

USERNAME: jasonwit Mon 17 Jul 2006 01:51pm
FILENAME: K:\Active Projects\MP-26174051\Sheets\Soil Borings\Fig-17



REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 06-27-02 & 07-09-02



PROJECT NAME AND SHEET DESCRIPTION:

**UPPER LLAGAS CREEK
TECHNICAL STUDIES
REPORT OF FIELD ACTIVITIES**
REACH 7A
SOIL BORING SITE PLAN

SCALE 1" = 100'	PROJECT NUMBER 26174053
VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	FIGURE 17

4

3

2

USERNAME: jgawhit Mon 17 Jul 2006 02:12pm
FILENAME: K:\Active Projects\WP-26174051\Sheets\Soil Borings\Fig-19

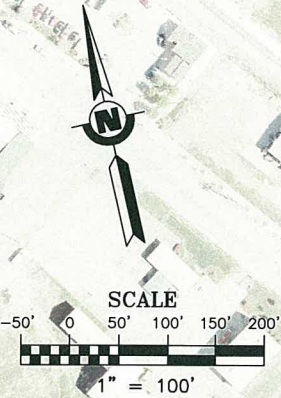


REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 06-27-02



PROJECT NAME AND SHEET DESCRIPTION: UPPER LLAGAS CREEK TECHNICAL STUDIES REPORT OF FIELD ACTIVITIES REACH 7B SOIL BORING SITE PLAN		SCALE 1" = 100' VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	PROJECT NUMBER 26174053 FIGURE 19
--	--	---	--

USERNAME: jasowhit Mon 17 Jul 2006 02:16pm
FILENAME: K:\Active Projects\WP-26174051\Sheets\Soil Borings\Fig-20



REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 06-27-02



PROJECT NAME AND SHEET DESCRIPTION:

**UPPER LLAGAS CREEK
TECHNICAL STUDIES
REPORT OF FIELD ACTIVITIES**
REACH 8A
SOIL BORING SITE PLAN

SCALE 1" = 100'	PROJECT NUMBER 26174053
VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	FIGURE 20

USERNAME: jao Whit Mon 17 Jul 2006 02:28pm
FILENAME: K:\Active Projects\WP-26174051\Sheets\Soil_Borings\Fig-21

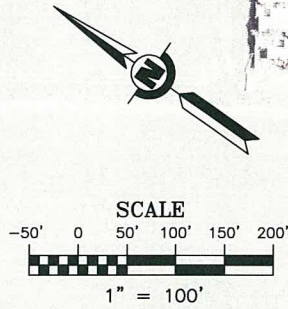
REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 06-27-02

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS CREEK
TECHNICAL STUDIES
REPORT OF FIELD ACTIVITIES
REACH 8B
SOIL BORING SITE PLAN

SCALE	PROJECT NUMBER
1" = 100'	26174053
VERIFY SCALES	FIGURE
0 1"	21
BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	



USERNAME: jaswhit Mon 17 Jul 2006 02:42pm
FILENAME: K:\Active Projects\WP-26174051\Sheets\Soil_Borings\Fig-22



REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 07-09-02



PROJECT NAME AND SHEET DESCRIPTION:

**UPPER LLAGAS CREEK
TECHNICAL STUDIES
REPORT OF FIELD ACTIVITIES**
REACH 14
SOIL BORING SITE PLAN

SCALE 1" = 100'	PROJECT NUMBER 26174053
VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	FIGURE 22

USERNAME: jasowhit Mon 17 Jul 2006 02:51pm
FILENAME: K:\Active Projects\WP-26174051\Sheets\Soil Borings\Fig-23



REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 07-09-02



PROJECT NAME AND SHEET DESCRIPTION: UPPER LLAGAS CREEK TECHNICAL STUDIES REPORT OF FIELD ACTIVITIES REACH 14 SOIL BORING SITE PLAN		SCALE 1" = 100' VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	PROJECT NUMBER 26174053 FIGURE 23
--	--	---	--

USERNAME: jasowhit Mon 17 Jul 2006 02:56pm
FILENAME: K:\Active Projects\WP-26174051\Sheets\Soil_Borings\Fig-24



REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 07-09-02



PROJECT NAME AND SHEET DESCRIPTION:

**UPPER LLAGAS CREEK
TECHNICAL STUDIES
REPORT OF FIELD ACTIVITIES**
REACH 14
SOIL BORING SITE PLAN

SCALE 1" = 100'	PROJECT NUMBER 26174053
VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	FIGURE 24

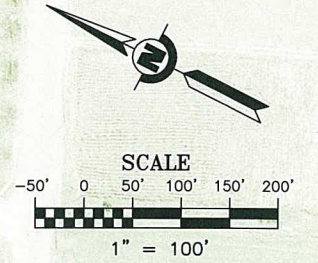
USERNAME: jasowhit Mon 17 Jul 2006 03:10pm
FILENAME: K:\Active Projects\MP-26174051\Sheets\Soil Borings\Fig-25

REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 07-09-02



PROJECT NAME AND SHEET DESCRIPTION:

**UPPER LLAGAS CREEK
TECHNICAL STUDIES
REPORT OF FIELD ACTIVITIES**
REACH 14
SOIL BORING SITE PLAN



SCALE	PROJECT NUMBER
1" = 100'	26174053
VERIFY SCALES	FIGURE
0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	25

USERNAME: jasonhitt Mon 17 Jul 2006 03:12pm
FILENAME: K:\Active Projects\MP-26174051\Sheets\Soil Borings\Fig-26

REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 07-09-02

Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS CREEK
TECHNICAL STUDIES
REPORT OF FIELD ACTIVITIES
REACH 14
SOIL BORING SITE PLAN

SCALE	PROJECT NUMBER
1" = 100'	26174053
VERIFY SCALES	FIGURE
0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	26

4

3

2

USERNAME: jsewhit Mon 17 Jul 2006 03:18pm
FILENAME: K:\Active Projects\MP-26174051\Sheets\Soil_Borings\Fig-27



REFERENCE INFORMATION AND NOTES:
1. GIS IMAGE DATE: 07-09-02



PROJECT NAME AND SHEET DESCRIPTION: UPPER LLAGAS CREEK TECHNICAL STUDIES REPORT OF FIELD ACTIVITIES REACH 14 SOIL BORING SITE PLAN		SCALE 1" = 100'	PROJECT NUMBER 26174053
VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY		FIGURE 27	

SCVWD POINT NUMBER	NORTHING	EASTING	GROUND ELEVATION	DESCRIPTION
20634	1859235.13	6240949.32	290.93	OW14-10
20649	1855526.03	6243125.66	272.98	OW14-16
20644	1851650.63	6244873.53	263.53	OW14-22
20659	1849210.96	6245921.58	252.20	OW14-26
20654	1848477.90	6245859.86	250.21	OW14-27
20626	1862412.33	6237887.04	307.32	OW14-3
20670	1843825.94	6249252.16	232.78	OW4-11
20667	1842909.17	6249951.46	227.14	OW4-13
185207	1841934.53	6252722.16	225.15	OW4-18
20675	1846636.67	6247495.97	241.82	OW4-6
20656	1847988.48	6244920.61	249.69	OW5-3
20711	1856893.62	6238722.46	289.38	OW6-12
20696	1854456.64	6240309.95	279.60	OW6-17
20690	1849427.66	6241965.97	266.86	OW6-25
20716	1858729.22	6237444.89	302.19	OW6-7
20770	1865061.67	6228117.31	329.94	OW7A-2
20759	1867708.82	6227041.41	331.99	OW7B-4B
20753	1870487.74	6225912.69	341.41	OW8A-1B
20748	1870807.77	6225823.88	342.71	OW8A-2C
20743	1871011.12	6225500.84	344.24	OW8A-3B
20727	1871142.46	6225155.32	345.01	OW8A-4
20733	1871126.30	6224576.21	347.00	OW8A-5
20633	1859238.65	6240943.92	288.02	SB14-10
20637	1858709.15	6241317.87	286.41	SB14-11 EAST
20635	1858708.76	6241205.01	285.84	SB14-11 WEST
20638	1857428.47	6241890.81	280.58	SB14-13
20650	1856814.17	6242185.70	275.07	SB14-14
20639	1856207.46	6242630.64	272.63	SB14-15
20648	1855547.01	6243137.39	270.00	SB14-16
20636	1858042.08	6241476.94	286.07	SB14-12
20640	1854824.98	6243307.72	272.65	SB14-17
20647	1854214.64	6243687.95	265.86	SB14-18
20641	1853473.37	6243884.69	266.72	SB14-19
20624	1862948.56	6237357.59	302.77	SB14-2
20646	1852858.35	6244276.61	261.64	SB14-20
20642	1852197.97	6244436.76	260.85	SB14-21
20643	1851640.80	6244878.58	260.65	SB14-22
20645	1851020.79	6245020.03	257.99	SB14-23
20658	1850418.64	6245416.99	255.21	SB14-24
20651	1849781.90	6245577.81	251.18	SB14-25
20660	1849217.54	6245919.51	249.22	SB14-26
20652	1849249.64	6245844.53	240.43	SB14-26B
20653	1848640.92	6245882.10	246.08	SB14-27
20625	1862408.57	6237890.75	304.18	SB14-3
20627	1861833.87	6238448.24	298.64	SB14-4
20628	1861243.60	6239002.15	296.54	SB14-5
20629	1860774.02	6239353.09	295.72	SB14-6
20630	1860138.61	6239717.33	293.98	SB14-7
20631	1859529.17	6239989.41	292.16	SB14-8
20632	1859200.31	6240340.70	286.57	SB14-9
20662	1848062.19	6246061.06	244.73	SB4-1
20673	1844322.71	6249549.80	229.91	SB4-10
20671	1843836.97	6249256.17	229.85	SB4-11
20669	1843140.56	6249509.73	226.10	SB4-12
20668	1842905.83	6249955.76	223.90	SB4-13
20663	1842678.41	6250585.90	225.97	SB4-14

SCVWD POINT NUMBER	NORTHING	EASTING	GROUND ELEVATION	DESCRIPTION
20665	1841837.61	6251001.92	225.07	SB4-15
20664	1841995.86	6251582.92	223.33	SB4-16
20666	1842176.74	6251922.67	222.11	SB4-17
185205	1842010.08	6252486.07	218.83	SB4-18
20681	1847656.37	6246276.01	245.13	SB4-2
20680	1846676.71	6246197.46	242.12	SB4-3
20679	1846655.25	6246535.67	242.50	SB4-4
20678	1846973.53	6247122.85	240.15	SB4-5
20676	1846633.53	6247500.53	238.26	SB4-6
20677	1845998.64	6248083.64	235.57	SB4-7
20674	1845575.17	6248965.50	234.50	SB4-8
20672	1845132.80	6249492.96	233.17	SB4-9
20684	1847794.91	6243782.91	251.70	SB5-1
20683	1847763.83	6244348.35	245.10	SB5-2
20657	1847989.40	6244921.75	246.84	SB5-3
20655	1848272.00	6245375.57	248.69	SB5-4
20661	1848342.40	6245965.56	247.23	SB5-5
20700	1859709.30	6233742.54	316.97	SB6-1
20712	1857979.15	6238884.68	287.76	SB6-10
20713	1857515.96	6238981.15	289.74	SB6-11
20709	1855792.59	6239401.82	281.84	SB6-14
20710	1856889.32	6238721.01	286.89	SB6-12
20708	1856162.79	6239290.77	284.40	SB6-13
20707	1854797.18	6239886.18	279.40	SB6-16
20695	1854448.40	6240309.75	276.91	SB6-17
20706	1853805.59	6240343.68	275.57	SB6-18
20705	1853426.25	6240172.45	272.97	SB6-19
20701	1859617.46	6233445.91	310.77	SB6-1B
20702	1859185.02	6232722.48	313.71	SB6-1C
20703	1858994.08	6232327.40	298.41	SB6-1D
20699	1859461.61	6234334.38	306.99	SB6-2
20694	1852616.91	6240106.91	273.32	SB6-20
210070	1852220.61	6240430.66	270.04	SB6-21
20693	1851912.78	6240464.69	268.93	SB6-21B
20704	1851354.14	6240951.33	265.45	SB6-22
20692	1850487.24	6241472.62	265.26	SB6-22B
20688	1850412.62	6241679.07	261.24	SB6-23
20687	1850193.74	6241744.98	261.95	SB6-24
20689	1849423.01	6241967.58	263.86	SB6-25
20686	1848718.28	6242414.80	258.77	SB6-26
20691	1848217.08	6242654.92	259.02	SB6-27
185206	1848019.62	6243287.52	253.71	SB6-28
20698	1859349.44	6234841.17	306.88	SB6-3
20697	1859405.95	6235383.71	305.33	SB6-4
20718	1859321.53	6236449.13	300.11	SB6-5
210066	1859163.55	6236730.72	301.72	SB6-6
210065	1858860.05	6237379.82	300.34	SB6-7
20717	1858935.97	6237669.64	303.77	SB6-8
20714	1858814.91	6238655.98	294.86	SB6-9
20768	1865757.18	6228007.79	325.12	SB7A-1
20719	1859953.46	6233067.68	312.22	SB7A-12B
20769	1865055.35	6228117.33	327.40	SB7A-2
20771	1864377.40	6228025.21	325.63	SB7A-3
20725	1864005.49	6228478.34	324.12	SB7A-4
20724	1863980.51	6228616.05	323.23	SB7A-4B
20723	1863796.88	6228812.68	319.72	SB7A-4C

SCVWD POINT NUMBER	NORTHING	EASTING	GROUND ELEVATION	DESCRIPTION
20722	1863337.45	6229188.83	319.15	SB7A-5B
20720	1862969.66	6229564.97	319.28	SB7A-6B
210068	1860531.87	6232455.29	317.72	SB7A-11B
20756	1869028.72	6226505.06	335.66	SB7B-1B
20755	1868554.86	6226733.81	332.94	SB7B-2B
20761	1868203.00	6226872.87	331.97	SB7B-3B
20760	1867918.39	6227010.12	329.96	SB7B-3C
20758	1867713.05	6227035.91	329.18	SB7B-4B
20757	1867623.86	6227240.41	330.89	SB7B-4C
20762	1867543.84	6227045.07	331.16	SB7B-4D
20763	1867083.30	6227344.36	327.91	SB7B-4E
20764	1867067.78	6227253.67	328.37	SB7B-4F
20765	1866364.66	6227664.45	327.91	SB7B-6C
20766	1866865.66	6227393.84	326.77	SB7B-5B
20767	1866033.58	6227813.46	323.97	SB7B-6B
20754	1870334.80	6226008.68	340.49	SB8A-1
20752	1870457.37	6225907.97	339.28	SB8A-1B
20751	1870550.90	6225920.62	339.89	SB8A-2
20750	1870702.82	6225958.96	341.04	SB8A-2B
20749	1870790.03	6225900.42	340.83	SB8A-2C
20747	1870886.31	6225832.30	340.46	SB8A-2D
20744	1870975.95	6225556.82	341.02	SB8A-3
20745	1871014.98	6225494.76	341.90	SB8A-3B
20746	1871055.96	6225320.70	343.45	SB8A-3C
20726	1871135.34	6225158.43	342.62	SB8A-4
20729	1871083.57	6224987.25	342.64	SB8A-4C
20730	1871089.05	6224883.96	342.73	SB8A-4D
20731	1871062.46	6224685.58	342.79	SB8A-4F
20732	1871119.36	6224578.07	344.02	SB8A-5
20734	1871117.22	6224100.85	345.24	SB8A-6
20735	1870986.77	6224202.07	346.77	SB8A-5B
20736	1871393.37	6223905.72	346.12	SB8A-6B
20737	1871691.50	6223703.17	346.56	SB8A-7
20738	1871998.62	6223498.08	347.52	SB8A-7B
20739	1872271.11	6223311.82	348.41	SB8A-8
20740	1872552.81	6223122.37	349.00	SB8A-8B
20741	1872856.16	6222892.24	349.83	SB8A-9
20742	1873214.27	6222561.06	348.62	SB8A-9B
20728	1871155.95	6225061.05	342.27	SB8A-4B
185000	1863669.76	6229032.77	-	** SB7A-5_EXIST
185001	1863143.80	6229372.06	-	** SB7A-6_EXIST
185002	1862577.61	6229865.87	-	** SB7A-7_EXIST
185003	1862085.41	6230421.57	-	** SB7A-8_EXIST
185004	1861710.60	6230921.51	-	** SB7A-9_EXIST
185005	1861207.01	6231538.91	-	** SB7A-10_EXIST
185006	1860769.50	6232141.62	-	** SB7A-11_EXIST
185007	1860236.28	6232738.67	-	** SB7A-12_EXIST
185008	1859783.00	6233458.78	-	** SB7A-13_EXIST
185056	1868824.17	6226679.53	-	** SB7B-1_EXIST
185057	1868872.94	6226661.19	-	** SB7B-2_EXIST
185058	1869474.56	6226264.63	-	** SB7B-3_EXIST
185059	1869551.23	6226241.62	-	** SB7B-4_EXIST
185060	1869734.33	6226185.74	-	** SB7B-5_EXIST
185061	1869925.54	6226209.37	-	** SB7B-6_EXIST
185062	1870113.56	6226141.45	-	** SB7B-7_EXIST
210069	1848220.91	6242650.67	262.08	* OW6-27

REFERENCE INFORMATION AND NOTES:

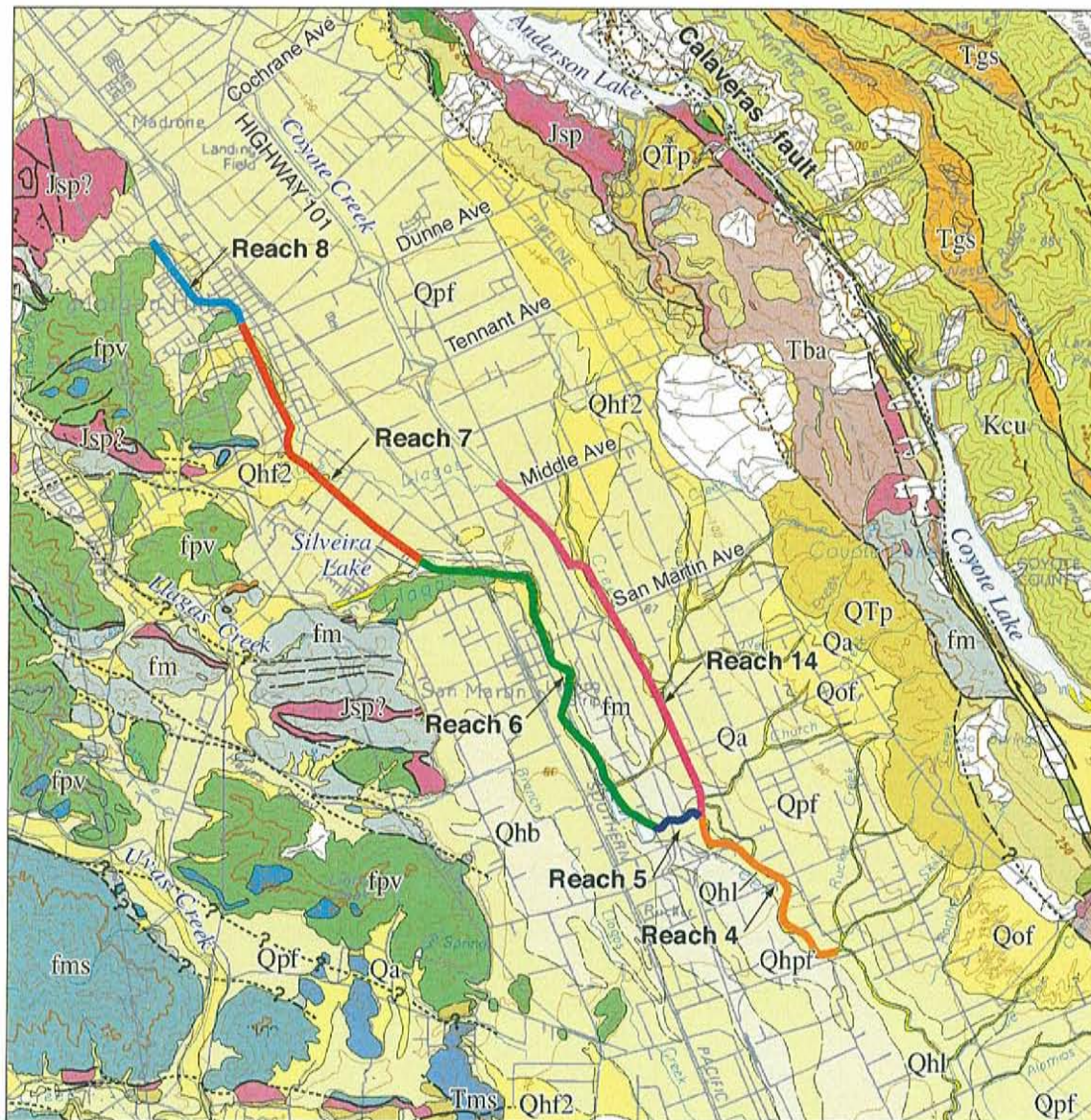
- LLAGAS CREEK SURVEY OF OBSERVATION WELLS AND SOIL BORINGS PERFORMED NOV/DEC 2005.
- BASIS OF ELEVATION AND COORDINATE SYSTEM ARE AS FOLLOWS:
HORIZONTAL DATUM: NAD 83, CALIFORNIA COORDINATE SYSTEM (ZONE 3) US FEET
VERTICAL DATUM: NAVD 88, STATE PLANE US FEET
- ADJACENT SOIL BORING AND OBSERVATION WELL SYMBOLS HAVE BEEN SEPARATED FOR CLARITY.
- * REPRESENTS THE ELEVATION AT THE LIP OF PVC PIPE INSIDE BOX.
- ** LLAGAS CREEK SURVEY OF EXISTING SOIL BORINGS PERFORMED MAY 2004.



PROJECT NAME AND SHEET DESCRIPTION:

UPPER LLAGAS CREEK TECHNICAL STUDIES REPORT OF FIELD ACTIVITIES SURVEY COORDINATES SOIL BORING LOCATIONS

SCALE N.T.S.	PROJECT NUMBER 26174053
VERIFY SCALES 0 1" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	FIGURE 28



Legend

- Contact - depositional and intrusive contact, dashed where approximately located
- - - Fault - dashed where approximate located, dotted where concealed

Selected Map Units

Qhf2	Older alluvial fan deposits (Holocene)	QTp	Packwood Gravels of Crittenden (1951) (Pleistocene? and Pliocene)
Qpf	Alluvial fan deposits (Holocene)	Jsp	Serpentinite (Jurassic)
Qhfp	Flood Plain deposits (Holocene)	fpv	Basaltic volcanic rocks (lower Cretaceous)
Qh1	Levee deposits (Holocene)	fm	Melange (lower Tertiary? and upper Cretaceous)



0 1 2 3 4 5 Kilometers

URS

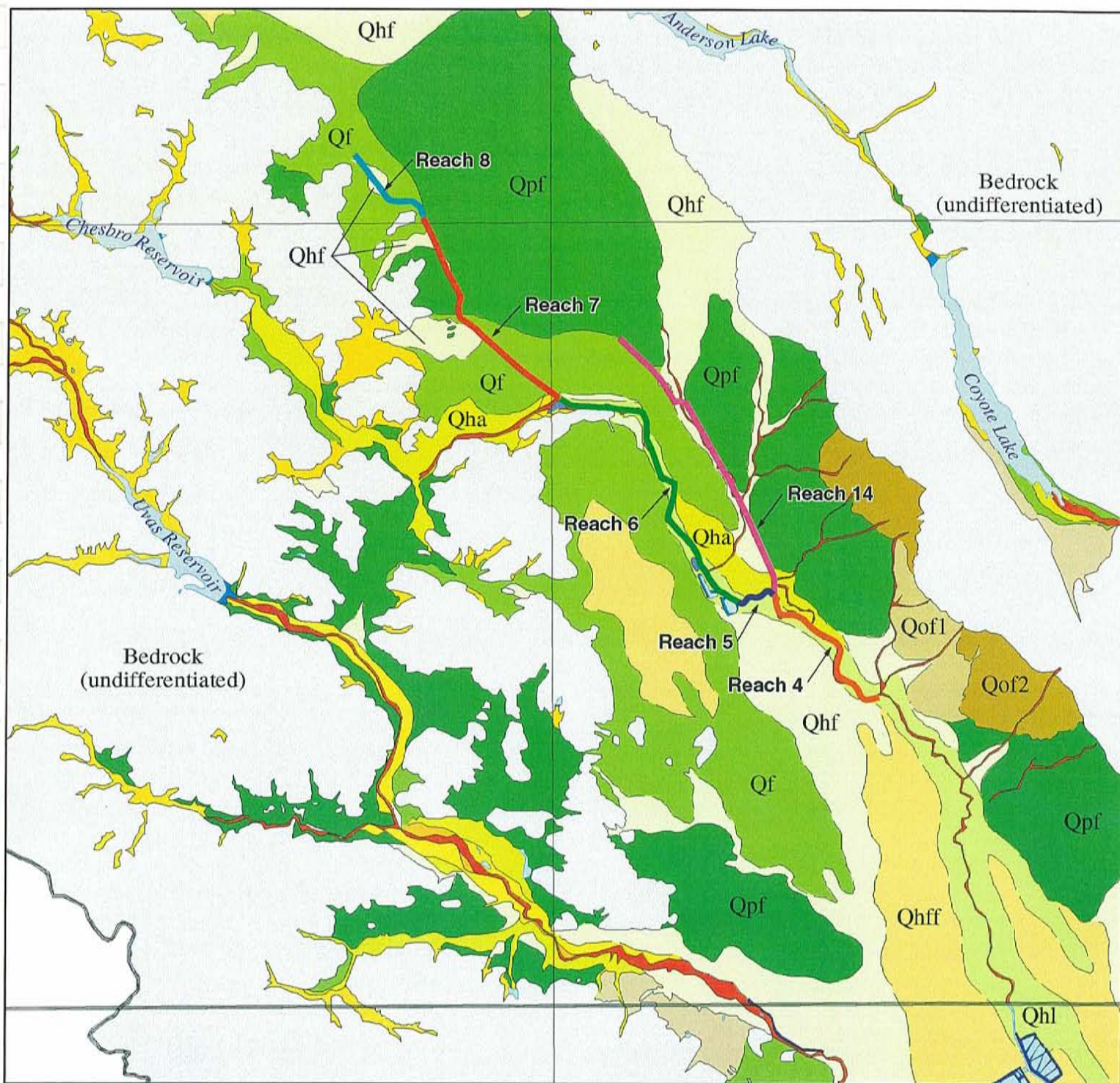
PACIFIC
GEOTECHNICAL
ENGINEERING

Project No.

