1.10 - TABLES

Table 1.3-1 Approximate Driving Distances to Locations of Interest from SRS

Location of Interest from Center of Site	Distance by Road (Miles)
Atlanta, GA	180
Greenville, SC	115
Atlantic Ocean	100
Charleston, SC	100
Savannah, GA	100
Columbia, SC	60
Augusta, GA	25
Aiken, SC	20
Barnwell, SC	15
Williston, SC	15
Jackson, SC	12

Source: 1996 Road Atlas, United States, Canada, Mexico, Consumer Publications, American Automobile Association, Heathrow, FL, 1996.

Table 1.3-2 SRS Boundary and Area Coordinates

SRS Boundaries	Latitude	Longitude	SRS Coordinates
North	33.3485°	81.7551°	N 111,500 ; E 48,000
South	33.0958°	81.6145°	N 11,000 ; E 28,000
East	33.3859°	81.4832°	N 72,200 ; E 122,900
West	33.2336°	81.8310°	N 90,700 ; E 4,500
Area Centers			
F Area			N 77,687 ; E 51,345
SWDF			N 75,000 ; E 56,000
H Area			N 72,000 ; E 62,000
S Area			N 74,000 ; E 63,000
Z Area			N 75,600 ; E 74,800
M Area			N 105,000 ; E 52,000
SRTC			N 108,000 ; E 53,000
D Area			N 65,000 ; E 22,400

Source: "Savannah River Plant South Carolina Emergency Response Grid Map". Prepared for United States Department of Energy by EG&G Energy Measurements, Inc., Las Vegas, Nevada, Under the Direction of Savannah River Operations Office, August 1987.

Table 1.3-3 Vegetation Types and Acres Covered, 1989

Vegetation Types	Acres (est.)
Bottomland Hardwoods	28,492
Upland Hardwoods	6,459
Mixed Hardwood/Pine	10,425
Swamp Species	9,158
Undrained Flatwoods	551
Longleaf Pine	40,804
Loblolly Pine	63,952
Slash Pine	21,616
Other Pine	265
Permanent Grass Openings	4,419
Non-Forest	12,377
	198,518
	(Site Geographic Information Systems acres)

Source: Unofficial Communication, Rick Davalos, U.S. Forest Service, Savannah River Natural Resource Management and Research Institute, Aiken, SC, June 5, 1997.

Table 1.3-4 Fuel Loading Characteristics of SRS Vegetation (Total Fuel Accumulation for Three-Year Period)

Vegetation	Fuel Buildup, Tons/Acre	Average Range of Consumption by Prescribed Fire, Tons/Acre
Southern yellow pine	11 - 15	8 - 11
Hardwood	3 - 6	1 - 3
Pine-hardwood mixed	10 - 16	8 - 9
Pine clearcut	8 - 16	4 - 10

Source: Unofficial communication from Rick Davalos, U.S. Forest Service, Savannah River Natural Resource Management and Research Institute, Aiken, SC, June 25, 1997.

Table 1.3-5 Cities and Towns Within 50 Miles of the SRS Center

Population Center	County	State	Distance (miles)	Sector	Population [a]
Augusta	Richmond	GA	25.0	WNW	43,459
Aiken	Aiken	SC	19.5	NNW	24,929
North Augusta	Aiken/Edgefield	SC	23.4	NW	17,618
Orangeburg	Orangeburg	SC	47.5	ENE	13,762
Evans	Columbia	GA	33.0	NW	13,713
Belvedere	Aiken	SC			6,133
Red Bank	Lexington	SC			5,950
Waynesboro	Burke	GA	25.8	WSW	6,712
Barnwell	Barnwell	SC	16.4	ESE	5,600
Clearwater	Aiken	SC	19.3	NE	4,731
Allendale	Allendale	SC	27.3	SE	4,316
Batesburg	Lexington/Saluda	SC	43.3	N	4,380
Bamberg	Bamberg	SC	35.2	E	3,596
Millen	Jenkins	GA	31.6	SW	3,977
Denmark	Bamburg	SC	28.9	E	3,640
Grovetown	Columbia	GA	34.2	WNW	4,427
Williston	Barnwell	SC	15.0	ENE	3,445
Hampton	Hampton	SC	41.3	SE	3,146
Sylvania	Screven	GA	37.0	S	3,109
Saluda	Saluda	SC	49.7	N	2,957
Gloverville	Aiken	SC	24.5	NW	2,753
Blackville	Barnwell	SC	22.2	ENE	2,640
Johnston	Edgefield	SC	38.9	NNW	2,670
New Ellenton	Aiken	SC	9.4	NNW	2,494
Edgefield	Edgefield	SC	38.8	NNW	2,644
Hephzibah	Richmond	GA	26.6	W	2,925
Louisville	Jefferson	GA	48.6	WSW	2,542
Wrens	Jefferson	GA	43.8	W	2,577
South Congaree	Lexington	SC	49.3	NE	2,736
Estill	Hampton	SC	43.6	SSE	2,513
Fairfax	Allendale	SC	32.8	SE	2,397
Harlem	Columbia	GA	40.0	WNW	2,592
Leesville	Lexington	SC	44.8	N	2,235
Varnville	Hampton	SC	44.8	SE	2,140

Table 1.3-5 (Continued) Cities and Towns Within 50 Miles of the SRS Center

Population Center	County	State	Distance (miles)	Sector	Population[a]
Pineridge	Lexington	SC	49.5	NE	1,927
Jackson	Aiken	SC	9.4	WNW	1,876
McCormick	McCormick	SC	48.8	NW	1,701
Sardis	Burke	GA	22.7	SSW	1,217
Branchville	Orangeburg	SC	47.7	E	1,243
Gaston	Lexington	SC	48.4	NE	1,140
Ridge Spring	Saluda	SC	38.8	N	992
North	Orangeburg	SC	38.8	NE	827
Wagener	Aiken	SC	30.0	NNE	1,236
Midville	Burke	GA	47.2	SW	642
Brunson	Hampton	SC	36.4	SE	619
Dearing	McDuffie	GA	44.1	WNW	650
Swansea	Lexington	SC	44.5	NE	572
Springfield	Orangeburg	SC	25.8	NE	546
Burnettown	Aiken	SC	25.0	NNW	521
Salley	Aiken	SC	27.5	NE	515
Ehrhardt	Bamberg	SC	38.8	ESE	577
Neeses	Orangeburg	SC	34.5	ENE	474
Hilltonia	Screven	GA	27.7	S	414
Norway	Orangeburg	SC	31.7	ENE	411
Olar	Bamberg	SC	31.5	E	352
Hilda	Barnwell	SC	23.0	E	253
Pelion	Lexington	SC	40.3	NE	349
Stapleton	Jefferson	GA	48.3	W	330
Gilbert	Lexington	SC	46.4	NNE	356
Rowesville	Orangeburg	SC	47.2	E	350
Trenton	Edgefield	SC	33.6	NNW	315
Newington	Screven	GA	48.9	S	313
Gifford	Hampton	SC	37.8	SE	296
Blythe	Burke	GA	32.3	W	307
Monetta	Aiken/Saluda	SC	39.4	N	286
Kline	Barnwell	SC	20.6	ESE	293

Table 1.3-5 Cities and Towns Within 50 Miles of the SRS Center (Continued)

Population Center	County	State	Distance (miles)	Sector	Population[a]
Furman	Hampton	SC	49.5	SSE	267
Summit	Lexington	SC	45.9	NNE	273
Perry	Aiken	SC	30.3	NE	230
Elko	Barnwell	SC	16.4	ENE	207
Sycamore	Allendale	SC	32.3	SE	203
Woodford	Orangeburg	SC	40.6	NE	215
Rocky Ford	Screven	GA	43.9	SSW	223
Girard	Burke	GA	17.5	SSW	222
Parksville	McCormick	SC	48.1	NE	199
Williams	Colleton	SC	49.5	ESE	175
Scotia	Hampton	SC	48.0	SSE	189
Livingston	Orangeburg	SC	47.7	ENE	178
Lodge	Colleton	SC	42.7	ESE	198
Smoaks	Colleton	SC	50.0	ESE	147
Cordova	Orangeburg	SC	43.1	ENE	139
Ward	Saluda	SC	25.6	N	141
Snelling	Barnwell	SC	11.3	ESE	133
Cope	Orangeburg	SC	37.3	E	130
Windsor	Aiken	SC	15.3	NNE	130
Luray	Hampton	SC	40.3	SE	71
Plum Branch	McCormick	SC	50.0	NW	104
Govan	Bamberg	SC	27.3	E	80
Ulmer	Allendale	SC	35.5	SE	67

[a]As of July 1, 1994.

Source: Population Distribution and Population Estimates Brochures, U.S. Bureau of the Census, (October, 1995).

Table 1.3-6 Peak Daytime Onsite Population Within a 5-Mile Radius of F Area

Location	November 1992 Population[a]
A and M Areas (including G Area)	7736
B Area	612
C Area	831
N Area (Central Shops)	1456
E Area	66
F Area	2027
H Area	3044
K Area	1111
S Area	1192
Z Area	245

[a]Latest data available

Source: 1992 Onsite Worker Population for PRA Applications, J. M. East, WSRC-RP-93-197, January 1993.

Table 1.3-7 Peak Daytime Onsite Population Within a 5-Mile Radius of H Area

Location	November 1992 Population[a]
B Area	612
C Area	831
N Area (Central Shops)	1456
E Area	66
F Area	2027
H Area	3044
R Area	0
S Area	1192
Z Area	245

[a]Latest data available

Source: 1992 Onsite Worker Population for PRA Applications, J. M. East, WSRC-RP-93-197, January 1993.

Table 1.3-8 Peak Daytime Onsite Population Within a 5-Mile Radius of A and M Areas

Location	November 1992 Population[a]
A and M Areas (including G Area, SREL, and SRFS)	7736
B Area	612

[a]Latest data available

Source: 1992 Onsite Worker Population for PRA Applications, J. M. East, WSRC-RP-93-197, January 1993.

Table 1.3-9 Public School Population Within Approximately 5 Miles of SRS, 1995-1996

District School	Address	Grade Level	Enrollment 1995-1996
Aiken, Area 5			
Greendale Elementary	505 S. Boundary New Ellenton, SC	Pre-K-5	439
Jackson Middle	SCR 125 Jackson, SC	6-8	546
New Ellenton Middle	814 Main St. New Ellenton, SC	6-8	276
Redcliff Elementary	SC 125 N. Jackson, SC	Pre-K-5	1033
Silver Bluff High	280 Desoto Dr. Aiken, SC	9-12	876
Barnwell 29			
Kelly Edwards Elementary	808 Elko St. Williston, SC	K-4	354
Williston-Elko High	408 Main St. Williston, SC	9-12	307
Williston-Elko Middle	404 Main St. Williston, SC	5-8	249
Barnwell 45			
Barnwell Elementary	Marlboro Avenue Barnwell, SC	Pre-K-5	1316
Barnwell High	Jackson St. Barnwell, SC	9-12	794
Guinyard-Butler Middle	Allen St. Barnwell, SC	6-8	643

Sources: "South Carolina Education Profiles 1996," South Carolina Department of Education, Columbia, SC, October 1996.

Table 1.3-10 Attendance at State Parks Near SRS, Fiscal Year 1994/1995a

State Park	Cabin Users and Campers	Picnickers	Total Park Visitors
Aiken	4,488	15,908	35,698
Barnwell	3,112	18,241	64,366
Redcliffe Plantation	NA	10,930	15,539

[a]Latest data available

Source: South Carolina State Parks Attendance, FY 94/95 , South Carolina Statistical Abstract, South Carolina Office of Research and Statistics, Columbia, South Carolina, February, 1996.

Table 1.3-11 Health Care Population Within a 5-Mile Vicinity of SRS, 1998

Name of Facility	Location	Facility Type	Licensed Beds
Barnwell County Hospital	Barnwell	Acute care hospital	53
Barnwell County Nursing Home	Barnwell	Skilled care and intermediate nursing home	40
Southern Manor	Barnwell	Community Residential Care	5
Triple E Residential Care	Barnwell	Community Residential Care	10
Academy Street Community Residence	Williston	Intermediate Care for Mentally Retarded	8
Black's Drive Community Residence	Williston	Intermediate Care for Mentally Retarded	8
Harley Road Community Residence	Williston	Intermediate Care for Mentally Retarded	8
Lemon Park Community Residence	Williston	Intermediate Care for Mentally Retarded	8
Silver Springs Long Term Care	Williston	Skilled and intermediate care facility	44
New Ellenton Nursing Center	New Ellenton	Skilled and intermediate care	26

Sources: Aiken County Health Care Facilities, Health Care Facility Information, published by South Carolina Department of Health and Environmental Control, April, 10 1998.

Barnwell County Health Care Facilities, Health Care Facility Information, published by South Carolina Department of Health and Environmental Control, April 10, 1998.

Table 1.3-12 Selected SRS Road Traffic Counts 1996-1997 (Average Daily Traffic Tuesday through Thursday)

Road Segment	Traffic Direction	Count
Road 2, between B Area and Road C	Combined	3,500
Road 2, between C Road and D Road	Combined	6,500
Road 2, between D Road and F Road	Combined	3,000
Road 3 West of Road 5	East	650
Road 3 West of Road 5	West	400
Road 4, between Road E and H Area	East	4,500
Road 4, between Road E and H Area	West	4,200
Road 4, between S Area and H Area (North Entr.)	East	3,000
Road 4, between S Area and H Area (North Entr.)	West	2,800
Road 7, west of Road C	East	300
Road 7, west of Road C	West	300
Road C, between landfill and Road 2	North	7,000
Road C, between landfill and Road 2	South	7,000
Road D, at Old Gunsite	North	2,000
Road D, at Old Gunsite	South	1,800
Road E, at Burial Ground	North	4,550
Road E, at Burial Ground	South	3,650
Road F, near 603-3G	North	3,300
Road F, near 603-3G	South	3,100

Source: Unofficial data from R. Swygert, Engineering Services, WSRC, June 1997.

Table 1.3-13 Land Use at SRS (Acres)

Use	Acres	
Vegetation Types		
Bottomland Hardwoods	28,492	
Upland Hardwoods	6,459	
Mixed Hardwood/Pine	10,425	
Swamp Species	9,158	
Undrained Flatwoods	551	
Longleaf Pine	40,804	
Loblolly Pine	63,952	
Slash Pine	21,616	
Other Pine	265	
Permanent Grass Openings	4,419	
Non-Forest	12,377	
	198,518	(site GIS acres)
Water/Wetlands		
Savannah River Swamp	9,894	
Par Pond	2,640	
L Lake	1,184	
	13,718	
Production and Support Areas		
100-C	182	
100-K	247	
100-L	183	
100-P	185	
100-R	137	
200-E & F	1,058	
200-S & H	580	
200-Z	182	
300-M & 700-A	330	
400-D	422	
600-B	114	
N-Area (Central Shops)	375	
	3,995	
Total	216,231[a]	

[a]Exceeds site total due to overlap in wetlands and bottomland hardwood acres and the addition of new areas (S, Y, and Z) and L Lake without recalculating acreage.

Source: Unofficial communication with Rick Davalos, Savannah River Natural Resource Management and Research Institute, SRS, Aiken, SC June 5, 1997.

Table 1.3-14 Number and Size of Farms in Aiken County, South Carolina

Year	Number of Farms	Total Acreage of Farms	Average Acreage of Farms
1981	900	171,300	190
1982	850	163,100	192
1983	790	157,700	200
1984	760	152,300	200
1985	750	149,500	199
1986	740	146,800	198
1987	710	141,400	199
1988	760	152,700	201
1989	750	152,700	204
1990	740	149,900	203
1991	710	149,900	208
1992	720	149,900	208
1993	710	148,400	209
1994	760	155,700	205
1995	730	154,200	211
1996	710	152,700	215
1997	710	152,700	215

Source: Agricultural Statistics for Aiken County, South Carolina Agricultural Statistics Service, Department of Agricultural and Applied Economics, Clemson University, 1998.

Table 1.3-15 Number and Size of Farms in Allendale County, South Carolina

Year	Number of Farms	Total Acreage of Farms	Average Acreage of Farms
1981	210	153,800	732
1982	200	146,400	732
1983	190	141,500	745
1984	180	136,700	759
1985	180	134,200	746
1986	180	131,800	732
1987	170	126,900	746
1988	140	132,400	946
1989	130	132,400	1018
1990	130	129,900	999
1991	130	129,900	999
1992	130	129,900	999
1993	130	128,600	989
1994	130	92,700	989
1995	120	91,800	713
1996	120	91,800	765
1997	120	91,800	765

Source: Agricultural Statistics for Allendale County, South Carolina Agricultural Statistics Service, Department of Agricultural and Applied Economics, Clemson University, 1998.

Table 1.3-16 Number and Size of Farms in Barnwell County, South Carolina

Year	Number of Farms	Total Acreage of Farms	Average Acreage of Farms
1981	360	120,800	336
1982	340	115,000	338
1983	320	111,200	348
1984	310	107,400	346
1985	300	105,400	351
1986	300	103,500	345
1987	290	99,700	344
1988	310	95,700	309
1989	300	95,700	319
1990	290	93,900	324
1991	290	93,900	324
1992	290	93,900	324
1993	290	93,000	321
1994	320	85,200	266
1995	300	84,400	281
1996	300	83,000	277 1997
300	83,000	277	

Source: Agricultural Statistics for Barnwell County, South Carolina Agricultural Statistics Service, Department of Agricultural and Applied Economics, Clemson University, 1998.

Table 1.3-17 Agricultural and Forest Land Use in Richmond and Burke Counties, Georgia

County	No. of Farms	Total Acreage Farm Size	Average Acreage in Forest	Total Acreage
Burke	315	82,517	262	293,529
Richmond	113	6,201	54.9	120,769

Source: The Georgia County Guide Fifteenth Edition, College of Agricultural and Environmental Sciences, The University of Georgia, Athens, GA, August 1996.

Table 1.3-18 Major Reservoirs (Area Greater than 1,000 Acres) in South Carolina

Lake Name and/or Owner or Governing Body	Use[a]	Surface Area, acres	Capacity, Acre-feet
Lake Jocassee (O)	P, R	7,565	1,185,000
Lake Keowee (O)	P, R, Ws	18,372	1,000,000
Hartwell Reservoir (O)	P, R, Ws	56,000	2,549,000
Thurmond Lake (O)	P, R, Ws, Fc	70,000	2,510,000
Greenville Water Works, North Saluda Reservoir	Ws	1,080	76,108
Lake Greenwood (O)	P, R, Ws	11,400	270,000
Lake Murray (O)	P, R, Ws	51,000	2,114,000
Spartanburg Water Works, also called Lake Bowen	Ws, R	1,600	24,550
Monticello Reservoir	Ws	6,800	431,050
Parr Reservoir (O)	P, R	4,400	32,533
Lake Wylie, also called Lake Catawba (O)	P, R	12,455	281,900
Fishing Creek Reservoir (O)	P, R, Ws	3,370	80,000
Lake Wateree (O)	P, R, Ws	13,710	310,000
Lake Marion (O)	P, R	110,600	1,400,000
Lake Moultrie (O)	P, R, Ws	60,400	1,211,000
Lake Robinson (O)	I, P, R	2,250	31,000
Lake Russell	P, R, Ws, Fc	26,650	1,026,000
Savannah River Site L Lake	I	1,050	21,208
Savannah River Site Par Pond	I	2,700	54,000
TOTALS		461,402	14,607,349

[a]P = Power
I = Industrial
R = Recreation
O = Open to public, free
Ws = Water supply
Ir = Irrigation
Fc = Flood control

Sources: Inventory of Lakes in South Carolina Ten Acres or More in Surface Area, State of South Carolina Water Resources Commission, Report Number 171, 1991.

Unofficial data from B. Badr, South Carolina Department of Natural Resources Water Resources Division, July 10, 1997.

Table 1.3-19 Lakes of 10 Acres or More in Aiken, Allendale, and Barnwell Counties, South Carolina

County	Number of Lakes	Surface Area, acres	Capacity Acre-feet
Aiken	124	3,357	18,559
Allendale	29	690	2,208
Barnwell[a]	28	4,695	81,495

[a]Includes Par Pond and L-Lake at SRS.

Sources: List of Major Reservoirs in South Carolina (larger than 1000 acres surface area), provided by Steve de Kozlowski, South Carolina Water Resources Commission, Columbia, SC, February 8, 1994.

Unofficial data provided by B. Badr, South Carolina Department of Natural Resources Water Resources Division, July 10, 1997.

Table 1.3-20 Lakes of 10 Acres or More in Burke, Richmond, and Screven Counties, Georgia

County	Number of Lakes	Surface Area, acres
Richmond	9	980
Burke	8	256
Screven	2	115

Source: Preliminary Safety Analysis Report: Defense Waste Processing Facility, E.I. du Pont de Nemours & Co., Aiken, SC, 1983.

Table 1.3-21 Public Boat Landings on the Savannah River Downstream from Augusta

State	County	Identification of Landing
South Carolina	Aiken	North Augusta
		Silver Bluff
		Jackson Boat Club (private)
	Allendale	Highway 368
		Johnson's Landing
		Cohen's Bluff
	Hampton	Stoke's Bluff
	Jasper	B & C Landing
		Millstone
		Union
Georgia	Richmond	Fifth Street Landing (Augusta)
		Below Lock & Dam Savannah Bluff
	Burke	Brighams Landing Rd E of Girard
	Screven	Dick's Lookout/Tuckahoe WMA NE of GA 24
		Poor Robins Landing
		U.S. Hwy 301 Crossing
		Blue Springs E. of GA Hwy 24
	Effingham	Tuckassee King Landing/off GA Hwy 119
		Abercom Creek/County Rd S983
	Chatham	Pt. Wentworth/U.S. Hwy 17/old ramp
		Pt. Wentworth/U.S. Hwy 17
		Savannah NWR/U.S. 17
	Columbia	GA ramp/below Clarks Hill Dam

Sources: Unofficial data provided by J. Duke, South Carolina Department of Natural Resources, August 4, 1997.

Unofficial data provided by L. Ager, Georgia Department of Natural Resources, August 4, 1997.

Table 1.3-22 Capabilities of Sprinkler Irrigation Systems in the Lower Savannah Region, 1983

	Type of System Used (Acres)						
County	Center Pivot	Traveler	Hand Moved	Drip	Solid Set	Other	Total Capacity
Aiken	840	960	200	110	450	150	2,710
Allendale	10,000	2,000	25	25	-	-	12,050
Barnwell	2,400	1,700	100	-	-	-	4,200

Source: South Carolina County Agent's Irrigation Survey, 1983.

Table 1.3-23 Surface Water Supplies for Aiken County, South Carolina

Water System	Estimated Population Water Serves	Water Source	[a]Treatment	Capacity of System (mgd)	Storage Capacity (mgd)	Average Water Use Total (mgd)
Aiken	31,500	Shaw Creek, Shilo Springs 4 wells	Fil, Cl, pH, F, p	15.90	4.60	7.10
Graniteville	2,050	Bridge Creek, 1 well	Fil, Cl, pH, p	2.70	1.25	1.85
North Augusta	25,900	Savannah River	Fil, Cl, pH, p	8.00	2.95	2.87

[a]Fil = Filtration; pH= pH adjustment; F = Fluorination; Cl = Chlorination; p = Phosphorous

Source: Unofficial data provided by Jim Brownlow, South Carolina Department of Health and Environmental Control, Aiken SC, February 22, 1994.

Table 1.3-24. Surface Water Supplies for Augusta-Richmond County and Burke County, Georgia

County	Plant Source	Average Capacity, mgd	Consumption, mgd
Augusta-Richmond County System	Savannah River and 28 wells	85	37
Waynesboro City System	Briar Creek and 2 wells	2	1.5

Sources: Unofficial data provided by April Myers, Augusta-Richmond County Utilities Department, August 7, 1997; and Jody Ellison, Waynesboro Water System, August 8, 1997.

Table 1.3-25 Average Daily Finished Water Production at the Beaufort/Jasper and City of Savannah Water Treatment Plants

Year	Beaufort/Jasper, SC (mgd)	City of Savannah, GA (mgd)
1983	5.8	31.6
1984	6.1	36.1
1985	5.4	31.4
1986	6.6	33.0
1987	6.5	NA
1988	6.9	NA
1989	7.0	37.6
1990	5.9	38.5
1991	5.9	42.3
1992	6.0	43.5
1993	6.6	46.7

Sources: Unofficial data provided by Mr. Billy Smith, Beaufort/Jasper Water/Sewer Authority, February 10, 1994; and Mr. Willy Weil, Savannah Industrial and Domestic Water Supply, February 10, 1994.

Table 1.4-1 Maximum Snow, Ice Pellets - Augusta, Georgia, in Inches

Month	Average	Maximum (Year)		24-Hr Maximum (Year)
January	0.3	2.6 (1992)		2.6 (1992)
February	0.7	14.0 (1973)		13.7 (1973)
March	<0.1	1.1 (1980)		1.1 (1980)
April	0.0	0.0	--	0.0
May	0.0	0.0	--	0.0
June	0.0	0.0	--	0.0
July	0.0	0.0	--	0.0
August	0.0	0.0	--	0.0
September	0.0	0.0	--	0.0
October	0.0	0.0	--	0.0
November	<0.1	Trace (1968)		Trace (1968)
December	0.1	1.0 (1993)		1.0 (1993)
Year	1.1	14.0 (1973)		13.7 (1973)

Period of record, 1951-1995.

Source: Local Climatological Data, Annual Summary with Comparative Data, 1995, Augusta, Georgia. National Oceanic and Atmospheric Administration, National Climate Data Center, Asheville, NC (1996).

Table 1.4-2 Estimated Ice Accumulation for Various Recurrence Intervals for the Gulf Coast States

Recurrence Interval (yr)	Accumulation (in.)
2	0
5	0.24
10	0.39
25	0.51
50	0.59
100	0.66

Source: Tattelman, P., et al. Estimated Glaze Ice and Wind Loads at the Earth's Surface for the Contiguous United States. AFCRL-TR-73-0640, U.S. Air Force (1973).

Table 1.4-3 Percent Occurrence of Atmospheric Stability Class for SRS Meteorological Towers

Stability Class	Percent Occurrence Per Year							
	A-Area	C-Area	D-Area	F-Area	H-Area	K-Area	L-Area	P-Area
A	17.5	15.6	20.5	13.3	25.9	15.4	16.8	14.9
B	10.6	8.8	11.9	8.3	13.2	9.8	10.2	9.4
C	17.6	15.7	19.4	15.2	20.1	17.0	18.0	16.4
D	26.6	27.1	24.9	28.6	22.1	25.4	25.1	26.5
E	19.6	20.6	17.4	24.9	15.5	21.2	18.7	21.1
F/G	8.0	12.1	6.0	10.6	3.2	11.1	11.1	11.8

Period of record: 1992-1996.

Source: Hunter, C. H. to J. Howley, Updated Meteorological Data for Revision 4 of the SRS Generic Safety Analysis Report, SRT-NTS-990043.

Table 1.4-4 Average Number of Thunderstorm Days, Augusta, Georgia, 1951-1995

Month	Thunderstorm Days
January	0.8
February	1.7
March	2.6
April	3.9
May	6.3
June	9.7
July	13.1
August	10.0
September	3.5
October	1.3
November	0.8
December	0.7
Annual	54.4

Period of record, 1951-1995.

Source: Local Climatological Data, Annual Summary with Comparative Data, 1995, Augusta, Georgia. National Oceanic and Atmospheric Administration, National Climate Data Center, Asheville, NC (1996).

Table 1.4-5 Number of Tornadoes Reported Between 1951 and 1996 by Month and F-Scale in a Two-Degree Square Centered at SRS

Month	F-0	F-1	F-2	F-3	F-4	F-5	Total	Percent
January	3	8	2	1	0	0	14	7.0
February	4	12	1	0	0	0	17	8.5
March	1	10	9	0	1	0	21	10.5
April	4	17	4	1	0	0	26	13.0
May	3	18	6	0	0	0	27	13.5
June	4	10	0	0	0	0	14	7.0
July	2	8	3	0	0	0	13	6.5
August	4	7	5	2	0	0	18	9.0
September	0	5	3	0	0	0	8	4.0
October	1	2	4	0	0	0	7	3.5
November	10	8	7	2	0	0	27	13.5
December	1	2	2	2	1	0	8	4.0
Total	37	107	46	8	2	0	200	100.0

Source: C.H. Hunter to J. Howley, Meteorological Data for Revision 4 to SRS Generic Safety Analysis Report, SRT-NTS-99043, March 1, 1999.

Table 1.4-6 Fujita Scale for Damaging Tornado Winds

Scale	Rotational Wind Speed	Expected Damage
F-0	40 - 72	Light damage
F-1	73 - 112	Moderate damage
F-2	113 - 157	Considerable damage
F-3	158 - 206	Severe damage
F-4	207 - 260	Devastating damage
F-5	261 - 318	Incredible damage

Source: Hunter, C. H., A Climatological Description of the Savannah River Site, WSRC-RP-89-313, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC, May 1990.

Table 1.4-7 Estimated Maximum Three-Second Wind Speeds for Tornadoes and "Straight-Line" Winds

Recurrence Interval, years	Probability events/year	Estimated Maximum 3-Sec Wind Speed, mph	
		Tornadoes	"Straight-Line" Winds
100	1×10^{-2}	---	88
200	5×10^{-3}	---	94
500	2×10^{-3}	---	102
1,000	1×10^{-3}	70	107
5,000	2×10^{-4}	120	120
10,000	1×10^{-4}	135	126
50,000	2×10^{-5}	180	140
100,000	1×10^{-5}	200	145
500,000	2×10^{-6}	240	---
1,000,000	1×10^{-6}	251	---

Sources: U. S. Department of Energy, Development of a Probabilistic Tornado Wind Hazard Model for the Continental United States (DRAFT), Hazard Mitigation Center, Lawrence Livermore National Laboratory, Livermore CA (2000). (Tornadoes)

A. H. Weber, et al., "Tornado, Maximum Wind Gust, and Extreme Rainfall Event Recurrence Frequencies at the Savannah River Site", WSRC-TR-98-00329, Westinghouse Savannah River Comapany, Aiken, SC (1998). (Straight-line Winds)

Table 1.4-7.1 Wind and Tornado Design Criteria for MFFF Site

	Item	PC-3	PC-4
W I N D	Annual Hazard Exceedance Probability	$1x10^{-3}$	$1x10^{-4}$
	Three Second Wind Speed, mph	110 rounded up value	130 rounded up value
	Missile Criteria	2x4 timber plank 15 lb. @50 mph (horizontal); max height 30 ft.	2x4 timber plank 15 lb. @50 mph (horizontal); max height 50 ft.
	ASCE 7-98, See Note		
T O R N A D O	Annual Hazard Exceedance Probability	$2x10^{-5}$	$2x10^{-6}$
	Three Second Tornado Speed, mph	180	240
	Atmospheric Pressure Change (APC), psf, at the rate of psf/sec	70 psf at 31 psf/sec	150 psf at 55 psf/sec
	Missile Criteria	2x4 timber plank 15 lb. @100 mph (horizontal); max height 150 ft; 70 mph (vertical) 3 in. diameter standard steel pipe, 75 lb. @50 mph (horizontal); max height 75 ft; 35 mph (vertical) 3000 lb. automobile @19 mph rolls and tumbles	2x4 timber plank 15 lb. @150 mph (horizontal); max height 200 ft; 100 mph (vertical) 3 in. diameter standard steel pipe, 75 lb. @75 mph (horizontal); max height 100 ft; 50 mph (vertical) 3000 lb. automobile @25 mph rolls and tumbles
	ASCE 7-98, See Note		

Note:
For determining wind and tornado loads using the ASCE 7-98 procedure following definitions shall apply:
I = 1.0.
Exposure Category = C.
K_{zt} = 1.0, and K_d = 1.0

Table 1.4-8 Observed Annual Fastest 1-Minute Wind Speeds for SRS [a,b]

Year	Wind Speed (mph)[c]	Direction	Date
1967	52	W	5/8
1968	43	NW	7/16
1969	43	NE	7/8
1970	52	NW	7/16
1971	34	SW	7/11
1972	56	SW	3/2
1973	37	NW	11/21
1974	49	W	3/21
1975	37	W	7/6*
1976	32	NW	3/9
1977	43	S	10/2
1978	39	SW	1/26
1979	30	W	5/12
1980	32	S	7/9
1981	33	NW	3/16
1982	40	NW	2/16
1983	32	NW	12/31
1984	32	SW	3/28
1985	35	W	2/11
1986	32	NW	7/2
1987	35	NNW	7/24
1988	32	WNW	5/24
1989	39	NW	6/22
1990	28	WSW	1/29
1991	29	NW	2/15
1992	29	SW	7/1
1993	33	W	3/13
1994	34	SE	7/10
1995	38	W	11/11
1996	35	W	2/12

Maximum 1-minute wind since 1950: 83 mph on 5/28/50

[a] Data for 1967-1994 from National Weather Service Office, Bush Field, Augusta, Georgia.
Source: Local Climatological Data, Annual Summary with Comparative Data, 1995, Augusta, Georgia. National Oceanic and Atmospheric Administration, National Climate Data Center, Asheville, NC (1996).

[b] Data for 1995-1996 from SRS Central Climatology Facility.
Source: Hunter, C. H., Updated Meteorological Data for Revision 2 of the SRS Generic Safety Analysis Report, SRT-NTS-970265.

[c] Values interpolated to a 10 m anemometer height.

Table 1.4-9 Total Occurrences of Hurricanes in South Carolina by Month, 1700-1992

Month	Number	Percent of Total
June	1	2.8
July	2	5.6
August	11	30.5
September	18	50.0
October	4	11.1

Source: Memo from Chuck Hunter to Baren Talukdar, SRT-NTS-970285 dated August 14, 1997, Westinghouse Savannah River Co., Aiken, SC.

Table 1.4-10 Extreme Total Rainfall for SRS Region (August 1948-December 1995)

Period Hours	Period Days	Inches/ Period	Begin Time	Begin Date
Augusta Bush Field				
1		3.14	1300	7/24/86
3		4.25	1900	9/20/75
6		4.50	1900	9/20/75
12		7.62	2100	10/11/90
24		8.57	1300	10/11/90
	3	12.24		10/10/90
	7	12.24		10/10/90
	10	12.24		10/10/90
	14	14.56		10/10/90
	30	15.47		9/30/90
	60	19.84		7/15/64
	90	25.88		7/18/64
Columbia Airport				
1		3.80	2000	8/18/65
3		5.03	1900	8/18/65
6		5.29	1700	6/15/73
12		7.03	2200	8/16/49
24		7.66	1600	8/16/49
	3	8.41		8/14/90
	7	10.22		6/15/73
	10	10.29		6/13/73
	14	14.71		8/14/49
	30	19.30		7/29/49
	60	25.64		6/18/71
	90	33.69		7/18/64

Source: C. H. Hunter to J. Howley, Updated Metereology for Revision 4 of the SRS Generic Safety Analysis Report, SRT-NTS-99-0043.

Table 1.4-11 Extreme Precipitation Recurrence Estimates by Accumulation Period.

Recurrence Interval (years)	15 min	1 hr	3 hr	6 hr	24 hr	48 hr
10	1.5	2.7	3.3	3.6	5.0	6.5 7.39[b]
25	1.8	3.2	4.0	4.4	6.1	7.9
50	2.0	3.5	4.6	5.0	6.9 (7.39)[b]	8.6
100	2.1	3.9	5.1 (5.2)[a]	5.7 (5.8)[b]	7.8	9.4 (10.2)[c] (11.15)[d]
1000	2.7	5.0	7.4	8.3	11.5	N/A
10,000	3.3	6.2	10.3	11.8	16.3	N/A
100,000	3.9	7.4	14.1	16.7	22.7	N/A

[a]July 25 rainfall at the 700 Area

[b]August 22 rainfall at the Climatology Site

[c]October 11-12 rainfall at the 773-A Area

[d]October 11-12 rainfall at Bush Field

Sources: A.H. Weber, et al., "Tornado, Maximum Wind Gust, and Extreme Rainfall Event Recurrence Frequencies at the Savannah River Site", WSRC-TR-98-00329, Westinghouse Savannah River Company, Aiken, SC (1998). (15-minute through 24 hour rainfall estimates)

J. F. Miller, "Two-To-Ten Day Precipitation for Return Periods of Two-to-One Hundred Years in the Contiguous United States," Technical Paper No. 49, U.S. Weather Bureau, USDOC (1964). (48-hour rainfall estimate)

Addis, R. P. and Kurzeja, R. J. Heavy Rainfall at the SRS in July, August, and October of 1990. WSRC-TR-92-136, Westinghouse Savannah River Co., Aiken, SC, (1992). (observed rainfall events)

Table 1.4-12 Monthly Average and Extreme Temperatures for SRS

	Average Daily Temperature, °F [a]			Extreme Temperature, °F [b]	
Month	Maximum	Minimum	Month	Maximum (Yr)	Minimum (Yr)
January	55.9	36.0	45.8	86 (1975)	-3 (1985)
February	60.0	38.3	49.1	86 (1989)	10 (1996)
March	68.6	45.4	57.0	91 (1974)	11 (1980)
April	77.1	52.5	64.8	99 (1986)	29 (1983)
May	83.5	60.7	72.1	102 (1963)	38 (1989)
June	89.6	68.0	78.8	105 (1985)	48 (1984)
July	92.1	71.5	81.7	107 (1986)	56 (1963)
August	90.1	69.6	80.3	107 (1983)	56 (1986)
September	85.4	65.6	75.4	104 (1990)	41 (1967)
October	76.6	54.6	65.6	96 (1986)	28 (1976)
November	67.0	45.2	56.2	89 (1974)	18 (1970)
December	59.3	39.1	49.1	82 (1984)	5 (1962)
Annual	75.5	54.0	64.7	107 (1986)	-3 (1985)

[a] Period of record: 1967-1996.
[b] Period of record: 1961-1996.

Source: Hunter, C. H., Updated Meteorological and Hydrological Data for Revision 2 of the SRS Generic Safety Analysis Report, SRT-NTS-970265.

Table 1.4-13 Average and Extreme Precipitation at SRS (Water Equivalent), in Inches

Month	Average[a]	Maximum (Year)[b]	Minimum (Year)[b]
January	4.44	10.02 (1978)	0.89 (1981)
February	4.25	7.97 (1995)	0.94 (1968)
March	4.83	10.96 (1980)	0.91 (1995)
April	3.02	8.20 (1961)	0.57 (1972)
May	3.86	10.90 (1976)	1.33 (1965)
June	4.53	10.98 (1973)	0.89 (1990)
July	5.57	11.48 (1982)	0.90 (1980)
August	5.44	12.34 (1964)	1.04 (1963)
September	3.63	8.71 (1959)	0.49 (1985)
October	3.40	19.62 (1990)	0.00 (1963)
November	2.89	7.78 (1992)	0.21 (1958)
December	3.59	9.55 (1981)	0.46 (1955)
Year	49.46	73.47 (1964)	28.82 (1954)

[a] Period of record: 1967-1996.

[b] Period of record: 1952-1996.

Source: Hunter, C. H., Updated Meteorological, and Hydrological Data for Revision 2 of the SRS Generic Safety Analysis Report, SRT-NTS-970265.

Table 1.4-14 Average Relative and Absolute Humidity at SRS.

Month	Relative Humidity (%)a			Absolute Humidity (g/m^3)b		
	Min	Max	Avg	Min	Max	Avg
January	51	86	70	2.3	13.2	6.0
February	44	84	65	2.9	11.3	6.6
March	40	86	61	3.4	11.8	7.0
April	36	88	56	3.7	13.3	8.4
May	40	93	63	6.2	17.6	12.7
June	44	95	75	10.2	19.2	15.6
July	47	96	75	13.0	20.6	18.4
August	50	97	78	11.1	21.3	18.3
September	48	96	78	9.8	19.1	15.4
October	45	93	74	5.8	17.6	11.3
November	46	90	70	3.4	15.8	7.3
December	48	87	70	2.3	12.4	6.0
Average	45	91	70			11.1

a Period of record: 1967-1996.
b Period of record: 1995-1996.

Source: Hunter, C. H. to B. Talukdar, Updated Meteorological, and Hydrological Data for Revision 2 of the SRS Generic Safety Analysis Report, SRT-NTS-970265.

Table 1.4-15 Flow Summary for the Savannah River and Savannah River Site Streams (values in ft^3/second)

	Mean	STD Dev.	7Q10	7-Day Low Flow
Savannah River				
at Augusta, GA	9493	2611	4332	3746
at SRS Boat Dock	----	----	4293	3773
at Hwy 301 [a]	10397	2830	4411	3991
at Clyo	12019	3687	5211	4513
Upper Three Runs				
at Hwy 278	105	8	56	55
at SRS Road C	211	30	100	86
at SRS Road A	245	41	100	84
Beaver Dam Creek				
at 400D	81.5	8.7	0.01	18
Fourmile Branch				
at SRS Site 7	17.8	5.4	0.58	3.2
Pen Branch				
at SRS Road B	7.5	8.2	0.27	0.22
at SRS Road A-13	210	45	5.5	8.8
Steel Creek				
at Hattiesville Bridge	160	12.3	12.9	12.0
Lower Three Runs				
below Par Pond	38.4	10.4	1.2	0.9
near Snelling, SC	85.8	27.9	16	15

[a] Eleven years are missing between 1971 and 1982.

Source: Hunter, C. H., Updated Meteorological, and Hydrological Data for Revision 2 of the SRS Generic Safety Analysis Report, SRT-NTS-970265.
Chen, Kou-fu, 7Q10 Flows for SRS Streams, WSRC-RP-96-340, Westinghouse Savannah River Co., Aiken, SC, 1996.

NOTE: The flow data used for computing statistics for the Savannah River and Savannah River Site Streams were based on U. S. Geological Survey stream gage measurements after construction of Thurmond Dam. Values listed for 7-day low flow, ten year recurrence (7Q10) are based on adjusted "natural" flows, i.e. without the effects of cooling water discharges from Savannah River Site reactors.

Table 1.4-16 Water Quality of the Savannah River Above SRS for 1983-1987

Analyte	Units	No. of Analyses	Min	Max	Mean
Alkalinity	mg/L	36	13	23	18.28
Aluminum	mg/L	36	0.08	0.95	0.38
Ammonia	mg/L	36	0.04	0.27	0.11
Cadmium	mg/L	36	0	0	0
Calcium	mg/L	36	3.1	4.24	3.62
Chloride	mg/L	36	4	13	7.73
Chromium	mg/L	36	0	0.01	0.01
Conductivity	µS/cm[a]	36	54	107	80.42
Copper	mg/L	36	0	0	0
DO	mg/L	72	6.4	24	9.42
Fixed residue	mg/L	36	1	17	7.69
Iron	mg/L	36	0.27	1.39	0.62
Lead	mg/L	36	0	0	0
Magnesium	mg/L	36	0.98	1.55	1.31
Manganese	mg/L	36	0.06	0.1	0.08
Mercury	mg/L	36	0	0	0
Nickel	mg/L	36	0	0.03	0.02
Nitrate + Nitrite	mg/L	36	0.02	0.63	0.27
Phosphate	mg/L	36	0.03	0.09	0.06
Sodium	mg/L	36	4.67	11.6	8.93
Sulfate	mg/L	36	4	9	6.82
Suspended solids	mg/L	36	3	18	9.69
Temperature	C	36	8.9	24.8	17.48
Total Dissolved Solids	mg/L	36	48	85	63.89
Total Solids	mg/L	36	54	96	73.58
Turbidity	NTU	36	2.22	3.3	9.66
Volatile Solids	mg/L	36	1	7	2.34
Water Volume	L	36	1.08E+11	2.31E+12	8.4E+11
Zinc	mg/L	36	0	0.02	0.01
pH	pH	36	5.7	7.8	6.44

[a]Micro [a]microsiemens per centimeter

Source: SRS Environmental Monitoring Reports for 1992, 1993, and 1994. Report numbers WSRC-TR-92-0075, WSRC-TR-93-0075, and WSRC-TR-94-0075. Data summary provided by J. Gladden, WSRC Environmental Analysis.

Table 1.4-17 Water Quality of the Savannah River Below SRS (River Mile 120) for 1992-1994

Analyte	Units	No. of Analyses	Min	Max	Mean
Alkalinity	mg/L	48	13	26	19.24
Aluminum	mg/L	36	0.08	0.64	0.4
Ammonia	mg/L	48	00.02	0.44	0.13
BOD 5 Day	mg/L	12	0.7	1.8	1.29
Cadmium	mg/L	36	0	0	0
Calcium	mg/L	38	3.26	5.02	4.18
Chloride	mg/L	36	4	12	6.27
Chromium	mg/L	36	0	0.01	0.01
Conductivity	µS/cm[a]	48	51	114	83.93
Copper	mg/L	36	0	0	0
DO	mg/L	84	5.8	21	8.77
Fecal Colloms	MPNECMED[b]	12	430	9300	3749.17
Fixed residue	mg/L	36	1	42	8.81
Iron	mg/L	36	0.40	1.32	0.79
Lead	mg/L	36	0	0	0
Magnesium	mg/L	36	0.92	1.52	1.3
Manganese	mg/L	36	0.03	0.1	0.07
Mercury	mg/L	36	0	0.92	0.23
Nickel	mg/L	36	0	0.03	0.02
Nitrate + Nitrite	mg/L	48	0.11	0.47	0.29
PH	pH	1	6.7	6.7	6.7
Phosphate	mg/L	36	0.03	0.01	0.06
Sodium	mg/L	36	5.28	13	9.29
Sulfate	mg/L	36	4	11	7.64
Suspended solids	mg/L	36	3	48	11.31
TOC	mg/L	12	1.5	14	5.08
Temperature	C	60	1	30	17.83
Total Dissolved Solids	mg/L	36	49	105	65.94
Total Phosphate	mg/L	12	0.07	0.13	0.1
Total Solids	mg/L	36	54	120	77.26
Turbidity	JTU[c]	48	2.66	32.4	10.77
Volatile Solids	mg/L	36	1	9	2.72
Water Volume	L	36	4E+11	2.68E+12	9.58E+11
Zinc	mg/L	36	0	0.01	0.01
PH	pH	36	5.9	7.2	6.34
pH (lab)	pH	12	6.7	7	6.86

[a] microsiemens per centimeter
[b] Maximum probable number per 100 mL
[c] Jackson turbidity units

Source: SRS Environmental Monitoring Reports for 1992, 1993, and 1994. Report numbers WSRC-TR-92-0075, WSRC-TR-93-0075, and WSRC-TR-94-0075. Data summary provided by J. Gladden, WSRC Environmental Analysis.

Table 1.4-18 Hydraulic Parameters of the Carbonate Phase of the Floridian Aquifer

Parameter	Value [Mean] (Average)	Maximum	Minimum	Comments	Source	
Transmissivity	[1,486 m^2/day]	9,290 m^2/day	30 m^2/day	Floridan undifferentiated, South Carolina	Newcome, 1993	(Ref. a)
		46,450	929	Upper Floridan, various areas, Georgia	Krause and Randolph, 1989	(Ref. b)
		3,066	2,601	Upper Floridan, Savannah, Georgia	Krause and Randolph, 1989	(Ref. b)
	(929 to 4,645)			Upper Floridan, Coastal South Carolina	Hayes, 1979	(Ref. c)
		20,066	186	Lower Floridan	Krause and Randolph, 1989	(Ref. b)
		465	46	Lower Floridan	Hayes, 1979	(Ref. c)
		929	65	Updip clastic phase	Aucott, 1988	(Ref. d)
Hydraulic Conductivity	(53 to 122 m/day)			Upper Floridan, Beaufort county	Hayes, 1979	(Ref. c)
		31 m/day	23 m/day	Lower Floridan, Coastal South Carolina	Hayes, 1979	(Ref. c)

Sources:
Ref. a: Newcome, Roy, Jr. 1993, the 100 largest public water supplies in south Carolina: South Carolina Water Resources Commission Report 169, 57 p.

Ref. b: Krause, R. E., and Randolph, R. B. Hydrology of the Floridan Aquifer System in Southeast Georgia and Adjacent Parts of Florida and South Carolina. U.S. Geological survey Professional Paper 1403-D, 1989

Ref. c: Hayes, L. R., 1979 The groundwater resources of Beaufort, Colleton, Hampton, and Jasper Counties, South Carolina: South Carolina Water Resources Commission report 9, 91 p.

Ref. d: Aucott, W. R., et al. Geohydrologic Framework of the Coastal Plain Aquifers of South Carolina. U.S. Geological survey Water Resources Investigations Report 85-4271, 1988

Table 1.4-19 Parameters Determined for the Upper Three Runs Aquifer Unit

Parameter	Value [Mean] (Average)	Maximum	Range Minimum	Comments	Source
Hydraulic Conductivity (vertical)	[2.71 x 10^{-3} m/d]	1.55 x 10^{-1} m/d	8.2 x 10^{-3} m/d	Clayey sand samples	Bledsoe et al., 1990 (Ref. a)
Hydraulic Conductivity (horizontal)	[3.38 x 10^{-3} m/d]	7.3 x 10^{-1}	9.66 x 10^{-4}	Clayey sand samples	Bledsoe et al., 1990 (Ref. a)
Porosity	[40%]	55%	10%	Clayey sand samples	Bledsoe et al., 1990 (Ref. a)
Effective porosity	12%			Clayey sand samples	Fetter, 1988 (Ref. b)
Hydraulic Conductivity (vertical)	5.09 x 10^{-3} m/d	6.4 x 10^{-3} m/d	1.04 x 10^{-3} m/d	Sandy clay samples	Bledsoe et al., 1990 (Ref. a)
Hydraulic Conductivity (horizontal)	1.24 x 10^{-4} m/d	9.85 x 10^{-2}	7.77 x 10^{-4}	Sandy clay samples	Bledsoe et al., 1990 (Ref. a)
Porosity	41%	71%	23%	Sandy clay samples	Bledsoe et al., 1990 (Ref. a)
Effective porosity	5%			Sandy clay samples	Fetter, 1988 (Ref. b)
Leakance coefficient		2.58 x 10^{-4} m/d	4.11 x 10^{-4} m/d		Walton, 1970 (Ref. c)

Sources:

Ref. a: Bledsoe et al., 1990 — Baseline Hydrogeologic Investigation - summary Report. WSRC-RP-90-1010, Westinghouse Savannah River Company, Savannah River Site, Aiken SC, 1990

Ref. b: Fetter, 1988 — Ground Water Resource Evaluation. McGraw-Hill Book Co., New York, NY, 1988

Ref. c: Walton, 1970 — Applied Hydrology. Merrell Publishing, Columbus OH, 1988.

Table 1.4-20 Parameters Determined for the Gordon Confining Unit

Parameter	Value [Mean] (Average)	Maximum	Range Minimum	Comments	Source	
Hydraulic Conductivity (vertical)		9.1×10^{-3} m/d	9.1×10^{-4} m/d	"green clay" confining zone	Eddy et al., 1991	(Ref. a)
Hydraulic Conductivity (horizontal)	[1.24×10^{-3} m/d]	4.85×10^{-2}	1.74×10^{-4}	Clayey sand samples	Bledsoe et al., 1990	(Ref. b)
Hydraulic Conductivity (vertical)	[8.75×10^{-3}]	1.12×10^{-4}	6.83×10^{-3}	Sandy clay samples	Bledsoe et al., 1990	(Ref. b)
Hydraulic Conductivity (horizontal)	(1.1 Darcies)			Miniperme-ameter data from sandy muds in General Separations Area	Kegley, 1993	(Ref. c)
Porosity		90%	35%	"green clay" confining zone	Eddy et al., 1991	(Ref. a)
Porosity	(34.6%)			From sleeve analyses of sand samples (<25% clay)	Aaland, 1995	(Ref. d)
Permeability	(16.3 Darcies)			From sleeve analyses of sand samples (<25% clay)	Aaland, 1995	(Ref. d)

Sources:

Ref. a: Eddy et al., 1991 Characterization of the geology, geochemistry, hydrology, and microbiology of the bi-situ air stripping demonstration site at the Savannah River Site: USDOE Report WSRC-RD-91-21. Westinghouse Savannah River Laboratory, Aiken SC 29808, 118 pages

Ref. b: Bledsoe et al., 1990 Baseline Hydrogeologic Investigation - Summary Report. WSRC-RP-90-1010, Westinghouse Savannah River Company, Savannah River Site, Aiken SC, 1990

Ref. c: Kegley, 1993 Distribution of permeability at the MWD Well Field, Savannah River Site, Aiken SC: M.S. Thesis, Clemson University, Clemson SC, 186 pages

Ref. d: Aaland, 1995 Hydrogeologic framework of West Central South Carolina

Table 1.4-21 Hydraulic Parameters for the Gordon Aquifer Unit

Parameter	Value [Mean] (Average)	Maximum	Range Minimum	Comments	Source	
Hydraulic Conductivity	(11 m/d)	12 m/d	7 m/d	Derived from long-term pumping test of Gordon Aquifer Unit.	Aaland, 1995	(Ref. a)
Hydraulic Conductivity	(13.1	19	9.6	Derived from long-term pumping test of Steed Pond Aquifer Unit (updip equivalent of Gordon Aquifer Unit)	Aaland, 1995	(Ref. a)

Source: Aaland, R. K., et al. Hydrogeologic framework of West Central South Carolina, 1995

Table 1.4-22 Hydraulic Conductivity Values from Single- and Multiple-Well Aquifer Tests and Slug Tests for Upper Three Runs, Gordon, and Steed Pond Aquifers

Hydrologic unit	Type of test	Number of tests	Mean Hydraulic Conductivity (ft/d)	Median Hydraulic Conductivity (ft/d)	Source
"Upper" aquifer zone of Upper Three Runs aquifer	Slug tests	190	5.62	1.38	GeoTrans (1992b) (Ref. a)
do.	Short-duration single-well pumping tests	38	0.67	0.61	Parizek and Root (1986) (Ref. b)
do.	Short-duration single-well pumping tests	14	5.09	1.22	Evans and Parizek (1991) (Ref. c)
do.	Long-duration multiple-well pumping tests	1	13	-	D'Appoinia (1981) (Ref. d)
do.	Minipermeameter tests	317	12.6	-	Kegley, (1993) (Ref. e)
"Lower" aquifer zone of Upper Three Runs aquifer	Slug tests	173	5.62	1.00	GeoTrans (1992b) (Ref. a)
do.	Short-duration single-well pumping tests	51	0.91	0.61	Parizek and Root (1986) (Ref. b)
do.	Short-duration single-well pumping tests	7	33.3	1.22	Evans and Parizek (1991) (Ref. c)
do.	Long-duration single-well pumping tests	4	1.06	-	D'Appoinia (1981) (Ref. d)
do.	Long-duration multiple-well pumping tests	1	10	-	Chas. T. Main, Inc. (1990) (Ref. f)
do.	Pumping test	1	19	-	Christensen and Gordon (1983) (Ref. g)
do.	Minipermeameter tests	199	23.8	-	Kegley, (1993) (Ref. e)
Steed Pond aquifer	Long-duration multiple-well pumping tests	4	43	N/A	Geraghty and Miller (1986) (Ref. h)
"M-Area" aquifer zone of the Steed Pond aquifer	Slug tests	6	2.19	N/A	Sirrine (1991c) (Ref. i)
"Lost Lake" aquifer zone of the Steed Pond aquifer	Slug tests	14	18.9	N/A	Sirrine (1991c) (Ref. i)
do.	Long-duration multiple-well pumping tests	8	58	N/A	Geraghty and Miller (1986) (Ref. h)
do.	Long-duration multiple-well pumping tests	1	31.2	-	Hiergesell (1993) (Ref. k)
Gordon aquifer	Slug tests	41	4.9	2.82	GeoTrans (1992b) (Ref. a)
do.	Short-duration single-well pumping tests	10	13.8	1.91	do.
do.	Long-duration single- and multiple-well pumping tests	8	35	N/A	(see text)

Table 1.4-22 Hydraulic Conductivity Values from Single- and Multiple-Well Aquifer Tests and Slug Tests for Upper Three Runs, Gordon, and Steed Pond Aquifers (Continued)

Source:	Ref. a:	GeoTrans, Inc., 1992b, Groundwater flow and solute transport modeling of the F- and H-Area seepage basins: prepared for Westinghouse Savannah River Company, Environmental Group, Sept. 1992, Corporate Parkway, CCC4, Aiken, SC, 29803, 77 pages.
	Ref. b:	Parizek, R. R., and Root, R. W., 1986, Development of a ground water velocity model for the radioactive waste management facility, Savannah River Plant, Aiken, SC: USDOE Report DPST-86-658, E. I. duPont de Nemours & Co., Savannah River Laboratory, Aiken, SC, 29808.
	Ref. c:	Evans, E.K. and Parizek, R.R., Characterization of Hydraulic Conductivity Heterogeneity in Tertiary Sediments within the General Separations Area, Savannah River Site, South Carolina. Department of Geosciences, Pennsylvania State University, PA, 1991.
	Ref. d:	D'Appolonia, Inc., 1981, Report, DWPF - stage 1 investigation aquifer performance tests, 200-S Area: Savannah River Plant, SC, Project No. 76-372, Pittsburgh, PA.
	Ref. e:	Kegley, W.P., 1993, Distribution of permeability at the MWD Well Field, Savannah River Site, Aiken, SC: M.S. Thesis, Clemson University, Clemson, SC, 186 pages.
	Ref. f:	Chas. T. Main, Inc., 1990, F-Area aquifer pump test report: Report prepared for Westinghouse Savannah River Company, Aiken, SC, 29808, 13 pages.
	Ref. g:	Christensen, E. J., and Gordon, D. E., 1983, Technical summary of groundwater quality protection program at Savannah River Plant, Vol. 1, site geohydrology and solid and hazardous wastes: Savannah River Laboratory Report DPST-83-929, E. I. duPont de Nemours & Co., Aiken, SC, 29808
	Ref. h:	Geraghty and Miller, Inc., 1986, Hydraulic properties of the Tertiary aquifer system underlying the A/M: E. I. duPont de Nemours & Co., Atomic Energy Division, Aiken, SC, 29808, 56 pages.
	Ref. i:	Sirrine Environmental Consultants, 1991c, 1992 RCRA Part B permit renewal application M-Area Hazardous Waste Management Facility: (Draft), 300 pages.
	Ref. j:	Hiergesell, R.A., 1993, Hydrologic analysis of data for the Lost Lake aquifer zone of the Steed Pond aquifer at recovery well RWM-16: WSRC-TR-92-529, Rev. 1, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC, 29808, 36 pages.

Table 1.4-23 pH and Composition of Water from Cretaceous to Eocene Sources in the Vicinity of SRS

				Chemical Content (ppm)										
Aquifer / Confining System or Unit	No. of Analy-ses	Range and Median	pH	Fe	Ca	Na	Na+ K	HCO 3	SO_4	Cl	F	NO_3	TDS[a]	Hardness ($CaCO_3$)
Dublin-Midville Aquifer System	13	Maximum	6.9	0.77	1.4	0.9	6.7	17	4.8	4.0	0.1	8.8	28	7
		Minimum	4.4	0	0.3	0	0.9	0	0.5	0.8	0	0	14	2
		Median	5.4	0.16	0.9	0.5	2.1	3	1.4	2.2	0	0.6	19	5
Dublin-Midville Aquifer System/	16	Maximum	6.8	4.1	8.7	1.3	4.2	23	27	6.0	0.2	0.9	54	30
		Minimum	4.4	0.10	3.9	0.4	1.5	4	7.4	1.5	0	0	36	10
Meyers Branch Confining System		Median	5.9	1.1	6.4	1.0	2.7	12	11	2.1	0.1	0	41	19
Calcareous Facies of Floridan Aquifer System	15	Maximum	7.6	1.0	47	9.4	19	171	14	4.5	0.5	6.2	192	132
		Minimum	6.8	0	17	0.3	0.4	55	0.8	0.4	0	0	75	50
		Median	7.1	0.25	27	2.0	1.7	94	4.3	2.8	0.1	0.2	95	72
Arena-ceous Facies of Floridan Aquifer System	9	Maximum	6.1	1.84	8.7	4.2	2.4	17	9.3	4.0	0.3	2.3	29	15
		Minimum	4.2	0.04	0.5	0.3	0.4	1	0.8	1.5	0	0	20	4
		Median	5.5	0.16	1.5	0.7	2.1	5.5	1.9	2.7	0.1	1.3	21	8

Source : Siple, "Geology and Ground Water of the Savannah River Plant and Vicinity, South Carolina." U.S. Geological Survey Water Supply Paper 1841 (1967).

[a] TDS = total dissolved solids.

Table 1.4-24 Pumpage for Municipal Supplies

Location[a]	User	Distance From SRS Center (miles)	Number Served	Average Daily Use (gpd x 10^6)	Water-Bearing Formation[b]	Type Source
Aiken County						
1	City of Aiken	22	28,000	2.0	"Tuscaloosa"[c]	Springs
2	Town of Jackson	10	3,152	0.175	"Tuscaloosa"	2 Wells
3	Town of New Ellenton	11	4,000	0.300	"Tuscaloosa"	2 Wells
4	Town of Langley	19	1,330	0.130	"Tuscaloosa"	2 Wells
5	College Acres	15	1,264	0.065	"Tuscaloosa"	3 Wells
6	Bath Water Dist.	19	1,239	0.325	"Tuscaloosa"	2 Wells
7	Beech Island	18	4,500	0.300	"Tuscaloosa"	3 Wells
8	Talatha	10	1,260	0.040	"Tuscaloosa"	2 Wells
9	Breezy Hill	22	4,500	0.233	"Tuscaloosa"	4 Wells
10	Burnettown	20	1,200	0.150	"Tuscaloosa"	2 Wells
11	Montmorenci	17	4,232	0.423	"Tuscaloosa"	2 Wells
12	Warrenville	19	788	0.300	"Tuscaloosa"	4 Wells
13	Johnstown	18	1,560	0.144		
	Nowlandville	18	1,232	0.100	"Tuscaloosa"	1 Well
	Gloverville	18	1,440	0.144		
14	Belvedere	24	6,300	0.362	"Tuscaloosa"	5 Wells
Barnwell County						
15	Barnwell	15	6,500	4.0	Congaree	11 Wells
16	Williston	15	3,800	0.700	Santee "Tuscaloosa"	4 Wells
17	Blackville	22	2,975	0.300	"Tuscaloosa"	3 Wells
18	Hilda	22	315	0.009	"Tuscaloosa"	1 Well
19	Elko	17	315	0.010	Santee	1 Well
Burke County, GA						
20	Girard	16	210	0.020	"Tuscaloosa"	3 Wells

[a] See Figure 1.4-50.

[b] Many of these wells are gravel packed from the bottom of the well to the free water table; thus, the water-bearing formation may not be clearly defined.

[c] "Tuscaloosa" refers to undifferentiated Cretaceous formations of the Lumbee Group.

