

U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

Geologic Mapping Index to the Death Valley National Monument Area,
California and Nevada

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Open-File Report
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¹Denver, Colorado

Introduction

Death Valley National Monument occupies about 8,400 km² of the southern Great Basin of California and Nevada (figure 1a) and spans several geologically intriguing mountain ranges (figure 1b). Numerous geologic mapping investigations have been conducted within and adjacent to the Monument boundaries since 1950 in an effort to delineate and describe the complex geology of the Death Valley area. An early investigator in the region, Levi Noble (1941), stated that he moved "from bewilderment to only partial understanding" while studying the puzzling geology of this area. The geology in and around Death Valley continues to challenge geologists; interpretations are as varied as the geologists who make them. Recognizing the importance of mapping to geologic studies and to resource management issues addressed by the National Park Service staff, we have compiled the coverage of existing geologic maps in and near Death Valley National Monument.

Methods

We have compiled maps and grouped them into categories either by map scale or, in some cases, by emphasis of study (e.g. air photo interpretation of lineaments). In addition, figures 2 through 7 depict the general chronologic history of map publication and contain reference numbers that tie individual maps to their respective entry in the map reference list.

The coordinate boundaries of these available published and unpublished reports and maps span from 1954 to 1993 and from scales of about 1:10,000 to 1:250,000. While many of the map boundaries can be described by the four corner latitudes and longitudes, for the irregular boundaries of some of the maps, we have used coordinates that reflect the true extents of each mapping effort. These coordinates, given in decimal latitude and longitude, are presented in appendix I for each map. Many map boundaries were digitized on GSMAP software (Selner and Taylor, 1992), converted to an ascii file, reformatted, and imported into Atlas Mapmaker software (Strategic Mapping, 1990) for final compilation and output.

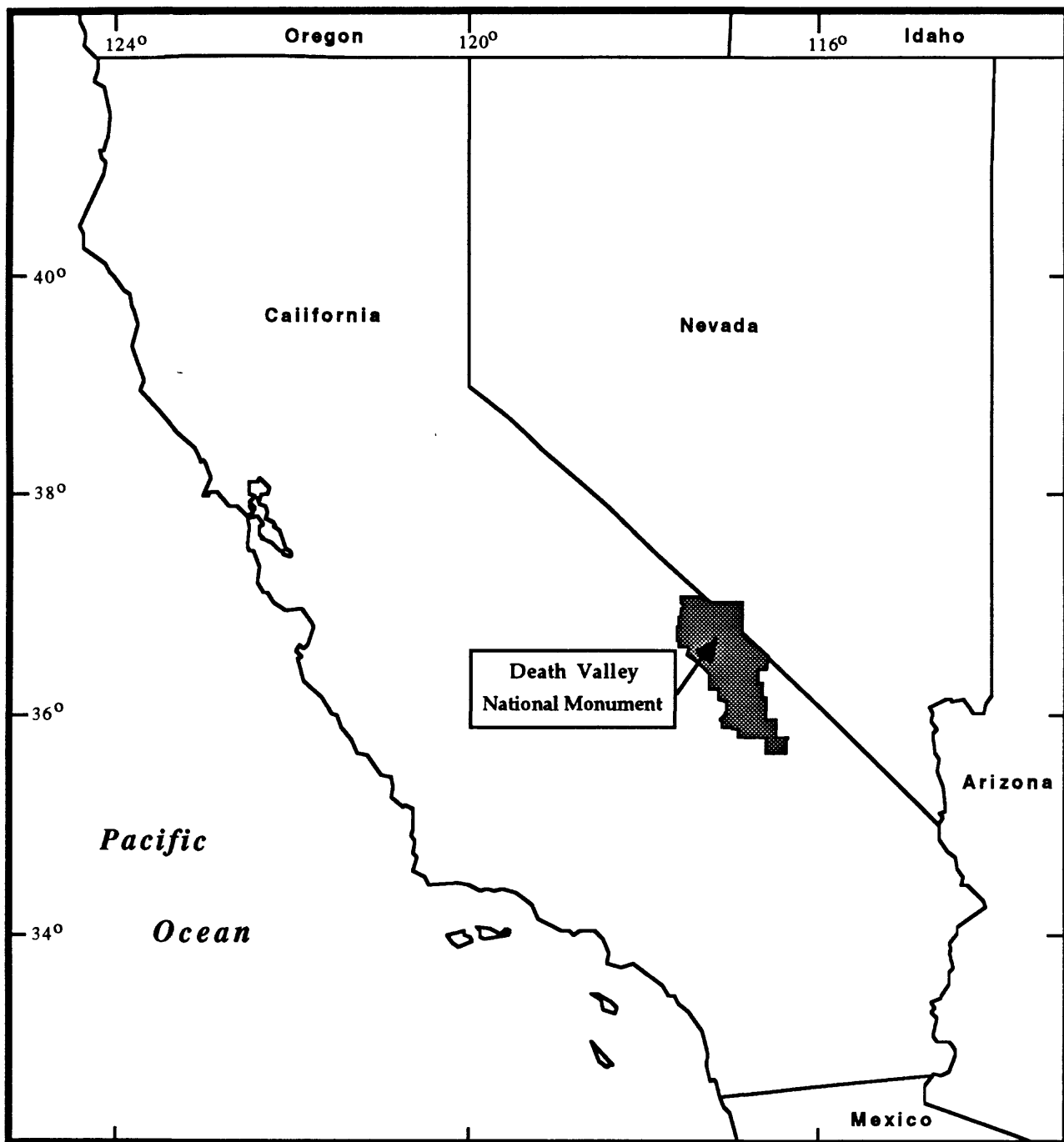


Figure 1a.--Location map of Death Valley National Monument.

