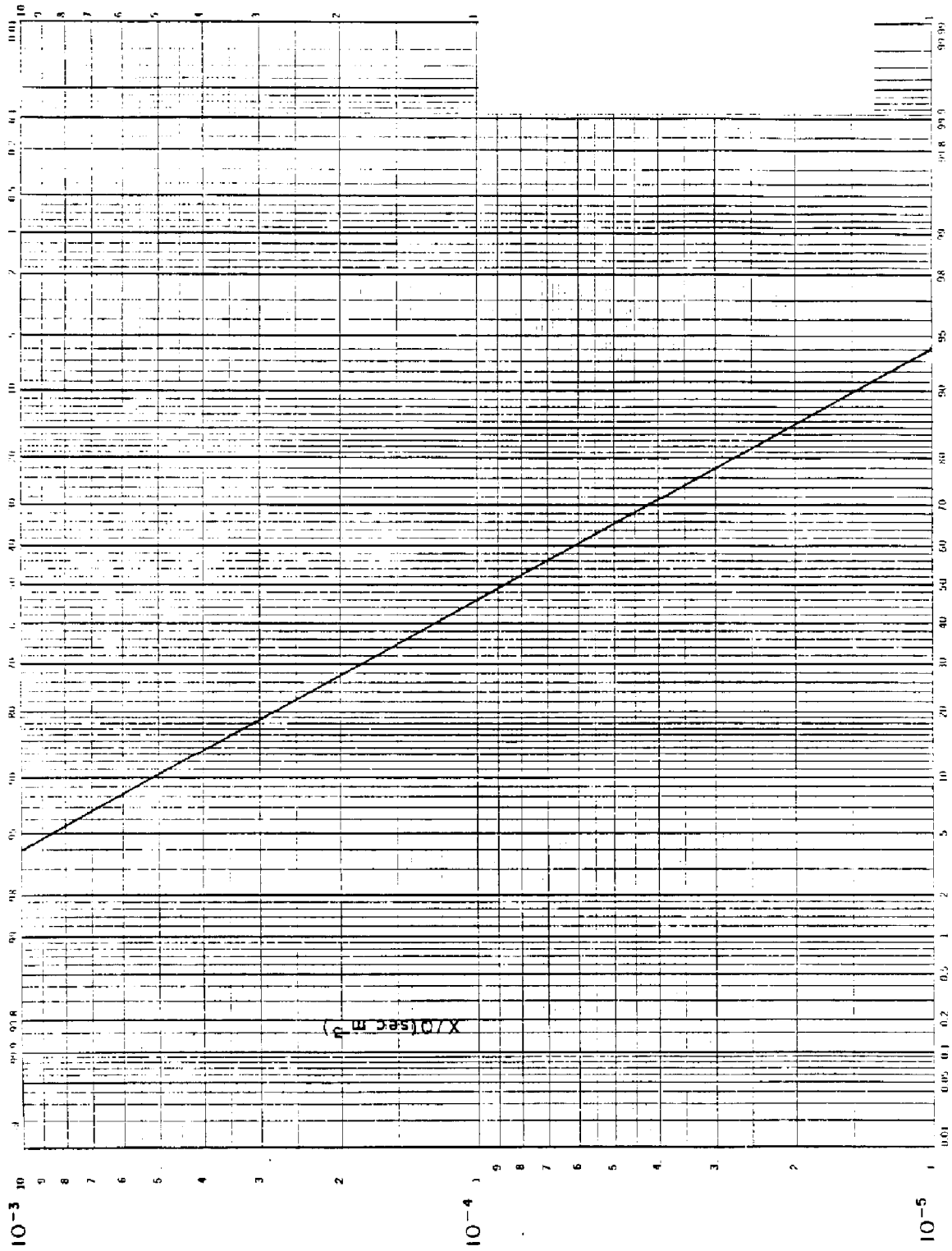


Figure 2-44. Relative Concentration Frequency Distribution - 8842 Meters

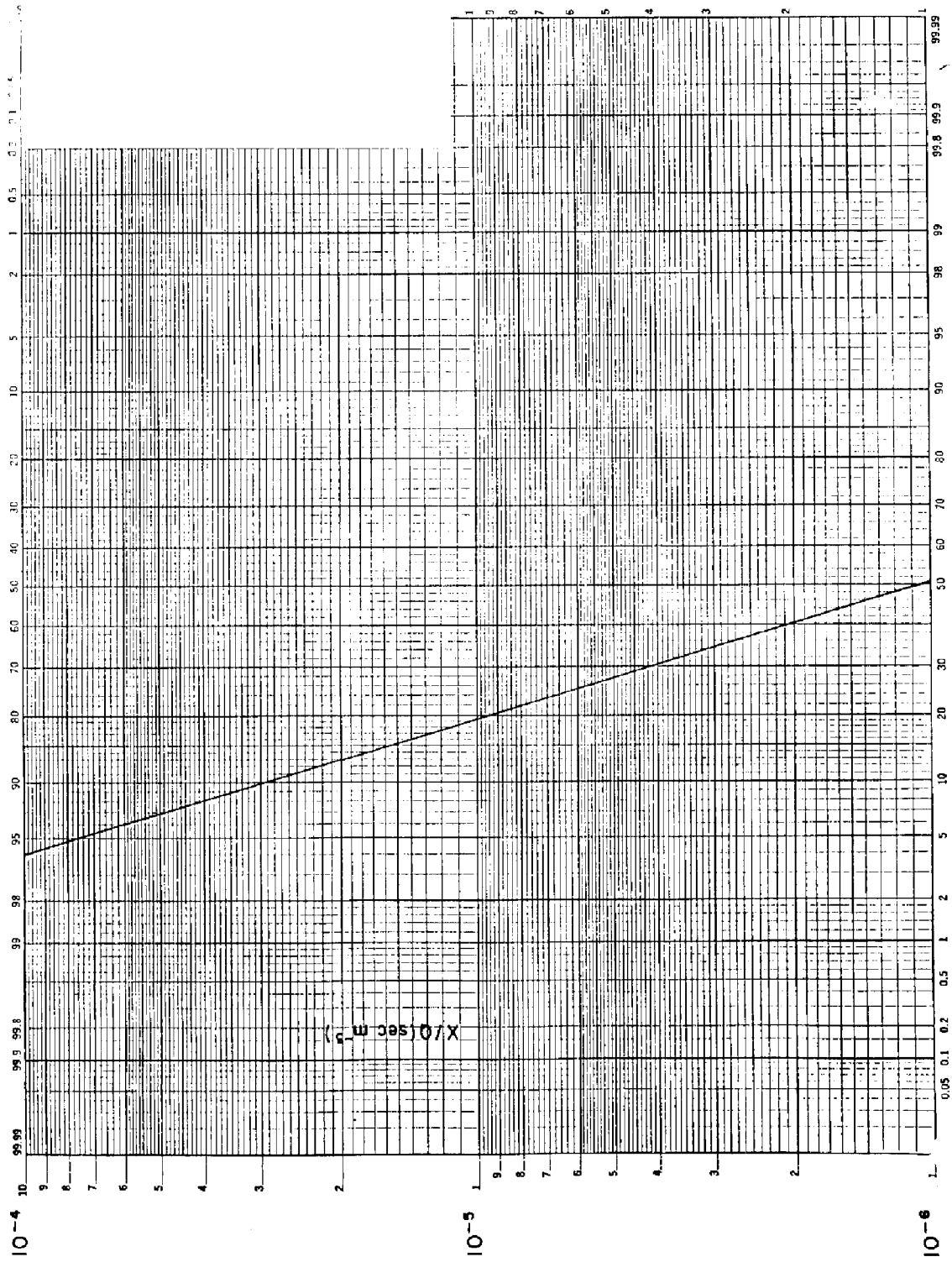


Figure 2-45. Relative Concentration Frequency Distribution - 8842 Meters