Table 1.4-25 Radioactivity and Chemical Concentrations in F-Canyon Monitoring Wells

Well		FCA 16B	FCA 16D
Plant Coor.	North	78898	78899
	East	53571	53720
Screen Interval (ft)	Top	11.0	69.0
	Bottom	15.0	89.0
Date		3/24/88	3/19/88
Water Temperature		27.4C	20.9C
pH		6.3	6.3
Alkalinity			14 Mg/L
Spec. Conductance		158uMh/Cm	116uMh/Cm
Contaminants (1-in. uG/L, 2-in. pCi/L)			
Silver(1)			2
Arsenic(1)			2
Barium(1)			32
Calcium(1)			8950
Carbon Tetrachloride(1)			1
Cadmium(1)			2
Chloroform(1)			1
Chloride			5200
Fluoride			100
Iron(1)			22
Potassium(1)			1500
Magnesium(1)			790
Manganese(1)			21
Sodium(1)			12000
Nitrate as Nitrogen(1)			11900
Lead			6
Phenols(1)			5
Sulfate(1)			5000
Tetrachloroethylene(1)			1
Total Organic Carbon(1)			1300
Total Organic Halogens(1)			234
Total Phosphates(1)			120
Trichloroethylene(1)			284
1,1,1-Trichloroethane (1)			1
Gross Alpha (2)		0.21+/-0.41	9.00+/-2.50
Nonvolatile Beta (2)		7.22+/-1.71	21.50+/-2.70
Cerium-144 (2)		0.00+/-0.26	
Cobalt-60 (2)		0.00+/-0.04	
Chromium-51 (2)		0.00+/-0.45	
Cesium-134 (2)		0.00+/-0.03	
Cesium-137 (2)		0.00+/-0.03	
Iodine-131 (2)		0.00+/-0.22	
Ruthenium-103 (2)		0.00+/-0.05	
Ruthenium-107 (2)		0.00+/-0.37	
Antimony-125 (2)		0.00+/-0.11	
Strontium-90 (2)		1.38+/-3.08	less than 0.00
Total Radium (2)			3.00+/-1.00
Tritium (2)		13.22+/-1.41	228+/-1.00
Zirconium/Niobium-95 (2)		0.00+/-0.11	

Table 1.4-26 Significant Earthquakes Within 200 Miles of SRS (Intensity > 4 or Magnitude > 3)

DATE yr/mm/dd	Latitude Deg. N	Longitude Deg. W	Depth mi.	Magnitude(s)*Intensity		Distance mi.
1776/11/05	35.2	83			IV	154
1799/04/04	32.9	80			V	96
1799/04/11	32.9	80			V	96
1799/04/11	32.9	80			V	96
1817/01/08	32.9	80			V	96
1820/09/03	33.4	79.3			IV	133
1827/05/11	36.1	81.2			IV	195
1851/08/11	35.6	82.6			V	170
1853/05/20	34	81.2			VI	56
1857/12/19	32.9	80			V	96
1860/01/19	32.9	80			V	96
1861/08/31	36.1	81.1			VI	195
1869	32.9	80			IV	96
1872/06/17	33.1	83.3			V	98
1874/02/10	35.7	82.1			V	170
1874/02/22	35.7	82.1			IV	170
1874/03/17	35.7	82.1			IV	170
1874/03/26	35.7	82.1			IV	170
1874/04/14	35.7	82.1			IV	170
1874/04/17	35.7	82.1			IV	170
1875/11/02	33.8	82.5			VI	62
1876/12/12	32.9	80			IV	96
1879/12/13	35.2	80.8			IV	141
1885/08/06	36.2	81.6			V	200
1885/10/17	33	83			IV	82
1886/08/27	32.9	80			V	96
1886/08/28	32.9	80			VI	96
1886/08/28	32.9	80			IV	96
1886/08/28	32.9	80			IV	96
1886/09/01	30.4	81.7			IV	197
1886/09/01	32.9	80		6.9F	X	96
1886/09/01	32.9	80			V	96
1886/09/02	32.9	80			V	96
1886/09/03	30.4	81.7			IV	197
1886/09/04	32.9	80			V	96
1886/09/04	30.4	81.7			IV	197
1886/09/05	30.4	81.7			IV	197
1886/09/06	32.9	80			V	96
1886/09/06	32.9	80			IV	96
1886/09/08	30.4	81.7			IV	197
1886/09/09	30.4	81.7			IV	197
1886/09/17	32.9	80			VI	96
1886/09/21	32.9	80			VI	96
1886/09/21	32.9	80			V	96
1886/09/27	32.9	80			VI	96
1886/09/27	32.9	80			V	96
1886/10/09	32.9	80			IV	96

Table 1.4-26 Significant Earthquakes Within 200 Miles of SRS (Intensity > 4 or Magnitude > 3) (Continued)

DATE yr/mm/dd	Latitude Deg. N	Longitude Deg. W	Depth mi.	Magnitude(s)*	Intensity	Distance mi.
1886/10/09	32.9	80			IV	96
1886/10/09	32.9	80			V	96
1886/10/22	32.9	80			VI	96
1886/10/22	32.9	80			VII	96
1886/10/23	32.9	80			IV	96
1886/11/05	32.9	80			VI	96
1886/11/28	32.9	80			IV	96
1887/01/04	32.9	80			V	96
1887/03/04	32.9	80			IV	96
1887/03/17	32.9	80			V	96
1887/03/18	32.9	80			IV	96
1887/03/19	32.9	80			IV	96
1887/03/24	32.9	80			IV	96
1887/03/24	32.9	80			IV	96
1887/03/28	32.9	80			IV	96
1887/04/07	32.9	80			IV	96
1887/04/08	32.9	80			IV	96
1887/04/10	32.9	80			IV	96
1887/04/14	32.9	80			IV	96
1887/04/26	32.9	80			IV	96
1887/04/28	32.9	80			V	96
1887/05/06	32.9	80			IV	96
1887/06/03	32.9	80			IV	96
1887/07/10	32.9	80			IV	96
1887/08/27	32.9	80			V	96
1887/08/27	32.9	80			IV	96
1888/01/12	32.9	80			VI	96
1888/01/16	32.9	80			IV	96
1888/02/29	32.9	80			V	96
1888/03/03	32.9	80			IV	96
1888/03/03	32.9	80			IV	96
1888/03/04	32.9	80			IV	96
1888/03/14	32.9	80			V	96
1888/03/20	32.9	80			IV	96
1888/03/25	32.9	80			IV	96
1888/04/16	32.9	80			IV	96
1888/04/16	32.9	80			IV	96
1888/05/02	32.9	80			IV	96
1889/02/10	32.9	80			IV	96
1889/07/12	32.9	80			IV	96
1891/10/13	32.9	80			IV	96
1893/06/21	32.9	80			V	96
1893/06/21	30.4	81.7			IV	197
1893/07/05	32.9	80			IV	96

Table 1.4-26 Significant Earthquakes Within 200 Miles of SRS (Intensity > 4 or Magnitude > 3) (Continued)

DATE yr/mm/dd	Latitude Deg. N	Longitude Deg. W	Depth mi.	Magnitude(s)*	Intensity	Distance mi.
1893/07/06	32.9	80			IV	96
1893/07/08	32.9	80			IV	96
1893/07/08	32.9	80			IV	96
1893/09/19	32.9	80			IV	96
1893/09/19	32.9	80			IV	96
1893/09/19	32.9	80			IV	96
1893/11/08	32.9	80			IV	96
1893/11/08	32.9	80			IV	96
1893/12/27	32.9	80			IV	96
1893/12/27	32.9	80			IV	96
1893/12/27	32.9	80			IV	96
1893/12/27	32.9	80			IV	96
1893/12/28	32.9	80			IV	96
1894/01/10	32.9	80			IV	96
1894/01/10	32.9	80			IV	96
1894/01/10	32.9	80			IV	96
1894/01/30	32.9	80			IV	96
1894/02/01	32.9	80			IV	96
1894/06/16	32.9	80			IV	96
1894/12/11	32.9	80			IV	96
1895/01/08	32.9	80			IV	96
1895/01/08	32.9	80			IV	96
1895/01/08	32.9	80			IV	96
1895/04/27	32.9	80			IV	96
1895/07/25	32.9	80			IV	96
1895/10/06	32.9	80			IV	96
1895/10/20	32.9	80			IV	96
1895/11/12	32.9	80			IV	96
1896/03/19	32.9	80			IV	96
1896/08/11	32.9	80			IV	96
1896/08/11	32.9	80			IV	96
1896/08/11	32.9	80			IV	96
1896/08/11	32.9	80			IV	96
1896/08/12	32.9	80			IV	96
1896/08/14	32.9	80			IV	96
1896/08/30	32.9	80			IV	96
1896/09/08	32.9	80			IV	96
1896/11/14	32.9	80			IV	96
1899/03/10	32.9	80			IV	96
1899/12/04	32.9	80			IV	96
1900/10/31	30.4	81.7			V	197
1901/12/02	32.9	80			IV	96
1903/01/24	32.9	80			IV	96
1903/01/24	32.1	81.1			VI	85
1903/01/31	32.9	80			IV	96
1907/04/19	32.9	80			V	96
1911/04/20	35.1	82.7			V	141

Table 1.4-26 Significant Earthquakes Within 200 Miles of SRS (Intensity > 4 or Magnitude > 3) (Continued)

DATE yr/mm/dd	Latitude Deg. N	Longitude Deg. W	Depth mi.	Magnitude(s)*	Intensity	Distance mi.
1903/02/03	32.9	80			IV	96
1904/03/05	35.7	83.5		4.0F	V	198
1912/06/12	32.9	80			VII	96
1912/06/20	32	81			V	94
1912/09/29	32.9	80			IV	96
1912/10/23	32.7	83.5			IV	115
1912/11/17	32.9	80			IV	96
1912/12/07	34.7	81.7			IV	98
1913/01/01	34.7	81.7			VII	98
1913/04/17	35.3	84.2		3.9F	V	203
1914/03/05	33.5	83.5			VI	109
1914/03/07	34.2	79.8			IV	122
1914/07/14	32.9	80			IV	96
1914/09/22	32.9	80			V	96
1915/10/29	35.8	82.7			IV	184
1915/10/29	35.8	82.7			V	184
1916/02/21	35.5	82.5			VII	162
1916/03/02	34.5	82.7			IV	104
1916/08/26	36	81			V	190
1924/01/01	34.8	82.5			IV	117
1924/10/20	35	82.6			V	131
1926/07/08	35.9	82.1			VII	182
1928/11/03	36.112	82.828	3.1	4.5N	VI	206
1928/11/20	35.8	82.3			IV	178
1928/12/23	35.3	80.3			IV	158
1929/01/03	33.9	80.3			IV	88
1929/10/28	34.3	82.4			IV	83
1930/12/10	34.3	82.4			IV	83
1930/12/26	34.5	80.3			IV	114
1931/05/06	34.3	82.4			IV	83
1933/12/19	32.9	80			IV	96
1933/12/23	32.9	80			V	96
1933/12/23	32.9	80			IV	96
1934/12/09	32.9	80			IV	96
1935/01/01	35.1	83.6			V	170
1938/03/31	35.6	83.6			IV	195
1940/12/25	35.9	82.9			IV	195
1941/05/10	35.6	82.6			IV	170
1943/12/28	32.9	80			IV	96
1944/01/28	32.9	80			IV	96
1945/01/30	32.9	80			IV	96
1945/07/26	33.75	81.376	3.1	4.4F	VI	35
1947/11/02	32.9	80			IV	96
1949/02/02	32.9	80			IV	96
1952/11/19	32.9	80			V	96
1956/01/05	34.3	82.4			IV	83
1956/01/05	34.3	82.4			IV	83

Table 1.4-26 Significant Earthquakes Within 200 Miles of SRS (Intensity > 4 or Magnitude > 3) (Continued)

DATE yr/mm/dd	Latitude Deg. N	Longitude Deg. W	Depth	Magnitude(s)* mi.		Intensity	Distance mi.
1949/06/27	32.9	80				IV	96
1951/03/04	32.9	80				IV	96
1951/12/30	32.9	80				IV	96
1956/05/19	34.3	82.4				IV	83
1956/05/27	34.3	82.4				IV	83
1956/09/07	35.5	84				4.1F V	203
1957/05/13	35.799	82.142		3.1		4.1F VI	176
1957/07/02	35.6	82.7		4.4		VI	171
1957/11/24	35	83.5				4.0F VI	160
1958/05/16	35.6	82.6				IV	170
1958/10/20	34.5	82.7				V	104
1959/08/03	33.054	80.126		0.6		4.4F VI	88
1959/10/27	34.5	80.2				VI	117
1960/01/03	35.9	82.1				IV	182
1960/03/12	33.072	80.121		5.6		4.0F V	88
1960/07/24	32.9	80				V	96
1963/04/11	34.9	82.4				IV	120
1963/05/04	32.972	80.193		3.1		3.3M IV	85
1963/10/08	33.9	82.5				3.2M	67
1964/01/20	35.9	82.3				IV	184
1964/03/07	33.724	82.391		3.1		3.3M	54
1964/03/13	33.193	83.309		0.6	4.4P	3.9M V	98
1964/04/20	33.842	81.096		1.9		3.5M V	50
1965/09/09	34.7	81.2				3.9M	101
1965/09/10	34.7	81.2				3.0M	101
1965/11/08	33.2	83.2				3.3M	91
1967/10/23	32.802	80.221		11.8	3.8P	3.4N V	86
1968/07/12	32.8	79.7				IV	115
1968/09/22	34.111	81.484		0.6	3.7P	3.5M IV	58
1969/05/09	33.95	82.58				3.3N	72
1969/05/18	33.95	82.58			3.5N		72
1969/12/13	35.036	82.84	6	3.7		3.7M IV	141
1970/09/10	36.02	81.421		0.6		3.1N V	189
1971/05/19	33.359	80.655		0.6	3.4P	3.7N V	56
1971/07/13	34.76	82.98			3.8N	VI	128
1971/07/13	34.7	82.9			3.0M		122
1971/07/31	33.341	80.631		2.5	3.8N	III	56
1971/08/11	33.4	80.7			3.5N		54
1971/10/09	35.795	83.371	5	3.4P	3.7N	V	200
1971/10/22	36	83			3.3M		203
1972/02/03	33.306	80.582		1.2	4.5P	4.5N V	59
1972/02/07	33.46	80.58			3.2M	III	61
1972/02/07	33.46	80.58			3.2M	III	61
1972/08/14	33.2	81.4				3.0L III	14
1973/12/19	32.974	80.274		3.7		3.0M III	80
1974/10/28	33.79	81.92				3.0L IV	40
1974/11/05	33.73	82.22				3.7L II	46

Table 1.4-26 Significant Earthquakes Within 200 Miles of SRS (Intensity > 4 or Magnitude > 3) (Continued)

DATE	Latitude	Longitude	Depth	Magnitude(s)*		Intensity	Distance
yr/mm/dd	Deg. N	Deg. W	mi.				mi.
1974/08/02	33.908	82.534	2.5	4.3P	4.1N	V	69
1974/10/08	33.9	82.4	3.1P			III	62
1974/11/22	32.926	80.159	3.7	4.7P	4.3N	VI	88
1974/12/03	33.95	82.5			3.6L	IV	69
1975/04/01	33.2	83.2			3.9M		91
1975/04/28	33	80.22	6.2		3.0N	IV	83
1975/10/18	34.9	83				IV	136
1975/11/25	34.943	82.896	6.2		3.2N	IV	136
1976/12/27	32.06	82.504	8.7		3.7N	V	98
1977/01/18	33.058	80.173	0.6		3.0N	VI	85
1977/03/30	32.95	80.18	5		2.9D	V	85
1977/08/04	33.369	80.699	5.6		3.1N		54
1977/08/25	33.369	80.698	2.1	3.1N	2.8D	IV	54
1977/12/15	32.944	80.167	4.7	3.0N	2.6D	V	86
1978/09/07	33.063	80.21	6.2	2.7N	2.6D	IV	83
1979/08/13	35.2	84.353	13.8	3.7N	3.7D	V	203
1979/08/13	33.9	82.54	14.3		4.1D		69
1979/09/06	35.298	83.241	6.2		3.2D		166
1979/09/12	35.579	83.941	16.8	3.2N	3.1D	V	206
1979/12/07	33.008	80.163	3.1	2.8N	2.8D	IV	85
1980/06/10	35.458	82.815	0.4	3.0N	2.5D		165
1980/09/01	32.978	80.186	4.4	2.7N	2.9D	IV	85
1981/03/04	35.81	79.737	0.6	2.8N	2.2D	IV	203
1981/04/09	35.514	82.051	0.1	3.0N	3.3D	V	157
1981/05/05	35.327	82.422	6.3	3.5N	3.1D	V	149
1982/01/28	32.982	81.393	4.4	3.4N	2.4D		24
1982/03/01	32.936	80.138	4.2	3.0N	2.8D	IV	88
1982/07/16	34.32	81.55	1.2		3.1D	III	72
1982/10/31	32.671	84.873		2.9N	3.0D	V	192
1982/10/31	32.644	84.894		3.1N	3.1D		194
1982/12/11	32.853	83.532			3.0D		114
1983/01/26	32.853	83.558		3.5N	3.5D		115
1983/03/25	35.333	82.46	7.1	3.2N	3.3D	V	149
1983/11/06	32.937	80.159	6		3.3D	V	88
1985/12/22	35.701	83.72	8.3		3.3D		205
1986/03/13	33.229	83.226	3.1		2.4D	IV	93
1986/09/17	32.931	80.159	4.2		2.6D	IV	88
1987/03/16	34.56	80.948	1.9		3.1D		96
1988/01/09	35.279	84.199	7.6		3.2D	IV	200
1988/01/23	32.935	80.157	4.6		3.3D	V	88
1988/02/18	35.346	83.837	1.5	3.5N	3.3D	IV	190
1989/06/02	32.934	80.166	3.6		2.0D	IV	86
1990/11/13	32.947	80.136	2.1	3.5N	3.2D	V	88
1991/06/02	32.98	80.214	3.1		1.7D	V	83

Table 1.4-26 Significant Earthquakes Within 200 Miles of SRS (Intensity > 4 or Magnitude > 3) (Continued)

DATE yr/mm/dd	Latitude Deg. N	Longitude Deg. W	Depth mi.	Magnitude(s)*		Intensity	Distance mi.
1992/01/03	33.981	82.421	2.1		3.4D	V	67
1992/08/21	32.985	80.163	4	4.1N	4.1D	VI	86
1993/01/01	35.878	82.086	1.4		3.0D		181
1993/08/08	33.597	81.591	5.3	3.2N	2.9D	V	22

Source: SEUSSN Bulletins, Va. Tech Publications, Complete through 1/95)
* MAGNITUDE TYPE CODES (FOLLOWS MAGNITUDE VALUE)
" D - Md from duration or coda length"
" F - mb from felt area or attenuation data"
" L - ML (Richter, 1958)"
" M - mb determined from modified instruments/formuli"
" N - mb from Lg wave data (Nuttli, 1973)"
" P - mb from P wave data (Gutenberg and Richter (1956)"

Table 1.4-27 Modified Mercalli Intensity Scale of 1931

Level	Definition
I.	Not felt except by a very few under especially favorable circumstances (I Rossi-Forel Scale).
II.	Felt by only a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing (I and II, Rossi-Forel Scale).
III.	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing truck. Duration estimated (III Rossi-Forel Scale).
IV.	During the day felt indoors by many; outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls made creaking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably (IV to V Rossi-Forel Scale).
V.	Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken, a few instances of cracked plaster, unstable objects overturned. Disturbance of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop (V to VI Rossi-Forel Scale).
VI.	Felt by all; many are frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight (VI to VII Rossi-Forel Scale).
VII.	Everybody runs outdoors. Damage negligible in buildings of good structures; considerable in poorly built or badly designed structures; some chimneys are broken. Noticed by persons driving motor cars (VIII Rossi-Forel Scale).
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Disturbs persons driving motor cars (VIII+ to IX Rossi-Forel Scale).
IX.	Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken (IX+ Rossi-Forel Scale).
X	Some well built wooden structures destroyed; most masonry and frame structures destroyed with foundations, ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks (X Rossi-Forel Scale).
XI.	Few, if any, masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipe lines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII.	Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into the air.

Source: Earthquake Intensity and Ground Motion, pp 7-8, by Frank Neumann, University of Washington Press, Seattle, WA (1954).

Table 1.4-28 Historic Earthquakes Recorded Within 50 Miles of SRS (through December 1999)

Date	Latitude	Longitude	Depth (km)	Magnitude
05/06/1897	33.3000	-81.2000		ɜlt
05/09/1897	33.9000	-81.6000		ɜlt
05/24/1897	33.3000	-81.2000		ɜlt
05/27/1897	33.3000	-81.2000		ɜlt
8/14/1972	33.2000	-81.4000		20
10/28/1974	33.7900	-81.9200		00
11/5/1974	33.7300	-82.2200		70
9/15/1976	33.1440	-81.4130	50	40
6/5/977	33.0520	-81.4120	50	70
2/21/1981	33.5933	-81.1476	61	00
1/28/1982	32.9800	-81.3900	00	40
6/9/1985	33.2225	-81.6842	81	70
2/17/1988	33.5113	-81.6966	1.73	50
8/5/1988	33.1873	-81.6290	26	20
7/13/1992	33.4798	-81.1920	60	90
10/2/1992	33.4990	-81.2020	00	40
12/12/1992	33.2798	-81.8328	1.80	20
6/29/1993	33.4652	-81.2210	90	20
8/8/1993	33.5893	-81.5852	).18	20
8/8/1993	33.5885	-81.5812	22	60
9/18/1996	33.6915	-82.1248	38	80
5/17/1997	33.2118	-81.6765	44	50

Source: SEUSSN Bulletins, Virginia Tech Publication; complete through 12/99)

Table 1.4-29 Blume (1982) Estimated Site Motions for Postulated Maximum Events

Location	Epicentral Intensity (MMI)	R (km)	Site Intensity (MMI)	Site PGA (%g)
Local	VII	0-10	VII	0.10
Fall Line	VIII	45	VI	0.06
Bowman	X	95	VII	0.10
Middleton	X	145	VI-VII	0.075

Source: URS/John A. Blume and Associates, Engineers. Update of Seismic Criteria for the Savannah River Plant, Vol. 1 of 2, *Geotechnical*. USR/JAB 8144, San Francisco, CA. Prepared for E.I. du Pont de Nemours and Company, as DPE-3699, Savannah River Plant, Aiken, SC, 1982.

Table 1.4-30 Geomatrix Estimated Site Motions for Postulated Maximum Events

Location	Magnitude (Mw)	R (km)	Site PGA[a] (%g median, horizontal)
Local	5.0	<25	0.18
Bowman	6.0	80	0.06
Charleston	7.5	110	0.11

[a] 25 Hz

Source: Geomatrix Consultants, Inc., Ground Motion Following Selection of SRS Design Basis Earthquake and Associated Deterministic Approach, WSRC Subcontract AA2021S, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC, 1991.

Table 1.4-31 Modified Herrmann (1986) Crustal Model

H (km)	Vs (km/s)	density (g/cc)
5.0	3.75	2.7
9.5	3.76	2.7
14	4.01	2.8
inf	4.56	3.3

Source: Herrmann, R.B., "Surface-Wave Studies of Some South Carolina Earthquakes," Bulletin of Seismological Society of America, Vol. 76, No. 1, 1986.

Table 1.5-1 Annual Maximum Instantaneous Discharges of the Savannah River at Augusta, Georgia, for Water Years 1921 Through 1999 (USGS Flow Data, 1922-1999)

Year	Discharge (cfs)	Year	Discharge (cfs)
		1961	34,800
1921	129,000		
1922	92,000	1962	32,500
1923	59,700	1963	31,300
1924	56,400		
		1964	87,100
1925	150,000	1965	34,600
		1966	39,300
1926	55,300		
1927	39,000	1967	35,900
1928	226,000	1968	35,900
1929	191,000		
		1969	45,600
1930	350,000	1970	25,200
		1971	63,900
1931	26,100		
1932	93,800	1972	33,700
1933	48,200	1973	40,200
1934	73,200		
		1974	32,900
1935	63,700	1975	45,600
		1976	33,300
1936	258,000		
1937	90,200	1977	34,200
1938	65,300	1978	43,100
1939	82,400		
		1979	37,300
1940	252,000	1980	47,200
		1981	17,300
1941	52,200		
1942	115,000	1982	30,700
1943	132,000	1983	66,100
1944	141,000		
		1984	34,000
1945	62,100	1985	25,700
		1986	21,000
1946	109,000		
1947	90,200	1987	29,200
1948	76,100	1988	13,600
1949	172,000		
		1989	20,200
1950	32,500	1990	35,300
		1991	59,200
1951	41,400		
1952	39,300	1992	22,100
1953	35,200	1993	45,100
1954	25,500	1994	40,700
1955	23,900	1995	33,600
1956	18,600	1996	34,400
1957	18,000	1997	26,300
1958	66,300	1998	43,000
		1999	19,000
1959	28,500		
1960	34,900		

Source: Water Resources Data for South Carolina, USGS Annual Data Reports for Water Years 1967-1999.

Note: Station 02197000; drainage area 7,508 square miles (including Butler Creek drainage area). The maximum instantaneous discharge since gaging by the USGS began in 1882 is 350,000 cfs on October 3, 1929. The maximum historical flow is 360,000 cfs in 1796.

Table 1.5-2 Annual Maximum Instantaneous Discharges of Upper Three Runs Creek for Water Years 1967 Through 1999

Water Year	Discharge at High-way 278[a] (cfs)	Discharge at SRS Road C[b] (cfs)	Discharge at SRS Road A[c] (cfs)
1967	320	-[d]	
1968	237	-	-
1969	301	-	-
1970	303	-	-
1971	420	-	-
1972	382	-	-
1973	472	-	-
1974	260	-	-
1975	341	586	-
1976	429	732	1230
1977	304	540	717
1978	344	646	Not gauged
1979	341	680	996
1980	420	880	951
1981	308	582	620
1982	364	696	793
1983	472	880	1010
1984	466	840	861
1985	400	962	893
1986	360	802	780
1987	370	819	869
1988	278	460	428
1989	304	613	592
1990	202	869	572
1991	820	2040	2580
1992	742	1010	926
1993	421	1280	1100
1994	302	826	667
1995	412	1240	1010
1996	240	691	638
1997	242	840	709
1998	596	-	1200
1999	252	-	717

Source: Water Resources Data for South Carolina, USGS Annual Data Reports for Water Years 1967-1999.

[a]Station 02197300; drainage area 87 square miles.

[b]Station 02197310; drainage area 176 square miles.

[c]Station 02197315; drainage area 203 square miles.

[d]Indicates discharge point that was not monitored.

Table 1.5-3 Annual Maximum Instantaneous Discharges of Tims Branch for Water Years 1974 Through 1995, Station 02197309.

Water Year	Discharge at Road C (ft^3/s)[a]	Gage Height (feet msl)
1974	N/A	N/A
1975	N/A	N/A
1976	61	6.17
1977	N/A	N/A
1978	N/A	N/A
1979	N/A	N/A
1980	N/A	N/A
1981	N/A	N/A
1982	N/A	N/A
1983	NM	NM
1984	N/A	N/A
1985	41	144.76
1986	42	144.88
1987	63	145.16
1988	38	144.28
1989	38	144.26
1990	91	145.27
1991	129	145.69
1992	61	144.77
1993	107	145.47
1994	77	145.07
1995	107	145.47

Source: Water Resources Data for South Carolina, U.S. Geological Survey Annual Data Reports for Water Years 1974-1995.

[a] Drainage area 17.5 square miles.

N/A = data not available at time of publication.

NM = discharge point not monitored.

Table 1.5-3.1 Annual Maximum Daily Discharges of Fourmile Branch for Water Years 1980 Through 1999

Water Year	Discgarge at SRS Road C[a] (cfs)	Discharge at SRS Road A-7[b] (cfs)	Discharge at SRS Road A-12.2[c] (cfs)
1980	288	204	903
1981	123	-[d]	585
1982	262	177	745
1983	136	163	678
1984	267	189	692
1985	149	121	621
1986	211	181	415
1987	161	163	436
1988	89	74	102
1989	-	157	392
1990	-	1230	1060
1991	-	-	-
1992	135	465	493
1993	126	500	477
1994	90	176	-
1995	179	610	595
1996	89	156	200
1997	-	254	299
1998	-	773	837
1999	-	194	264

Sources: USGS Flow Data, 1980-1999.

[a] Station 02197340; drainage area 7.53 square miles.

[b] Station 02197342; drainage area 12.5 square miles.

[c] Station 02197344; drainage area 22.0 square miles.

[d] Indicates discharge unknown.

Table 1.5-4 Probable Maximum Precipitation for F Area

Time (hr)	Incremental Rainfall (in.)	Total Rainfall (in.)
0	–	0
1	2.2	2.2
2	2.8	5
3	3.1	8.1
4	15.1	23.2
5	4.9	28.1
6	2.7	30.8

Source: U. S. Dept. of Commerce, Probable Maximum Precipitation Estimates, United States East of the 105th Meridian, Hydrometeorological Report No. 51, Washington, DC, (1978).

Table 1.5-5 Cumulative Probable Maximum Precipitation for a 10-Square-Mile Area Surrounding the H, S, Z, and M Areas

Time (hr)	Incremental Rainfall (in.)	Total Rainfall (in.)
0	–	0
1	2.2	2.2
2	2.8	5
3	3.1	8.1
4	15.1	23.2
5	4.9	28.1
6	2.7	30.8

Source: U. S. Dept. of Commerce, Probable Maximum Precipitation Estimates, United States East of the 105th Meridian, Hydrometeorological Report No. 51, Washington, DC, (1978).

Table 1.5-6 Hour Storm Rainfall Distributions as a Function of Annual Probability of Exceedance

Annual Probability of Exceedance	2E-02	1E-02	2E-03	1E-03	2E-04	1E-04	2E-05	1E-05
				Rainfall	(inches)			
Hour 1	0.035	0.039	0.052	0.058	0.074	0.082	0.103	0.114
Hour 2	0.062	0.070	0.093	0.104	0.132	0.147	0.185	0.204
Hour 3	0.083	0.094	0.124	0.138	0.176	0.196	0.247	0.272
Hour 4	0.242	0.273	0.361	0.403	0.515	0.571	0.721	0.795
Hour 5	0.393	0.445	0.587	0.656	0.838	0.929	1.174	1.294
Hour 6	0.524	0.593	0.783	0.874	1.117	1.239	1.566	1.725
Hour 7	0.725	0.819	1.082	1.208	1.544	1.712	2.163	2.384
Hour 8	1.863	2.106	2.781	3.105	3.969	4.401	5.562	6.129
Hour 9	1.139	1.287	1.700	1.898	2.426	2.690	3.399	3.746
Hour 10	0.628	0.710	0.937	1.047	1.338	1.483	1.875	2.066
Hour 11	0.414	0.468	0.618	0.690	0.882	0.978	1.236	1.362
Hour 12	0.338	0.382	0.505	0.564	0.720	0.799	1.009	1.112
Hour 13	0.117	0.133	0.175	0.196	0.250	0.277	0.350	0.386
Hour 14	0.076	0.086	0.113	0.127	0.162	0.179	0.227	0.250
Hour 15	0.048	0.055	0.072	0.081	0.103	0.114	0.144	0.159
Hour 16	0.035	0.039	0.052	0.058	0.074	0.082	0.103	0.114
Hour 17	0.035	0.039	0.052	0.058	0.074	0.082	0.103	0.114
Hour 18	0.028	0.031	0.041	0.046	0.059	0.065	0.082	0.091
Hour 19	0.028	0.031	0.041	0.046	0.059	0.065	0.082	0.091
Hour 20	0.021	0.023	0.031	0.035	0.044	0.049	0.062	0.068
Hour 21	0.021	0.023	0.031	0.035	0.044	0.049	0.062	0.068
Hour 22	0.021	0.023	0.031	0.035	0.044	0.049	0.062	0.068
Hour 23	0.014	0.016	0.021	0.023	0.029	0.033	0.041	0.045
Hour 24	0.014	0.016	0.021	0.023	0.029	0.033	0.041	0.045
Accumulation	6.900	7.800	10.300	11.500	14.700	16.300	20.600	22.700

TABLE 1.5-7 DESIGN BASIS FLOOD

PERFORMANCE CATEGORY	1	2	3	4
ANNUAL EXCEEDANCE PROBABILITY	**2E-03**	**5E-04**	**1E-04**	**1E-05**
TIMS BRANCH BASIN (A-AREA)				
Flood (cfs)	2399	3568	5154	8233
Flood Elevation (feet msl)	247.1	247.4	247.6	248.2
FOURMILE BRANCH BASIN (C-AREA)				
Flood (cfs)	2072	3040	4413	7102
Flood Elevation (feet msl)	189.3	190.3	191.5	193.6
FOURMILE BRANCH BASIN (E-AREA)				
Flood (cfs)	1440	2155	3189	5246
Flood Elevation (feet msl)	202.0	203.0	204.4	207.9
UPPER THREE RUNS CREEK BASIN (F-AREA)				
Flood (cfs)	11966	17396	25022	39576
Flood Elevation (feet msl)	144.4	146.6	148.6	150.9
FOURMILE BRANCH BASIN (F-AREA)				
Flood (cfs)	1683	2507	3700	6058
Flood Elevation (feet msl)	193.2	194.2	195.5	197.7
FOURMILE BRANCH BASIN (H-AREA)				
Flood (cfs)	1404	2103	3113	5126
Flood Elevation (feet msl)	236.1	236.8	237.1	239.2
PEN BRANCH BASIN (K-AREA)				
Flood (cfs)	4430	6224	8638	13185
Flood Elevation (feet msl)	176.3	177.7	179.7	182.5
INDIAN GRAVE BRANCH BASIN (K-AREA)				
Flood (cfs)	781	1087	1524	2326
Flood Elevation (feet msl)	180.5	181.1	181.8	182.9

TABLE 1.5-7 DESIGN BASIS FLOOD (CON'T)

PERFORMANCE CATEGORY	1	2	3	4
ANNUAL EXCEEDANCE PROBABILITY	2E-03	5E-04	1E-04	1E-05
UPPER THREE RUNS CREEK BASIN (S-AREA)				
Flood (cfs)	11966	17396	25022	39576
Flood Elevation (feet msl)	151.8	153.4	155.3	158.2
UPPER THREE RUNS CREEK BASIN (Z- AND Y-AREAS)				
Flood (cfs)	11966	17396	25022	39576
Flood Elevation (feet msl)	158.5	160.4	161.7	163.8

TABLE 1.5-8 DESIGN BASIS FLOOD FOR PROPOSED MFFF FACILITY

PERFORMANCE CATEGORY	1	2	3	4
ANNUAL EXCEEDANCE PROBABILITY	**2E-03**	**5E-04**	**1E-04**	**1E-05**
UPPER THREE RUNS CREEK BASIN				
Flood (cfs)	11966	17532	25022	39576
Flood Elevation (feet msl)	146.4	148.4	150.5	153.1
FOURMILE BRANCH BASIN				
Flood (cfs)	1440	2155	3189	5246
Flood Elevation (feet msl)	202.0	203.0	204.4	207.9

1.11 - FIGURES

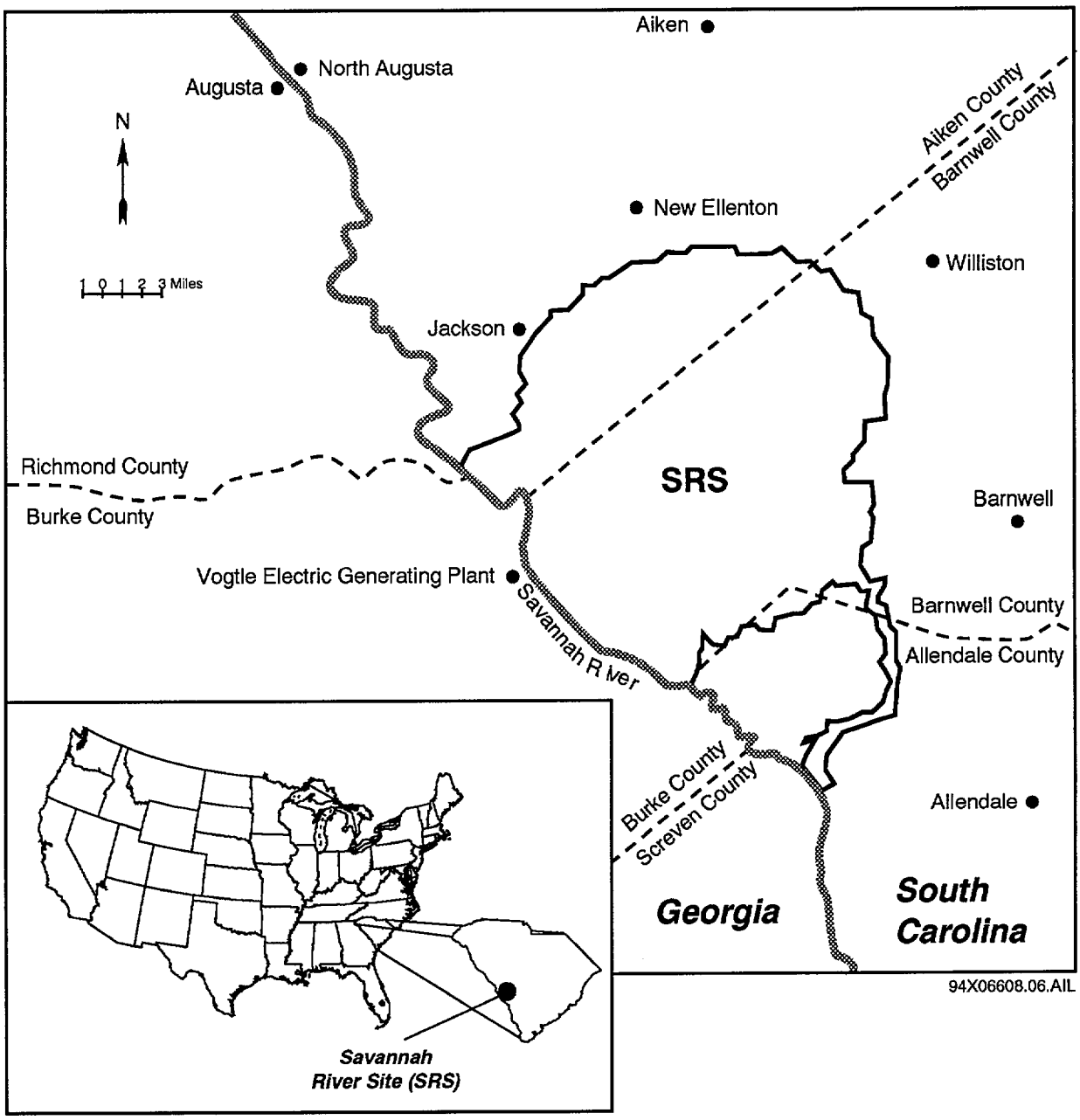


Figure 1.3-1 Savannah River Site Map (Sheet 1 of 2)

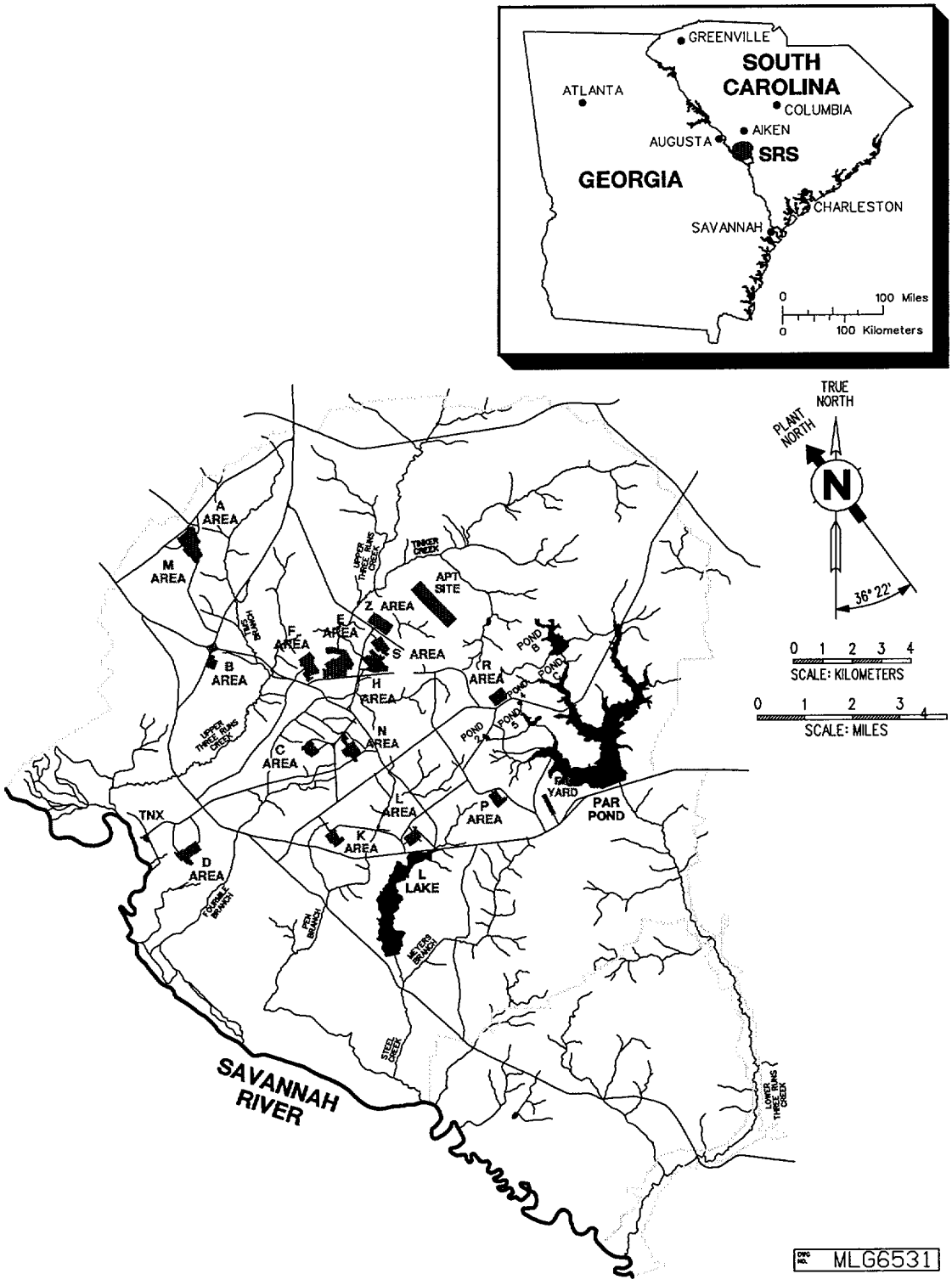


Figure 1.3-1 Savannah River Site Map (Sheet 2 of 2)

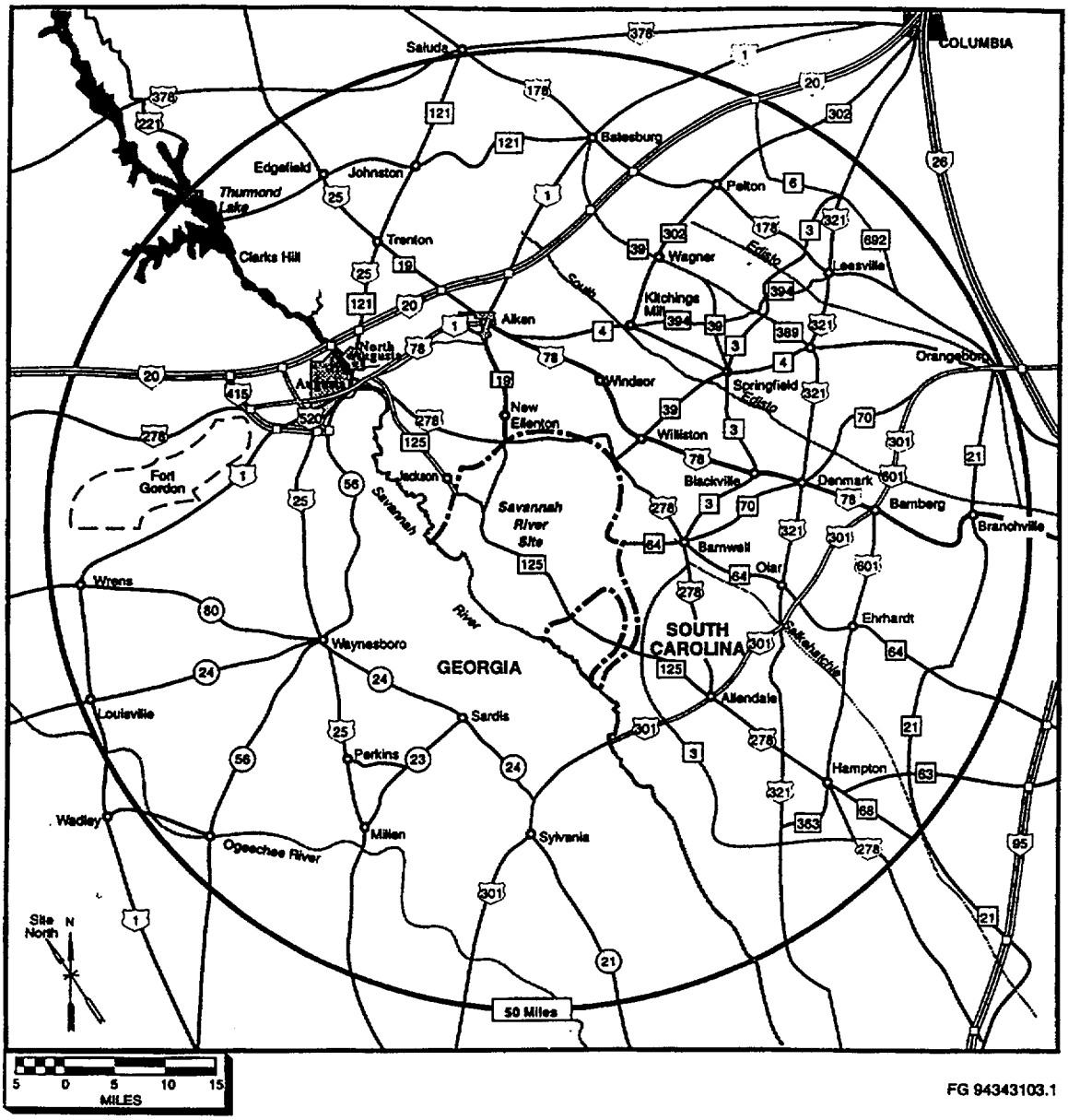


Figure 1.3-2 50-Mile Vicinity of SRS

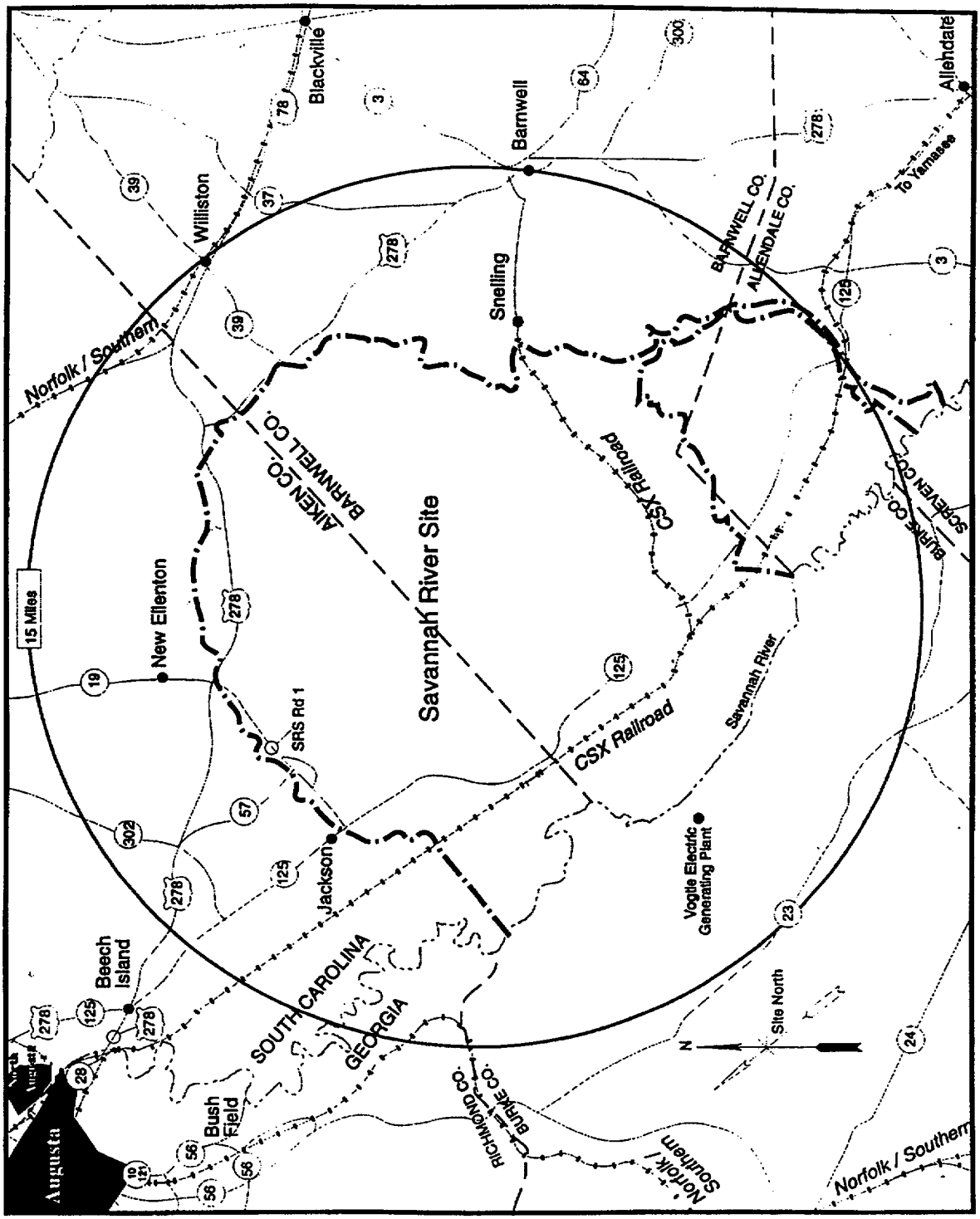


Figure 1.3-3 Map Showing 15-Mile Radius from SRS Center

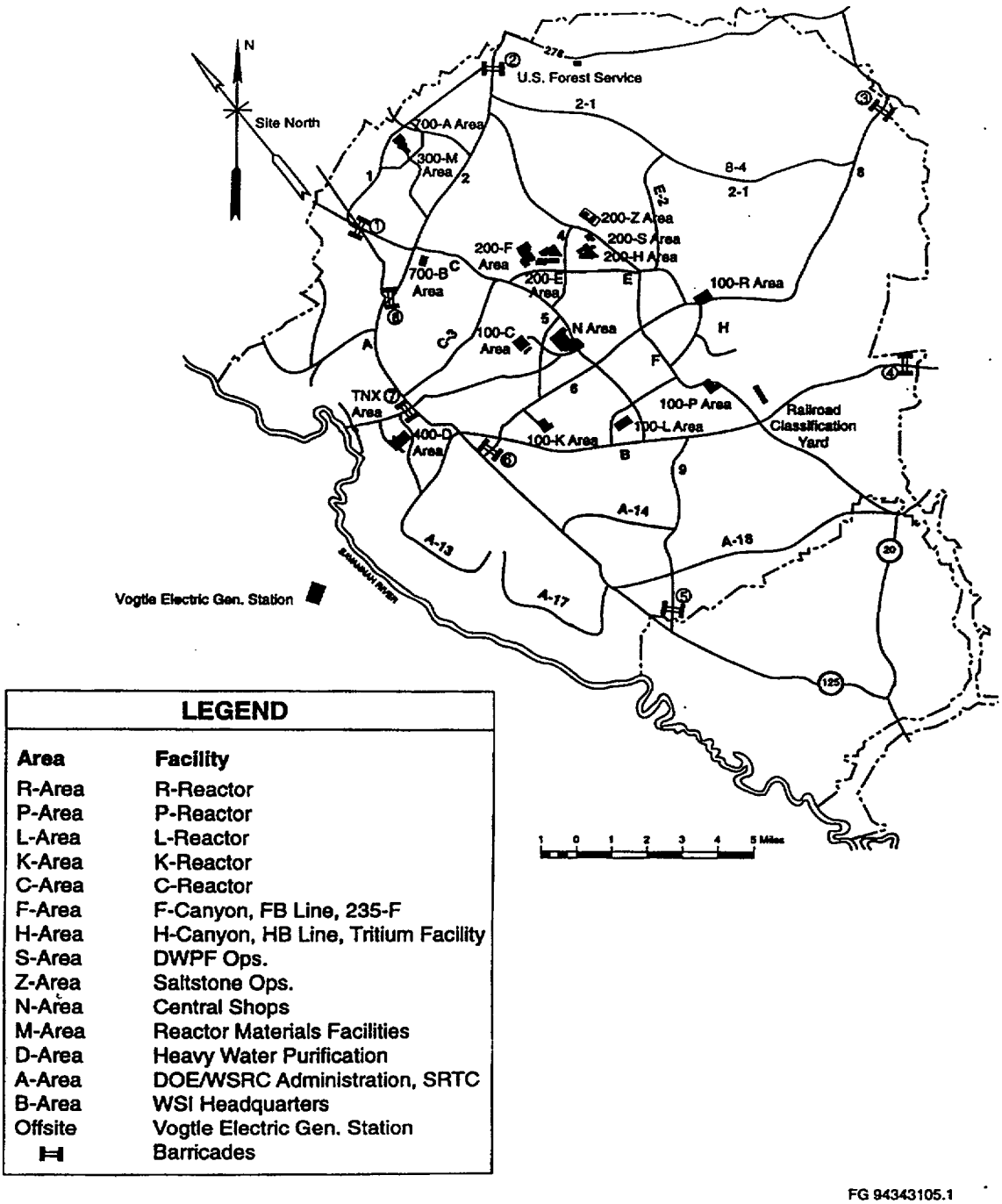


Figure 1.3-4 SRS Map Showing Key Facilities

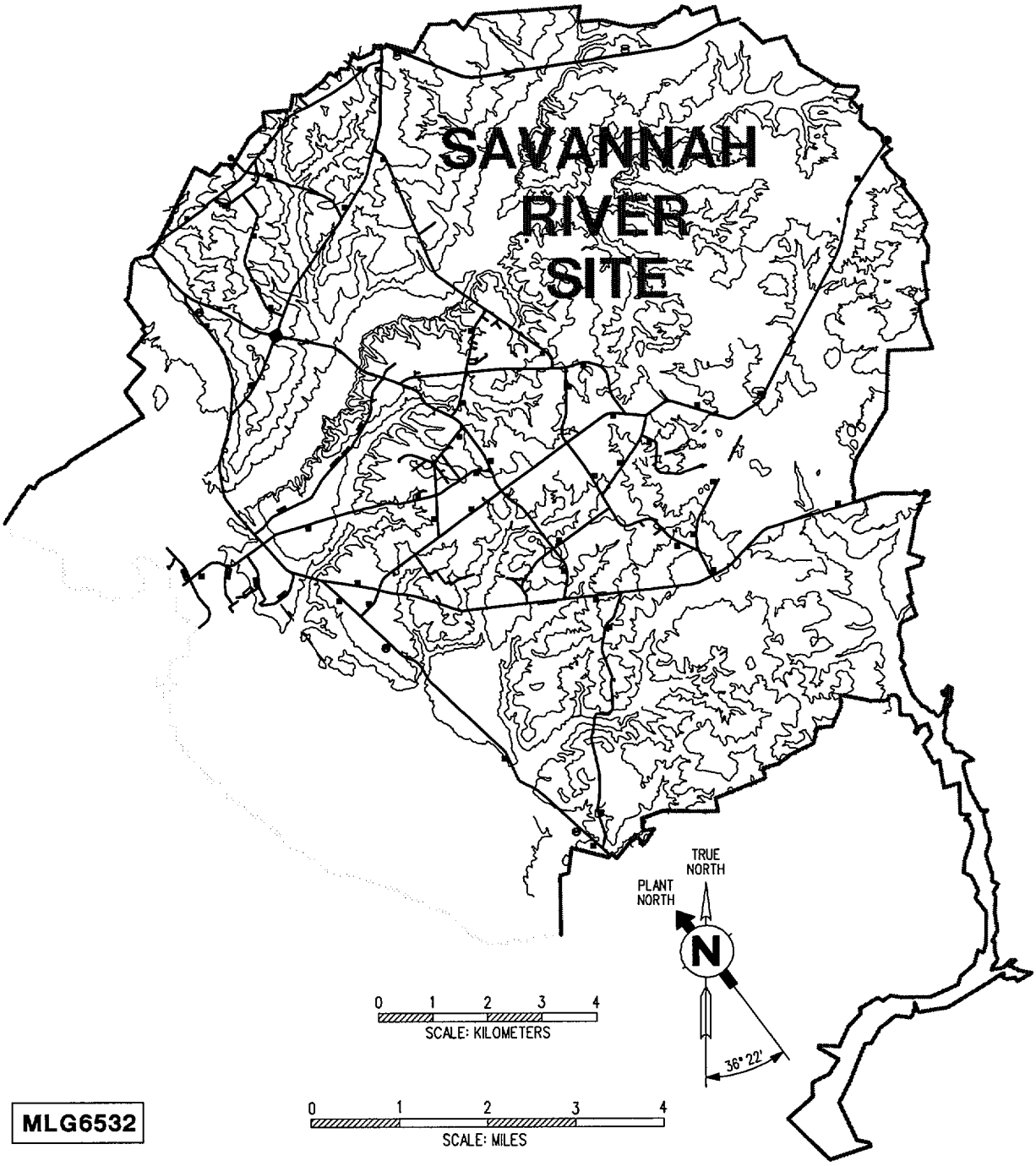
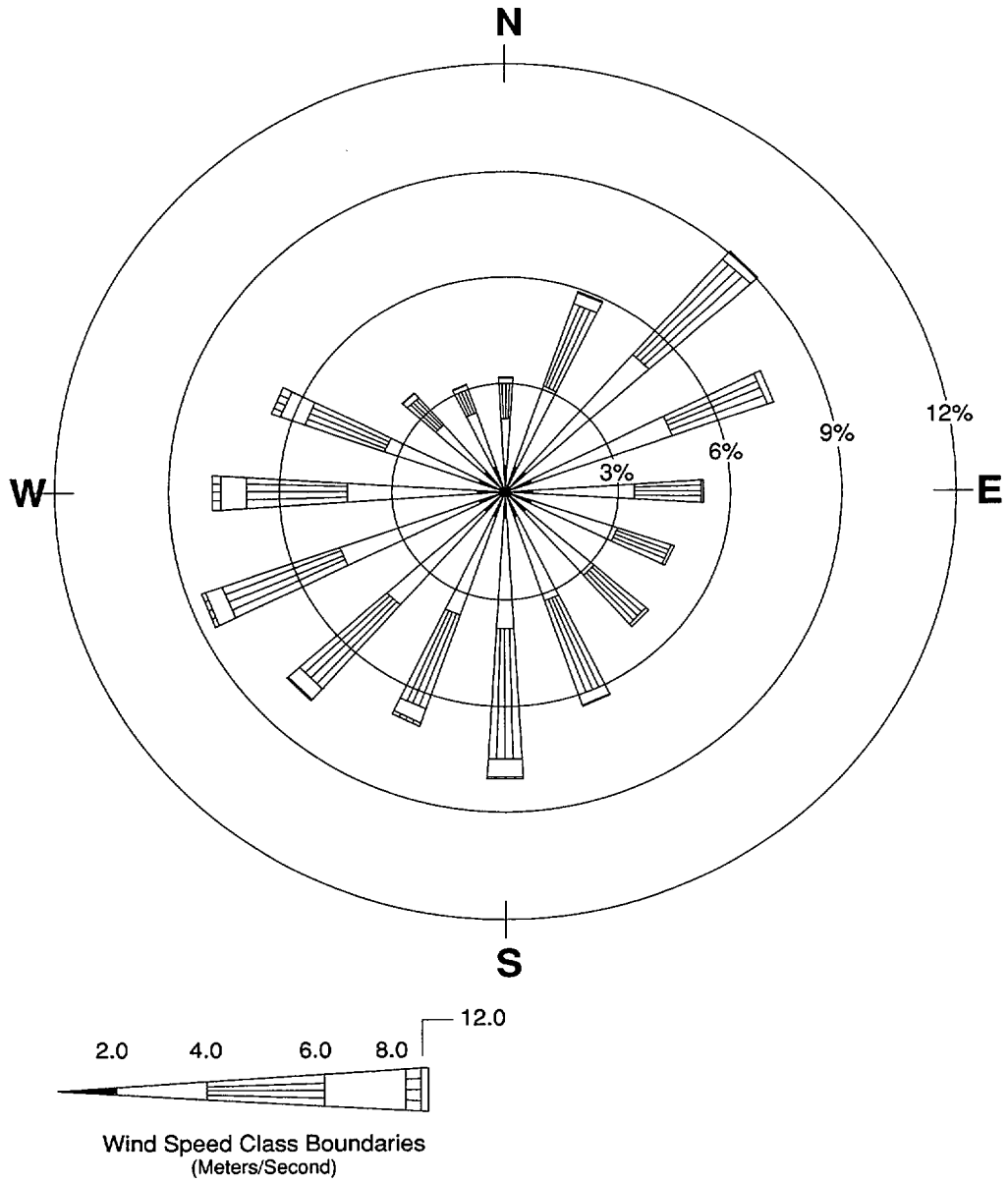


Figure 1.3-5 Topographic Map of SRS



Wind Rose for SRS, 1987-1991. The wind rose plot shows the percent of occurrence frequencies of wind direction and speed at SRS. The plot is based on hourly averaged wind data from the SRS meteorological tower network for the 5-year period 1987-1991. Measurements were taken 200 feet above the ground. Directions indicated are from which the wind blows.

Source: Environmental Report for 1996, WSRC-TR-97-0171

Figure 1.3-6 Wind Rose Diagram for SRS

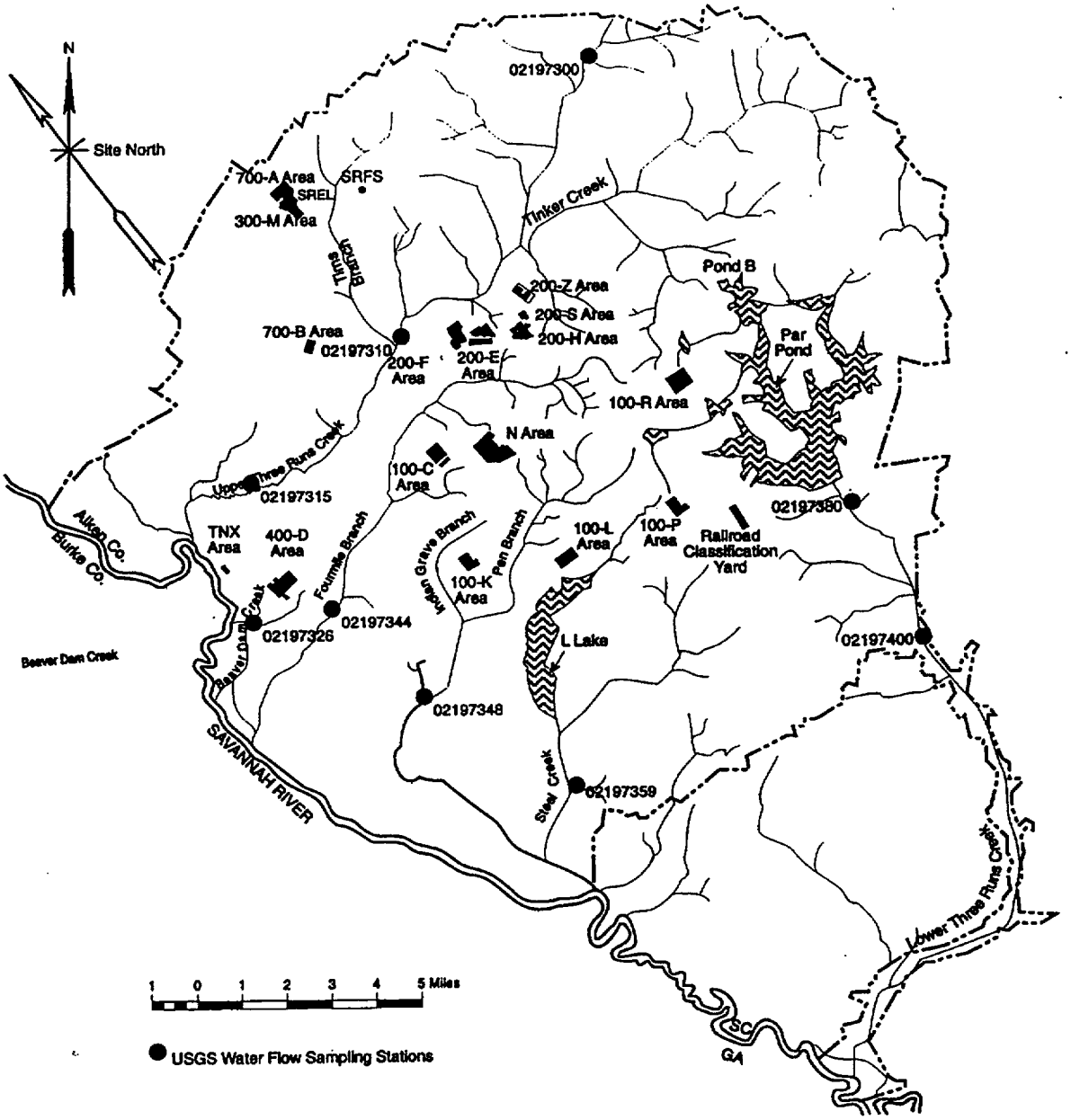


Figure 1.3-7 Surface Drainage Map of SRS

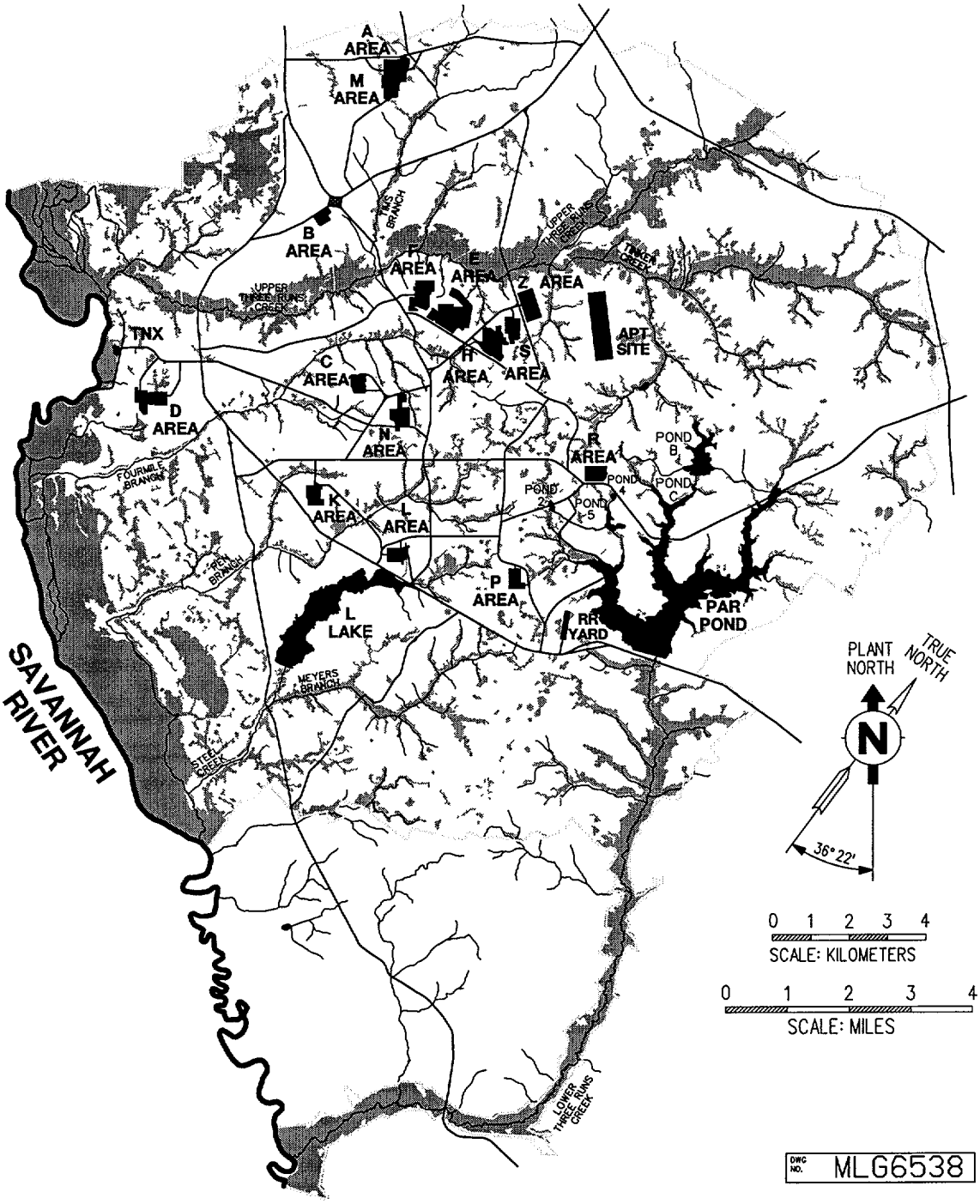


Figure 1.3-8 Major Rivers and Adjacent Wetland Areas

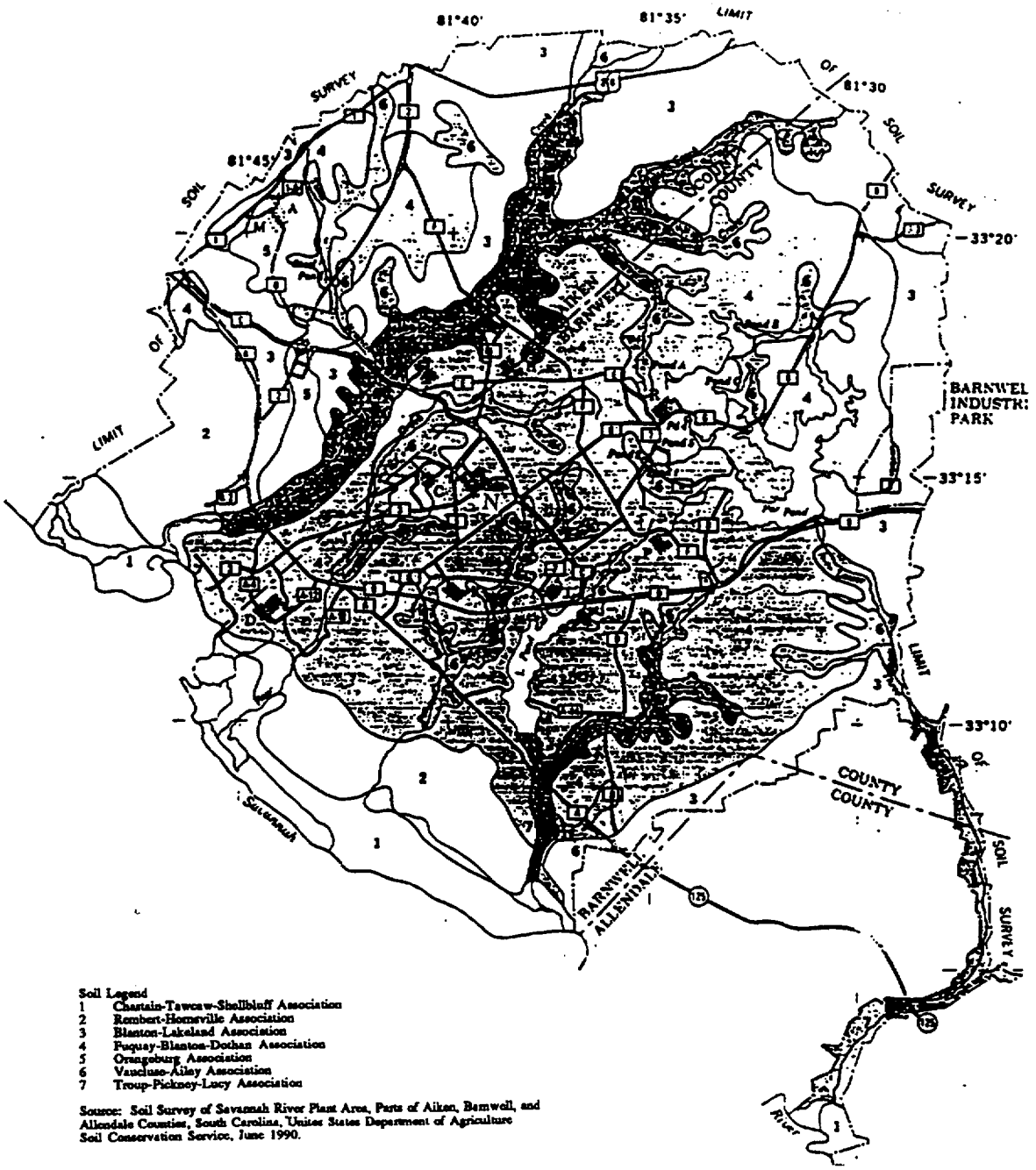
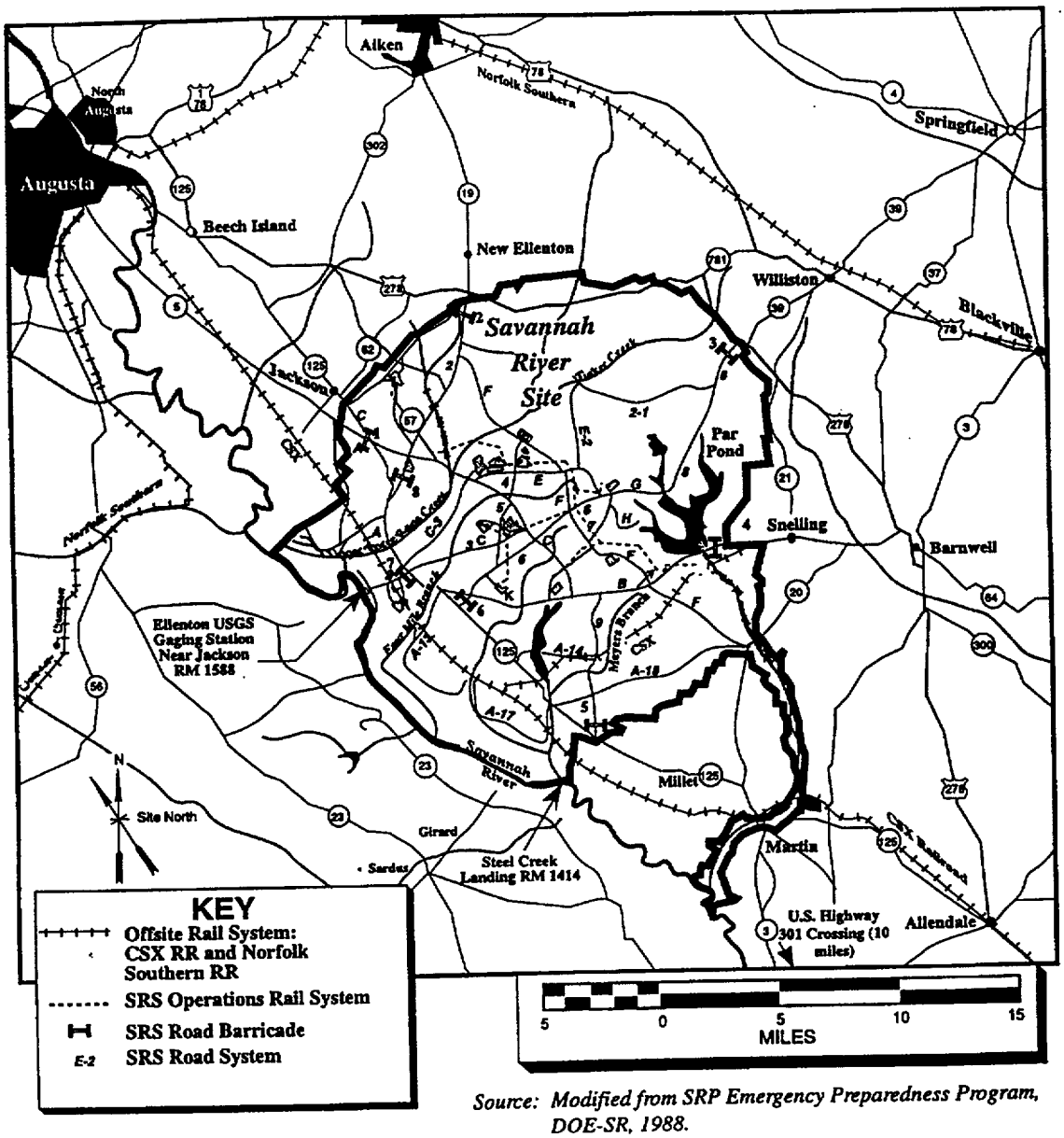


Figure 1.3-9 Soils Map of SRS



Source: Modified from SRP Emergency Preparedness Program, DOE-SR, 1988.