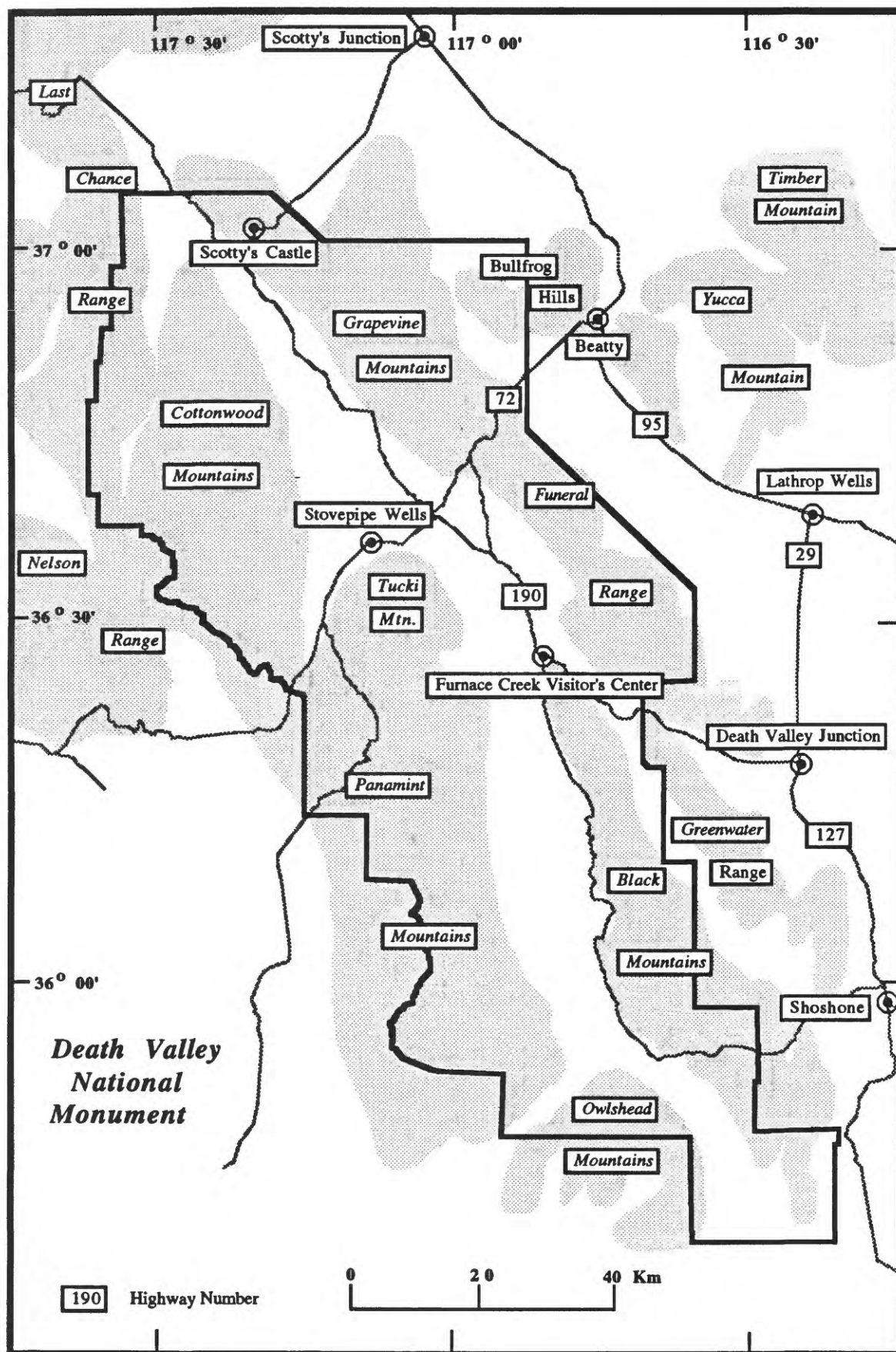


Figure 1b.--Geographic features in and near Death Valley National Monument. Shaded areas represent mountain ranges.

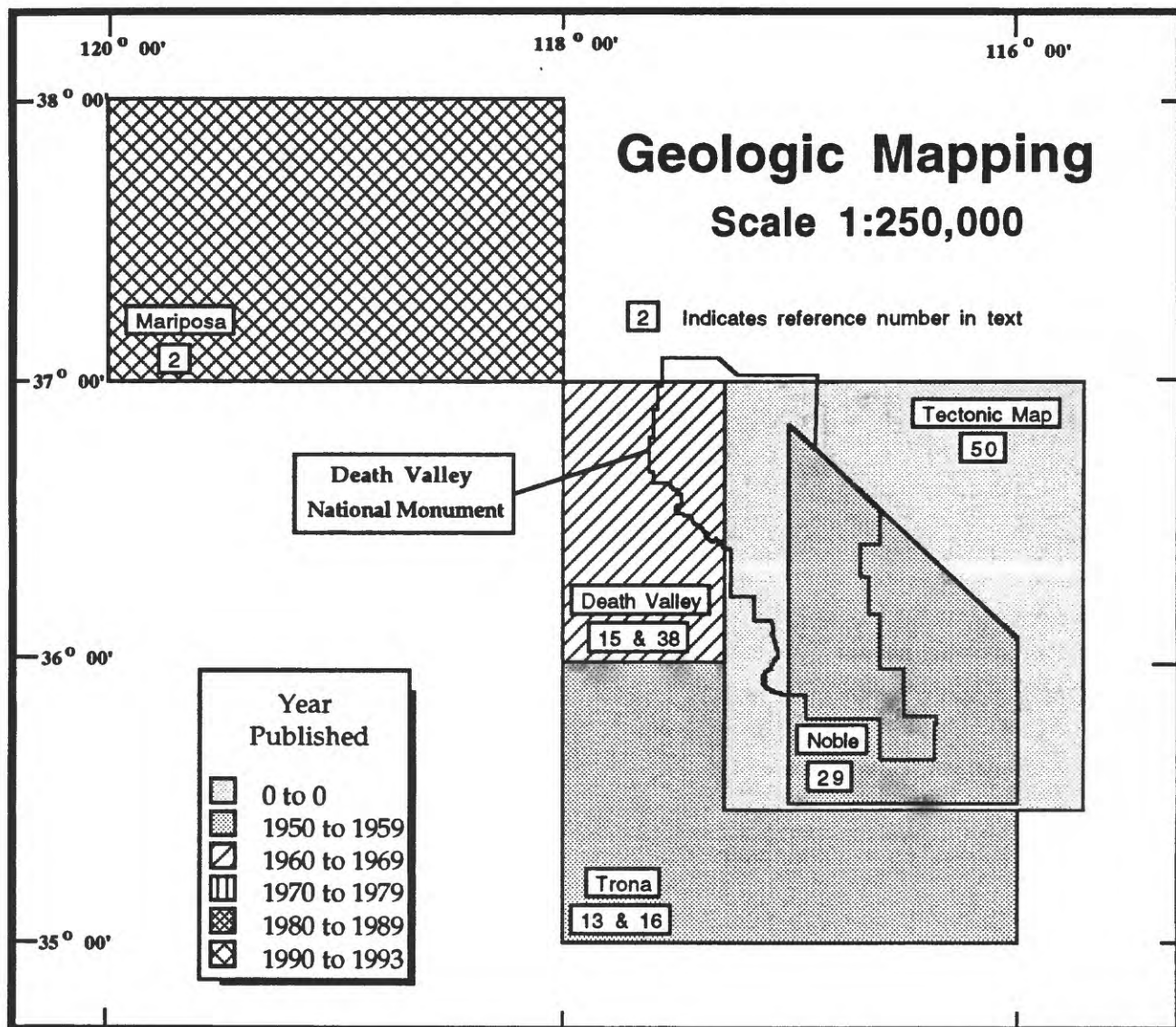


Figure 2.--Geologic maps at 1:250,000 scale in and near Death Valley National Monument.