**Upper Llagas Flood
Protection Project**

REGIONAL GEOLOGIC MAP

**Figure
29**



Source: From Knudsen et al. (2000)

Legend

Qhf	Alluvial fan deposits (Holocene)	Qf	Alluvial fan deposits (latest Pleistocene to Holocene)
Qhff	Fine-grained alluvial fan deposits (Holocene)	Qpf	Alluvial fan deposits (latest Pleistocene)
Qhl	Alluvial fan levee deposits (Holocene)	Qof2	Alluvial fan deposits (early to late Pleistocene)
Qha	Alluvium (Holocene)	Qof1	Alluvial fan deposits (early to late Pleistocene)



0 1 2 3 4 5 Kilometers

URS

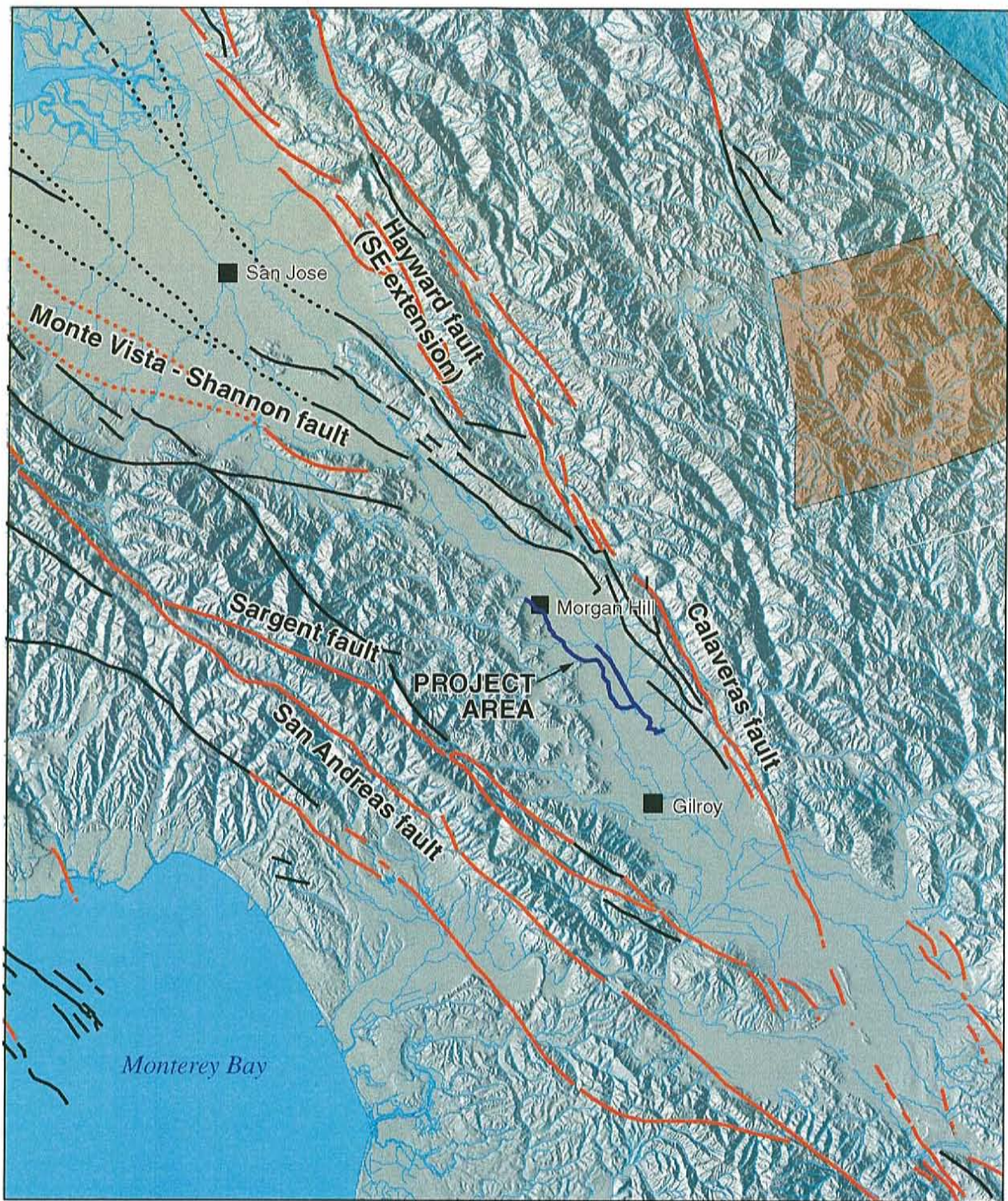
PACIFIC
GEOTECHNICAL
ENGINEERING

Project No.

**Upper Llagas Flood
Protection Project**

**QUATERNARY
GEOLOGIC MAP**

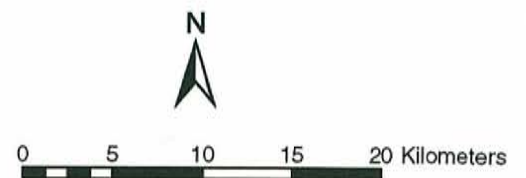
**Figure
30**



Source: After Jennings (1994); Sleeter and others (2004)

Legend

- Holocene (active) fault
- Pre-Holocene fault



URS

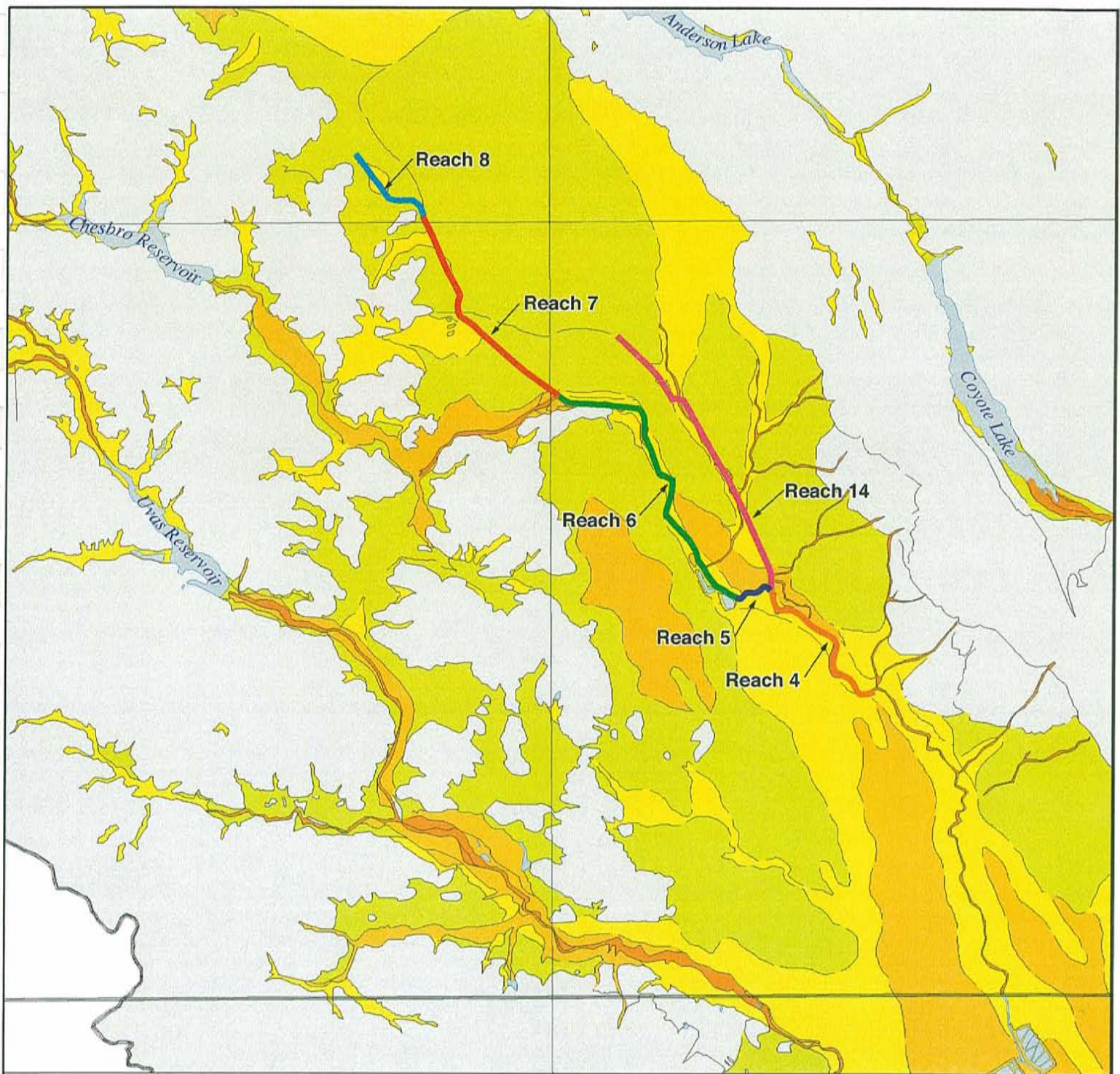
PACIFIC
GEOTECHNICAL
ENGINEERING

Project No.

**Upper Llagas Flood
Protection Project**

SELECTED ACTIVE FAULTS

**Figure
31**



Source: From Knudsen et al. (2000)

Legend

- Very high susceptibility
- High susceptibility
- Moderate
- Low
- Very Low

URS

PACIFIC
GEOTECHNICAL
ENGINEERING

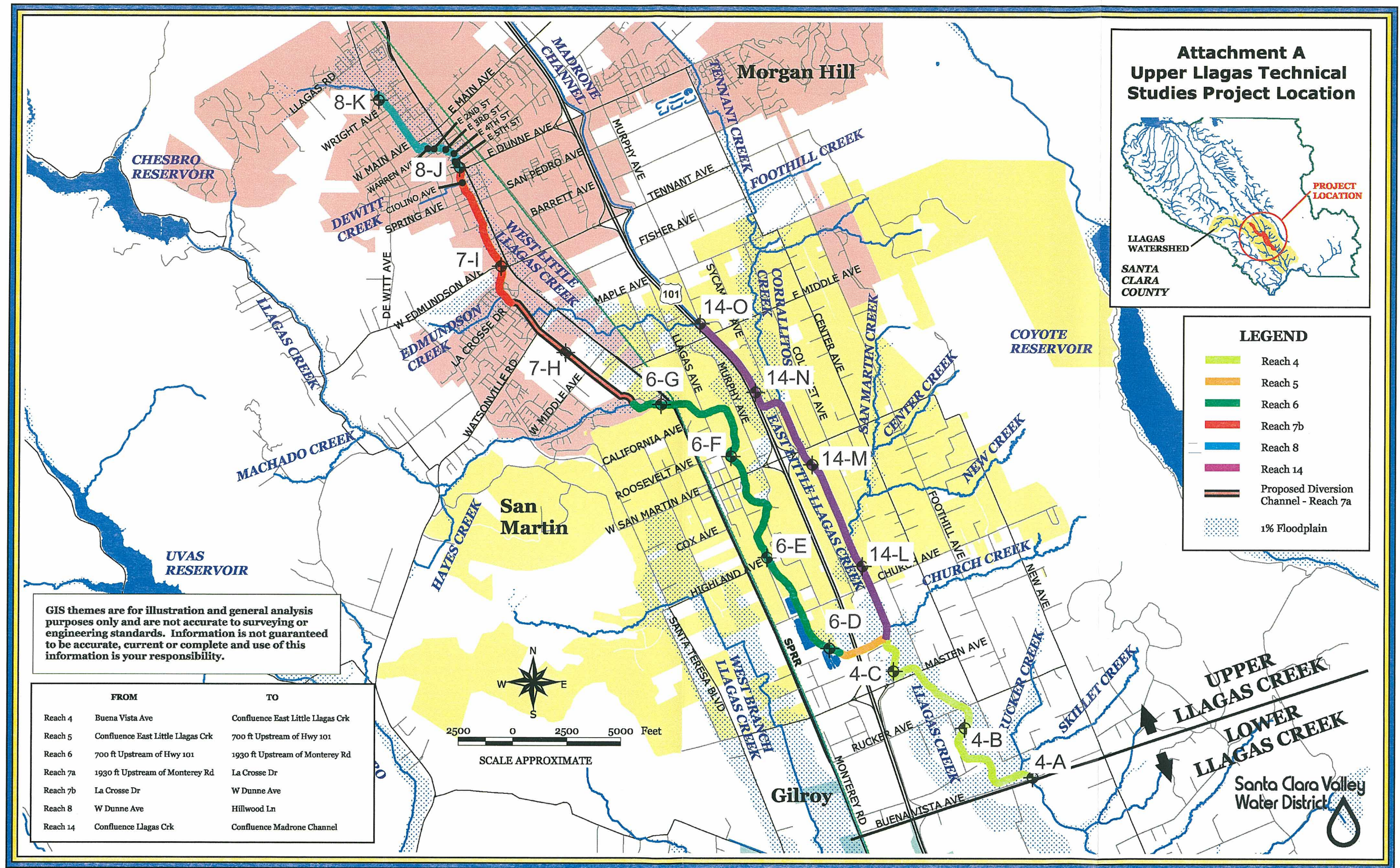
Project No.

**Upper Llagas Flood
Protection Project**

**LIQUEFACTION
SUSCEPTIBILITY MAP**

**Figure
32**

Q:\CADD\2006\28649692\GE-692001.dwg



LEGEND:



4-A = SITE NUMBER FOR DETERMINING PGA (15 TOTAL)

URS

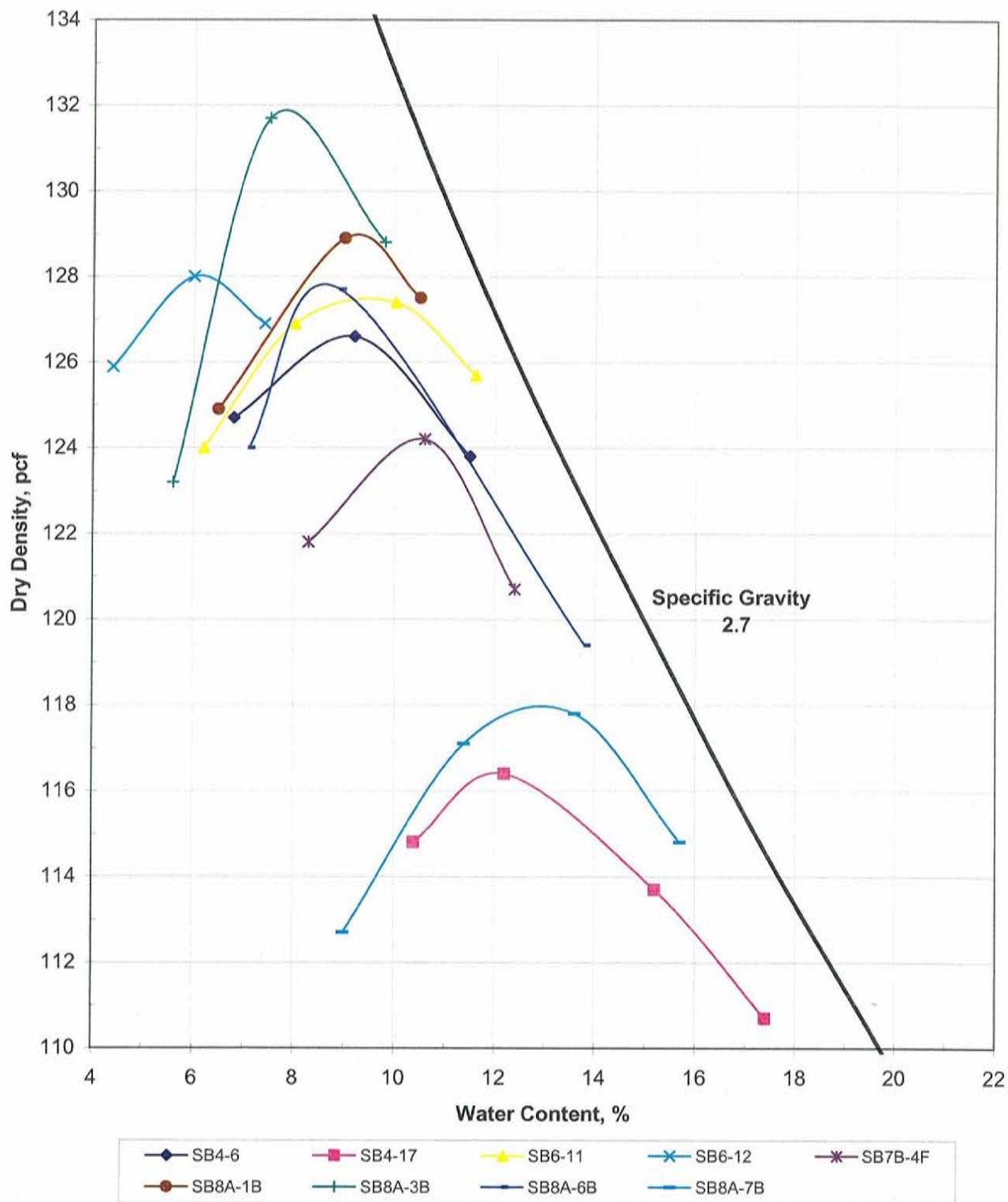
Project No. 28649692

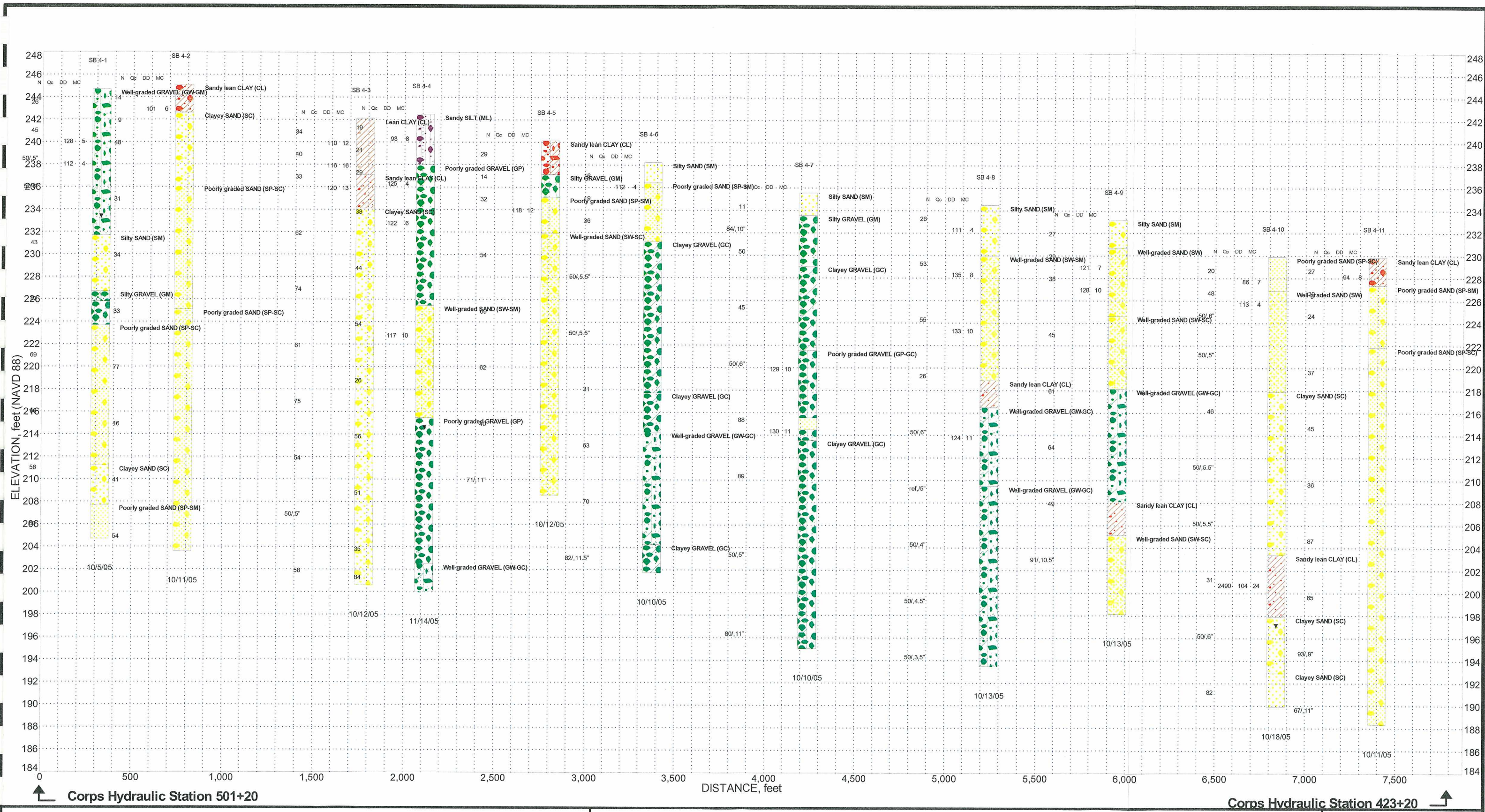
Upper Llagas Creek Flood Protection Project
Santa Clara County, CA

LOCATION OF SITES FOR ESTIMATED
PEAK HORIZONTAL GROUND ACCELERATIONS

Figure
33

Compaction Curves **Upper Llagas Creek Flood Protection Project**

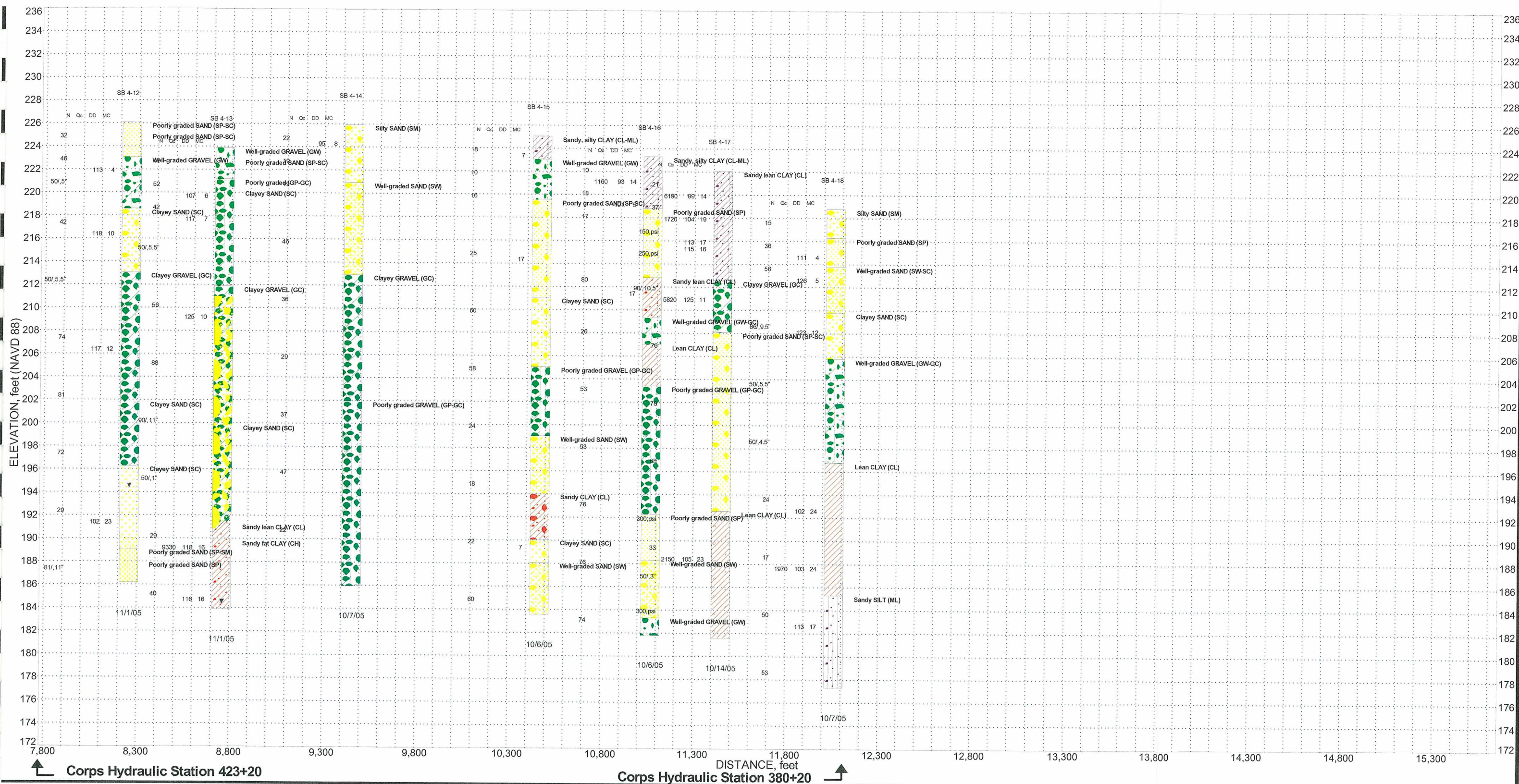




Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 4 (1)

