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# **APPENDIX C**

## **SOILS & GEOLOGY**

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**TABLE C-1: NOME AIRPORT GEOTECHNICAL INVESTIGATIONS**

YEAR	TYPE OF INVESTIGATION	FACILITY (NOTE 1)	NO. OF TEST HOLES	REFERENCE
1969	Subsurface Explorations, & Design Recommendations	RY 10-28	22	Engineering Services (1969)
1970	Subsurface Explorations	RY 10-28 SE Apron (Note 2)	59 6 3	Alaska Geologic Consultants (1970)
1970	Design Recommendations	RY 10-28	--	DOT&PF (1970)
1981	Subsurface Explorations & Design Recommendations	RY 10-28 RY 3-21 SW Apron	19 3 12	DOT&PF (1982)
1983	Subsurface Explorations & Design Recommendations	RY 10-28 RY 3-21	28 11	DOT&PF (1986)
1987	Subsurface Explorations & Design Recommendations	National Guard Facility	12	HLA (1987)
1986	Subsurface Explorations & Design Recommendations	RY 10-28 RY 3-21 GA Apron (Note 2)	16 35 2 1	R&M (1987a,b,c)
1987	Subsurface Explorations	RY 3-21 TY 'J' (Note 3)	18 1 19	R&M (1988)
1987	Subsurface Explorations	RY 28 MALSR	4	FAA (1989)

**TABLE C-1 CONTINUED: NOME AIRPORT GEOTECHNICAL INVESTIGATIONS**

YEAR	TYPE OF INVESTIGATION	FACILITY (NOTE 1)	NO. OF TEST HOLES	REFERENCE
1990	Subsurface Explorations	RY 10-28 GA Apron	68 7	R&M (1991)
1997	Subsurface Explorations & Design Recommendations	RY 10	11	DOT&PF (1998)
2001	Design Recommendations	RY 28	---	R&M (2001)
2003?	Subsurface Explorations & Design Recommendations?	ARFF/SREB	3?	Phukan (Note 4)
2006	Subsurface Explorations & Design Recommendations	RY 10-28 RY 3-21 TY 'J'	24 17 3	R&M (2007)
2008	Design Recommendations	SE, SW & NE Aprons	---	R&M (2008)

NOTES:

- 1 Using current runway designations - RY 10-28 was formerly designated 9-27, and RY 3-21 was formerly designated 2-20.
- 2 Undeveloped ground north of RY 10 and west of RW 21.
- 3 Drilled for re-aligning a portion of Center Creek, and a curtain drain east side of RY 20 and north of RY 27.
- 4 DOT&PF Northern Region did not have a copy of the geotechnical report or boring logs.

**TABLE C-2: NOME AIRPORT AIRFIELD IMPROVEMENT PROJECTS**

YEAR	PROJECT NO.		FACILITY (NOTE 1)	SCOPE OF CONSTRUCTION
	As-Builts	AIP		
1971	1975	8-02-0199-01	RYs 10-28 & 3-21 TYs 'E' & 'F' SE Apron	Reconstruct
1984	1986?	3-02-0199-01	RYs 10-28 & 3-21 SE Apron	Local pavement repairs (settlement areas) Extend and pave
1988	1990	3-02-0199-04	RY 3-21 Other	Reconstruct (excluding the intersection @ RY 10-28) Re-align Center Ck and construct curtain drain
1991 1993	1993 1995	3-02-0199-05 3-02-0199-06	RY 10-28	Reconstruct (STA 6+00 to 49+00) <b>*Including deep foundation soil dig-outs</b>
		3-02-0199-08		(Note 2)
1997	2000	3-02-0199-09	RY 10-28 SW & SE Aprons NE Apron & TY 'G' TY 'F'	Local pavement repairs (settlement areas) Extend pavement Construct Repair
1999	2000	3-02-0199-10 3-02-0199-11	RY 10-28	Reconstruct (STA 5+85 to 33+20)