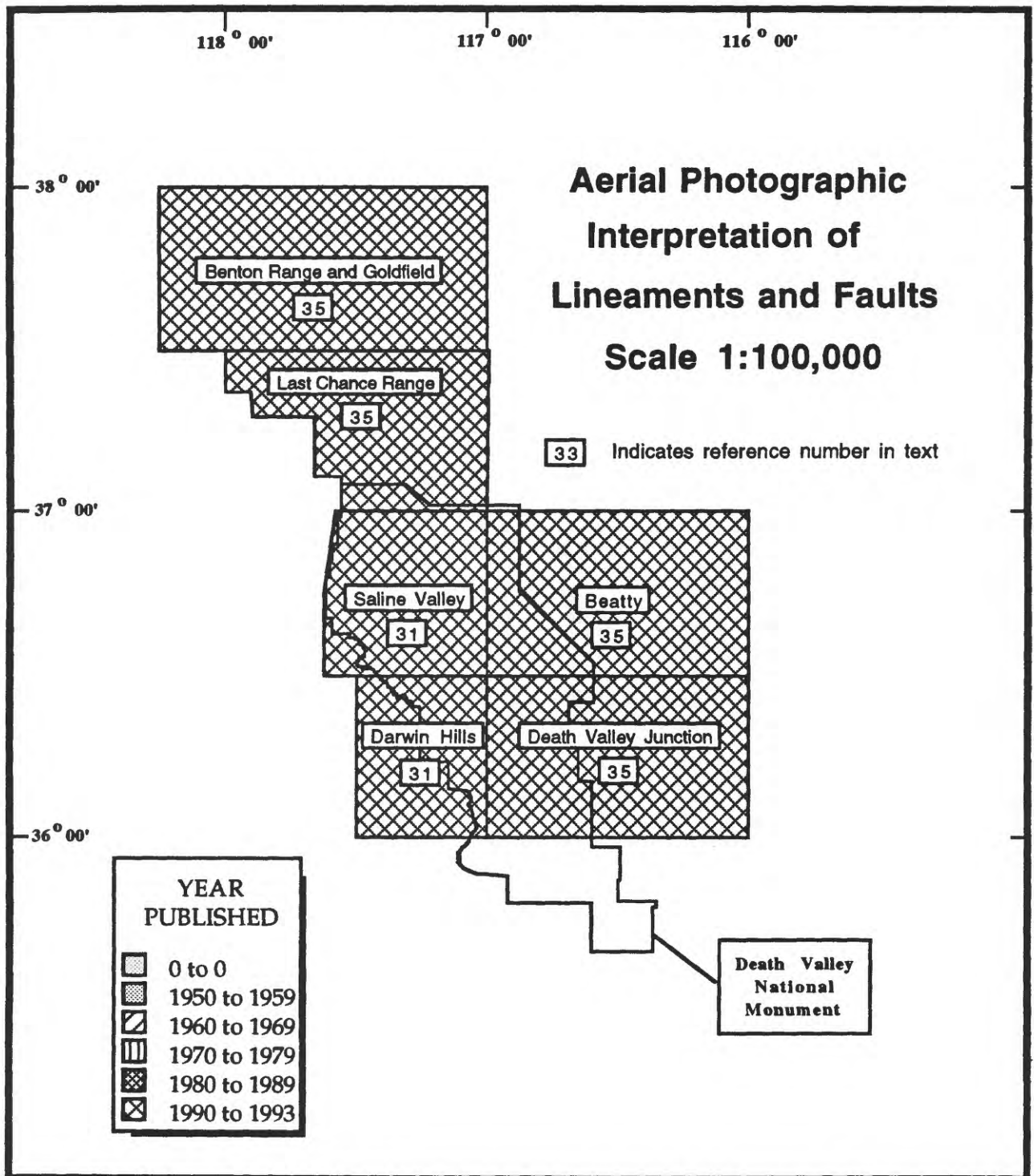


Figure 3.--Aerial Photographic interpretation of lineaments and faults at 1:100,000 scale in and near Death Valley National Monument.

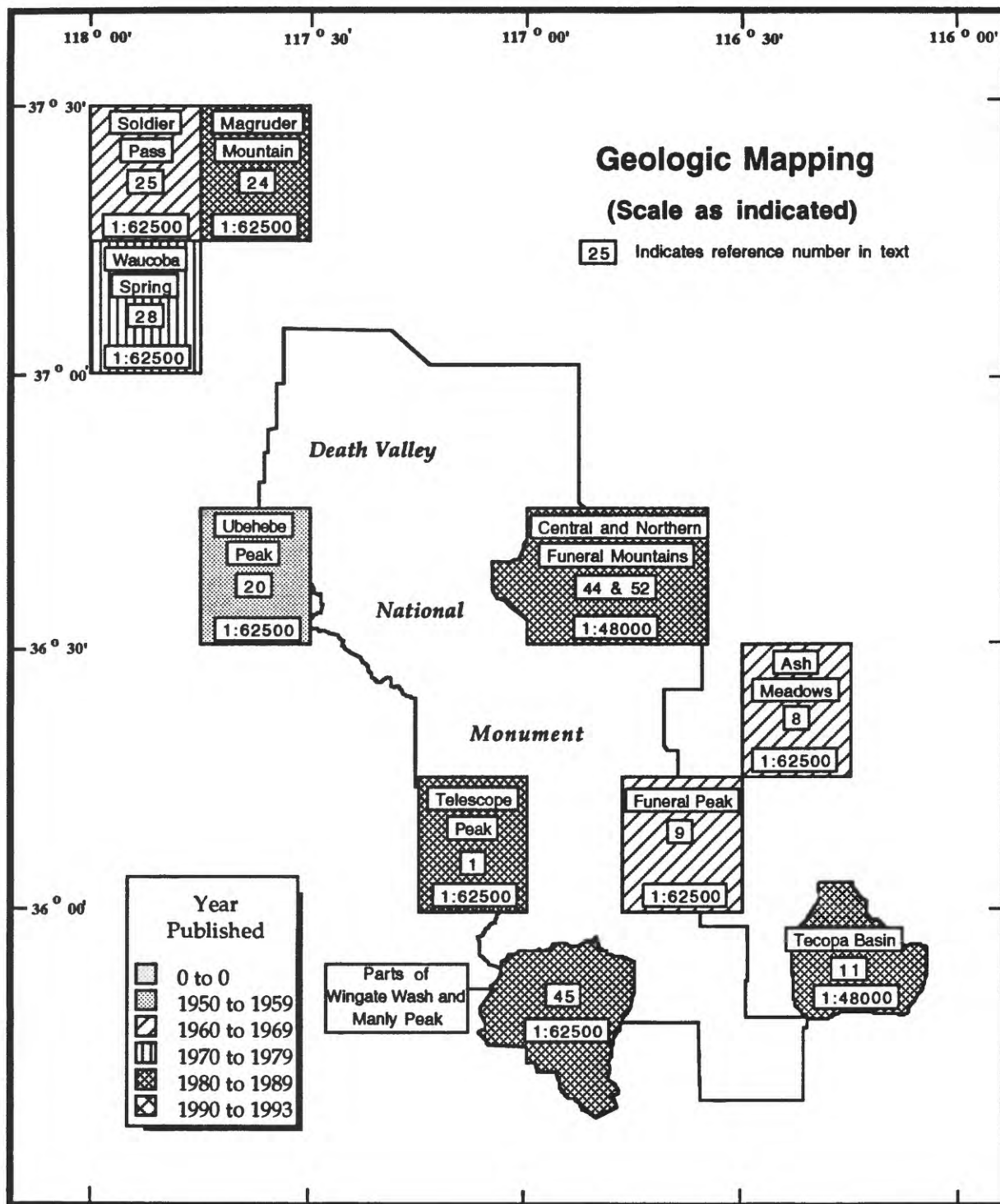


Figure 4.--Geologic maps at various scales in and near Death Valley National Monument.