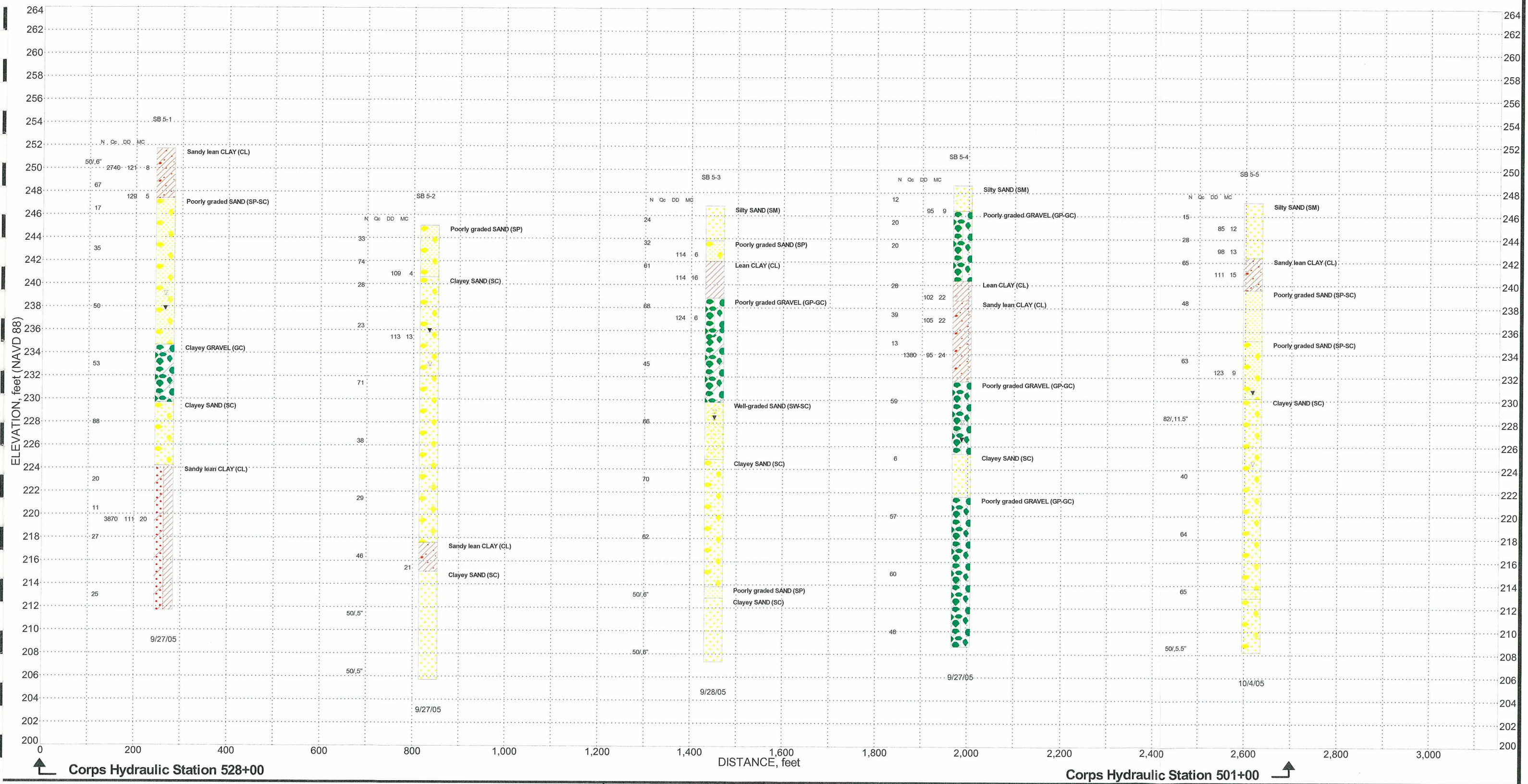
Figure
35



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 4 (2)

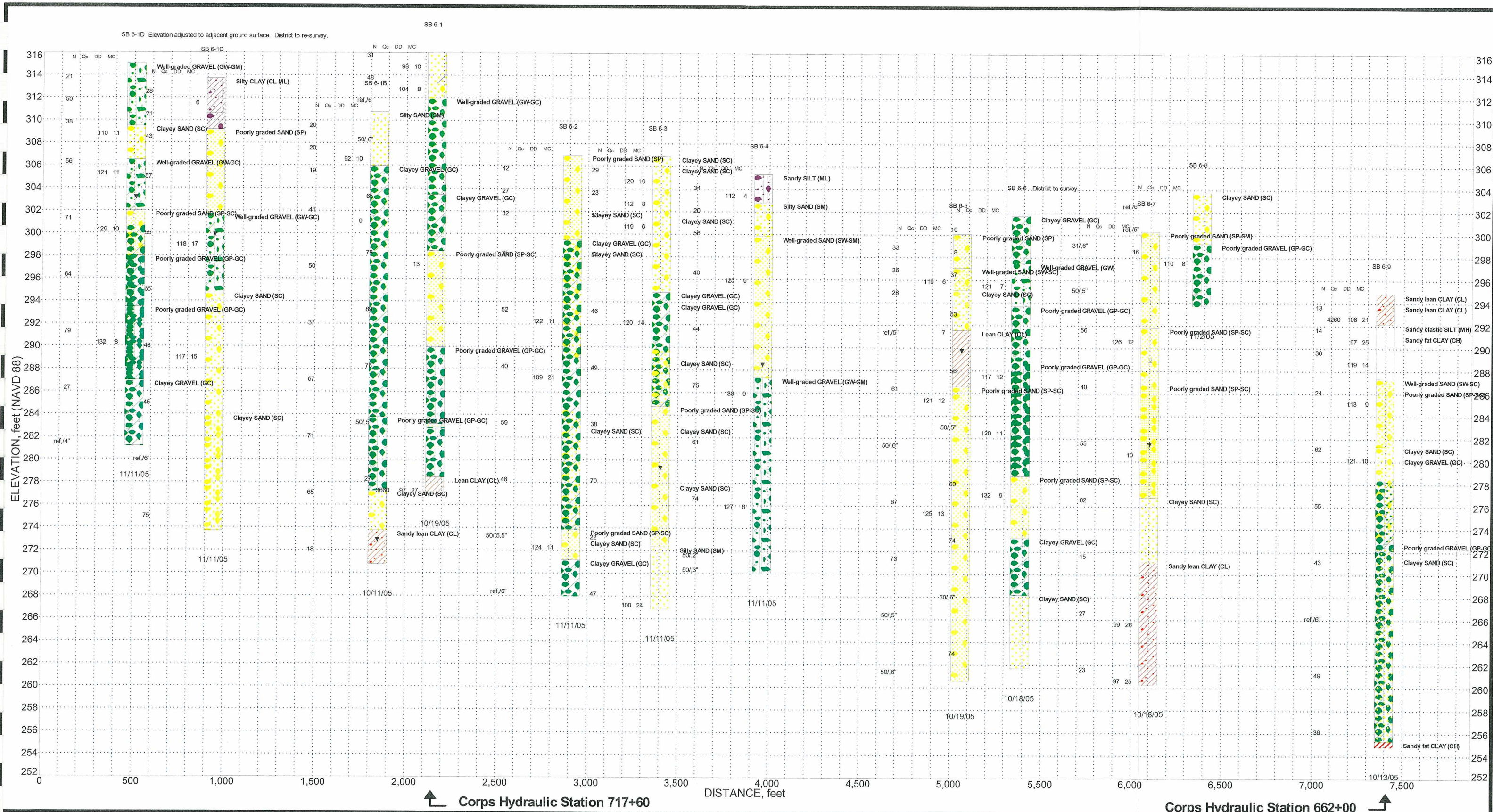
Figure
36



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 5

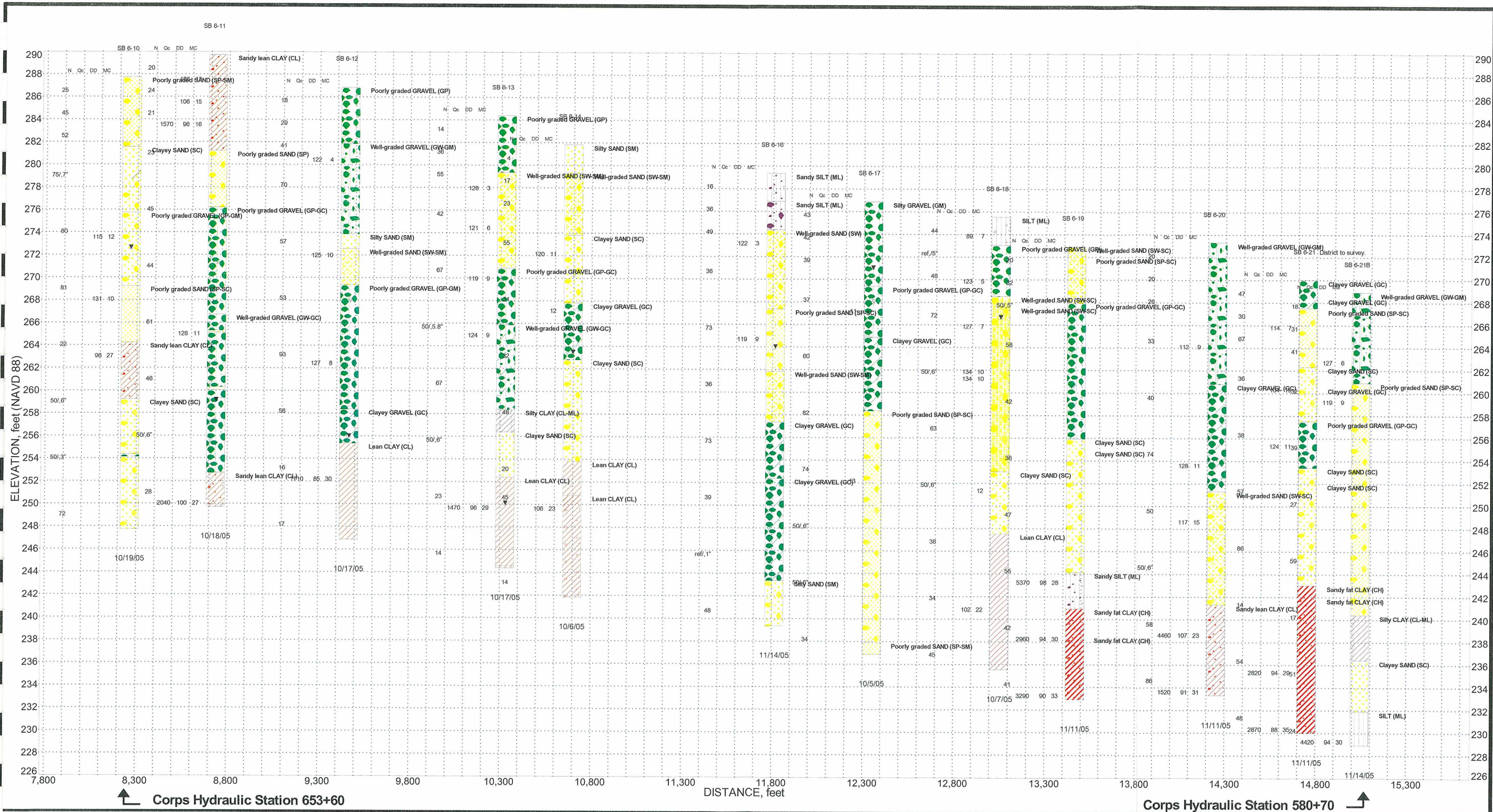
Figure
37



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 6 (1)

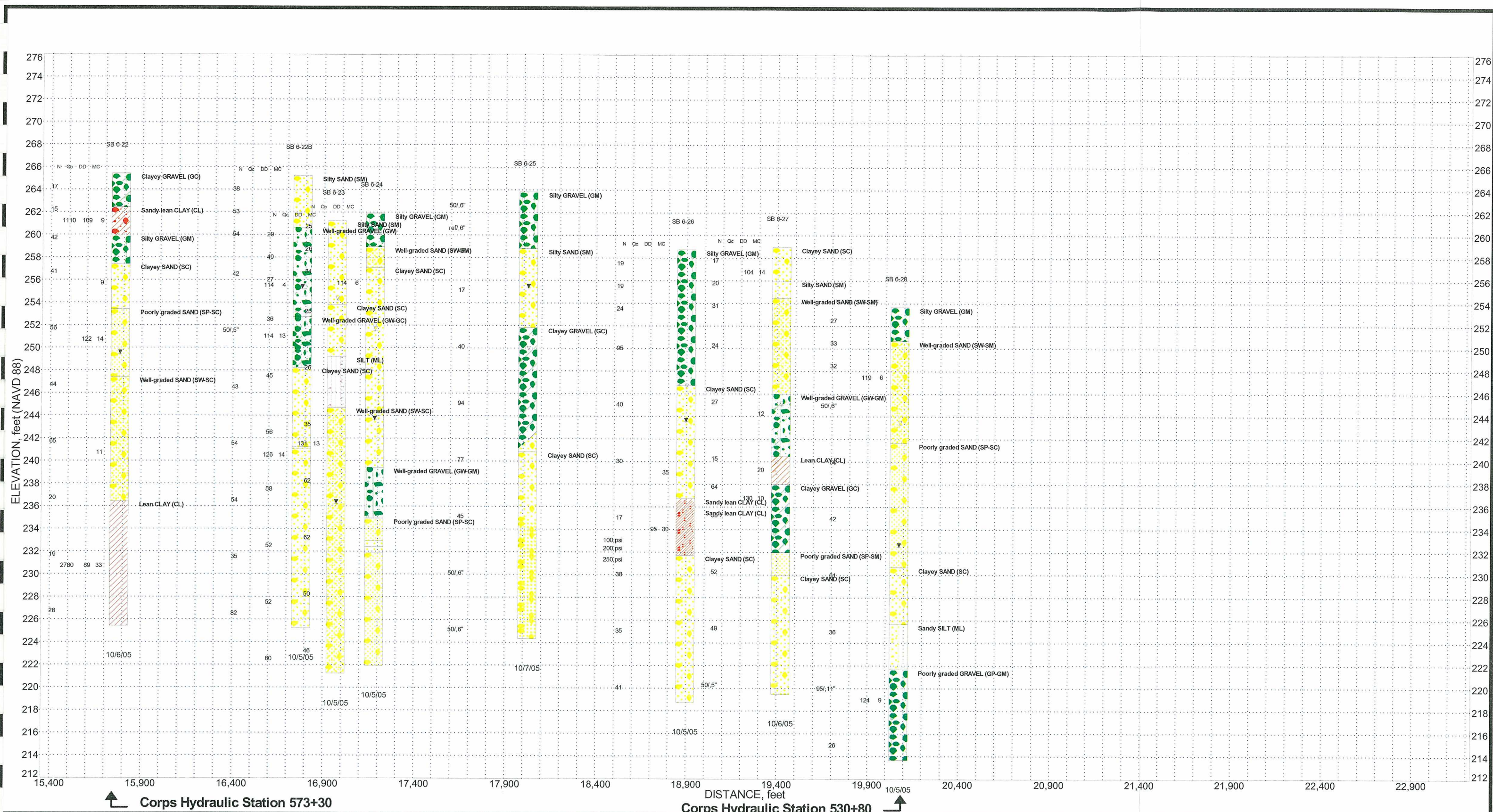
Figure
38



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 6 (2)

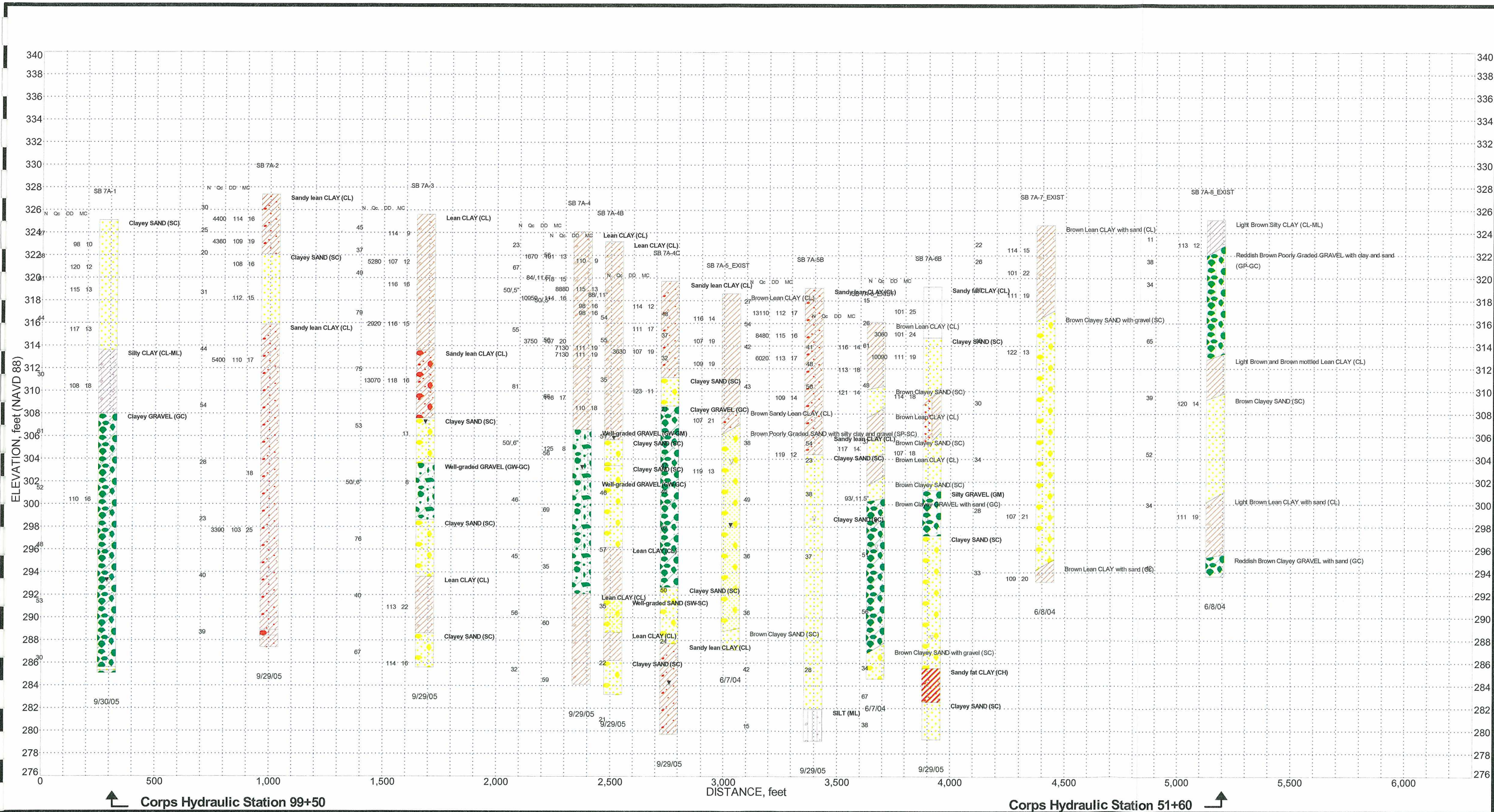
Figure
39



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 6 (3)

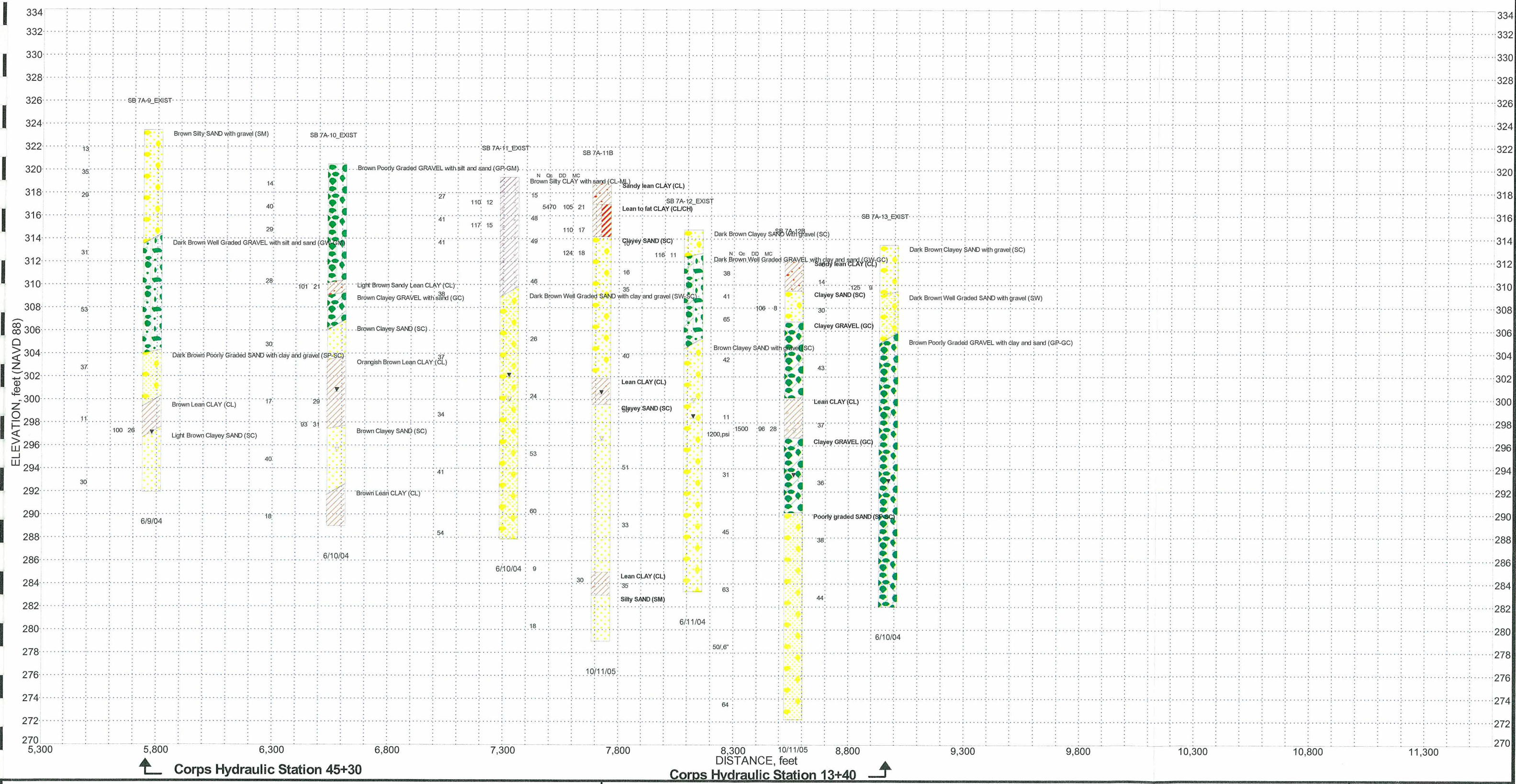
Figure
40



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 7A (1)