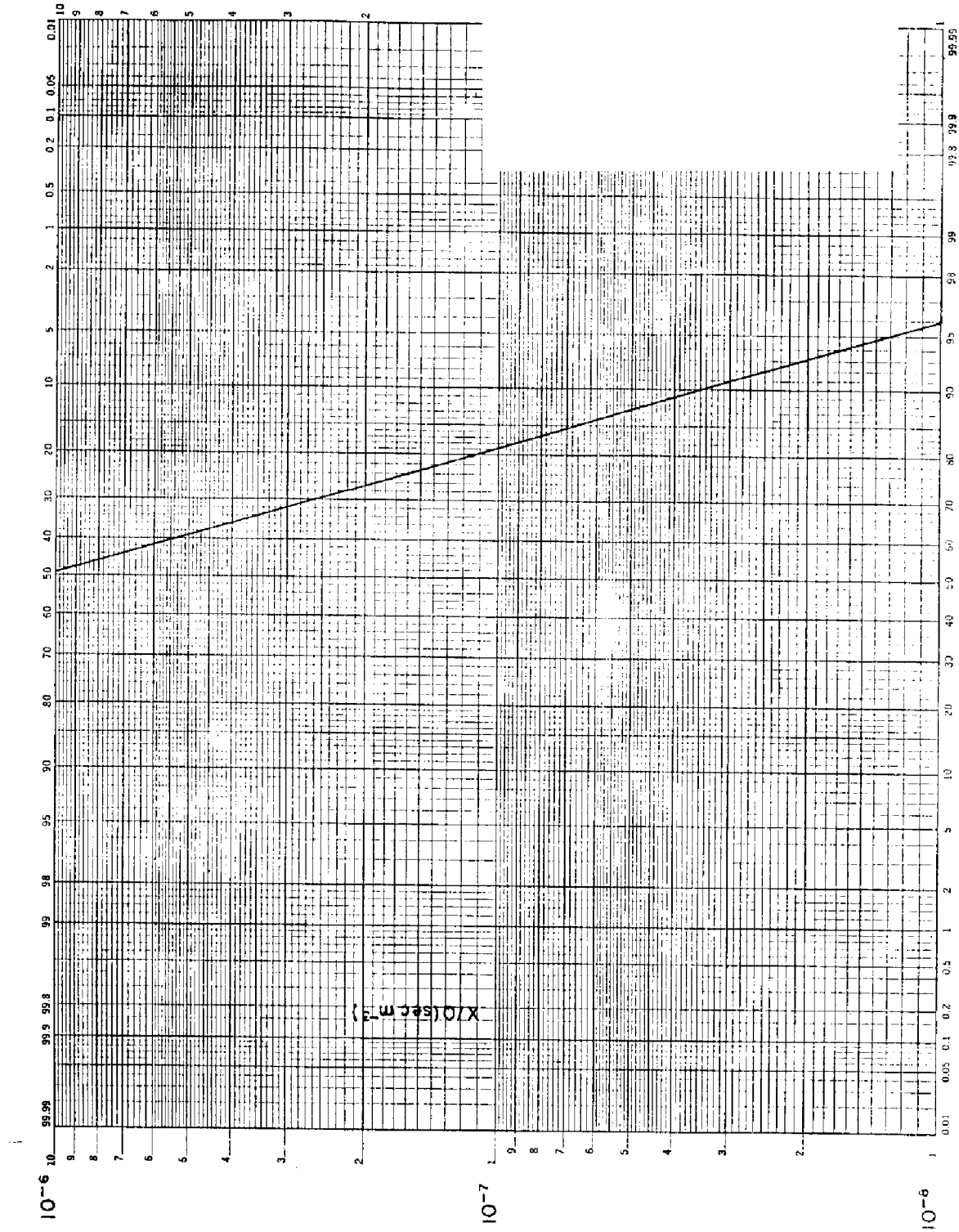


Figure 2-46. Areal Distribution of Average Relative Concentration - Ground Release [Historical information, not required to be revised.]