FG 94343119

Figure 1.3-10 SRS Road System

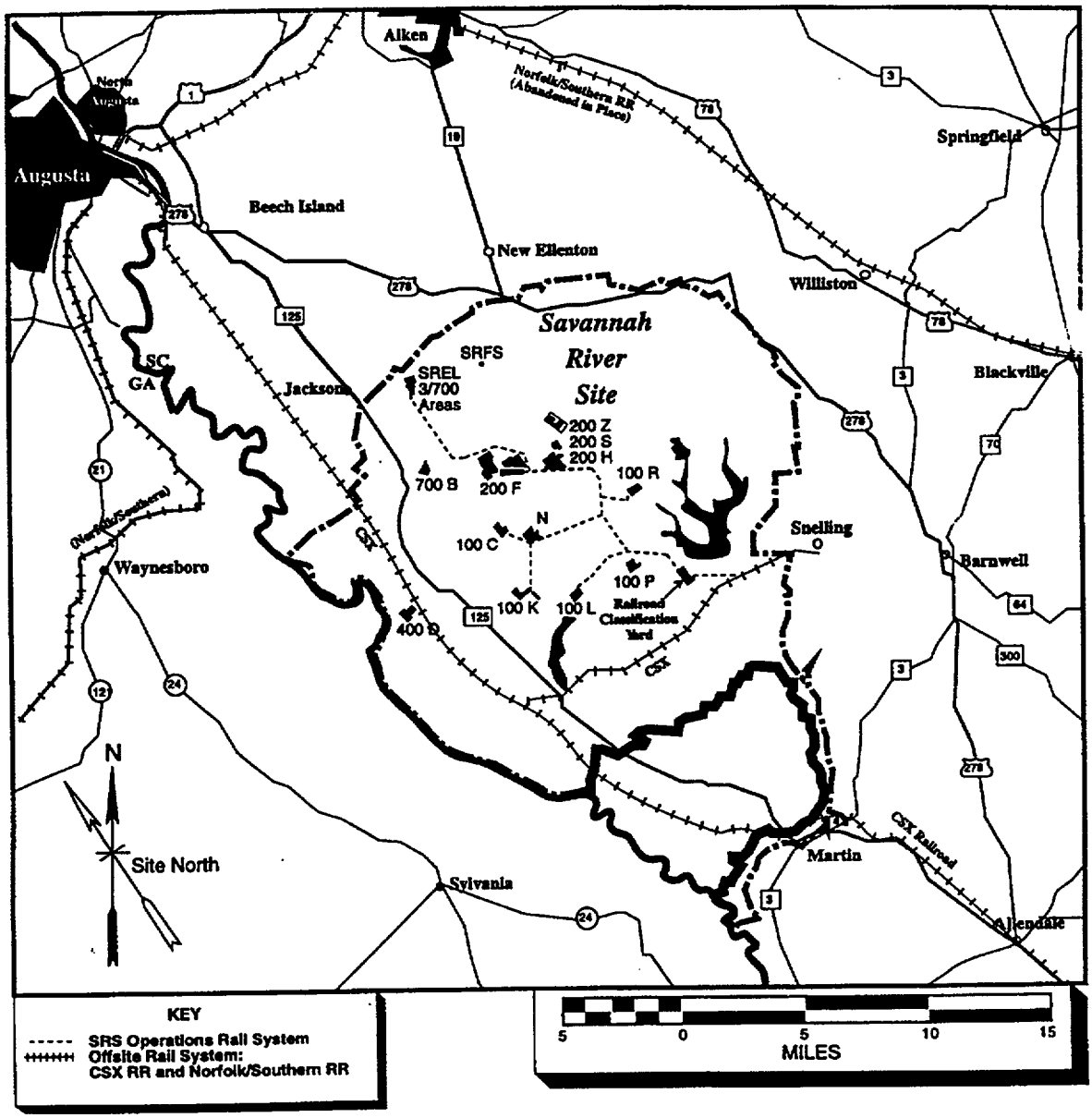
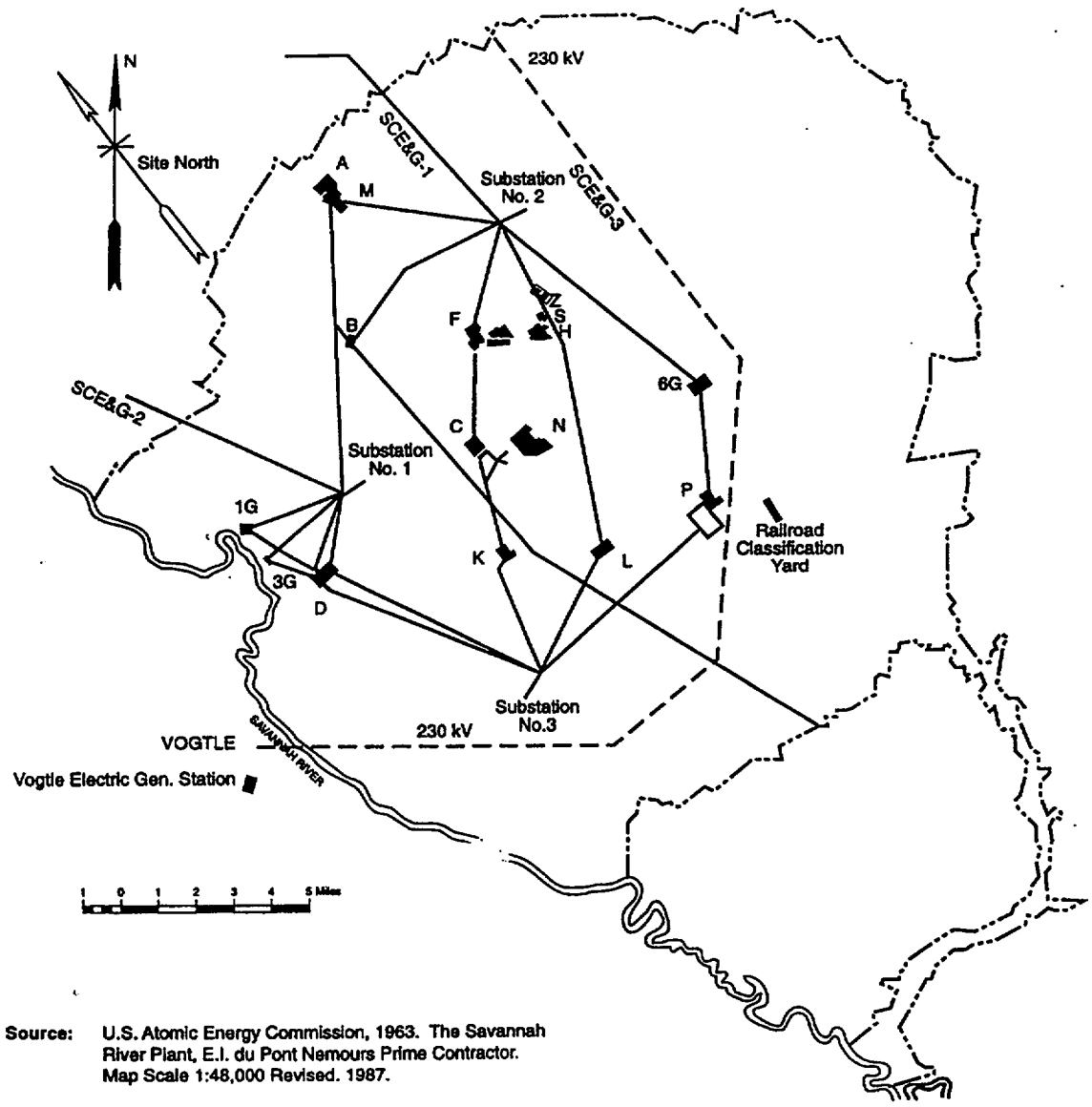


Figure 1.3-11 Railroad Network in the Vicinity of SRS



Source: U.S. Atomic Energy Commission, 1963. The Savannah River Plant, E.I. du Pont Nemours Prime Contractor. Map Scale 1:48,000 Revised. 1987.

Personal Communications, Loren Toole
Site Services Engineering, Savannah River Site, January 28, 1994.

Figure 1.3-12 Electrical Transmission Lines

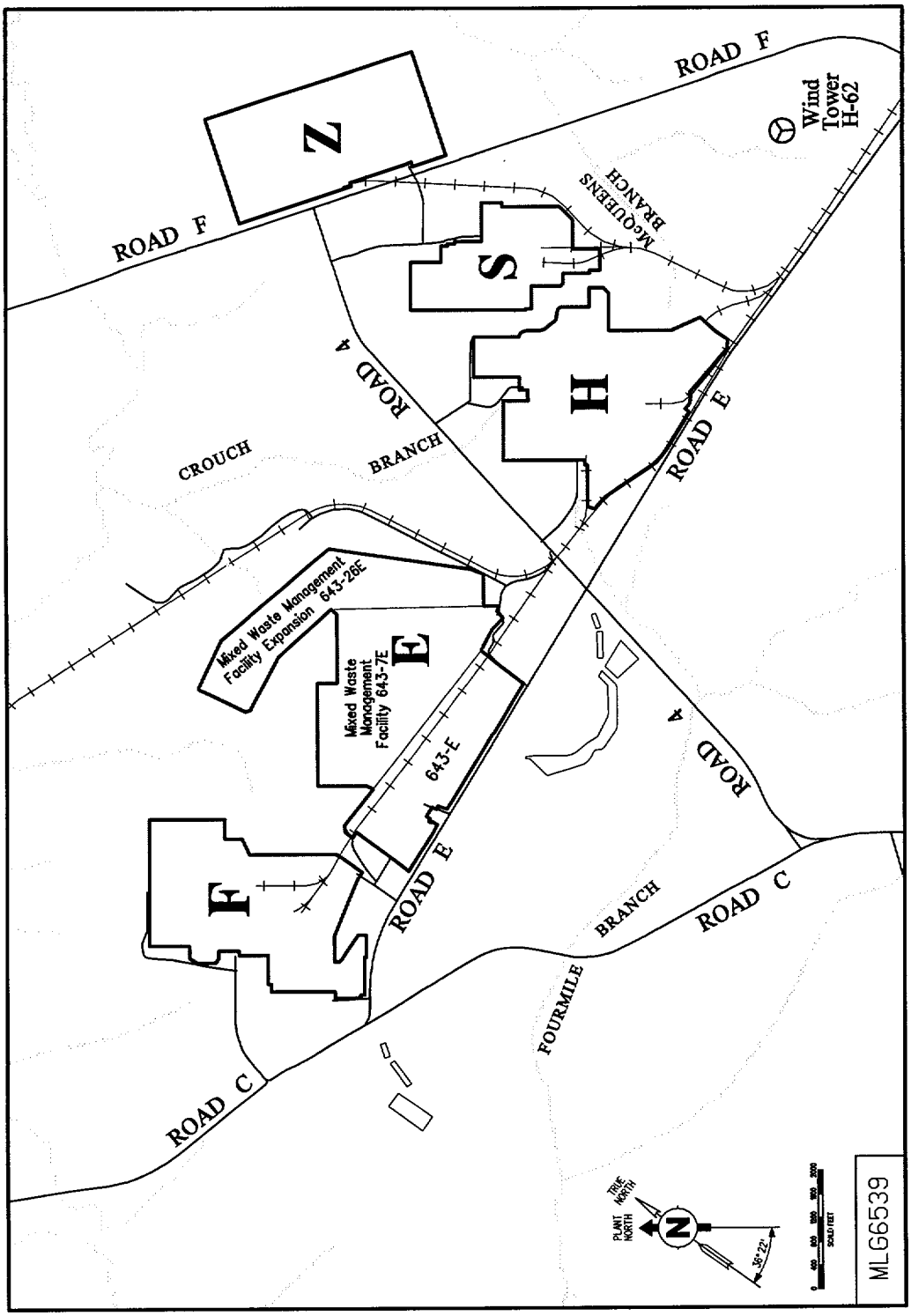


Figure 1.3-13 F, H, S, and Z Area Map

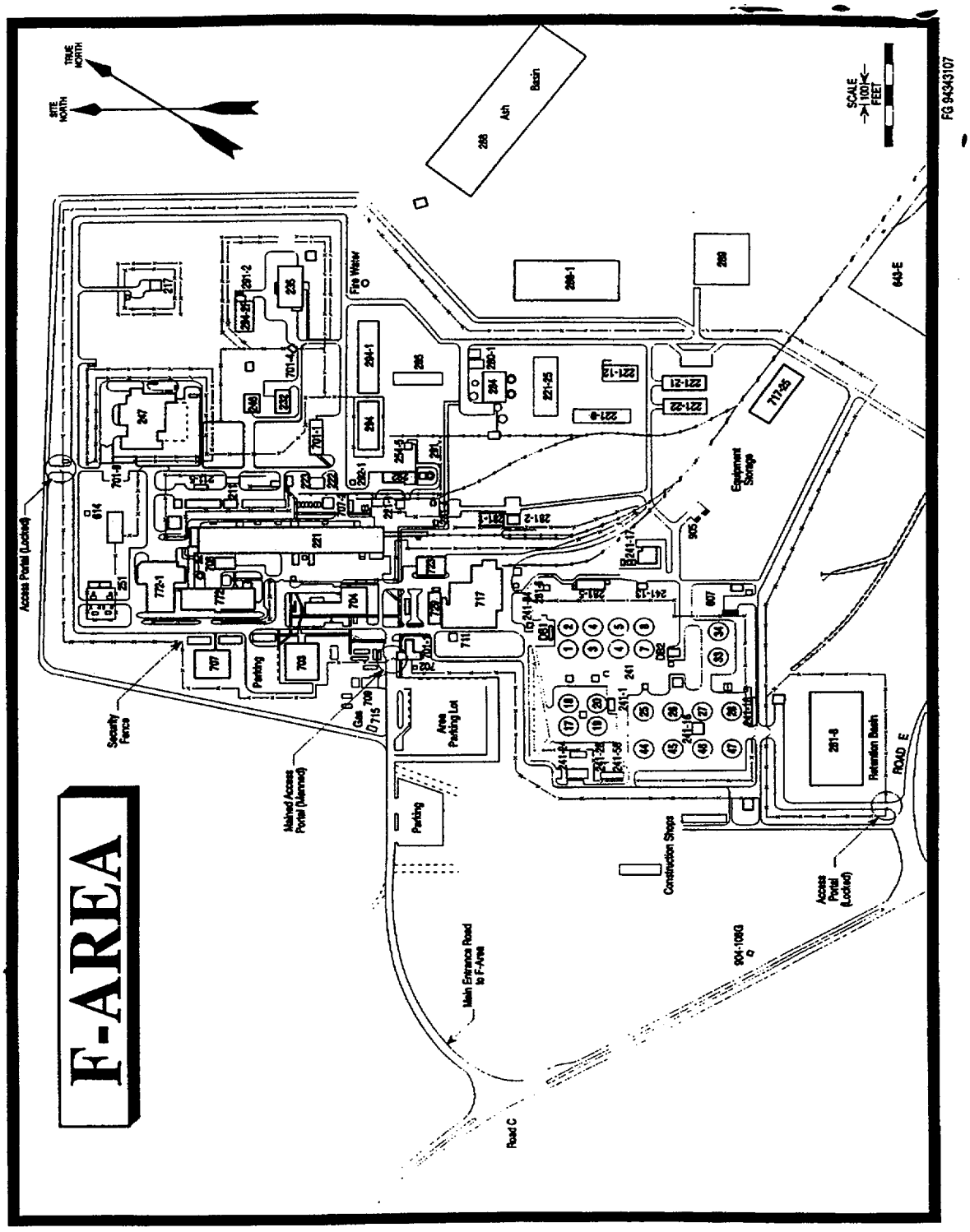


Figure 1.3-14 F-Area Map

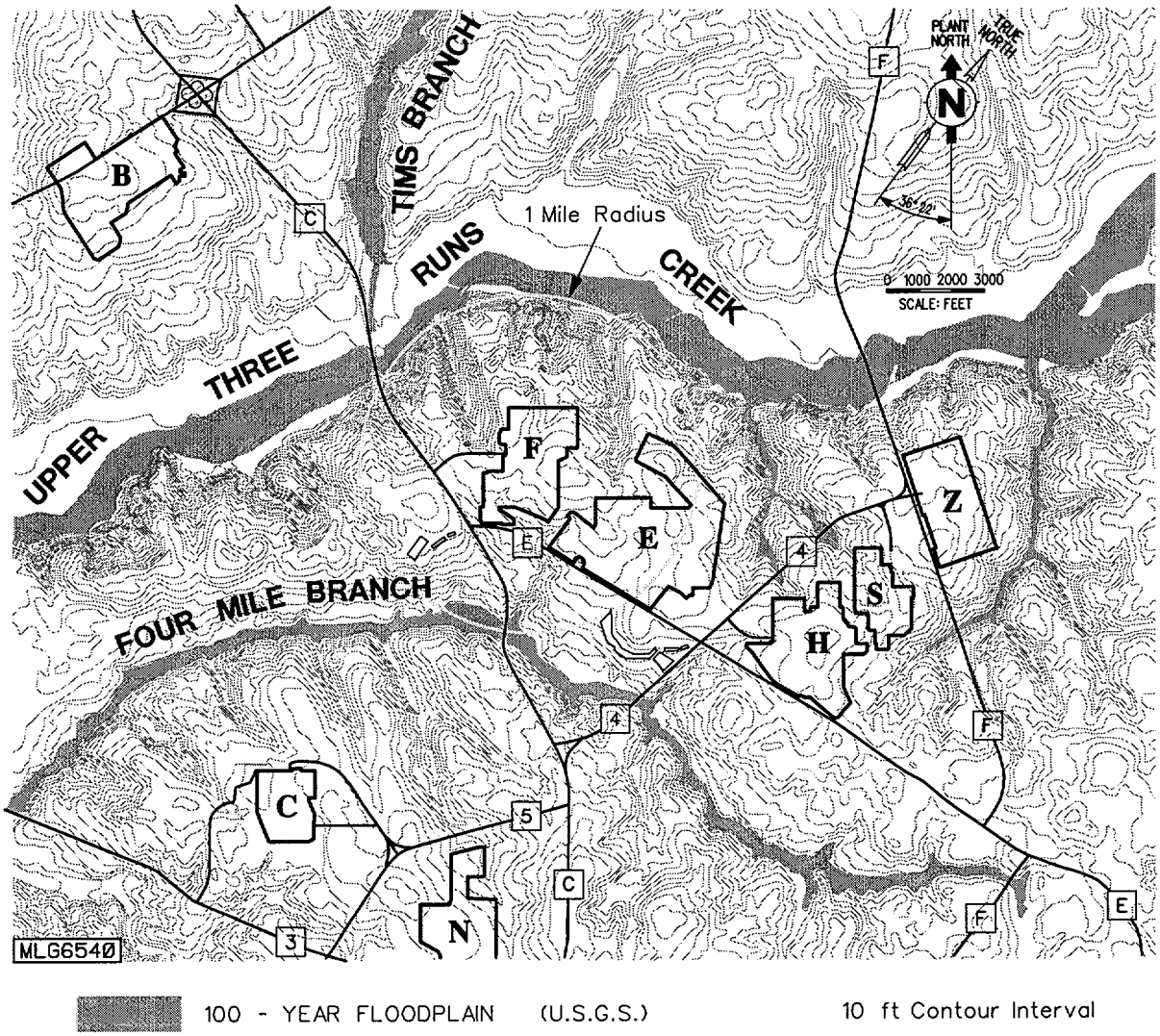


Figure 1.3-15 Topographic Map of F Area and Surrounding Area

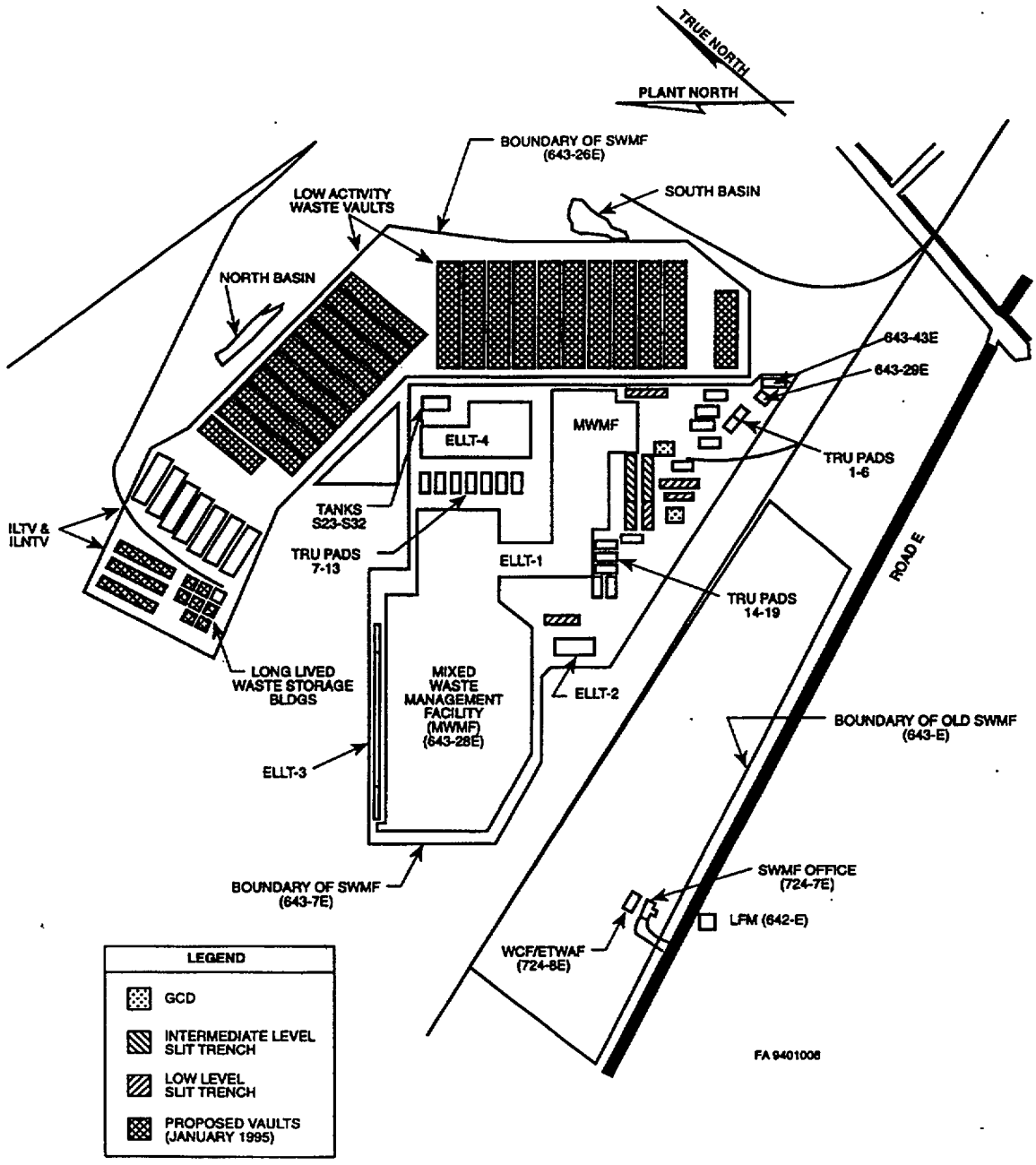


Figure 1.3-16 Solid Waste Management Facilities

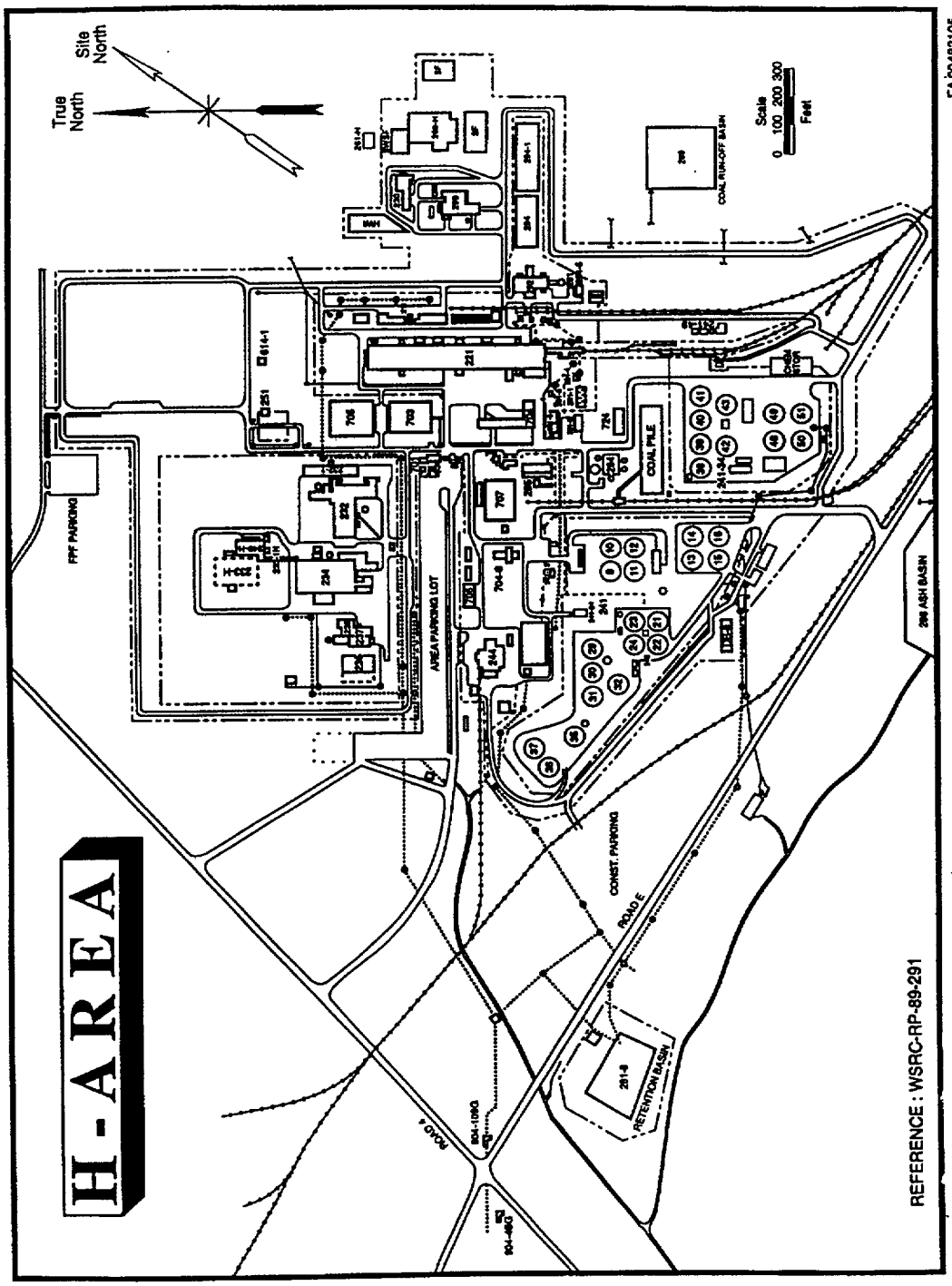


Figure 1.3-17 H-Area Map

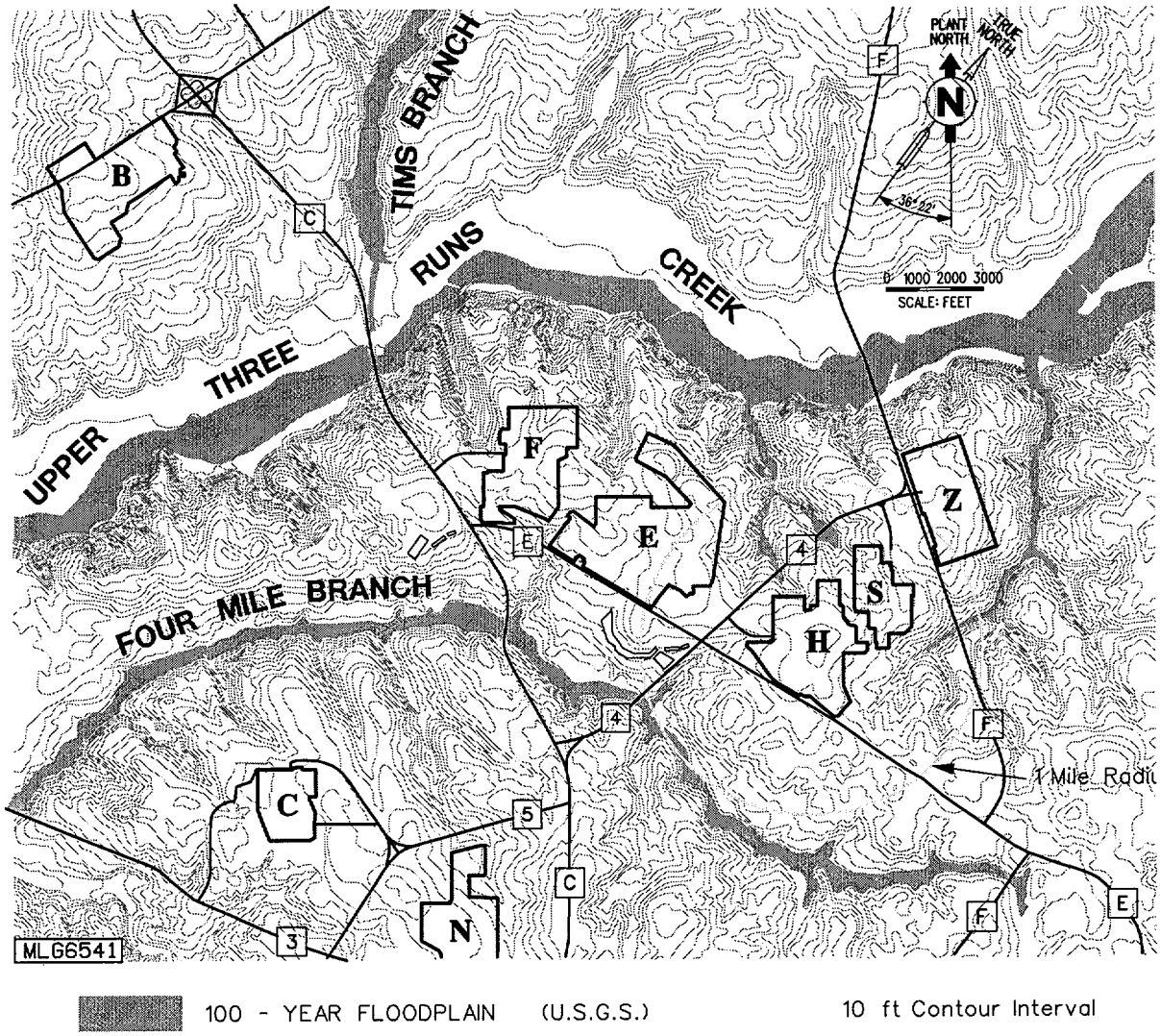


Figure 1.3-18 Topographic Map of H Area

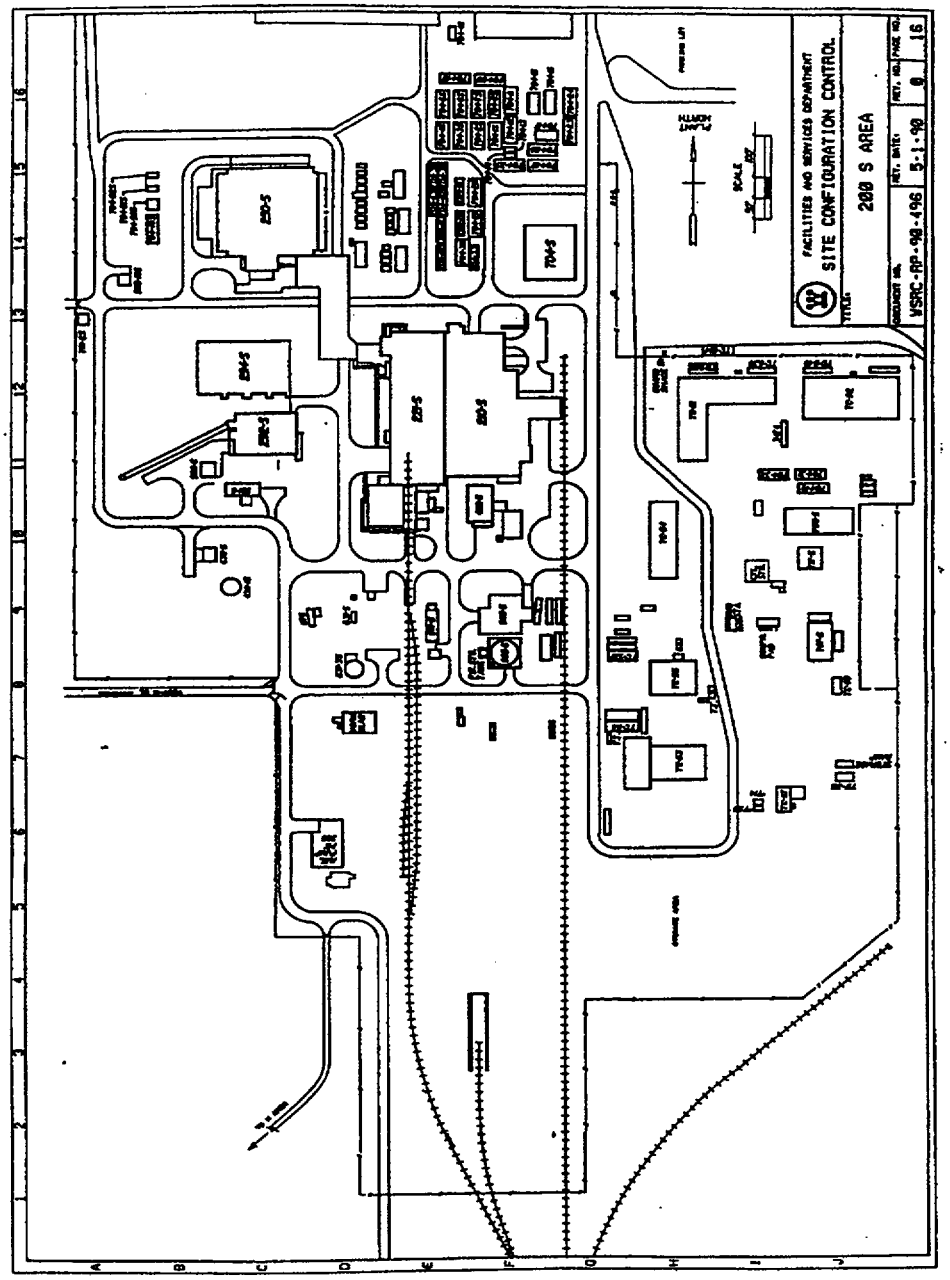


Figure 1.3-19 S-Area Map

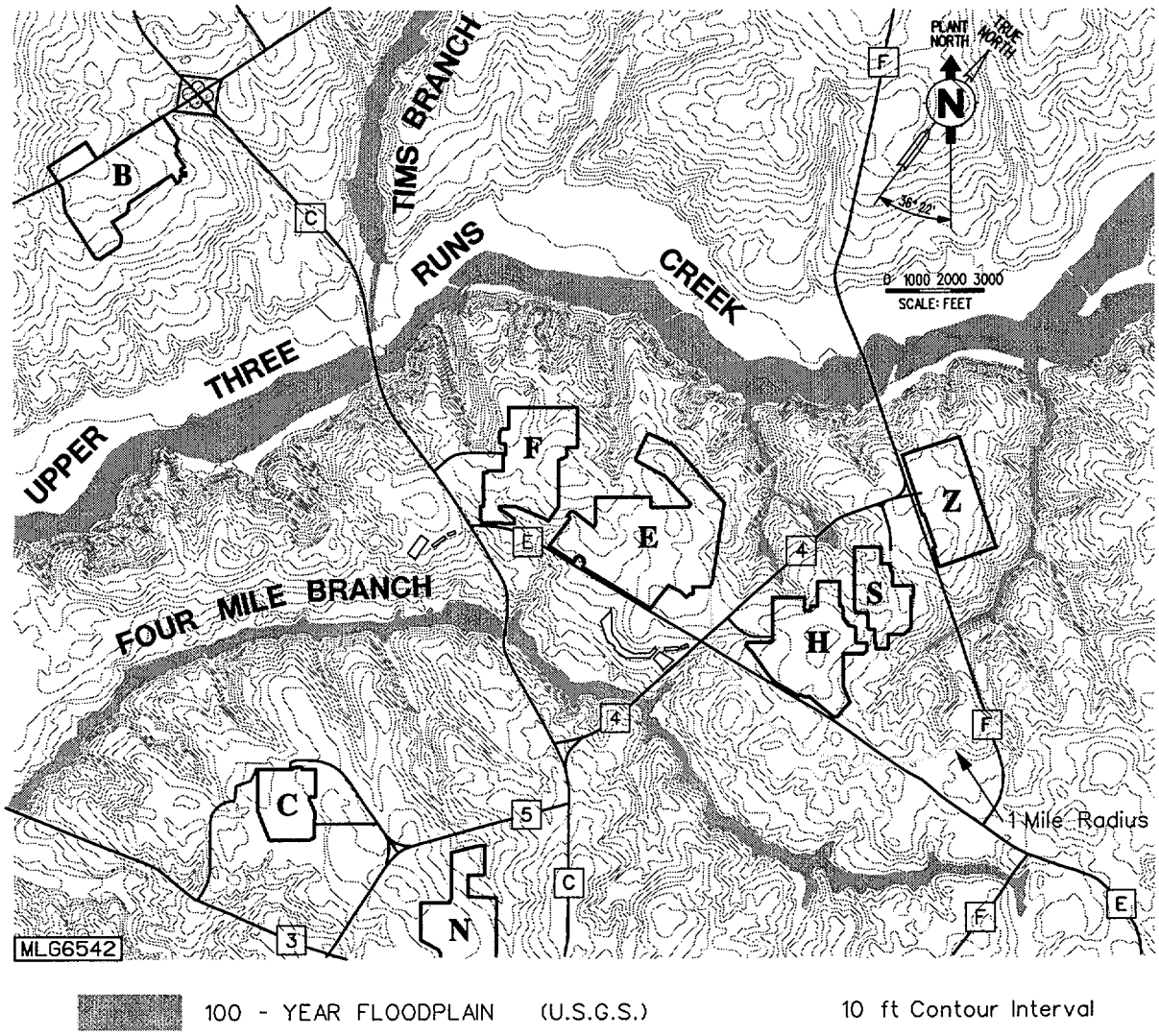


Figure 1.3-20 Topographic Map of S Area

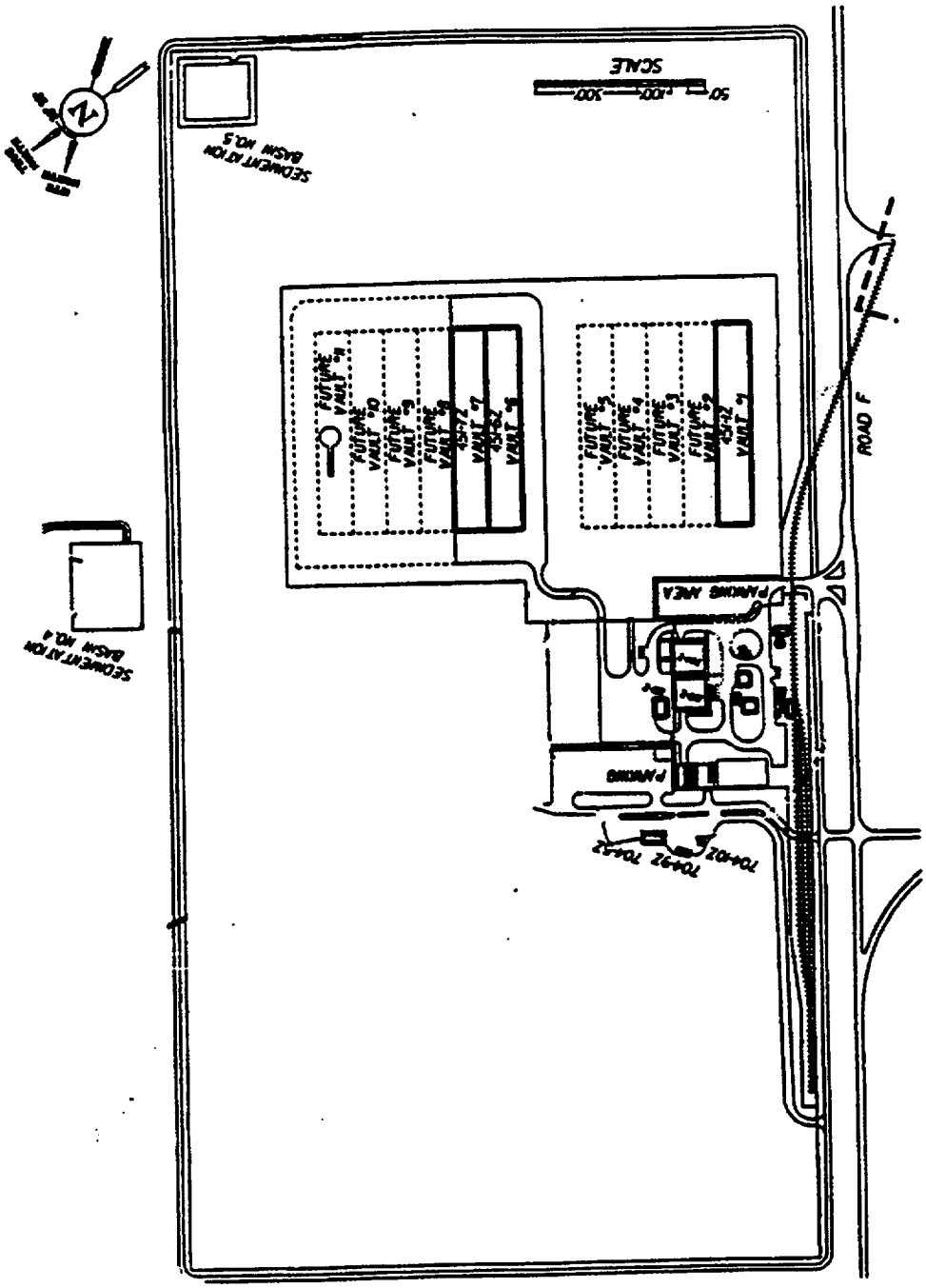
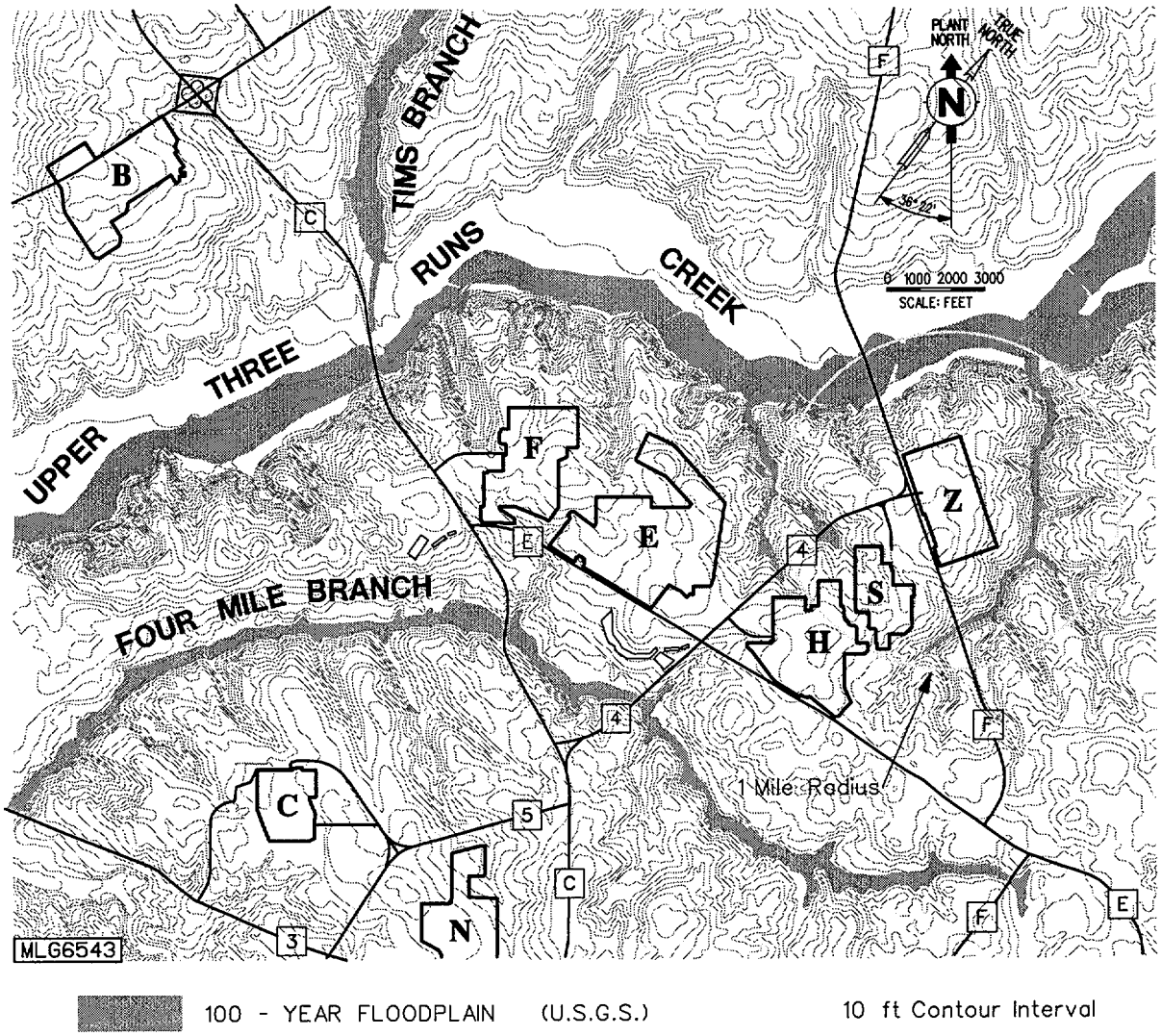
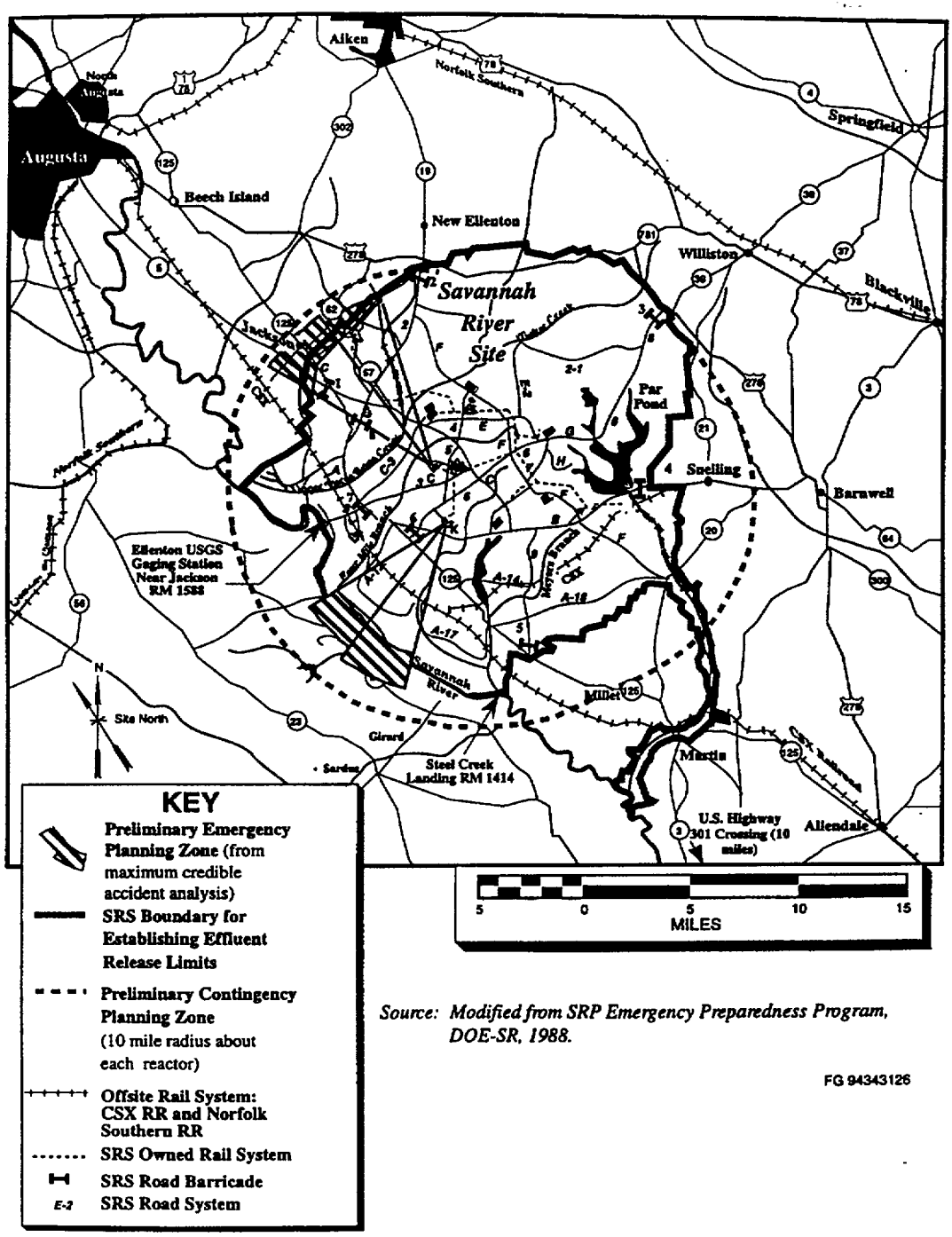


Figure 1.3-21 Z-Area Map (April 1994)



(Note: Figures 1.3-23 through 1.3-26 are intentionally omitted).

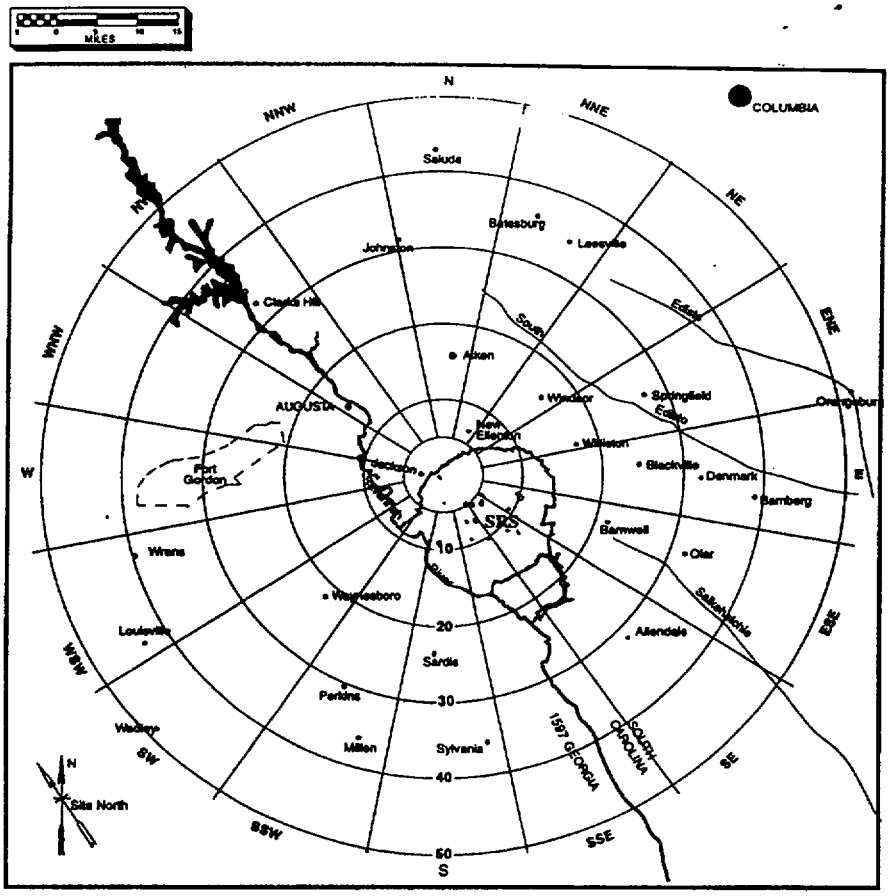
Figure 1.3-22 Topographic Map of Z Area



Source: Modified from SRP Emergency Preparedness Program, DOE-SR, 1988.

FG 94343126

Figure 1.3-27 SRS Emergency Planning Zone

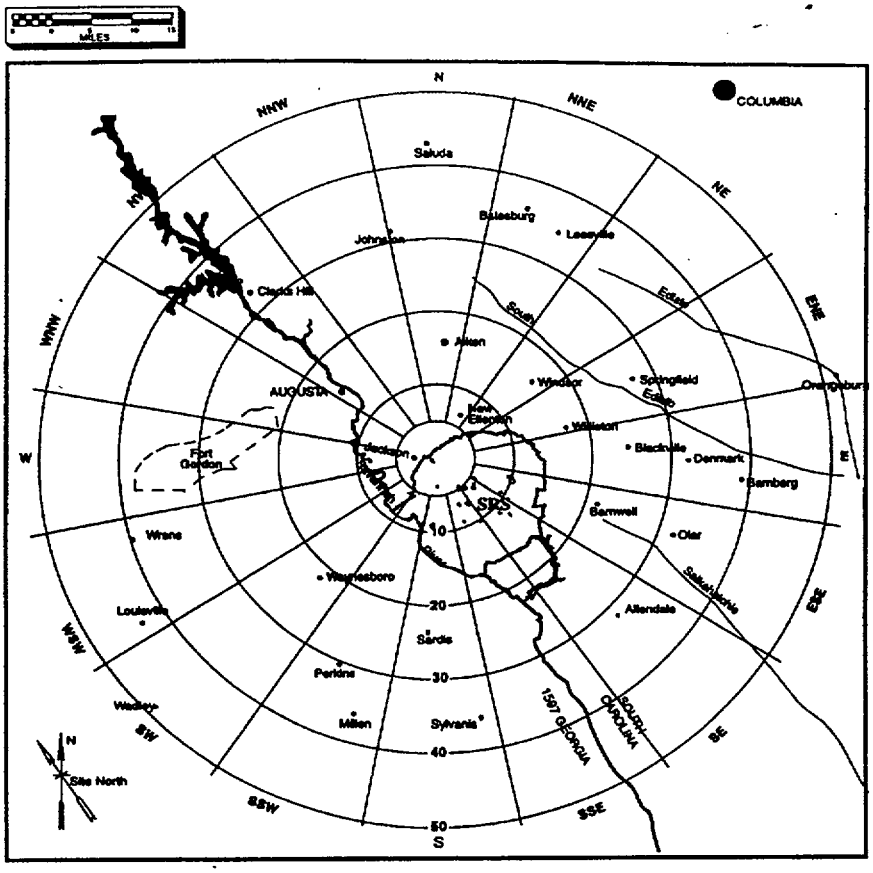


Age-group distribution for population more than 10 mi. away: 51.% adults, 10.9% teenagers, 37.8% children

SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	26	5319	10012	5067	12210
NNE	6	1320	2065	4446	14366
NE	1	2944	2927	5270	10197
ENE	27	3125	4482	5338	40771
E	155	6742	5303	8814	4334
ESE	36	1556	1931	2711	3253
SE	26	547	6509	6687	8577
SSE	40	391	769	1356	2539
S	1	557	1331	7252	3335
SSW	2	897	2007	4182	2944
SW	17	944	2240	2607	2660
WSW	60	1103	7110	2286	5818
W	55	3313	7938	7995	6780
WNW	449	3341	106832	50316	11550
NW	271	5898	87901	26576	3025
NNW	363	18022	27156	6666	6079

FG 94343125R

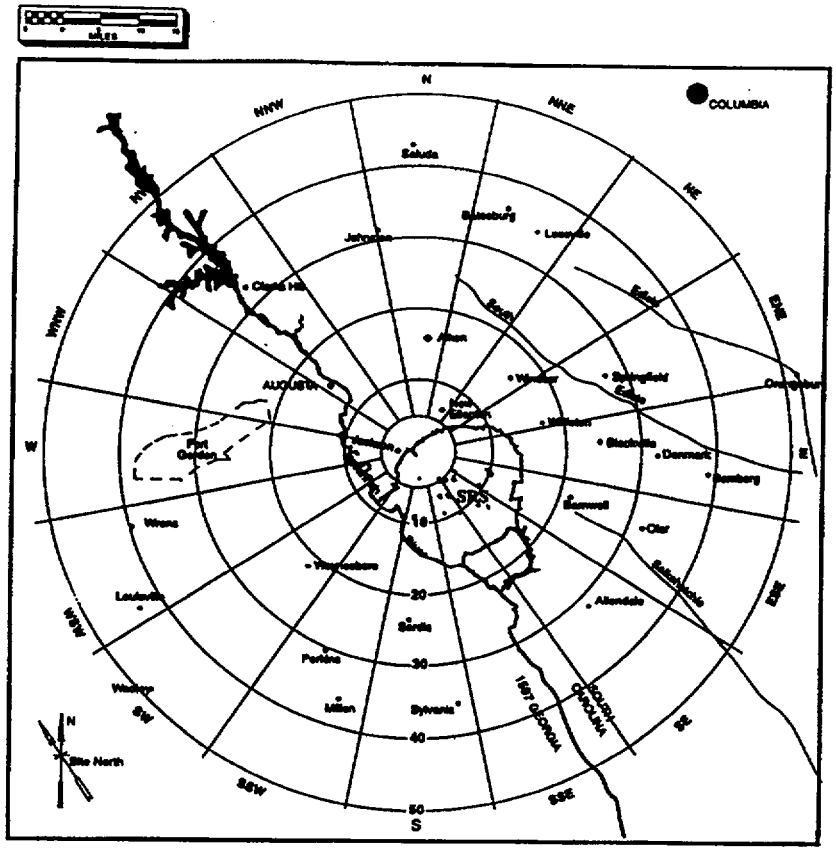
Figure 1.3-28 Total Population Distribution Within 50 Miles SRS Center, 1990



SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	30	6064	11414	5776	13919
NNE	7	1505	2354	5068	16377
NE	1	3356	3337	6008	11625
ENE	31	3563	5109	6085	46479
E	177	7686	6045	10048	4941
ESE	41	1774	2201	3091	3708
SE	30	624	7420	7623	9778
SSE	46	446	877	1546	2894
S	1	635	1517	8267	3802
SSW	2	1023	2288	4767	3356
SW	19	1076	2554	2972	3032
WSW	68	1257	8105	2606	6633
W	63	3777	9049	9114	7729
WNW	512	3809	121788	57360	13167
NW	309	6724	100207	30297	3449
NNW	414	20545	30958	7599	6930

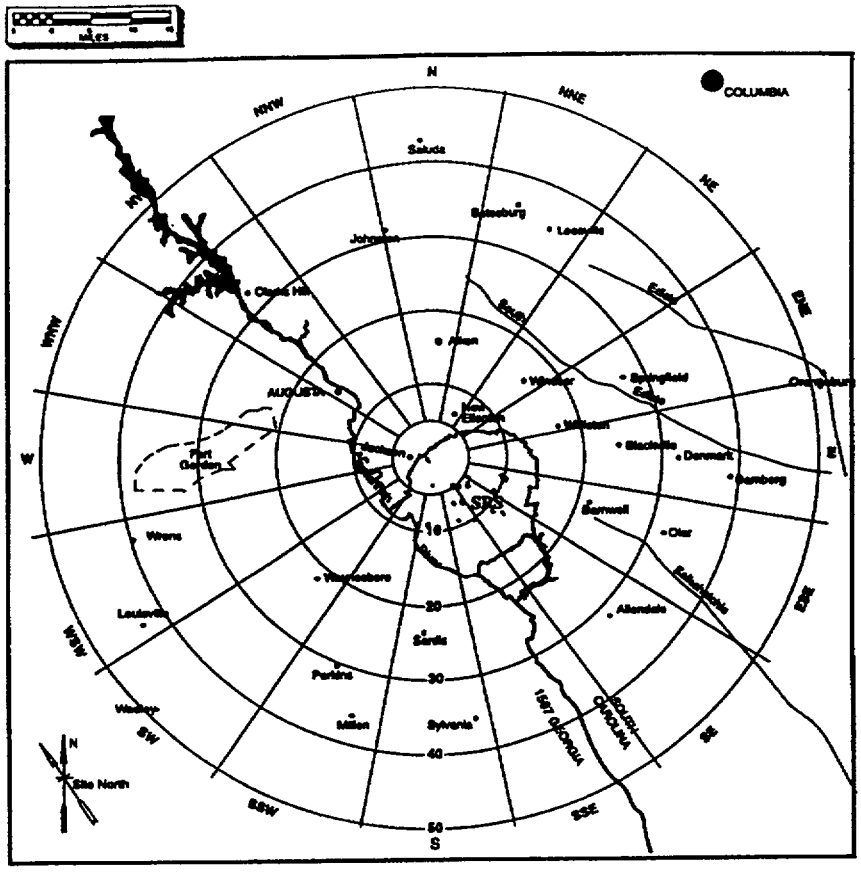
FG 943431278

Figure 1.3-29 Projected Population Distribution Within 50 Miles SRS Center, 2000



SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	34	6913	13012	6585	15868
NNE	8	1715	2684	5778	18670
NE	1	3826	3804	6849	13252
ENE	35	4061	5825	6937	52986
E	201	8762	6892	11455	5632
ESE	47	2022	2510	3523	4228
SE	34	711	8459	8690	11147
SSE	52	508	999	1762	3300
S	1	724	1730	9425	4334
SSW	3	1166	2608	5435	3826
SW	22	1227	2911	3388	3457
WSW	78	1433	9240	2971	7561
W	71	4306	10316	10390	8811
WNW	584	4342	138839	65391	15010
NW	352	7665	114236	34538	3931
NNW	472	23421	35292	8663	7900

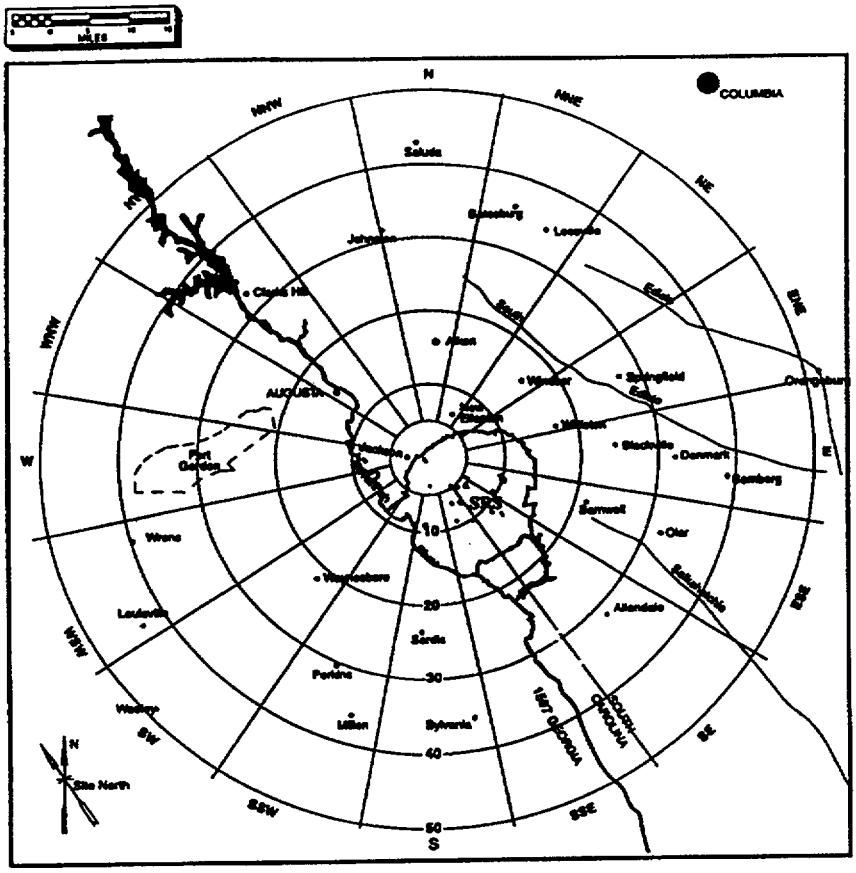
Figure 1.3-30 Projected Population Distribution Within 50 Miles SRS Center, 2010



SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	39	7880	14833	7507	18090
NNE	9	1956	3059	6587	21284
NE	1	4362	4336	7808	15107
ENE	40	4630	6640	7908	60404
E	230	9989	7857	13058	6421
ESE	53	2305	2861	4016	4819
SE	39	810	9643	9907	12707
SSE	59	579	1139	2009	3762
S	1	825	1972	10744	4941
SSW	3	1329	2973	6196	4362
SW	25	1399	3319	3862	3941
WSW	89	1634	10534	3387	8620
W	81	4908	11760	11845	10045
WNW	665	4950	158276	74545	17112
NW	401	8738	130229	39374	4482
NNW	538	26700	40233	9876	9006

FG 943431298

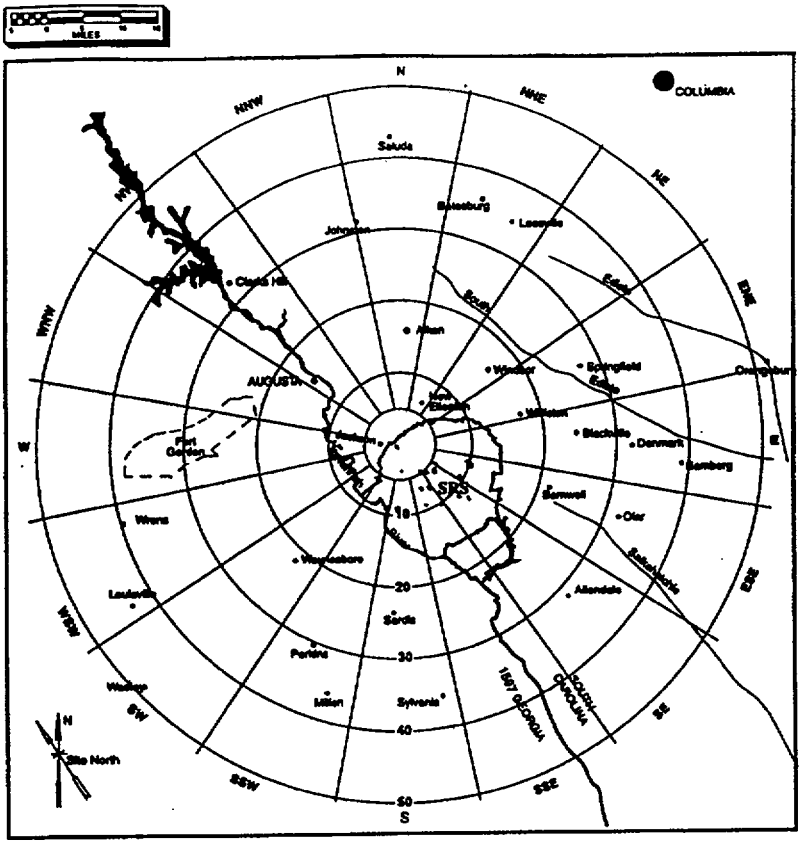
Figure 1.3-31 Projected Population Distribution Within 50 Miles SRS Center, 2020



SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	44	8984	16910	8558	20622
NNE	10	2229	3488	7509	24264
NE	2	4972	4944	8901	17222
ENE	46	5278	7570	9016	68861
E	262	11387	8957	14886	7320
ESE	61	2628	3261	4579	5494
SE	44	924	10993	11294	14486
SSE	68	660	1299	2290	4288
S	2	941	2248	12248	5633
SSW	3	1515	3390	7063	4972
SW	29	1594	3783	4403	4493
WSW	101	1863	12009	3861	9826
W	93	5596	13407	13503	11451
WNW	758	5643	180435	84982	19507
NW	458	9961	148461	44886	5109
NNW	613	30438	45865	11259	10267

FG 943431308

Figure 1.3-32 Projected Population Distribution Within 50 Miles SRS Center, 2030



SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	50	10241	19277	9756	23509
NNE	12	2542	3976	8560	27661
NE	2	5668	5636	10147	19633
ENE	52	6017	8630	10278	78501
E	298	12981	10210	16971	8345
ESE	69	2996	3718	5220	6263
SE	50	1053	12533	12875	16514
SSE	77	753	1481	2611	4889
S	2	1072	2563	13963	6421
SSW	4	1727	3864	8052	5668
SW	33	1818	4313	5020	5122
WSW	116	2124	13690	4401	11202
W	106	6379	15284	15394	13054
WNW	865	6433	205696	96879	22239
NW	522	11356	169246	51170	5824
NNW	699	34700	52287	12835	11705

FG 943431318

Figure 1.3-33 Projected Population Distribution Within 50 Miles SRS Center, 2040

SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	2072	21439	9195	6687	104462
NNE	235	1782	2081	4100	17085
NE	8	1545	2730	5240	11442
ENE	0	3277	4657	5189	31845
E	1	4773	5086	10908	5512
ESE	8	2166	2577	2839	2891
SE	0	563	4543	6387	10432
SSE	0	364	683	1046	2507
S	0	545	1596	6730	3560
SSW	9	780	2186	4805	2591
SW	110	1171	4578	2093	2711
WSW	101	1523	4472	2586	6149
W	241	6031	10519	8946	6959
WNW	1380	5066	129791	32475	14790
NW	1102	15212	81259	9385	3296
NNW	1171	19728	11205	6884	3344

Age-group distribution for population more than 10 mi. Away: 51 % adults, 10.9% teenagers, 37.8% children

Figure 1.3-34 Total Population Within 50 Miles of F Area, 1990

SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	2362	24440	10482	7623	11927
NNE	268	2031	2372	4674	19477
NE	9	1761	3112	5974	13044
ENE	0	3736	5309	5915	36303
E	1	5441	5798	12435	6284
ESE	9	2469	2938	3236	3296
SE	0	642	5179	7281	11892
SSE	0	415	779	1192	2858
S	0	621	1819	7672	4058
SSW	10	889	2492	5478	2954
SW	125	1335	5219	2386	3091
WSW	115	1736	5098	2948	7010
W	275	6875	11992	10198	7933
WNW	1573	5775	147962	37022	16861
NW	1256	17342	92635	10699	3757
NNW	1335	22490	12774	7848	3812

Figure 1.3-35 Projected Population Distribution Within 50 Miles of F Area, 2000

SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	2693	27862	11950	8690	13596
NNE	305	2316	2704	5328	22204
NE	10	2008	3548	6810	14870
ENE	0	4259	6052	6744	41386
E	1	6203	6610	14176	7163
ESE	10	2815	3349	3690	3757
SE	0	732	5904	8301	13557
SSE	0	473	888	1359	3258
S	0	708	2074	8746	4627
SSW	12	1014	2841	6245	3367
SW	143	1522	5950	2720	3523
WSW	131	1979	5812	3361	7991
W	313	7838	13670	11626	9044
WNW	1793	6584	168676	42205	19221
NW	1432	19770	105604	12197	4283
NNW	1522	25639	14562	8946	4346

Figure 1.3-36 Projected Population Distribution Within 50 Miles of F Area, 2010

SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	3070	31763	13623	9907	15500
NNE	348	3640	3083	6074	25312
NE	12	2289	4045	7763	16952
ENE	0	4855	6900	7688	47180
E	1	7071	7535	16161	8166
ESE	12	3209	3818	4206	4283
SE	0	834	6731	9463	15455
SSE	0	539	1012	1550	3714
S	0	807	2365	9971	5274
SSW	13	1156	3239	7119	3839
SW	163	1735	6783	3101	4016
WSW	150	2256	6625	3831	9110
W	357	8935	15584	13254	10310
WNW	2045	7506	192291	48113	21912
NW	1633	22537	120389	13904	4883
NNW	1735	29228	16601	10199	4954

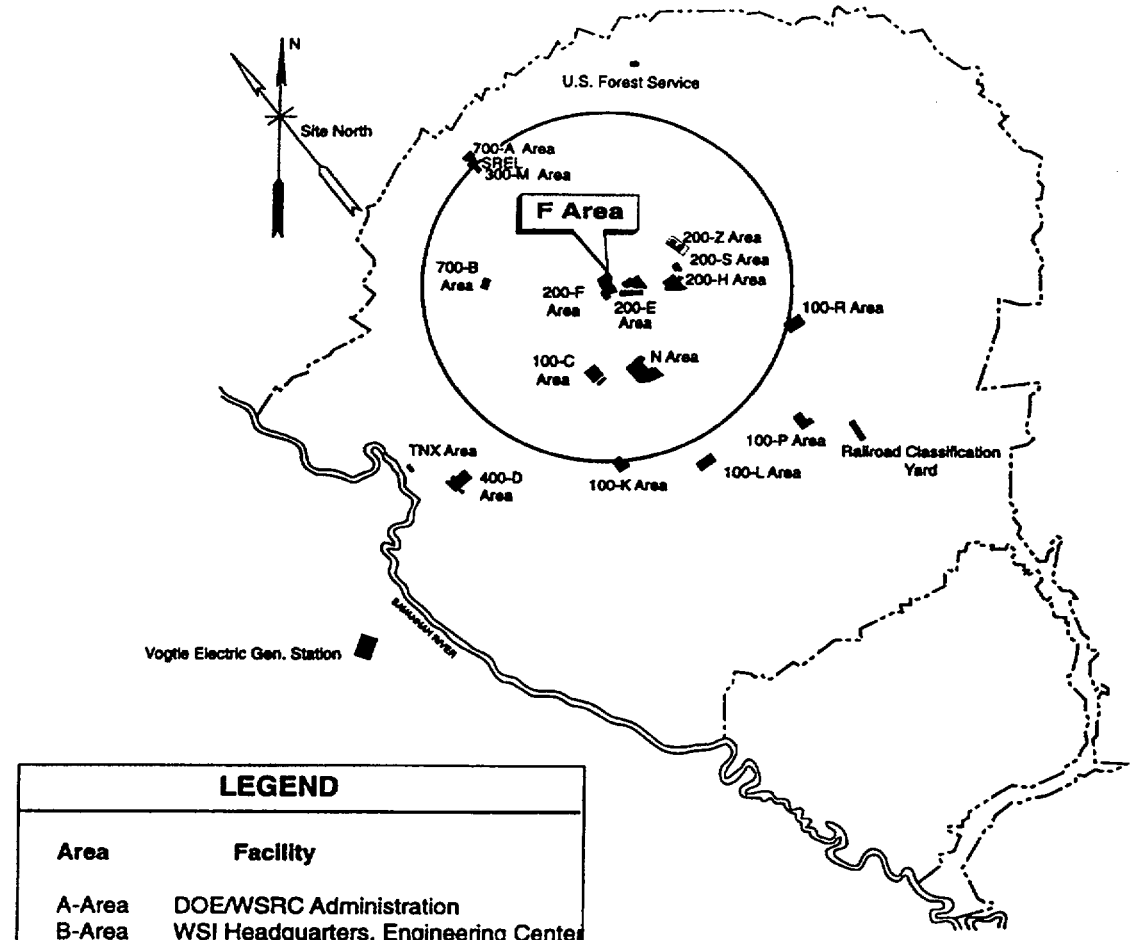
Figure 1.3-37 Projected Population Distribution Within 50 Miles of F Area, 2020

SECTOR	DISTANCE (MILES)				
	5-10	10-20	20-30	30-40	40-50
N	3500	36210	15530	11294	17670
NNE	397	3010	3515	6925	28856
NE	14	2609	4611	8850	19325
ENE	0	5535	7865	8764	53785
E	2	8061	8590	18423	9310
ESE	14	3658	4352	5466	488
SE	0	951	7673	7409	17619
SSE	0	615	1154	1767	4234
S	0	920	2696	11367	6013
SSW	15	1317	3692	8115	4376
SW	186	1978	7732	3535	4579
WSW	171	2572	7553	4368	10385
W	407	10186	17766	15109	11753
WNW	2331	8556	219212	54849	24980
NW	1861	25692	137243	15851	5567
NNW	1978	33320	18925	11627	5648

Figure 1.3-38 Projected Population Distribution Within 50 Miles of F Area, 2030

SECTOR	DISTANCE (MILES)				
	0-1	1-2	2-3	3-4	4-5.
N	0	0	0	0	0
NNE	0	0	0	0	0
NE	0	0	0	0	0
ENE	0	0	0	0	0
E	0	0	0	0	0
ESE	0	0	0	0	0
SE	0	0	0	0	0
SSE	0	0	0	0	1
S	0	0	0	4	17
SSW	0	0	3	13	28
SW	0	4	9	21	29
WSW	0	7	16	22	29
W	0	5	12	17	29
WNW	0	4	6	3	10
NW	0	0	1	0	7
NNW	0	0	0	0	2

Figure 1.3-39 Projected Population Distribution Within 50 Miles of F Area, 2040



LEGEND

Area	Facility
A-Area	DOE/WSRC Administration
B-Area	WSI Headquarters, Engineering Center
C-Area	C-Reactor
D-Area	Heavy Water Purification
E-Area	Solid Waste Disposal Facilities
F-Area	F-Canyon, FB Line, 235-F
H-Area	H-Canyon, HB Line, Tritium Facility
K-Area	K-Reactor
L-Area	L-Reactor
M-Area	Reactor Materials Facilities
N-Area	Central Shops
P-Area	R-Reactor
R-Area	P-Reactor
S-Area	DWPF Ops.
Z-Area	Saltstone Ops.
Offsite	Vogtle Electric Station

(Note: Figures 1.3-40 through 1.3-51 are intentionally omitted).