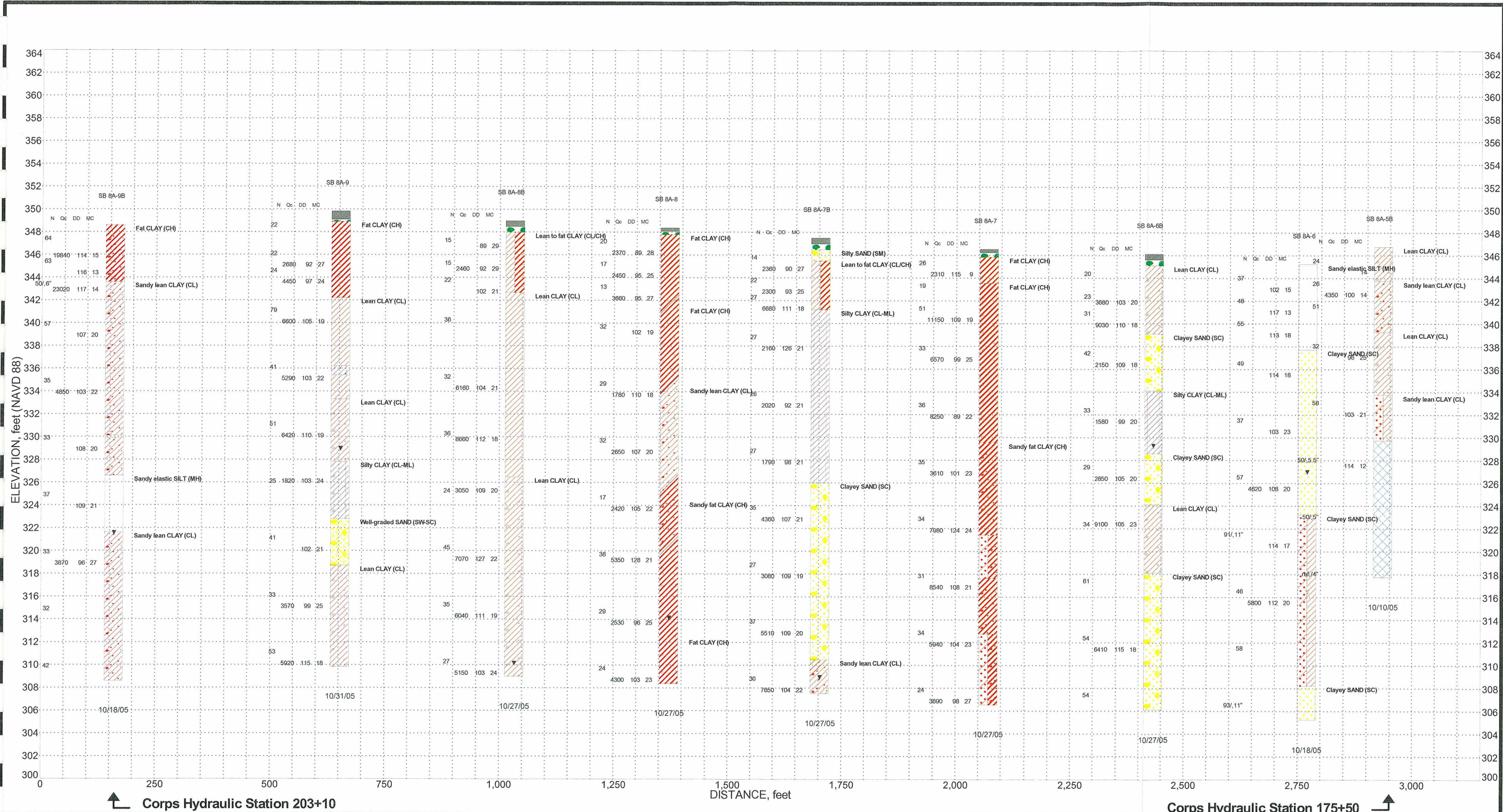
Figure
41



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 7A (2)

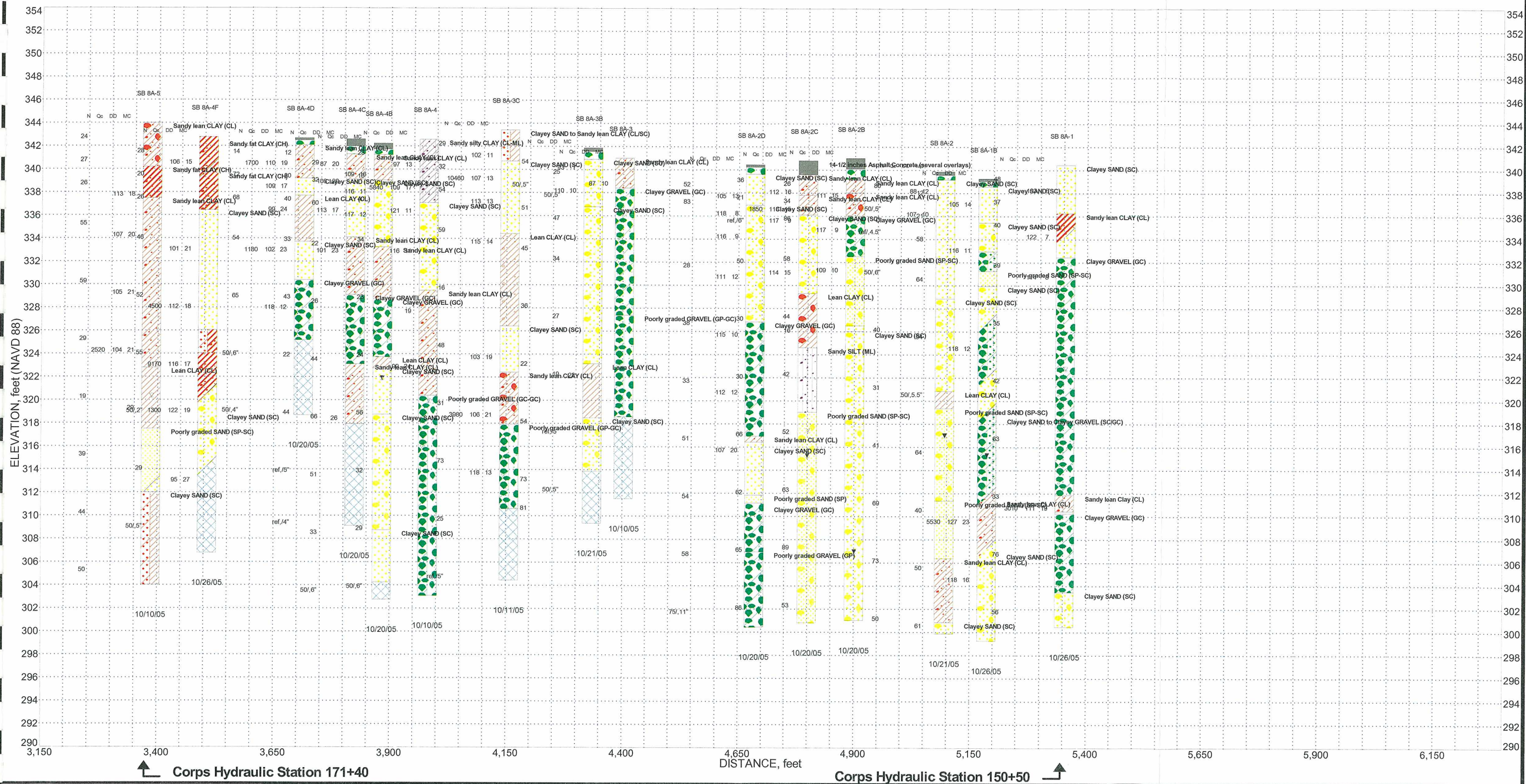
Figure
42



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 8 (1)

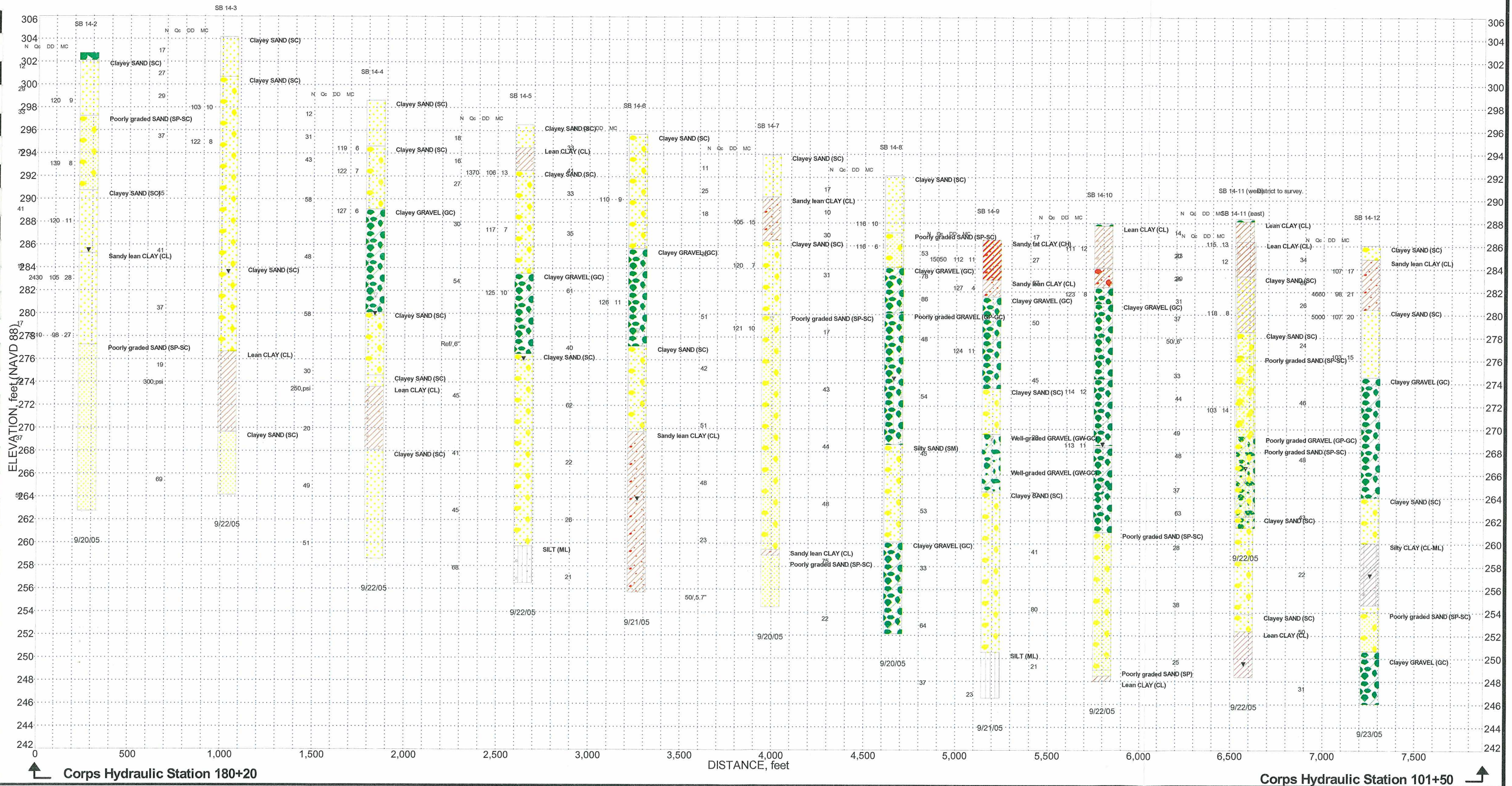
Figure
44



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 8 (2)

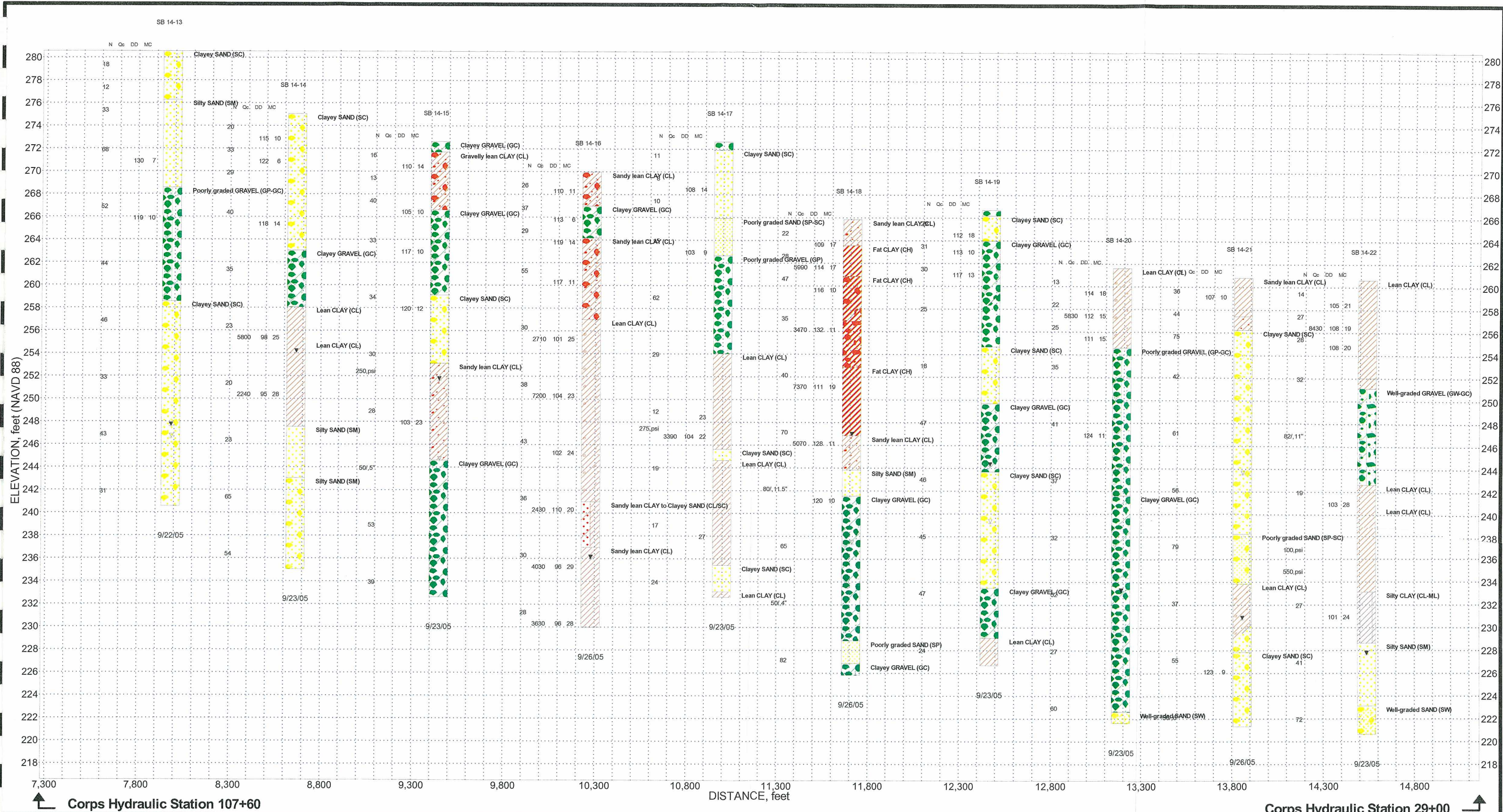
Figure
45



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 14 (1)

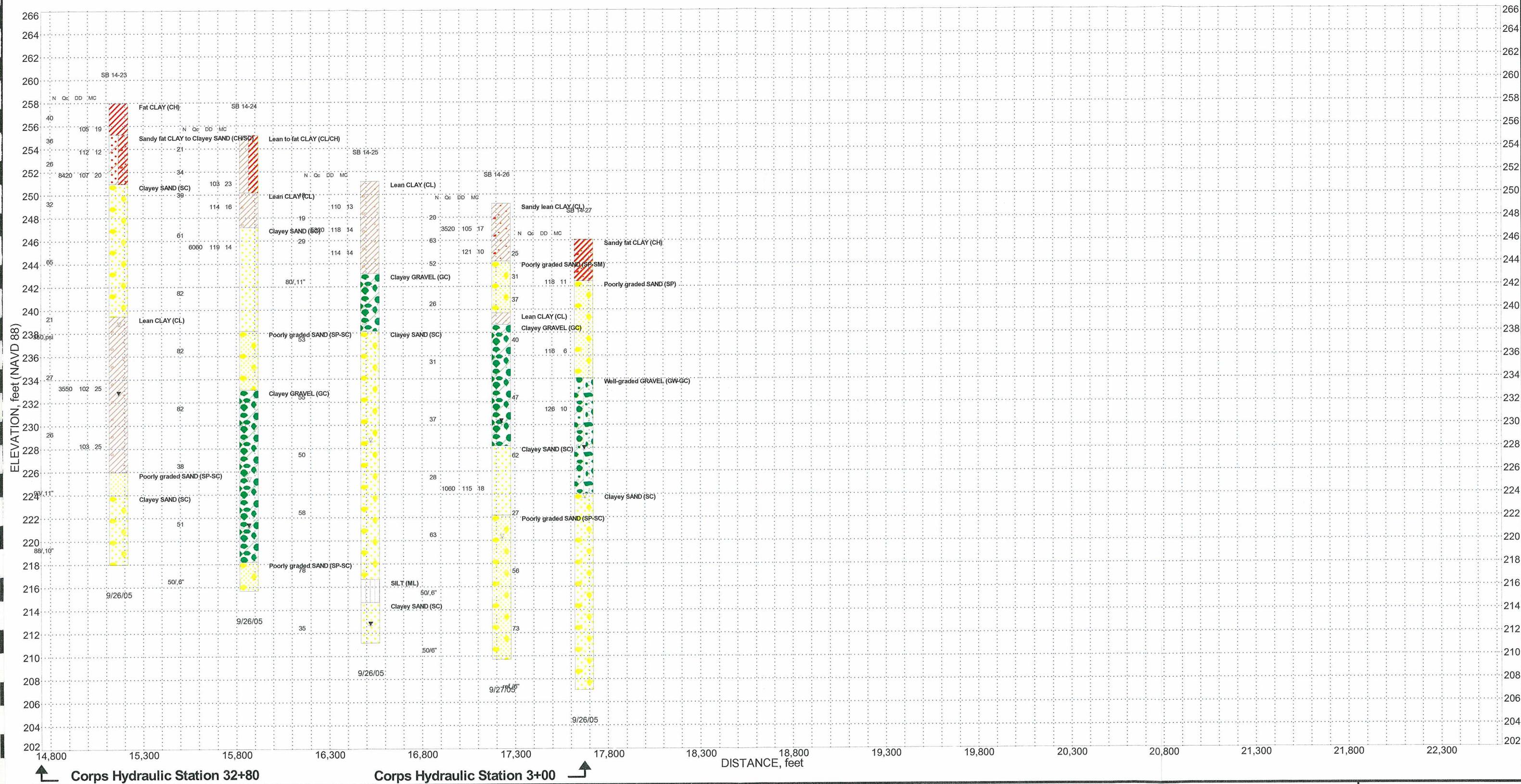
Figure
46



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 14 (2)

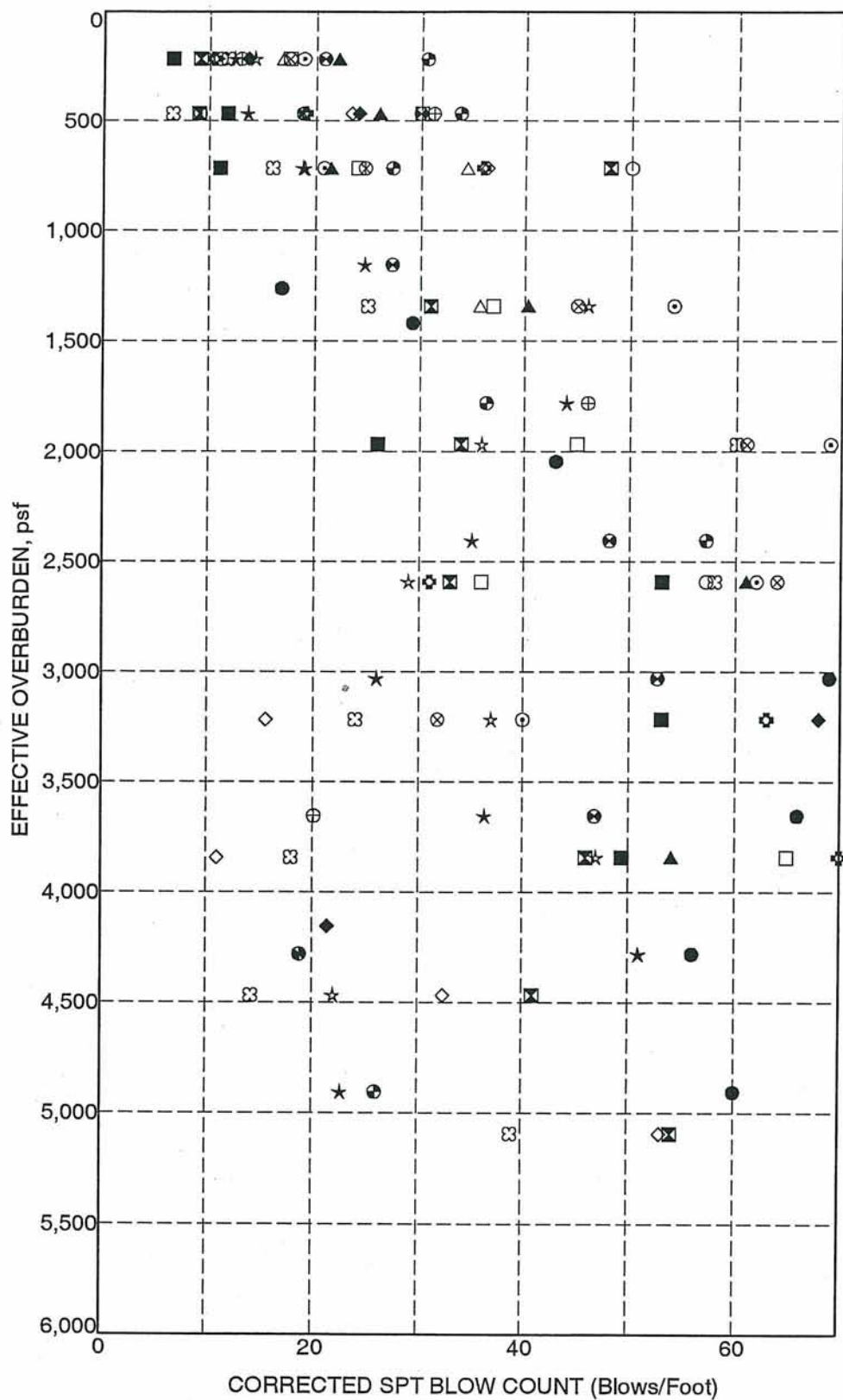
Figure
47



Project: UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

FENCE DIAGRAM REACH 14 (3)

Figure
48



LEGEND

Boring Number

Test Symbol

SB 4-1
SB 4-2
SB 4-3
SB 4-4
SB 4-5
SB 4-6
SB 4-7
SB 4-8
SB 4-9
SB 4-10
SB 4-11
SB 4-12
SB 4-13
SB 4-14
SB 4-15
SB 4-16
SB 4-17
SB 4-18