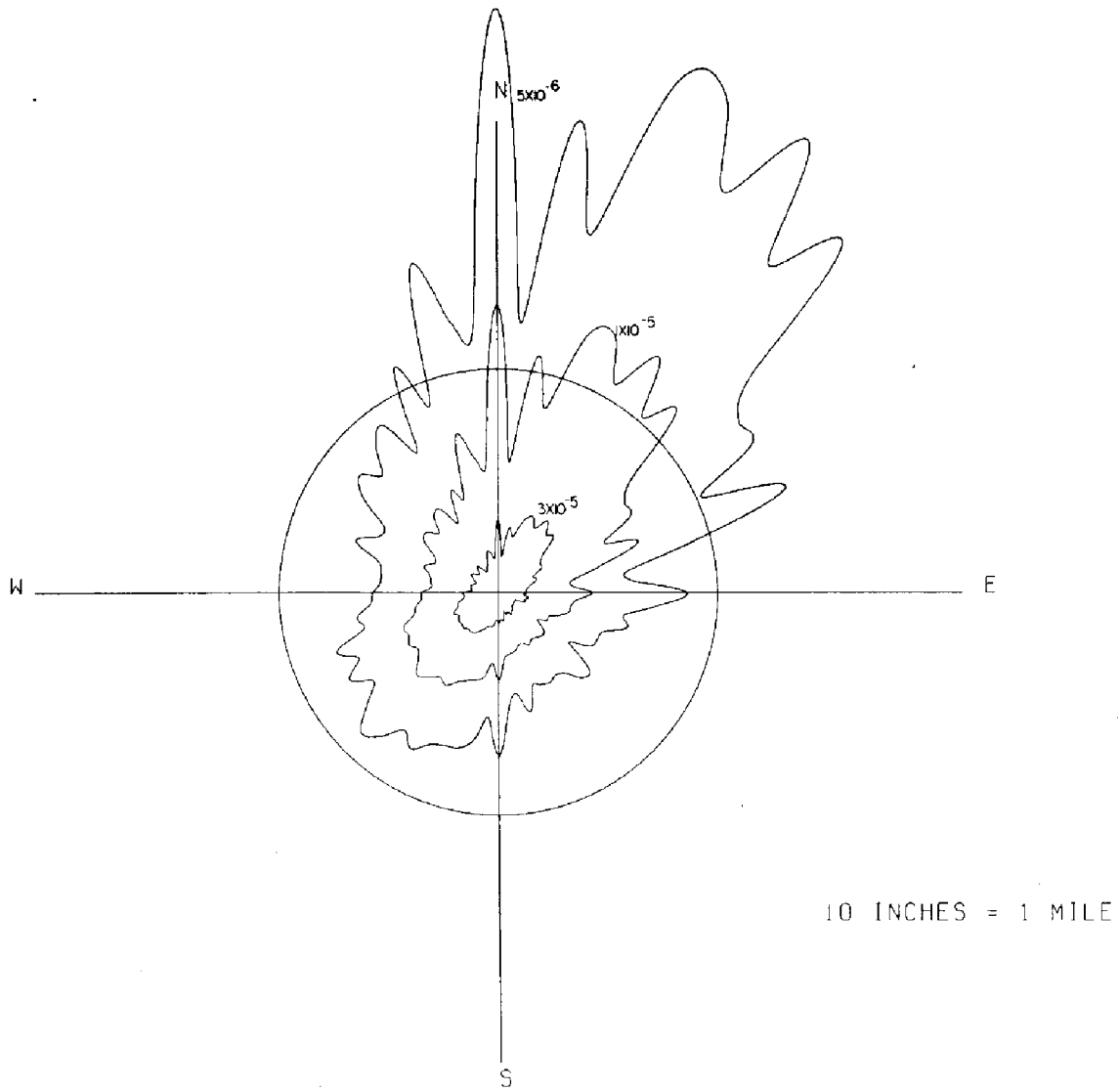


Figure 2-47. Areal Distribution of Average Relative Concentration - Ground Release [Historical information, not required to be revised.]

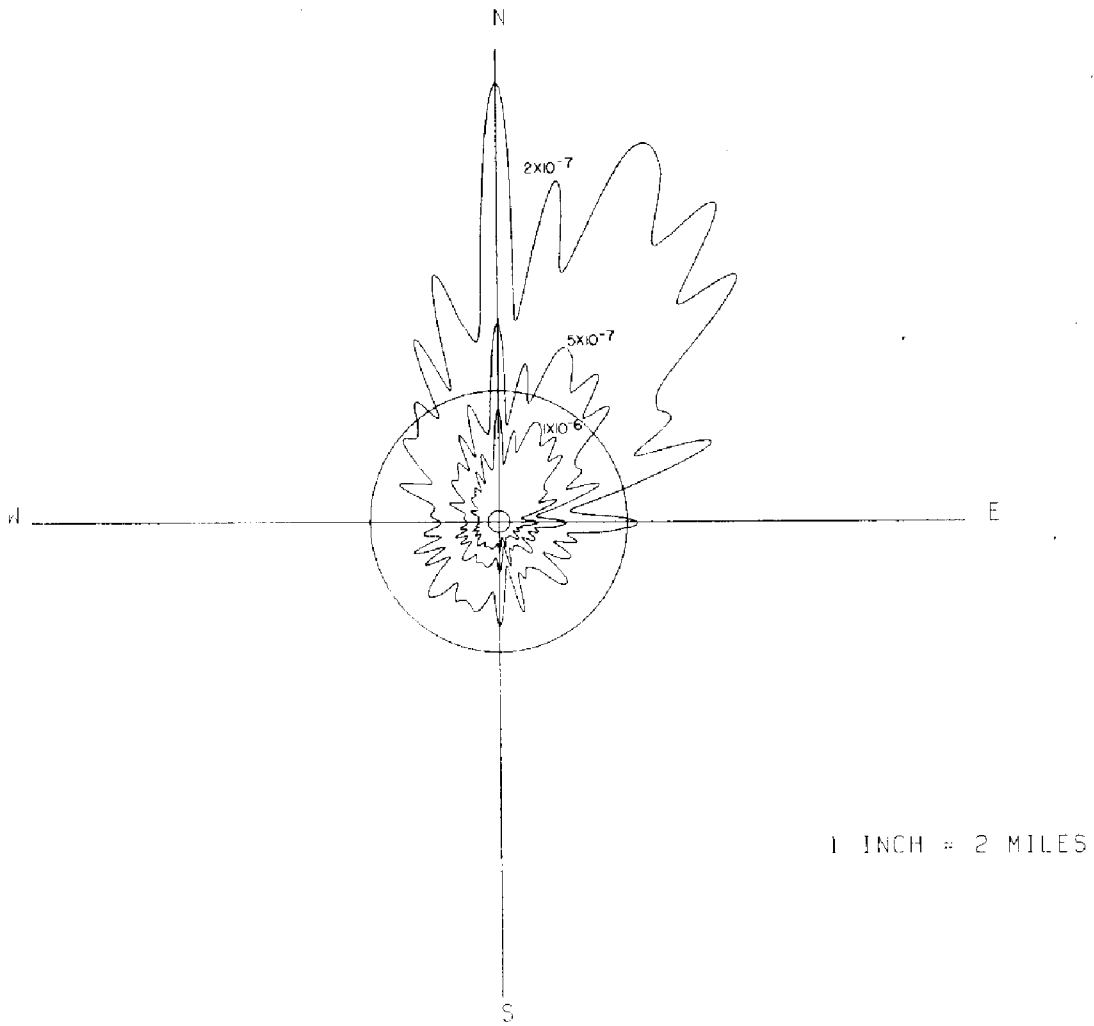


Figure 2-48. Areal Distribution of Average Relative Concentration - Ground Release [Historical information, not required to be revised.]