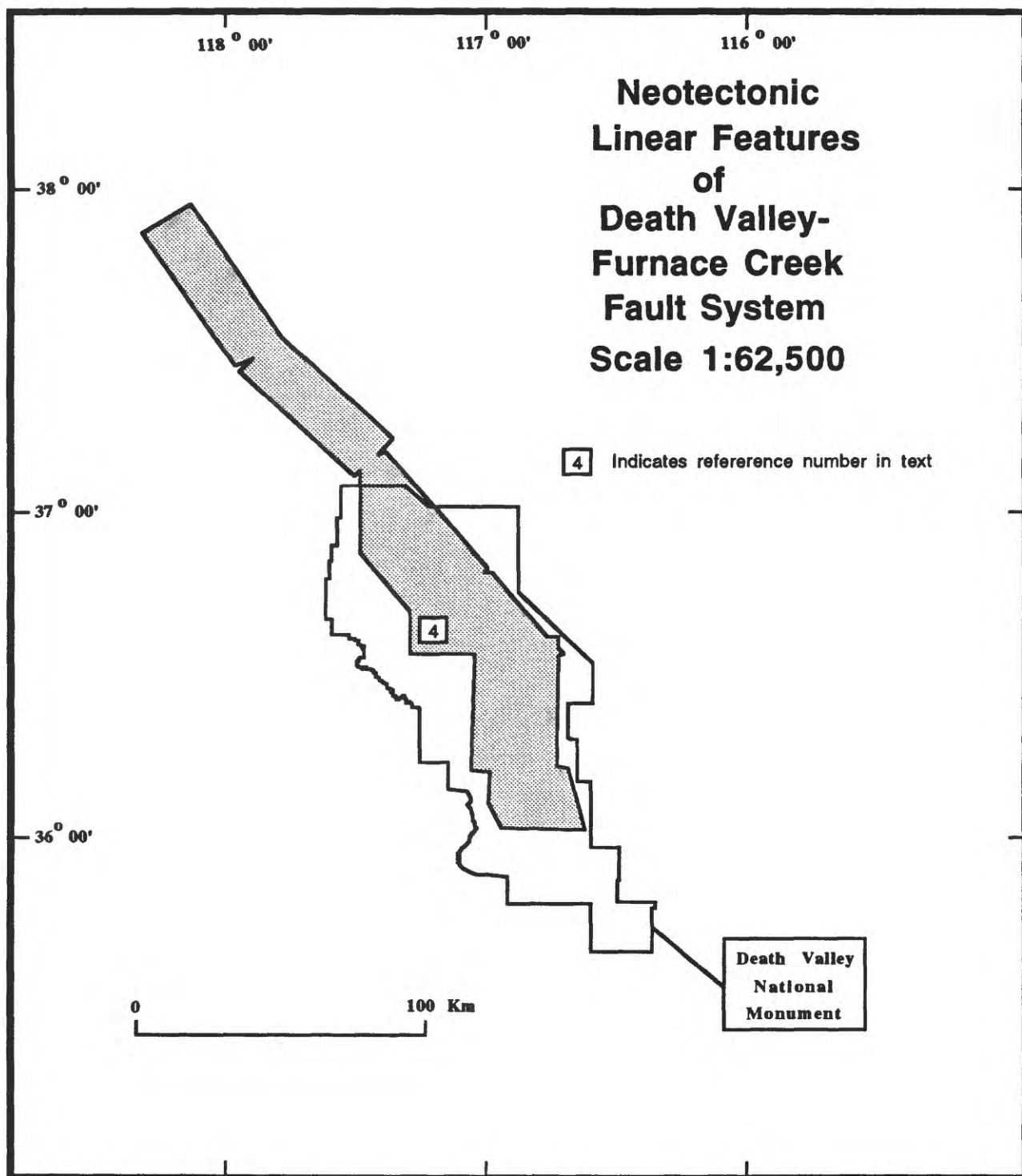


Figure 5.--Neotectonic map at 1:62,500 scale in and near Death Valley National Monument.

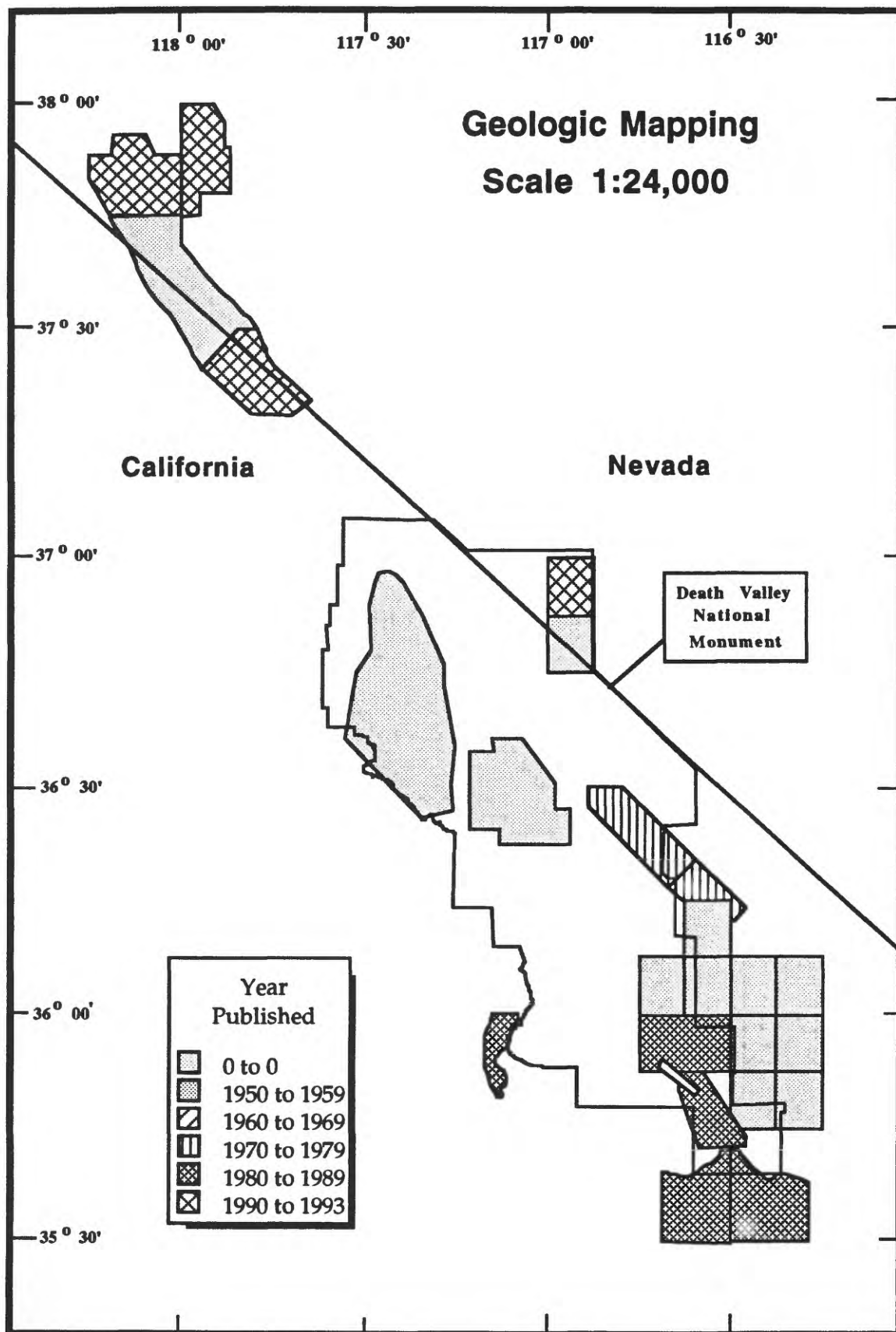


Figure 6a.--Location map of geologic mapping at 1:24,000 scale in and near Death Valley National Monument.