Figure 1.3-52 SRS Areas Within a 5-Mile Vicinity of F Area

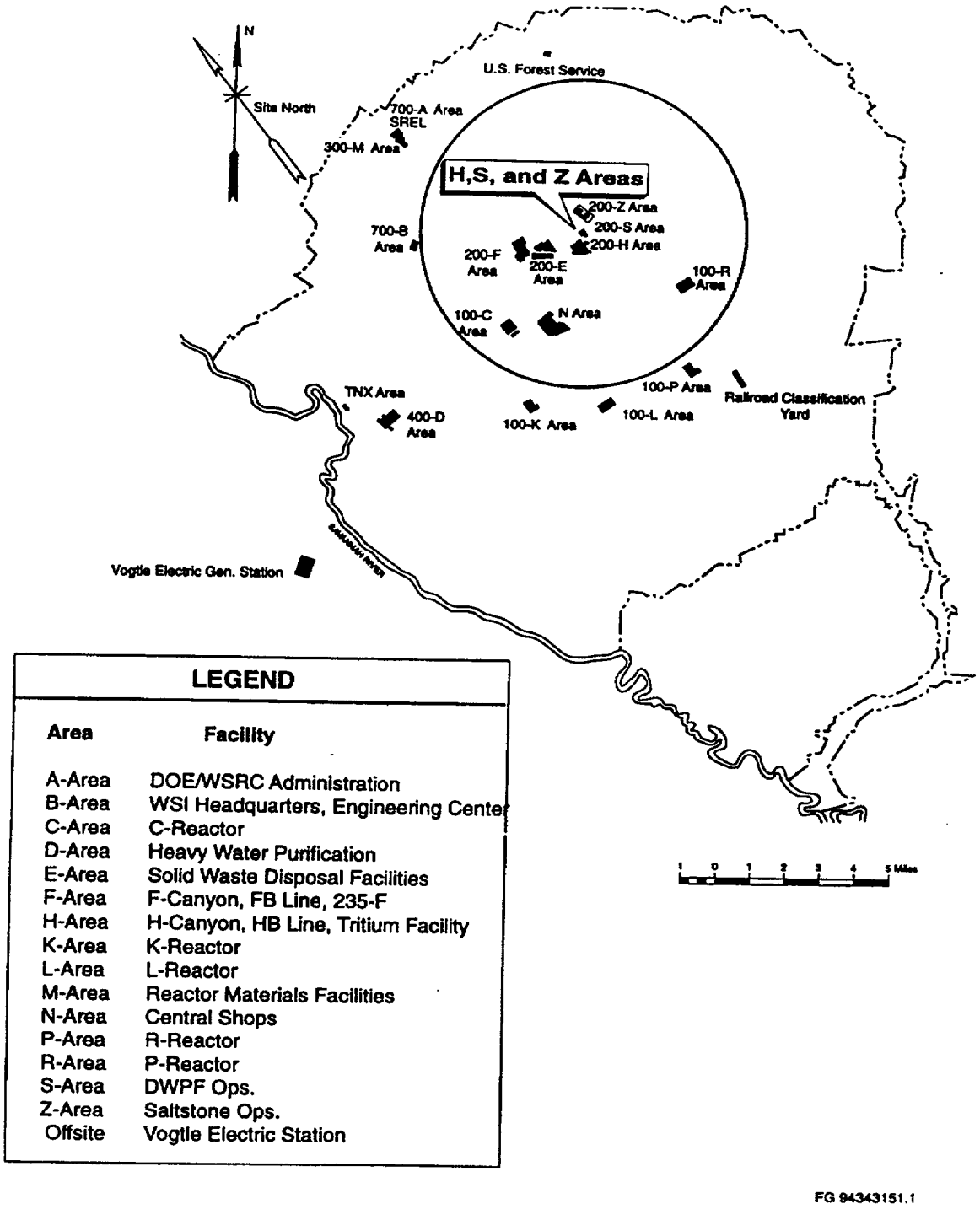
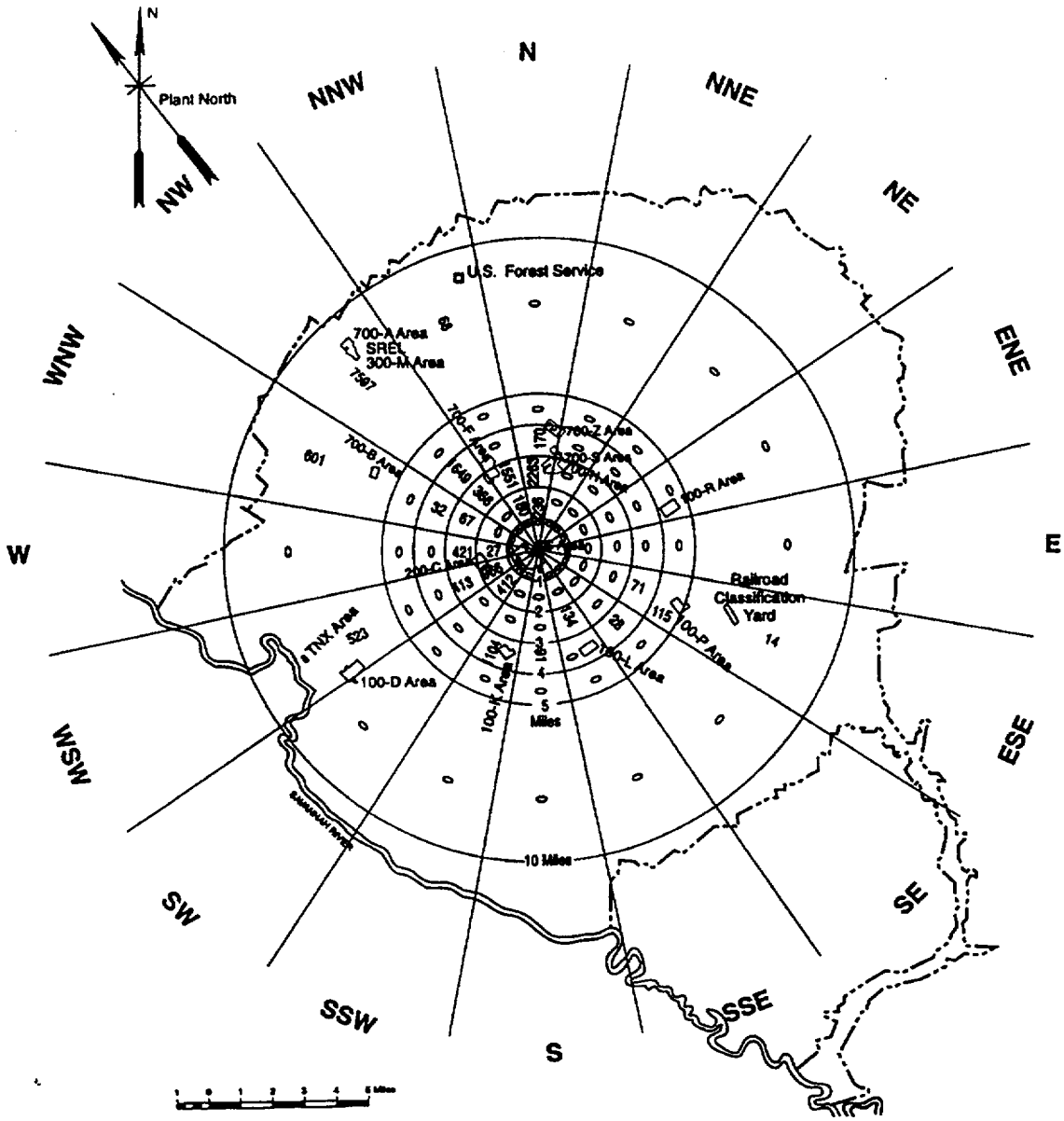


Figure 1.3-53 SRS Areas Within a 5-Mile Vicinity of H, S, and Z Areas



(Note: Figures 1.3-54 and 1.3-55 are intentionally omitted).

Figure 1.3-56 1993 Day Shift Population Distribution Within 10 Miles of SRS Center

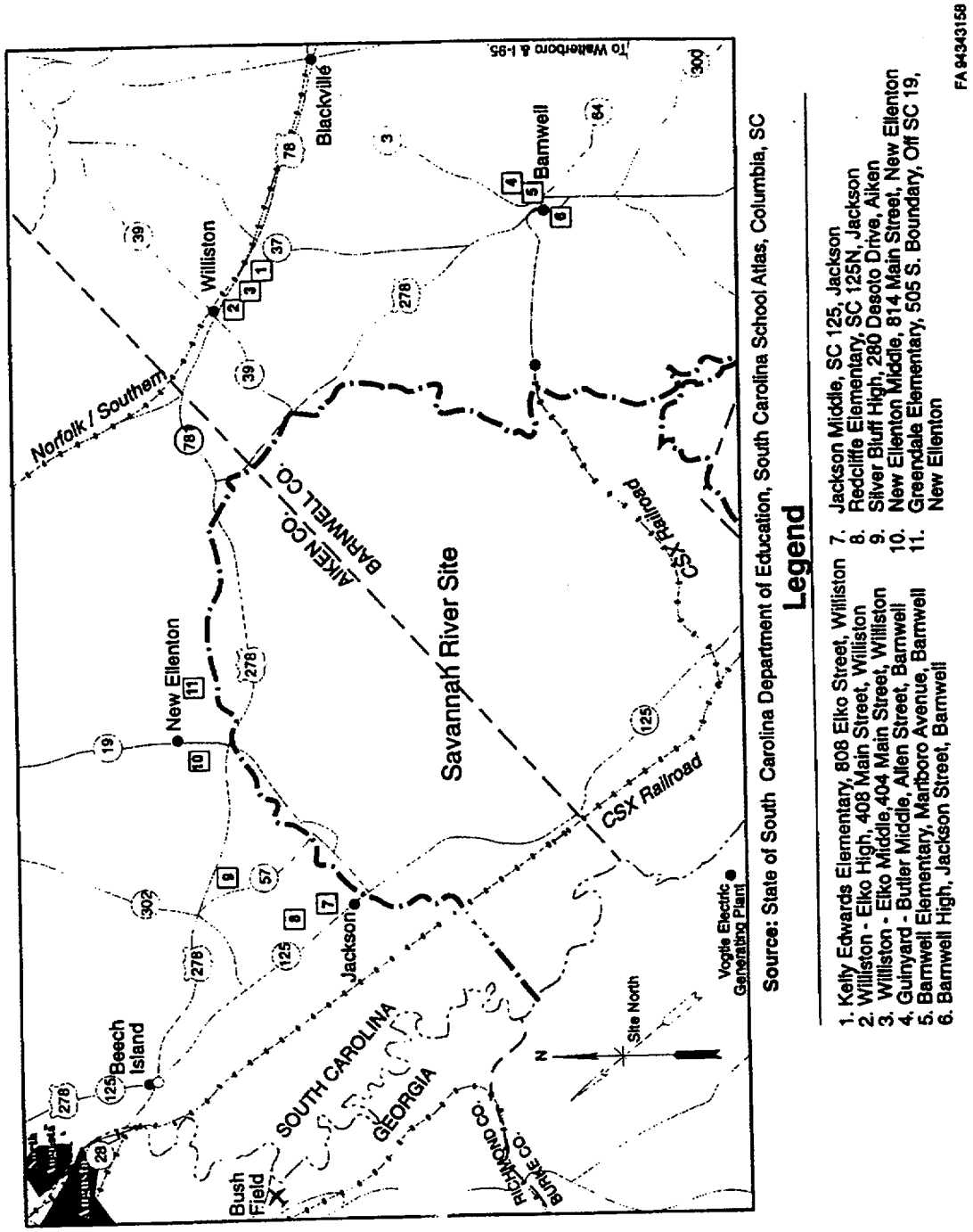
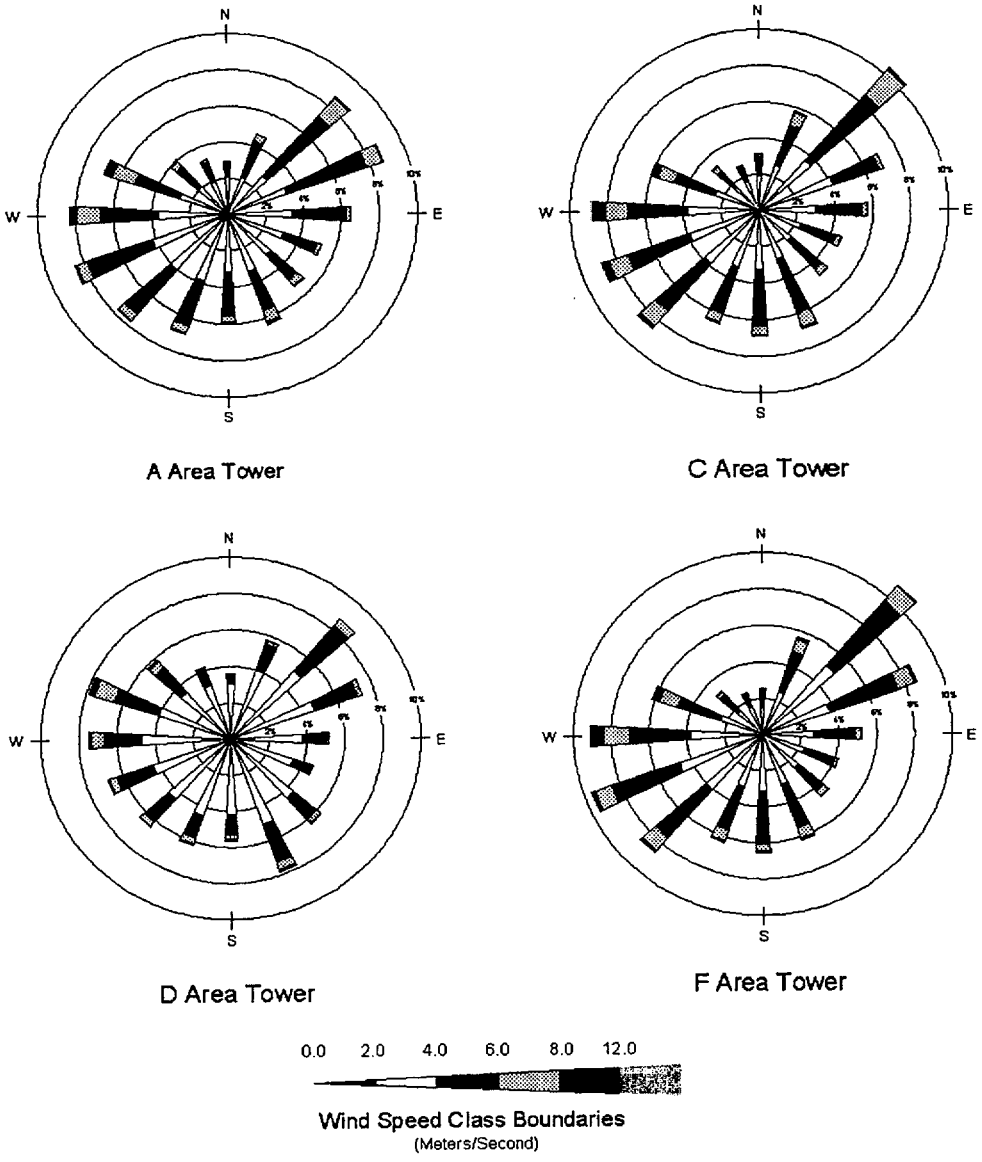
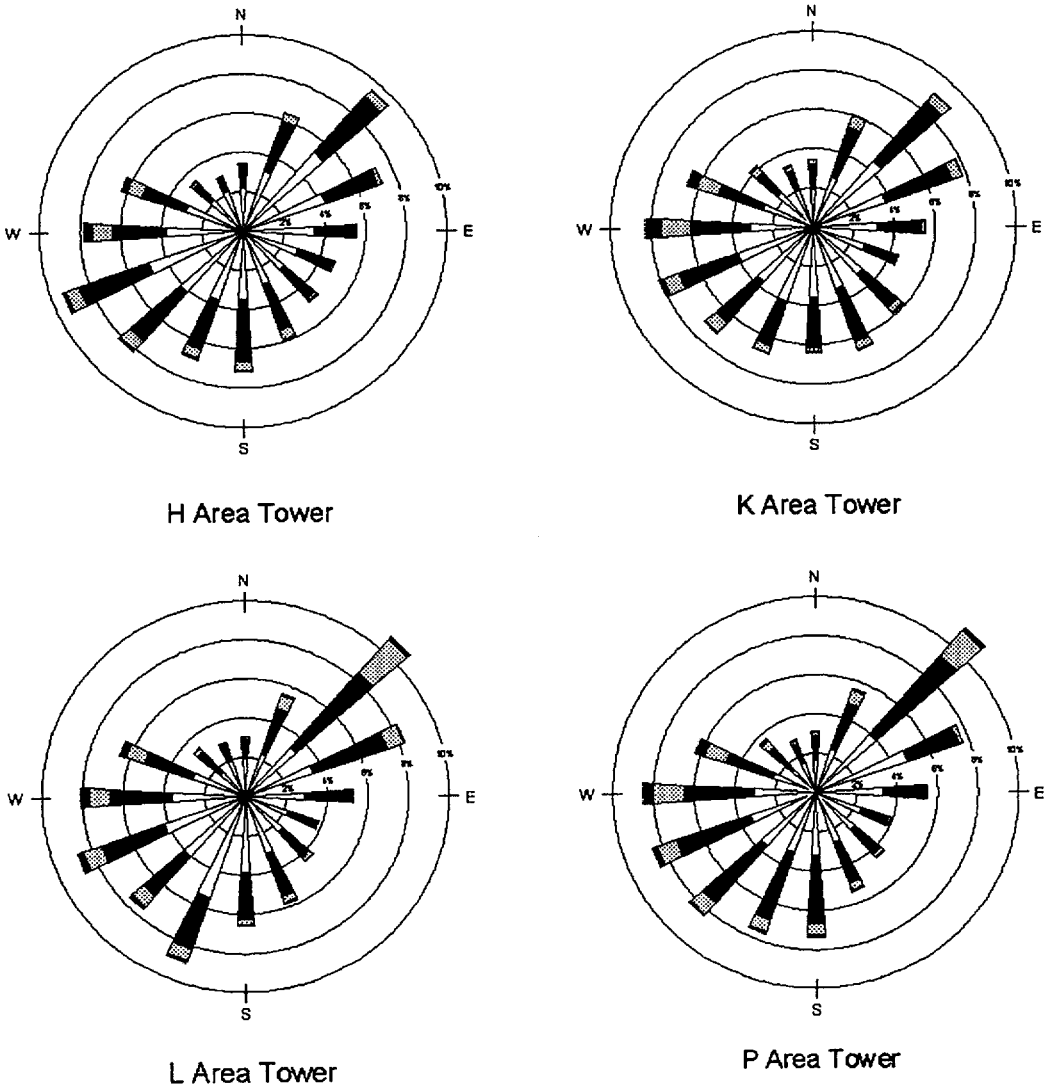


Figure 1.3-57 Public Schools Located Within 5 Miles of SRS Boundary, 1991



Note: Plots indicate the wind direction sector from which the wind blows

Figure 1.4-1 Wind Rose Plots for A, C, D, F, H, K, L, and P Areas, 1992-1996 (Sheet 1 of 2



Note: Plots indicate the wind direction sector from which the wind blows

Figure 1.4-1 Wind Rose Plots for A, C, D, F, H, K, L, and P Areas, 1992-1996 (Sheet 2 of 2

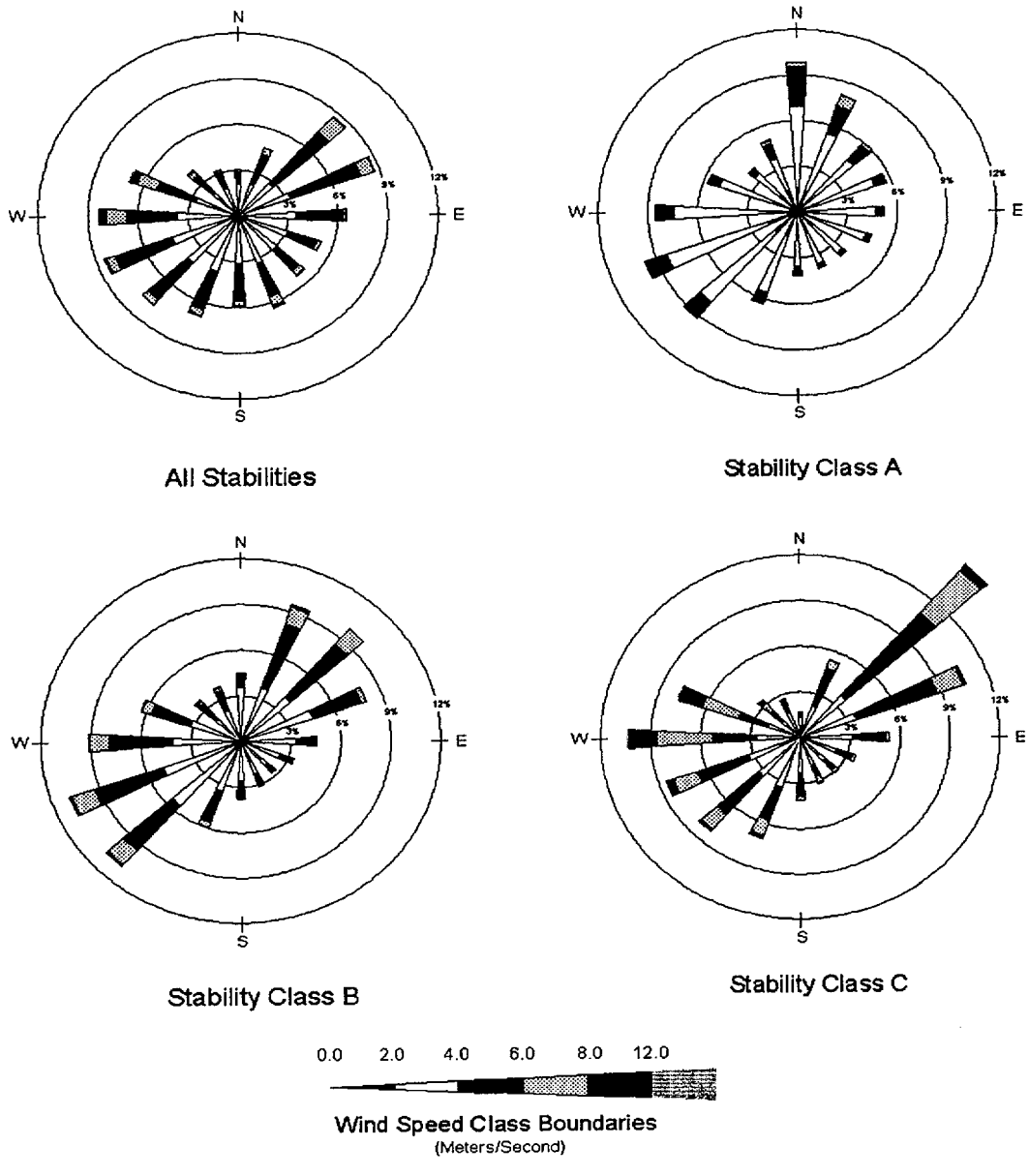
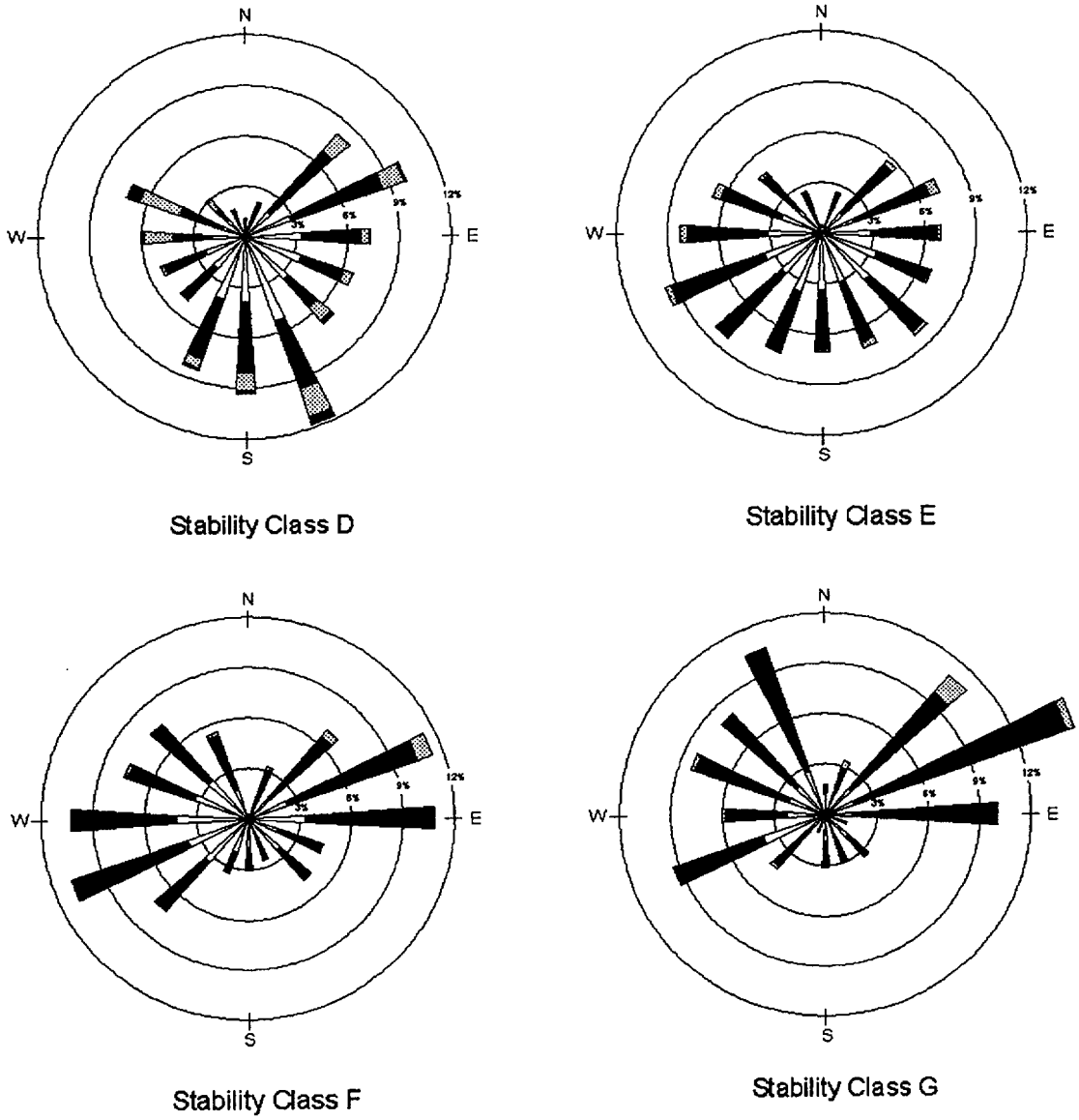


Figure 1.4-2 Wind Rose Plots by Stability Class - A Area Tower, 1992-1996 (Sheet 1 of 2)



Note: plots indicate the wind direction sector from which the wind blows

Figure 1.4-2 Wind Rose Plots by Stability Class - A Area Tower, 1992-1996 (Sheet 2 of 2)

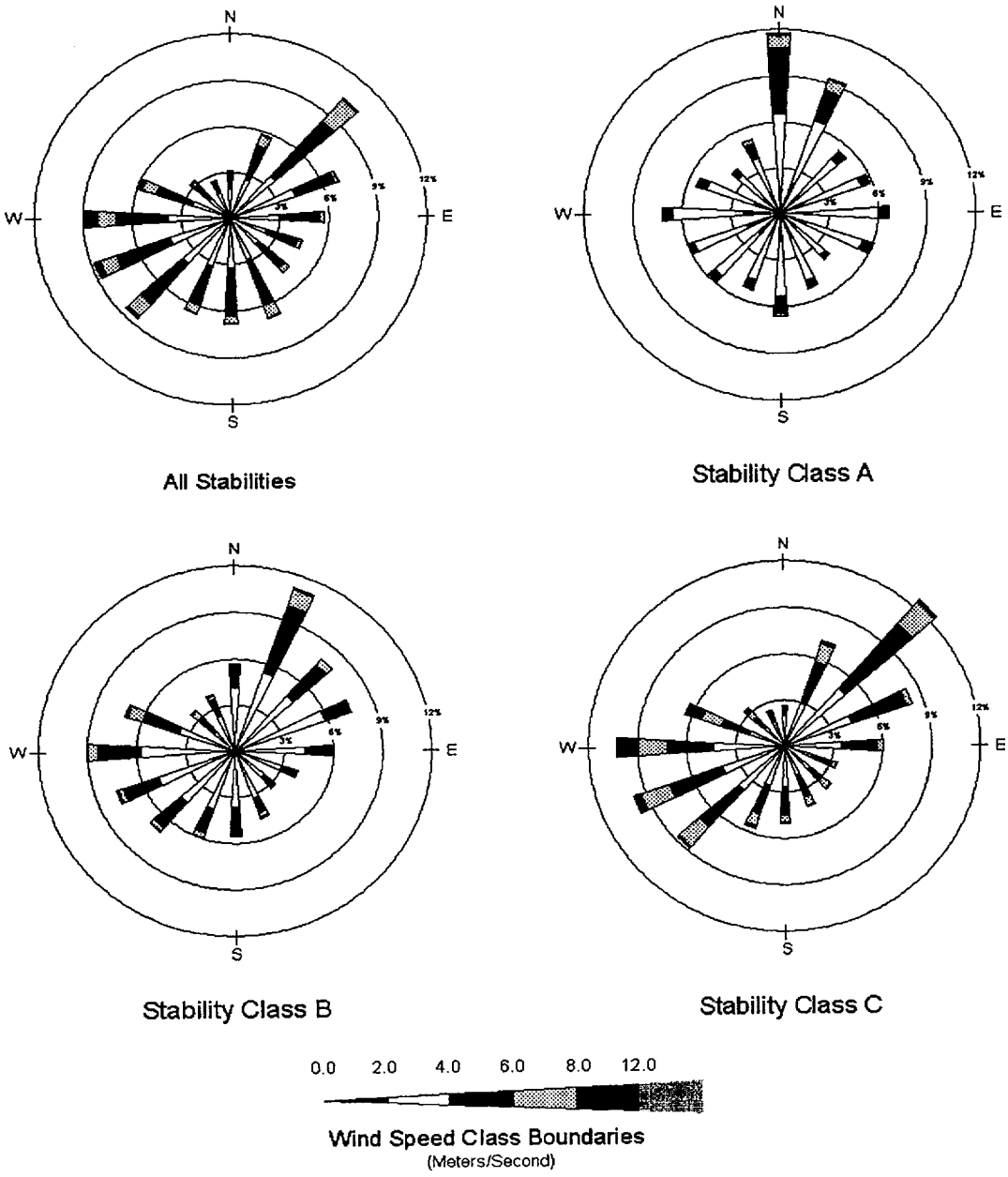
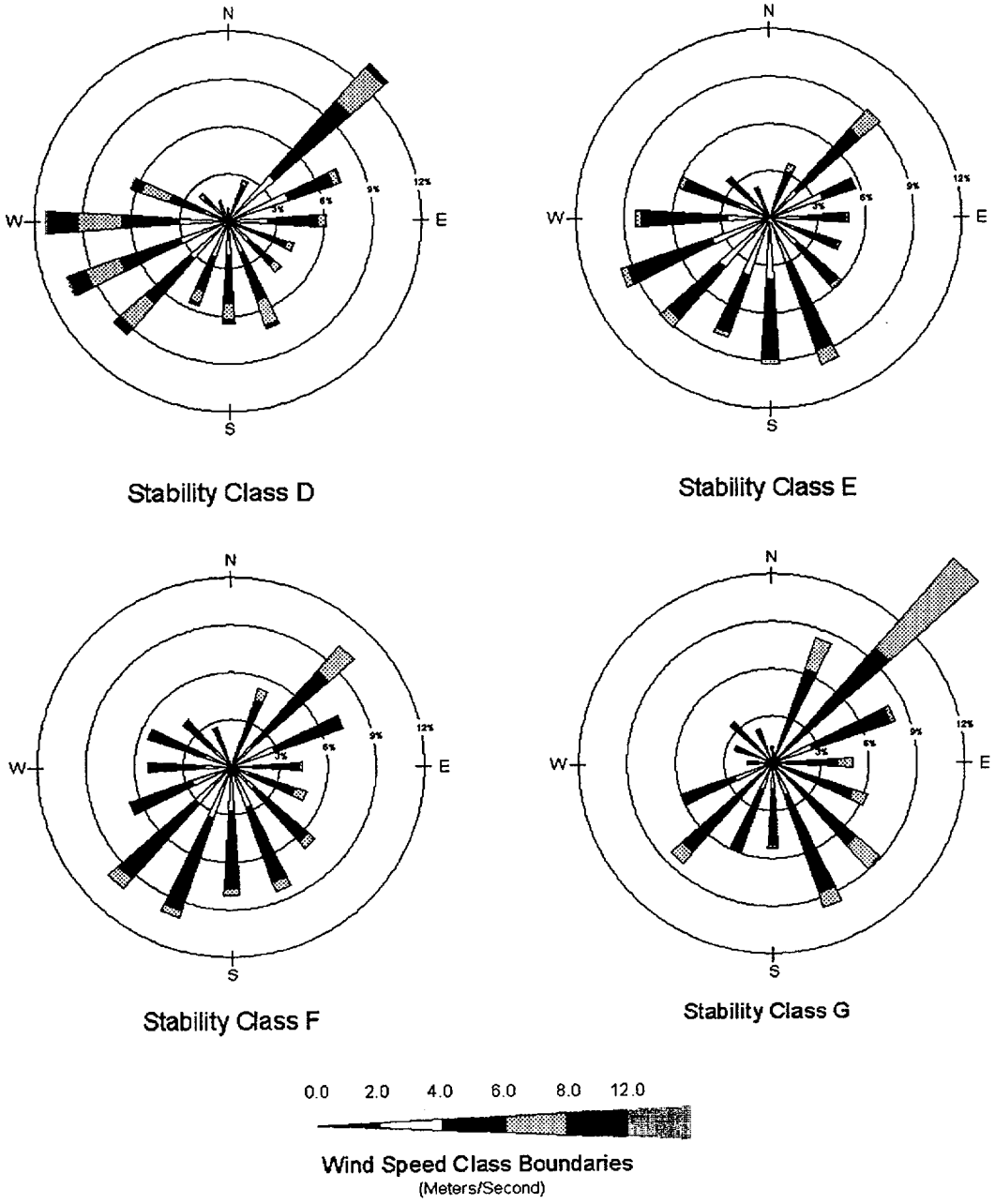


Figure 1.4-3 Wind Rose Plots by Stability Class - C Area Tower, 1992-1996 (Sheet 1 of 2)



Note: plots indicate the wind direction sector from which the wind blows

Figure 1.4-3 Wind Rose Plots by Stability Class - C Area Tower, 1992-1996 (Sheet 2 of 2)

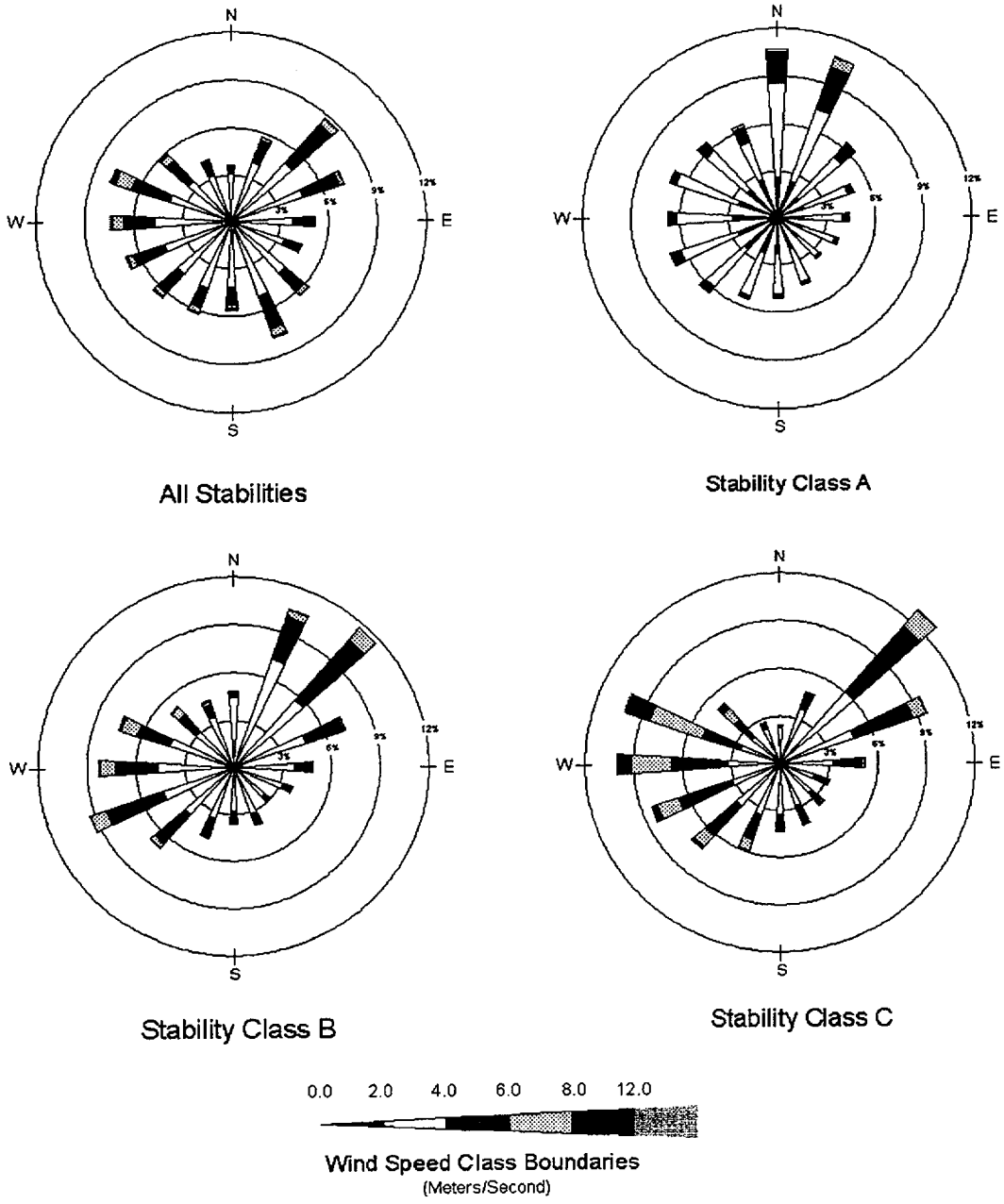


Figure 1.4-4 Wind Rose Plots by Stability Class - D Area Tower, 1992-1996 (Sheet 1 of 2)

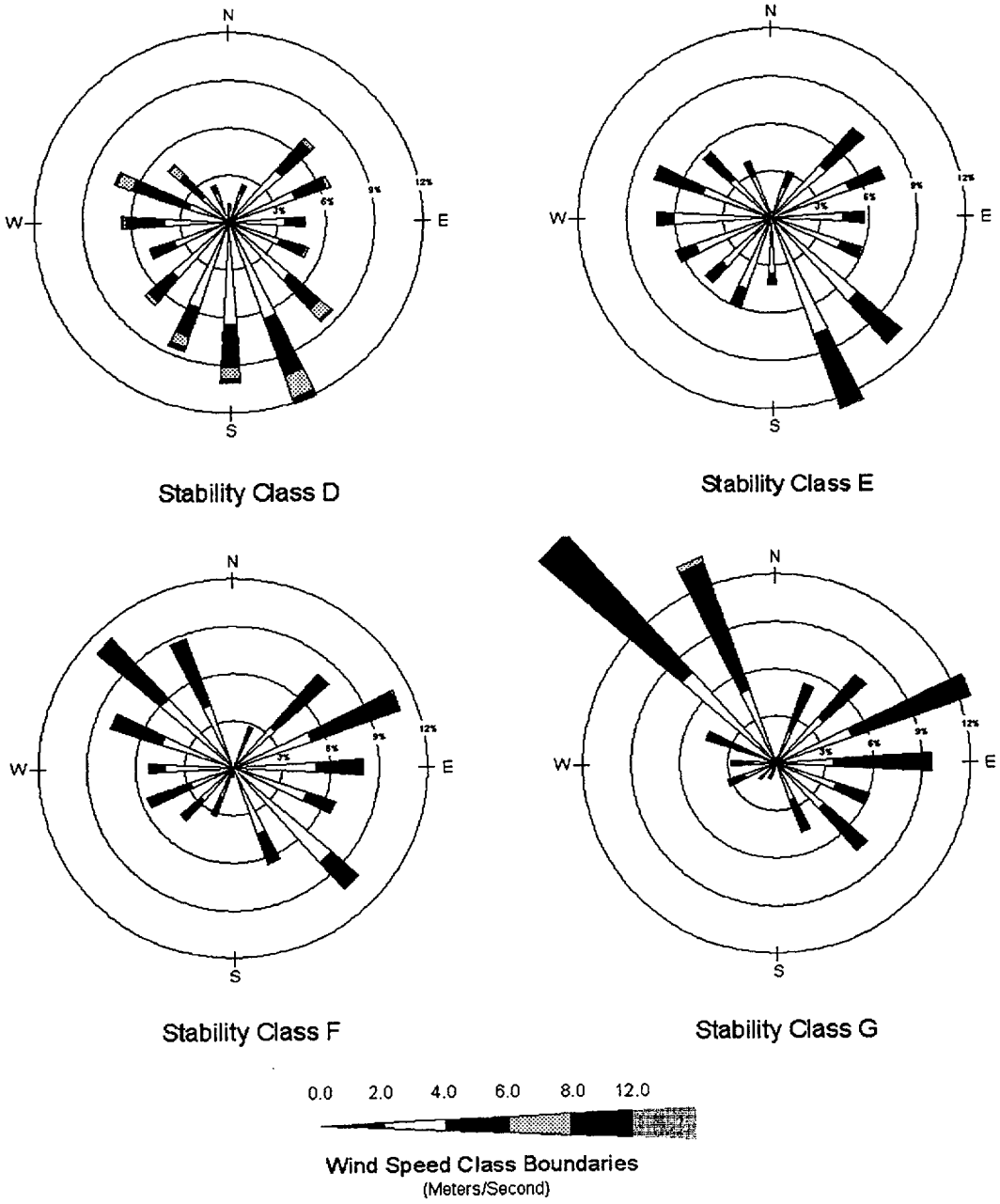


Figure 1.4-4 Wind Rose Plots by Stability Class - D Area Tower, 1992-1996 (Sheet 2 of 2)

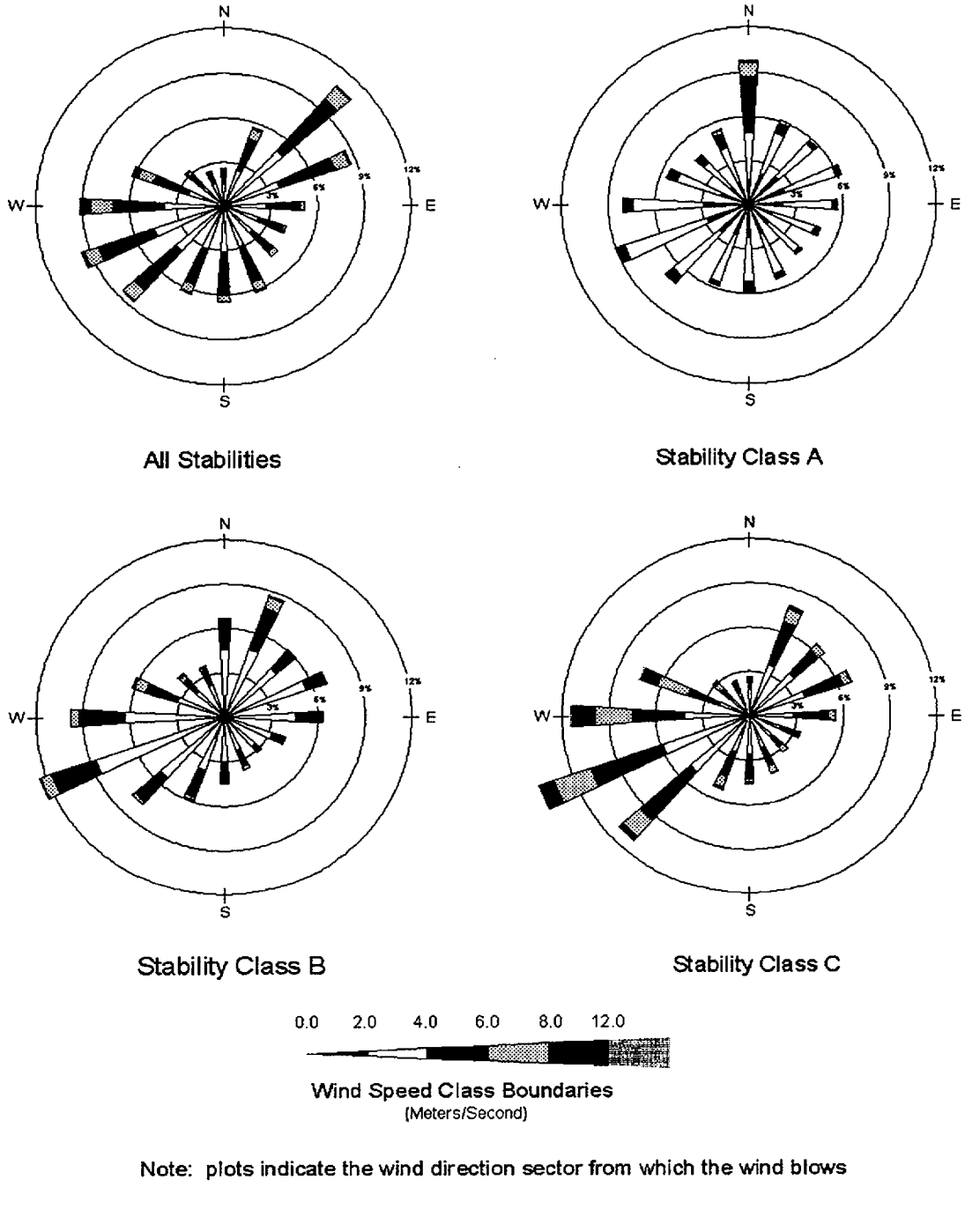
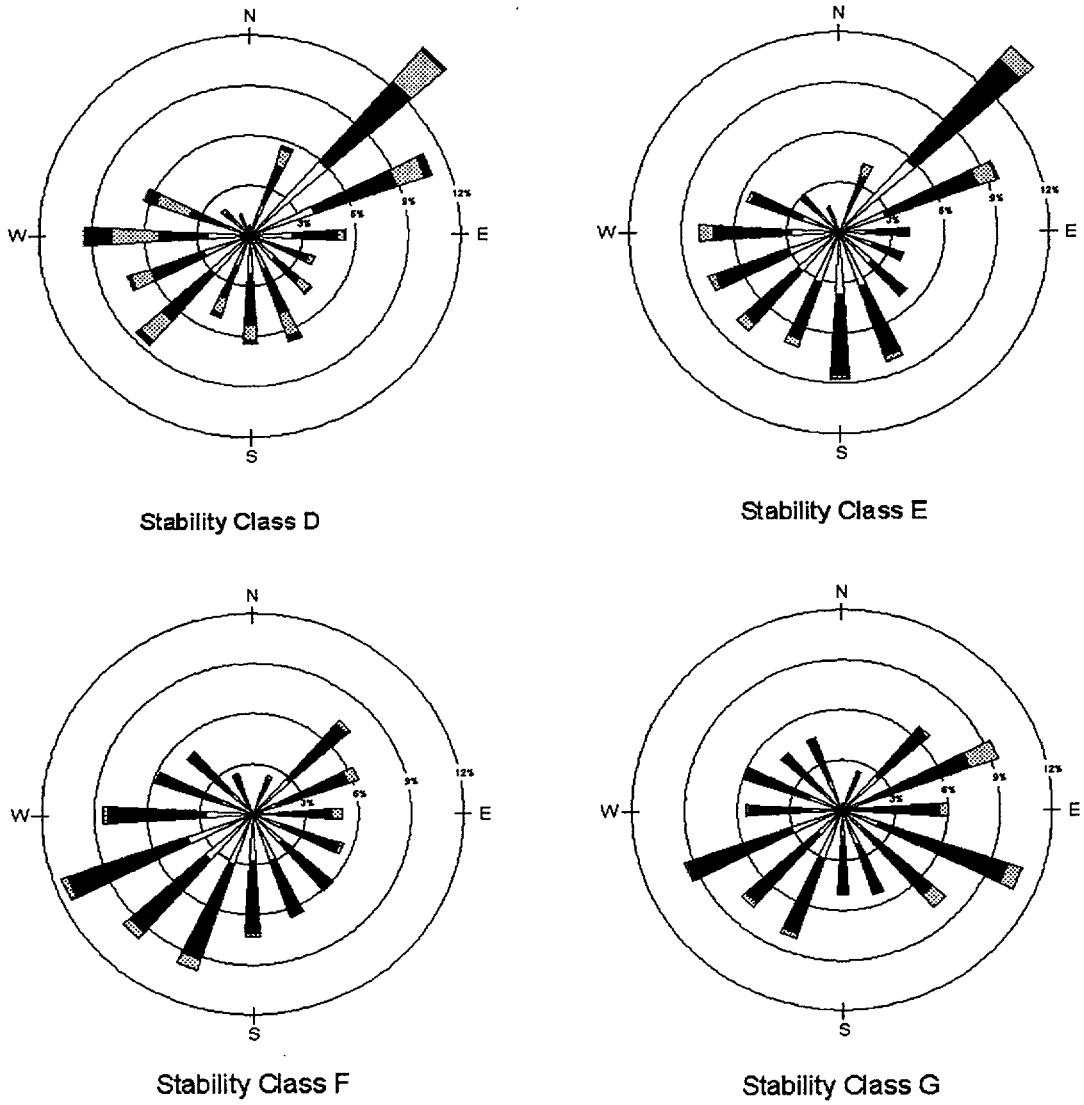
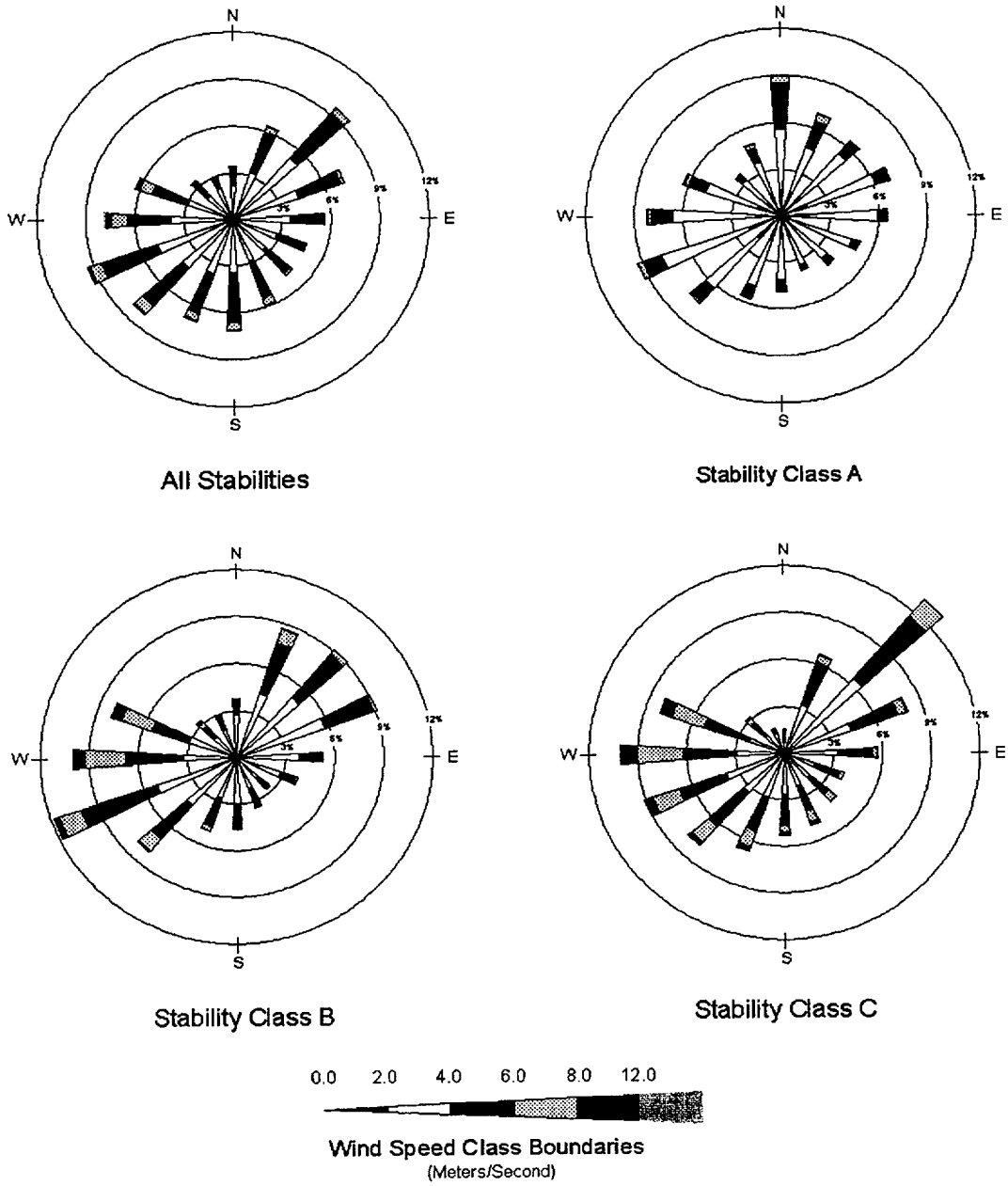


Figure 1.4-5 Wind Rose Plots by Stability Class - F Area Tower, 1992-1996 (Sheet 1 of 2)



Note: plots indicate the wind direction sector from which the wind blows

Figure 1.4-5 Wind Rose Plots by Stability Class - F Area Tower, 1992-1996 (Sheet 2 of 2)



Note: plots indicate the wind direction sector from which the wind blows

Figure 1.4-6 Wind Rose Plots by Stability Class - H Area Tower, 1992-1996 (Sheet 1 of 2)

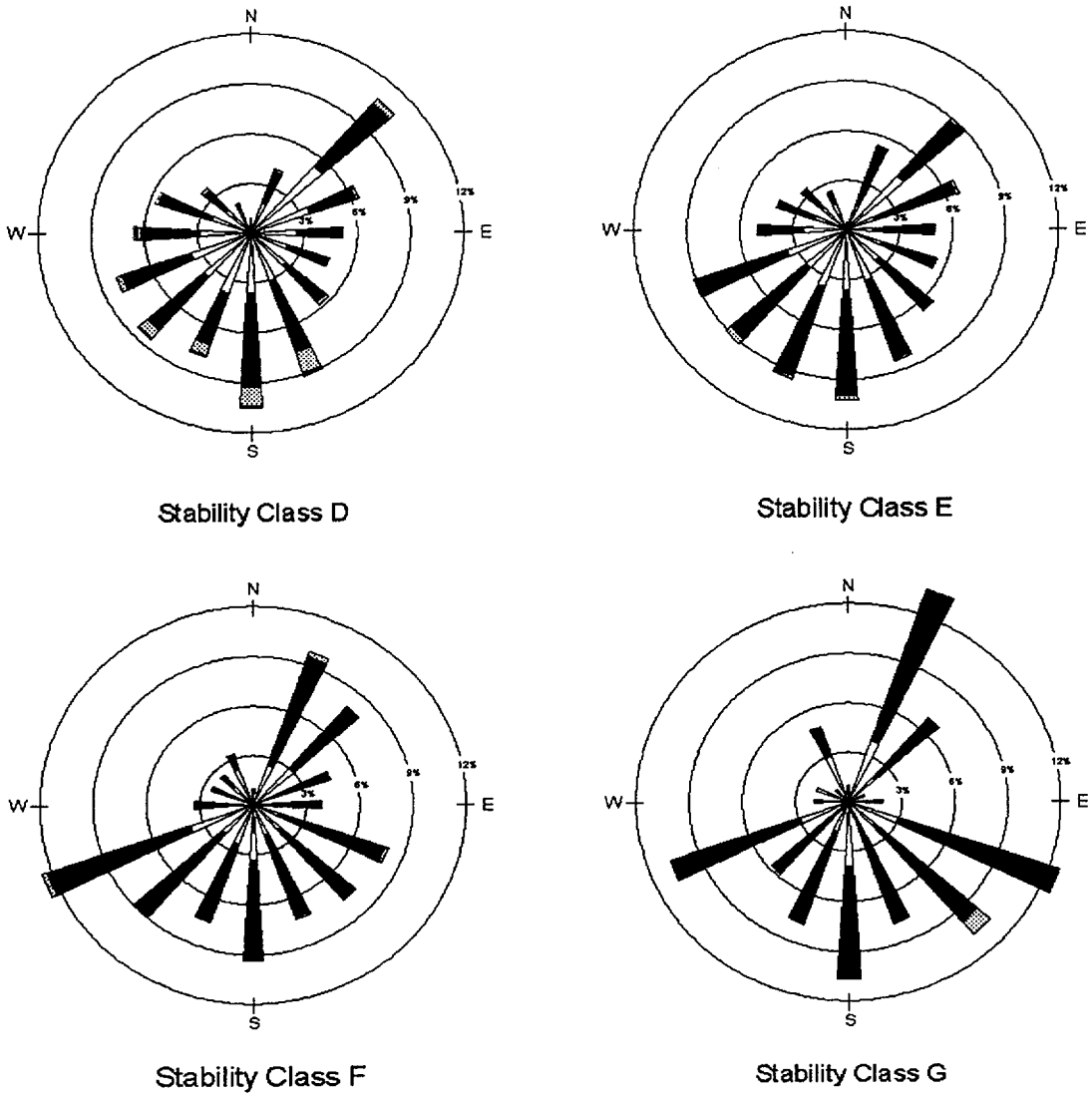


Figure 1.4-6 Wind Rose Plots by Stability Class - H Area Tower, 1992-1996 (Sheet 2 of 2)

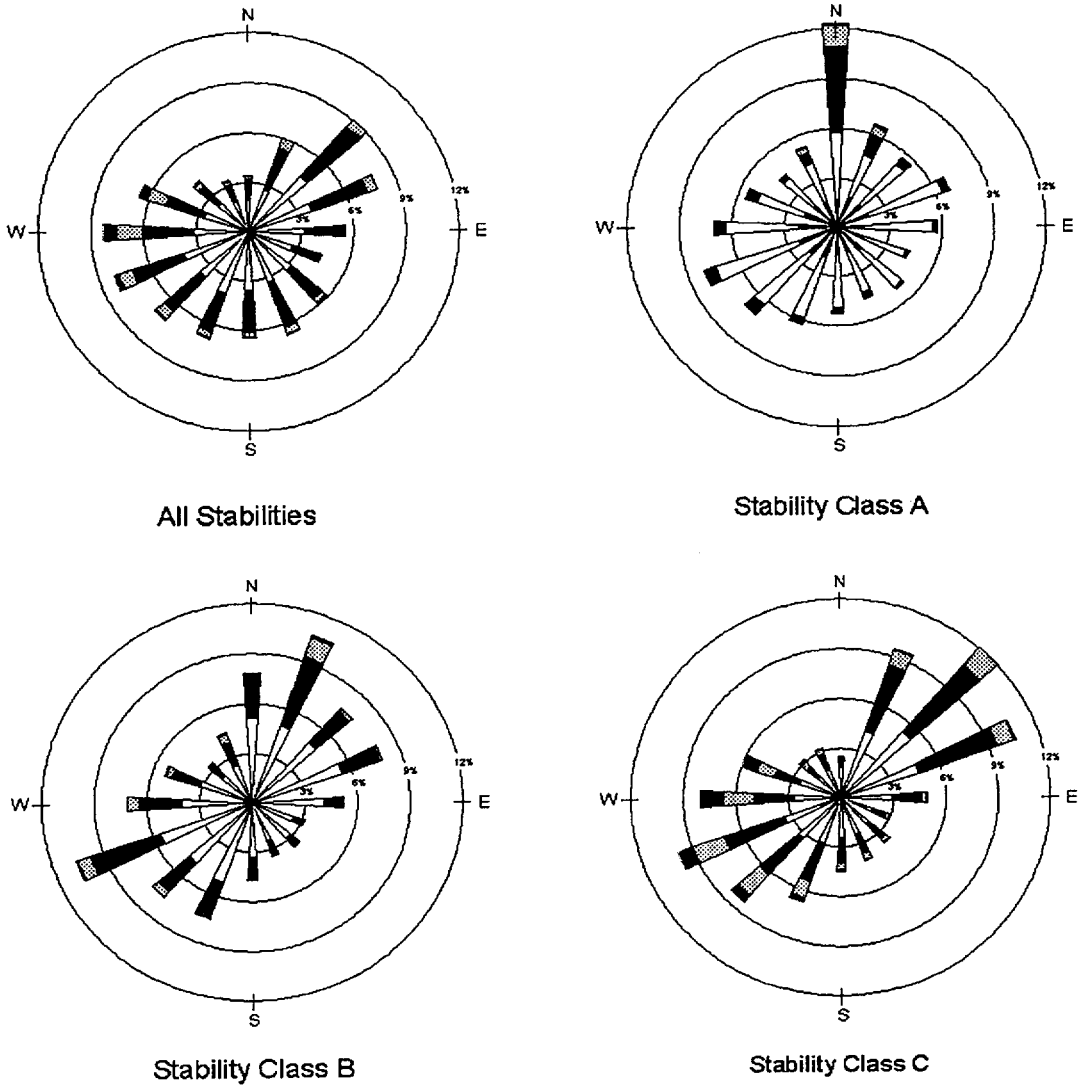
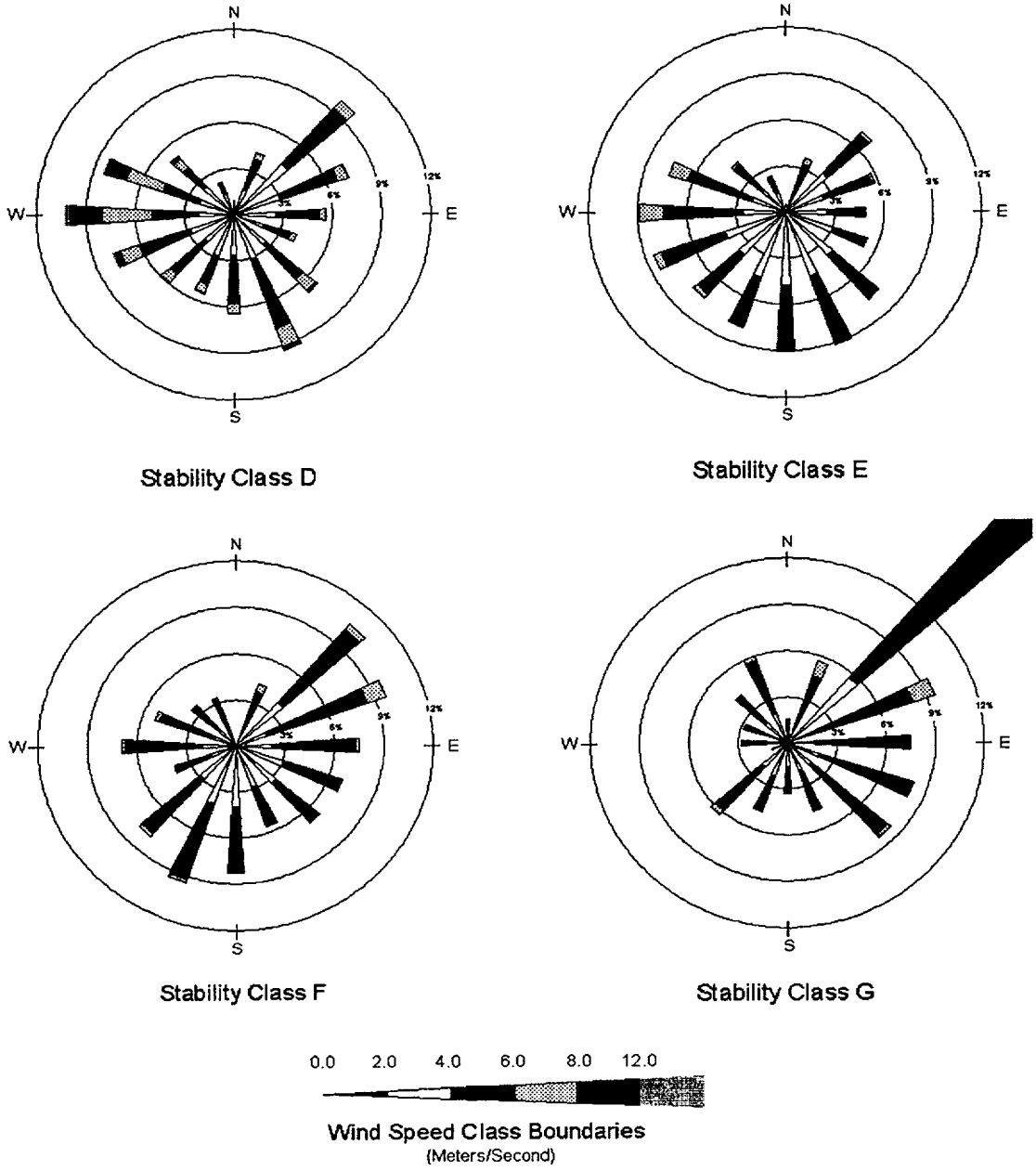


Figure 1.4-7 Wind Rose Plots by Stability Class - K Area Tower, 1992-1996 (Sheet 1 of 2)



Note: plots indicate the wind direction sector from which the wind blows

Figure 1.4-7 Wind Rose Plots by Stability Class - K Area Tower, 1992-1996 (Sheet 2 of 2)

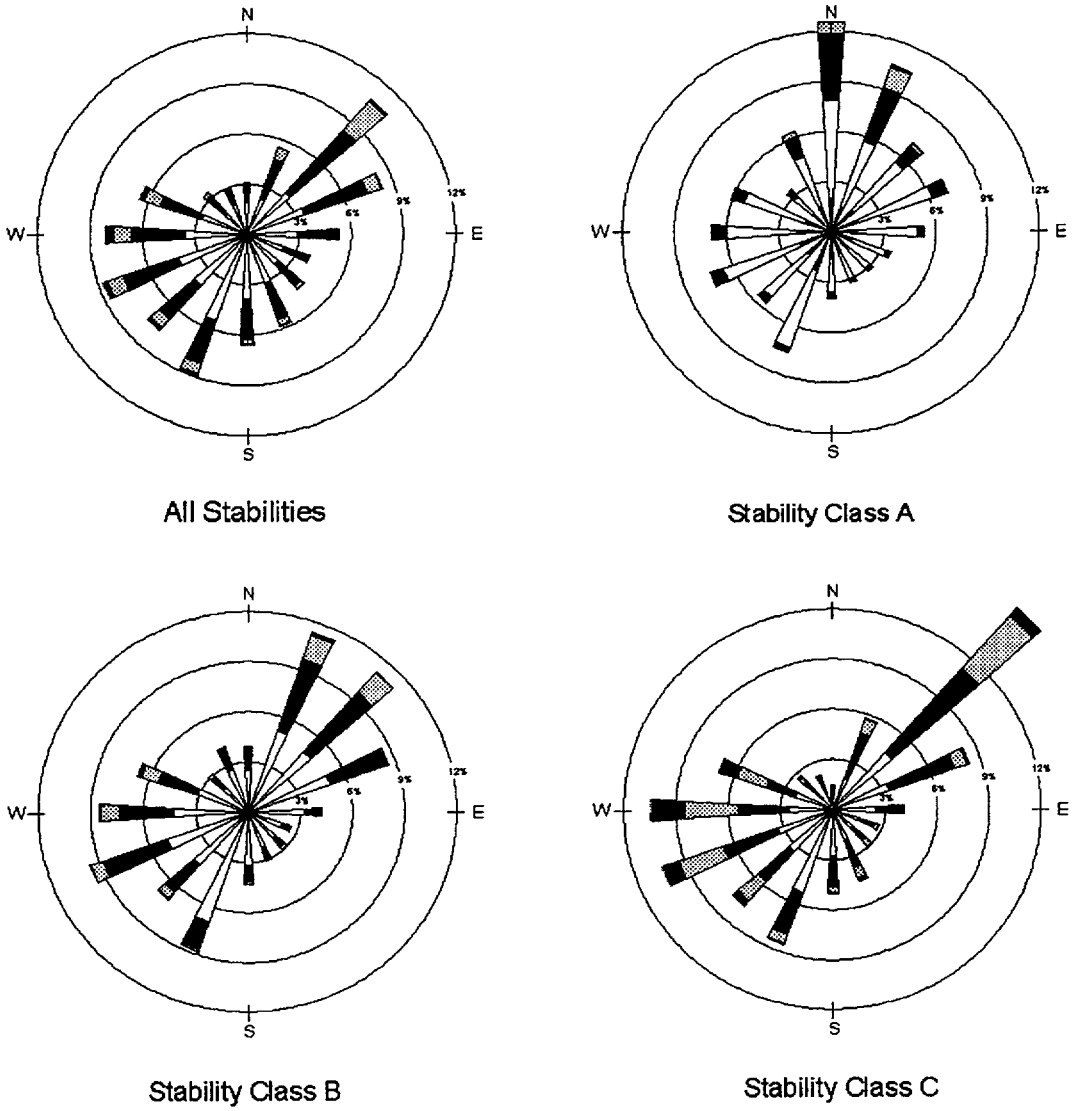
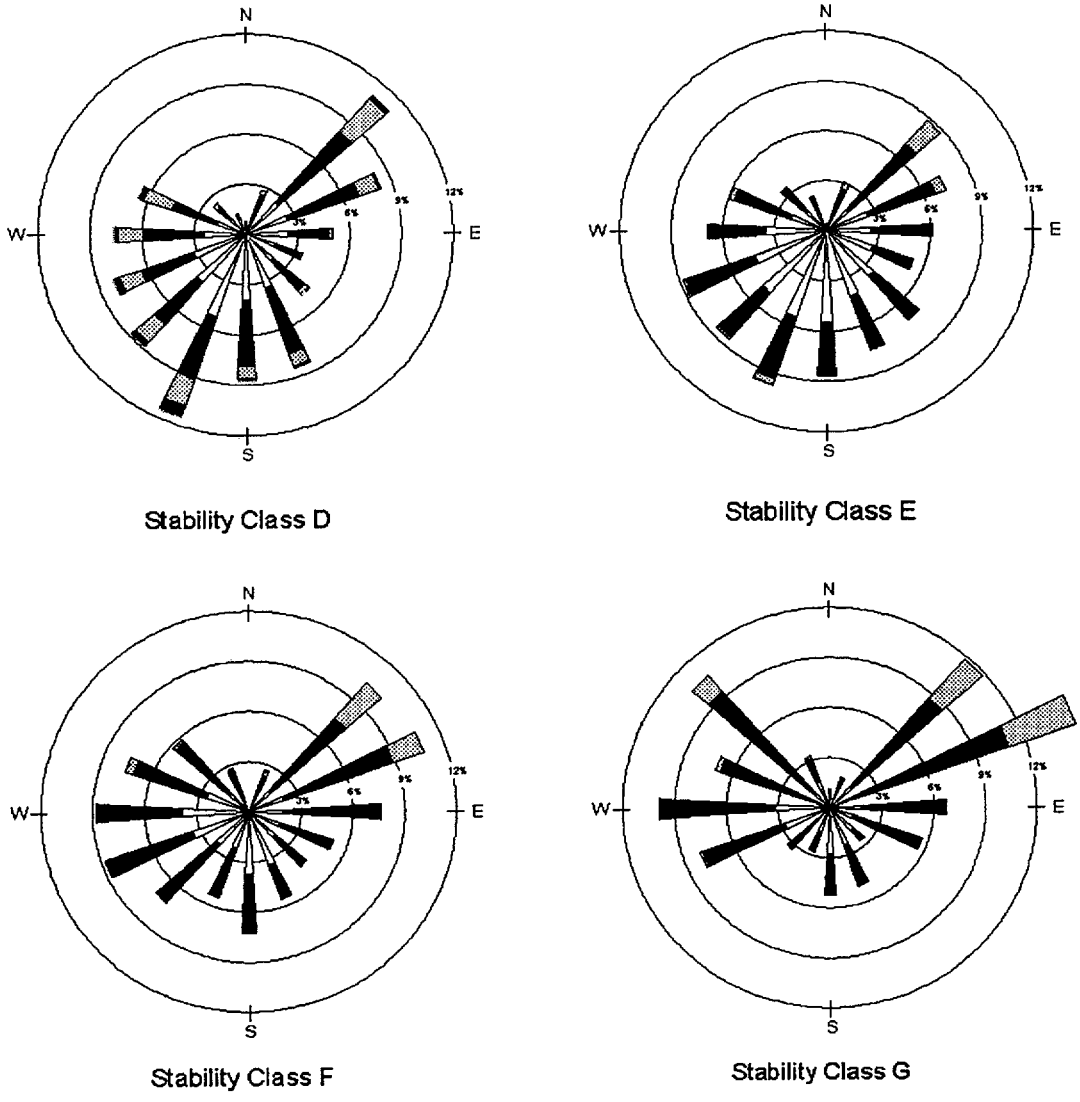