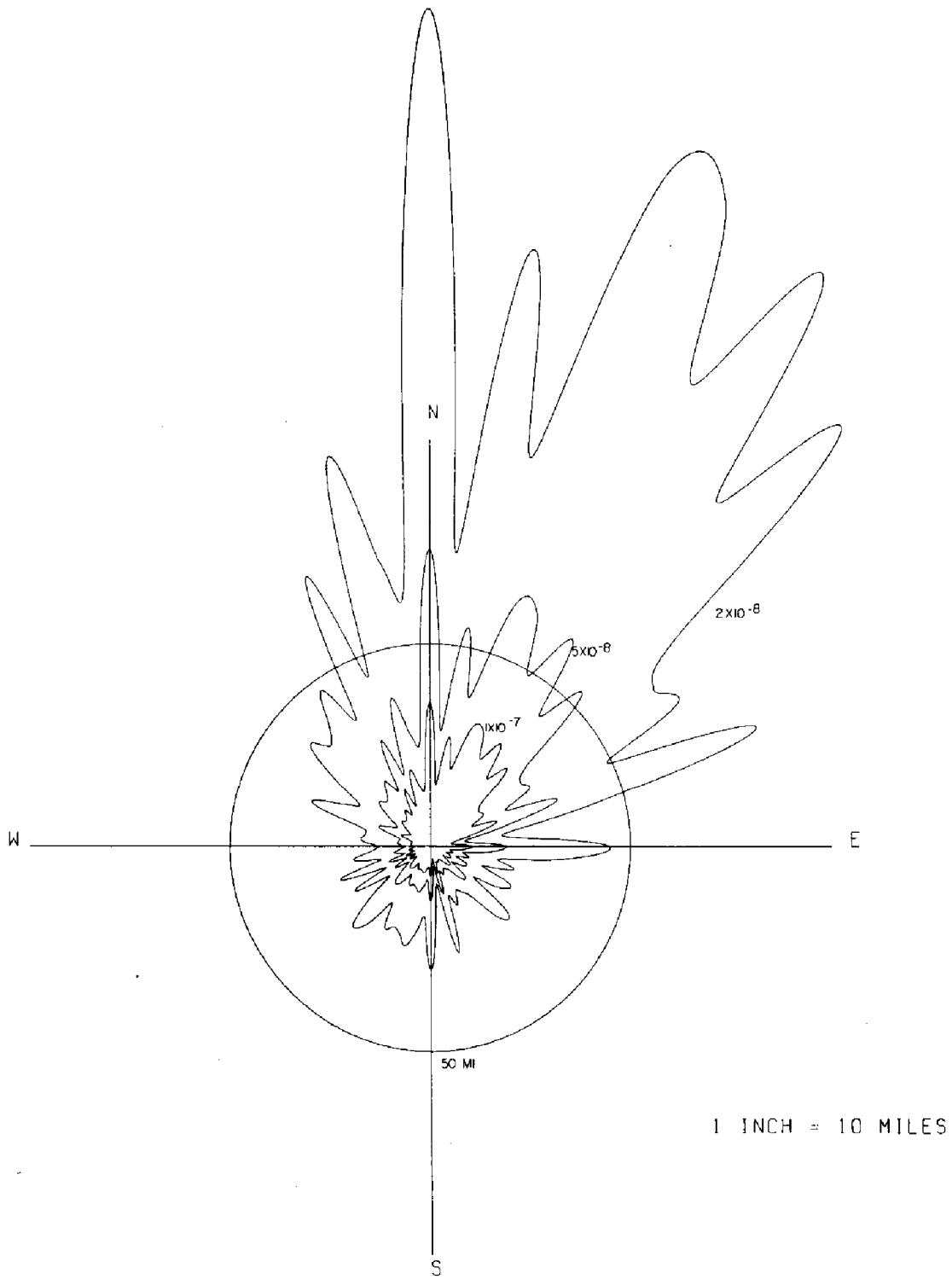


Figure 2-49. Relative Concentration Frequency Distribution - 762 Meters

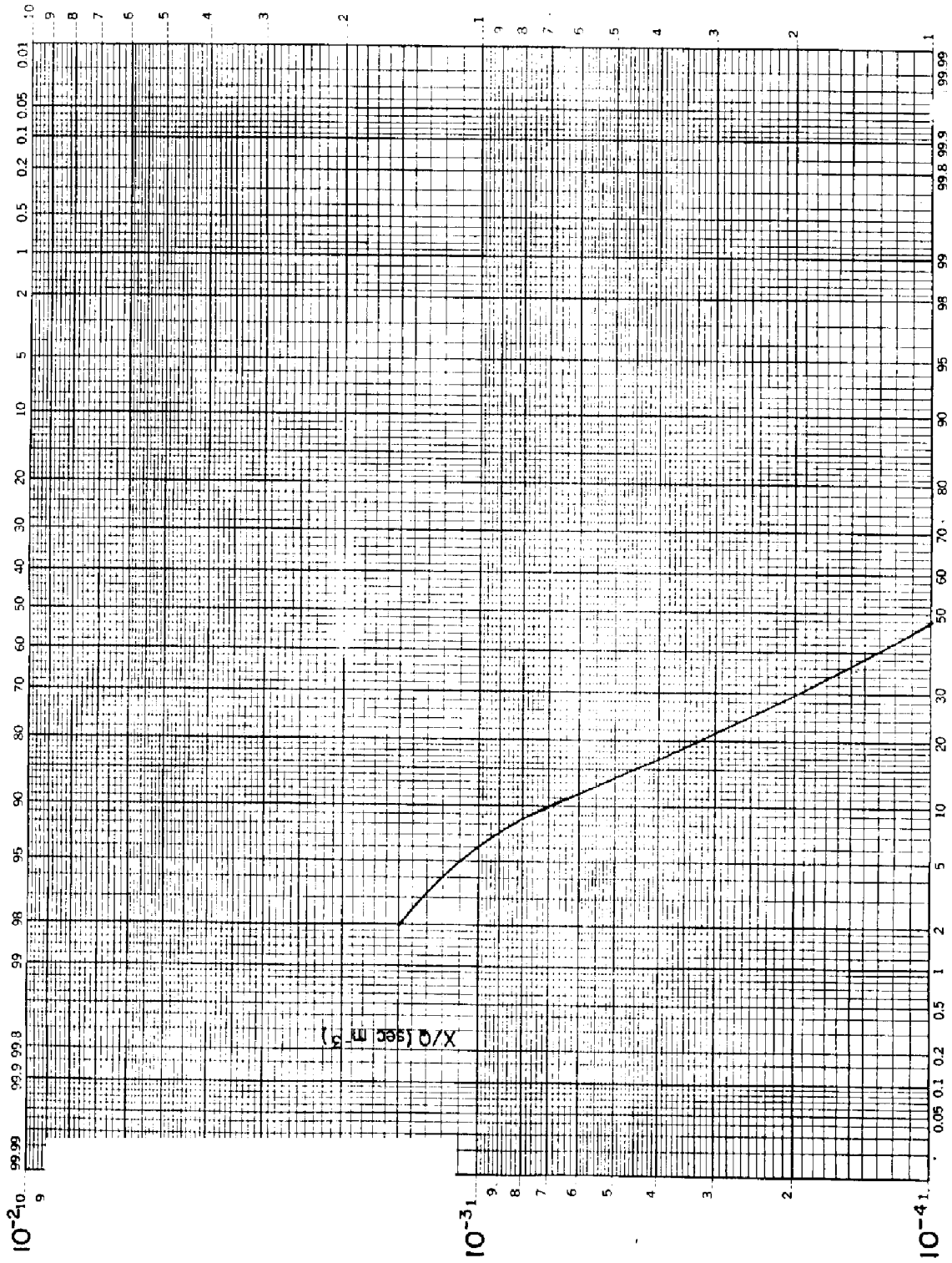


Figure 2-50. Water Use 20 Mile Radius

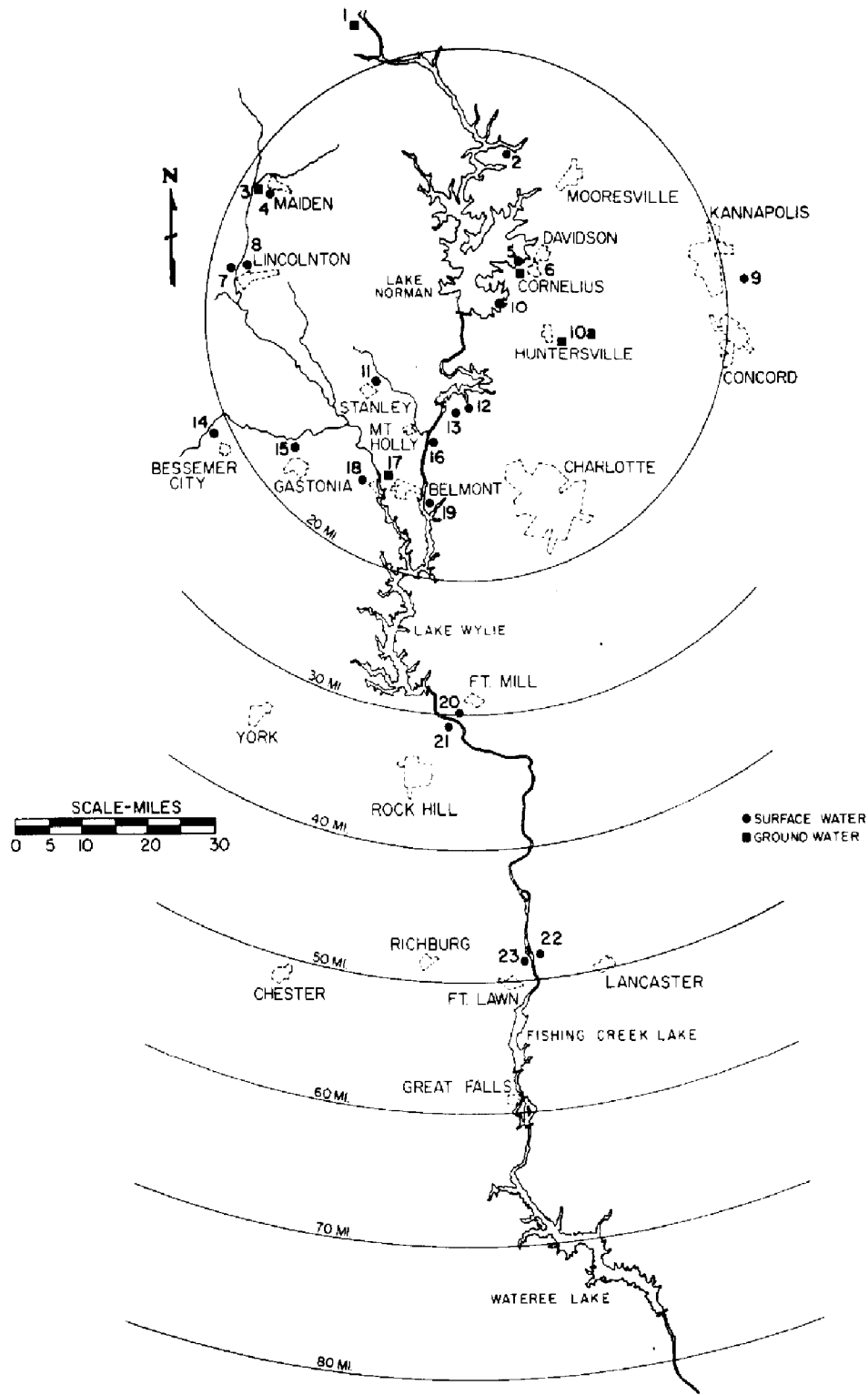


Figure 2-51. Dams and Dikes [Historical Information, not required to be revised.]



Figure 2-52. Maximum Fetch