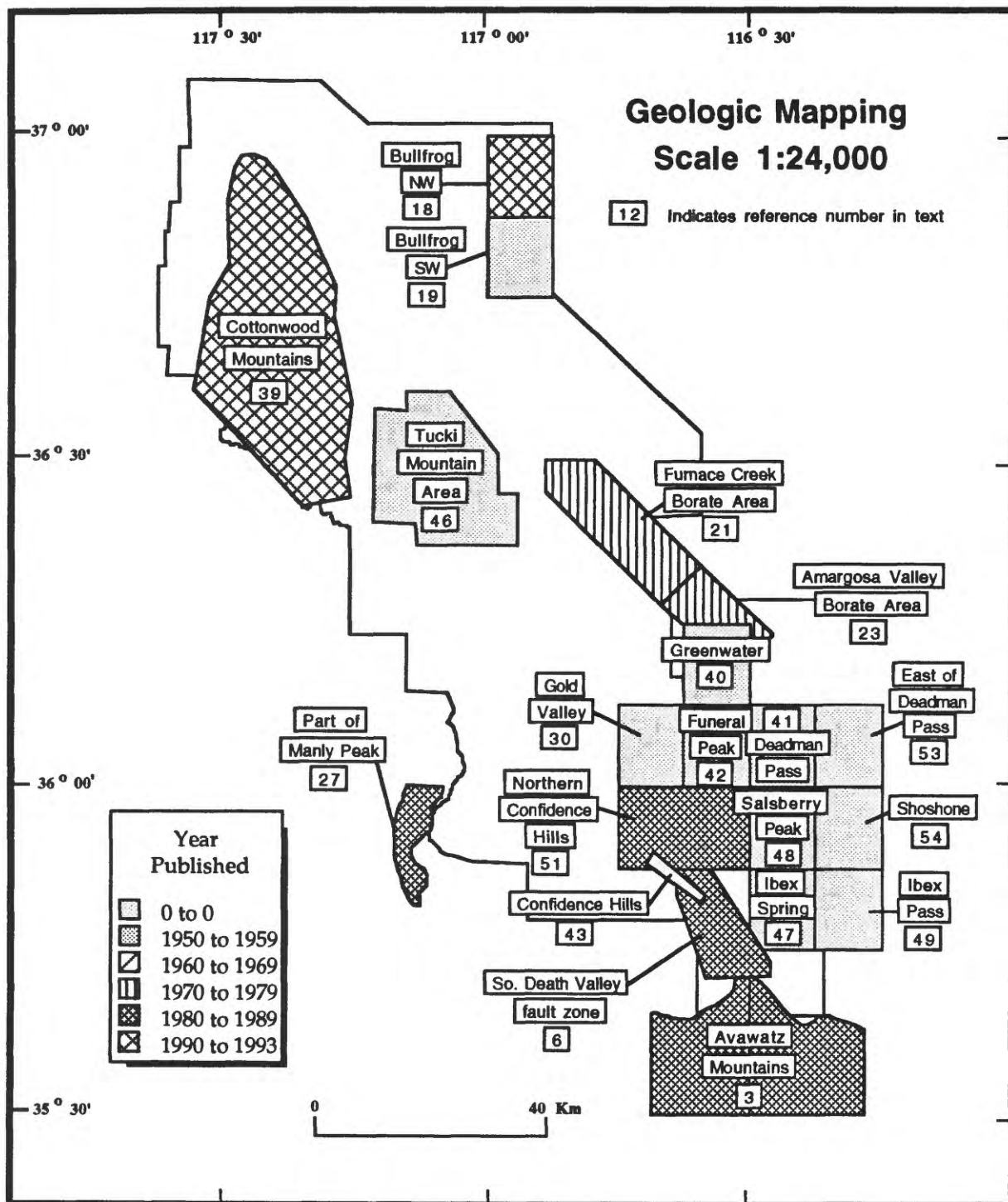


Figure 6b.--Geologic maps at 1:24,000 scale in and adjacent to Death Valley National Monument.

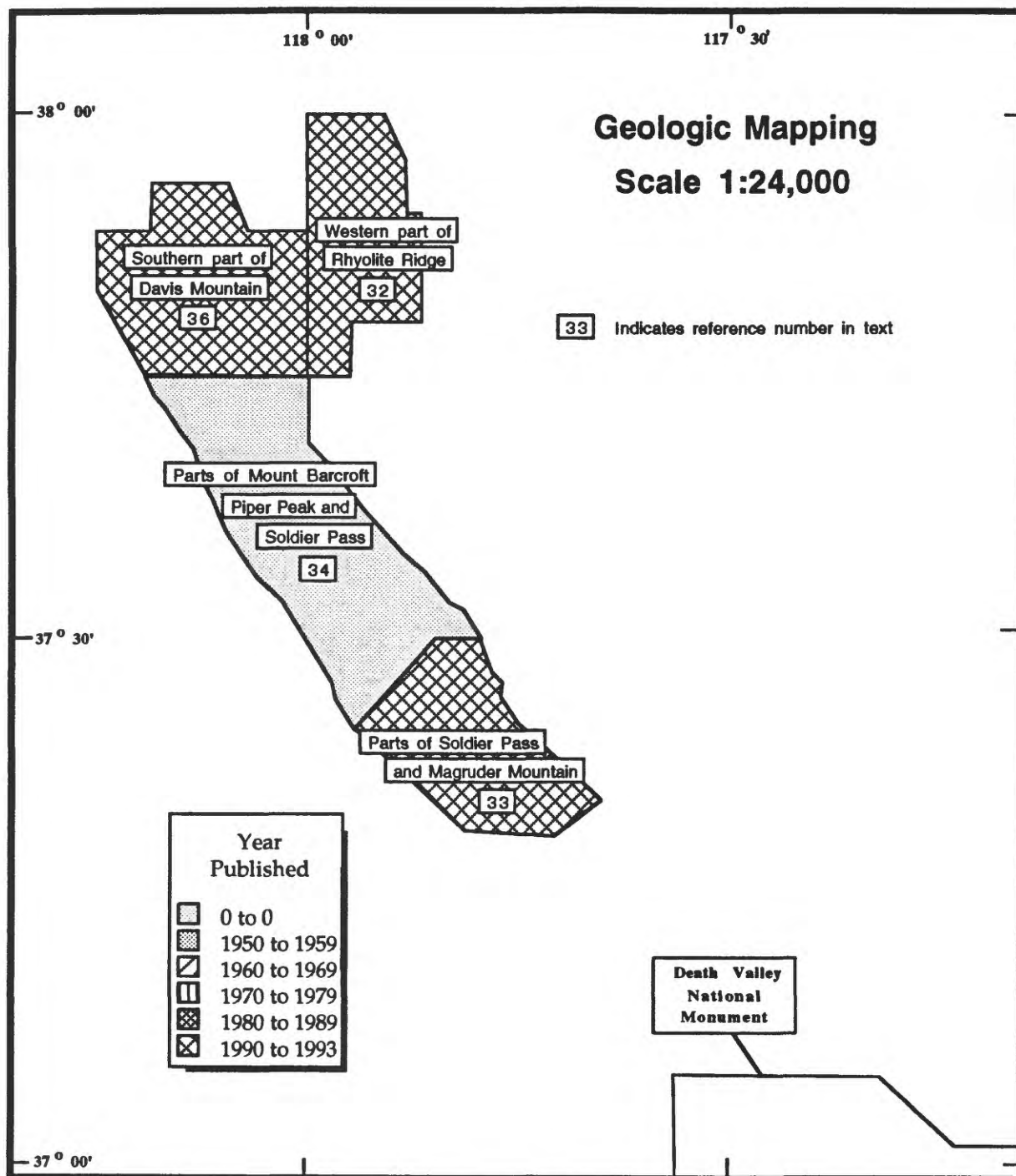


Figure 6c.--Geologic maps at 1:24000 scale near Death Valley National Monument.