Figure 1.4-8 Wind Rose Plots by Stability Class - L Area, 1992-1996 (Sheet 1 of 2)



Note: plots indicate the wind direction sector from which the wind blows

Figure 1.4-8 Wind Rose Plots by Stability Class - L Area, 1992-1996 (Sheet 2 of 2)

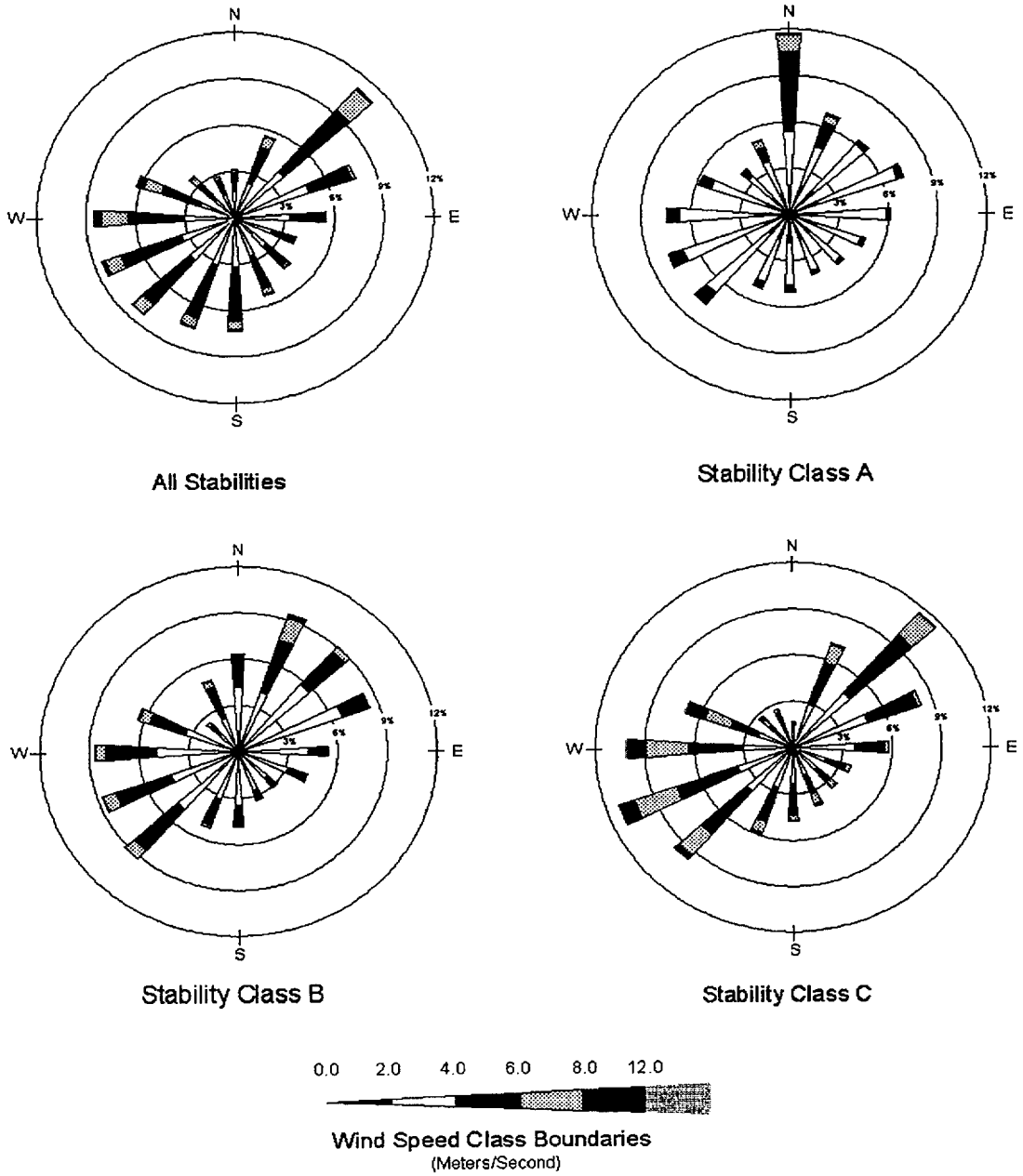


Figure 1.4-9 Wind Rose Plots by Stability Class- P Area, 1992-1996 (Sheet 1 of 2)

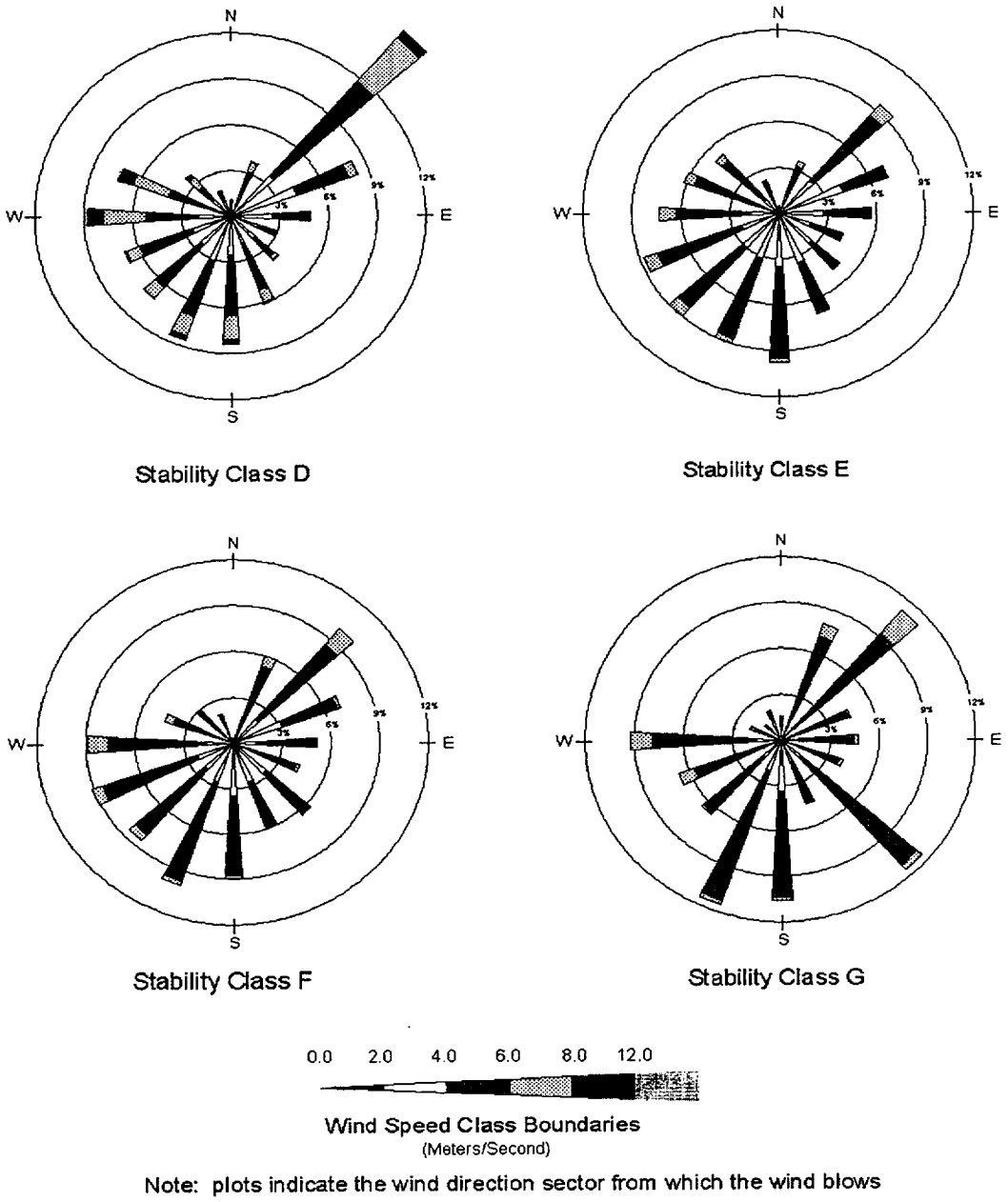


Figure 1.4-9 Wind Rose Plots by Stability Class- P Area, 1992-1996 (Sheet 2 of 2)

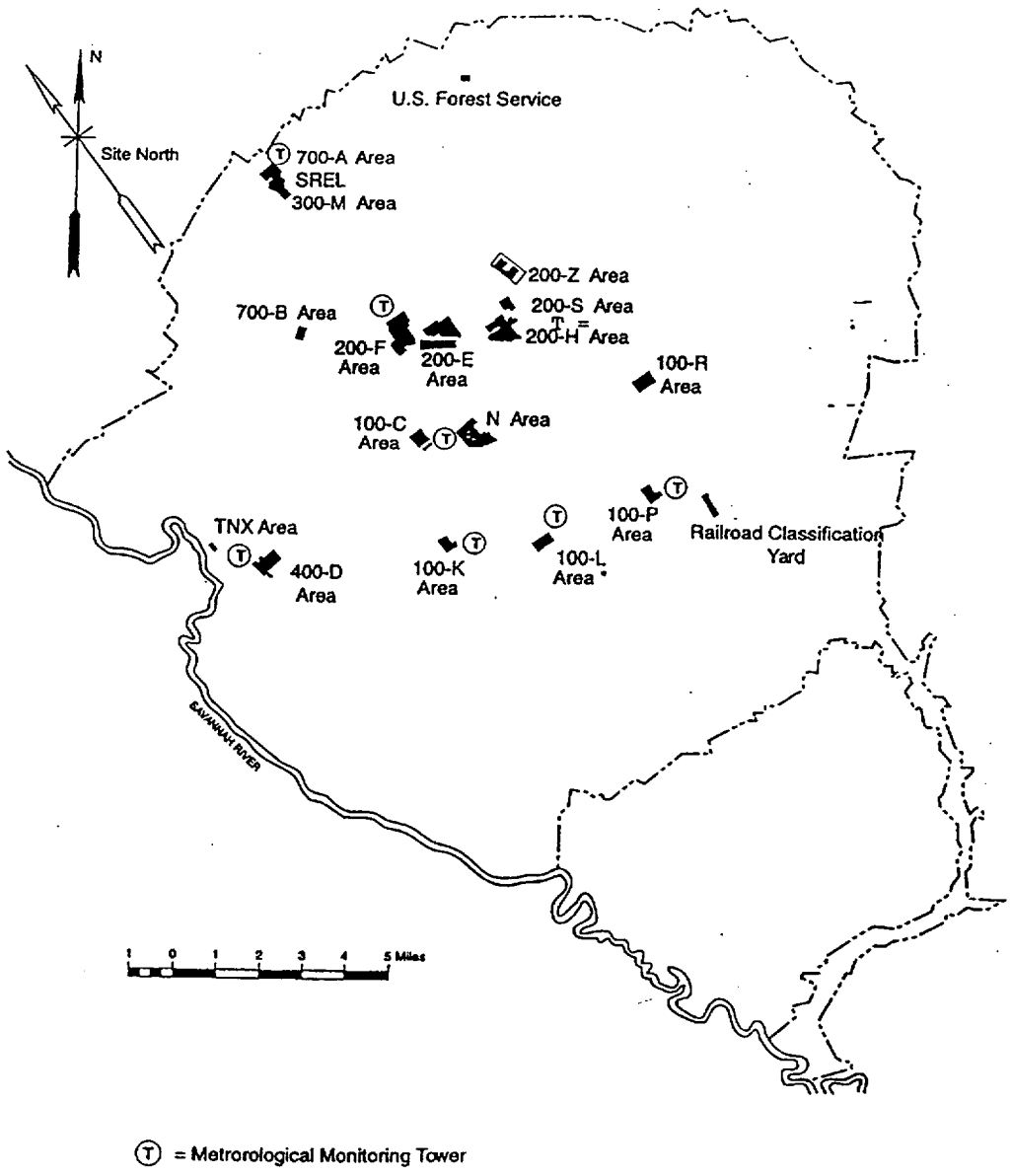


Figure 1.4-10 Locations of SRS Meteorological Monitoring Towers

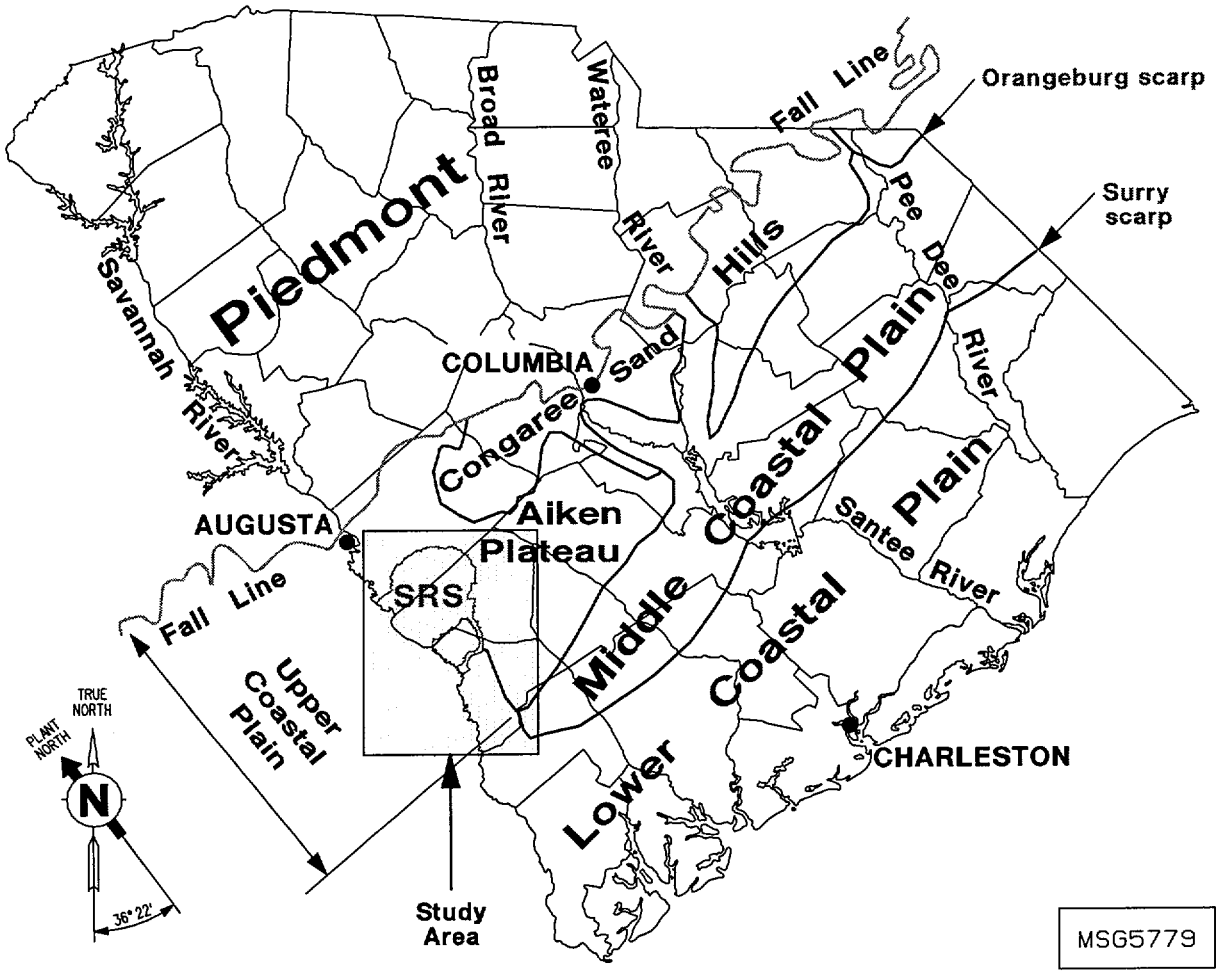


Figure 1.4-11 Regional Physiographic Provinces of South Carolina

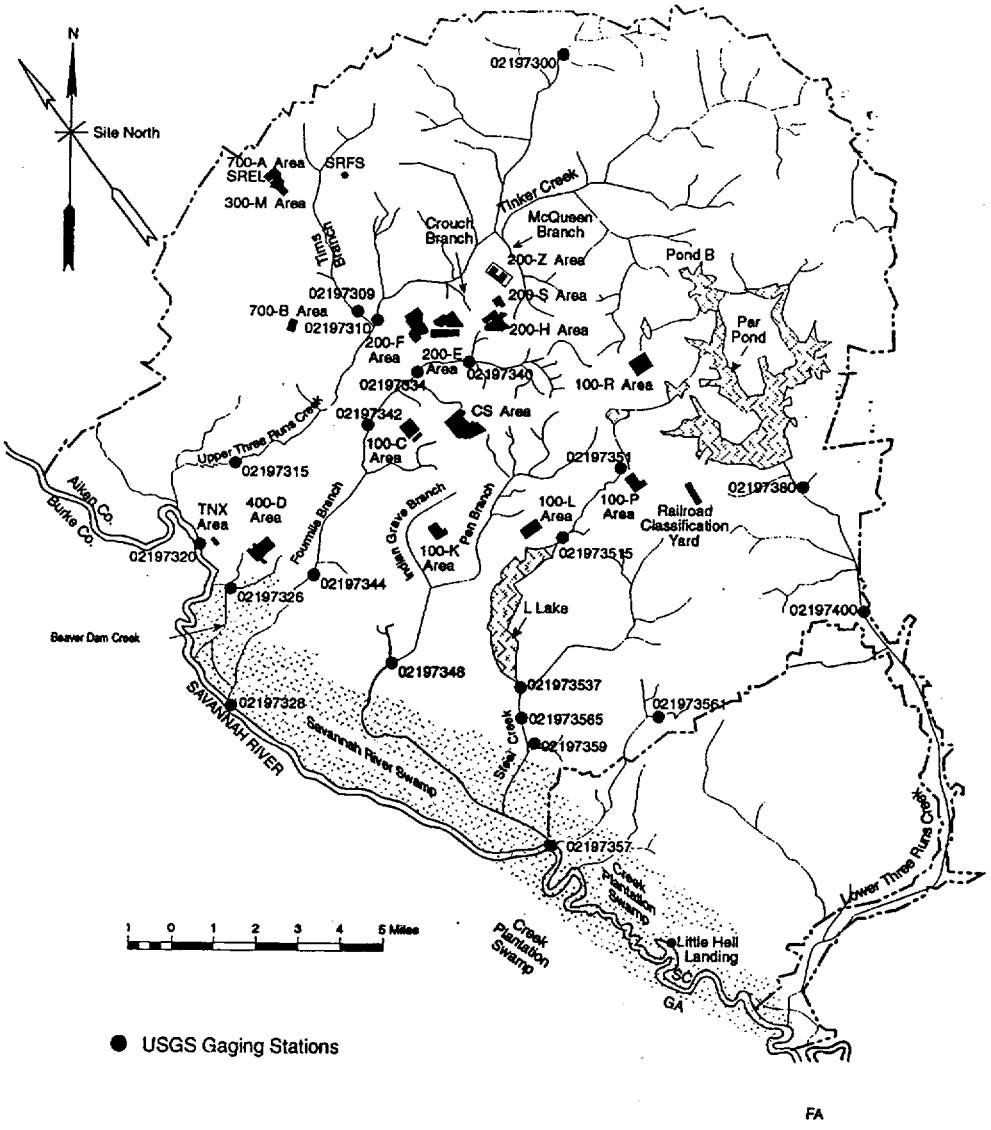


Figure 1.4-12 Surface Drainage Map of SRS Showing the Savannah River Swamp and Gauging Stations

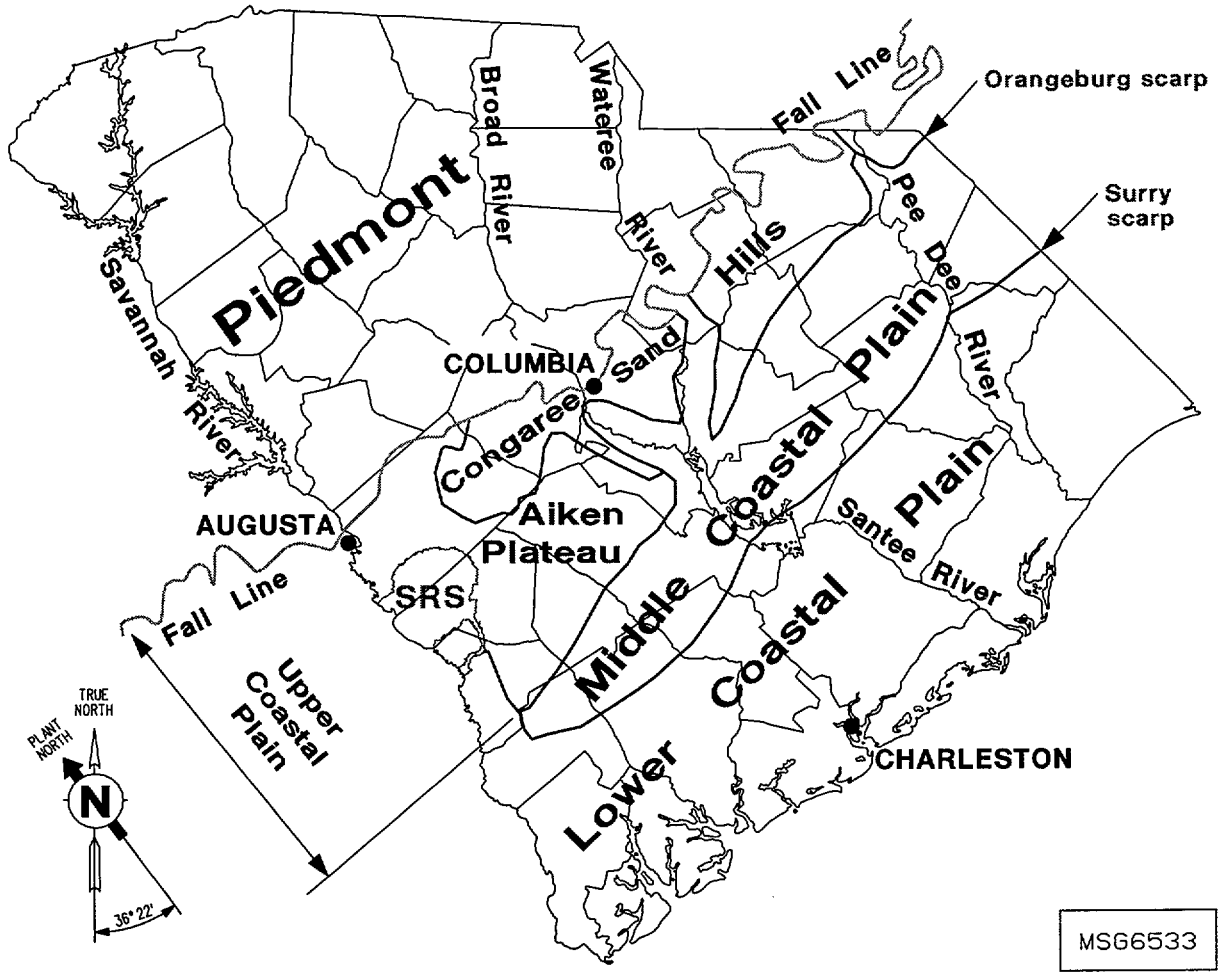


Figure 1.4-13 Physiography of the SRS Area

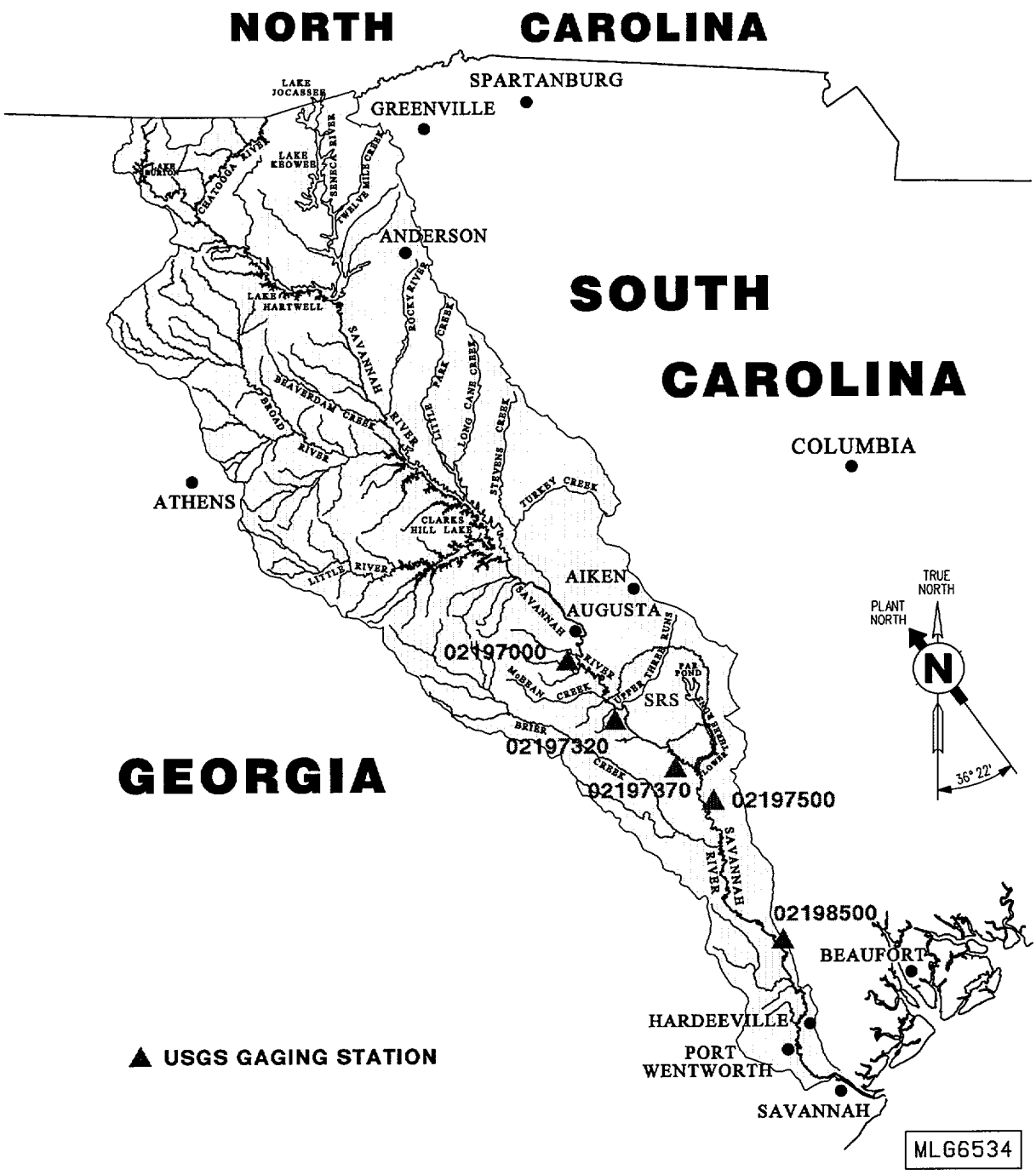


Figure 1.4-14 Savannah River Basin

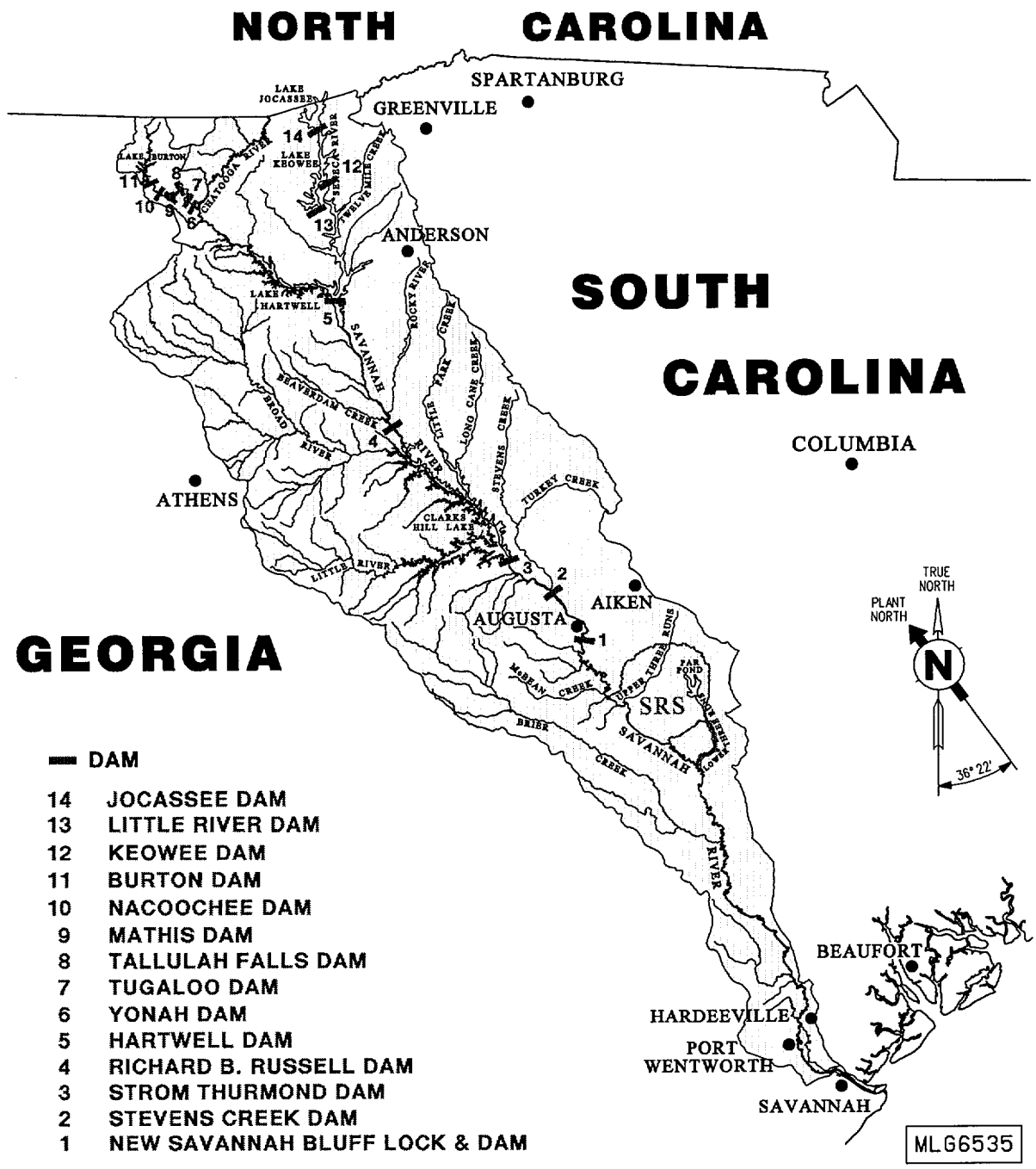
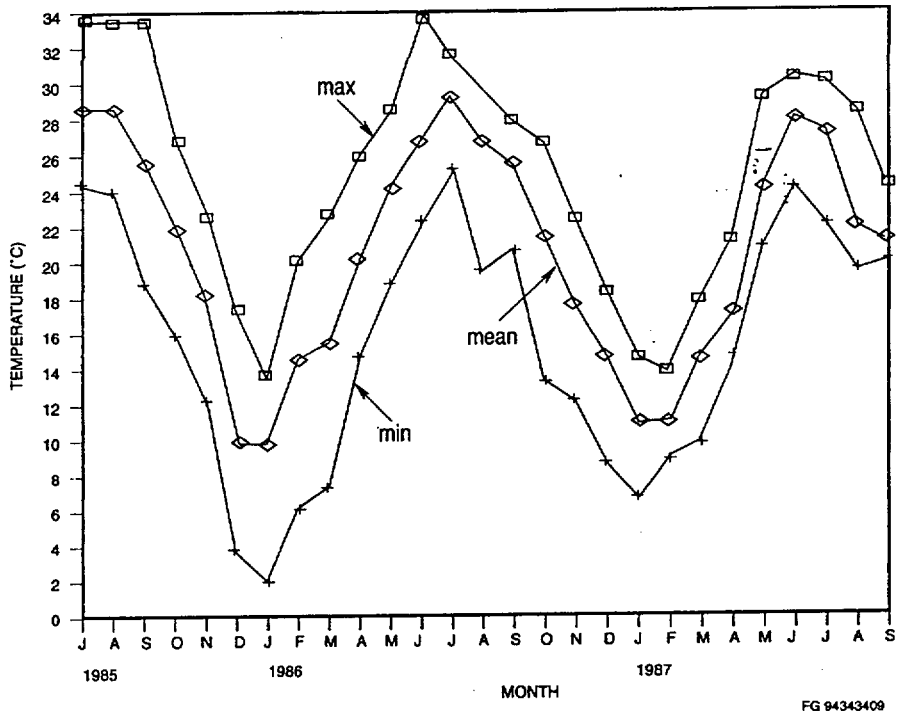


Figure 1.4-15 Savannah River Basin Dams Upstream of SRS



(Note: Figure 1.4-17 is intentionally omitted.).

Figure 1.4-16 Monthly Range and Mean Water Temperature of Fourmile Branch for June 1985 Through September 1987

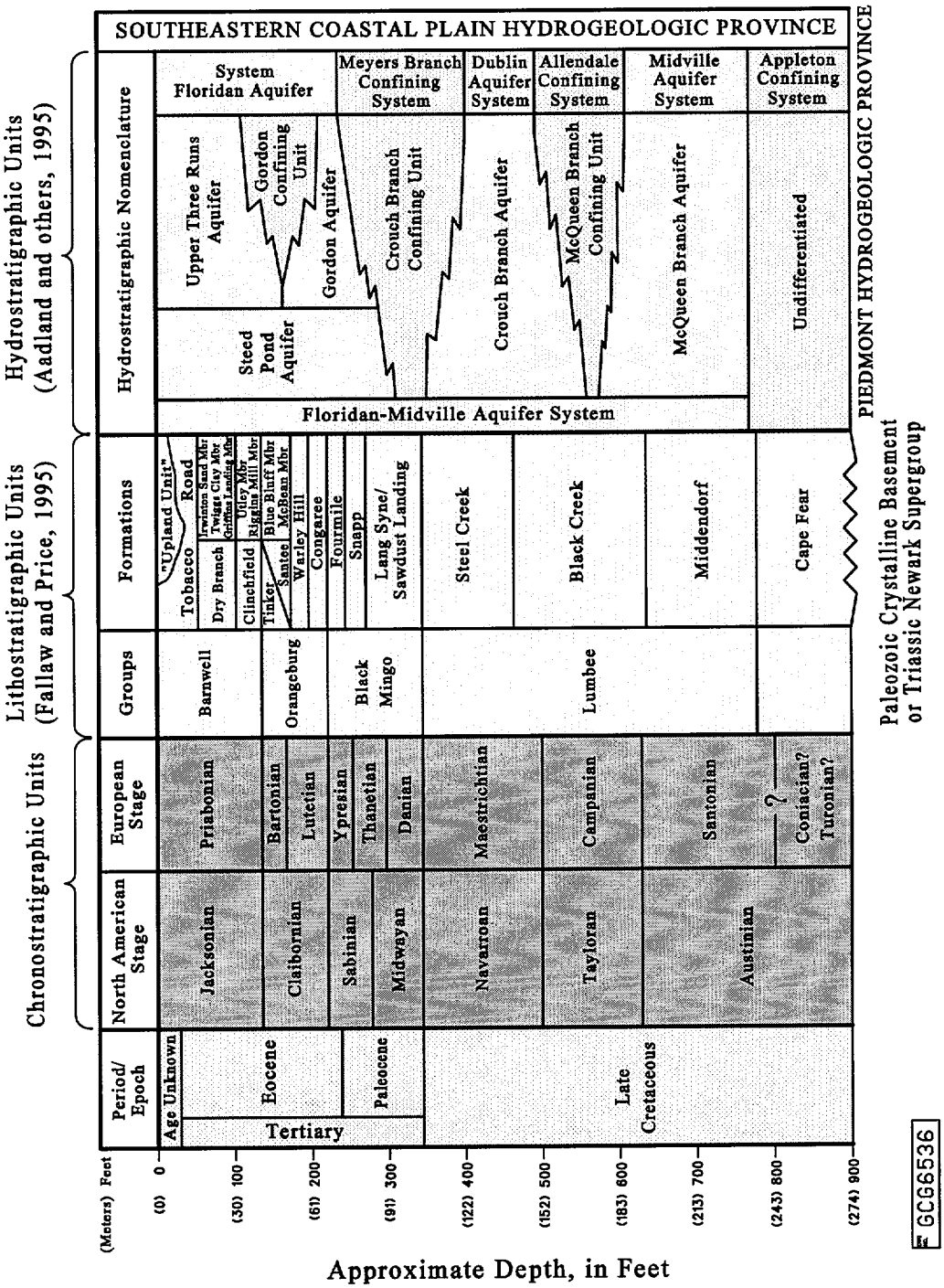


Figure 1.4-18. Comparison of chronostratigraphic, lithostratigraphic, and hydrostratigraphc units in the SRS region.

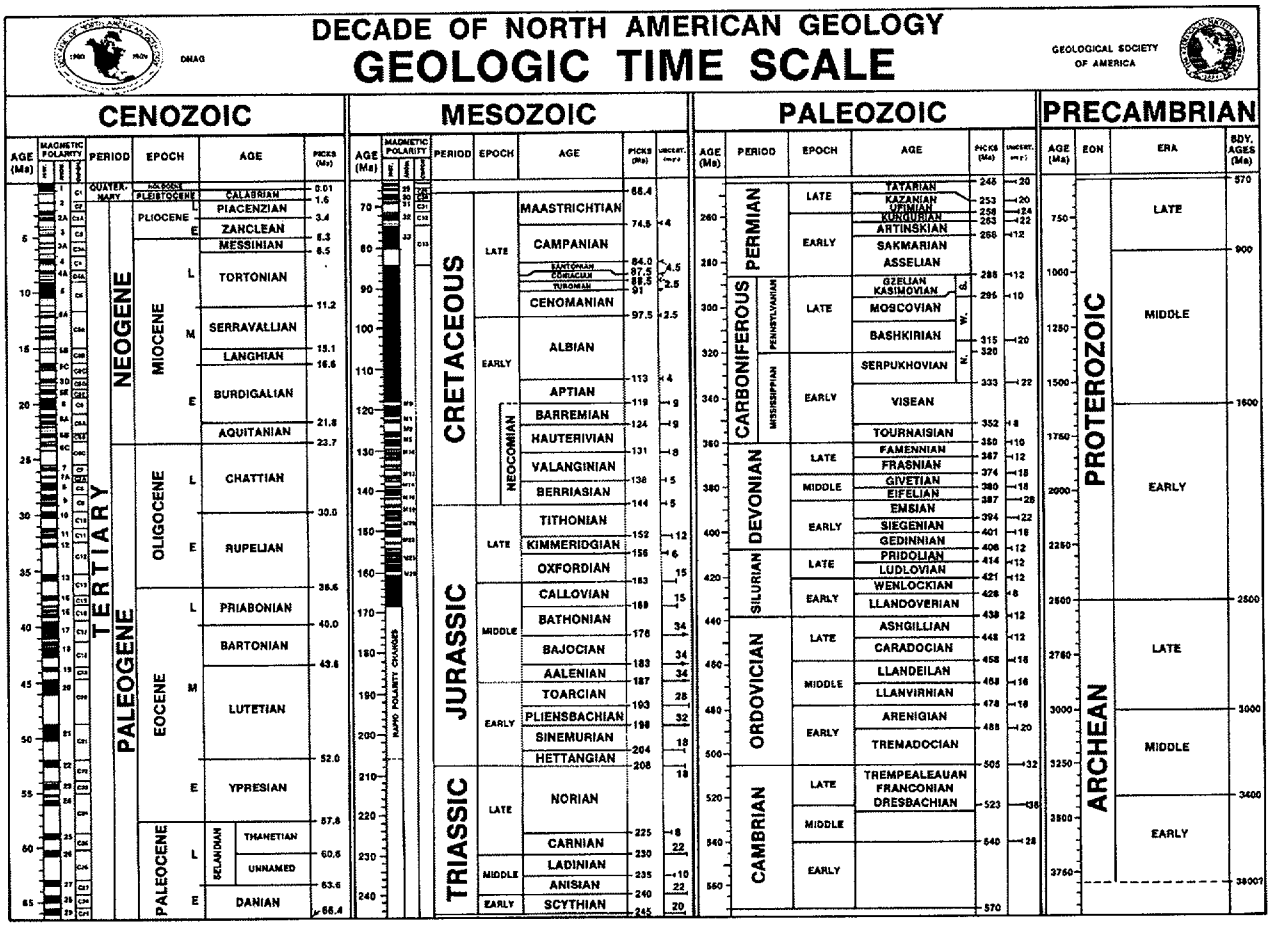


Figure 1.4-19. Geologic time scale. Decade of North American Geology, (1998).

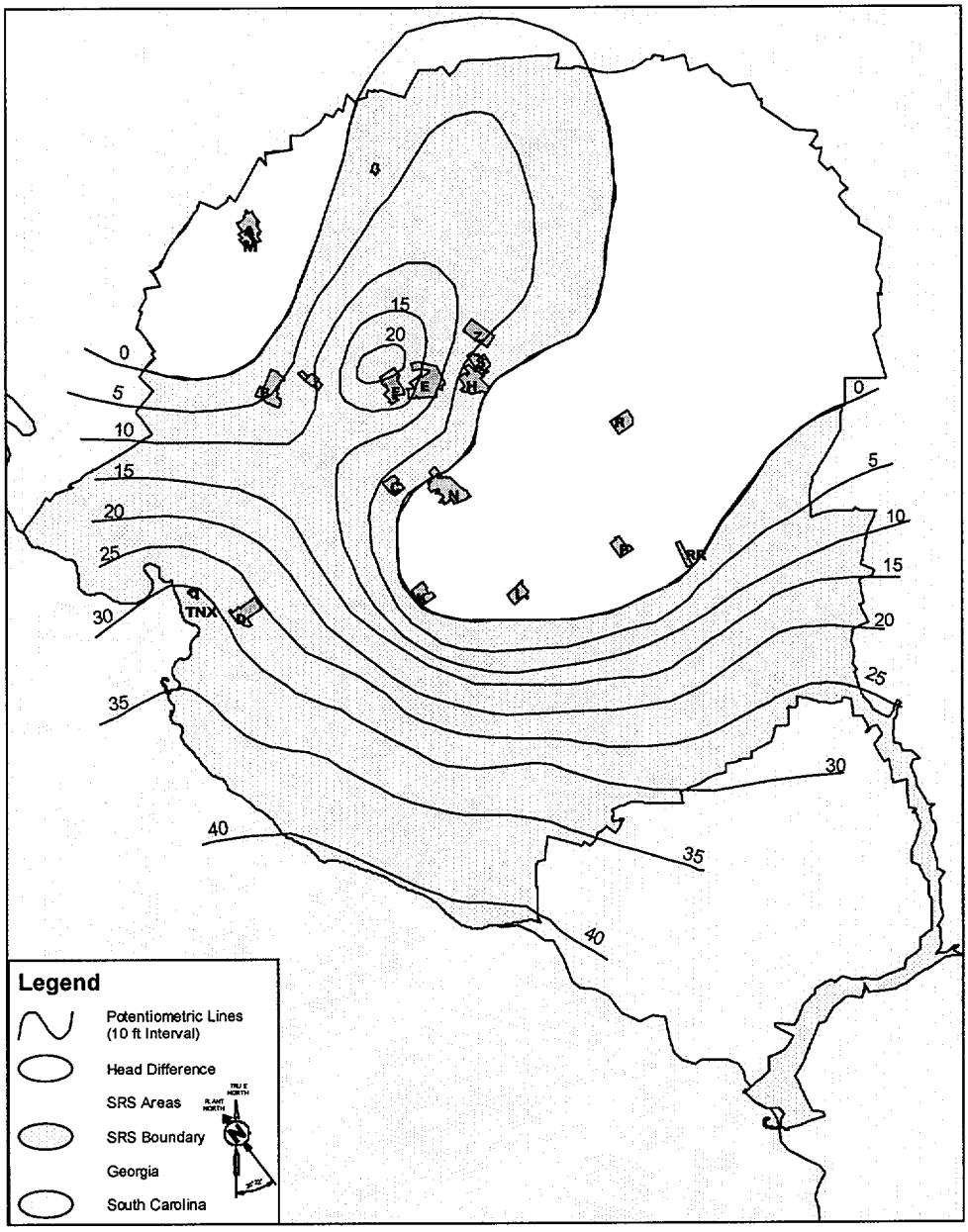


Figure 1.4-20. Hydraulic head difference across the Crouch Branch confining unit, July 1990 (modified from Bledsoe et al., 1990).

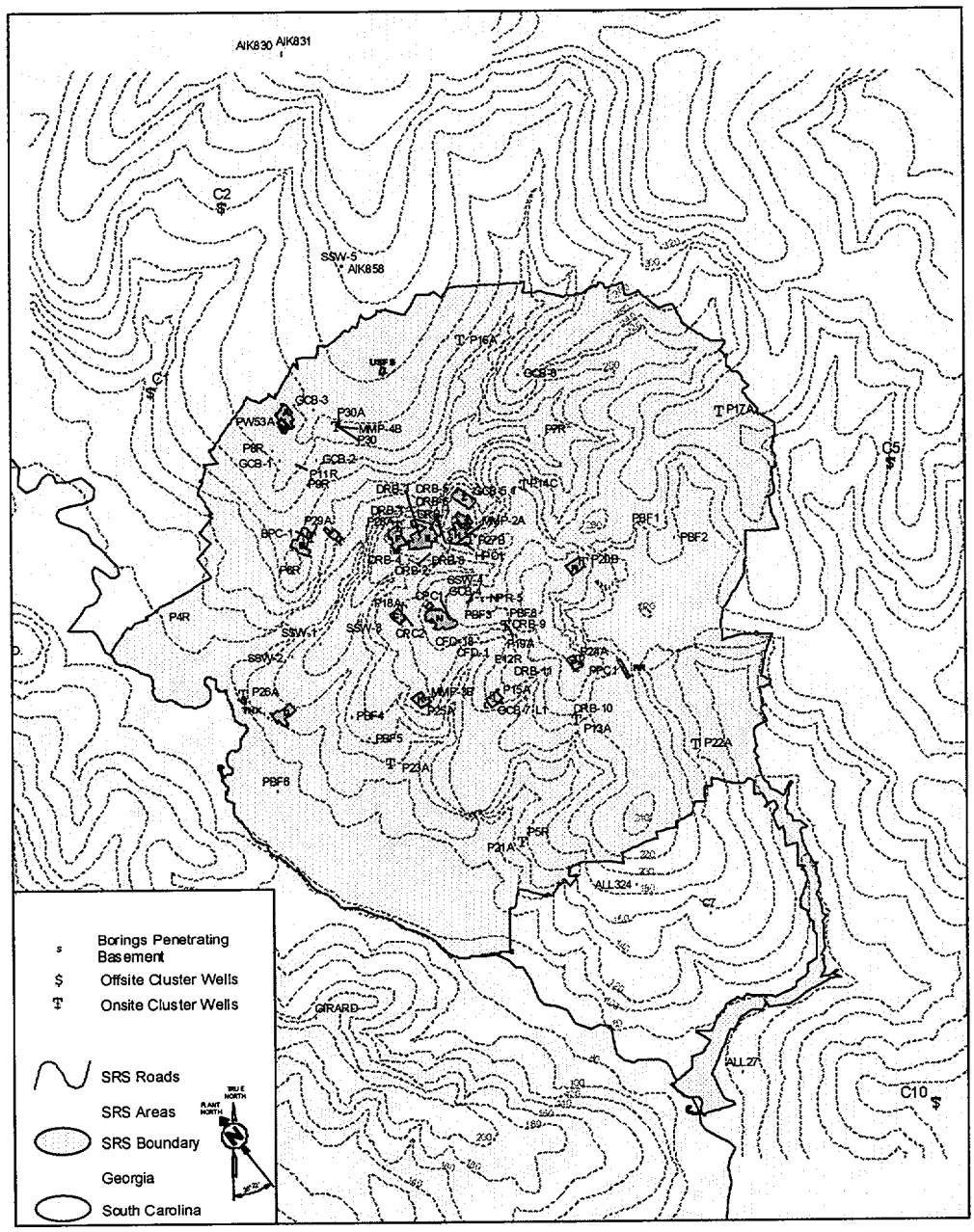


Figure 1.4-21. Location of type and reference wells for hydrostratigraphic units at SRS.

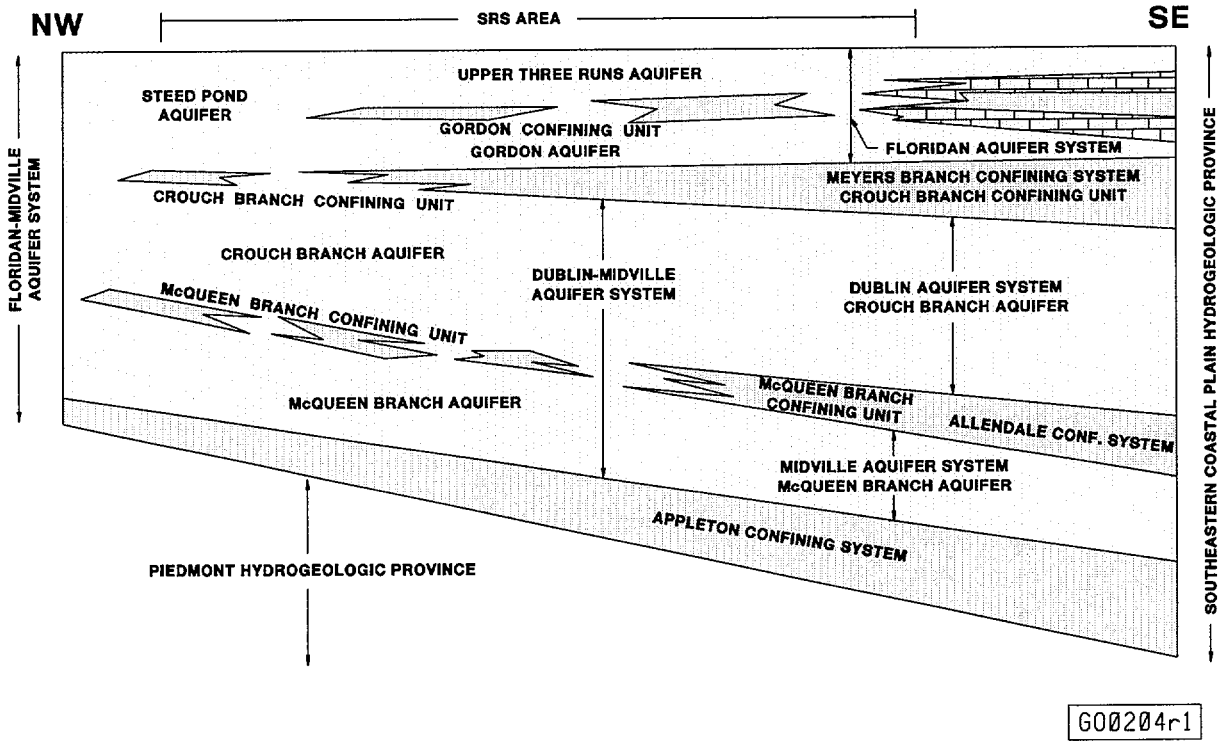


Figure 1.4-22. Hydrogeologic nomenclature for the SRS region.

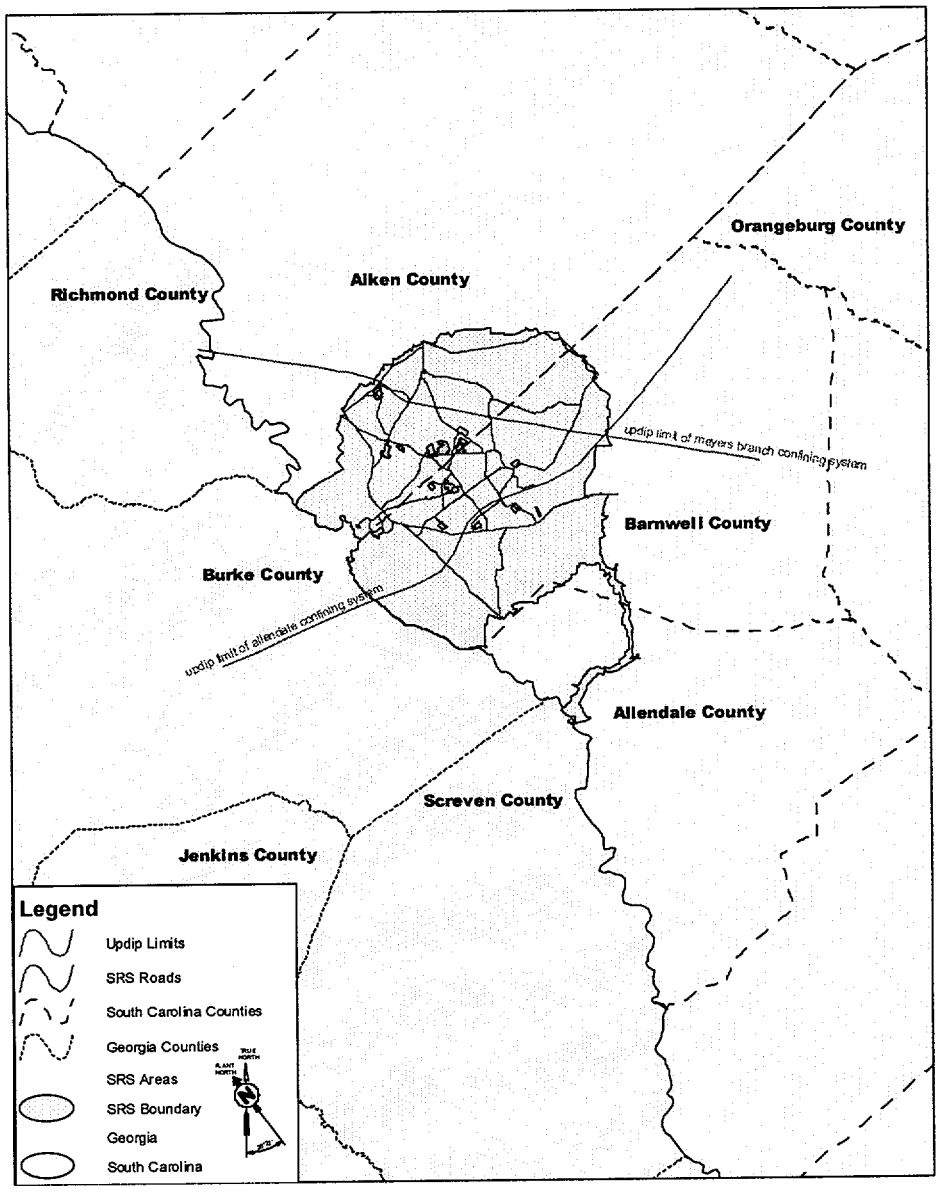


Figure 1.4-23. Location of aquifer and confining systems in the SRS region.

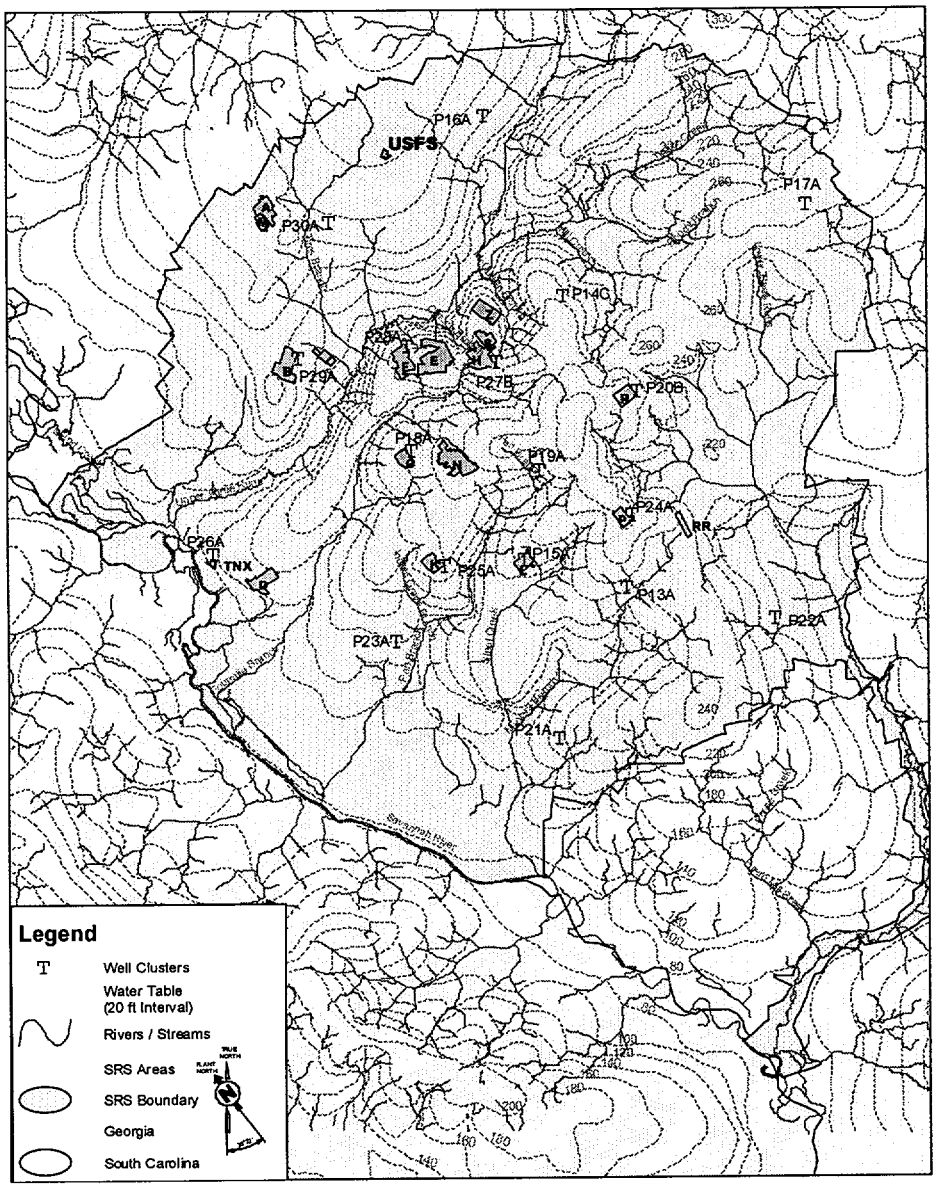


Figure 1.4-24. Potentiometric surface of the Upper Three Runs/Steed Pond aquifers, 1998 (water table map).

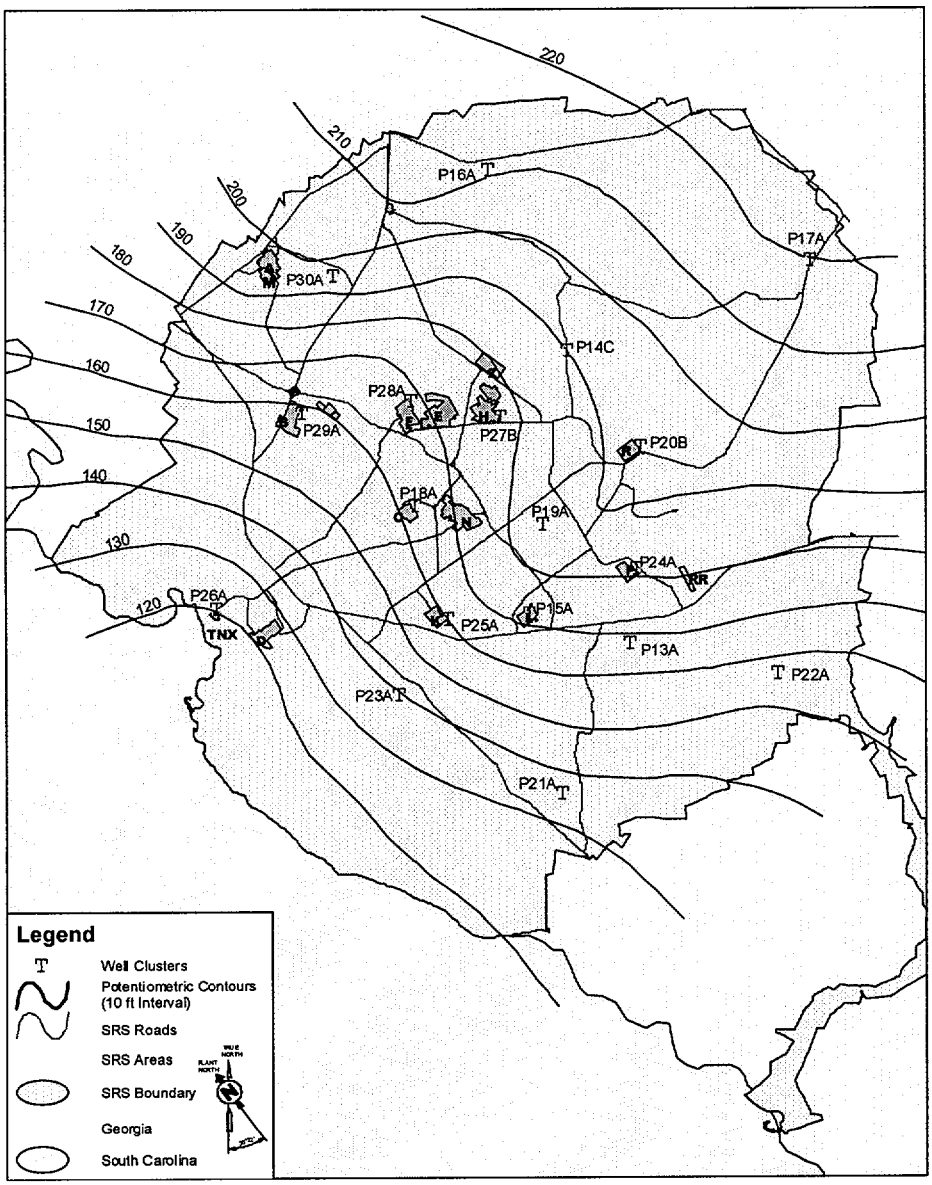


Figure 1.4-25. Potentiometric surface of the Gordon aquifer.

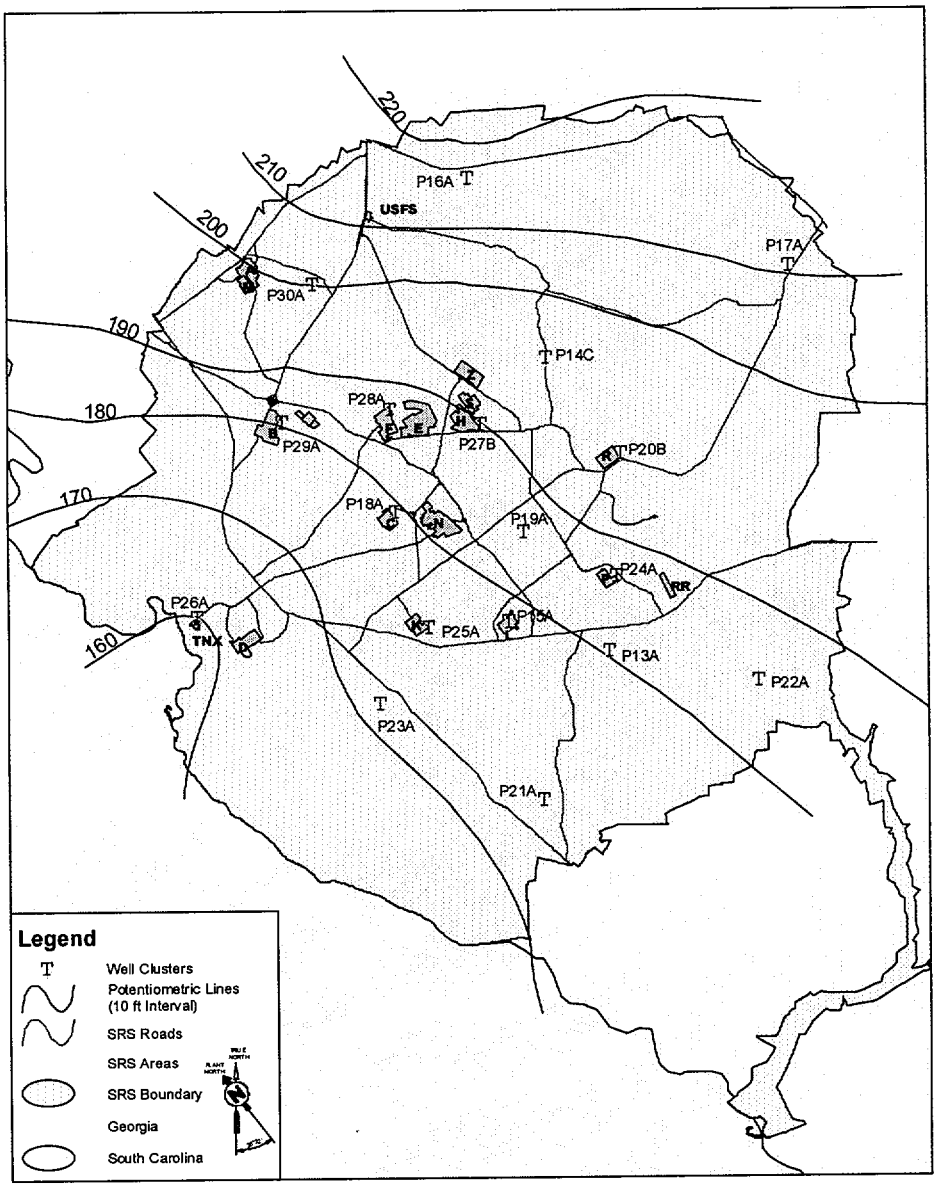


Figure 1.4-26. Potentiometric surface of the Crouch Branch aquifer.

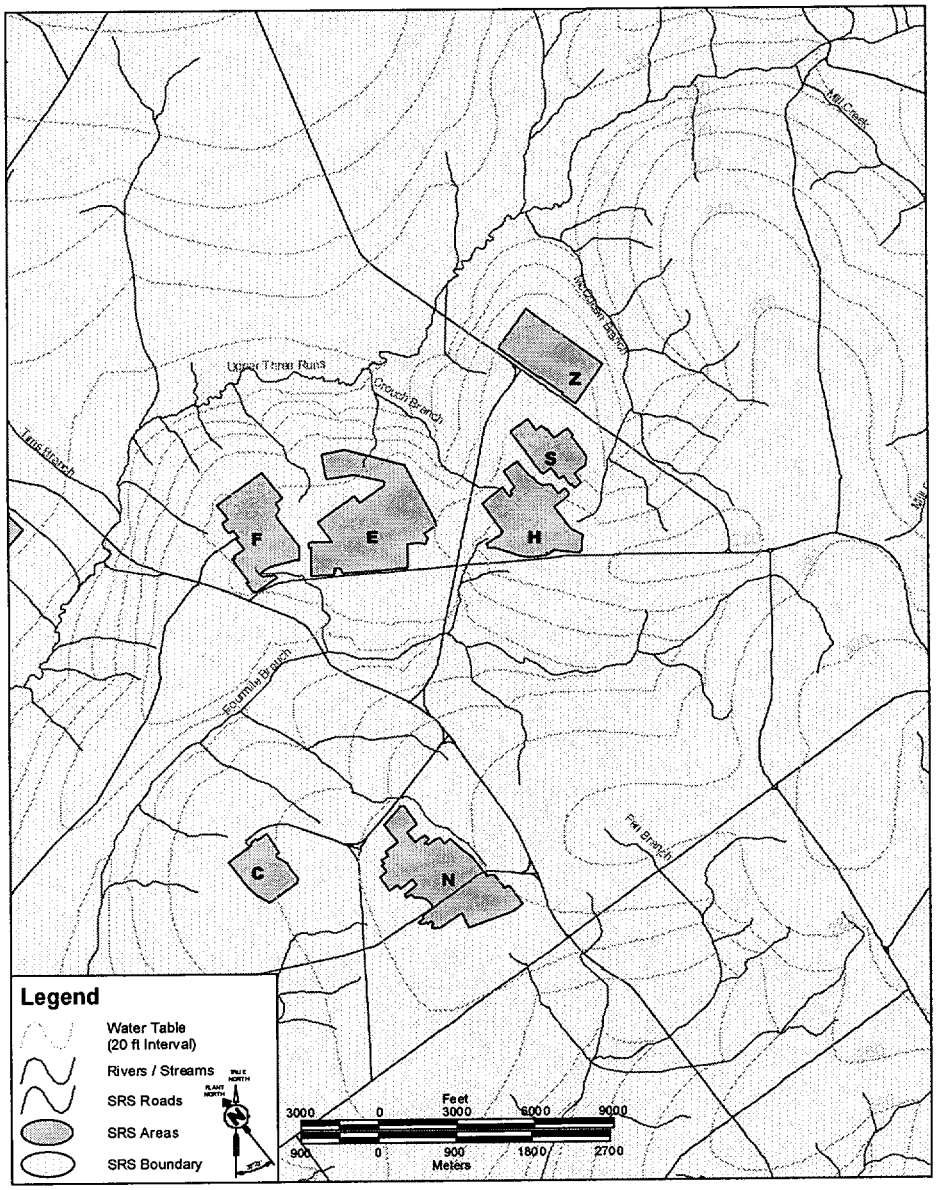


Figure 1.4-27. Potentiometric surface of the Upper Three Runs Creek aquifer (water table) for the General Separations Area.