Figure 2-53. Slope Protection Intake and Discharge Area [Historical Information, not required to be revised.]

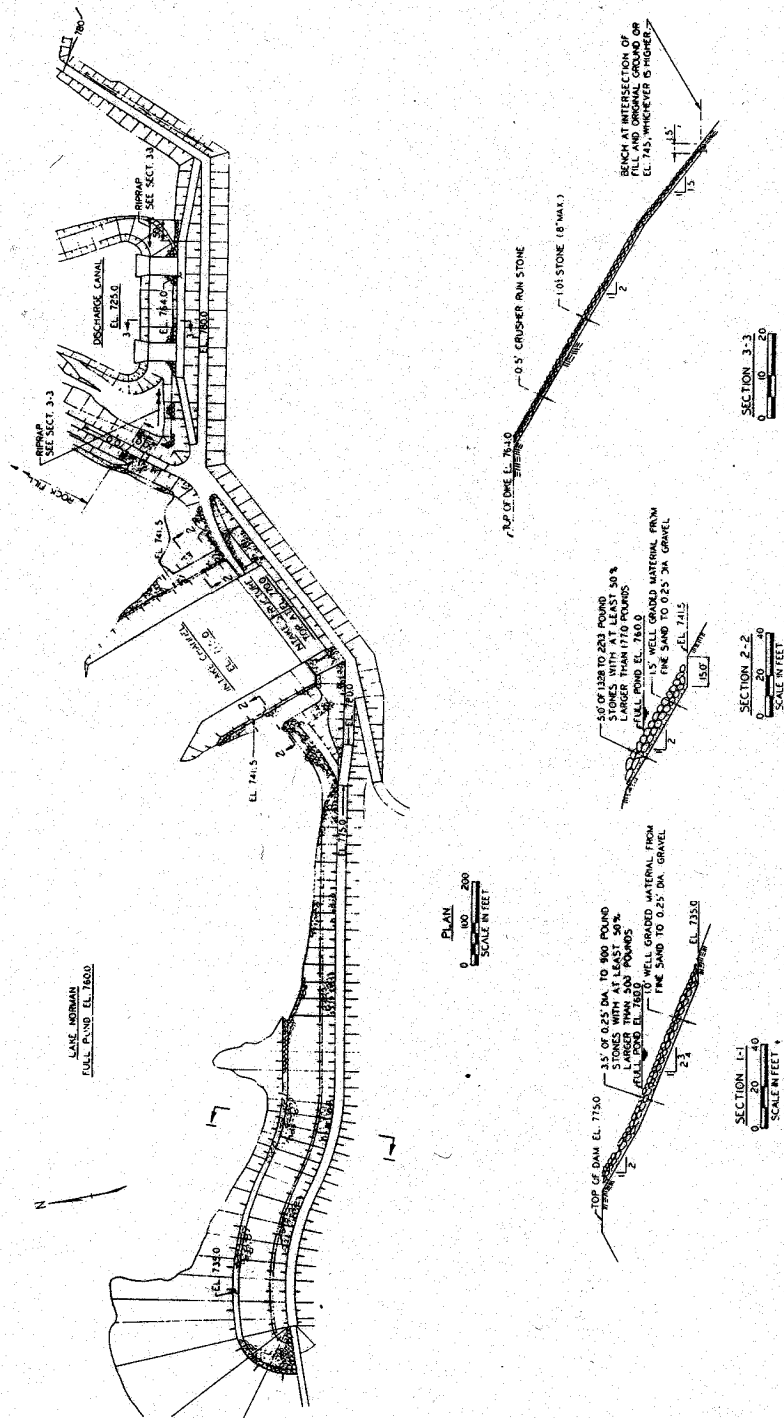


Figure 2-54. Intake Channel and Discharge Canal Cross Sections

Figure 2-55. Site Drainage Map

[HISTORICAL INFORMATION BELOW NOT REQUIRED TO BE REVISED]

[HISTORICAL INFORMATION BELOW NOT REQUIRED TO BE REVISED]

NOTE:

ELEVATIONS INDICATE TOP
OF DOOR SILLS, YARD
ELEVATION 760+0.