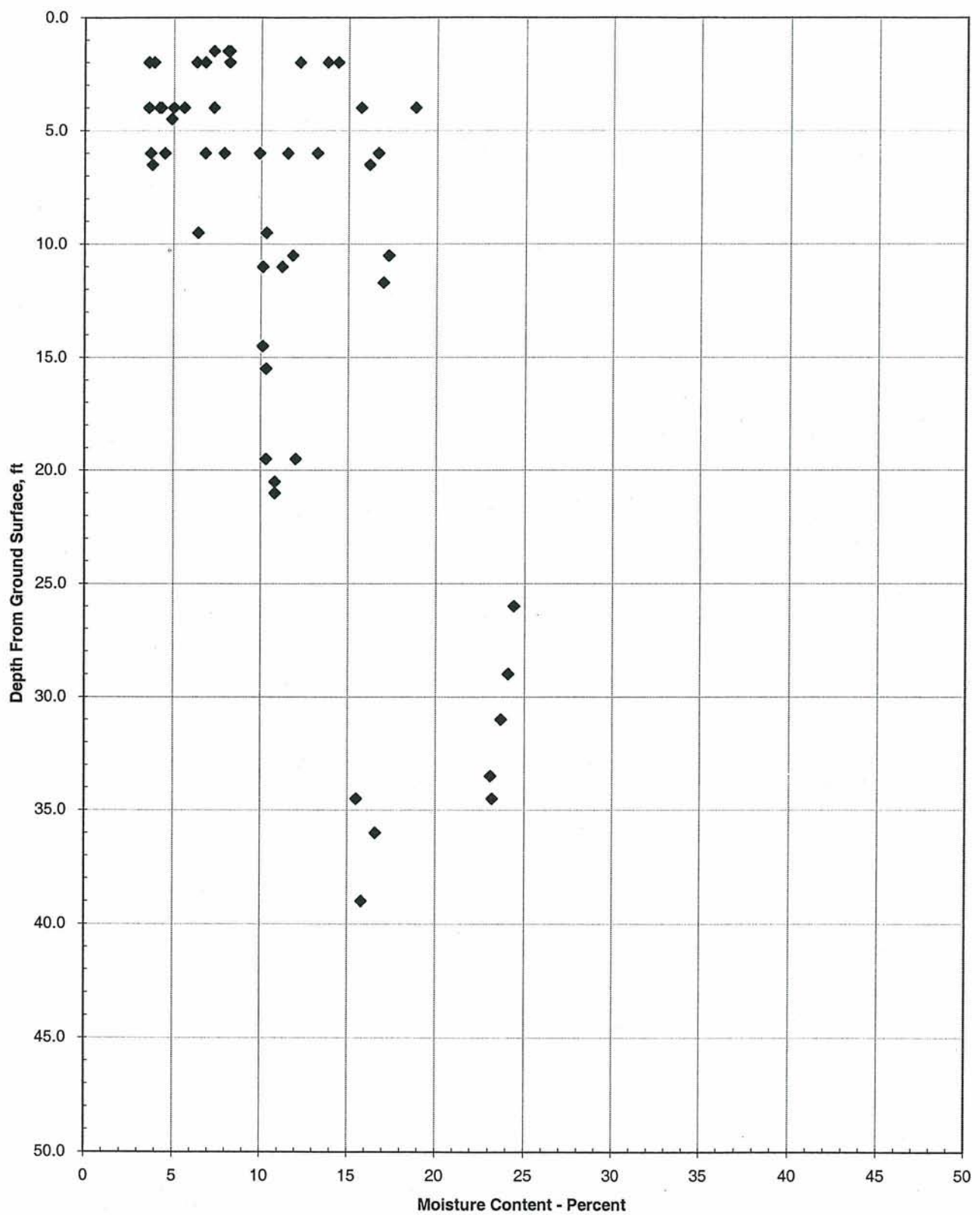
●
⊠
▲
★
⊙
⊕
○
△
⊗
⊕
□
⊗
⊕
★
⊗
■
◆
◇

UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

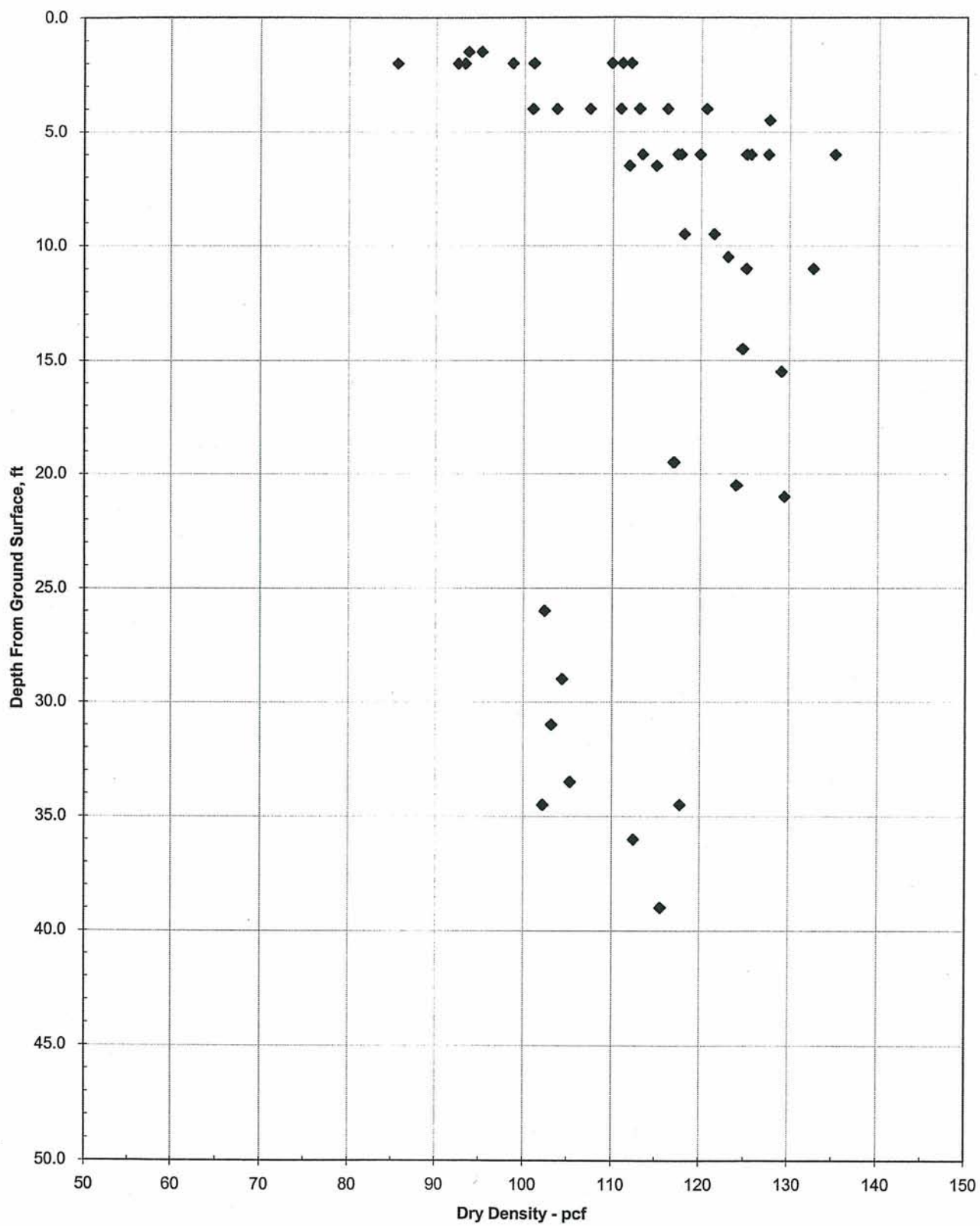
REACH 4
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

Figure 49

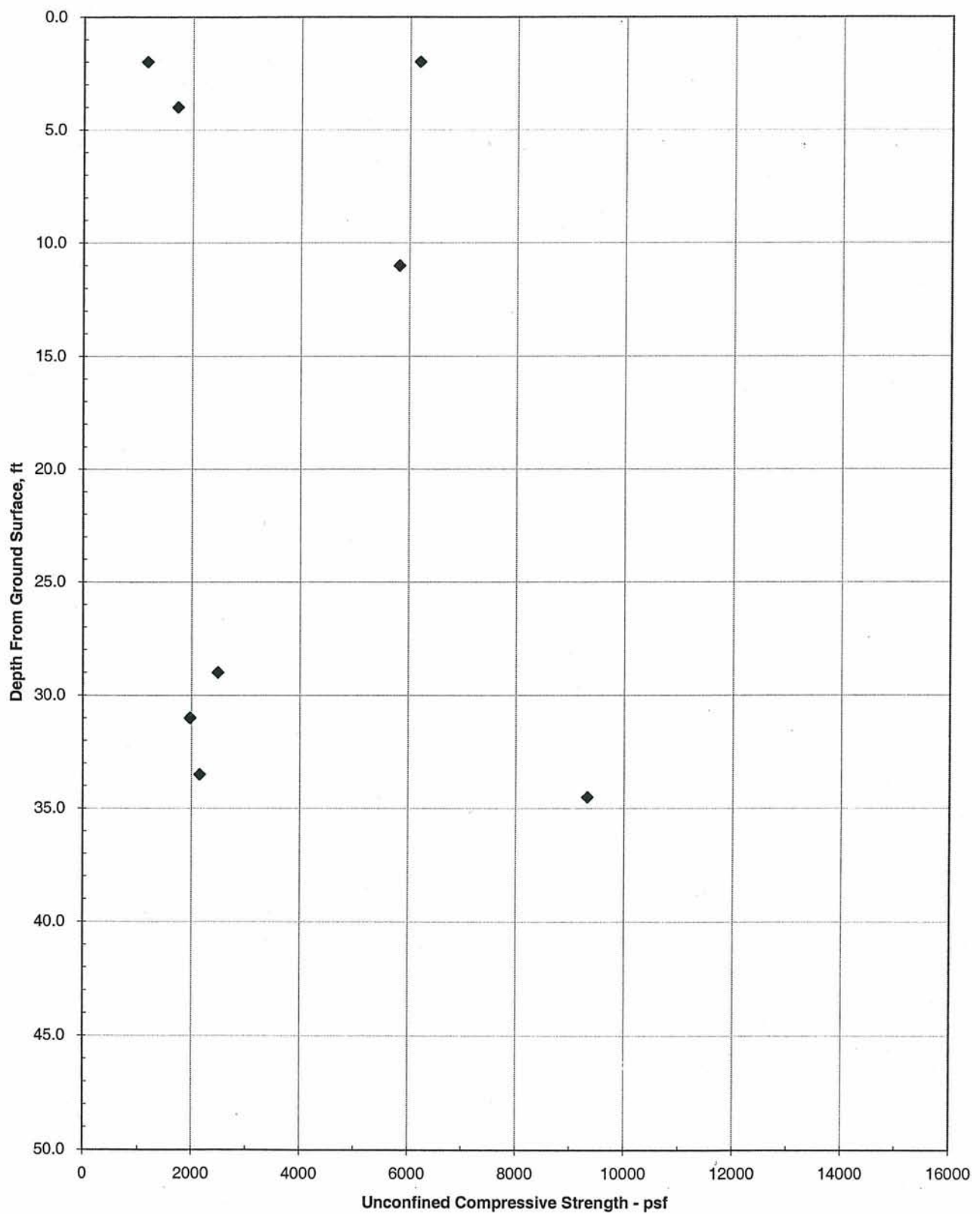
URS



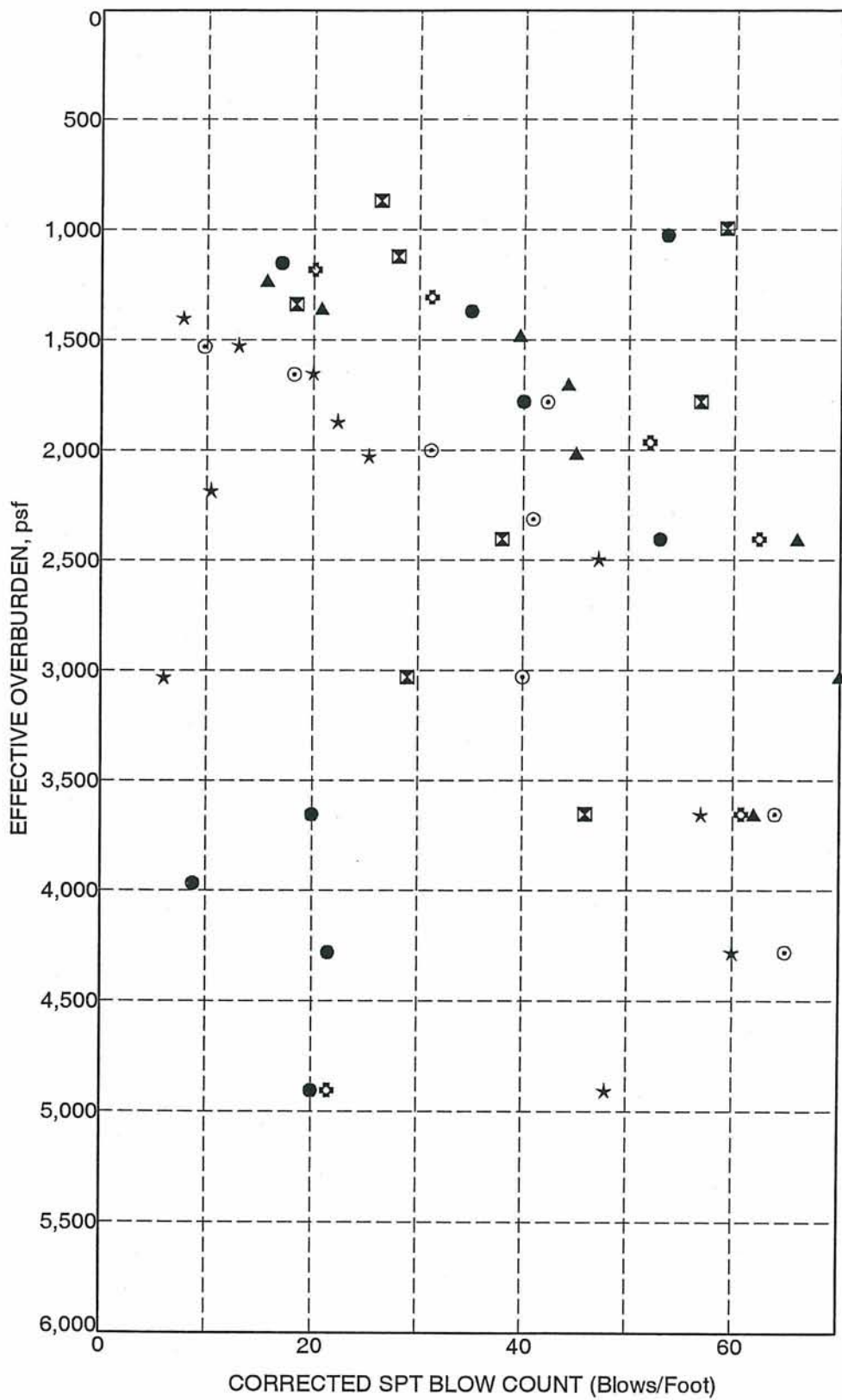
**Figure 51 - Moisture Content Profile of Reach 4
Upper Llagas Creek Protection Project**



**Figure 52 - Dry Density Profile of Reach 4
Upper Llagas Creek Protection Project**



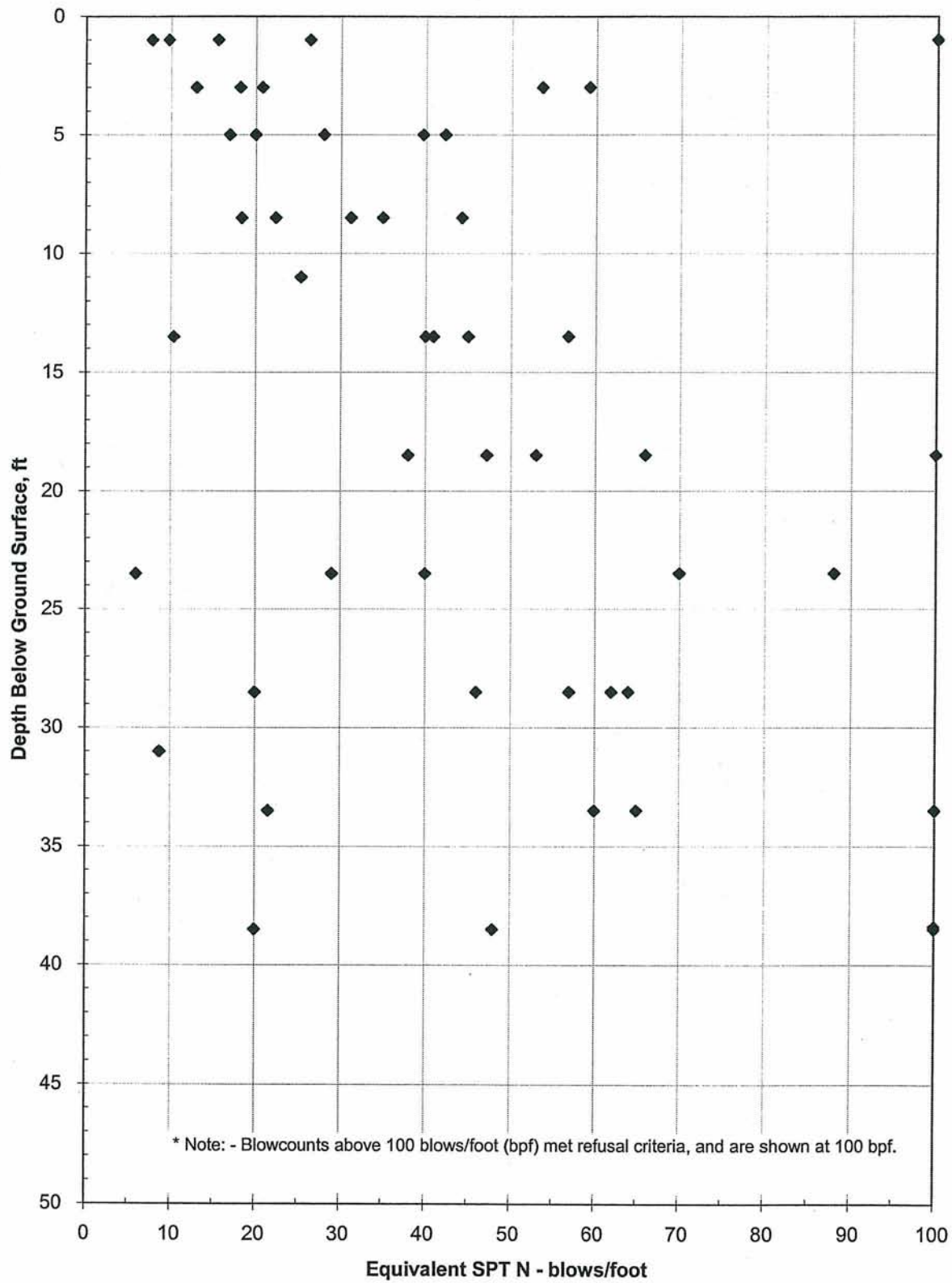
**Figure 53 - Unconfined Compressive Strength Profile of Reach 4
Upper Llagas Creek Protection Project**



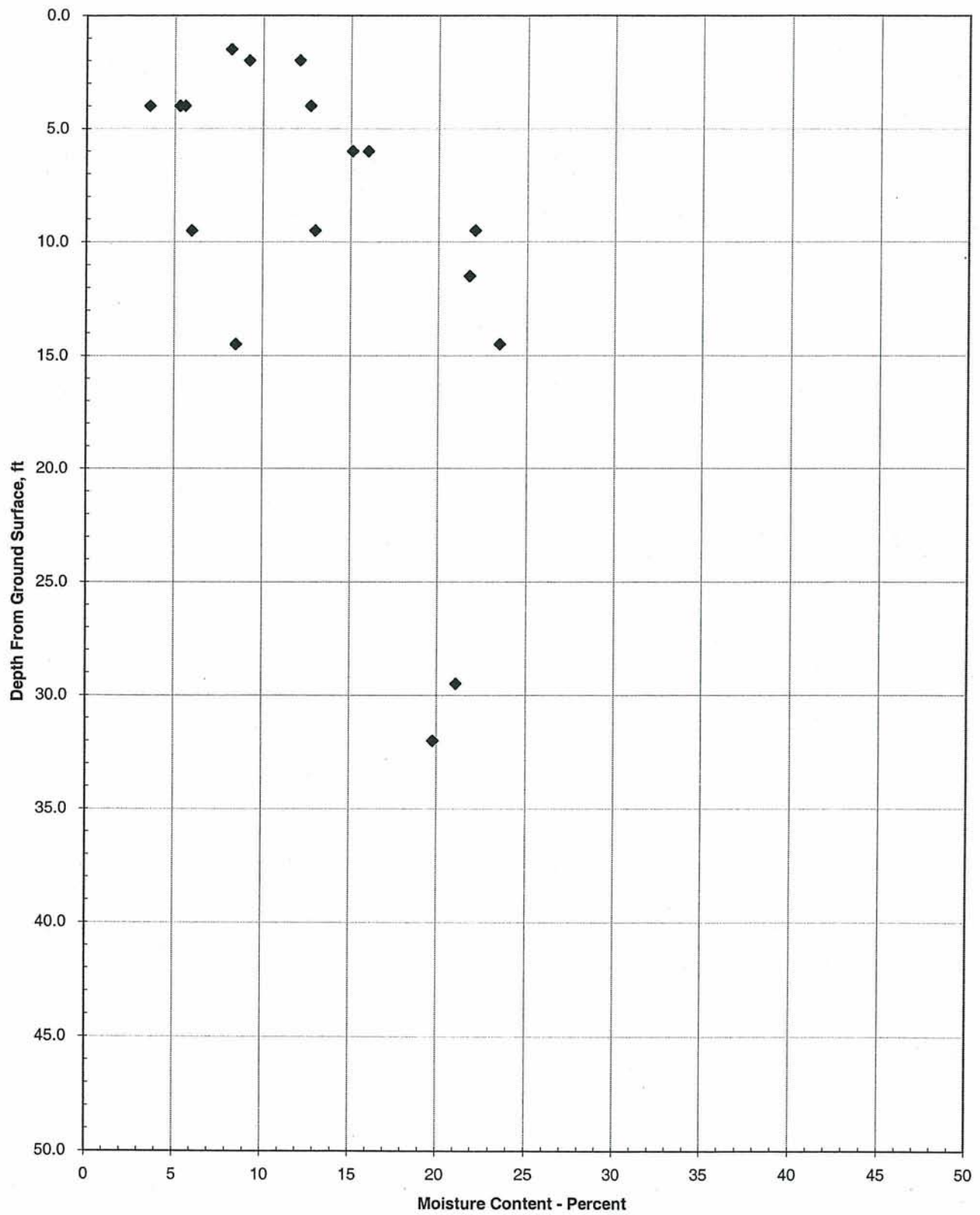
UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 5
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

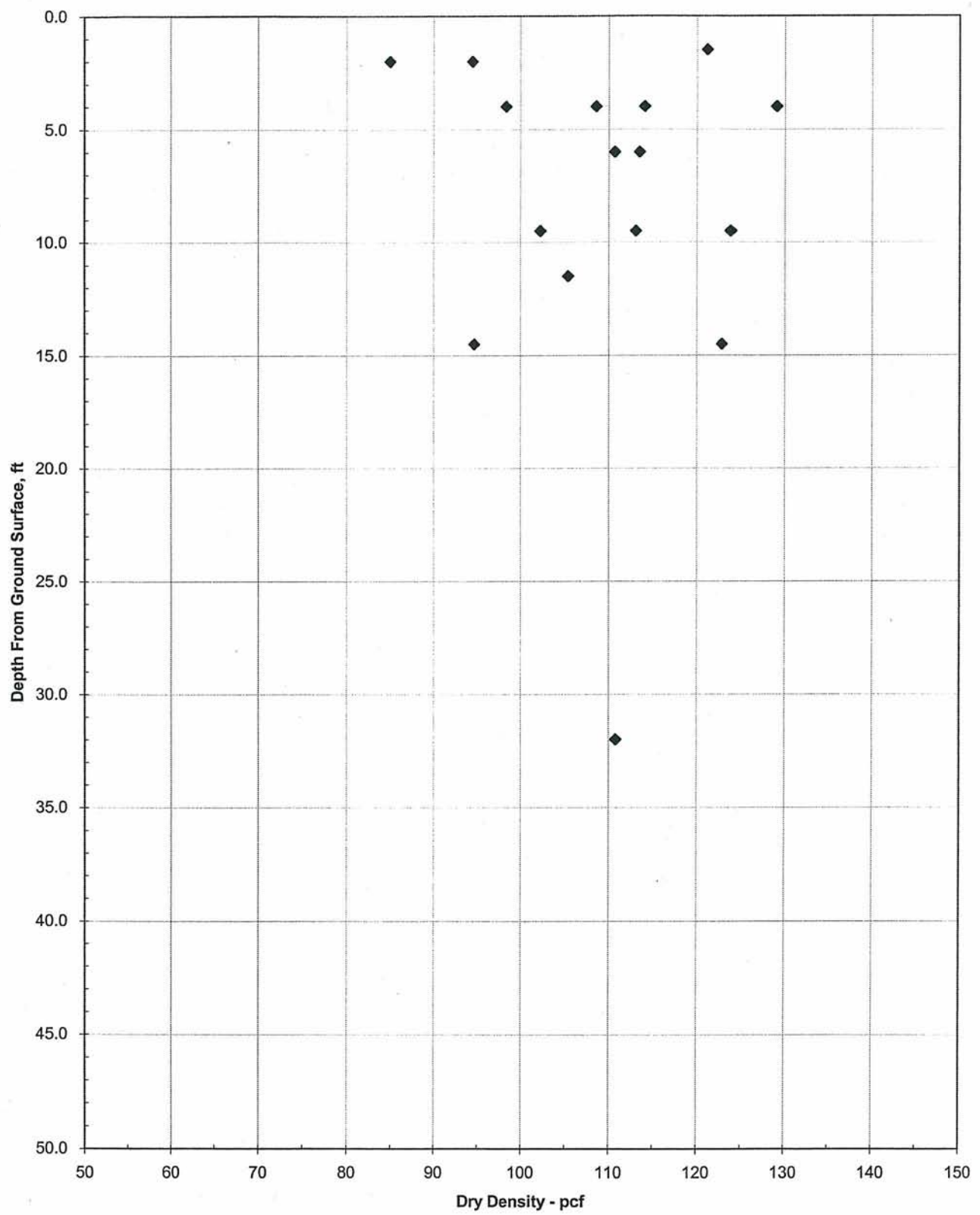
Figure 54



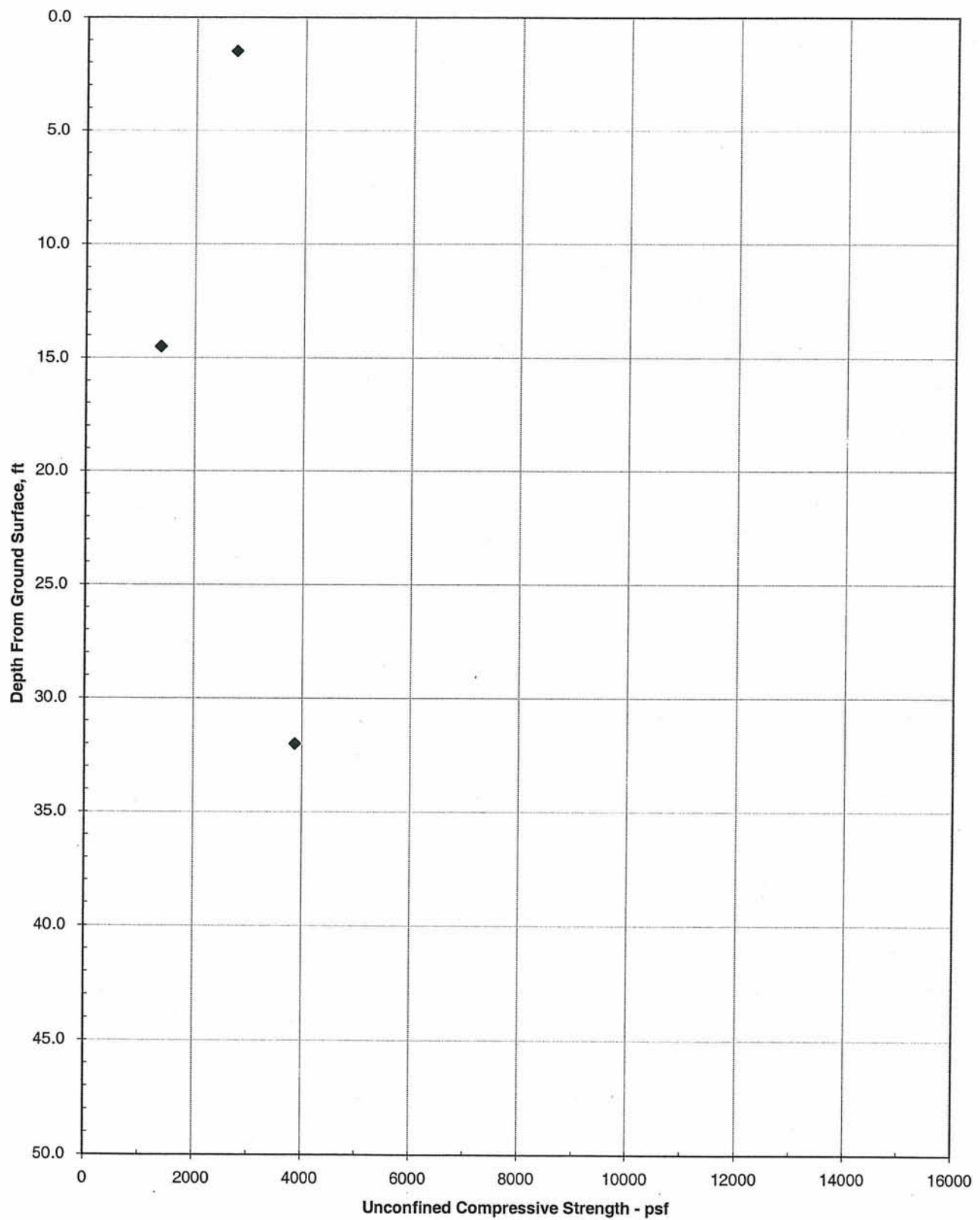
**Figure 55 - Corrected Equivalent SPT Blowcounts Profile of Reach 5
Upper Llagas Creek Protection Project**