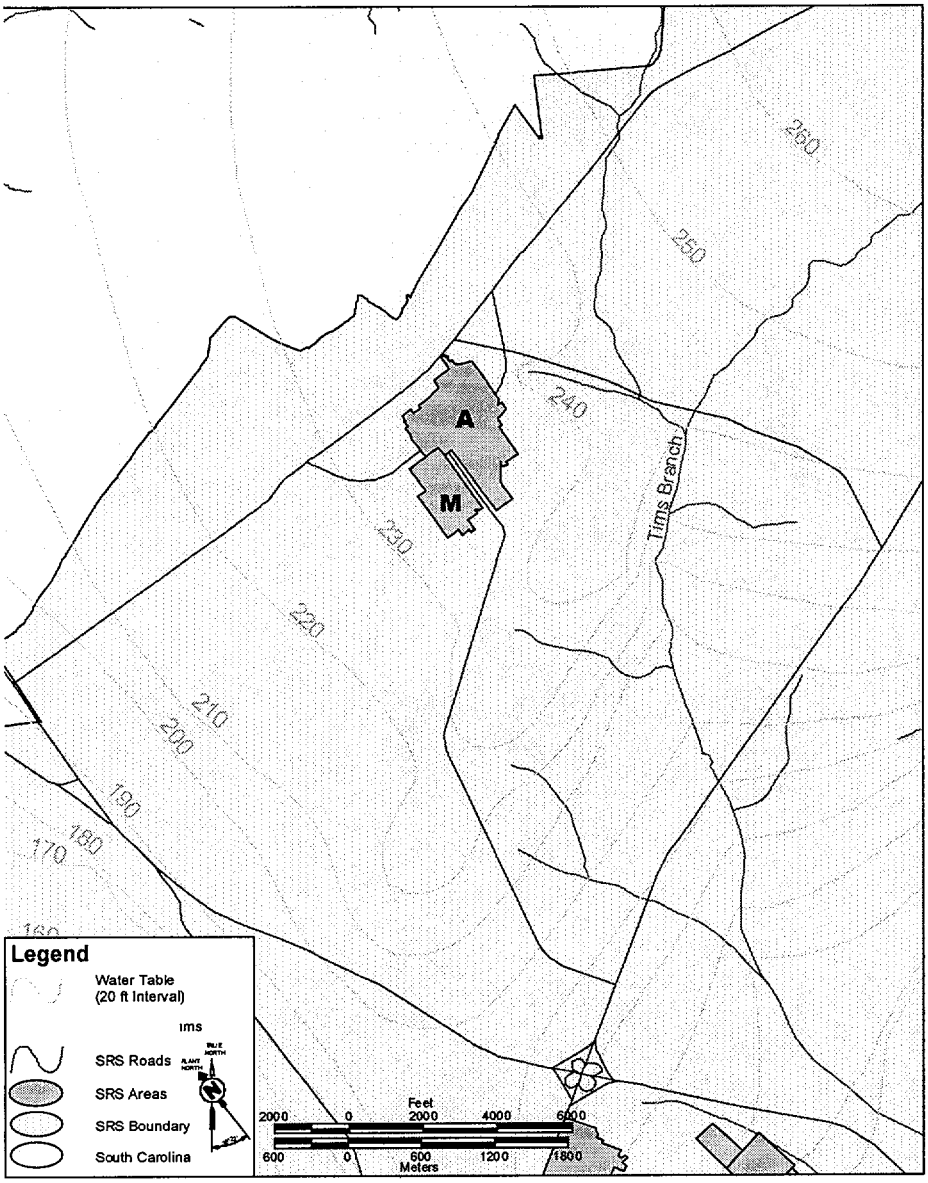


Figure 1.4-28. Potentiometric surface of the Steed Pond aquifer (water table) for the A/M Area.

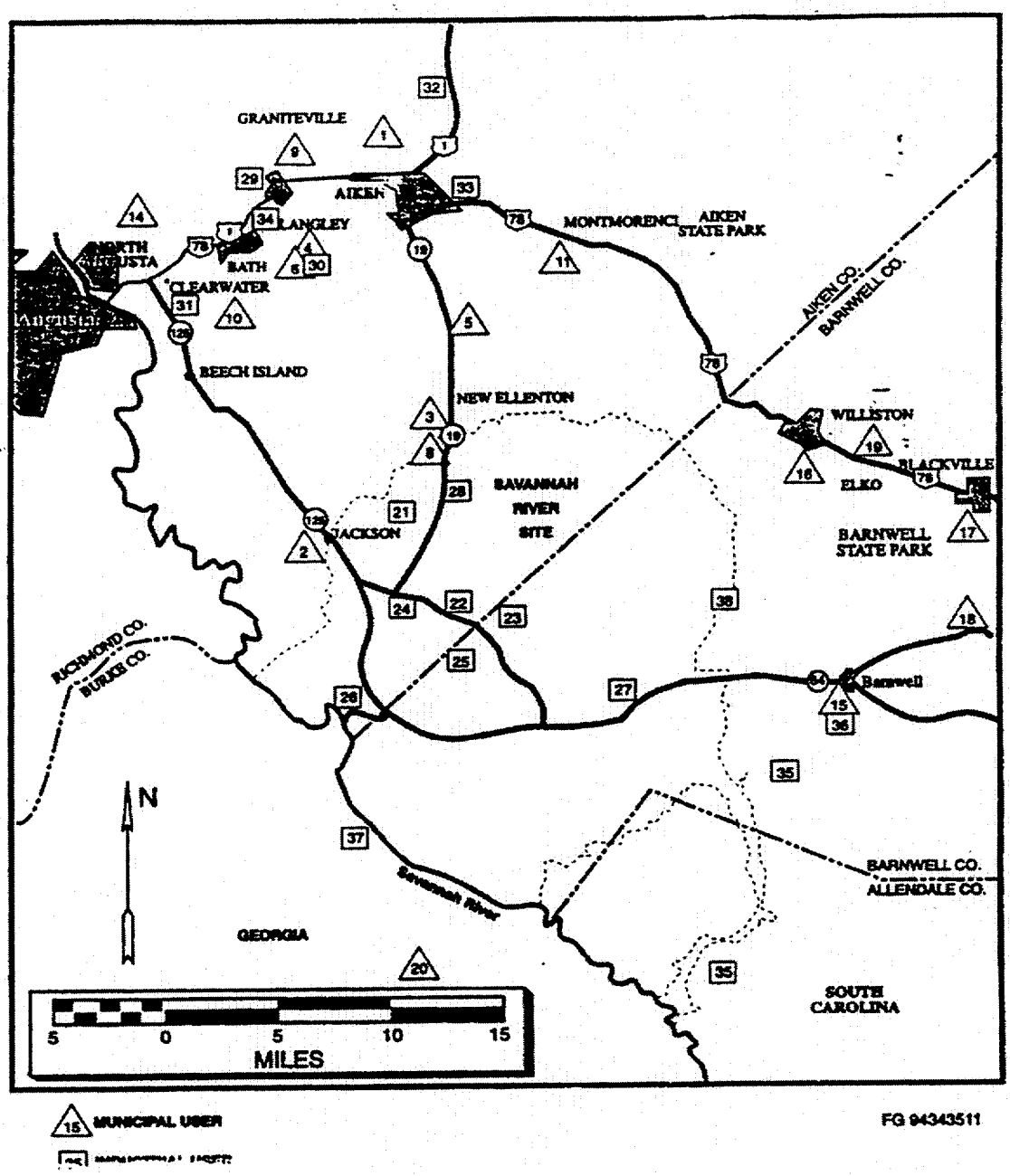


Figure 1.4-29. The location of industrial and municipal groundwater users near SRS.

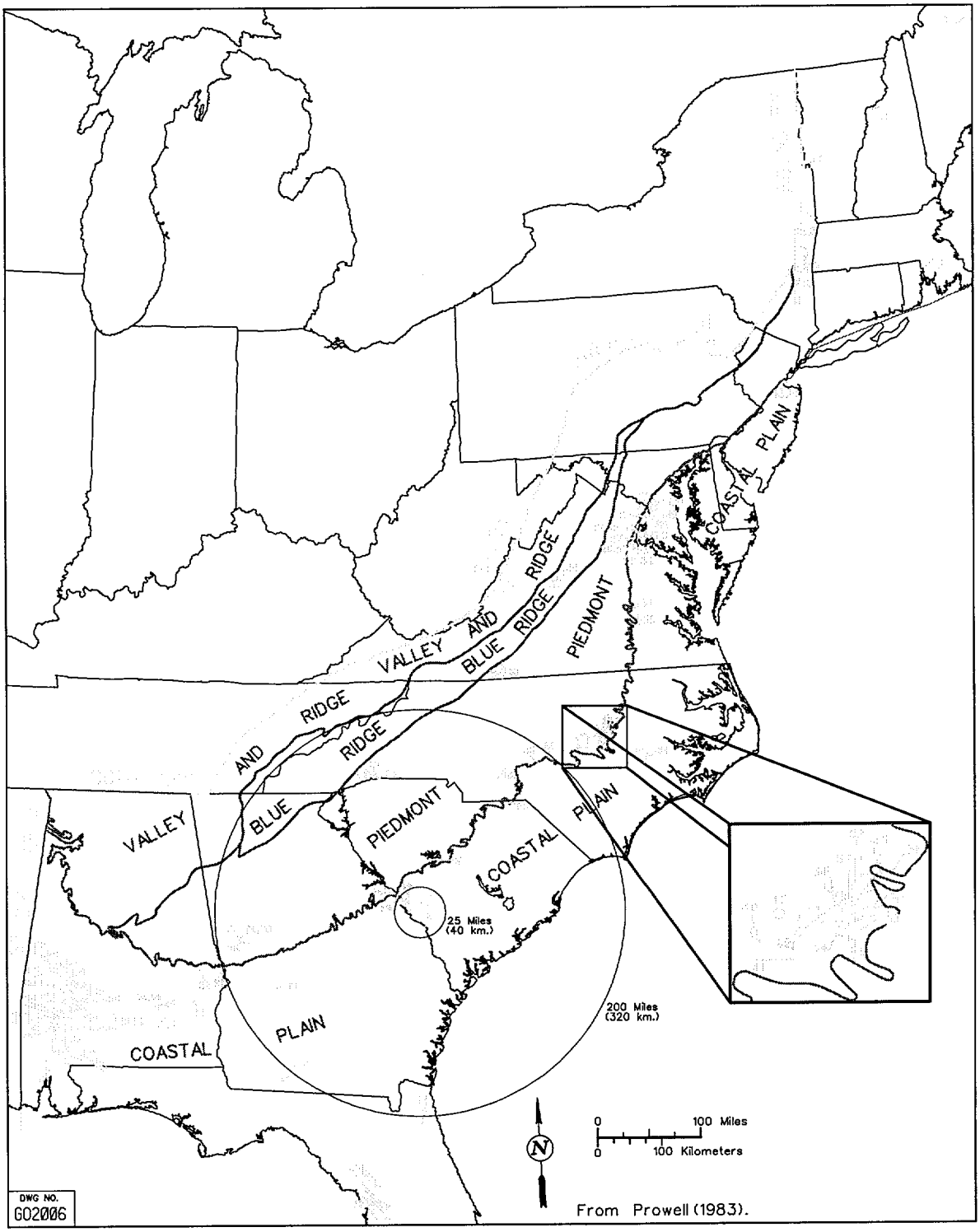


Figure 1.4-30. Relationship of SRS to regional geological provinces and terranes.

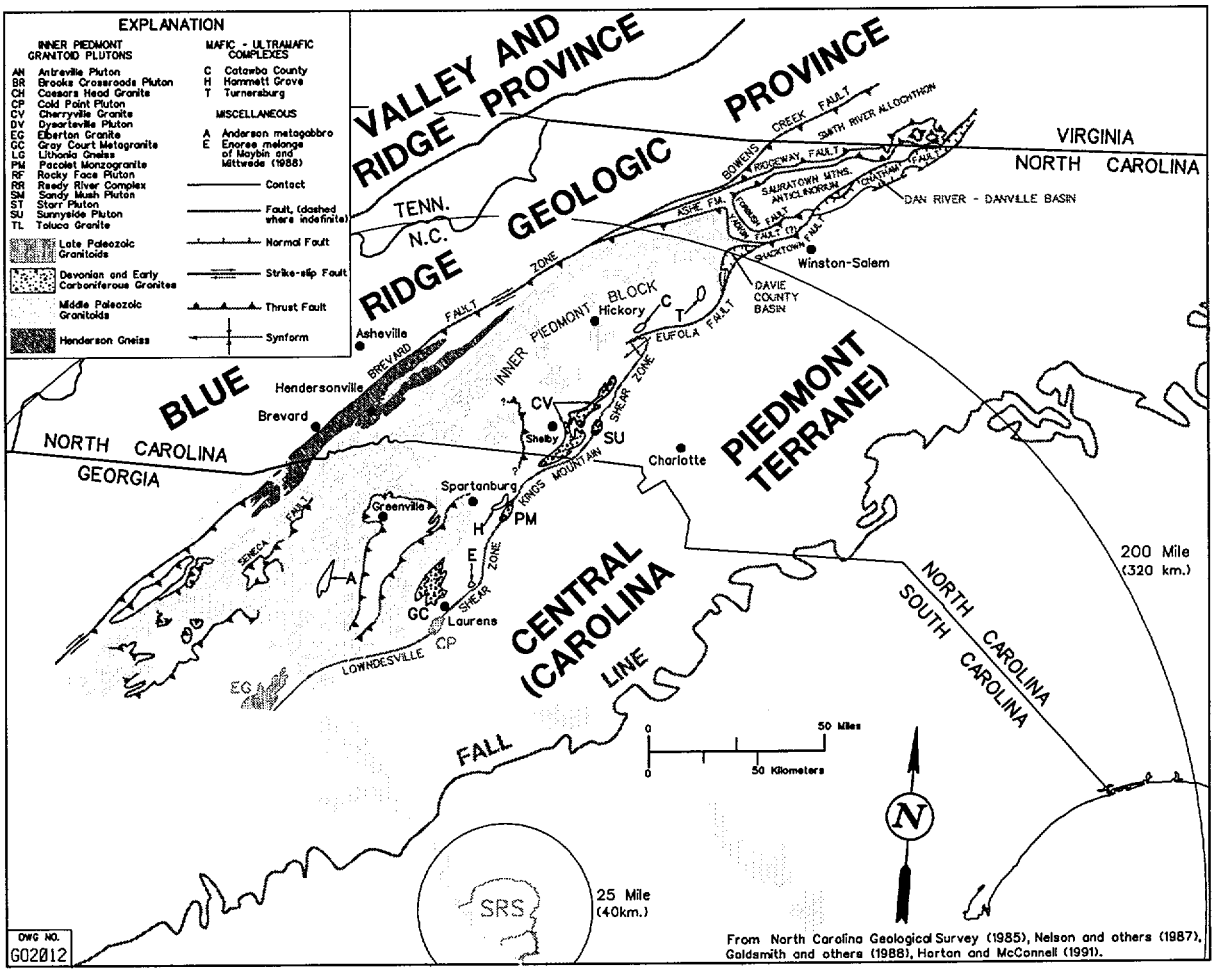


Figure 1.4-31. Piedmont Terrane.

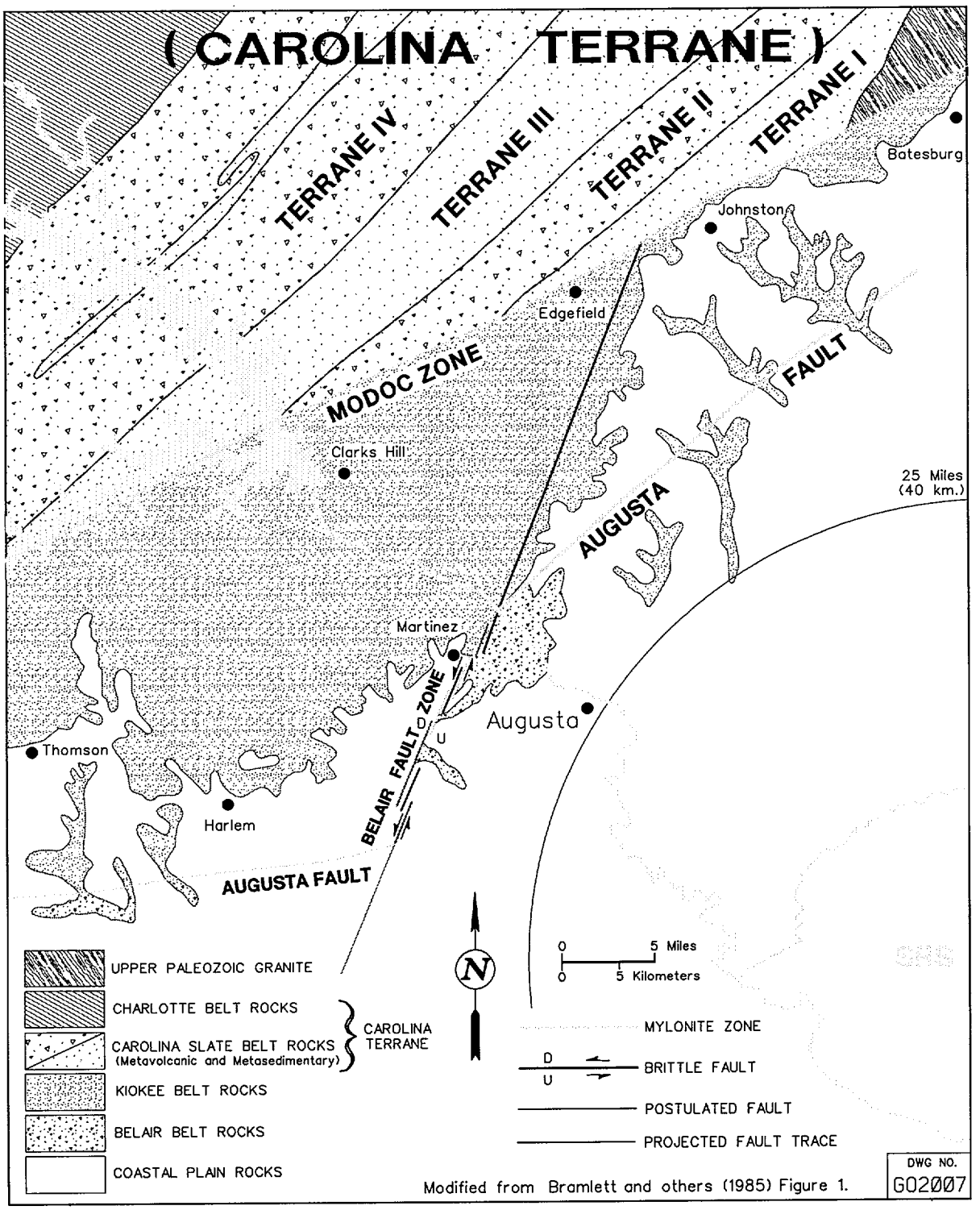


Figure 1.4-32. Carolina Terrane.

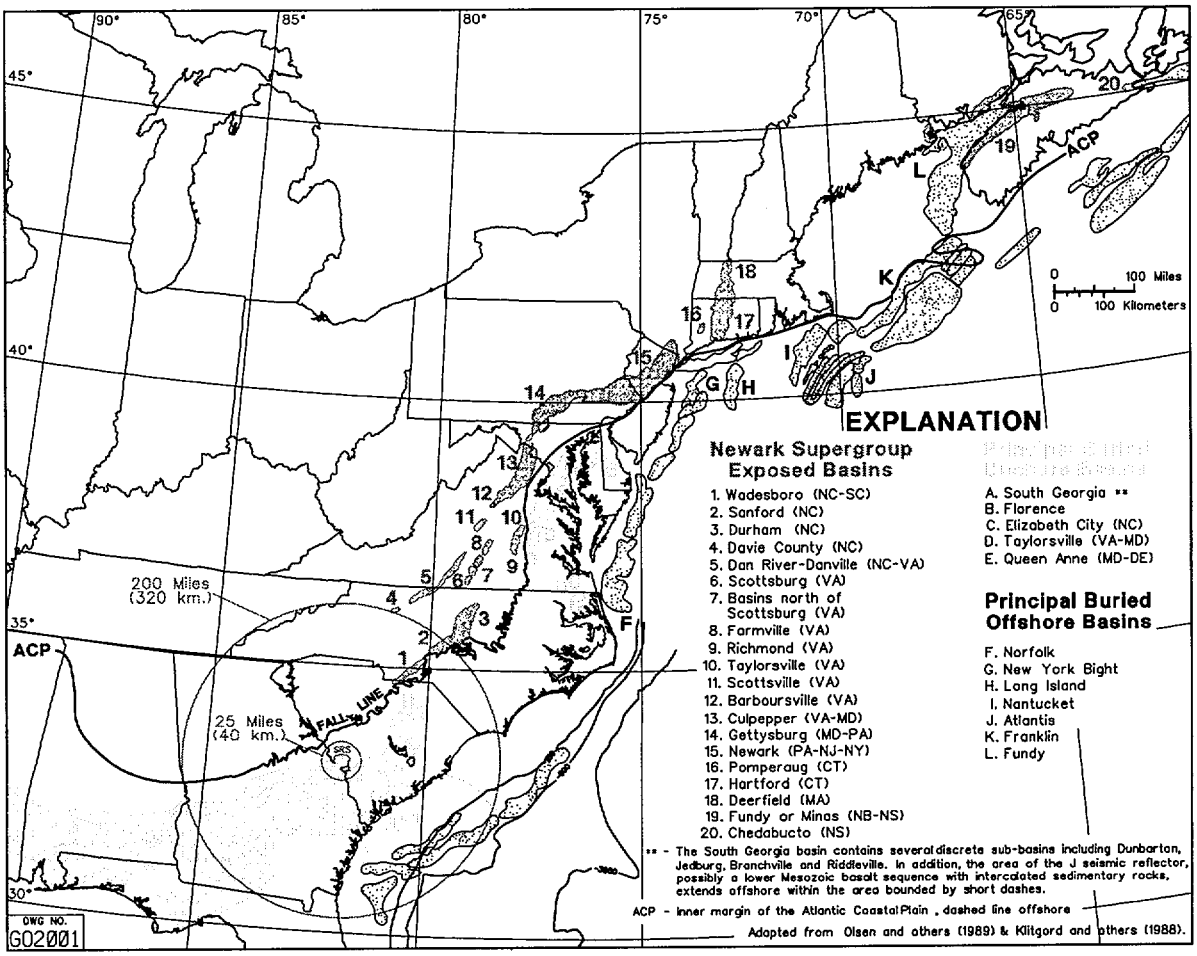


Figure 1.4-33. Location of Mesozoic rift basins along the entire eastern continental margin of North America from the gulf coast through Nova Scotia.

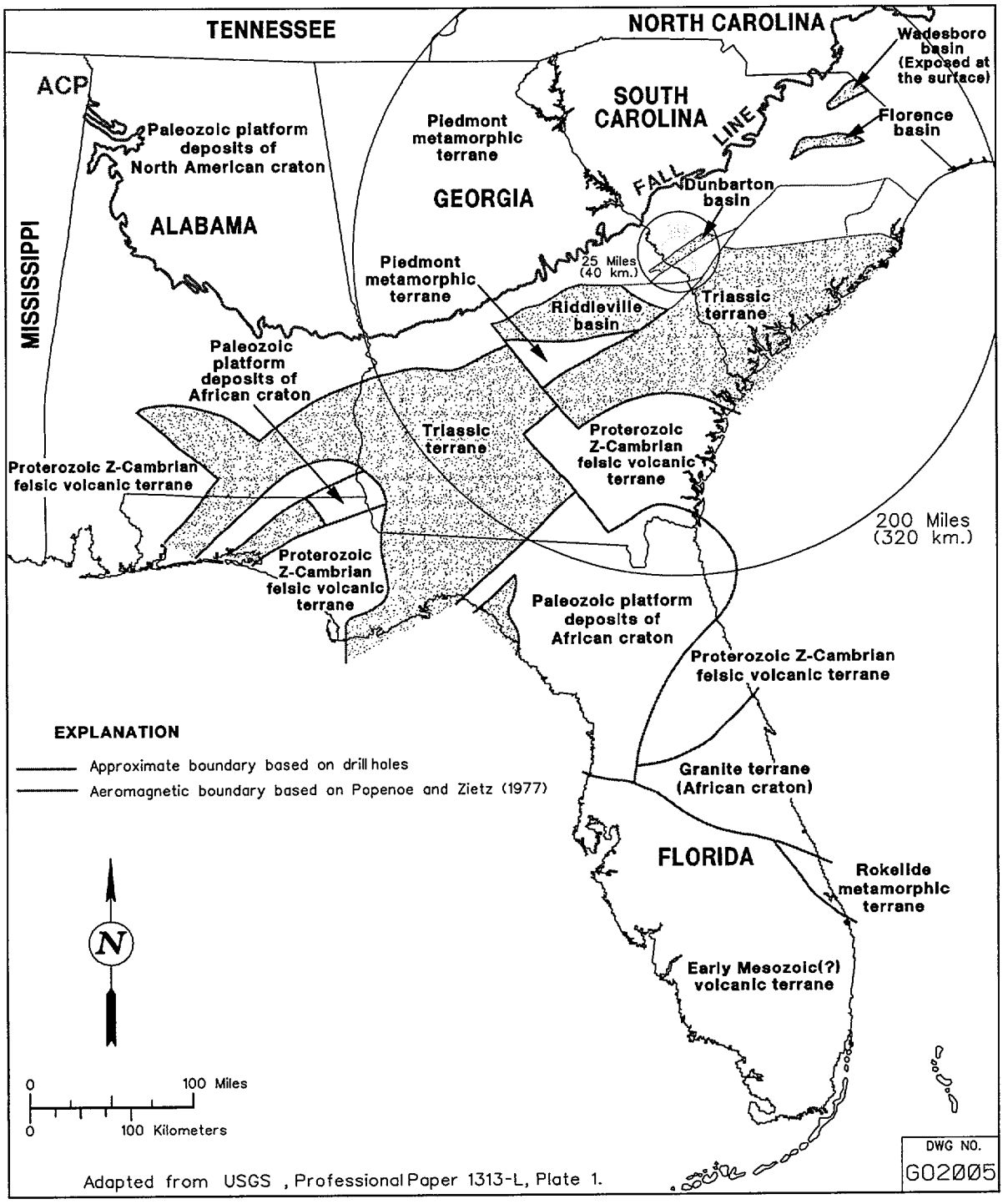


Figure 1.4-34. The Triassic basins beneath the Alabama, Florida, Georgia South Carolina coastal Plain.

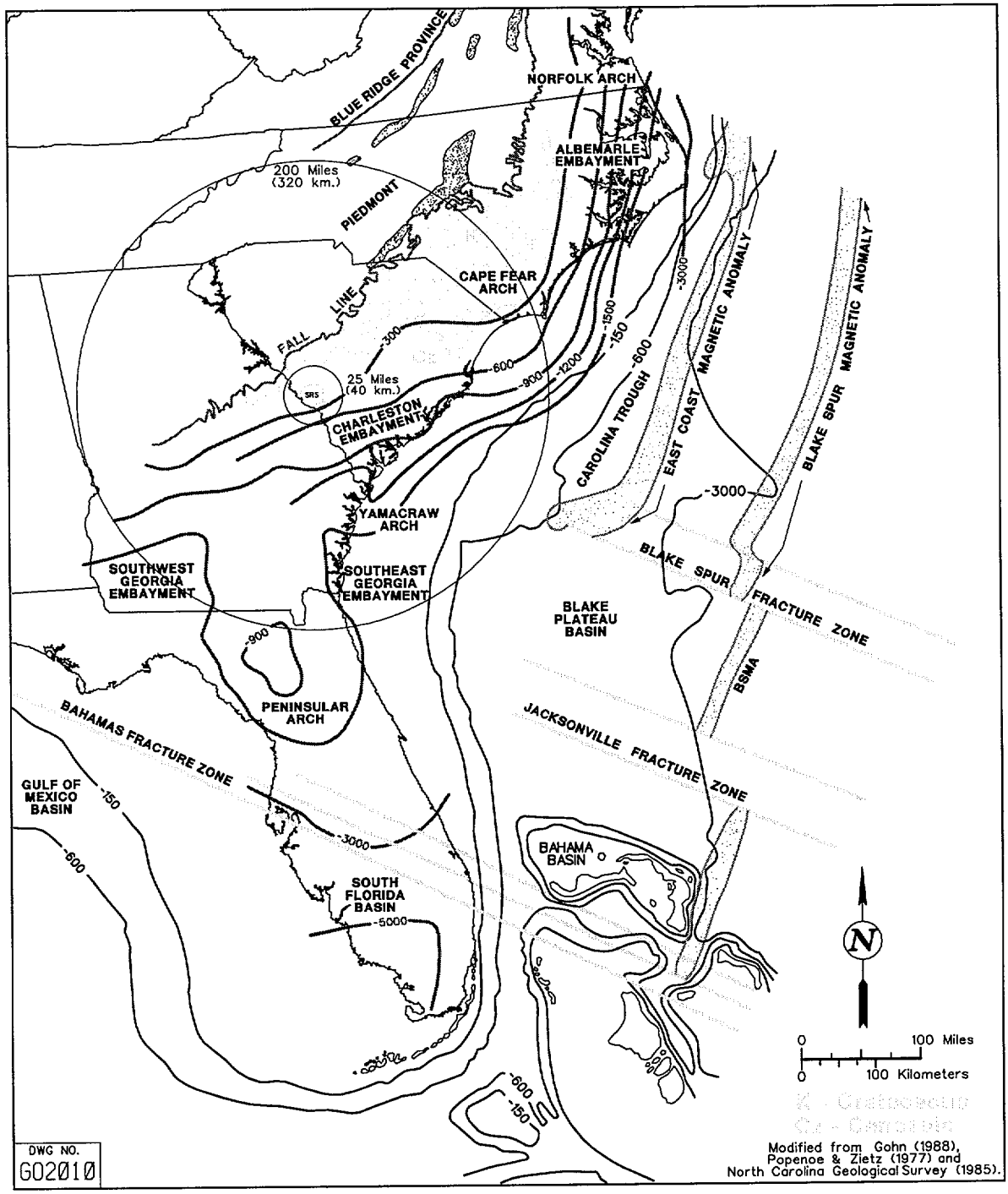


Figure 1.4-35. Structural configuration of the Atlantic continental margin.

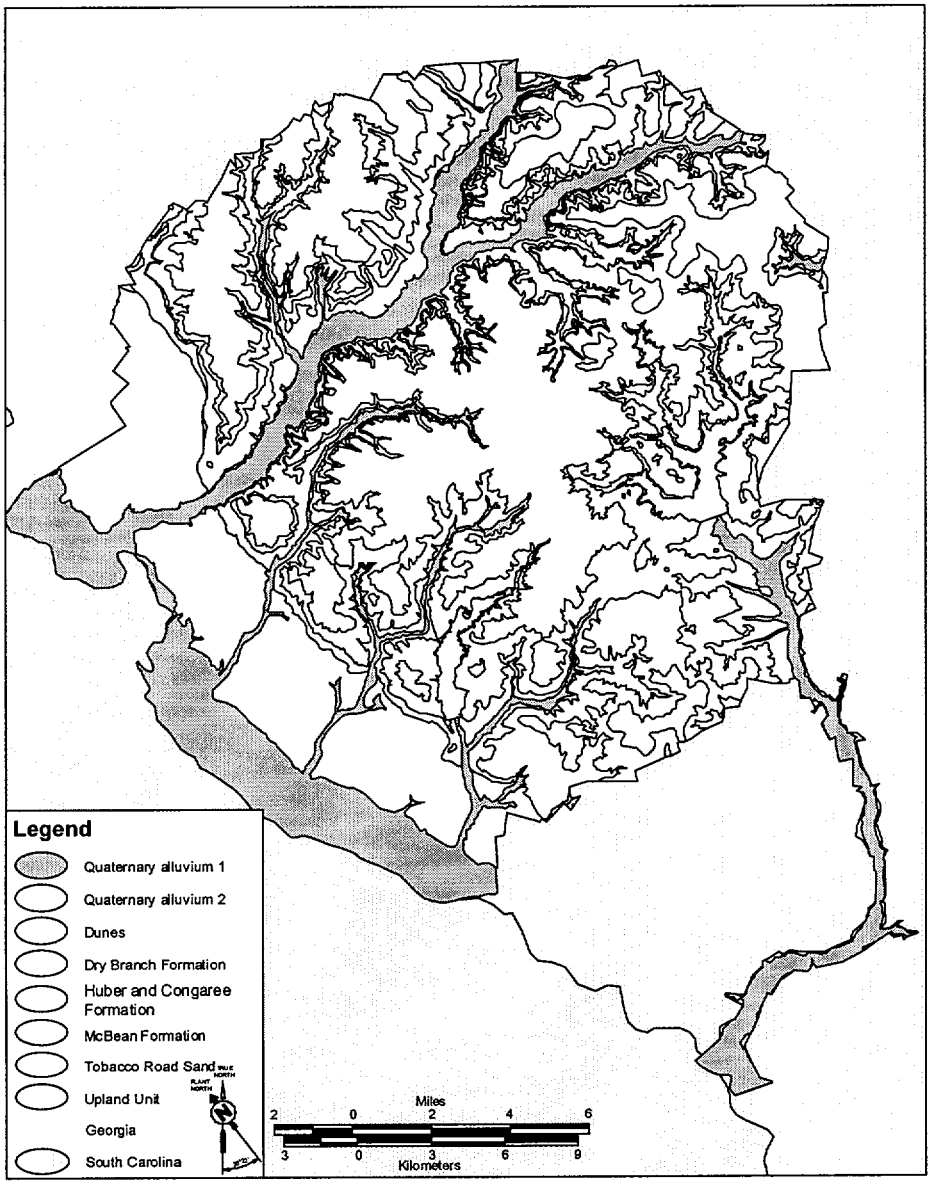


Figure 1.4-36. Geologic map of the SRS.

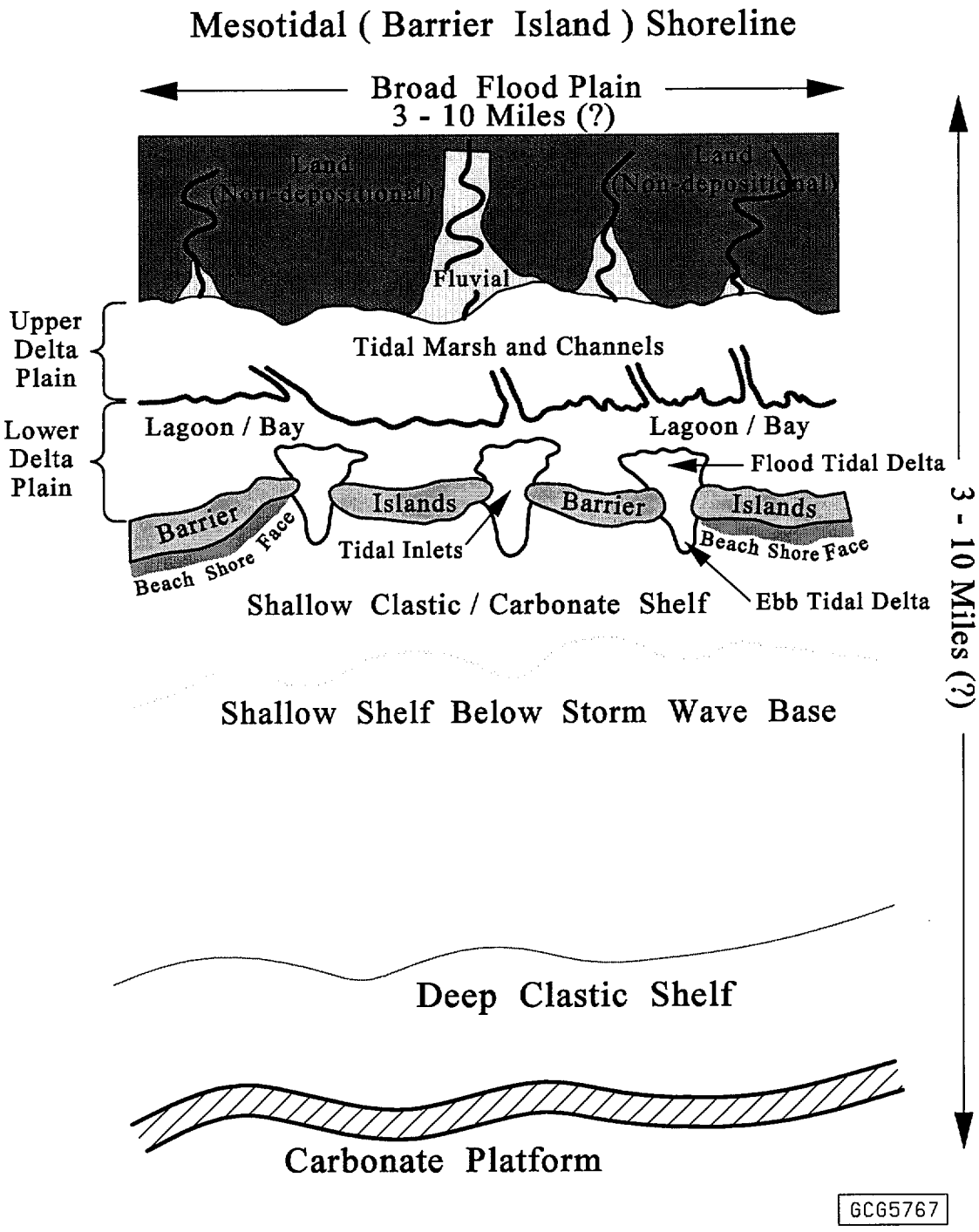


Figure 1.4-37. Spatial relationships of depositional environments typical of the Tertiary sediments at the SRS.

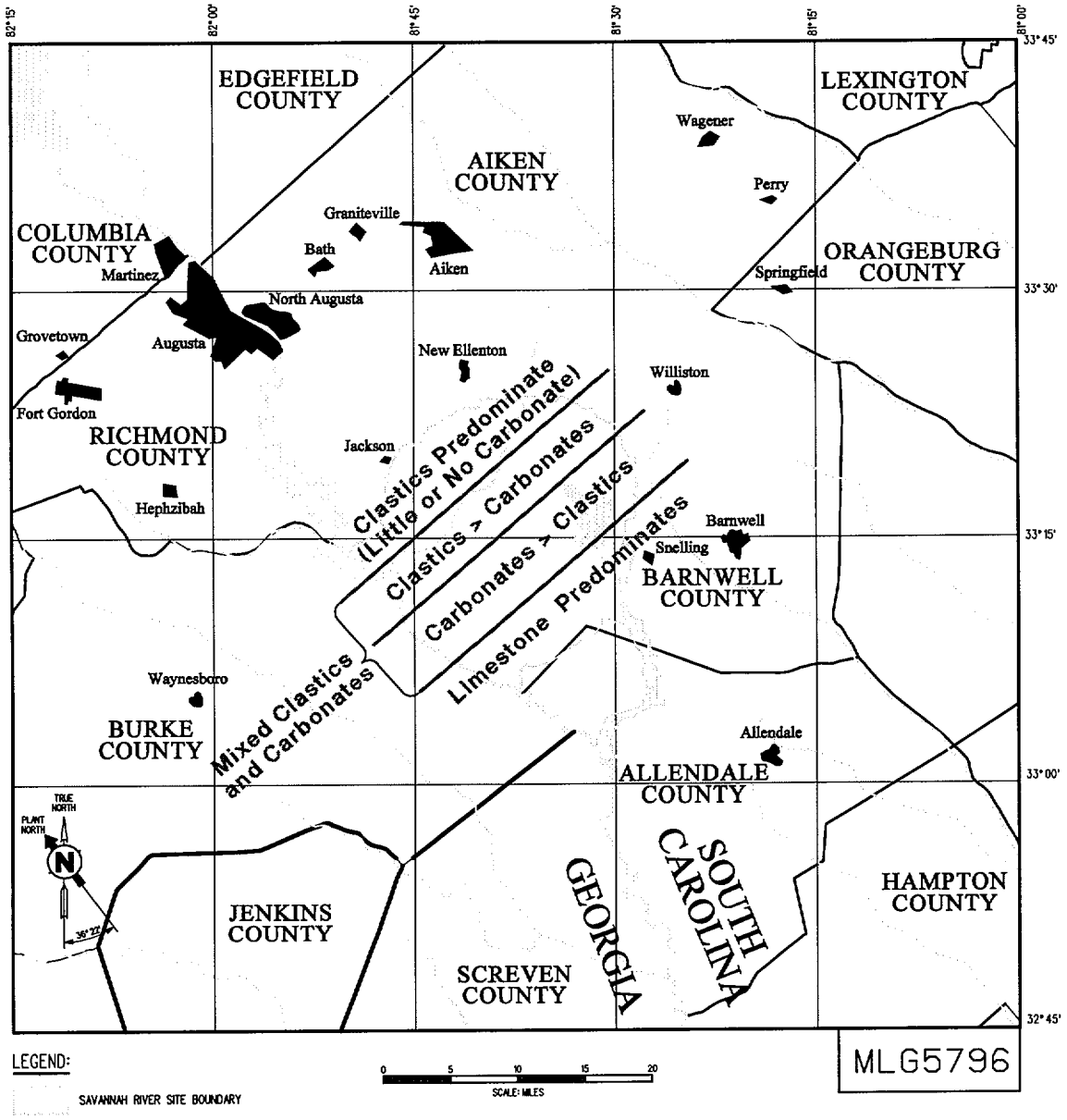


Figure 1.4-38. Regional distribution of carbonate in the Santee/Utley-Dry Branch sequence.

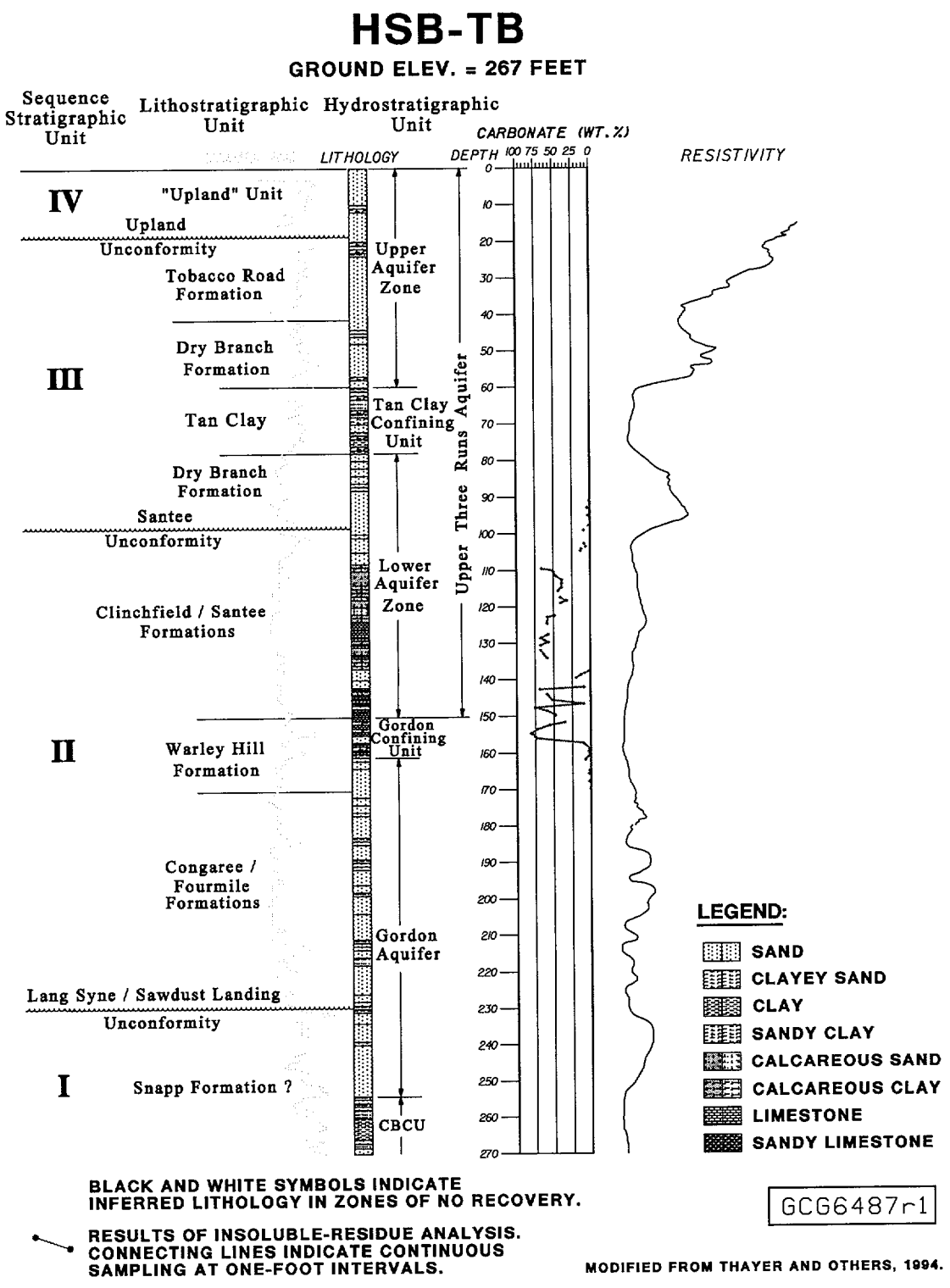


Figure 1.4-39. Lithologic and geophysical signature typical of the Tertiary section n the General Separations Area, Savannah River Site.

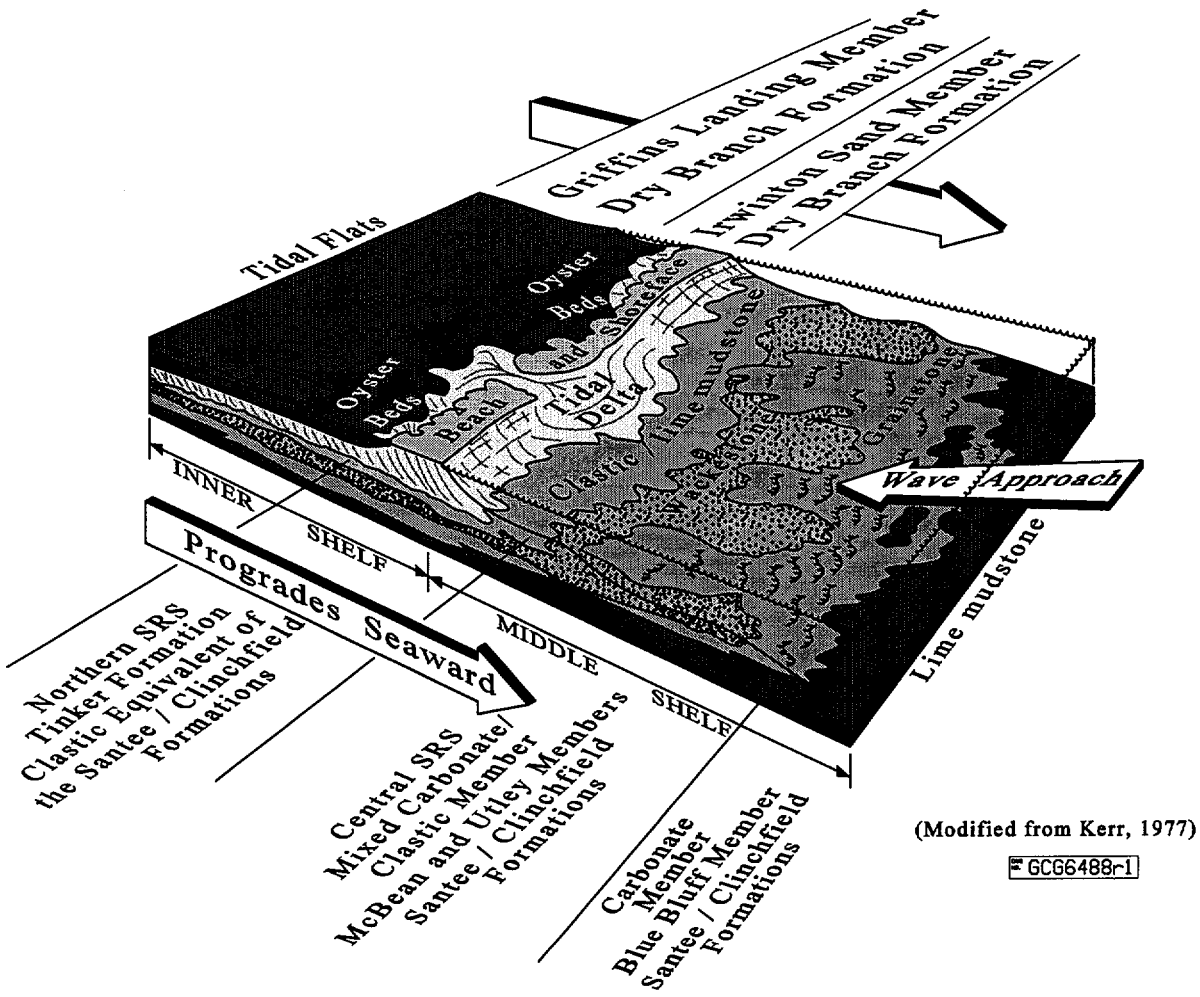


Figure 1.4-40. Spatial relationships of depositional environments typical of the Dry Branch and Tinker/Santee (Utley) sediments at SRS. Progradation seaward pus the tidal flat/marsh/shoreline (inner shelf) sediments of the Dry Branch Formation over the middle shelf sediments typical f the Santee Formation in the General Separations area, SRS.

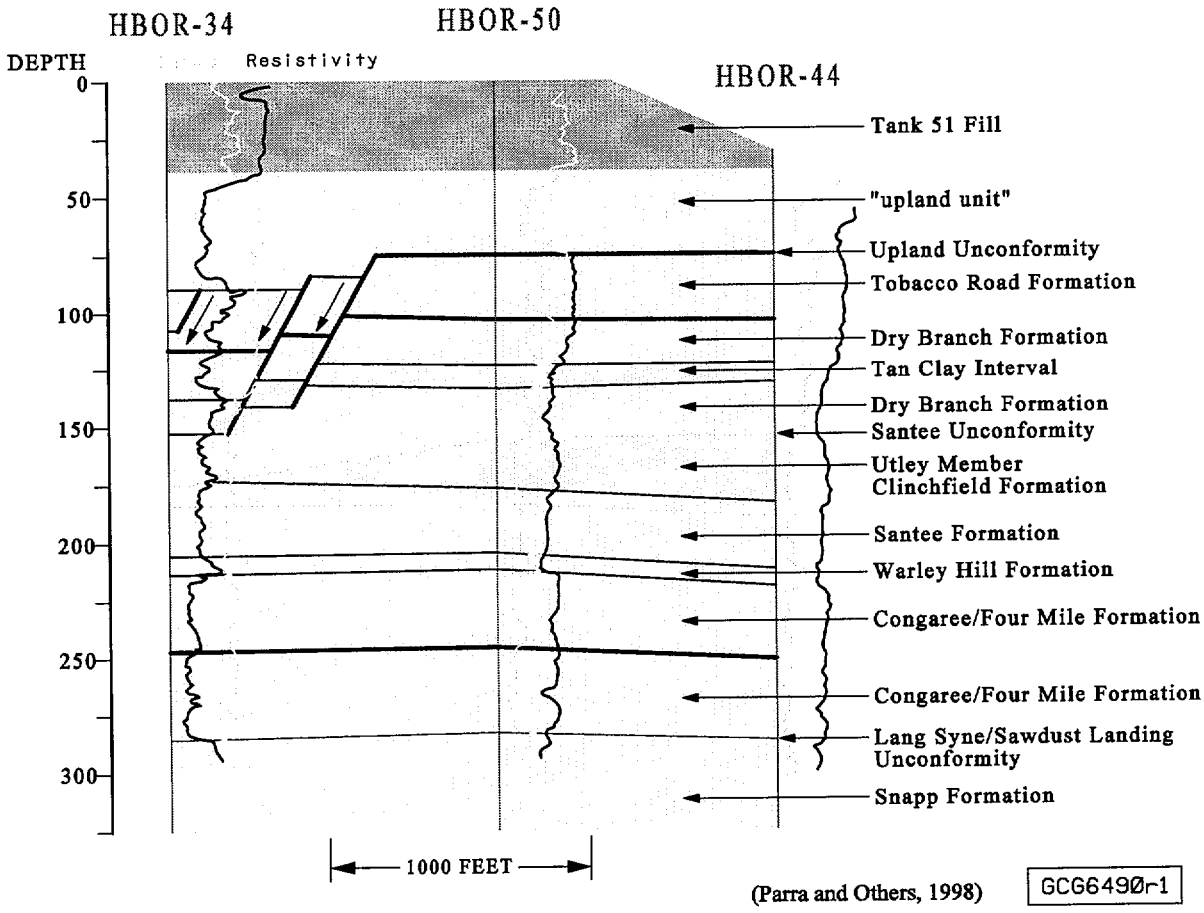


Figure 1.4-41. Carbonate dissolution in the Tinker/Santee (Utley) interval resulting in consolidation and slumping of the overlying sediments of the Tobacco Road and Dry Branch Formations into the resulting lows.

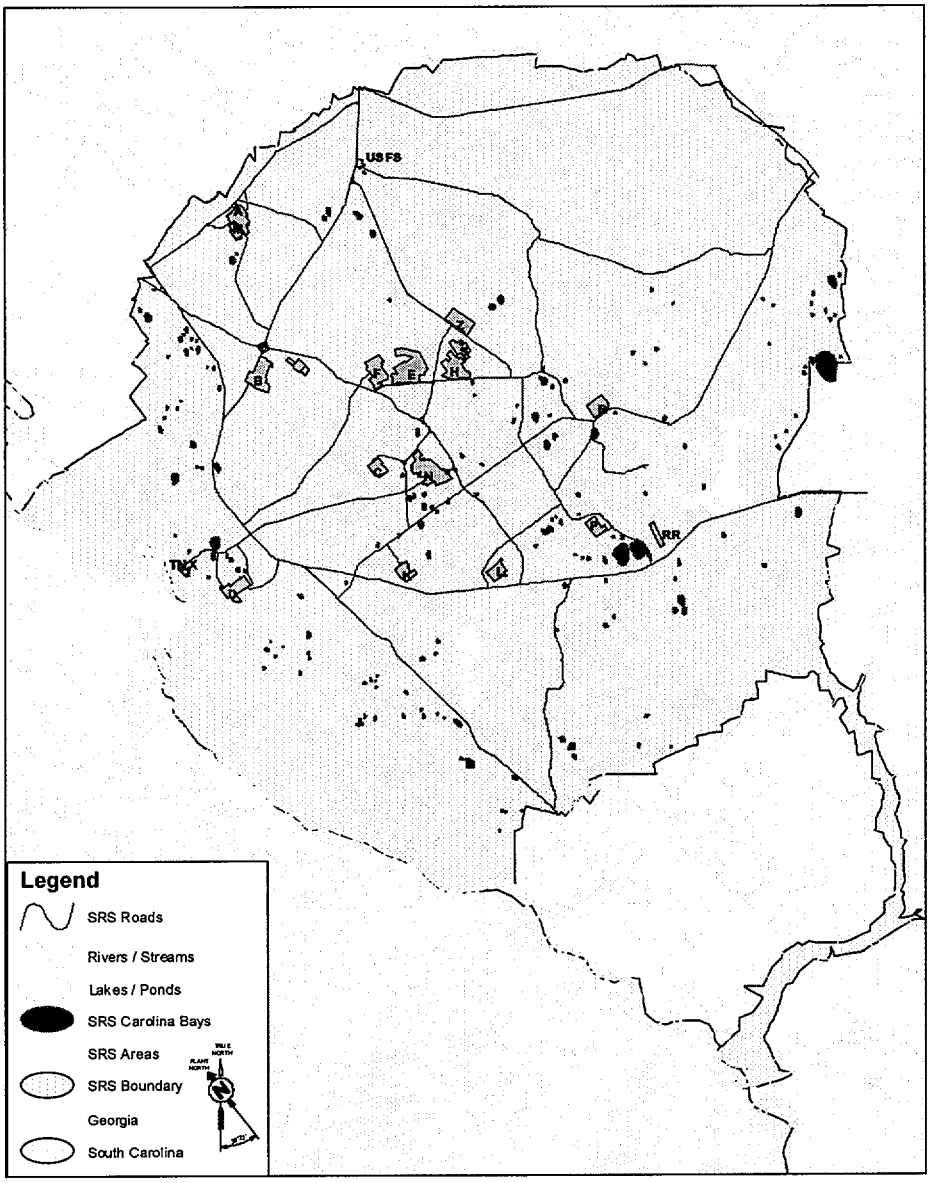


Figure 1.4-42. Distribution of Carolina Bays within the SRS.

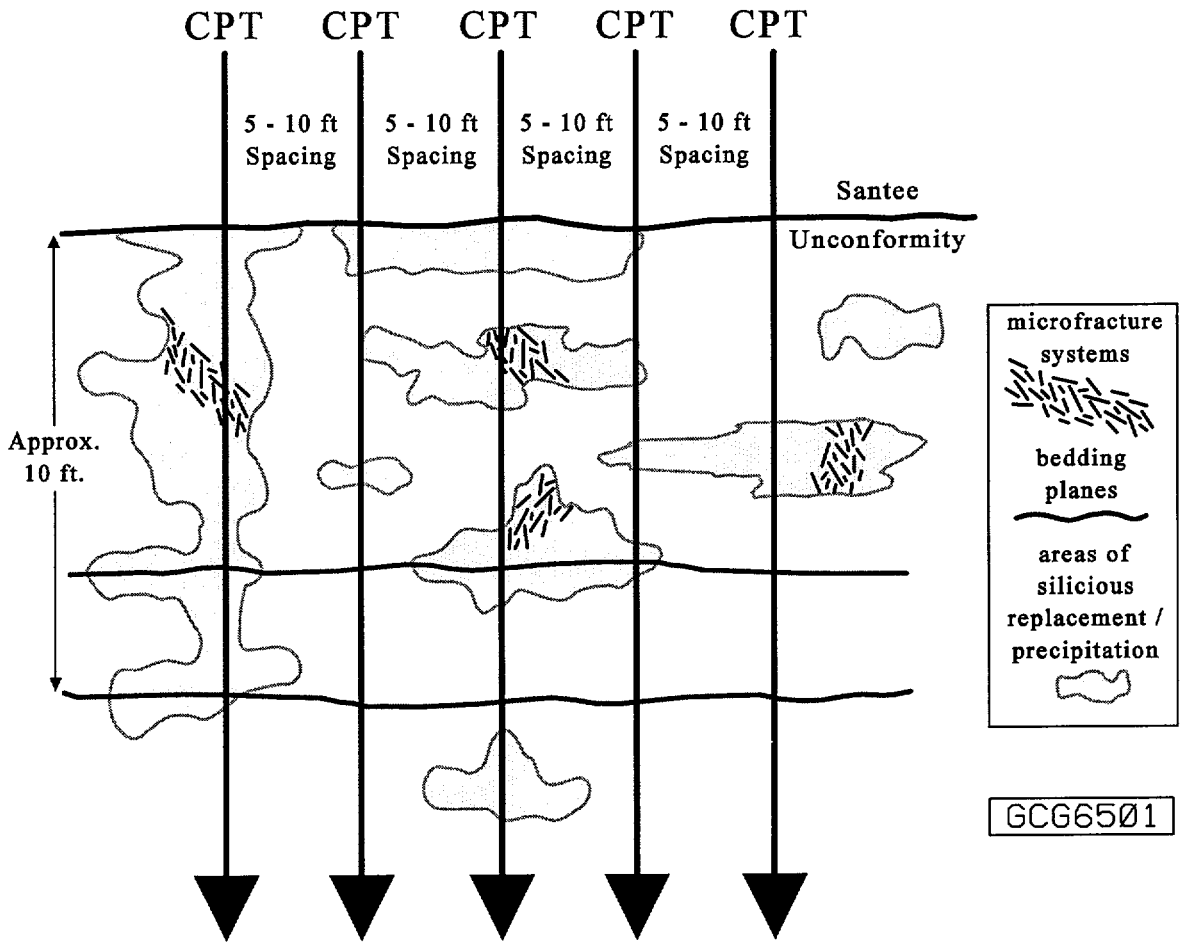


Figure 1.4-43. Diagram illustrating the stratigraphic and lateral distribution of soft zones due to silica replacement of carbonate in the GSA. Replacement/precipitation occurs along bedding planes, microfracture systems, and zones of enhanced permeability resulting in highly irregular pods, stringers, and sheets of silica replaced carbonate (i.e., soft zones).

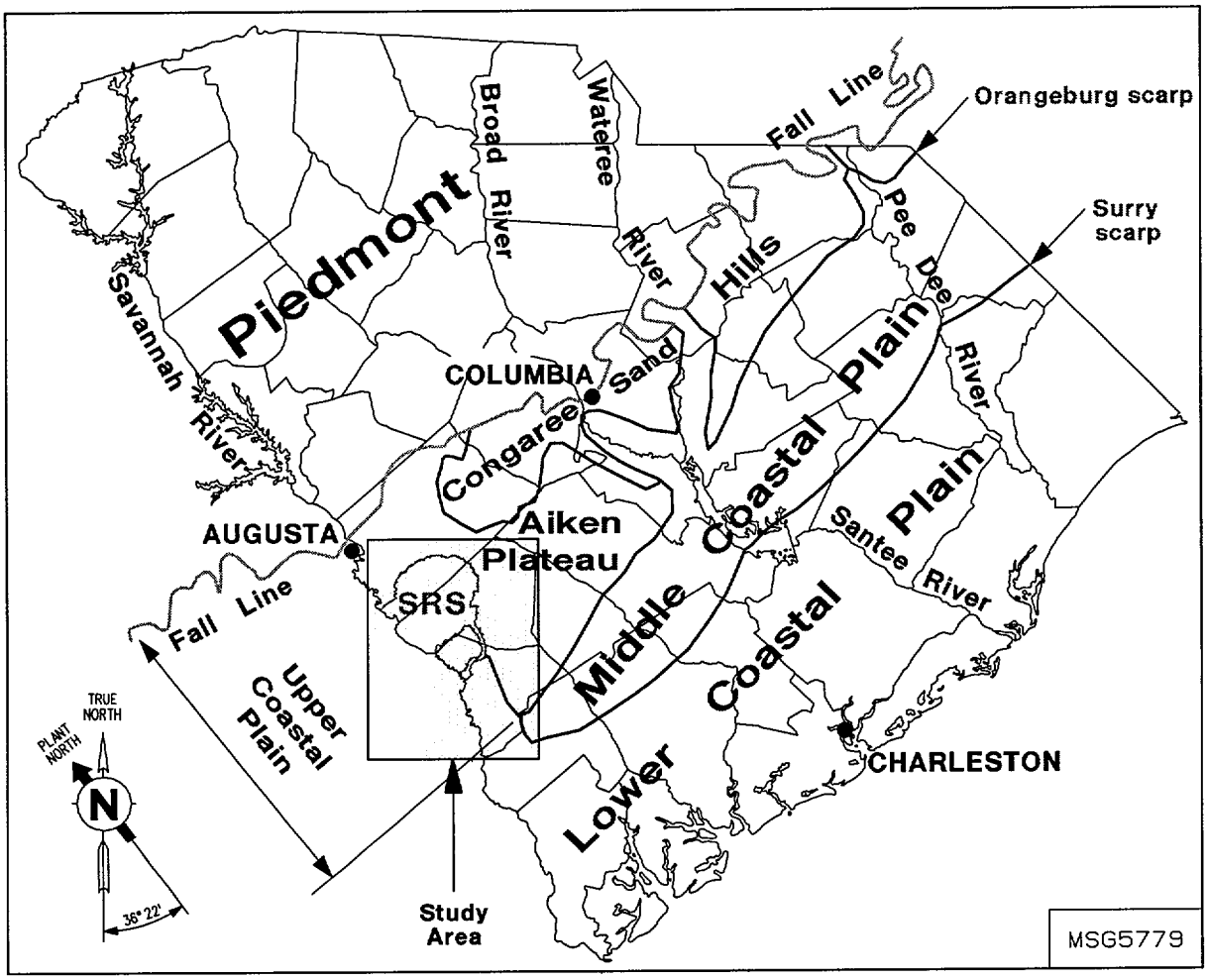


Figure 1.4-44. Regional physiographic provinces of South Carolina.

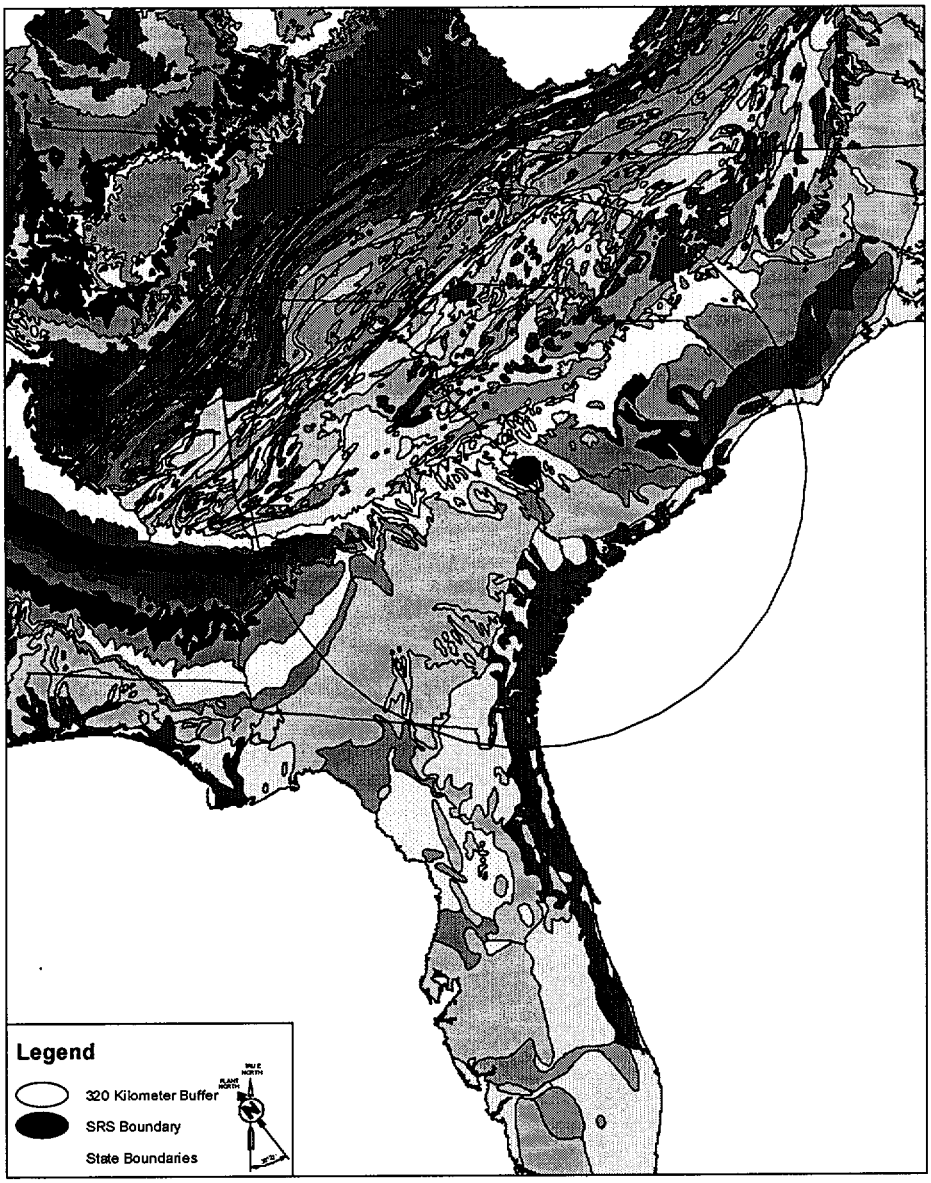


Figure 1.4-45. Regional geologic map of the southeastern US.

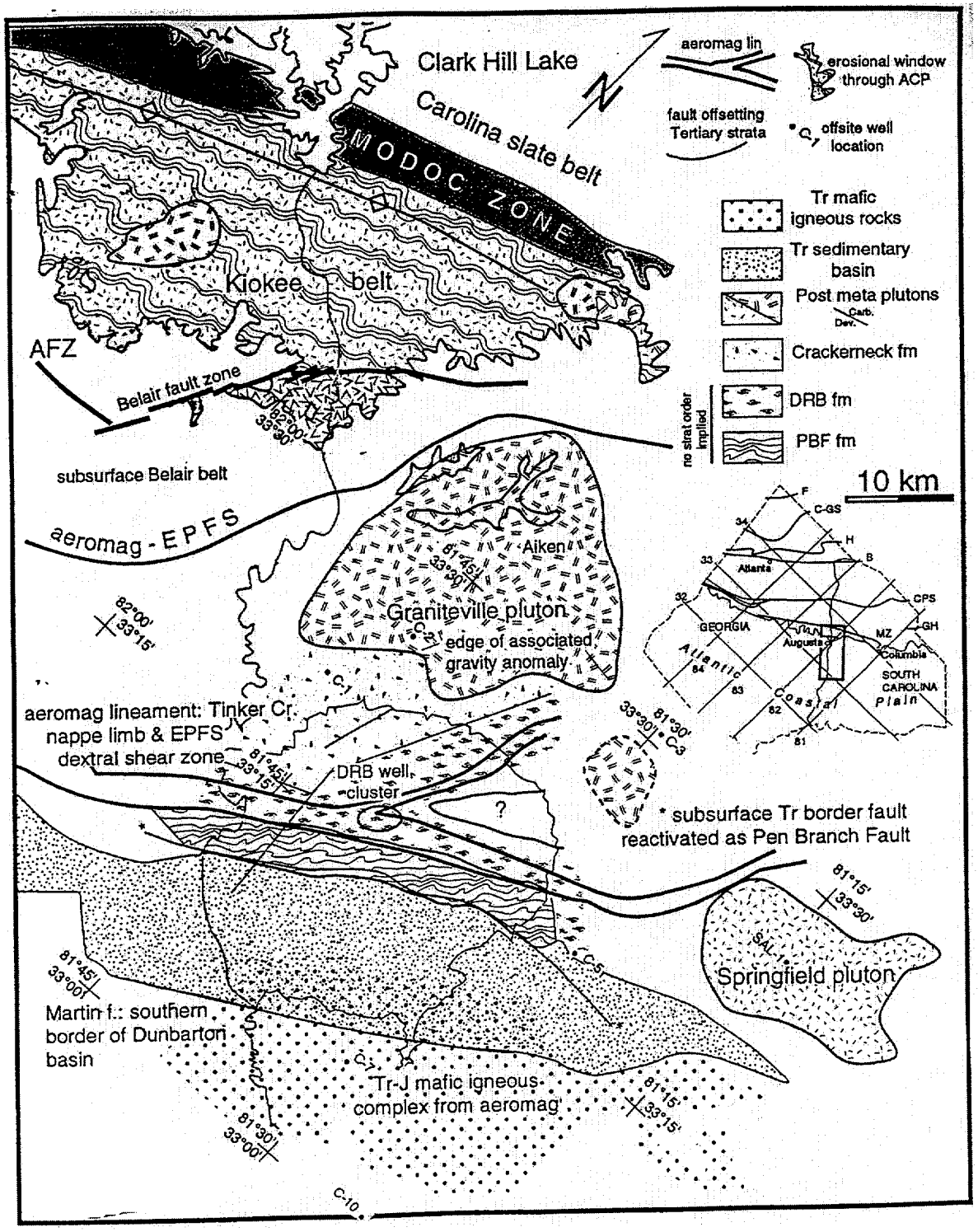


Figure 1.4-46. Geologic map of basement lithologies beneath the Savannah River Site and vicinity with adjacent piedmont (from Dennis et al. 1997).