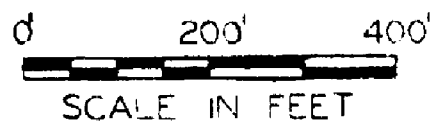


Figure 2-57. Discharge Rating Curve for Highway N.C. 73 Near Cowans Ford

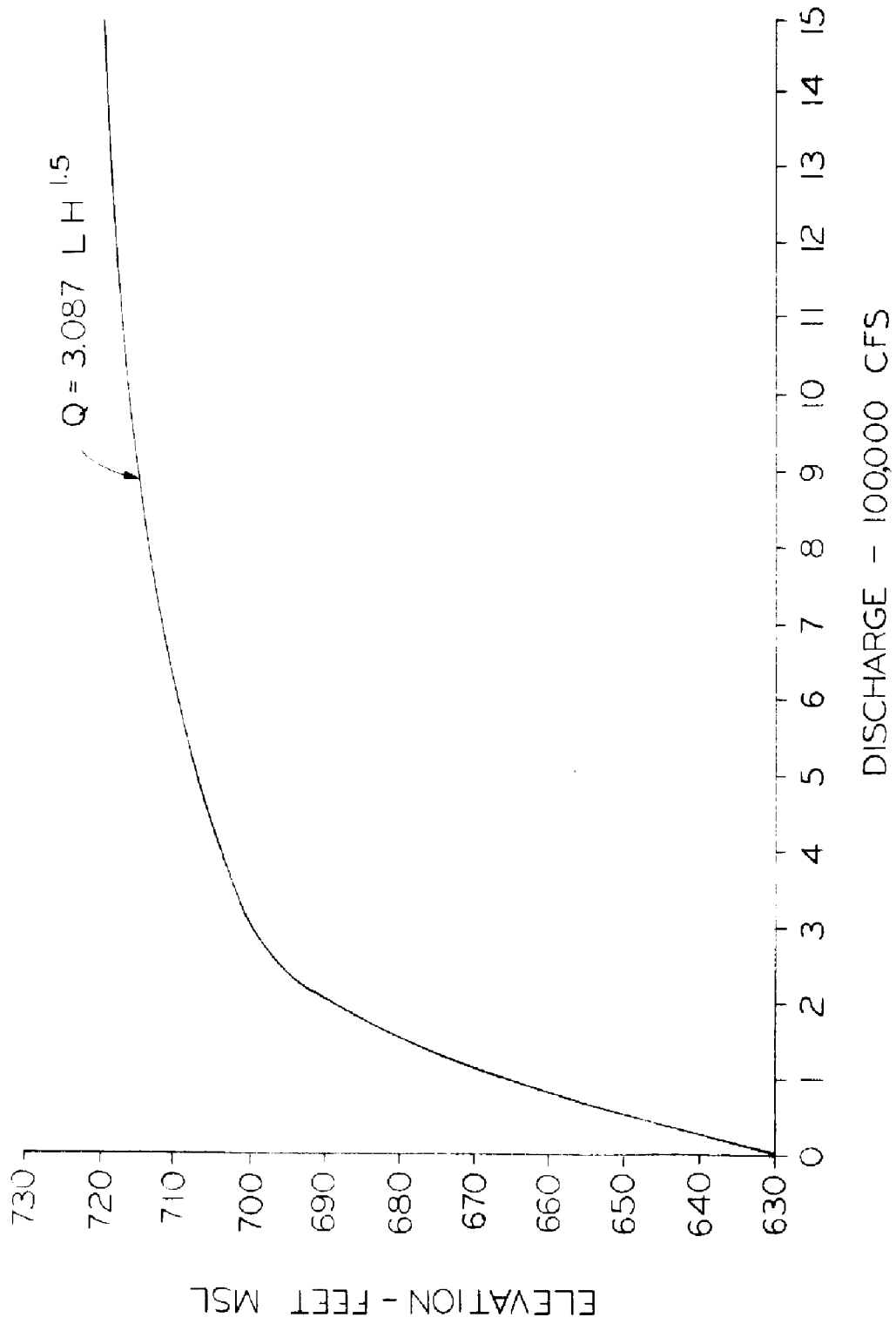


Figure 2-58. Cowans Ford Dam Breach Hydrographs

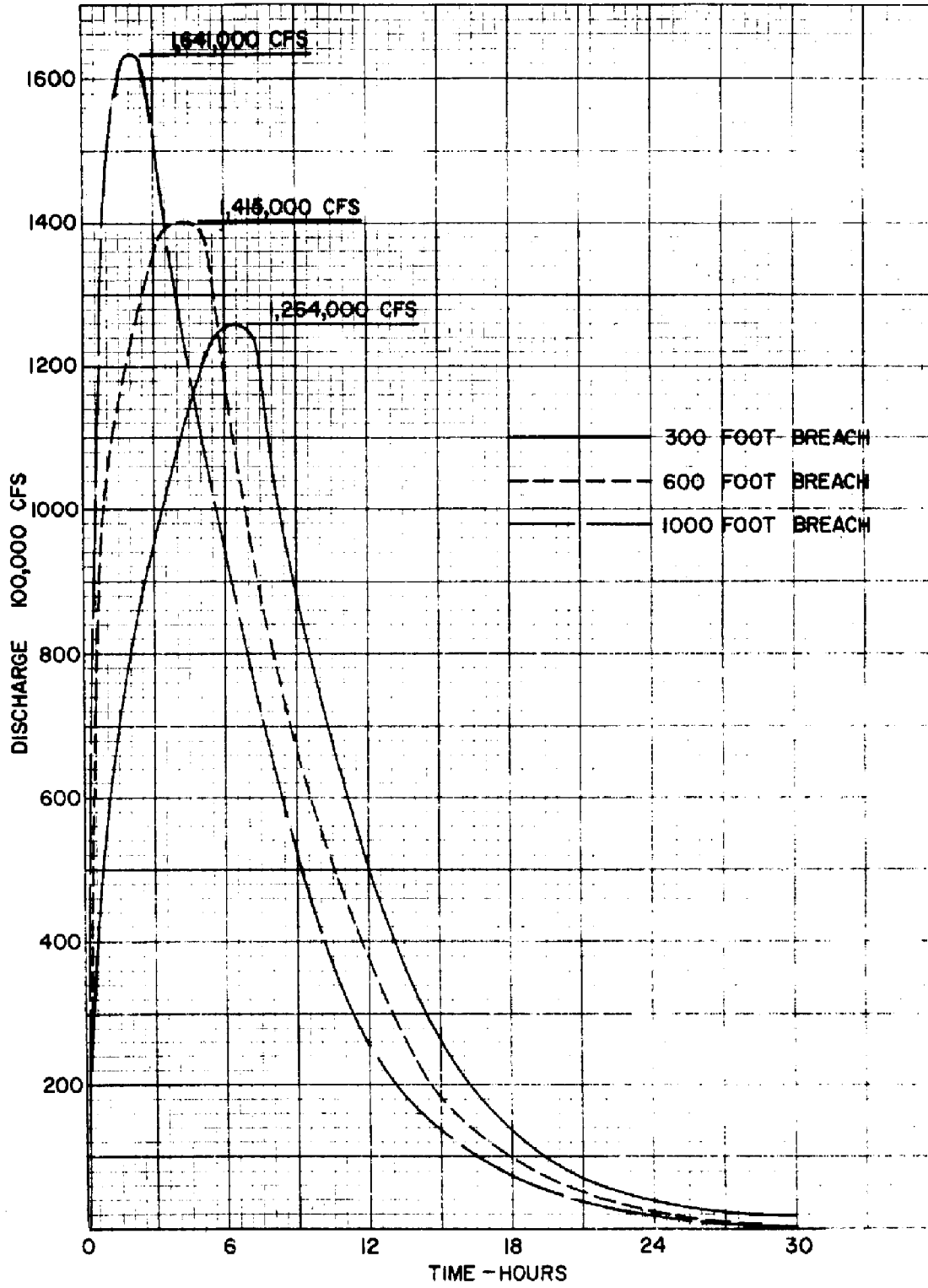


Figure 2-59. Backwater Area for Postulated Cowans Ford Dam Breach