**TABLE C-2 CONTINUED: NOME AIRPORT AIRFIELD IMPROVEMENT PROJECTS**

YEAR	PROJECT No.		FACILITY (NOTE 1)	SCOPE OF CONSTRUCTION
	As-Builts	AIP		
2001	2005	3-02-0199-12	RY 10-28	- Local Pavement Repairs (STA 37+23 to 44+11) - Reconstruct and extend safety area (STA 45+50 to 65+99) * <b>Including deep foundation soil dig-outs</b>
		60905	TYs 'F' & 'G'	Reconstruct
			NE Apron	Local repairs (settlement areas)
			RY 10-28	Level and repave (STA 7+85 to 49+05; 52+00 to 55+15)
2006			RY 3-21	Level and repave
2007	3-02-0199-15 3-02-0199-16	62774 76817	TYs 'D', 'H' & 'G'	Reconstruct
			SE, SW & NE Aprons	Local repairs (cracks and settlement areas)
			ARFF/SREB	Pave

**NOTES:**

1. Using current runway designations - RY 10-28 was formerly designated 9-27, and RY 3-21 was formerly designated 2-20.
2. Scope of project unknown; no design or construction files at DOT&PF Northern Region.

**TABLE C-3 NOME AIRPORT RUNWAY FOUNDATION PROBLEM AREAS**

**a. Runway 10-28**

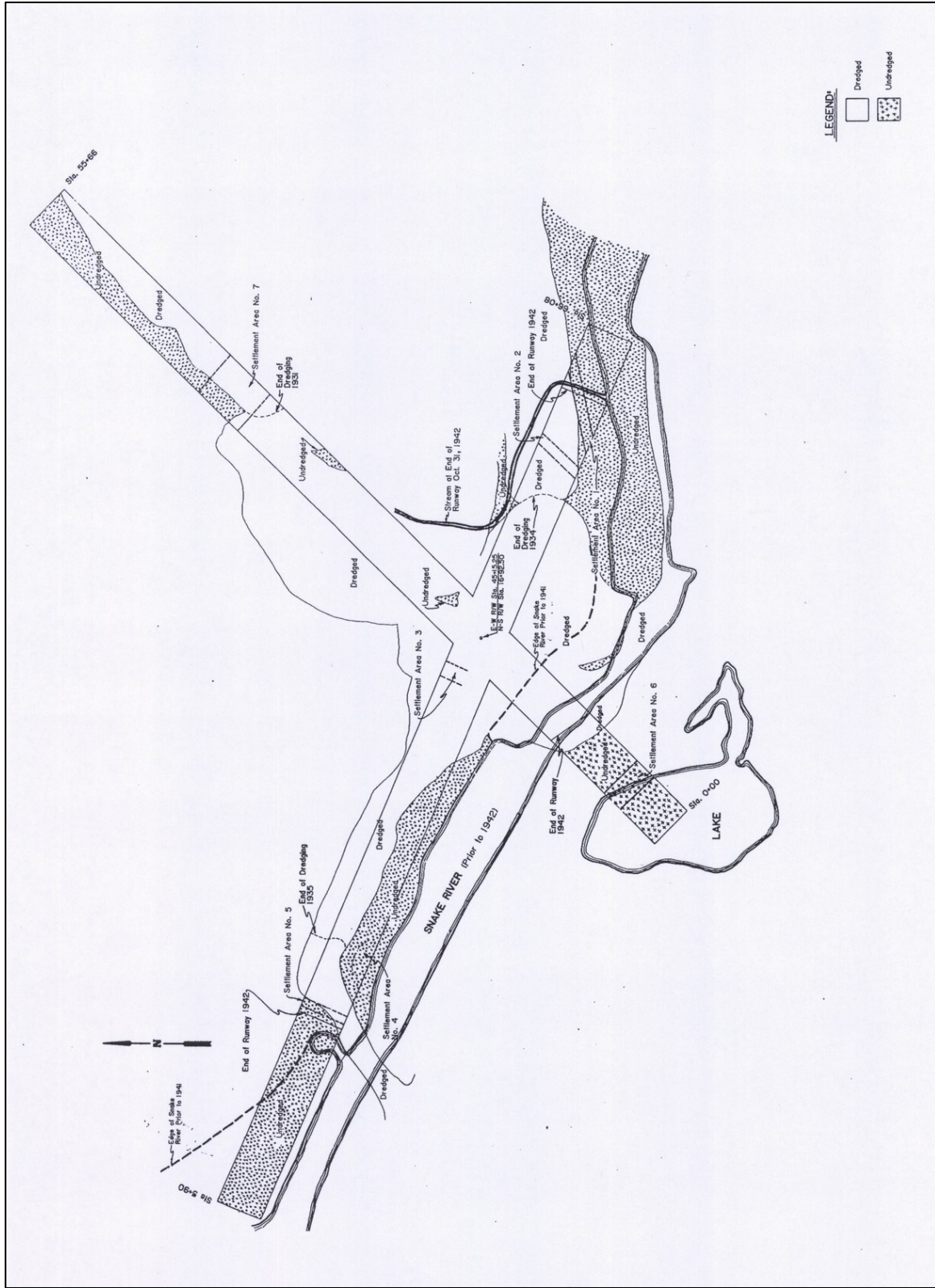
Pre-1994 Settlement Areas* (DOT&PF 1982 & 1986; R&M 1987abc, 1988 & 1991)	Deep Foundation Soil Dig-Outs* (Yr; AKSAS)	Recent Settlement Areas* (R&M, 2007)
	≈9+00 to 19+90 (1993-94; 66046)	8+00 to 9+50, Skewed 10+00 to 11+50, L of CL
18+75 to 20+75		14+20 to 16+00
22+00 to 27+00, R of CL	≈21+30 to 37+50, CL-75'R (1992; 64188)	24+50 to 28+00, R of CL
		32+50 to 33+75
42+00 to 44+00, L of CL	≈41+80 to 43+80 (1992; 64188)	39+75 to 42+25
57+50 to 58+00		52+75 to 55+00
60+50 to 62+50, Skewed	≈58+70 to 63+65 (2003-04; 60905)	