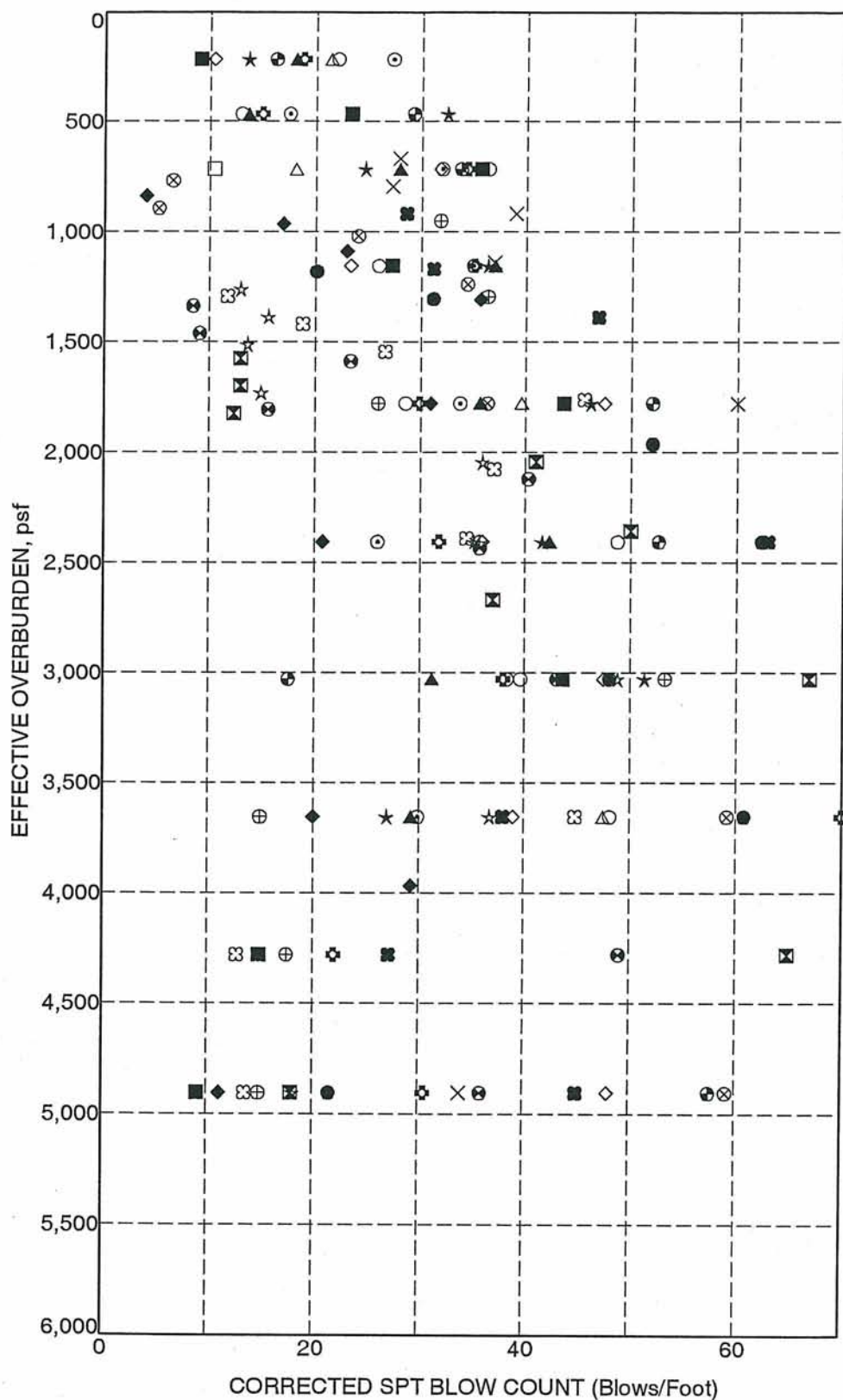
**Figure 56 - Moisture Content Profile of Reach 5
Upper Llagas Creek Protection Project**



**Figure 57 - Dry Density Profile of Reach 5
Upper Llagas Creek Protection Project**



**Figure 58 - Unconfined Compressive Strength Profile of Reach 5
Upper Llagas Creek Protection Project**



LEGEND

Boring Number

Test Symbol

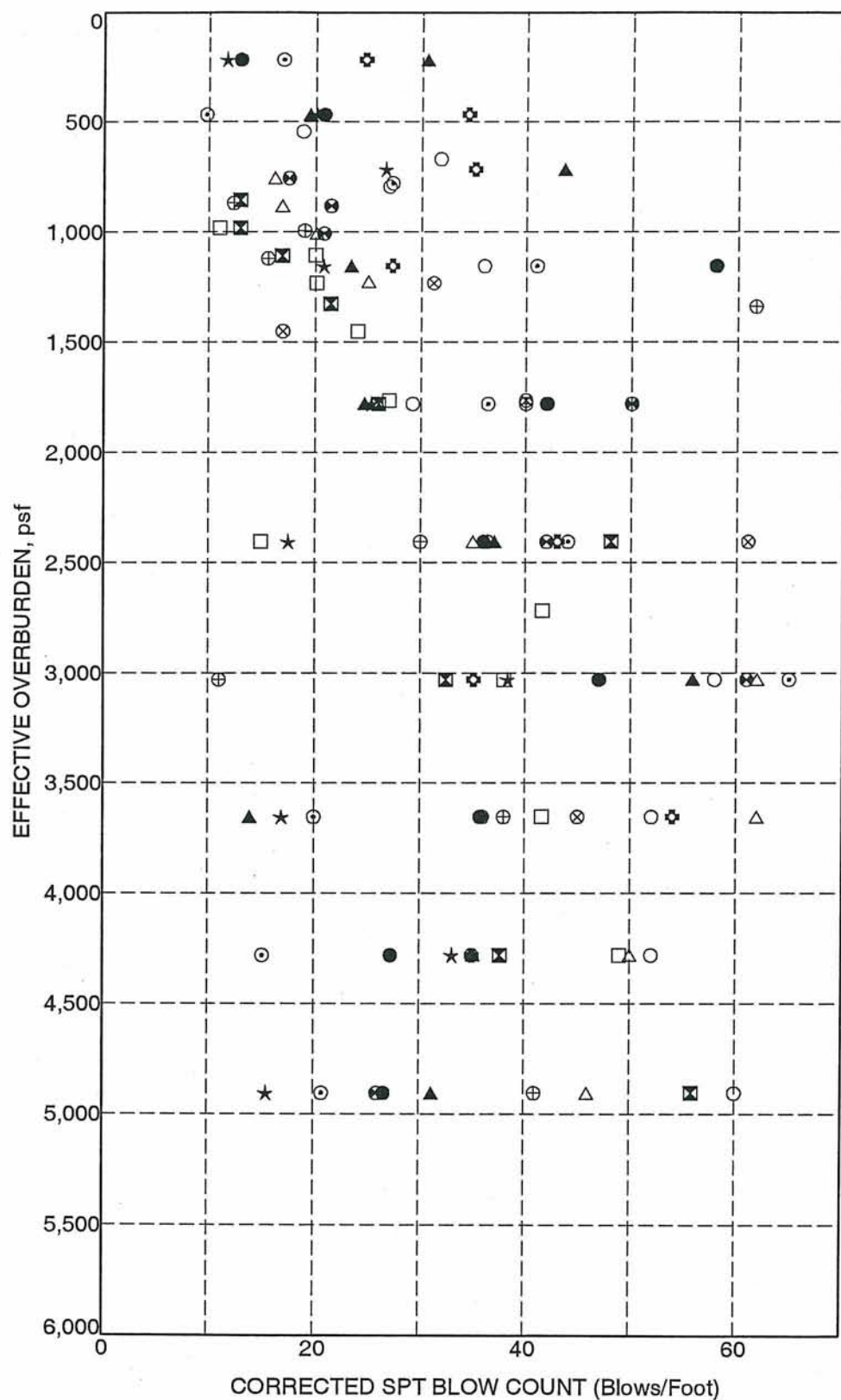
SB 6-1
SB 6-1B
SB 6-1C
SB 6-1D
SB 6-2
SB 6-3
SB 6-4
SB 6-5
SB 6-6
SB 6-7
SB 6-8
SB 6-9
SB 6-10
SB 6-11
SB 6-12
SB 6-13
SB 6-14
SB 6-16
SB 6-17
SB 6-18

●
⊠
▲
★
⊙
⊕
○
△
⊗
⊕
□
⊗
⊕
☆
⊗
■
◆
◇
×⊗

UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 6
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

Figure 59



LEGEND

Boring Number

Test Symbol

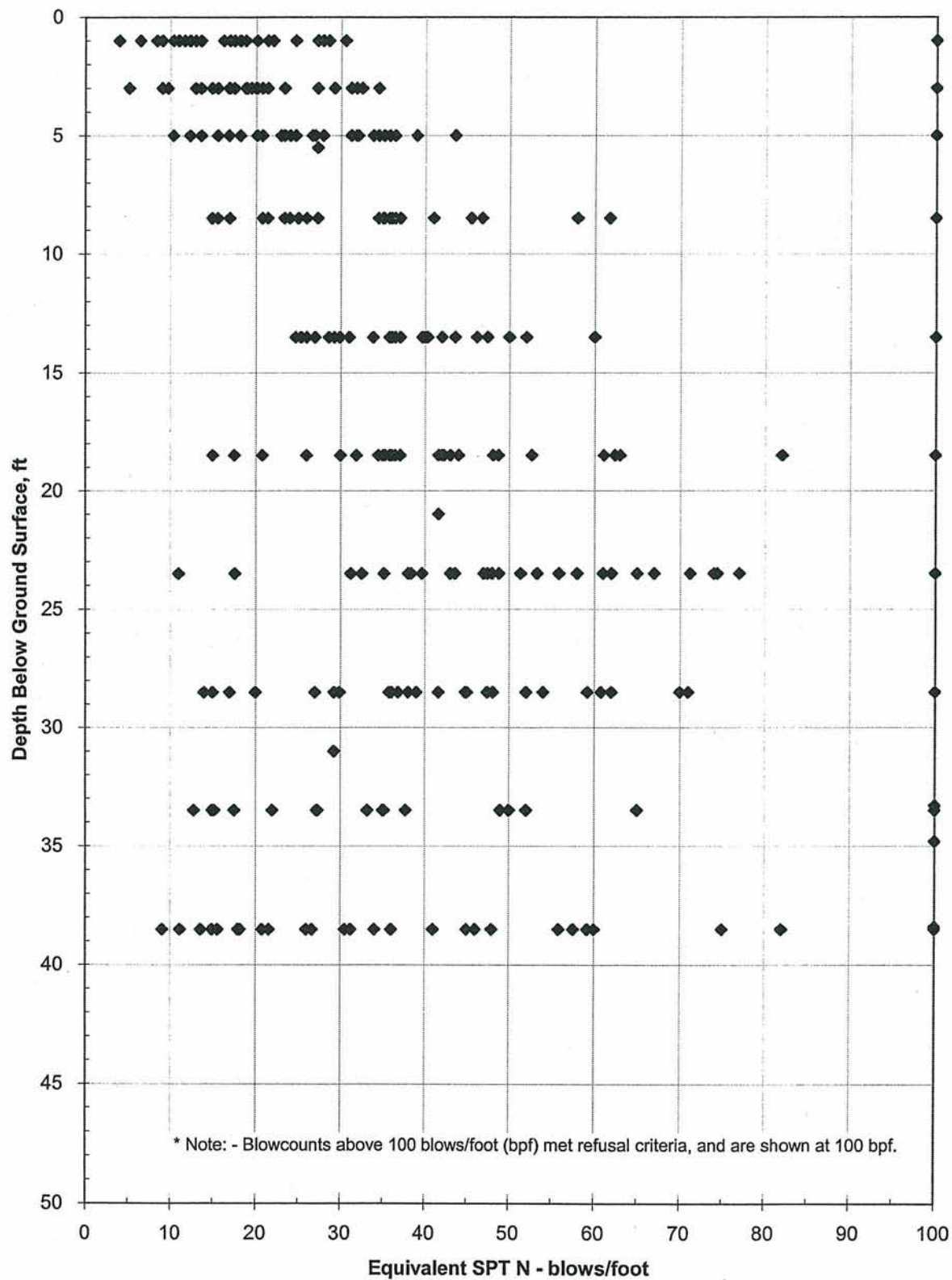
SB 6-19
SB 6-20
SB 6-21
SB 6-21B
SB 6-22
SB 6-22B
SB 6-23
SB 6-24
SB 6-25
SB 6-26
SB 6-27
SB 6-28

●
⊗
▲
★
⊙
⊕
○
△
⊗
⊕
□
⊗

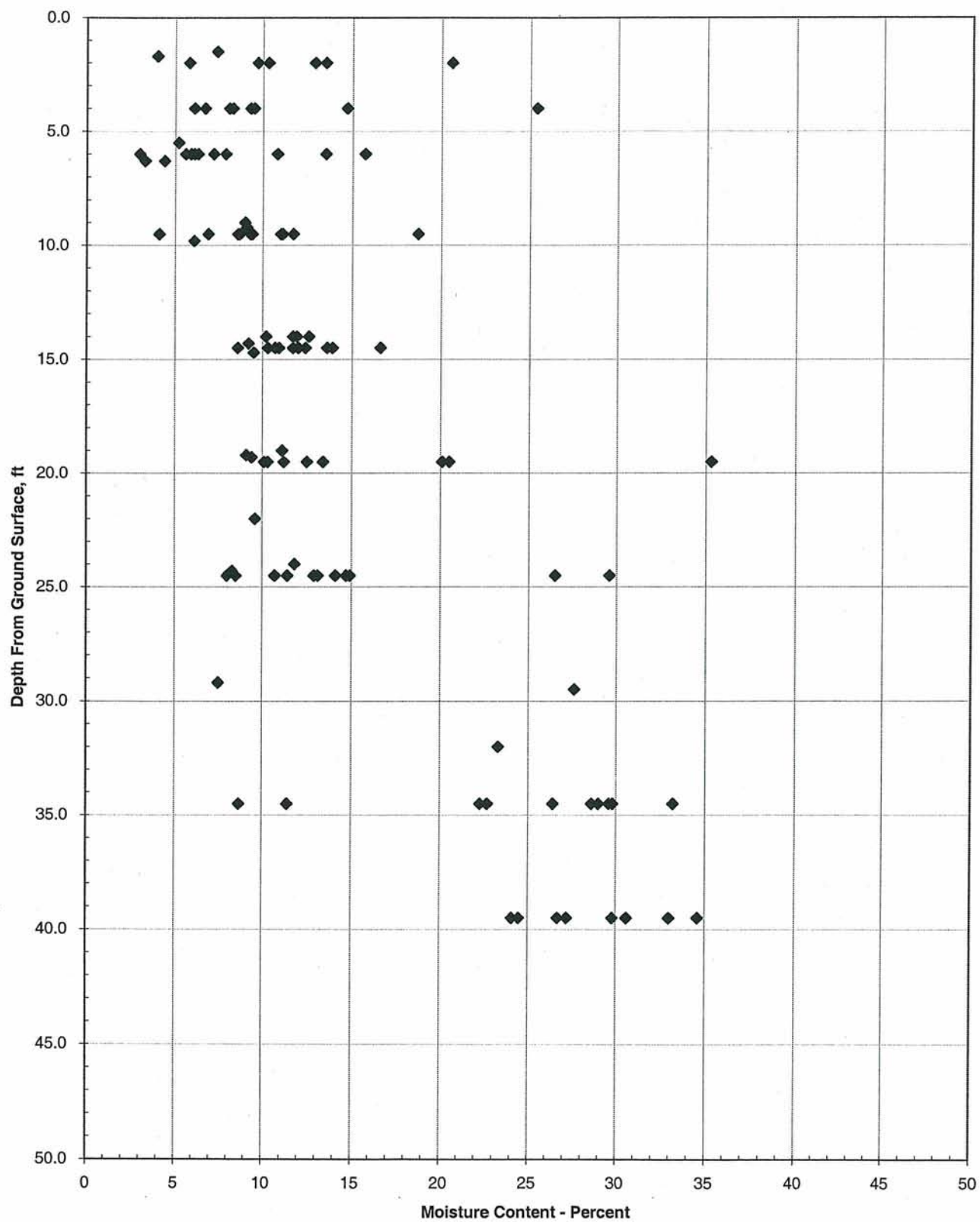
UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 6
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

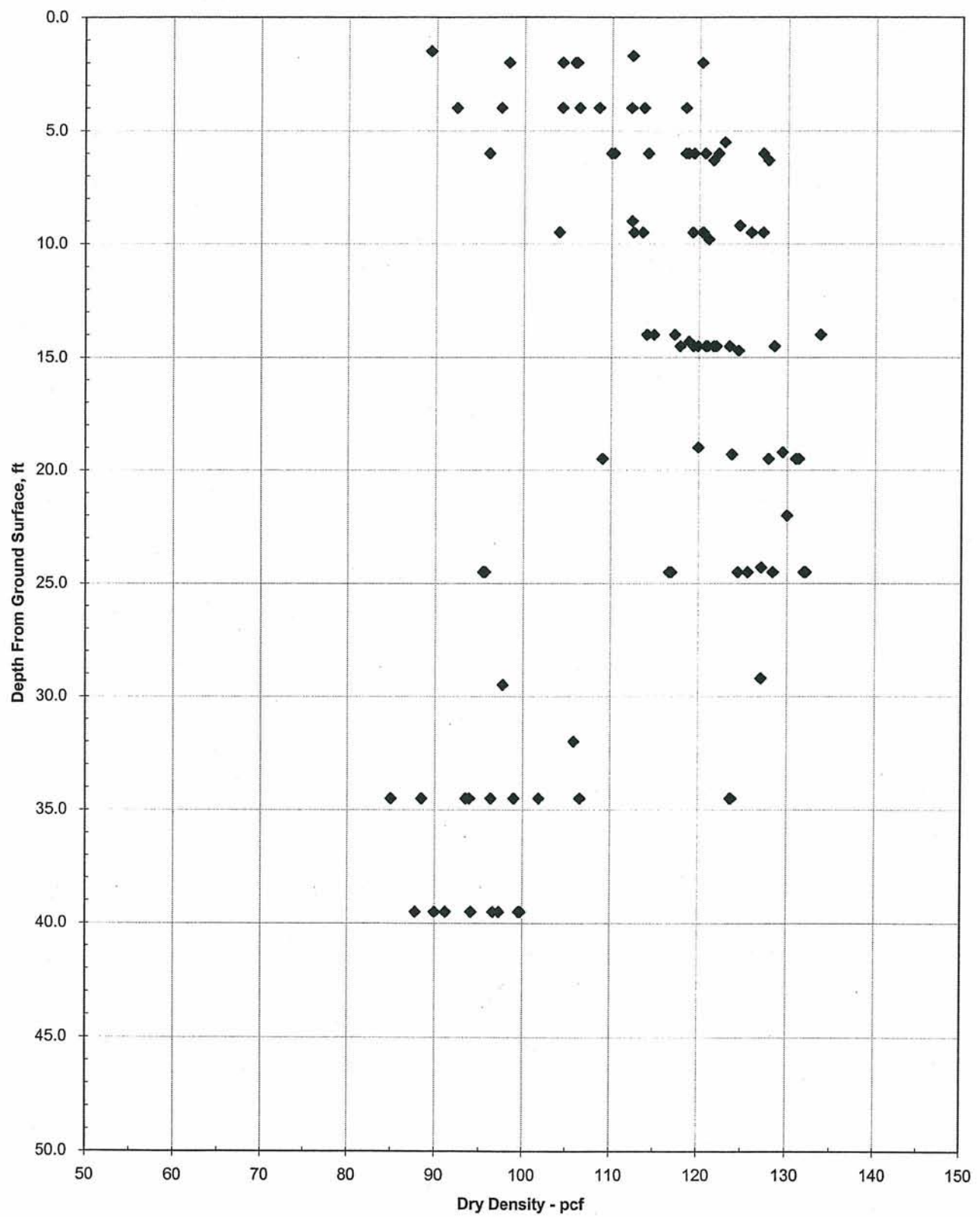
Figure 60



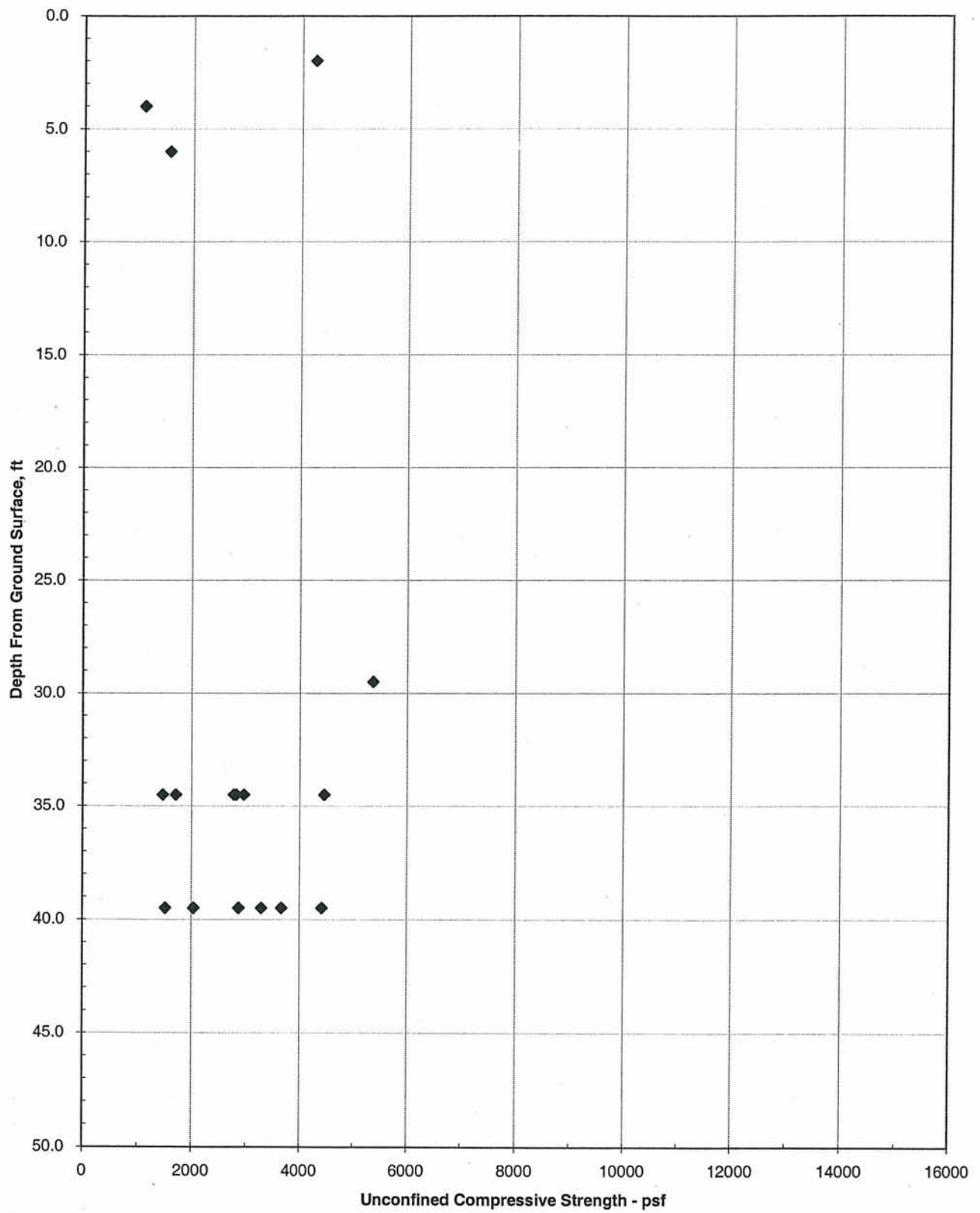
**Figure 61 - Corrected Equivalent SPT Blowcounts Profile of Reach 6
Upper Llagas Creek Protection Project**