This figure is currently unavailable in an electronic format. It can be located in a hardcopy version of the UFSAR.

Figure 2-60. Roof Plan

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Figure 2-61. Lake Norman Water Surface Elevation

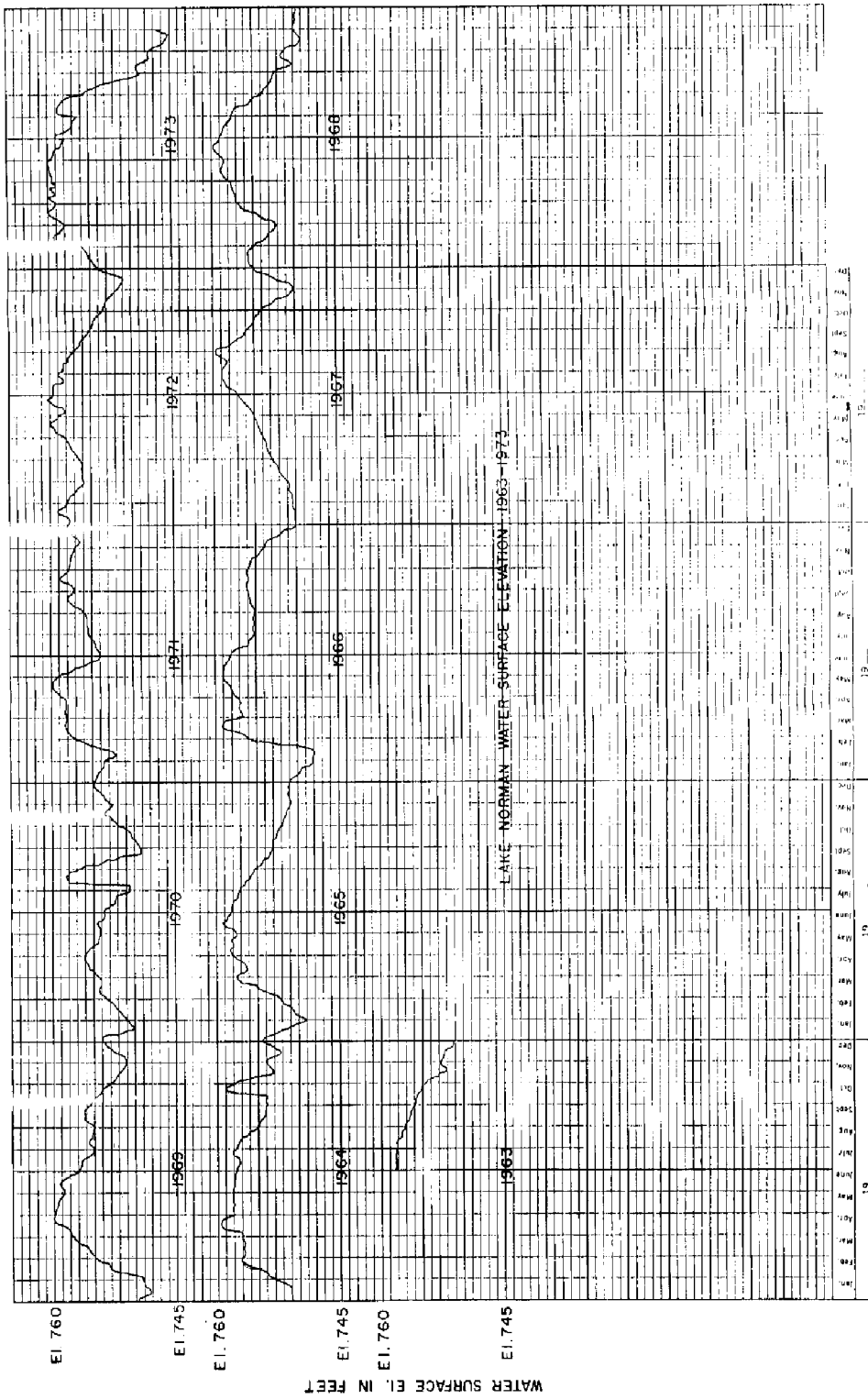


Figure 2-62. Reactor and Auxiliary Buildings Groundwater Drainage System [Historical Information, not required to be revised.]