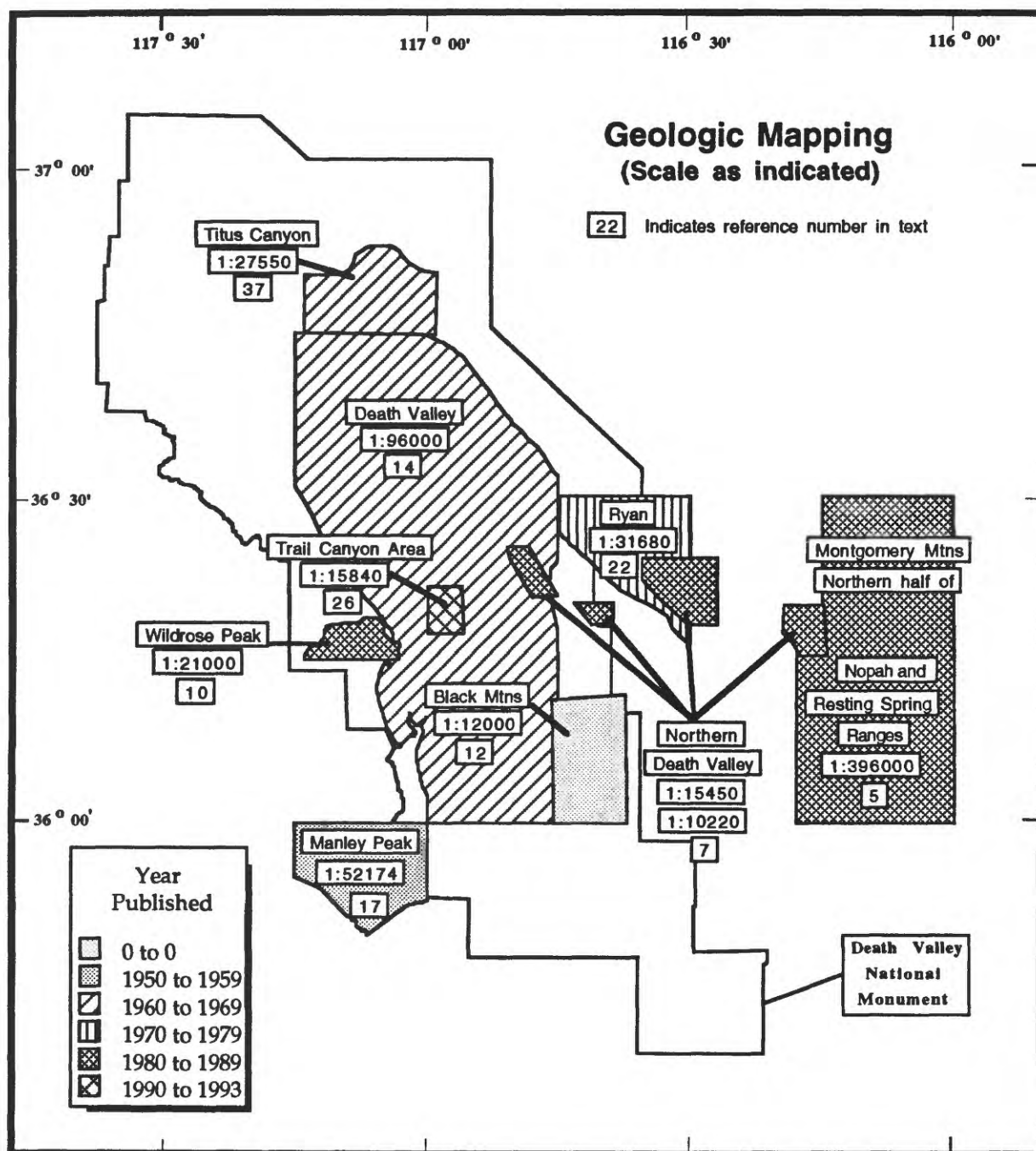


Figure 7.--Geologic maps at various scales in and near Death Valley National Monument.

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Appendix I **Longitude and Latitude Coordinates as contained** **in digital database**

<i>Format:</i>			
Reference number)	Name	Scale	number of coordinates
(list of coordinates-	longitude		latitude)

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-117.250000 36.2500000
-117.000000 36.2500000
-117.000000 36.0000000
-117.250000 36.0000000

2) Mariposa 250000 5
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3) Avawatz Mountains
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8) Ash Meadows 62500 5
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9) Funeral Peak 62500 5
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10) Wildrose Peak 42
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12) Black Mountains	12000	5
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13) Trona	250000	5
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14) Death Valley	96000	231
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-117.1841160	36.4146690
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15) Death Valley 250000 5

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18) *see entry 13*

17) Manley Peak 52100 32

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18) Bullfrog NW	24000	5
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19) Bullfrog SW	24000	5
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20) Ubehebe Peak	62500	5
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21) Furnace Creek Borate Area 24000 6

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-116.669000000	36.2780580
-116.890000000	36.4530500
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22) Ryan 31680 23

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-116.499467000	36.4996660
-116.500065000	36.2717540
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-116.603550000	36.3429200
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-116.728600000	36.4262520
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23) Amargosa Valley Borate Area 24000 9

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-116.506458000	36.2052390
-116.506642000	36.2339010
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-116.668915000 36.2788570

24) Magruder Mountain 62500 5

-117.7500 37.2500

-117.7500 37.5000

-117.5000 37.5000

-117.5000 37.2500

-117.7500 37.2500

25) Soldier Pass 62500 5

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26) Panamint-Black Mountains 15840 5

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-116.933898000 36.3615800

-116.932424000 36.2895790

-117.000000000 36.2887980

-117.000000000 36.3613160

27) Portion of Manley Peak 24000 57

-117.083121000 36.0013920

-117.084446000 35.9968360

-117.085691000 35.9892330

-117.087526000 35.9838980

-117.090466000 35.9826050

-117.097159000 35.9770680

-117.103544000 35.9712850

-117.105408000 35.9653640

-117.104238000 35.9577880

-117.103670000 35.9520690

-117.104702000 35.9444890

-117.106741000 35.9356630

-117.110747000 35.9320890

-117.119356000 35.9262410

-117.127738000 35.9211150

-117.141596000 35.9102310

-117.143435000 35.9070330

-117.143901000 35.9040990

-117.144101000 35.8981580

-117.142685000	35.8934330
-117.136547000	35.8844150
-117.127773000	35.8786860
-117.121406000	35.8742250
-117.116905000	35.8703620
-117.114146000	35.8639530
-117.112034000	35.8590010
-117.114315000	35.8512400
-117.121705000	35.8446370
-117.127163000	35.8406460
-117.128917000	35.8370550
-117.127699000	35.8313550
-117.126938000	35.8260970
-117.126974000	35.8226940
-117.128200000	35.8191060
-117.137643000	35.8191050
-117.145216000	35.8261690
-117.153034000	35.8367970
-117.158777000	35.8484260
-117.164460000	35.8625860
-117.169383000	35.8752630
-117.172905000	35.8853040
-117.176396000	35.8936720
-117.176826000	35.9011410
-117.177077000	35.9107670
-117.176595000	35.9219720
-117.176692000	35.9326920
-117.176503000	35.9406350
-117.174835000	35.9527480
-117.169958000	35.9642870
-117.165757000	35.9724030
-117.161590000	35.9786870
-117.160178000	35.9838350
-117.159173000	35.9889490
-117.157196000	35.9946740
-117.154792000	35.9995820
-117.153791000	36.0015940
-117.083121000	36.0013920