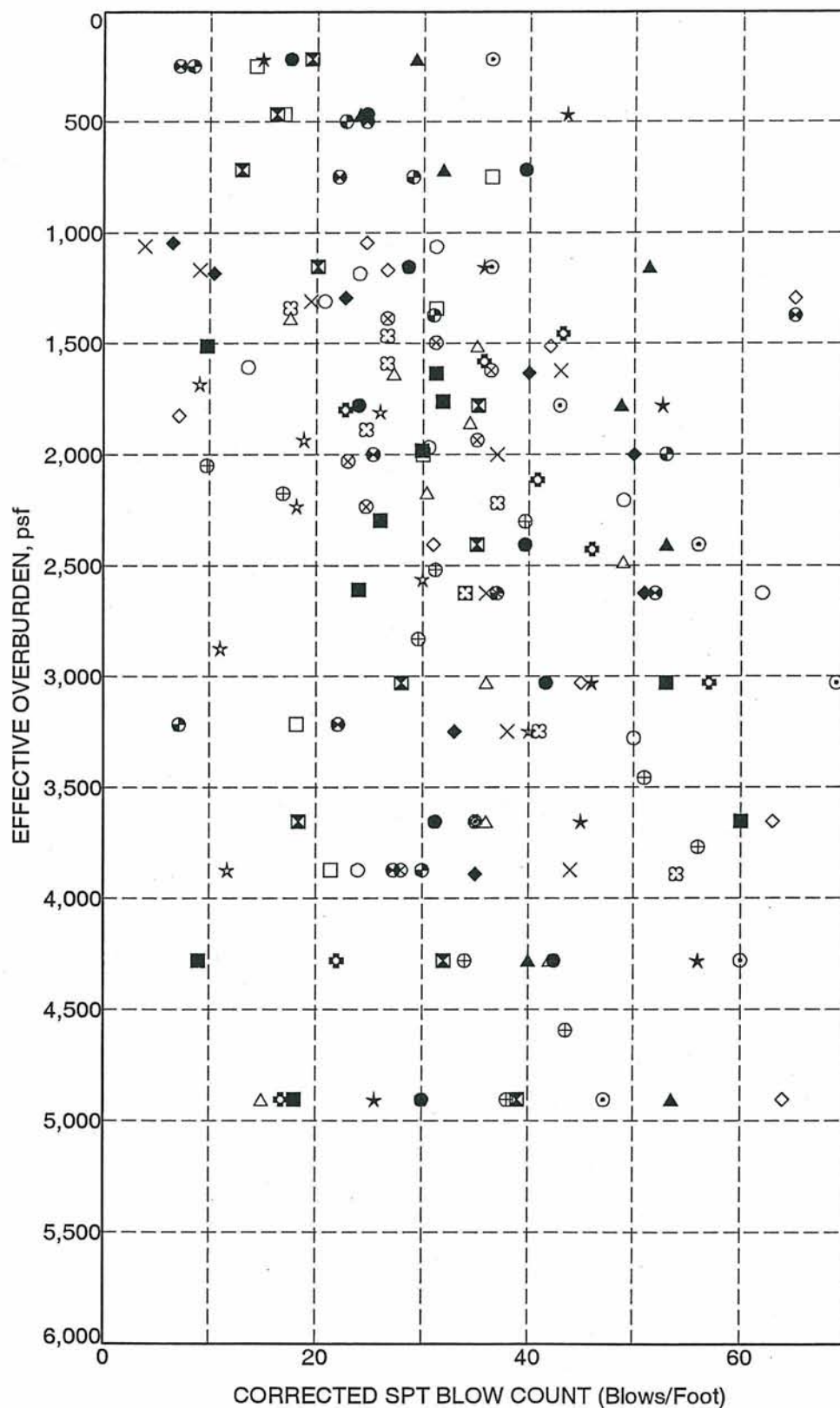
**Figure 62 - Moisture Content Profile of Reach 6
Upper Llagas Creek Protection Project**



**Figure 63 - Dry Density Profile of Reach 6
Upper Llagas Creek Protection Project**



**Figure 64 - Unconfined Compressive Strength Profile of Reach 6
Upper Llagas Creek Protection Project**



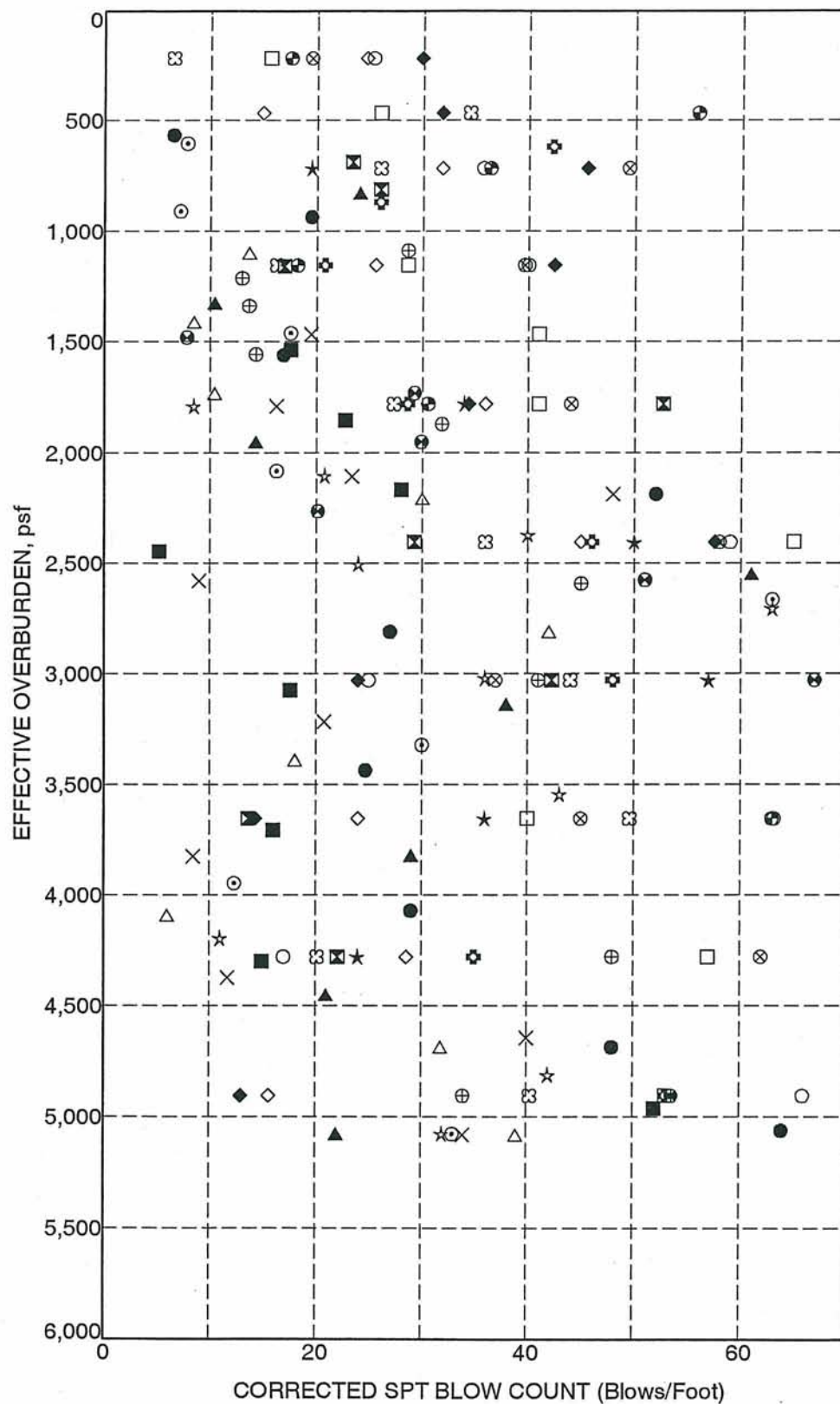
LEGEND

Boring Number	Test Symbol
SB 7A-1	●
SB 7A-2	⊠
SB 7A-3	▲
SB 7A-4	★
SB 7A-4B	⊙
SB 7A-4C	⊕
SB 7A-5_EXIST	○
SB 7A-5B	△
SB 7A-6_EXIST	⊗
SB 7A-6B	⊕
SB 7A-7_EXIST	□
SB 7A-8_EXIST	⊗
SB 7A-9_EXIST	⊕
SB 7A-10_EXIST	★
SB 7A-11_EXIST	⊗
SB 7A-11B	■
SB 7A-12_EXIST	◆
SB 7A-12B	◇
SB 7A-13_EXIST	×

UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 7A
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

Figure 65



LEGEND

Boring Number	Test Symbol
SB 7B-1_EXIST	●
SB 7B-1B	⊠
SB 7B-2_EXIST	▲
SB 7B-2B	★
SB 7B-3_EXIST	⊙
SB 7B-3B	⊕
SB 7B-3C	○
SB 7B-4_EXIST	△
SB 7B-4B	⊗
SB 7B-4C	⊕
SB 7B-4D	□
SB 7B-4E	⊗
SB 7B-4F	⊗
SB 7B-5_EXIST	☆
SB 7B-5B	⊗
SB 7B-6_EXIST	■
SB 7B-6B	◆
SB 7B-6C	◇
SB 7B-7_EXIST	×

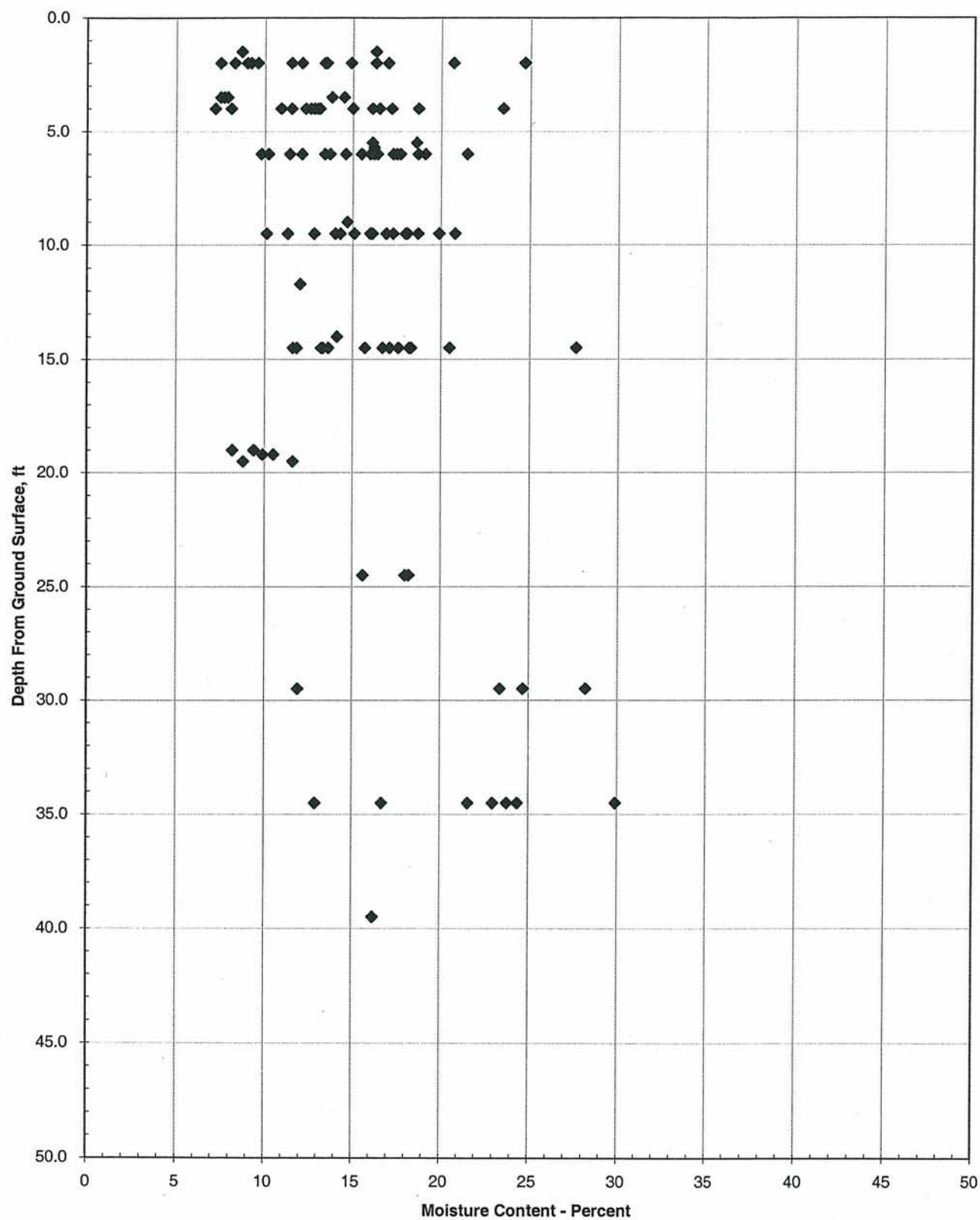
UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 7B
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

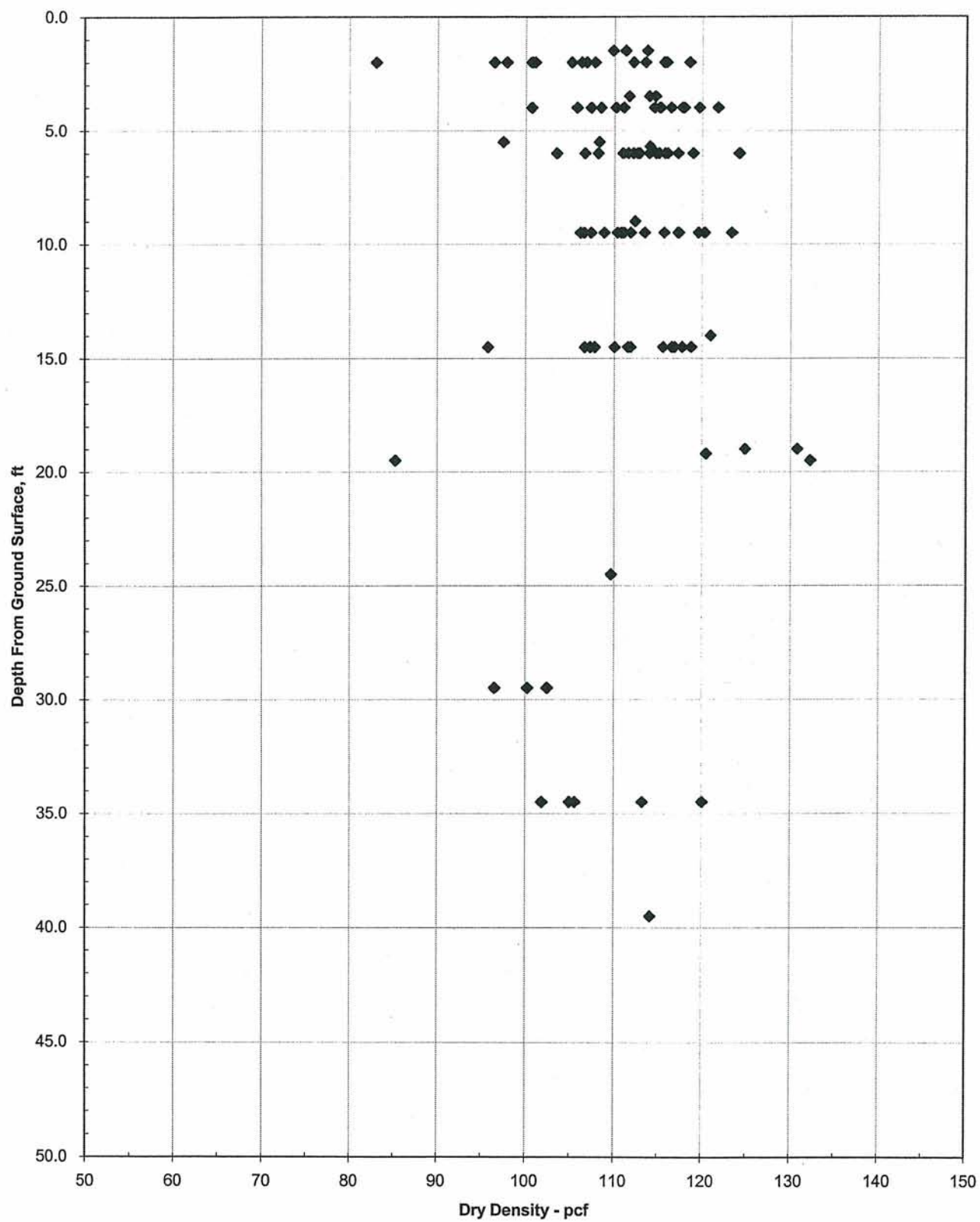
Figure 66



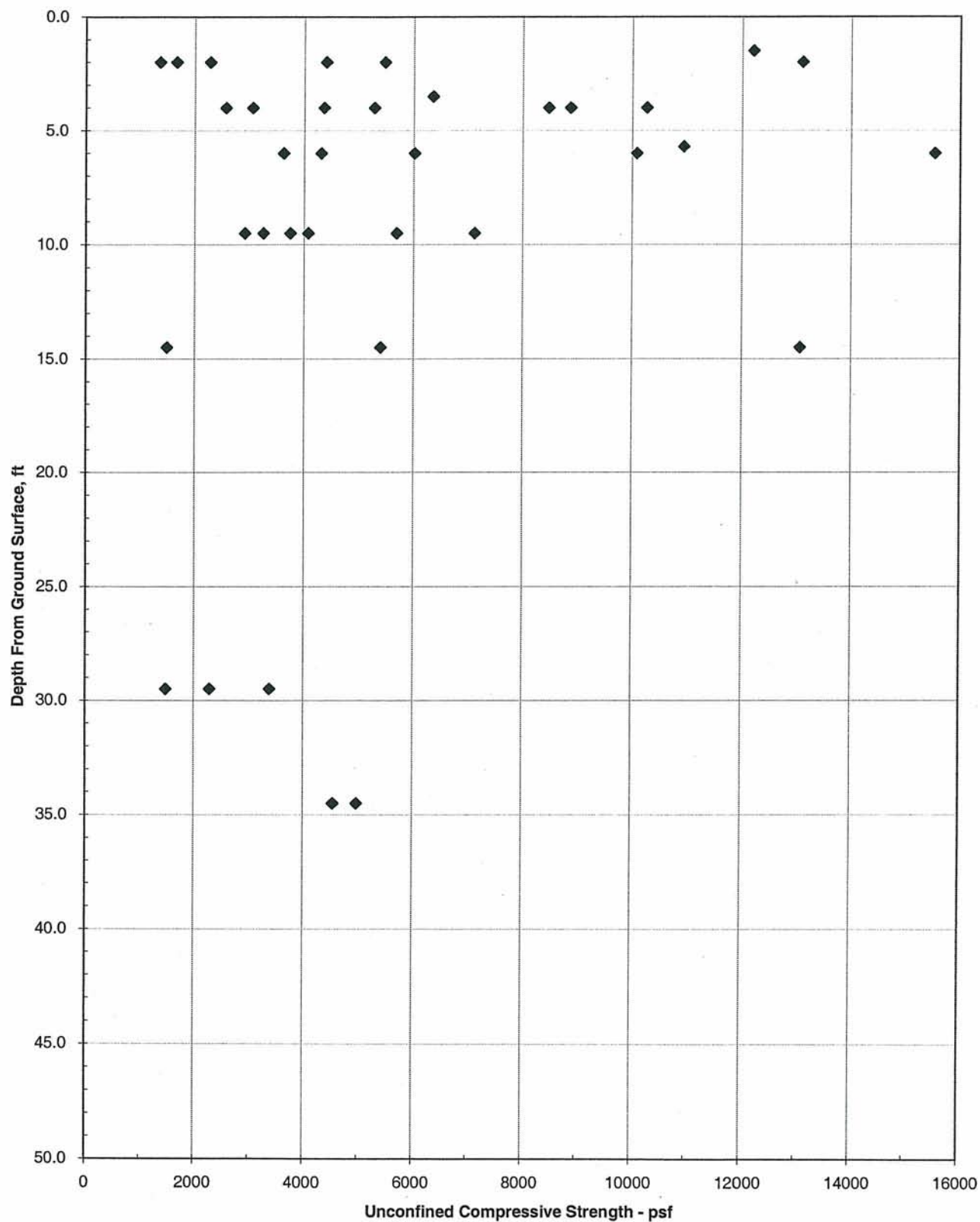
**Figure 67 - Corrected Equivalent SPT Blowcounts Profile of Reach 7A and 7B
Upper Llagas Creek Protection Project**



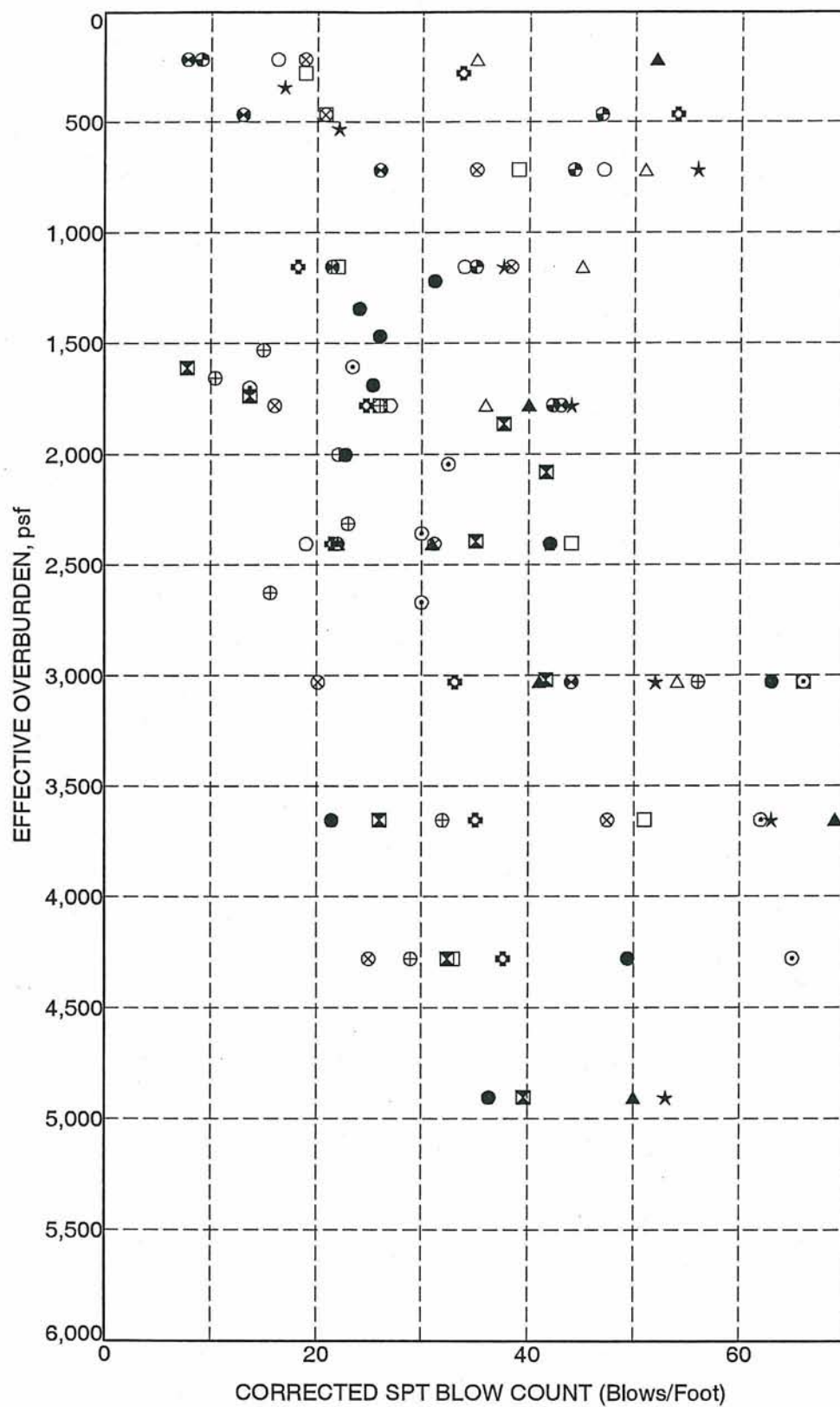
**Figure 68 - Moisture Content Profile of Reach 7A and 7B
Upper Llagas Creek Protection Project**