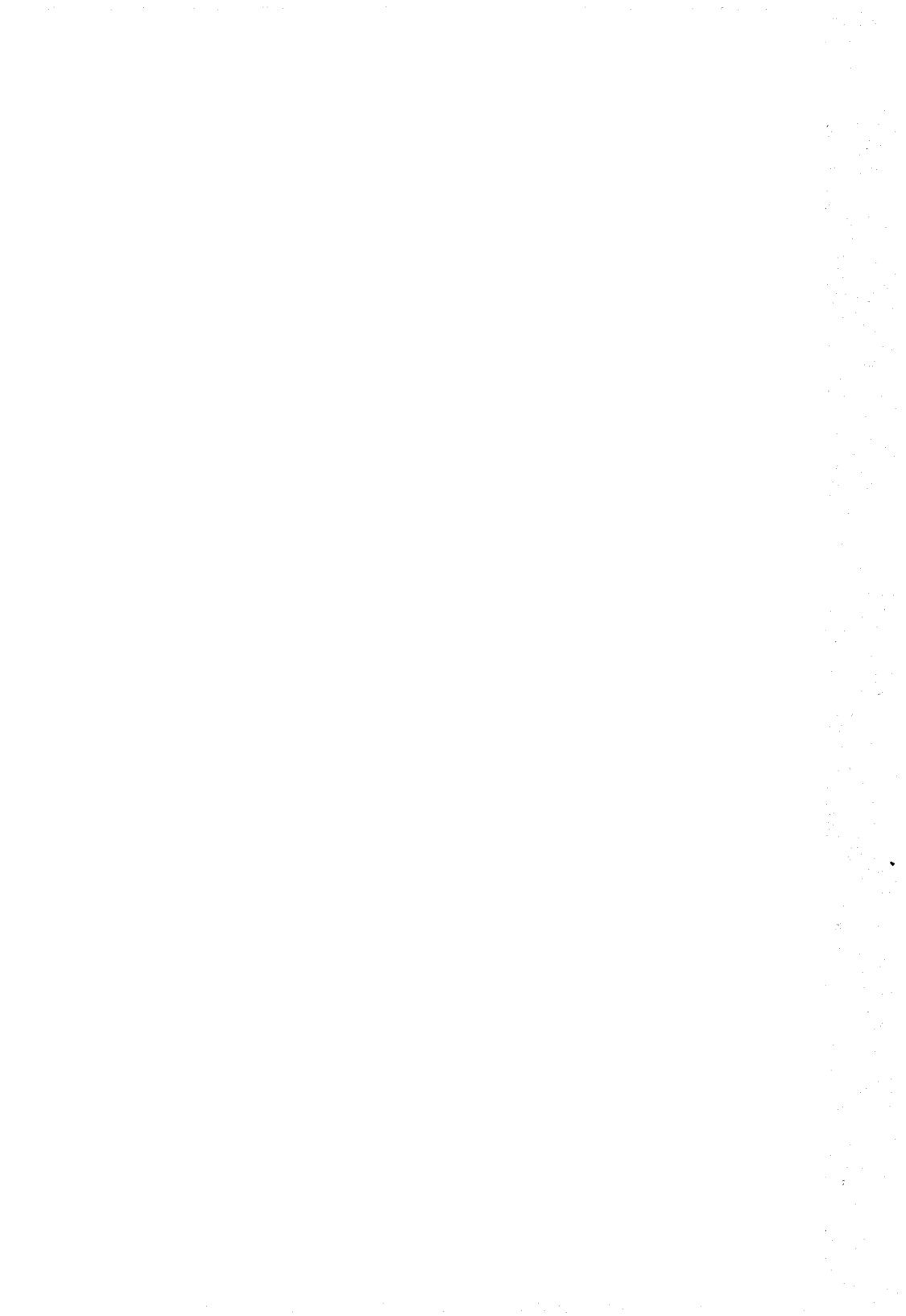


Figure 2-63. Reactor and Auxiliary Buildings Groundwater Drainage System Sections and Details [Historical Information, not required to be revised.]

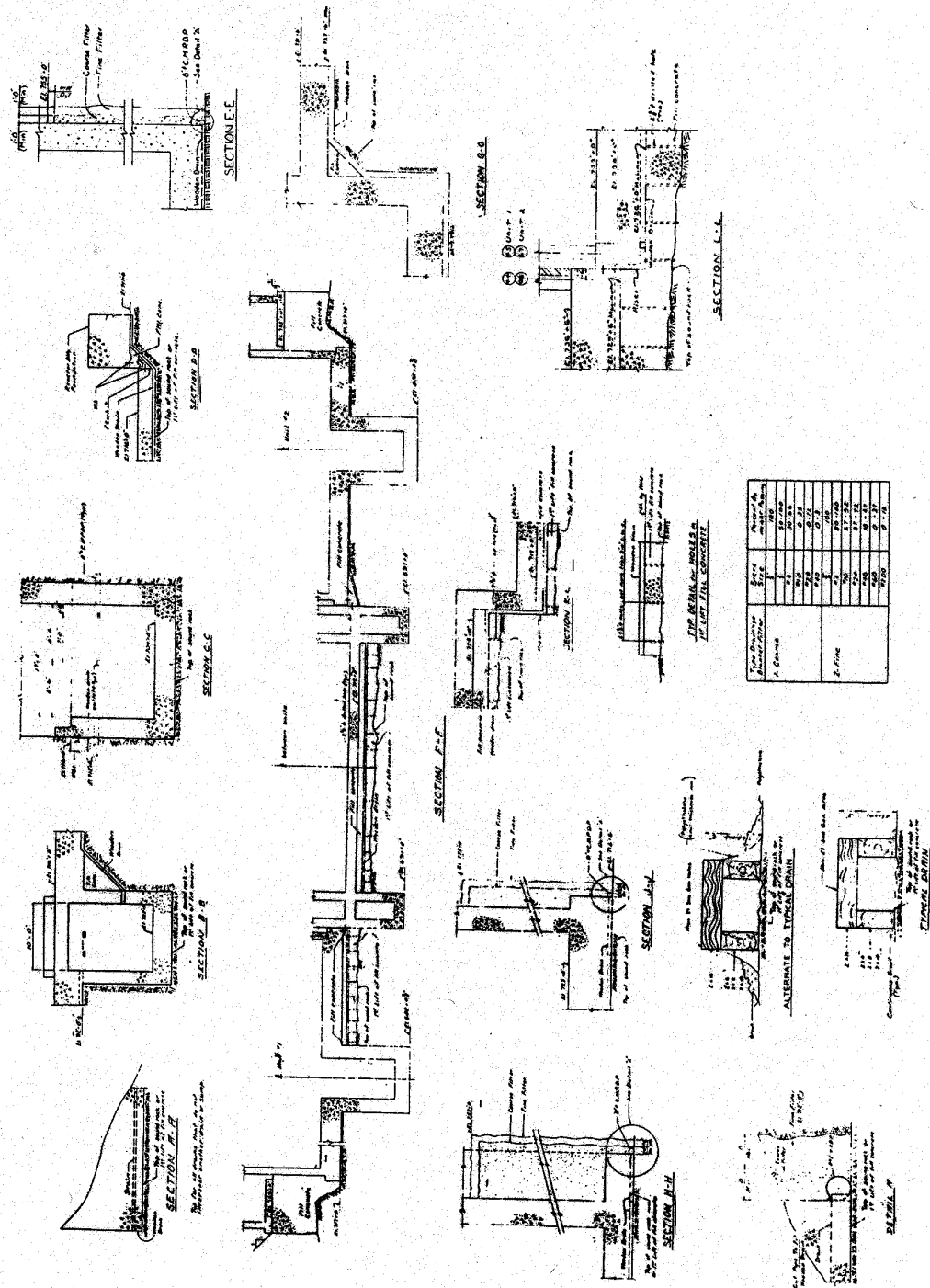


Figure 2-64. Structure Foundation Profile

Figure 2-65. Structure Foundation Profile