28) Waucoba Spring	62500	5
-118.000000	37.0000000	
-118.000000	37.2500000	
-117.750000	37.2500000	

-117.750000	37.0000000
-118.000000	37.0000000

29) Death Valley (Noble) 250000 5

-117.0000	35.5000
-117.0000	36.8439
-116.0000	36.0846
-116.0000	35.5000
-117.0000	35.5000

30) Gold Valley 24000 5

-116.7500	36.0000
-116.7500	36.1250
-116.6250	36.1250
-116.6250	36.0000
-116.7500	36.0000

31) Saline Valley 100000 6

-117.625338	36.5000000
-117.626020	36.7500000
-117.583012	37.0000000
-117.000000	37.0000000
-117.000000	36.5000000
-117.625338	36.5000000

Darwin Hills 100000 5

-117.500000	36.0000000
-117.500000	36.5000000
-117.000000	36.5000000
-117.000000	36.0000000
-117.500000	36.0000000

32) Rhyolite Ridge 24000 10

-117.912007000	38.0002240
-117.884783000	37.9567030
-117.884358000	37.9059420
-117.866351000	37.9055870
-117.866225000	37.8014740
-117.949941000	37.8015660
-117.950871000	37.7503390
-118.001624000	37.7499760
-118.001449000	37.9997180
-117.912007000	38.0002240

33) Soldier Pass-Magruder Mountain 24000 12

-117.848881000	37.5005100
-117.795737000	37.5005310
-117.787943000	37.4825010
-117.782361000	37.4679840
-117.768181000	37.4576270
-117.771436000	37.4443120
-117.750876000	37.4188800
-117.650401000	37.3457660
-117.706598000	37.3120600
-117.814013000	37.3170670
-117.944389000	37.4140450
-117.848881000	37.5005100

34) R Unpublished 24000 28

-118.001042000	37.7502540
-118.000846000	37.6855290
-117.971516000	37.6593210
-117.936943000	37.6230340
-117.888657000	37.5808330
-117.863026000	37.5637480
-117.831813000	37.5345470
-117.816568000	37.5270640
-117.795505000	37.5001610
-117.847601000	37.5003260
-117.945084000	37.4132120
-117.955920000	37.4268820
-117.967695000	37.4431380
-117.972498000	37.4577400
-118.031110000	37.5362260
-118.060979000	37.5585350
-118.080849000	37.5795680
-118.097119000	37.6002370
-118.107318000	37.6156510
-118.115547000	37.6323640
-118.124716000	37.6499060
-118.131211000	37.6679180
-118.136629000	37.6796450
-118.150932000	37.6959670
-118.170756000	37.7185560
-118.182138000	37.7311850
-118.193208000	37.7498240

-118.001042000 37.7502540

35) Benton Range and Goldfield 100000 5

-118.2500 37.5000

-118.2500 38.0000

-117.0000 38.0000

-117.0000 37.5000

-118.2500 37.5000

 Last Chance 100000 11

-117.562567000 37.0002140

-117.563327000 37.106675

-117.663023000 37.1065380

-117.665128000 37.2894110

-117.902896000 37.2901200

-117.903815000 37.3688930

-117.999740000 37.3686190

-117.999862000 37.5000230

-116.998680000 37.4990100

-116.999772000 36.9992320

-117.562567000 37.0002140

 Beatty 100000 5

-117.0000 36.5000

-117.0000 37.0000

-116.0000 37.0000

-116.0000 36.5000

-117.0000 36.5000

 Death Valley Junction 100000 5

-117.0000 36.0000

-117.0000 36.5000

-116.0000 36.5000

-116.0000 36.0000

-117.0000 36.0000

36) Davis Mountain 24000 10

-118.001227000 37.8883020

-118.000924000 37.7499770

-118.193562000 37.7506550

-118.250563000 37.8331960

-118.250102000 37.8889530

-118.186274000 37.8885450

-118.185595000	37.9347780
-118.096462000	37.9342210
-118.072067000	37.8886090
-118.001227000	37.8883020

37) Titus and Titanothera Canyons 27550 22

-117.234335000	36.7504170
-117.233210000	36.8398120
-117.165650000	36.8391990
-117.156613000	36.8407950
-117.147726000	36.8473780
-117.140171000	36.8579770
-117.135642000	36.8685190
-117.127666000	36.8753220
-117.118125000	36.8804890
-117.105793000	36.8835670
-117.087923000	36.8838920
-117.077013000	36.8838520
-117.065082000	36.8800260
-117.055224000	36.8744980
-117.047728000	36.8667880
-117.035610000	36.8563080
-117.026397000	36.8519540
-117.018383000	36.8471040
-117.007410000	36.8446820
-116.984625000	36.8422250
-116.985300000	36.7480930
-117.234335000	36.7504170

38) *see entry 15*

39) Cottonwood Mountains 24000 17

-117.3488850	36.4303840
-117.5550120	36.6081380
-117.5246970	36.7508780
-117.4863600	36.8000710
-117.4916340	36.8985960
-117.4755470	36.9490760
-117.4635900	36.9679600
-117.4420840	36.9710630
-117.4216610	36.9646120
-117.3996750	36.9458450
-117.3422770	36.8713390

-117.2861950	36.7673350
-117.2889350	36.7208450
-117.2551010	36.5899120
-117.2689650	36.5039620
-117.2599310	36.4446420
-117.3488850	36.4303840

40) Greenwater Canyon 24000 5

-116.625000	36.125000
-116.625000	36.250000
-116.500000	36.250000
-116.500000	36.125000
-116.625000	36.125000

41) Deadman Pass 24000 5

-116.500000	36.000000
-116.500000	36.125000
-116.375000	36.125000
-116.375000	36.000000
-116.500000	36.000000

42) Funeral Peak 24000 5

-116.625000	36.000000
-116.625000	36.125000
-116.500000	36.125000
-116.500000	36.000000
-116.625000	36.000000

43) Confidence Hills 24000 5

-116.698163	35.885006
-116.684840	35.902691
-116.583061	35.835906
-116.594726	35.823376
-116.698163	35.885006

44) Funeral Mountains 48000 24

-116.999797000	36.5001390
-117.001056000	36.5432560
-117.006777000	36.5469560
-117.023459000	36.5576770
-117.039378000	36.5684330
-117.055262000	36.5792520

-117.069706000	36.5854120
-117.083219000	36.5993990
-117.083006000	36.6524830
-117.046749000	36.6514370
-117.036155000	36.6520960
-117.028900000	36.6542000
-117.022715000	36.6570130
-117.015329000	36.6672210
-117.010845000	36.6751660
-117.007745000	36.6811830
-117.004761000	36.6883170
-117.002896000	36.6924060
-117.000890000	36.6988180
-117.000076000	36.7029560
-116.999958000	36.7501160
-116.581635000	36.7490610
-116.583362000	36.4993670
-116.999797000	36.5001390

45) Wingate Wash and Manley Peak 62500 198

-116.749741000	35.8499740
-116.753909000	35.8430560
-116.760740000	35.8242580
-116.763940000	35.8176280
-116.765970000	35.8136760
-116.767036000	35.8115700
-116.768544000	35.8100940
-116.770071000	35.8095910
-116.772423000	35.8087720
-116.774319000	35.8080960
-116.777229000	35.8058170
-116.779156000	35.8036390
-116.780663000	35.8021480
-116.779372000	35.7985870
-116.778894000	35.7966840
-116.780099000	35.7941500
-116.782099000	35.7931730
-116.784536000	35.7912090
-116.784636000	35.7893200
-116.783224000	35.7864460
-116.782780000	35.7842140
-116.783286000	35.7828830
-116.785126000	35.7813910