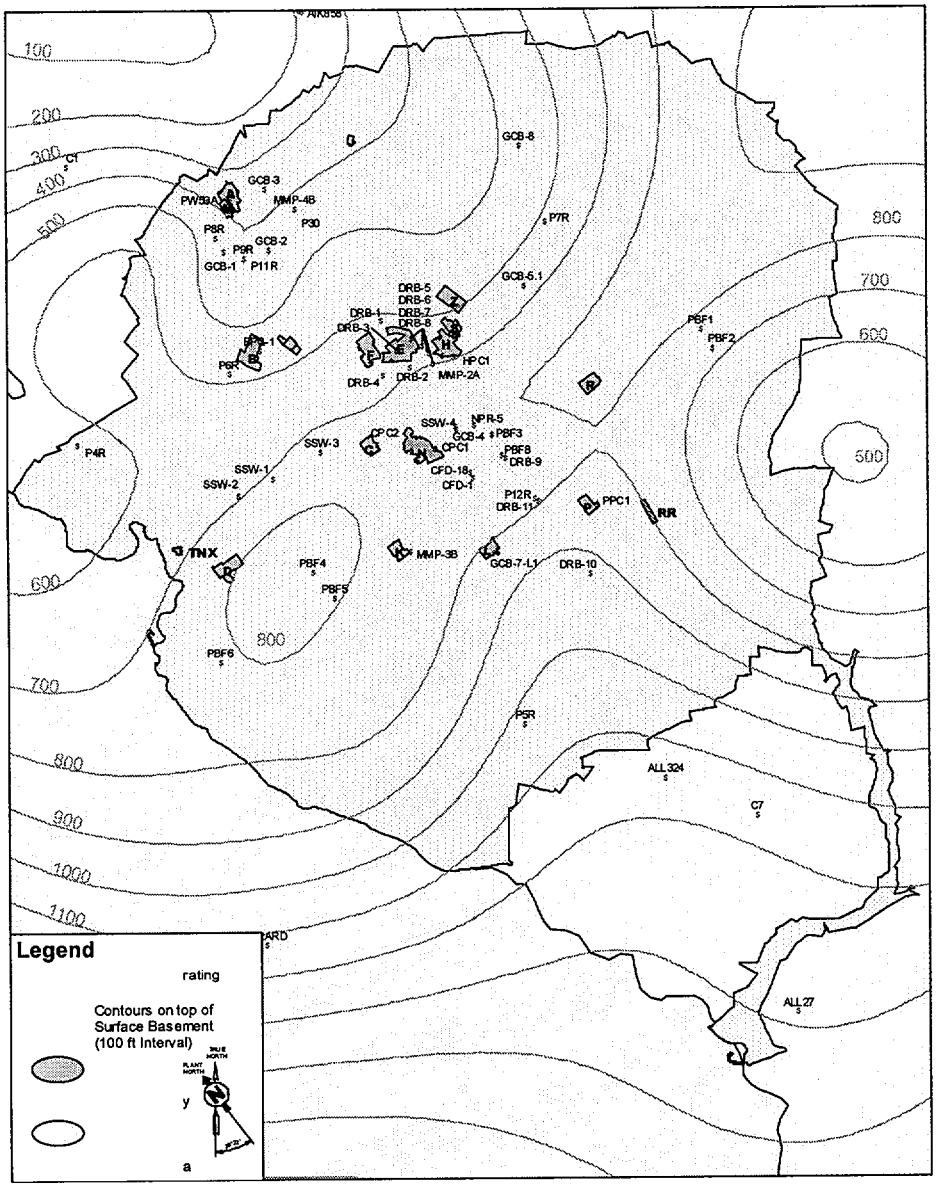


Figure 1.4-47. Map of the basement surface at the SRS.

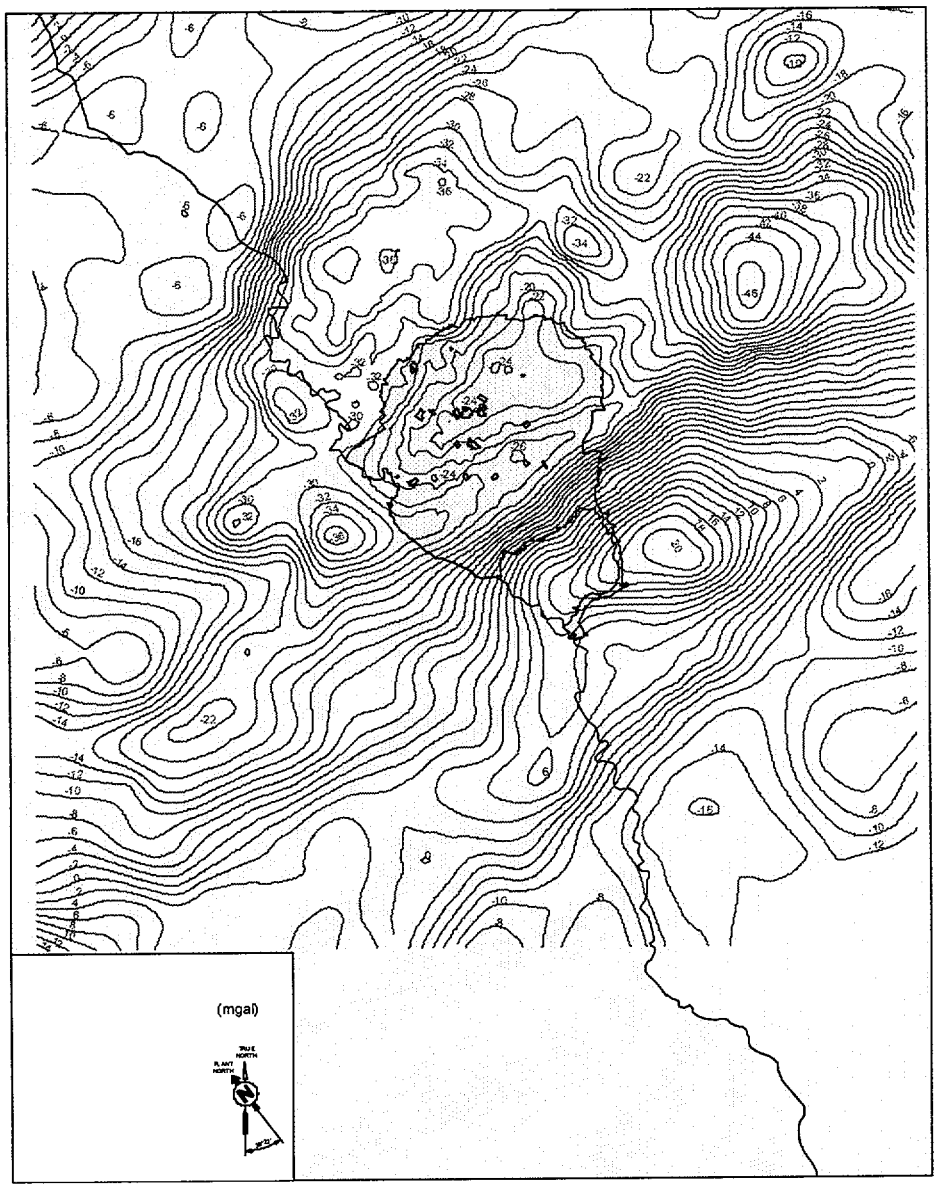


Figure 1.4-48. Free air gravity anomaly map for SRS and vicinity (40 km radius). Based on data from Domoracki (1994).

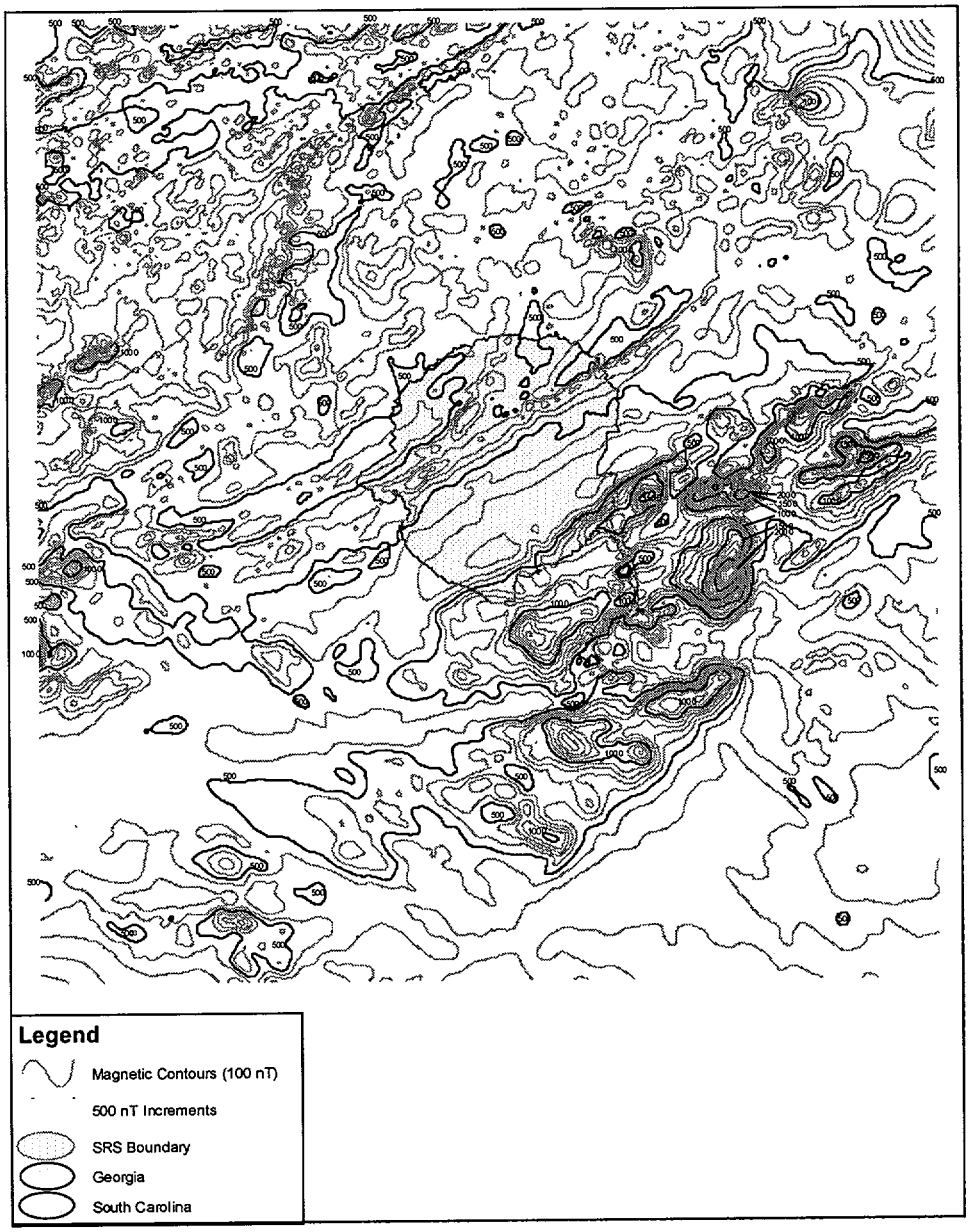


Figure 1.4-49. Aeromagnetic anomaly map for SRS and vicinity (40 km radius) Based on Petty et al., (1965).

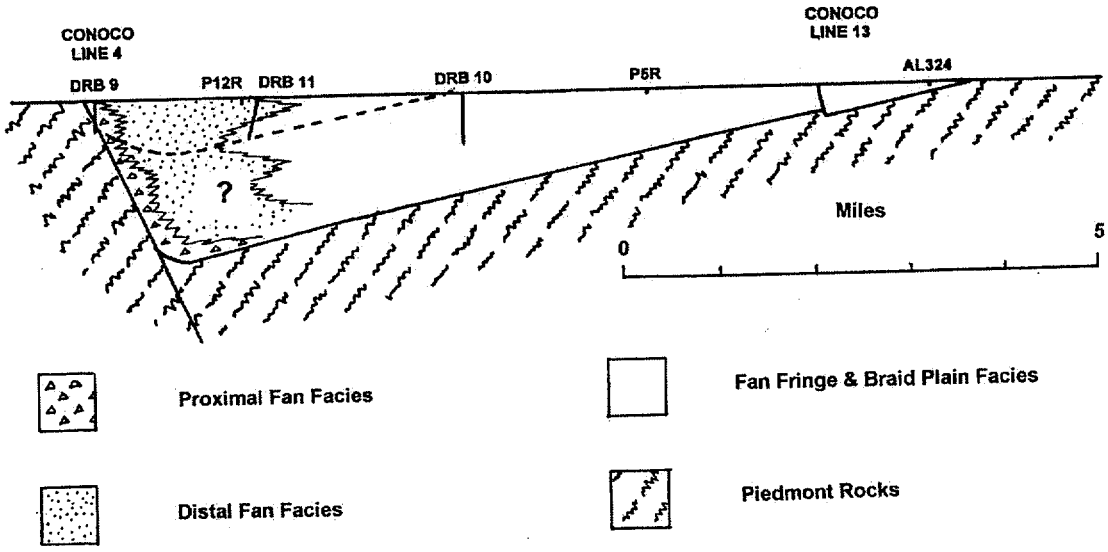


Figure 1.4-50. Generalized geologic cross-section of the Dunbarton Basin (from Chowns e a., 1996).

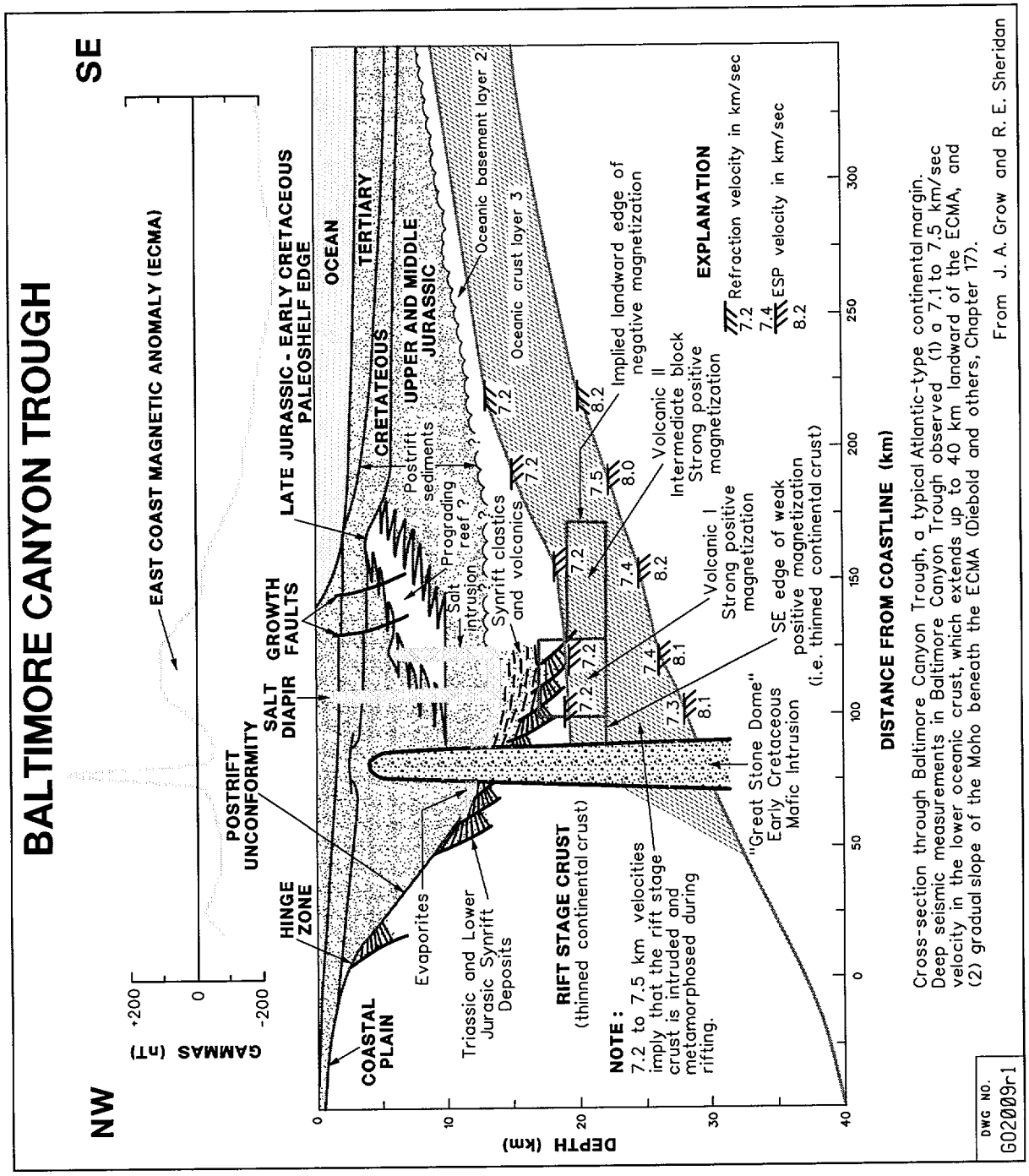


Figure 1.4-51. A cross-section through the continental margin and Baltimore trough (offshore New Jersey). This is a typical Atlantic-type margin showing the geometry of oceanic crust to the east and continental crust to the west. After Sheridan and Grow (1988).

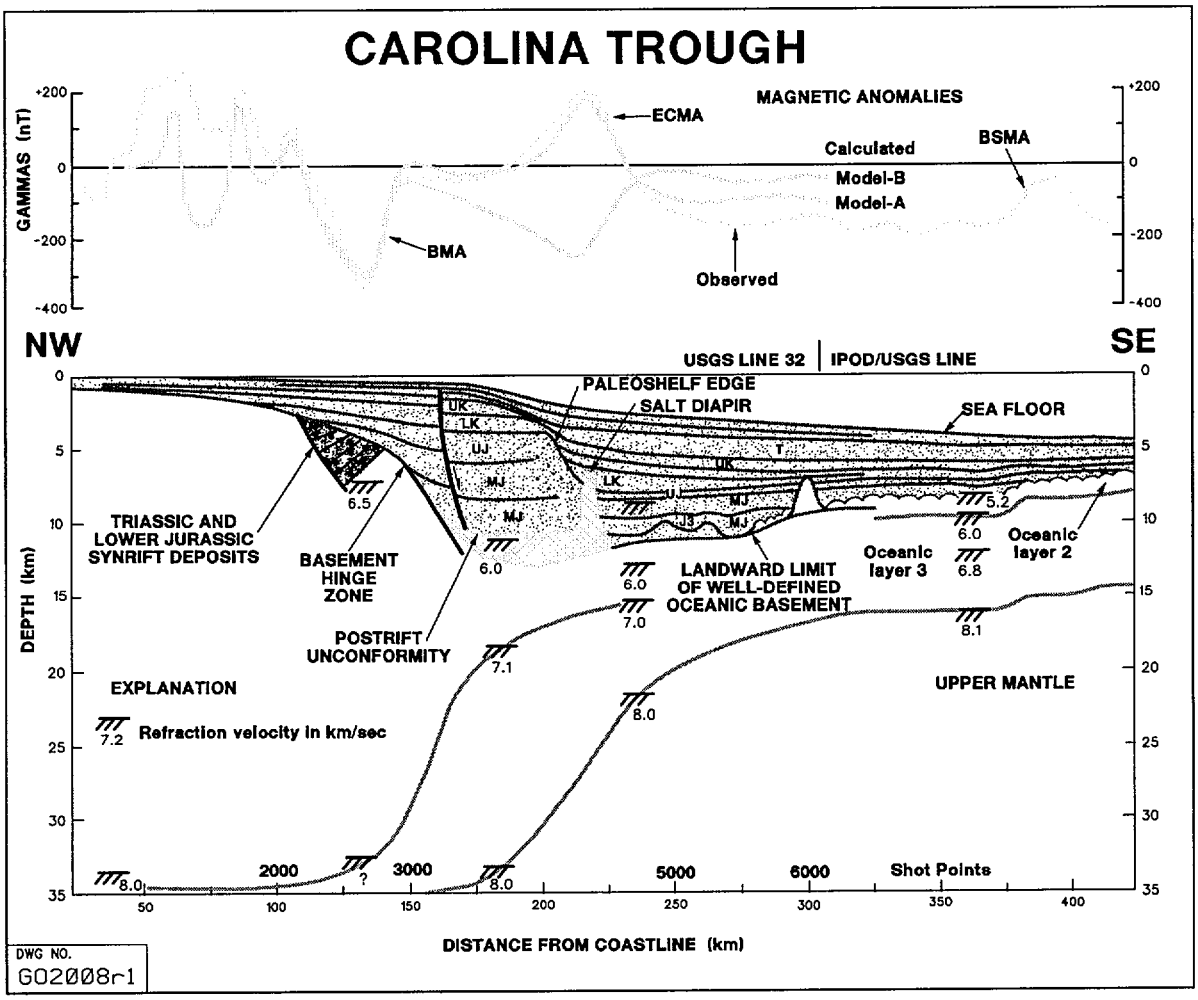


Figure 1.4-52. Crustal geometry for offshore South and North Carolina show a geometry of thinning crust (Klitgord et al; 1988).

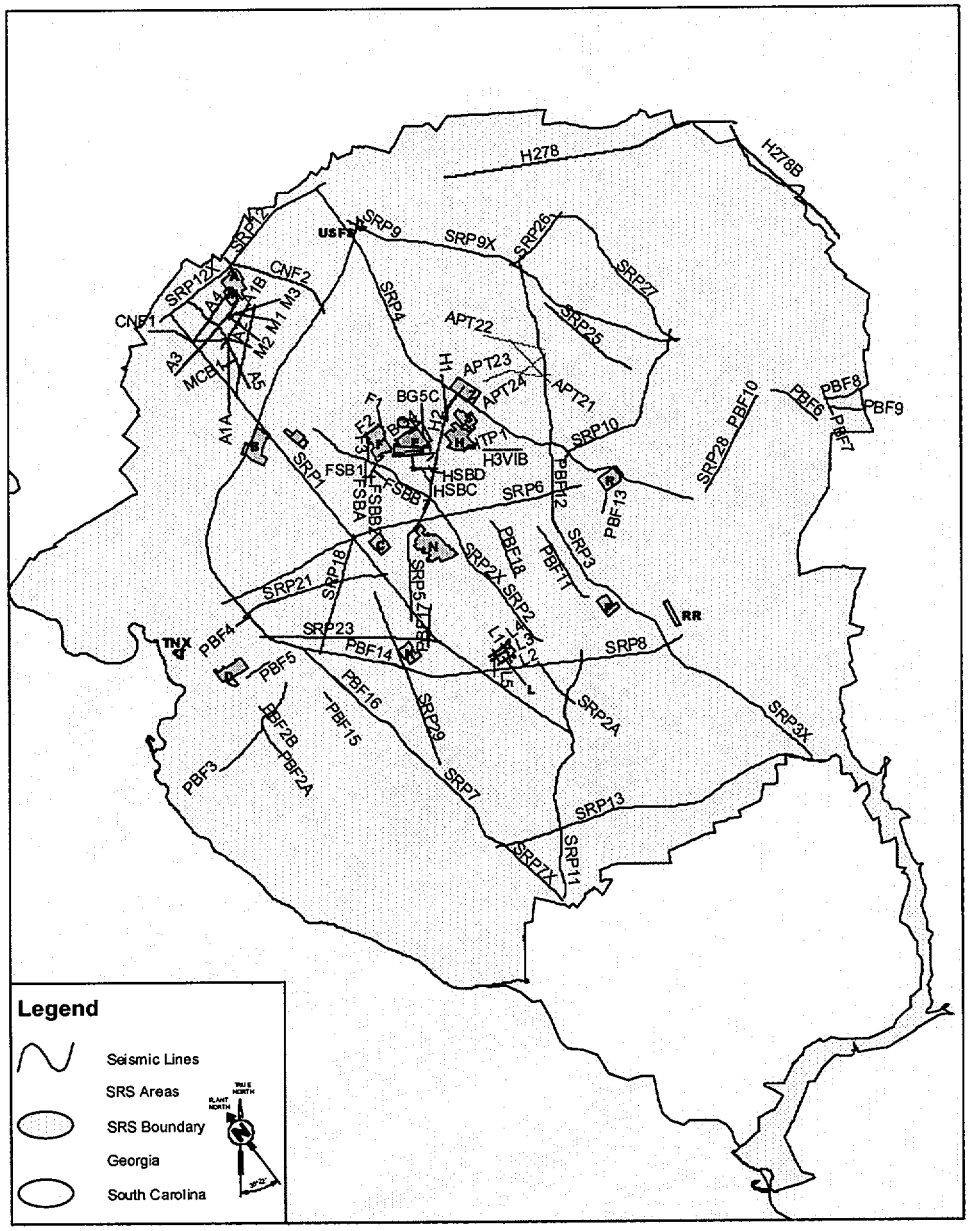
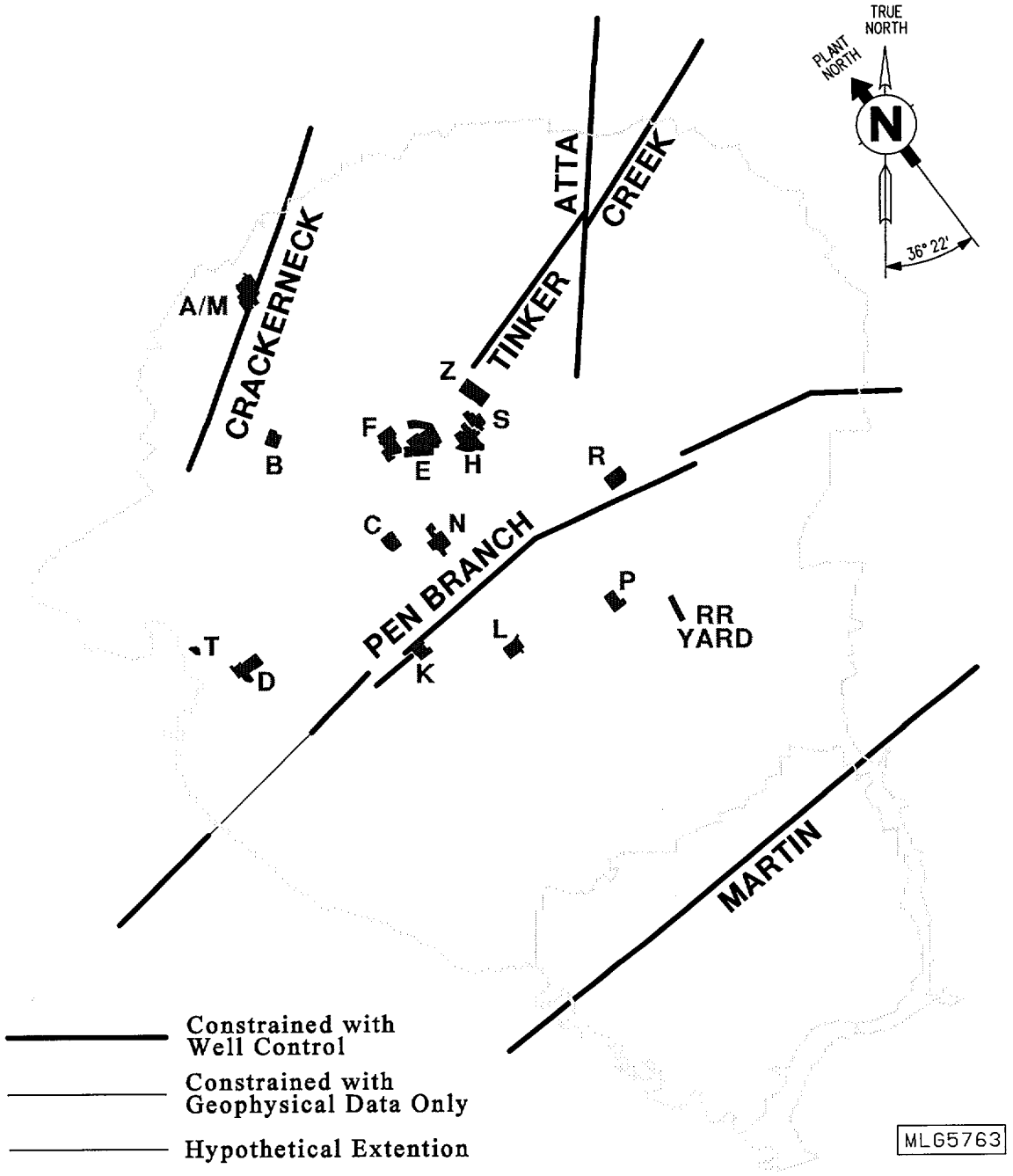


Figure 1.4-53. Seismic line coverage (location of seismic reflection data) for the SRS.



Regional Scale Faults for SRS and Vicinity

Figure 1.4-54. Faults that involve Coastal Plain sediments that are considered regionally significant based on their extent and amounts of offset.

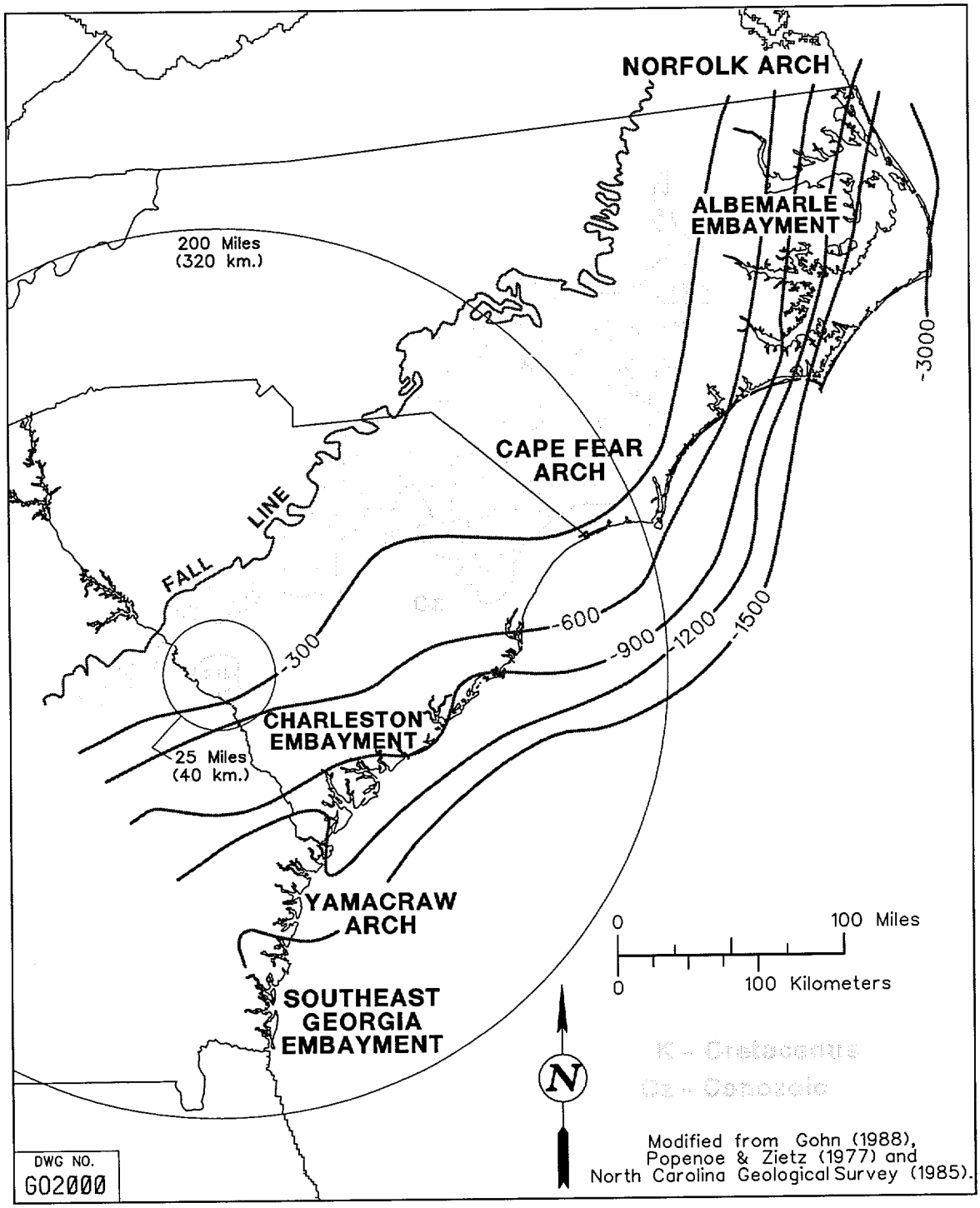


Figure 1.4-55. The Cape Fear arch near the North Carolina-South Carolina border.

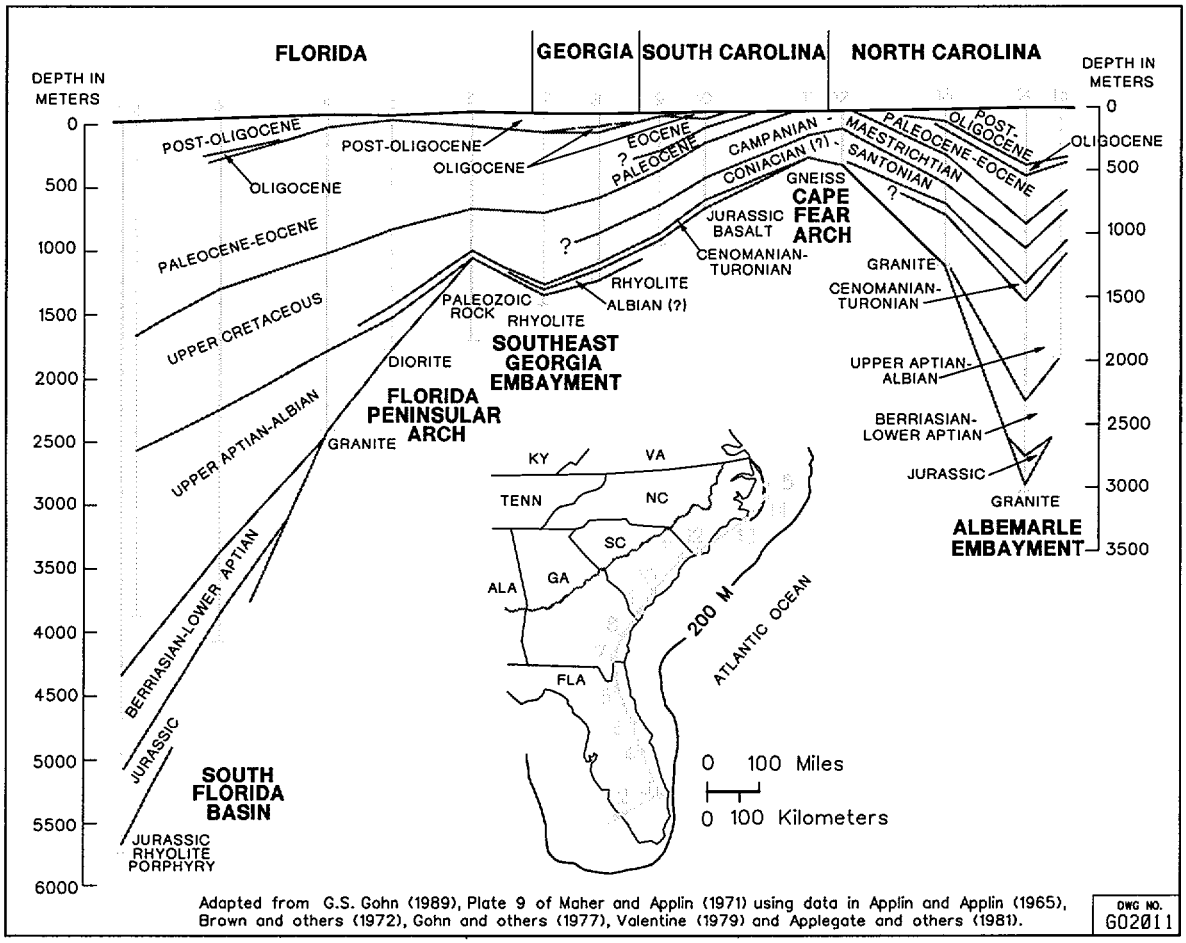


Figure 1.4-56. Other arches in the region include the Norfolk arch near the North Carolina-Virginia border, and the Yamacraw arch near the South Carolina-Georgia border.

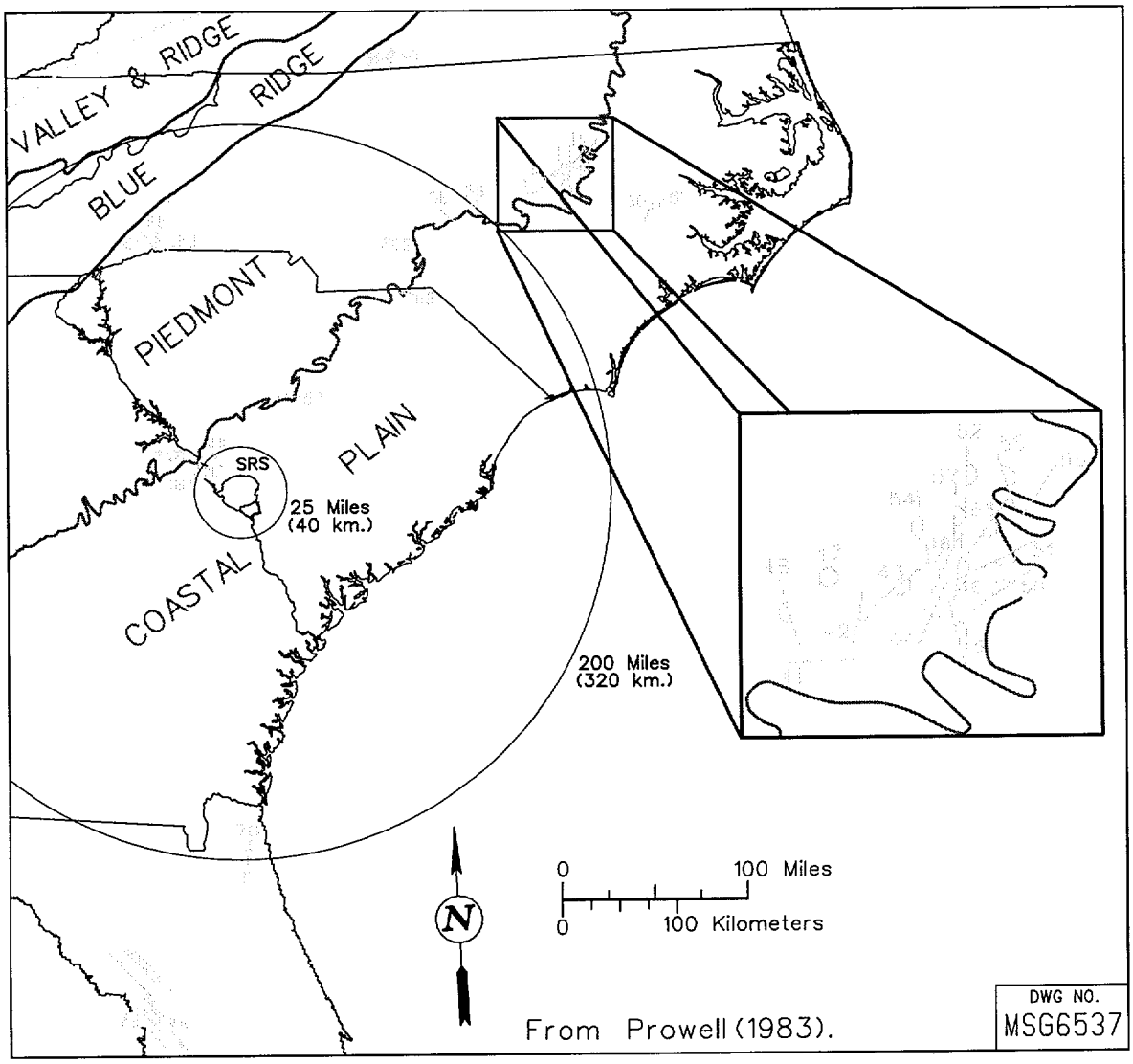


Figure 1.4-57. Previously unrecognized Cretaceous and Cenozoic fault zones found by Prowell, (1983). Of 131 fault localities cited, 26 are within North and South Carolina.

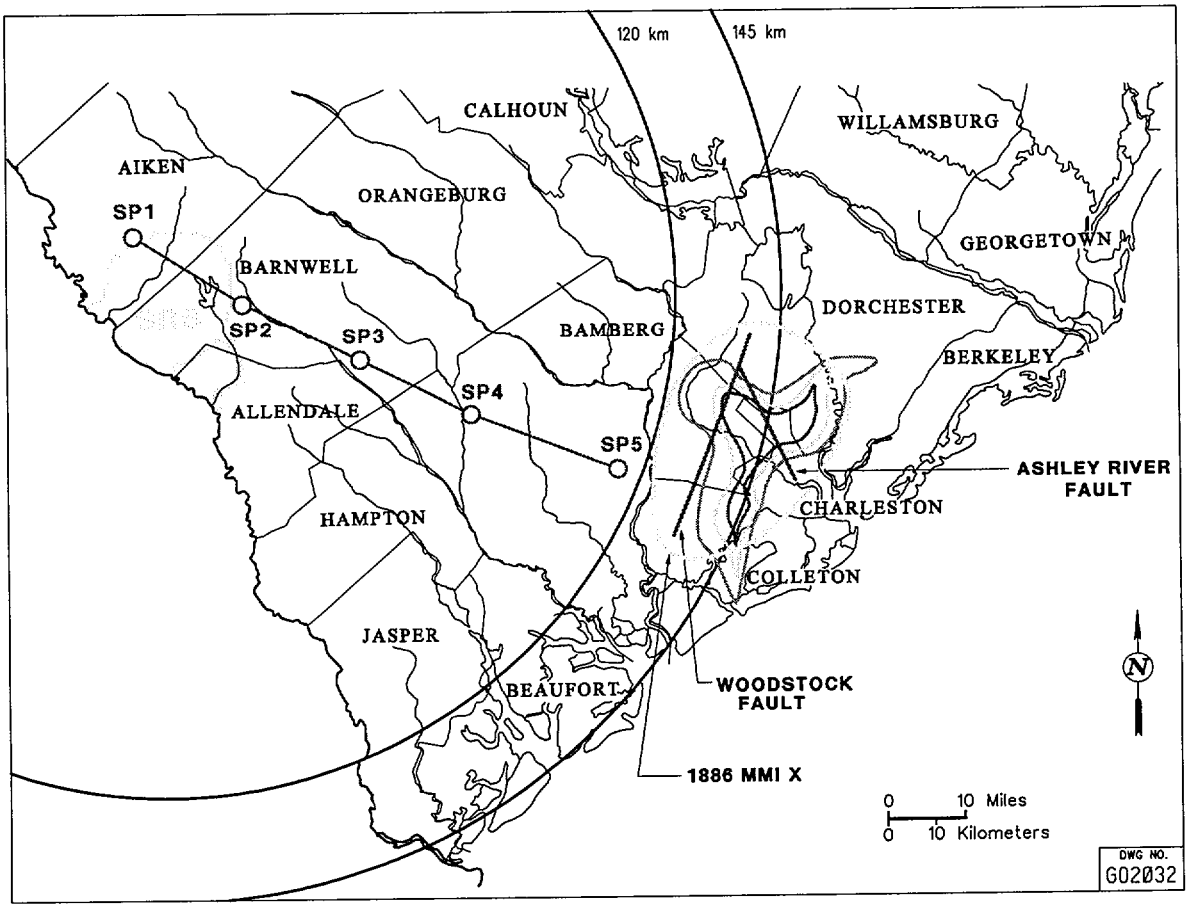


Figure 1.4-58. Ashley River/Woodstock Faults.

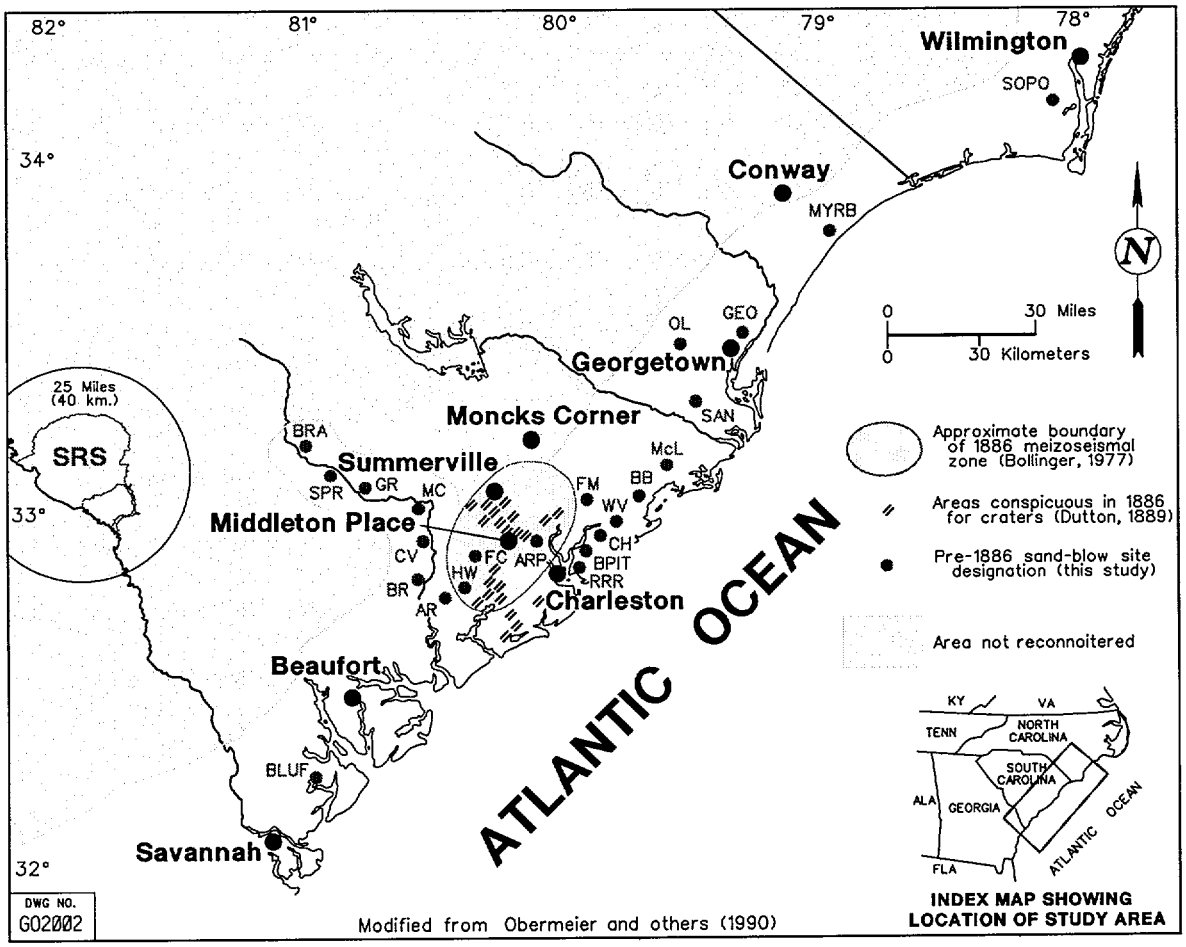


Figure 1.4-59. . Location of sand blows.

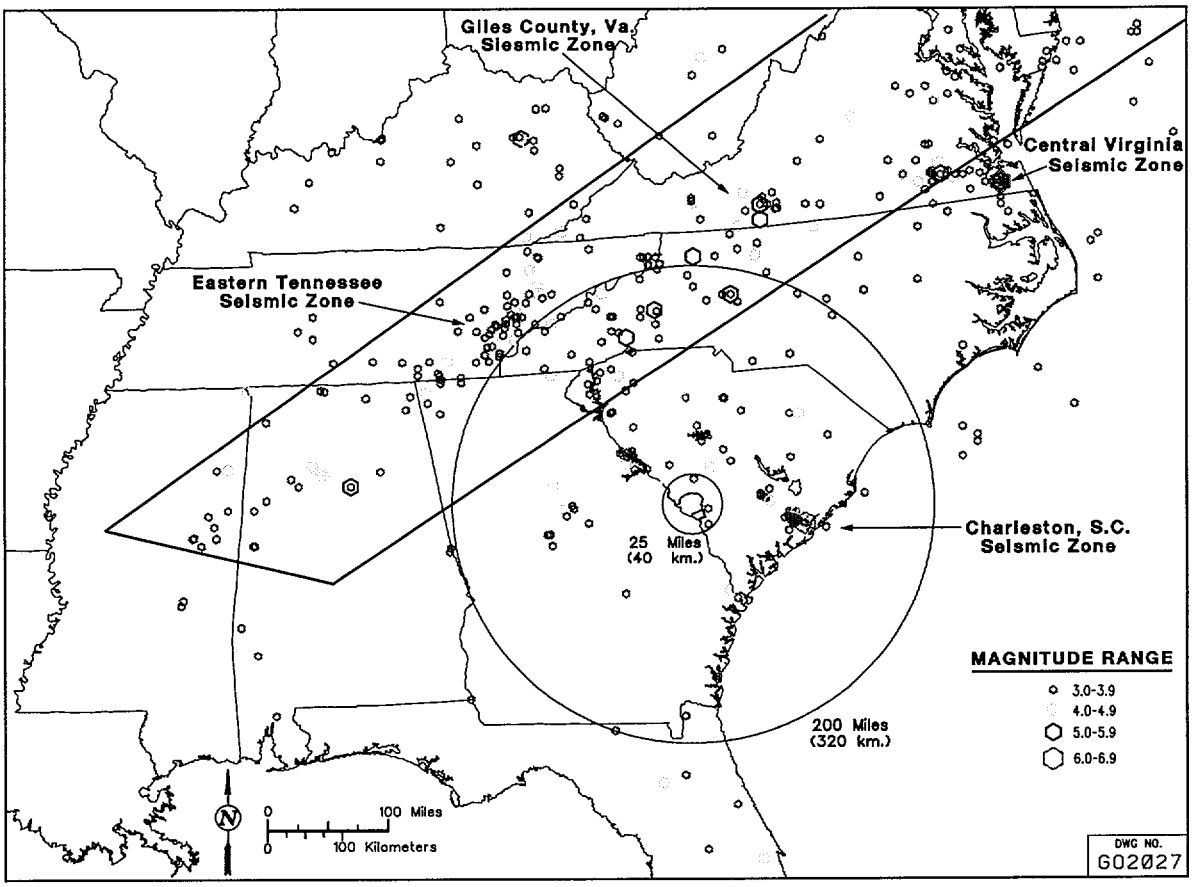


Figure 1.4-60. Location of historical seismic events, 1568 – 1993.

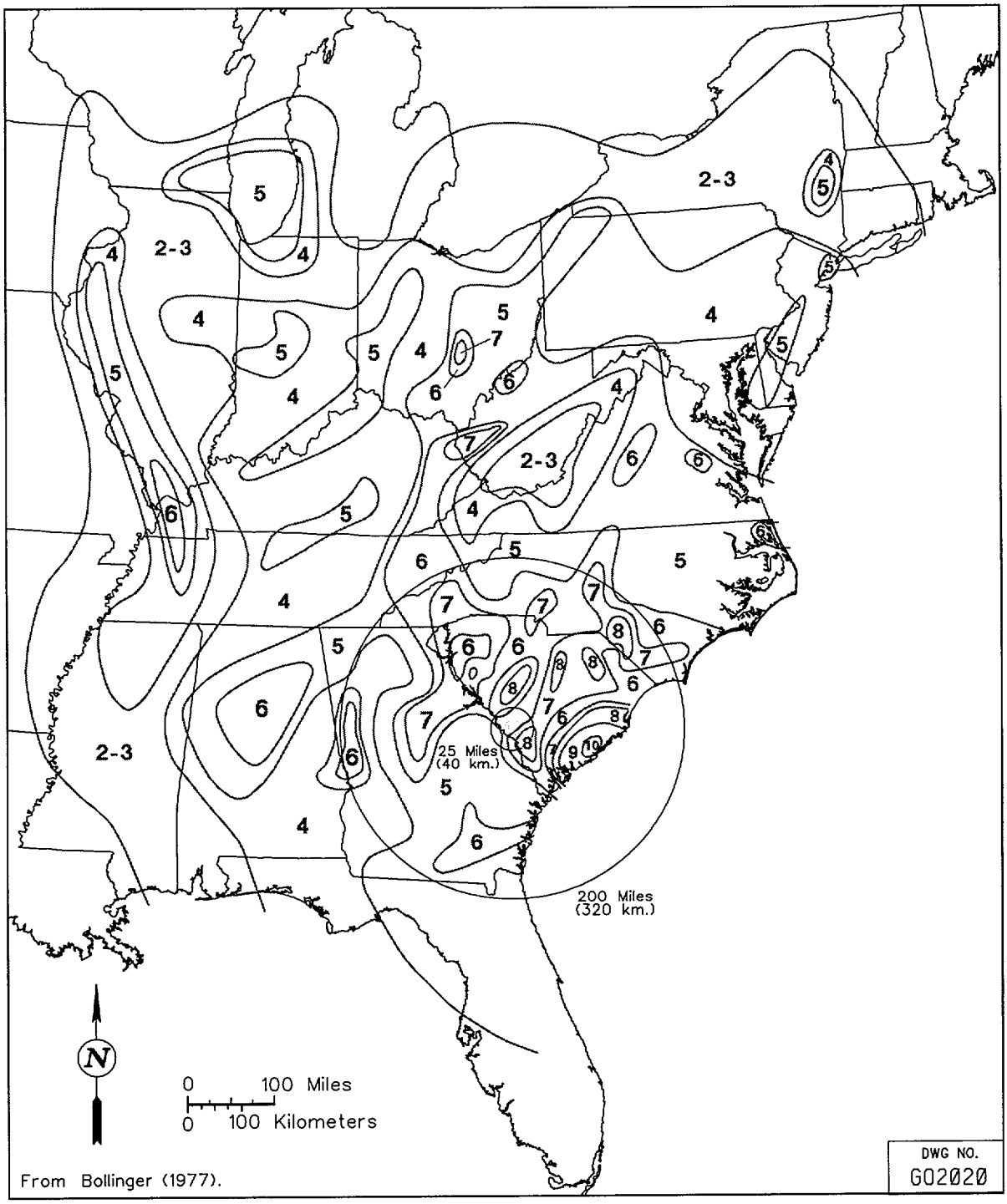


Figure 1.4-61. MMI intensity isoseismals for the Charleston event.

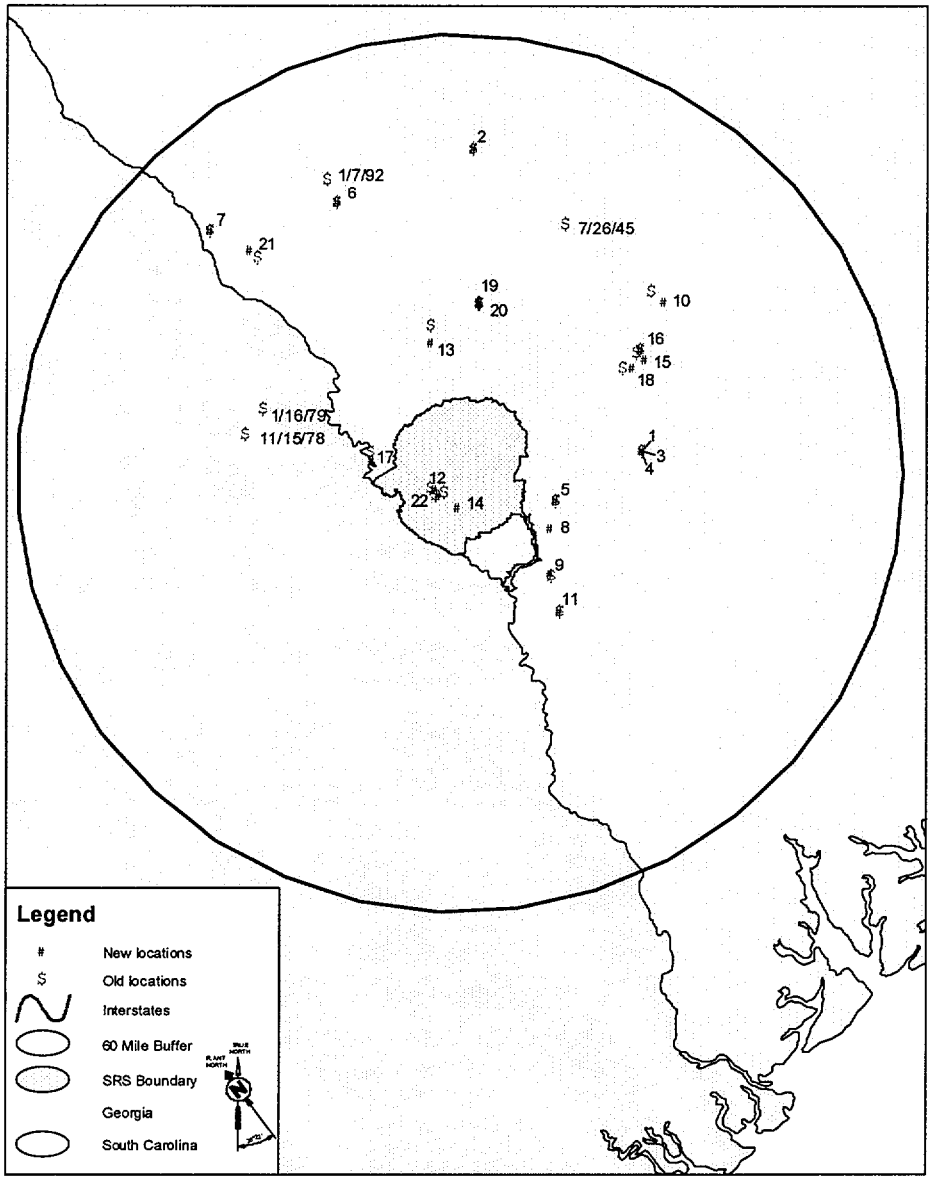


Figure 1.4-62. Historical seismic events. Triangles with date are historically mis-located.

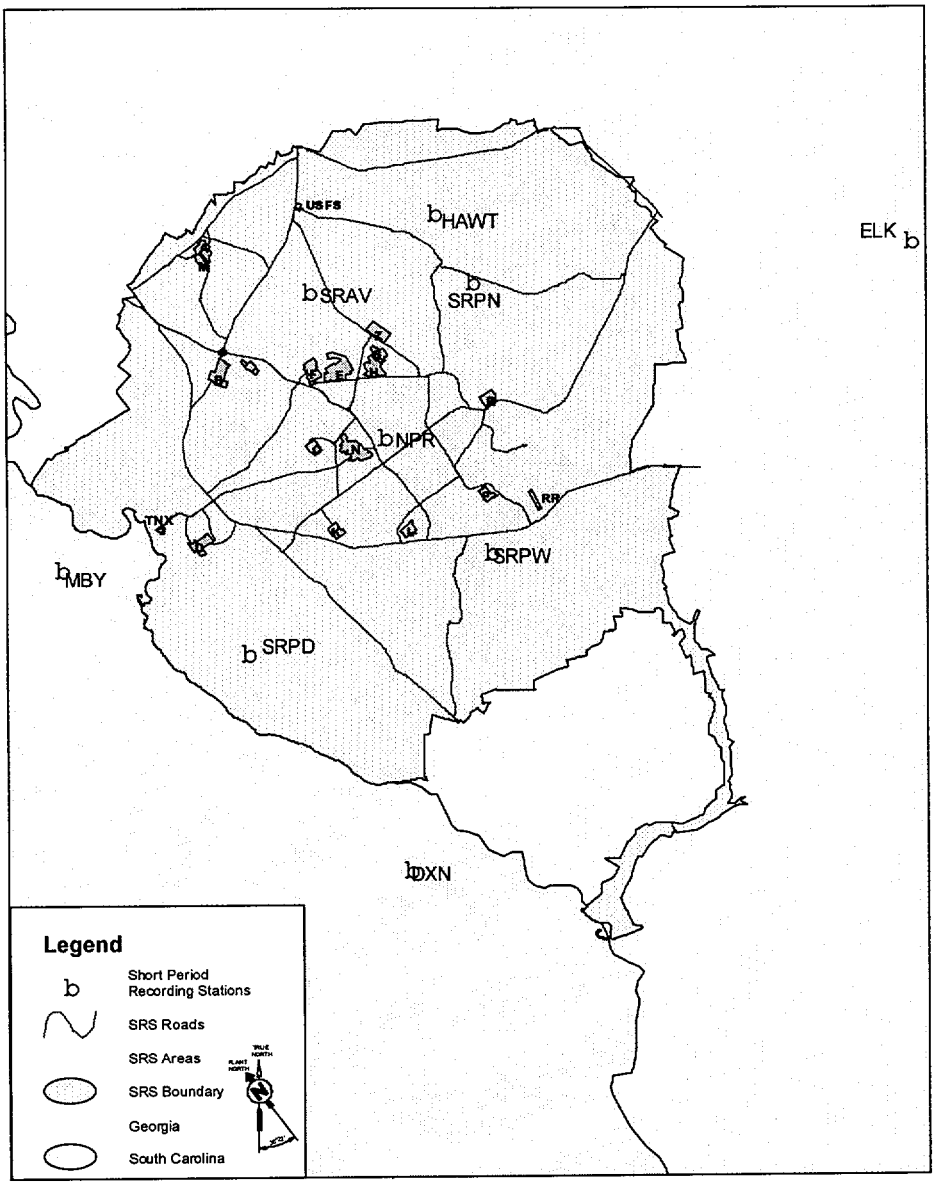


Figure 1.4-63. SRS short period recording stations.

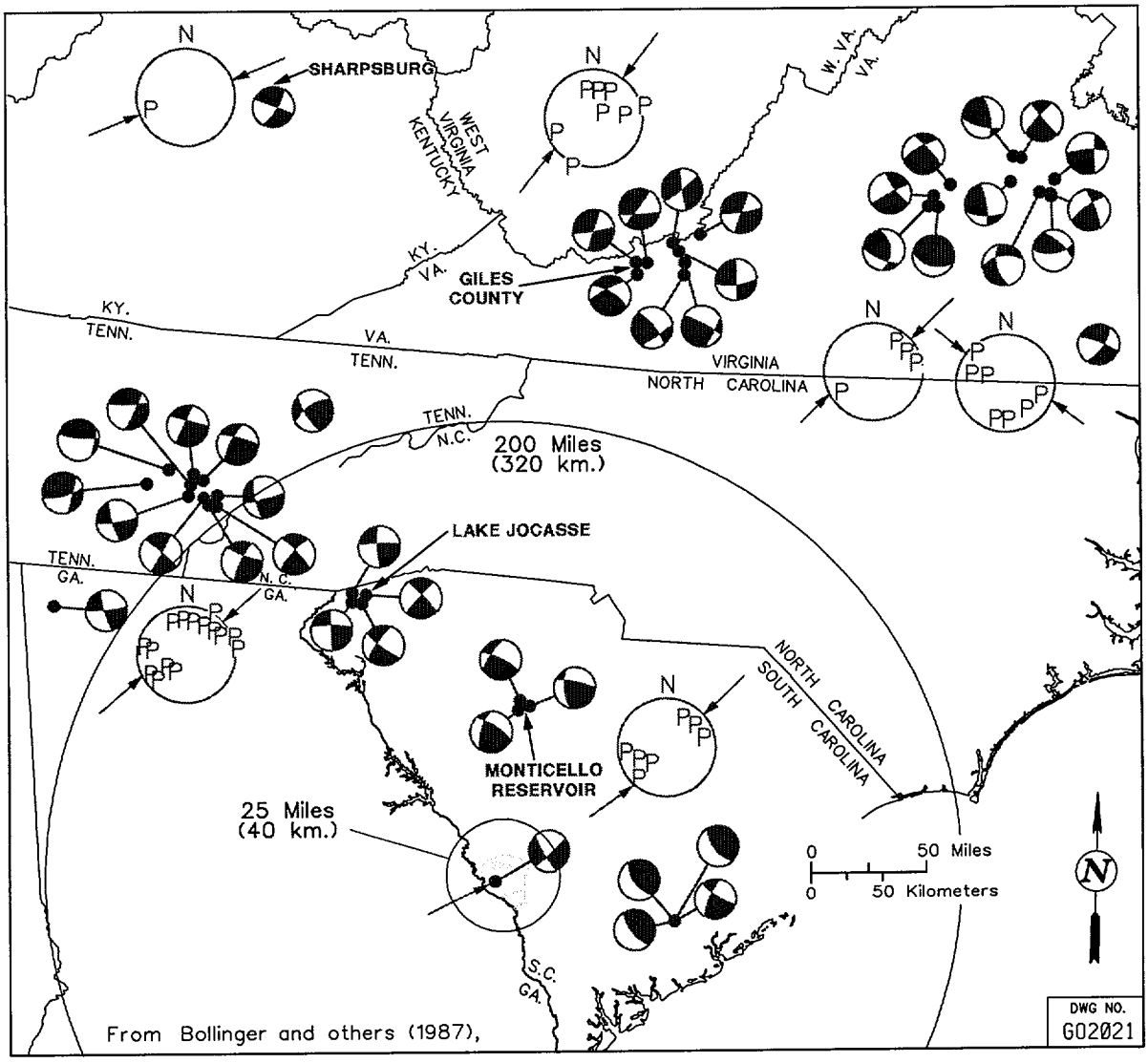


Figure 1.4-64. Summary fault plane solutions for southeastern United Stares.

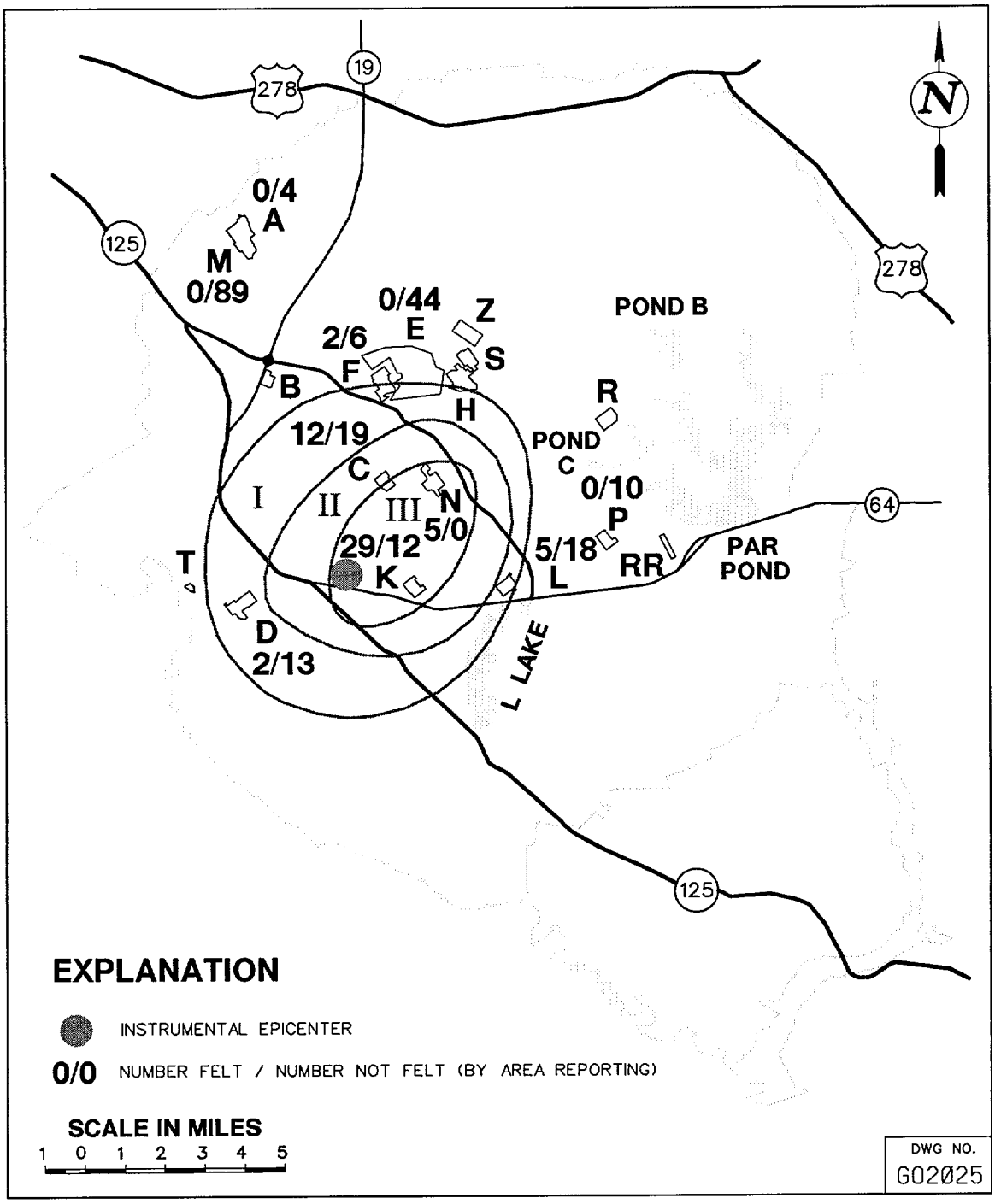


Figure 1.4-65. Isoseismal map for the June, 1985 earthquake.