**b. Runway 3-21**

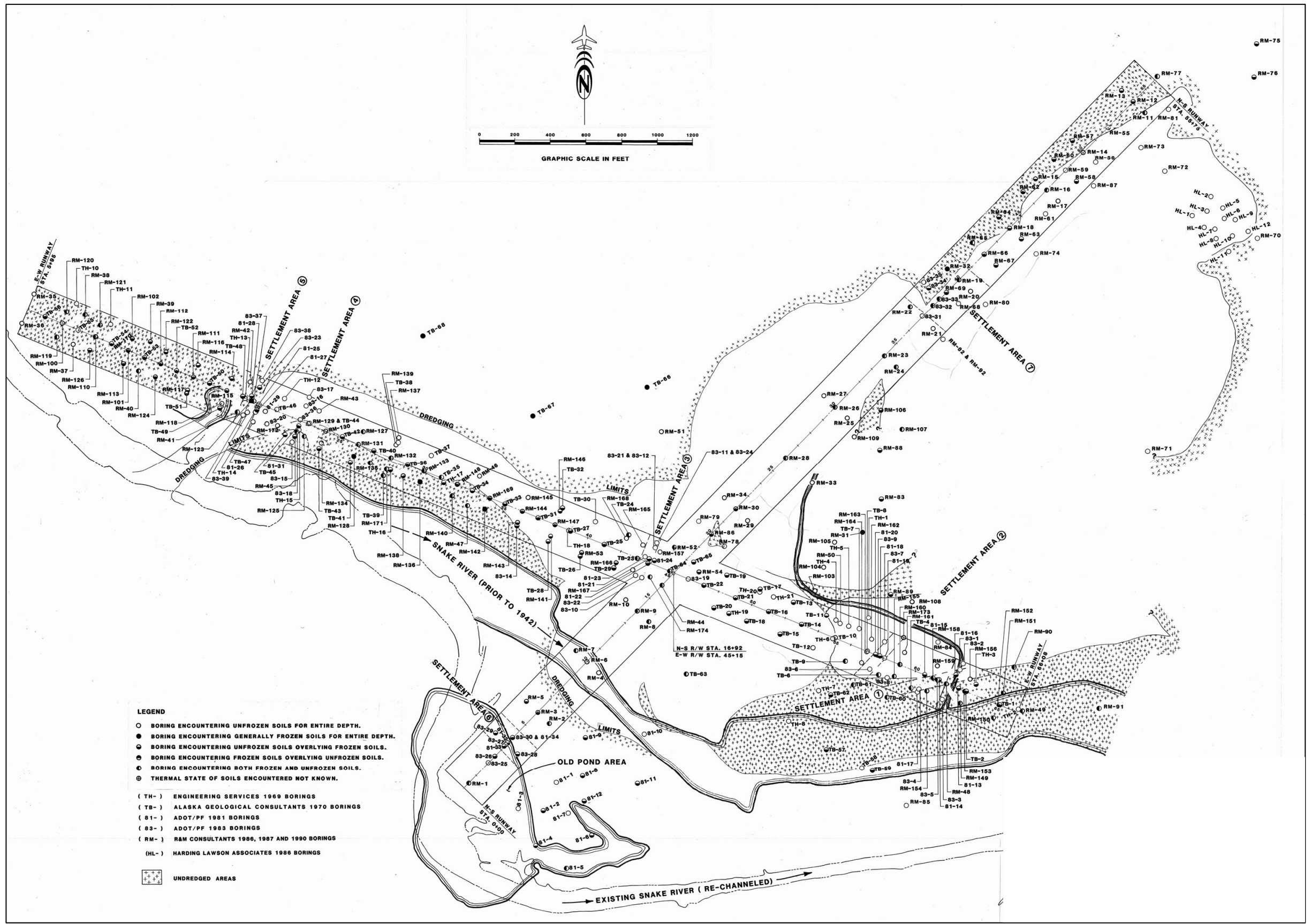
Pre-1990 Settlement Areas* (DOT&PF 1982 & 1986; R&M 1987abc & 1988)	Recent Settlement Areas* (R&M, 2007)
3+00 to 4+00	
	19+75 to 26+25, L of CL
37+50 to 41+00	26+25 to 40+50

\* Area extended across the full width of runway unless otherwise noted.





**FIGURE C-2: EXTENT OF PRE-AIRPORT DREDGING, CIRCA 1930-1940 (FROM DOT&PF, 1986)**



**LEGEND**

- BORING ENCOUNTERING UNFROZEN SOILS FOR ENTIRE DEPTH.
- BORING ENCOUNTERING GENERALLY FROZEN SOILS FOR ENTIRE DEPTH.
- ◐ BORING ENCOUNTERING UNFROZEN SOILS OVERLYING FROZEN SOILS.
- ◑ BORING ENCOUNTERING FROZEN SOILS OVERLYING UNFROZEN SOILS.
- ◒ BORING ENCOUNTERING BOTH FROZEN AND UNFROZEN SOILS.
- ⊙ THERMAL STATE OF SOILS ENCOUNTERED NOT KNOWN.

( TH - ) ENGINEERING SERVICES 1969 BORINGS  
 ( TB - ) ALASKA GEOLOGICAL CONSULTANTS 1970 BORINGS  
 ( 81 - ) ADOT/PF 1981 BORINGS  
 ( 83 - ) ADOT/PF 1983 BORINGS  
 ( RM - ) R&M CONSULTANTS 1986, 1987 AND 1990 BORINGS  
 ( HL - ) HARDING LAWSON ASSOCIATES 1986 BORINGS

⊞ UNDREGGED AREAS

FIGURE C-3: PRE-1991 GEOTECHNICAL TEST BORINGS (FROM R&M, 1991)