-116.788299000	35.7791250
-116.790664000	35.7770610
-116.792609000	35.7752690
-116.798780000	35.7649980
-116.800257000	35.7591710
-116.801422000	35.7551480
-116.801880000	35.7489790
-116.802449000	35.7452720
-116.803856000	35.7399180
-116.804268000	35.7362960
-116.805050000	35.7336330
-116.806183000	35.7306550
-116.808835000	35.7252840
-116.810004000	35.7226490
-116.809766000	35.7193000
-116.809103000	35.7143790
-116.808125000	35.7095730
-116.807049000	35.7072710
-116.808147000	35.7046930
-116.809597000	35.7024720
-116.811182000	35.6984340
-116.812104000	35.6958850
-116.812303000	35.6918060
-116.811754000	35.6897460
-116.808661000	35.6876770
-116.796625000	35.6796140
-116.793296000	35.6740670
-116.785915000	35.6675110
-116.785843000	35.6669960
-116.787997000	35.6656330
-116.797633000	35.6627260
-116.800068000	35.6619490
-116.801749000	35.6611010
-116.802553000	35.6598840
-116.801088000	35.6564380
-116.797842000	35.6489020
-116.790661000	35.6375800
-116.838104000	35.6184440
-116.845738000	35.6216760
-116.851374000	35.6248840
-116.857220000	35.6278900
-116.859625000	35.6289440
-116.865660000	35.6307040

-116.868871000	35.6314550
-116.870504000	35.6322820
-116.871823000	35.6337380
-116.872762000	35.6363550
-116.875953000	35.6414990
-116.877011000	35.6433140
-116.887335000	35.6522040
-116.890268000	35.6536130
-116.904321000	35.6560090
-116.906762000	35.6569620
-116.910220000	35.6581830
-116.913314000	35.6600070
-116.913851000	35.6627960
-116.916983000	35.6653340
-116.919819000	35.6686320
-116.922199000	35.6716160
-116.923698000	35.6735870
-116.924569000	35.6763610
-116.923634000	35.6833180
-116.925716000	35.6864030
-116.928501000	35.6894430
-116.932784000	35.7025680
-116.975133000	35.7025390
-116.976226000	35.7035950
-116.975409000	35.7051710
-116.976673000	35.7052250
-116.982591000	35.7207750
-116.999894000	35.7209310
-116.999923000	35.7503670
-117.088483000	35.7507890
-117.087683000	35.7518940
-117.091254000	35.7558720
-117.092788000	35.7570820
-117.092395000	35.7587440
-117.093474000	35.7600130
-117.095496000	35.7604760
-117.095034000	35.7624530
-117.097412000	35.7635740
-117.097366000	35.7645900
-117.102508000	35.7670440
-117.101688000	35.7679340
-117.104031000	35.7690830
-117.104246000	35.7697690

-117.106234000	35.7703190
-117.106625000	35.7711610
-117.109923000	35.7732940
-117.112197000	35.7746580
-117.112699000	35.7762010
-117.111152000	35.7786690
-117.101422000	35.7811150
-117.098991000	35.7825990
-117.096566000	35.7879760
-117.096912000	35.7898490
-117.098483000	35.7937920
-117.108426000	35.8102910
-117.109618000	35.8152950
-117.108299000	35.8204520
-117.090832000	35.8449820
-117.081254000	35.8535930
-117.080402000	35.8551280
-117.085085000	35.8591440
-117.085605000	35.8606730
-117.084575000	35.8618650
-117.080633000	35.8640850
-117.076944000	35.8672910
-117.070356000	35.8738710
-117.066285000	35.8808710
-117.063424000	35.8906700
-117.060894000	35.9028430
-117.060371000	35.9066230
-117.058590000	35.9087190
-117.056170000	35.9099450
-117.050529000	35.9137870
-117.046209000	35.9181540
-117.041046000	35.9227960
-117.037848000	35.9234230
-117.030057000	35.9205610
-117.027917000	35.9216710
-117.022330000	35.9263280
-117.021142000	35.9278630
-117.017602000	35.9271320
-117.003725000	35.9277810
-117.000097000	35.9270070
-116.990003000	35.9277990
-116.977734000	35.9299720
-116.974498000	35.9302970

-116.970290000	35.9294810
-116.967045000	35.9278740
-116.962526000	35.9285030
-116.950732000	35.9308720
-116.947534000	35.9317690
-116.943784000	35.9350280
-116.939233000	35.9404510
-116.929559000	35.9411080
-116.927332000	35.9428600
-116.921535000	35.9452800
-116.919998000	35.9438540
-116.912018000	35.9415860
-116.906810000	35.9416430
-116.904285000	35.9394880
-116.896114000	35.9378640
-116.895052000	35.9362210
-116.894365000	35.9359220
-116.888919000	35.9379820
-116.883888000	35.9384670
-116.879490000	35.9386640
-116.872319000	35.9407850
-116.866879000	35.9448610
-116.860871000	35.9480090
-116.853763000	35.9482390
-116.849632000	35.9496220
-116.846032000	35.9518050
-116.839516000	35.9560540
-116.830945000	35.9326180
-116.829548000	35.9303030
-116.825585000	35.9290660
-116.817385000	35.9283520
-116.815941000	35.9276970
-116.815899000	35.9253500
-116.815999000	35.9236330
-116.809291000	35.9213410
-116.797870000	35.9197590
-116.787720000	35.9199910
-116.781157000	35.9190570
-116.775679000	35.9161900
-116.771576000	35.9141350
-116.763499000	35.9126740
-116.756775000	35.9103790
-116.753730000	35.9092240

-116.751528000	35.9075100
-116.749819000	35.9059100
-116.749741000	35.8499740

46) Tucki Mountain 24000 12

-117.2150010	36.5780810
-117.1520680	36.5779670
-117.1530190	36.6053820
-117.0745940	36.6068380
-116.9799540	36.5081410
-116.9806120	36.4495250
-116.9429510	36.4496270
-116.9427910	36.3711680
-117.1348010	36.3722910
-117.1360530	36.4045790
-117.2174110	36.4054220
-117.2150010	36.5780810

47) Ibex Spring 24000 5

-116.500000	35.750000
-116.500000	35.875000
-116.375000	35.875000
-116.375000	35.750000
-116.500000	35.750000

48) Salsberry Peak 24000 5

-116.500000	35.875000
-116.500000	36.000000
-116.375000	36.000000
-116.375000	35.875000
-116.500000	35.875000

49) Ibex Pass 24000 5

-116.375000	35.750000
-116.375000	35.875000
-116.250000	35.875000
-116.250000	35.750000
-116.375000	35.750000

50) Death Valley Tectonic 250000 5

-117.286127000	37.0000000
-115.711834000	37.0000000
-115.713264000	35.4704440

-117.286712000	35.4701980
-117.286127000	37.0000000

51) North Confidence Hills 24000 5

-116.7500 35.8750

-116.7500 36.0000

-116.5000 36.0000

-116.5000 35.8750

-116.7500 35.8750

52) *see entry 44*

53) East of Deadman Pass 24000 5

-116.375000 36.000000

-116.375000 36.125000

-116.250000 36.125000

-116.250000 36.000000

-116.375000 36.000000

54) Shoshone 24000 5

-116.375000 35.875000

-116.375000 36.000000

-116.250000 36.000000

-116.250000 35.875000

-116.375000 35.875000