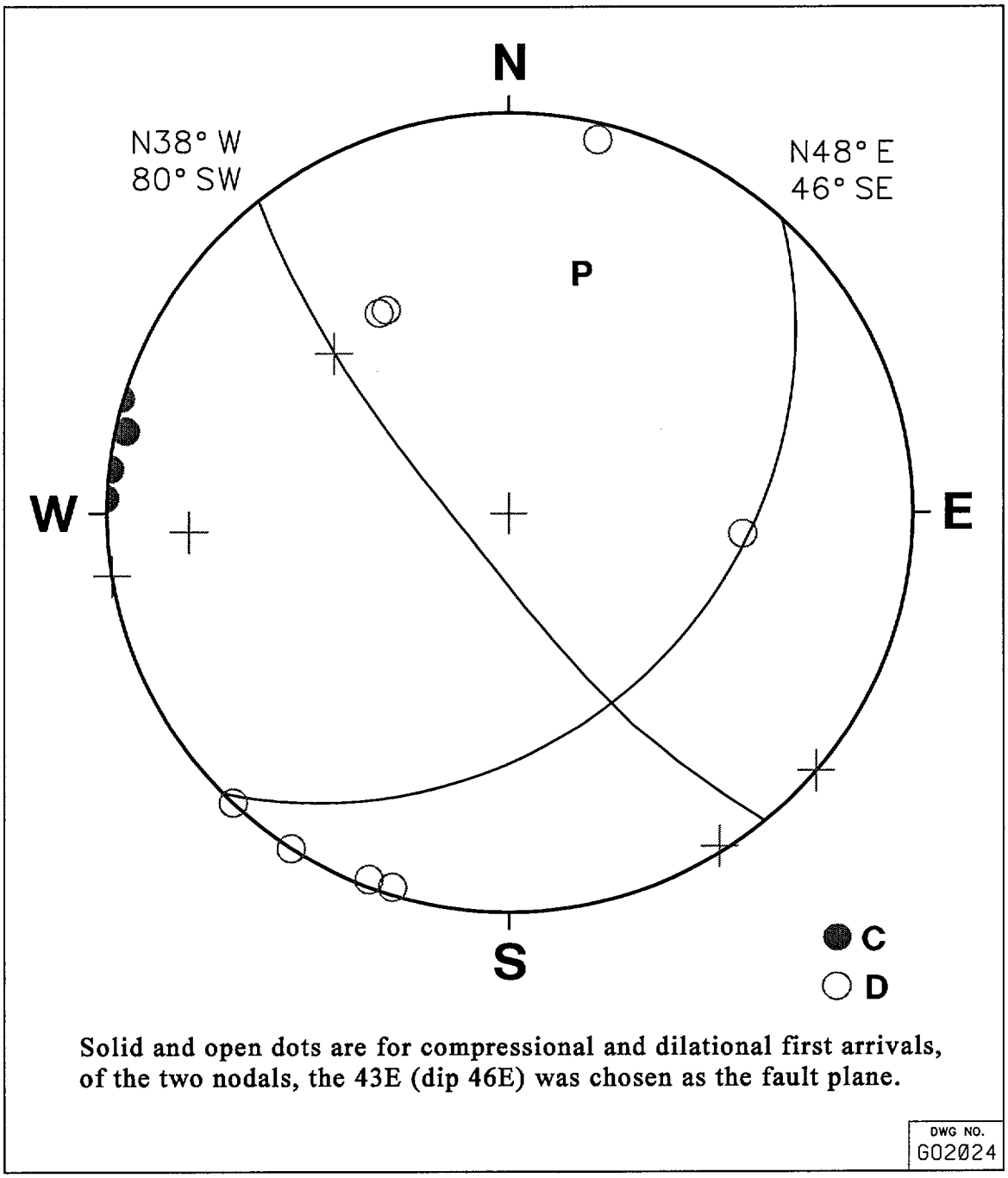


Figure 1.4-66. Fault plane solution for the June, 1985 earthquake..

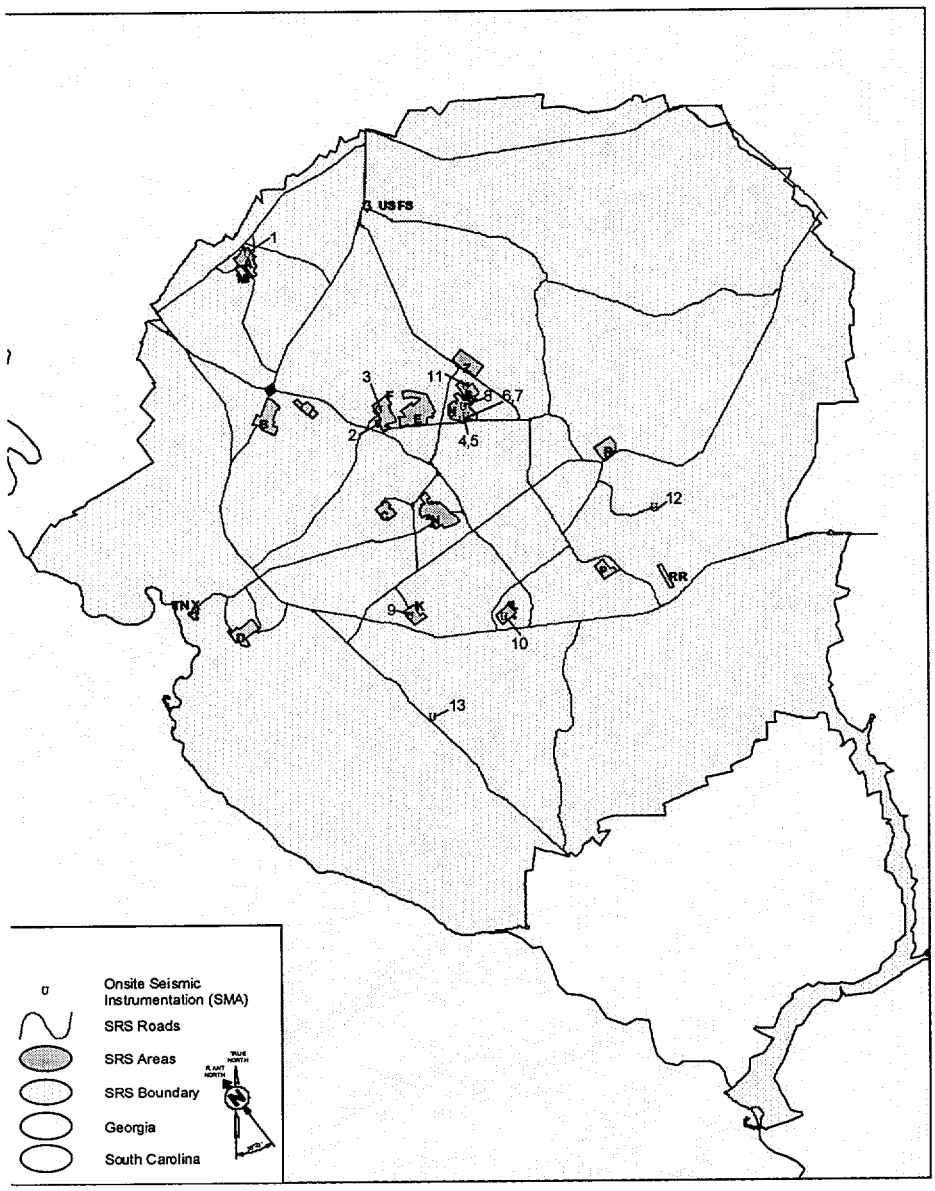


Figure 1.4-67. Location of strong motion accelerographs.

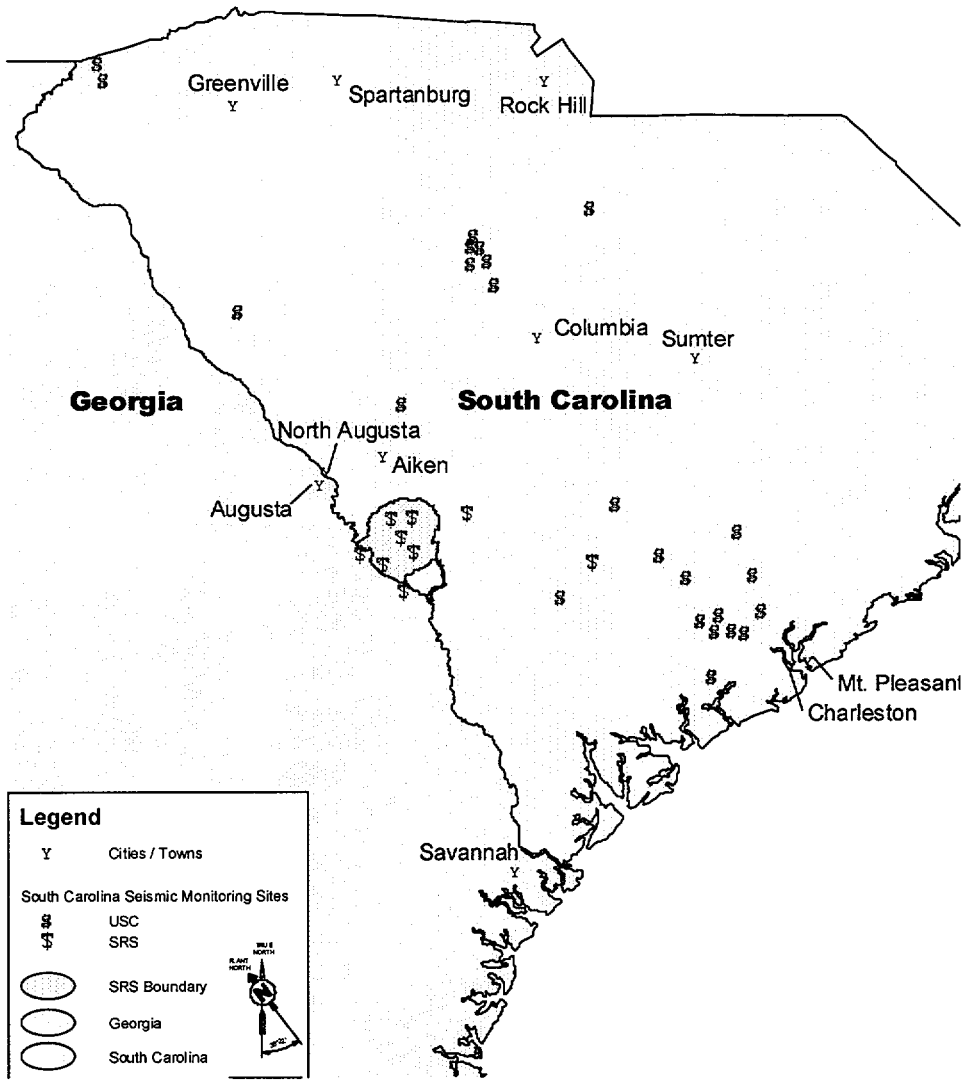


Figure 1.4-68. Seismic network for SRS and the surrounding region.

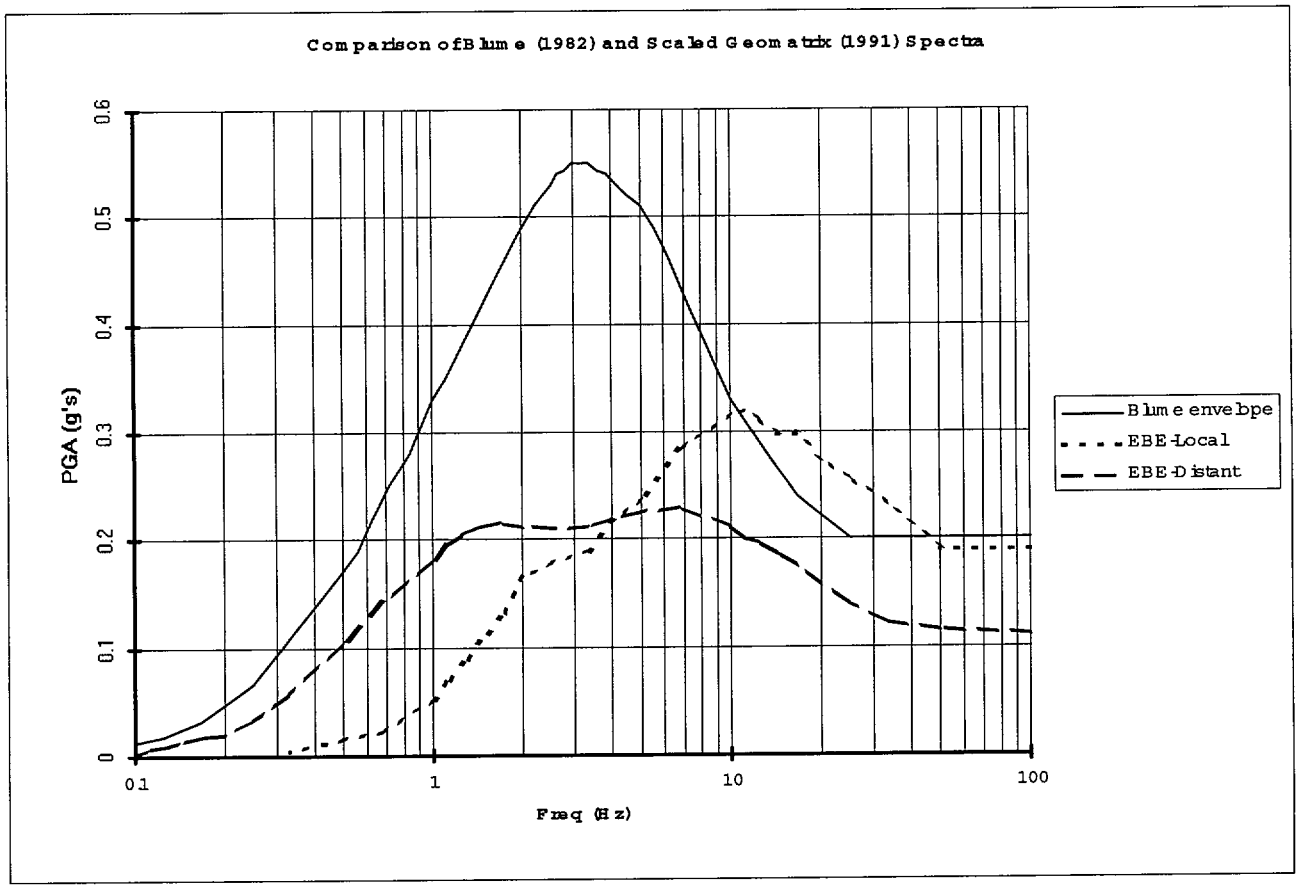


Figure 1.4-69. Response spectrum envelope developed by URS/Blume (1982).

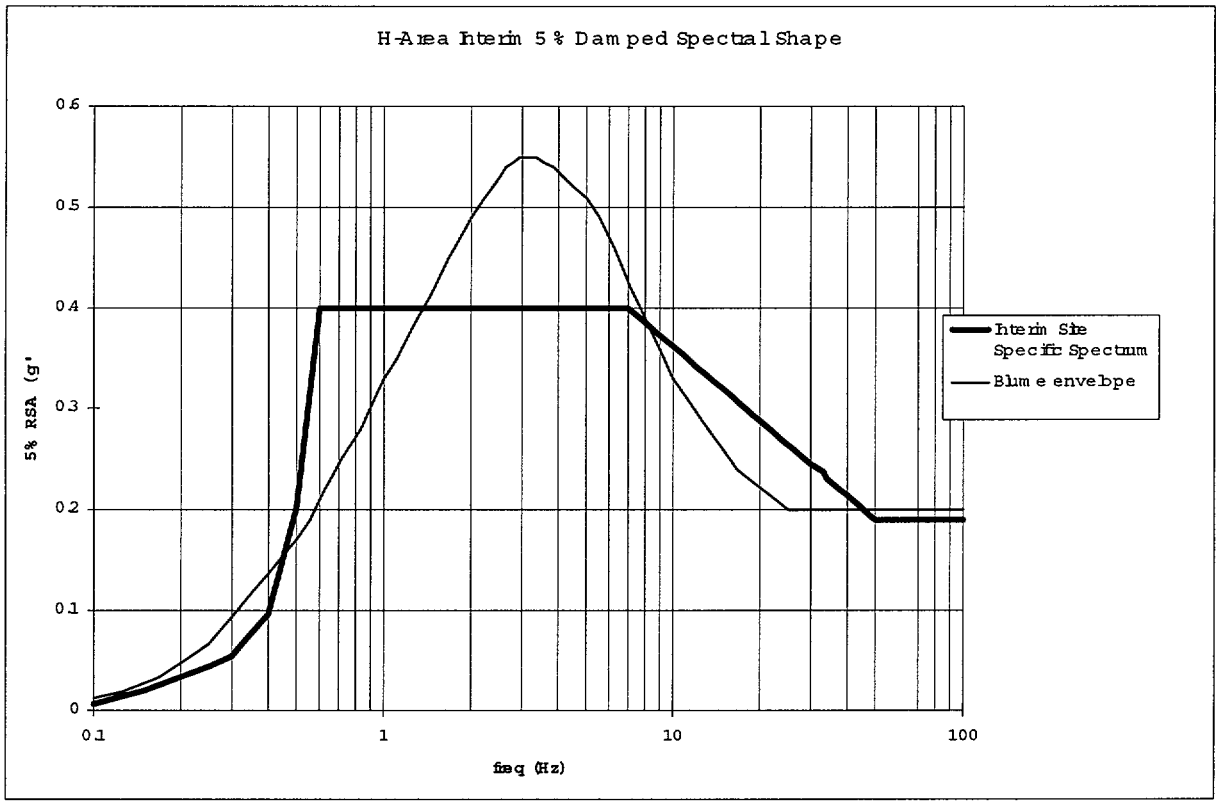


Figure 1.4-70. Interim site spectrum versus Blume envelope.

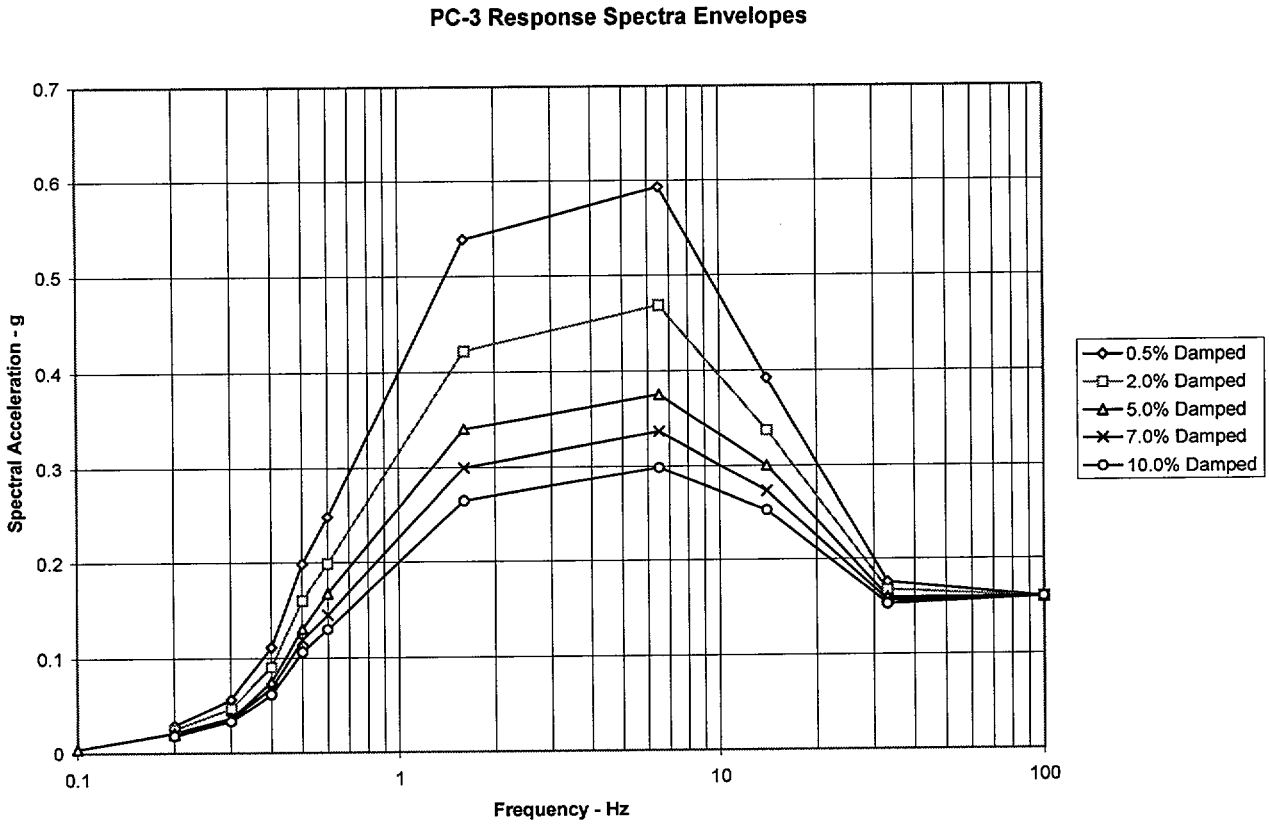


Figure 1.4-71. PC-3 response spectra envelopes.

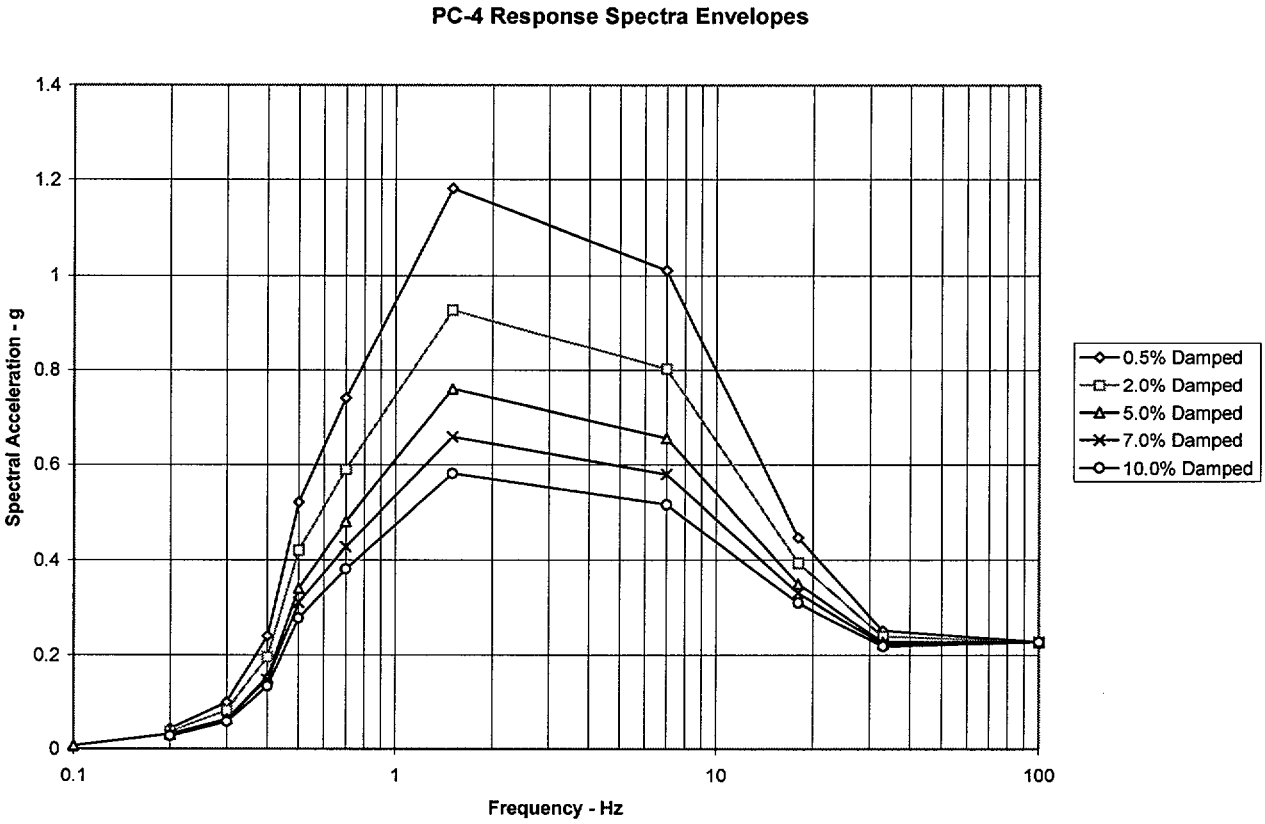


Figure 1.4-72. PC-4 response spectra envelopes.

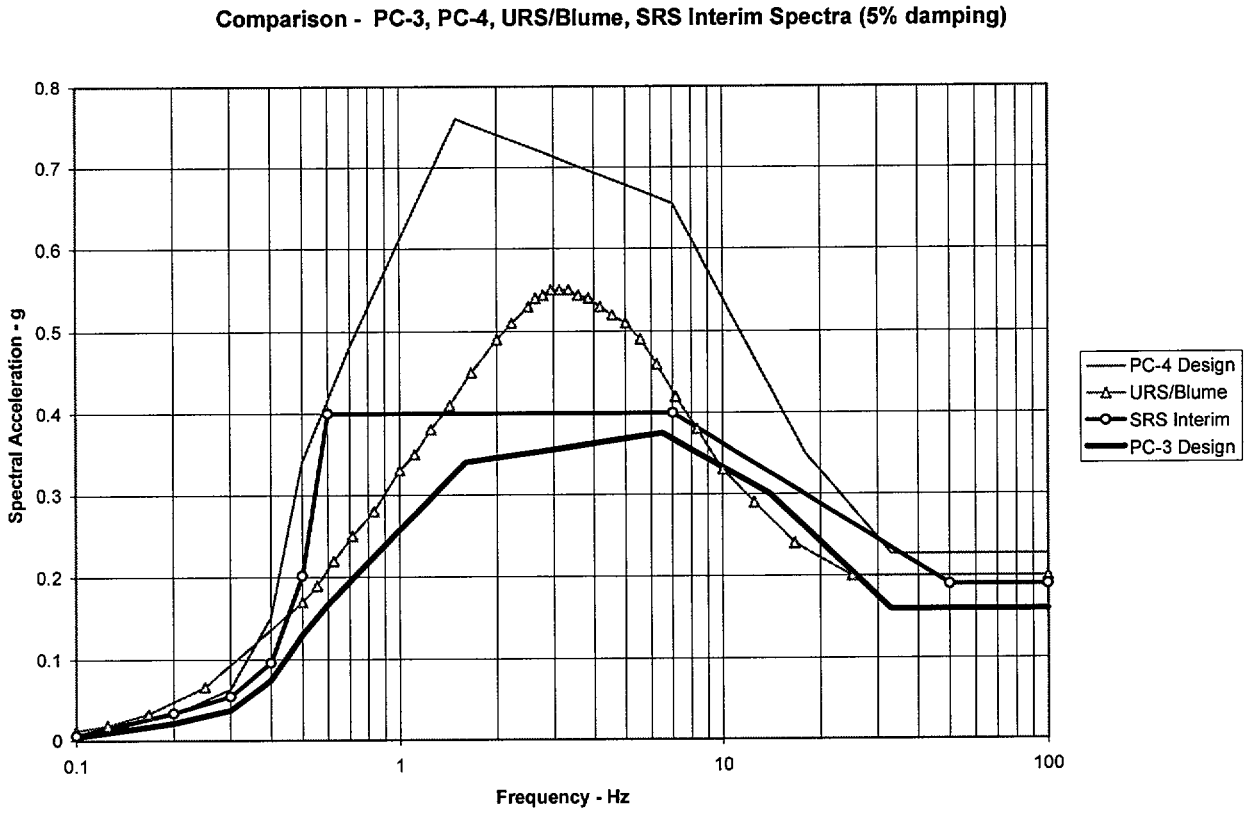


Figure 1.4-73. Comparison – PC-3, PC-4, Blume, SRS Interim spectra (5% damping).

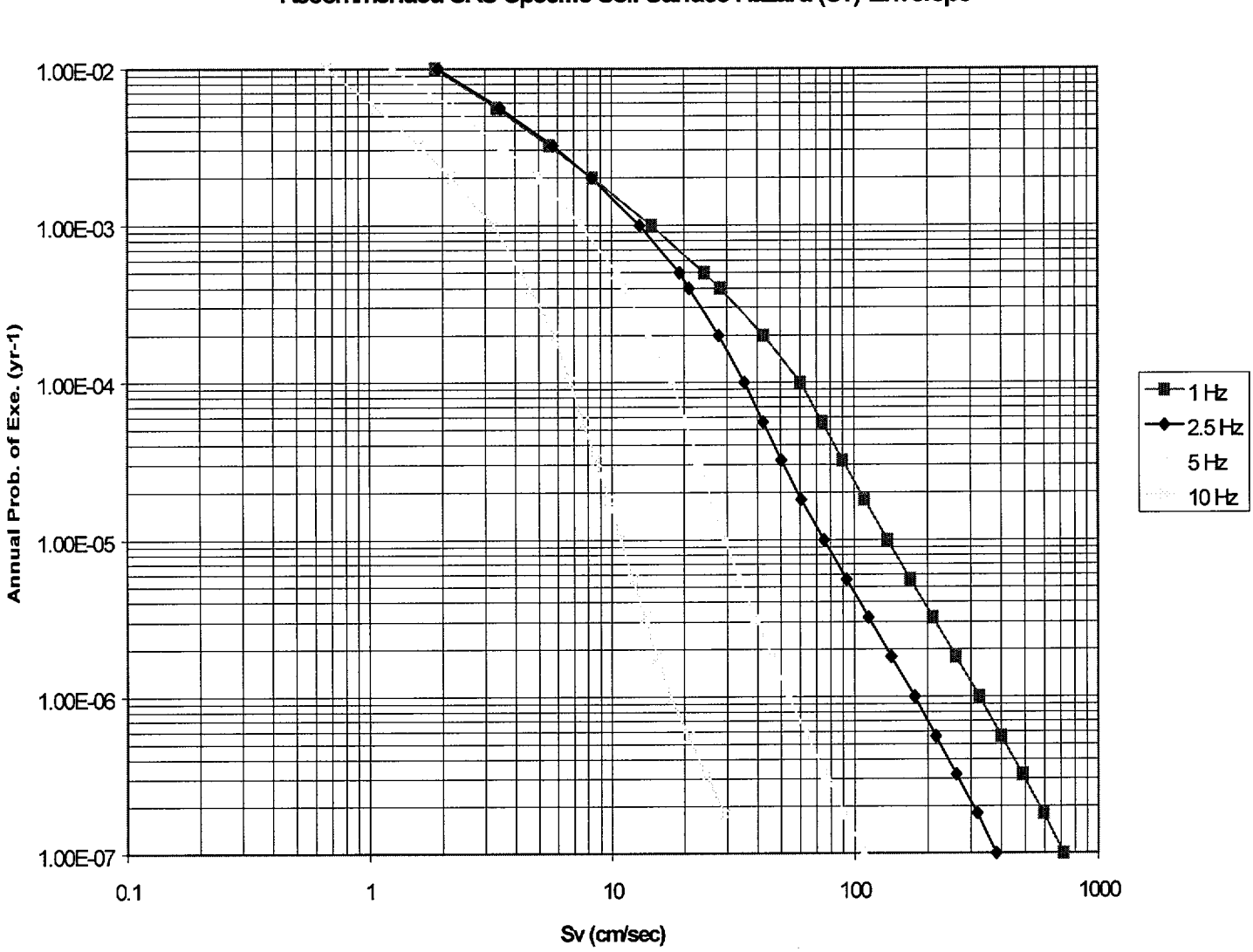


Figure 1.4-73.1. Combined EPRI and LLNL soil surface hazard envelope (probability of exceedence vs. 5% damped spectral velocity) for oscillator frequencies of 1, 2.5, 5, and 10 Hz. fsdf

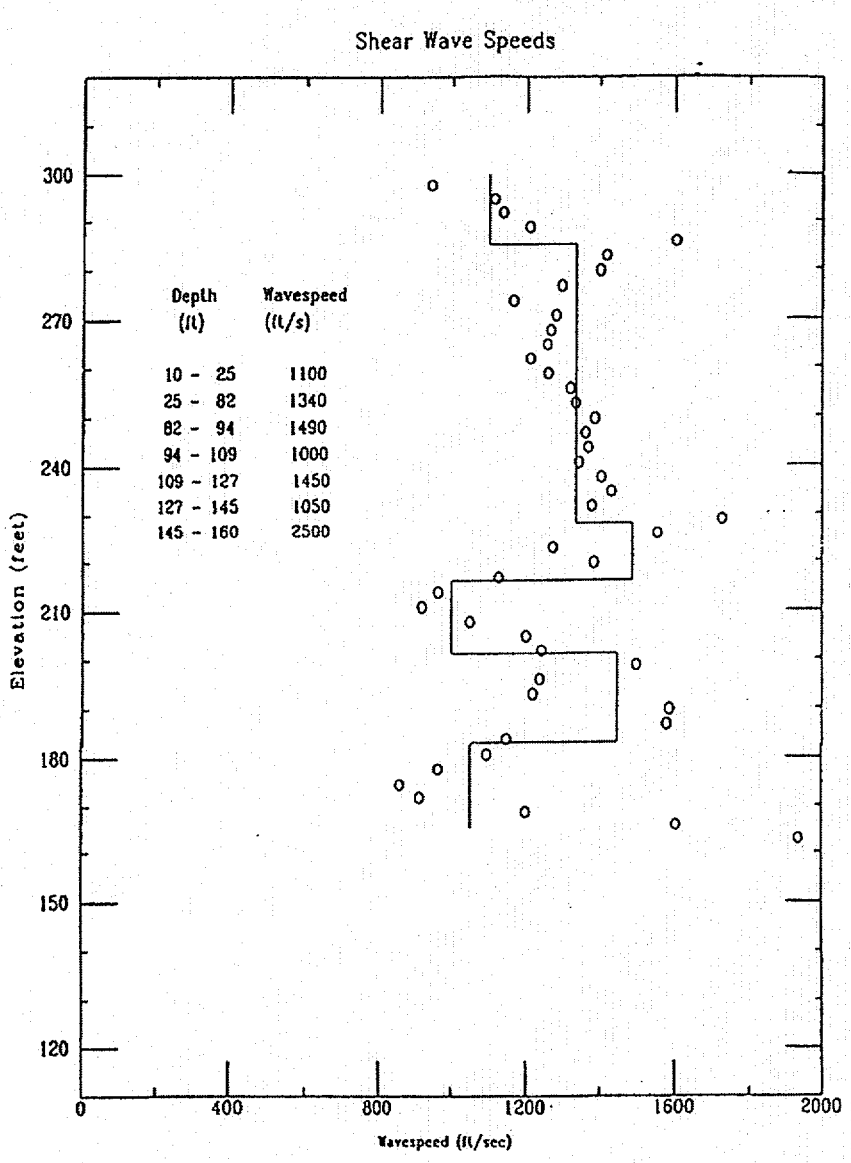


Figure 1.4-74. Example seismic cone penetromter S-wave interpretation (solid lines). Measurement taken in F-Area.

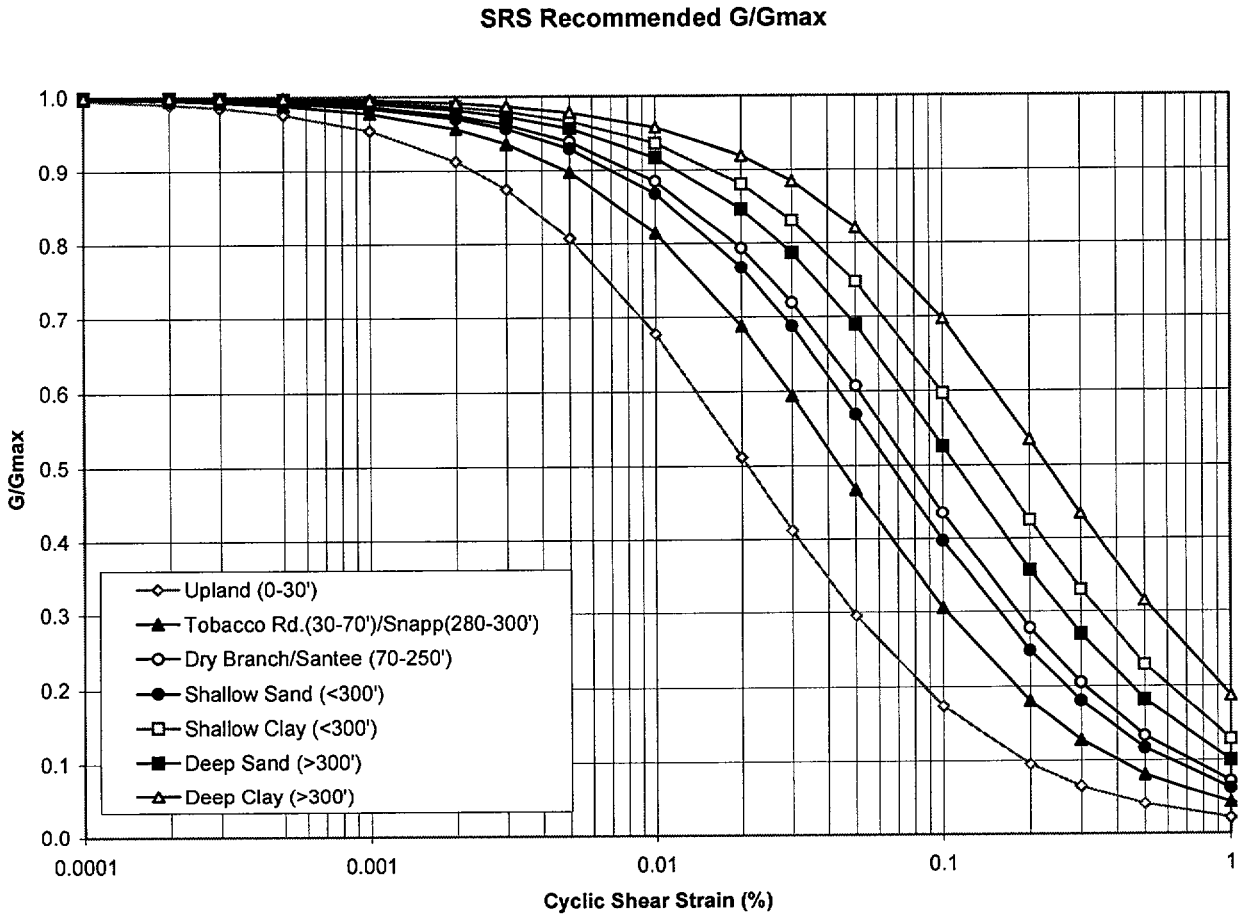


Figure 1.4-75. SRS Recommended G/Gmax.

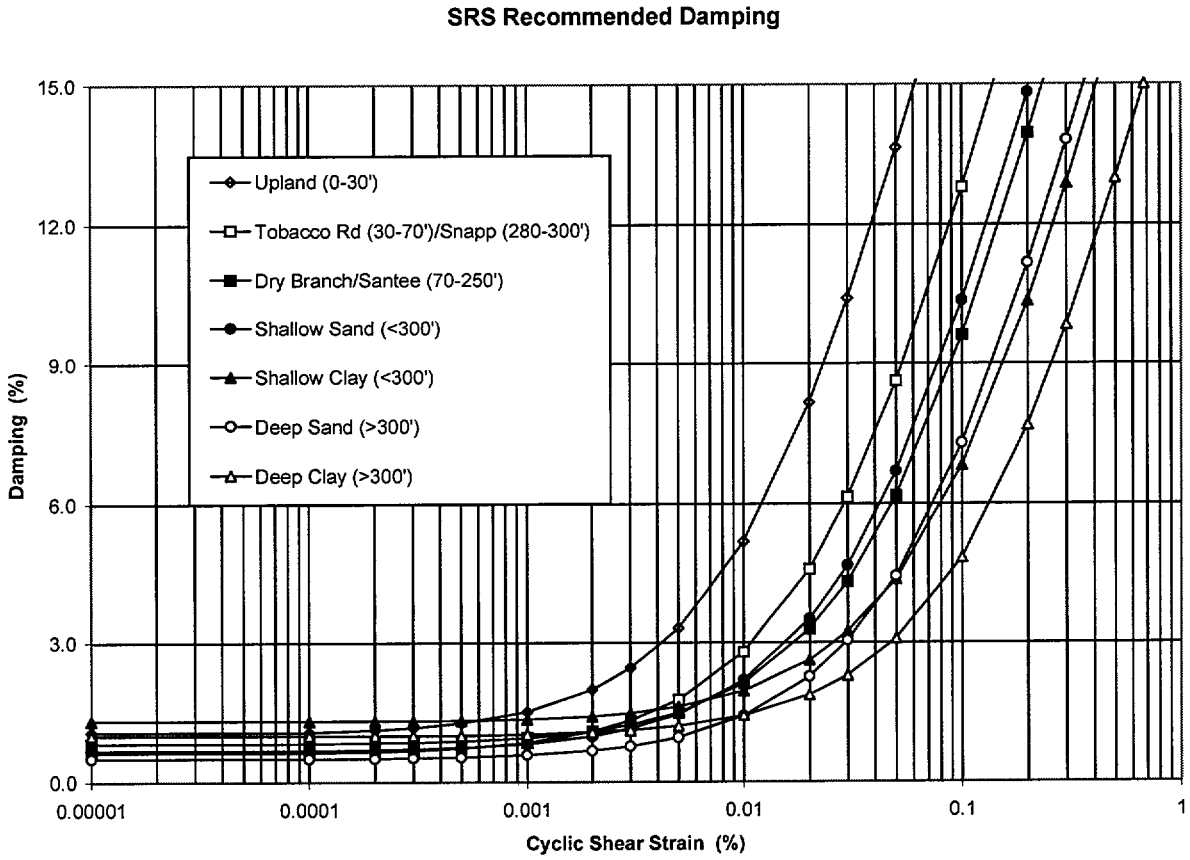


Figure 1.4-76. SRS recommended damping.

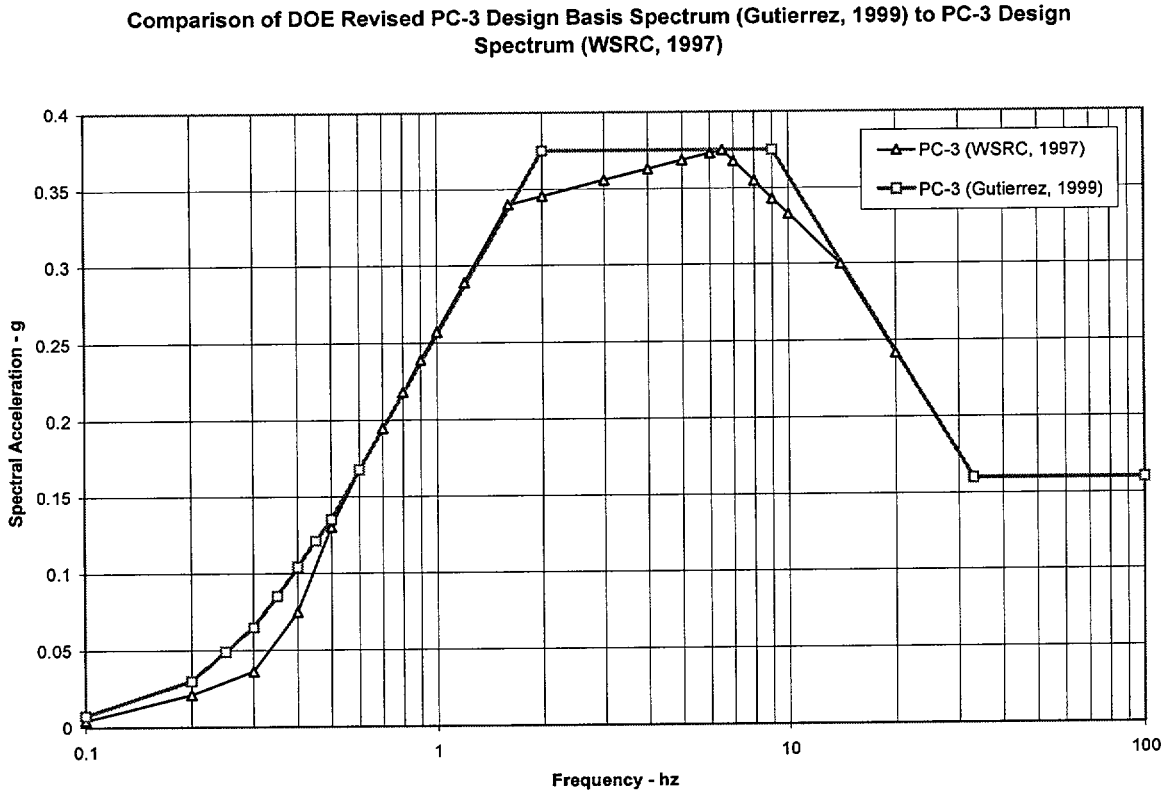


Figure 1.4-77. Revised SRS PC-3 5% damped design response spectrum (Gutierrez, 1999).

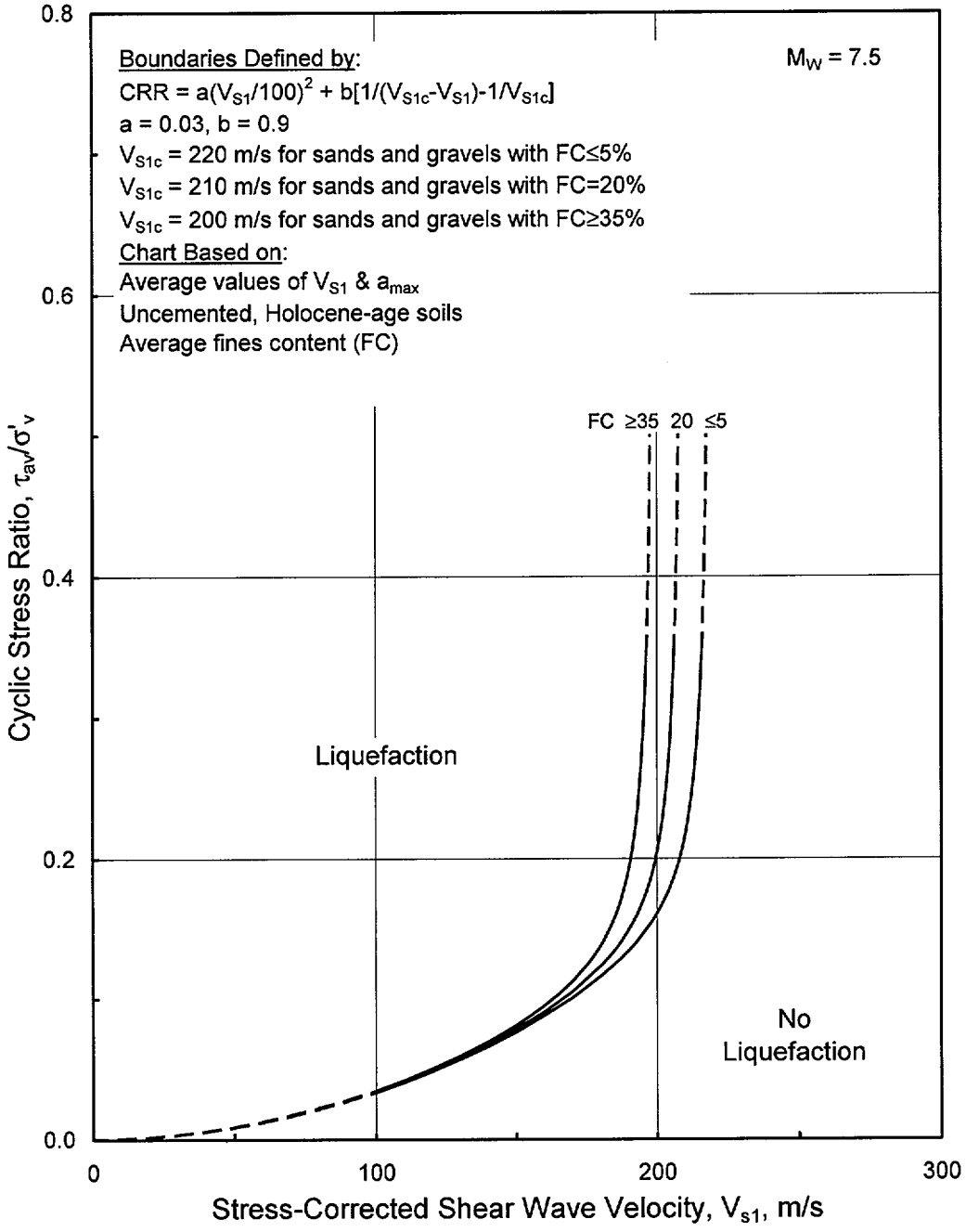


Figure 1.4-78. Recommended Liquefaction Assessment Chart Based on V_{S1} and Cyclic Stress Ratio for Magnitude 7.5 Earthquakes and Uncemented Soils of Holocene Age (NCEER, 1997).

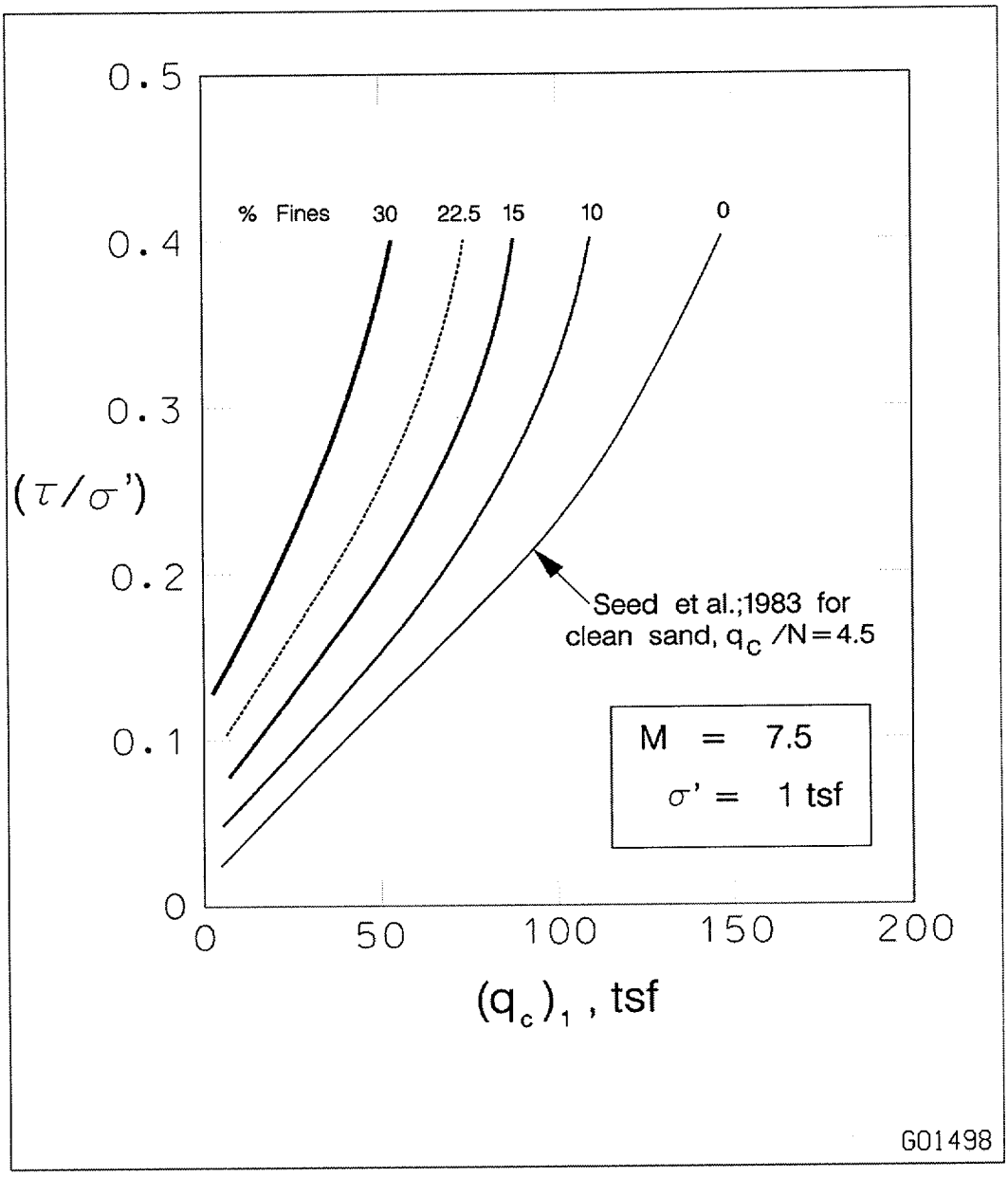


Figure 1.4-79. Correlation Between Normalized CPT Tip Resistance and Cyclic Stress Ratio Required for Initial Liquefaction Due to Magnitude 7.5 Earthquake and SRS Soils (WSRC, 1995).

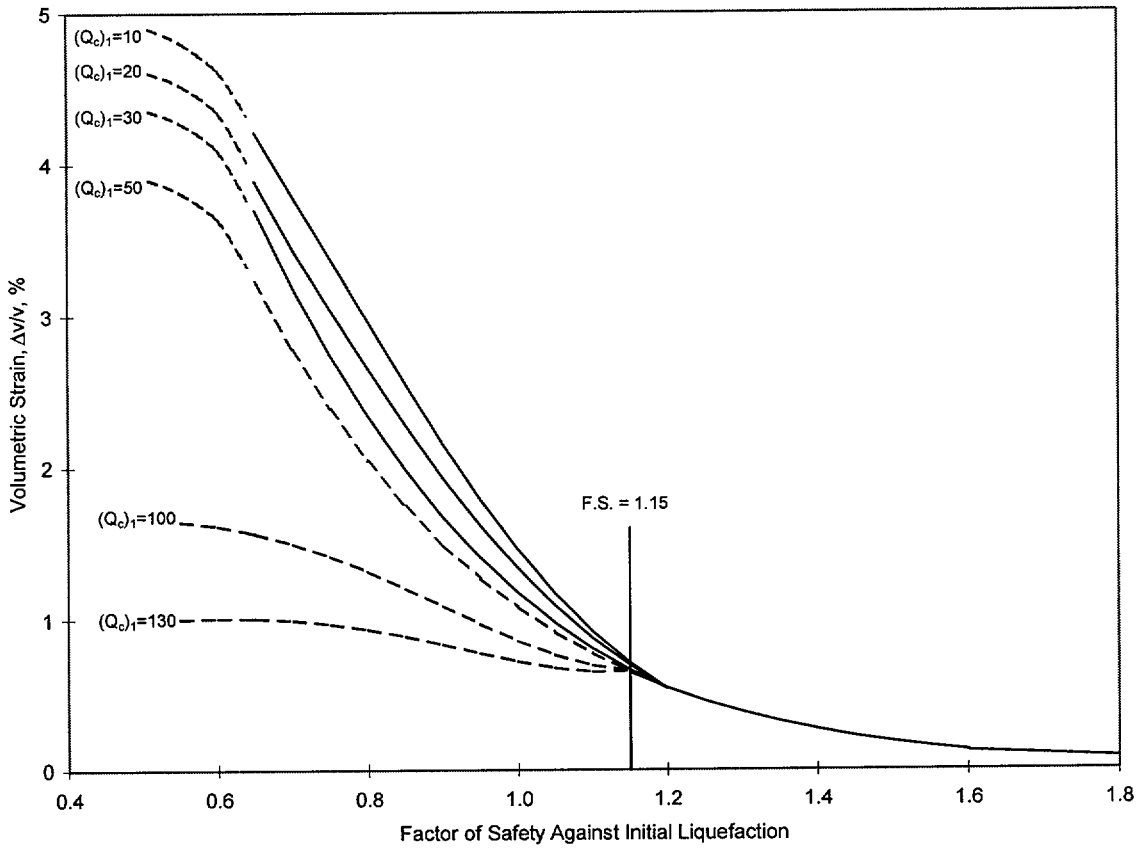


Figure 1.4-80. Volumetric Strain as a Function of Factor of Safety Against Initial Liquefaction for SRS Soils (WSRC, 1995).

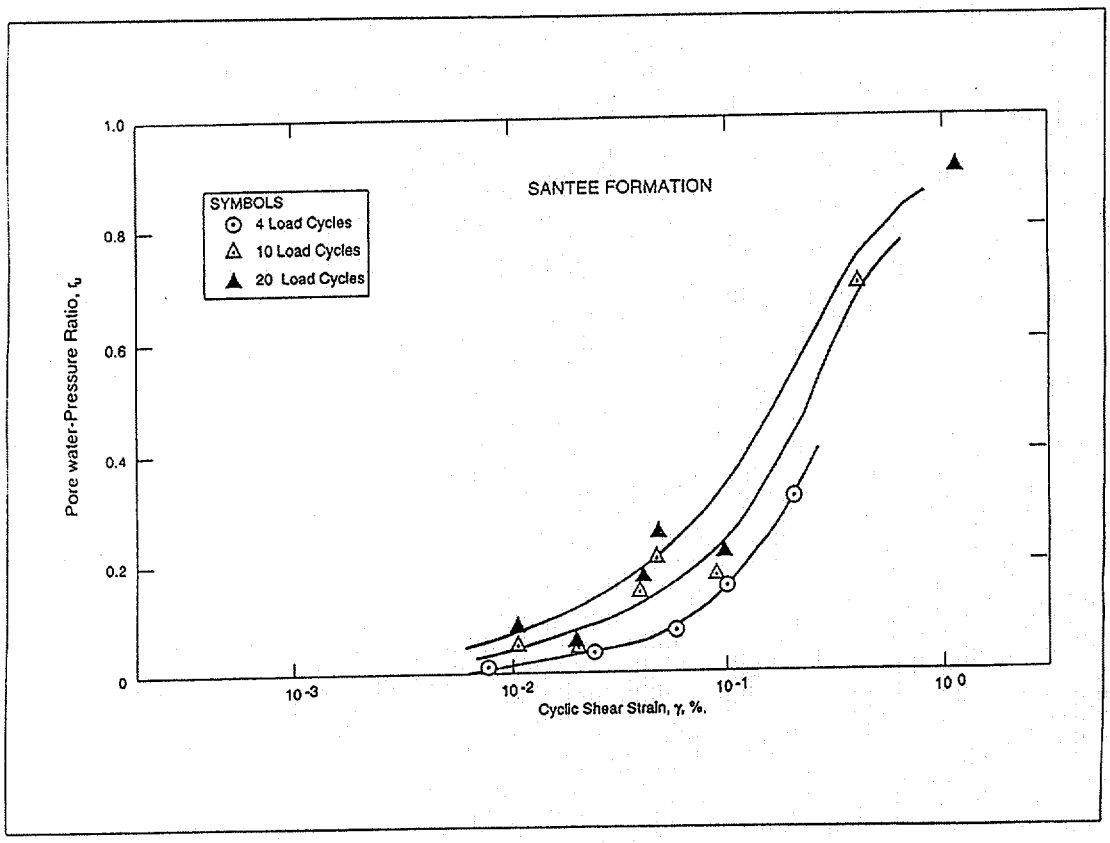


Figure 1.4-81. Pore Pressure Ratio Versus Cyclic Shear Strain for the Santee Formation at the ITP Facility (WSRC, 1995).

Calendar Year Streamflow Statistics for South Carolina

USGS 02197310 UPPER THREE RUNS ABOVE ROAD C (SRS), SC

Available data for this site

Aiken County, South Carolina
Hydrologic Unit Code 03060106
Latitude 33°17'08", Longitude 81°41'40" NAD27
Drainage area 176. square miles
Gage datum 121.5 feet above sea level NGVD29

Output formats

HTML table of all data
Tab-separated data
Reselect output format

Year	Annual mean streamflow, in ft^3/s	Year	Annual mean streamflow, in ft^3/s	Year	Annual mean streamflow, in ft^3/s
1975	233	1983	200	1991	253
1976	218	1984	235	1992	243
1977	210	1985	186	1993	266
1978	195	1986	167	1994	252
1979	220	1987	202	1995	286
1980	207	1988	156	1996	222
1981	177	1989	172	1997	211
1982	187	1990	174		

Water Resources | Data Category: | Geographic Area:

PROVISIONAL DATA SUBJECT TO REVISION

USGS 02197310 UPPER THREE RUNS ABOVE ROAD C (SRS), SC

Available data for this site

Display options

Parameter	Output format	Days	
00060 DISCHARGE Mean (DD 11)	Table	31	GO

Date	GAGE HEIGHT (FEET) (DD 03)	GAGE HEIGHT (FEET) (DD 03)	GAGE HEIGHT (FEET) (DD 03)	Stream-flow (CFS) (DD 11)	Stream-flow (CFS) (DD 11)	Stream-flow (CFS) (DD 11)
05/07/2001						
05/08/2001	3.11	2.94	3.03	129	114	121
05/09/2001	2.94	2.92	2.93	114	112	113
05/10/2001	2.93	2.91	2.92	113	111	112
05/11/2001	2.93	2.89	2.92	113	109	111
05/12/2001	3.00	2.89	2.92	119	109	112
05/13/2001	3.00	2.95	2.97	119	114	116
05/14/2001	2.95	2.89	2.92	114	109	112
05/15/2001	2.89	2.88	2.89	109	108	109
05/16/2001	2.88	2.85	2.87	108	106	108
05/17/2001	2.85	2.84	2.85	106	105	106
05/18/2001	2.84	2.83	2.84	105	104	105
05/19/2001	2.83	2.82	2.83	104	103	104
05/20/2001	2.93	2.82	2.84	113	103	105
05/21/2001	3.10	2.93	3.04	128	113	122
05/22/2001	3.08	2.96	3.01	126	115	120
05/23/2001	3.24	3.07	3.14	143	125	133

05/24/2001	3.24	2.98	3.10	143	117	129
05/25/2001	2.98	2.89	2.93	117	109	113
05/26/2001	2.89	2.87	2.88	109	108	109
05/27/2001	2.87	2.85	2.86	108	106	107
05/28/2001	2.85	2.85	2.85	106	106	106
05/29/2001	5.30	2.85	4.40	560	106	363
05/30/2001						
05/31/2001						
06/01/2001						
06/02/2001						
06/03/2001						
06/04/2001						
06/05/2001	3.25	3.14	3.17	144	132	136
06/06/2001	3.14	3.03	3.09	132	122	128

Questions about data gs-w-sc_NWISWeb_Data_Inquiries@usgs.gov
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Real-time data for USGS 02197310 UPPER THREE RUNS ABOVE ROAD C (SRS), SC
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Monthly Streamflow Statistics for South Carolina

USGS 02197310 UPPER THREE RUNS ABOVE ROAD C (SRS), SC

Available data for this site

Aiken County, South Carolina
Hydrologic Unit Code 03060106
Latitude 33°17'08", Longitude 81°41'40" NAD27
Drainage area 176. square miles
Gage datum 121.5 feet above sea level NGVD29

Output formats

HTML table of all data
Tab-separated data
Reselect output format

YEAR	Monthly mean streamflow, in ft^3/s											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1974							178	211	192	162	183	232
1975	251	275	270	260	241	204	237	206	231	182	214	229
1976	253	214	229	172	238	229	193	167	197	222	231	272
1977	255	223	303	215	185	161	147	218	195	206	186	225
1978	301	235	230	210	215	164	174	165	154	140	170	186
1979	191	279	251	256	237	198	189	169	236	184	254	203
1980	229	227	328	246	195	171	153	150	178	196	209	206
1981	194	236	200	179	138	222	143	170	126	145	153	219
1982	254	224	192	208	162	161	192	185	163	151	171	189
1983	206	244	267	263	185	176	149	142	191	155	212	222
1984	212	258	267	283	321	199	284	258	170	177	186	201
1985	216	302	194	173	149	152	170	160	127	146	246	208
1986	171	202	189	145	136	154	113	189	131	155	202	217
1987	287	253	304	208	181	188	186	158	189	141	167	167
1988	203	187	185	183	137	148	125	124	168	134	146	132
1989	147	149	198	200	142	169	213	140	165	173	172	200
1990	191	178	161	141	129	112	129	156	105	394	204	181
1991	239	213	275	228	269	195	304	401	237	203	225	240

1992	262	256	238	232	179	267	195	278	218	249	296	252
1993	402	307	377	334	238	212	203	179	235	213	249	244
1994	277	277	329	210	168	197	258	222	180	326	252	322
1995	379	393	311	234	196	327	221	290	290	246	274	281
1996	268	241	297	242	197	184	189	206	206	204	207	218
1997	224	276	207	198	174	207	211	149	201	186	211	297
1999	299	267	224	217	194	207	220	134	166			
Mean of monthly streamflows	246	247	251	218	192	192	191	193	186	195	209	223

Questions about data gs-w-sc_NWISWeb_Data_Inquiries@usgs.gov
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http://water.usgs.gov/sc/nwis/monthly
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Daily Streamflow Statistics for South Carolina

USGS 02197310 UPPER THREE RUNS ABOVE ROAD C (SRS), SC

Available data for this site

Aiken County, South Carolina
Hydrologic Unit Code 03060106
Latitude 33°17'08", Longitude 81°41'40" NAD27
Drainage area 176. square miles
Gage datum 121.5 feet above sea level NGVD29

Output formats

HTML table of all data
Tab-separated data
Reselect output format

Day of month	Mean of daily mean values for this day for 25 years of record[1], in ft^3/s											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	246	233	258	248	221	201	182	189	177	186	204	238
2	245	248	274	233	215	198	176	234	183	192	203	226
3	244	249	271	223	195	187	177	223	176	197	208	211
4	253	231	266	223	218	201	182	204	170	203	205	204
5	232	230	253	226	218	196	210	188	192	189	206	204
6	213	250	248	231	199	203	210	188	204	171	199	212
7	243	259	269	219	199	201	195	186	199	161	190	221
8	287	247	264	212	195	207	178	188	188	167	198	228
9	276	225	243	237	194	220	165	194	177	191	198	223
10	248	220	238	250	202	204	178	182	178	199	200	222
11	233	241	234	231	199	201	176	190	179	220	207	215
12	234	250	221	220	184	192	182	192	172	247	213	224
13	245	236	248	213	184	196	191	208	171	247	228	234
14	252	254	272	220	188	183	184	212	175	226	219	223
15	262	259	254	216	190	180	173	206	182	198	205	219
16	263	241	234	210	182	184	189	185	172	180	209	222
17	239	246	240	196	200	201	202	183	170	174	205	215
18	231	260	248	193	189	197	194	181	183	177	199	206

19	251	262	246	199	176	182	197	174	192	175	196	209
20	262	249	237	205	177	182	206	208	174	177	200	213
21	243	234	230	203	171	186	198	216	185	179	209	211
22	240	246	233	205	166	176	191	209	197	179	232	220
23	241	271	230	207	171	169	195	179	182	228	231	241
24	266	275	249	215	181	165	197	172	179	217	213	246
25	272	259	276	206	182	170	216	174	207	194	207	256
26	256	234	274	215	176	171	209	207	228	195	205	241
27	248	236	254	220	185	178	184	213	210	203	210	220
28	252	251	247	227	195	206	191	185	189	197	220	216
29	235	256	254	223	207	208	208	172	195	189	223	231
30	232		262	218	200	194	194	170	192	193	233	228
31	239		255		191		190	171		204		230

1 -- Available period of record may be less than value shown for certain days of the year.

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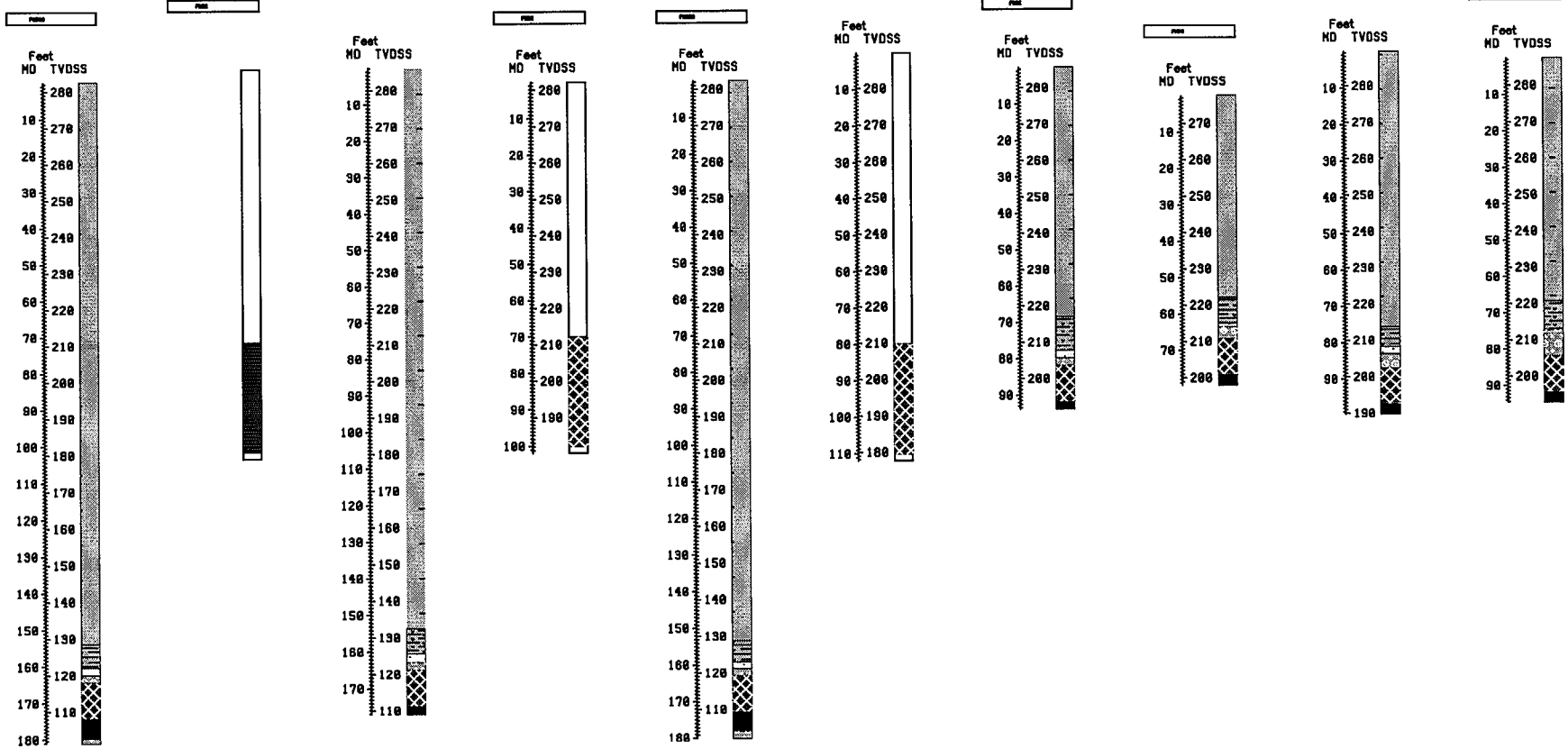
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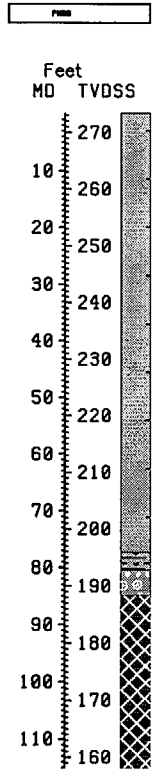
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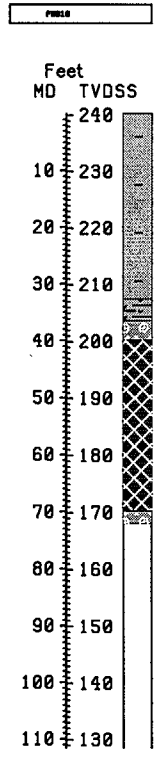
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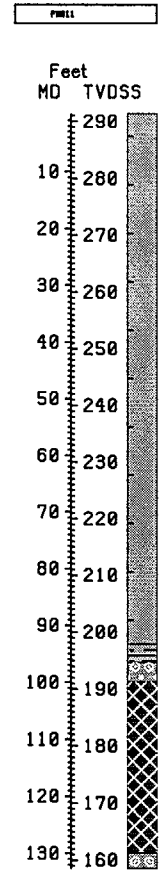
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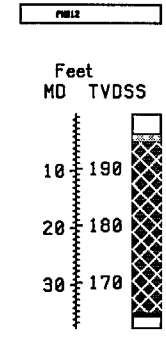
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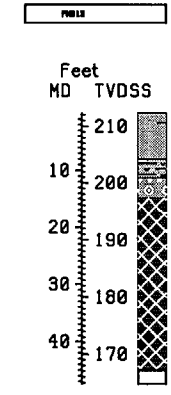
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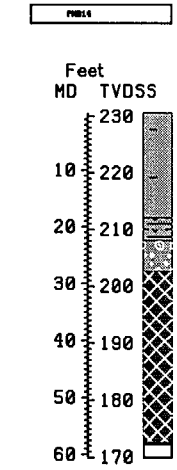
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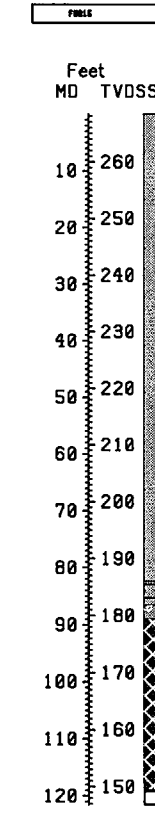
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