**Figure 69 - Dry Density Profile of Reach 7A and 7B
Upper Llagas Creek Protection Project**



**Figure 70 - Unconfined Compressive Strength Profile of Reach 7A and 7B
Upper Llagas Creek Protection Project**



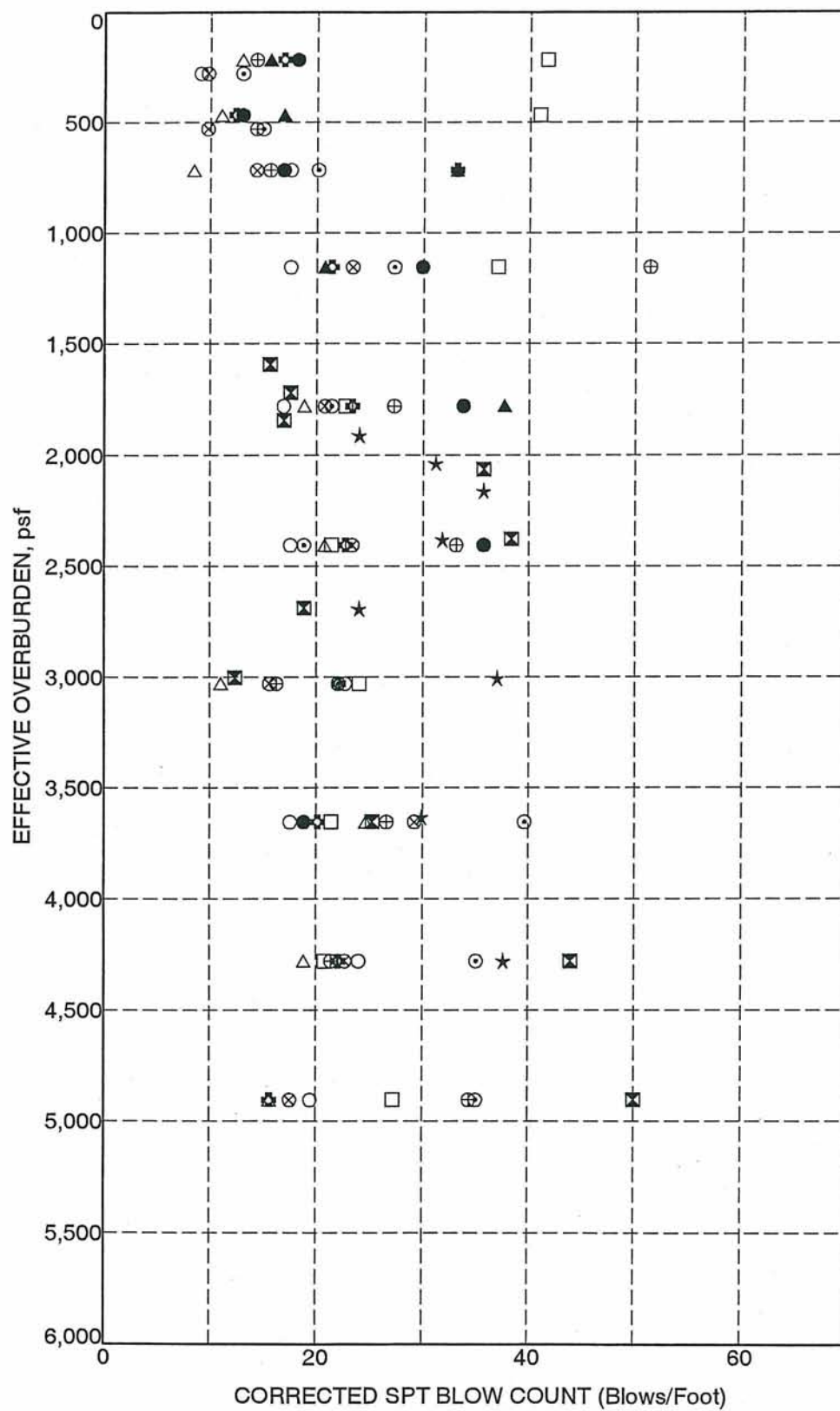
LEGEND

Boring Number	Test Symbol
SB 8A-1	●
SB 8A-1B	⊗
SB 8A-2	▲
SB 8A-2B	★
SB 8A-2C	⊙
SB 8A-2D	⊕
SB 8A-3	○
SB 8A-3B	△
SB 8A-3C	⊗
SB 8A-4	⊕
SB 8A-4B	□
SB 8A-4C	⊗
SB 8A-4D	⊕

UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 8
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

Figure 71



LEGEND

Boring Number	Test Symbol
SB 8A-4F	●
SB 8A-5	⊠
SB 8A-5B	▲
SB 8A-6	★
SB 8A-6B	⊙
SB 8A-7	⊕
SB 8A-7B	○
SB 8A-8	△
SB 8A-8B	⊗
SB 8A-9	⊕
SB 8A-9B	□

UPPER LLAGAS CREEK FLOOD PROTECTION
 Project Number: 28649692

REACH 8
CORRECTED SPT BLOW COUNT
 vs
EFFECTIVE OVERBURDEN

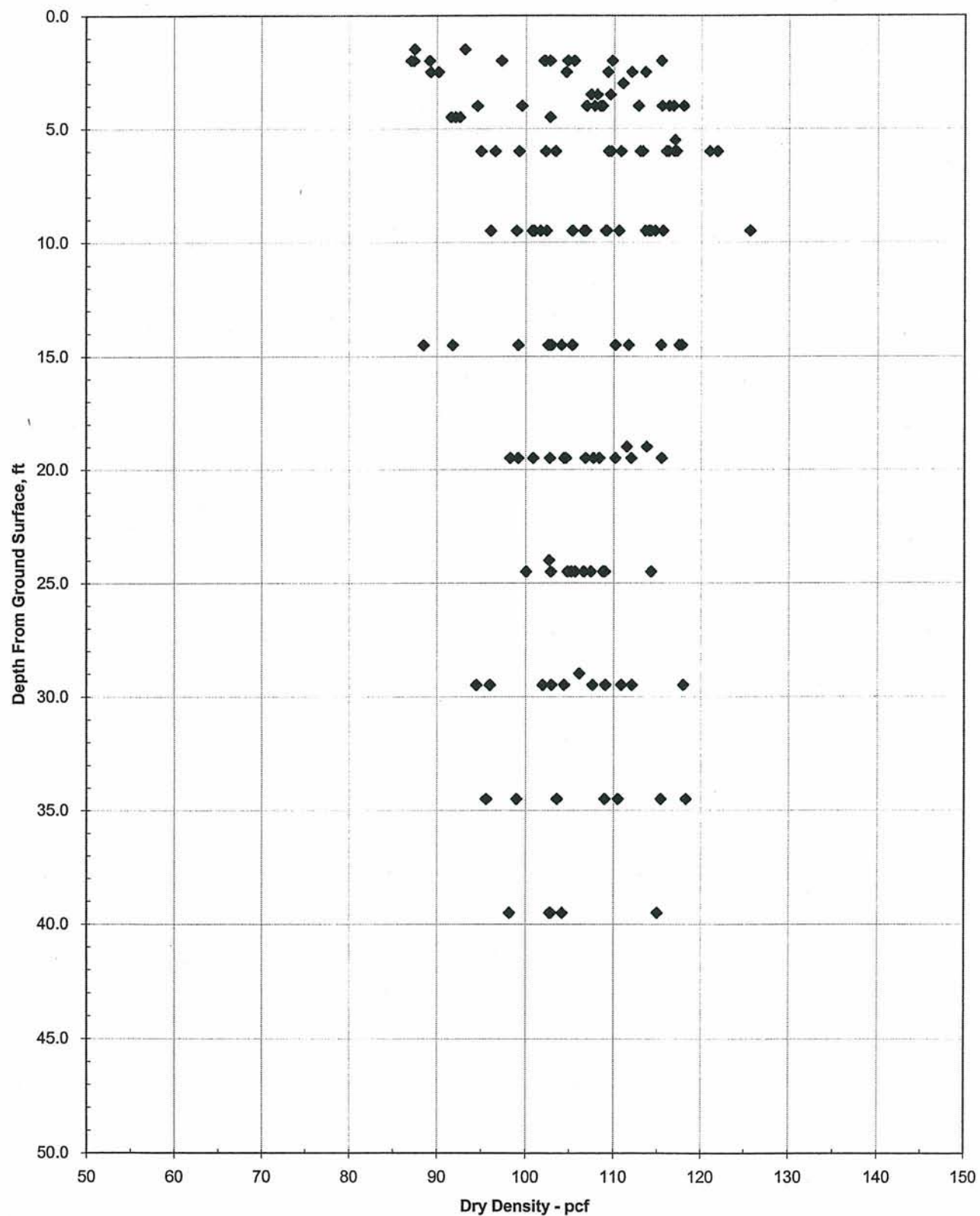
Figure 72



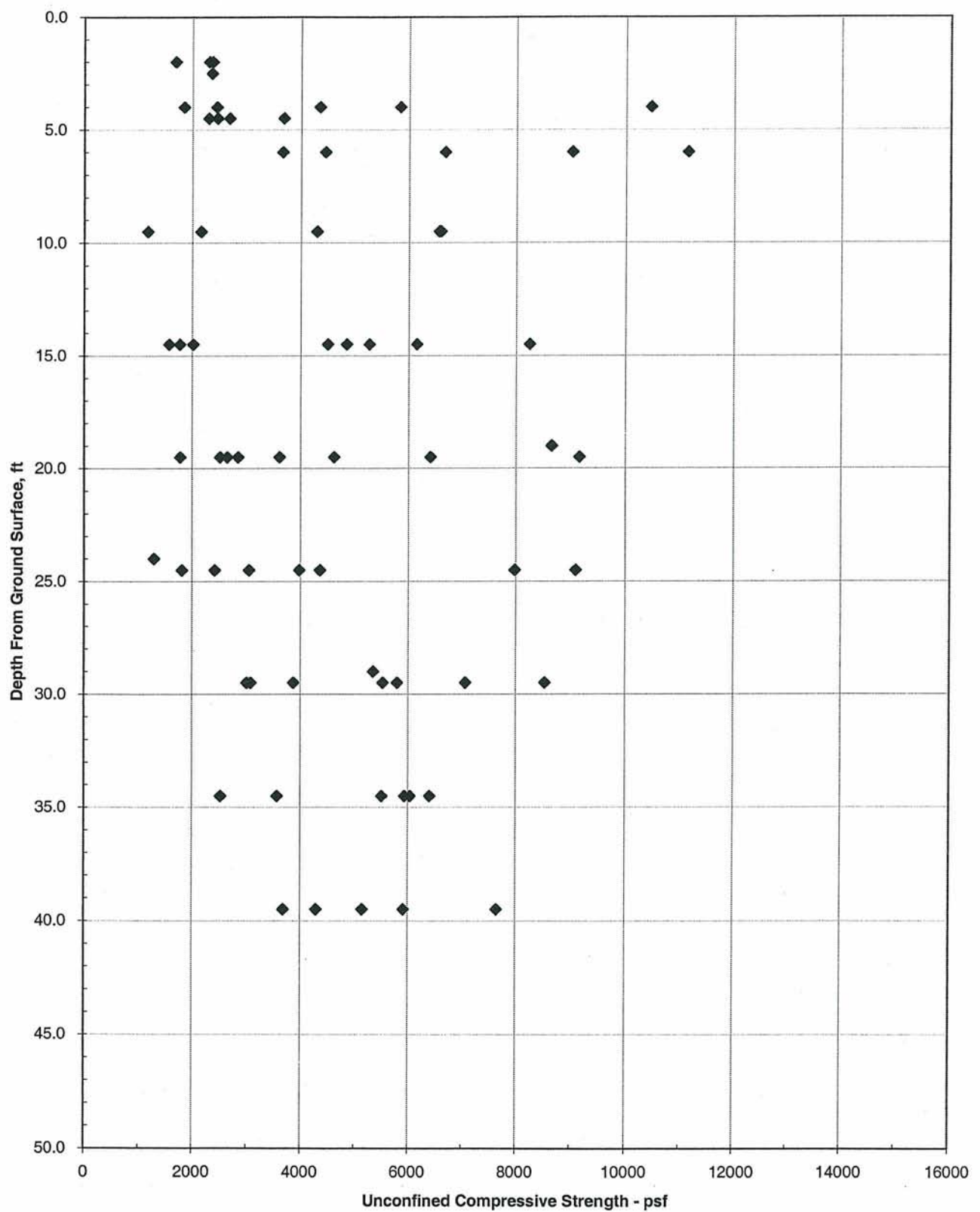
**Figure 73 - Corrected Equivalent SPT Blowcounts Profile of Reach 8A
Upper Llagas Creek Protection Project**



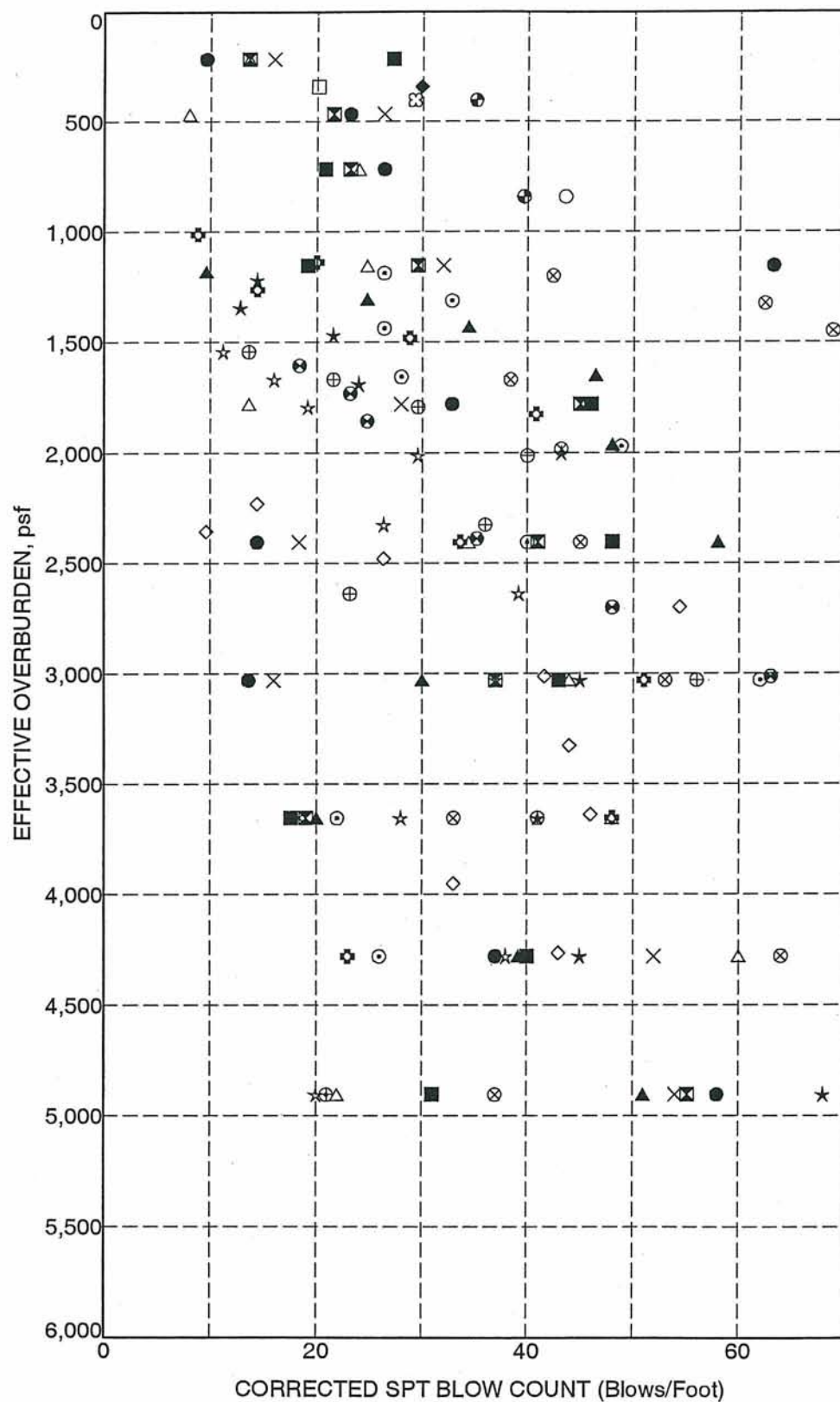
**Figure 74 - Moisture Content Profile of Reach 8A
Upper Llagas Creek Protection Project**



**Figure 75 - Dry Density Profile of Reach 8A
Upper Llagas Creek Protection Project**



**Figure 76 - Unconfined Compressive Strength Profile of Reach 8A
Upper Llagas Creek Protection Project**



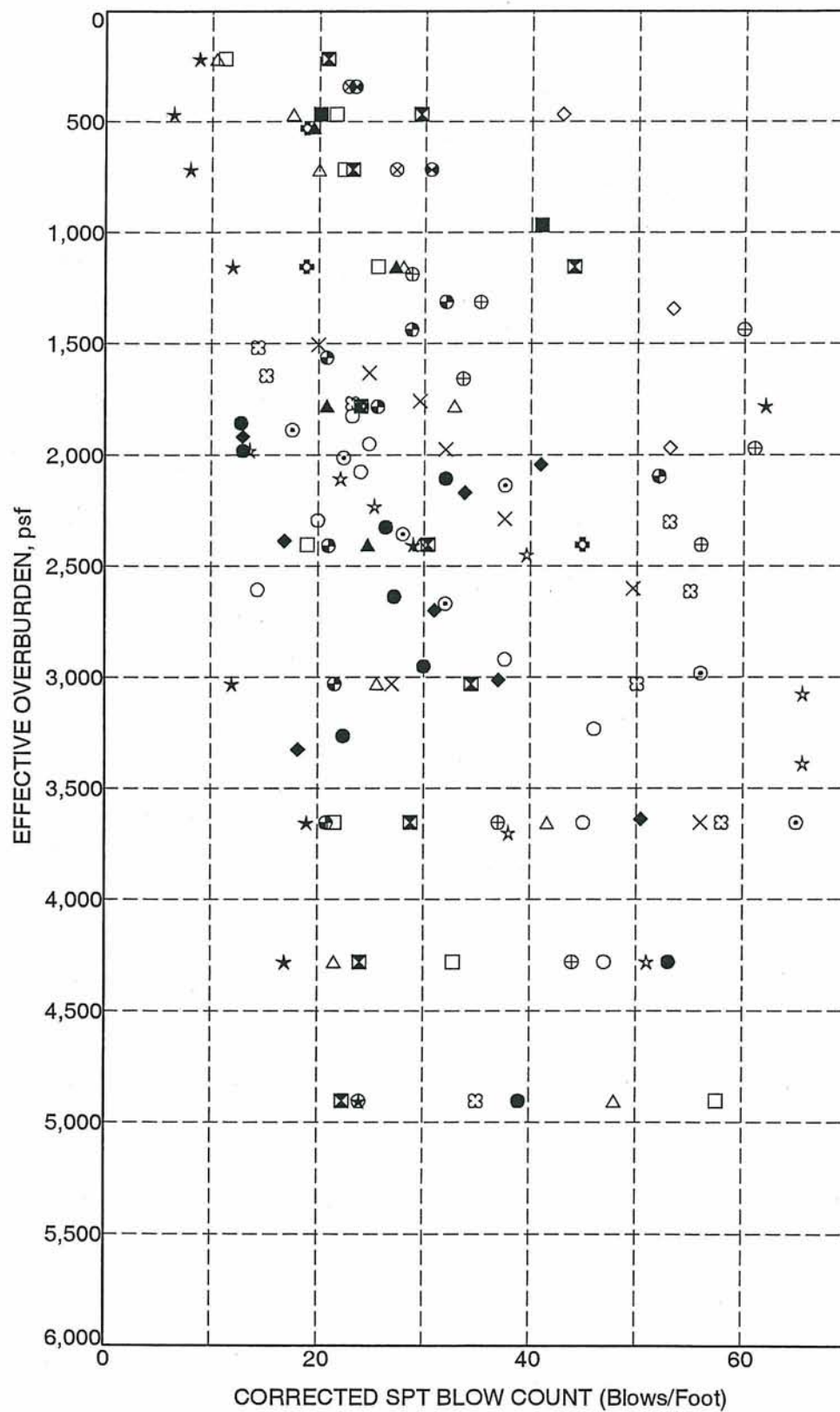
LEGEND

Boring Number	Test Symbol
SB 14-2	●
SB 14-3	⊠
SB 14-4	▲
SB 14-5	★
SB 14-6	⊙
SB 14-7	⊕
SB 14-7A	○
SB 14-8	△
SB 14-9	⊗
SB 14-10	⊕
SB 14-10A	□
SB 14-11 (east)	⊗
SB 14-11 east A	⊕
SB 14-11 (west)	★
SB 14-11 west A	⊗
SB 14-12	■
SB 14-12A	◆
SB 14-13	◇
SB 14-14	×

UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 14
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

Figure 77



LEGEND

Boring Number

SB 14-15
SB 14-16
SB 14-16A
SB 14-17
SB 14-18
SB 14-18A
SB 14-19
SB 14-20
SB 14-20A
SB 14-21
SB 14-22
SB 14-22A
SB 14-23
SB 14-24
SB 14-25
SB 14-25A
SB 14-26
SB 14-26B
SB 14-27

Test Symbol

●
⊠
▲
★
⊙
⊕
○
△
⊗
⊕
□
⊗
⊕
★
⊗
■
◆
◇
×

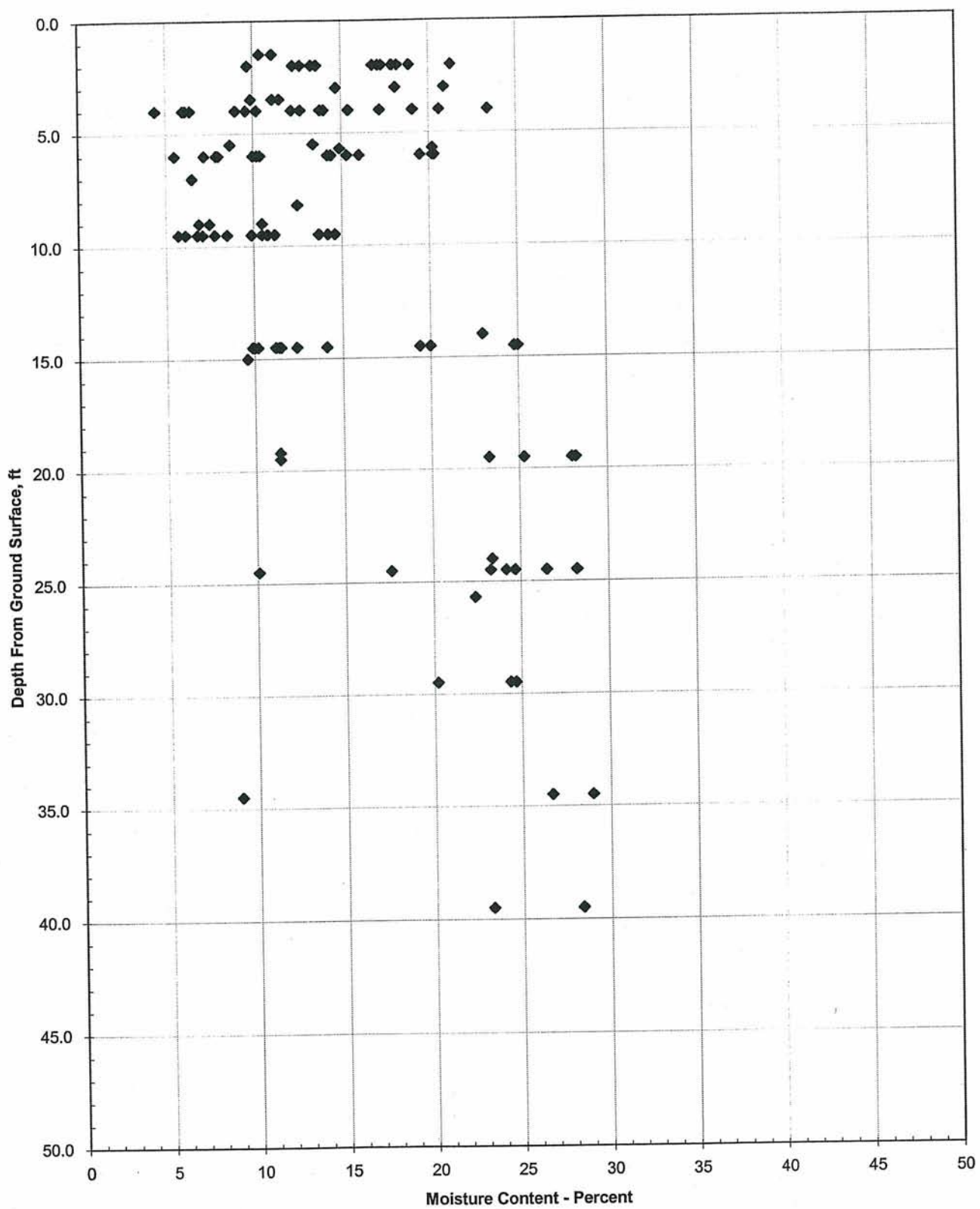
UPPER LLAGAS CREEK FLOOD PROTECTION
Project Number: 28649692

REACH 14
CORRECTED SPT BLOW COUNT
vs
EFFECTIVE OVERBURDEN

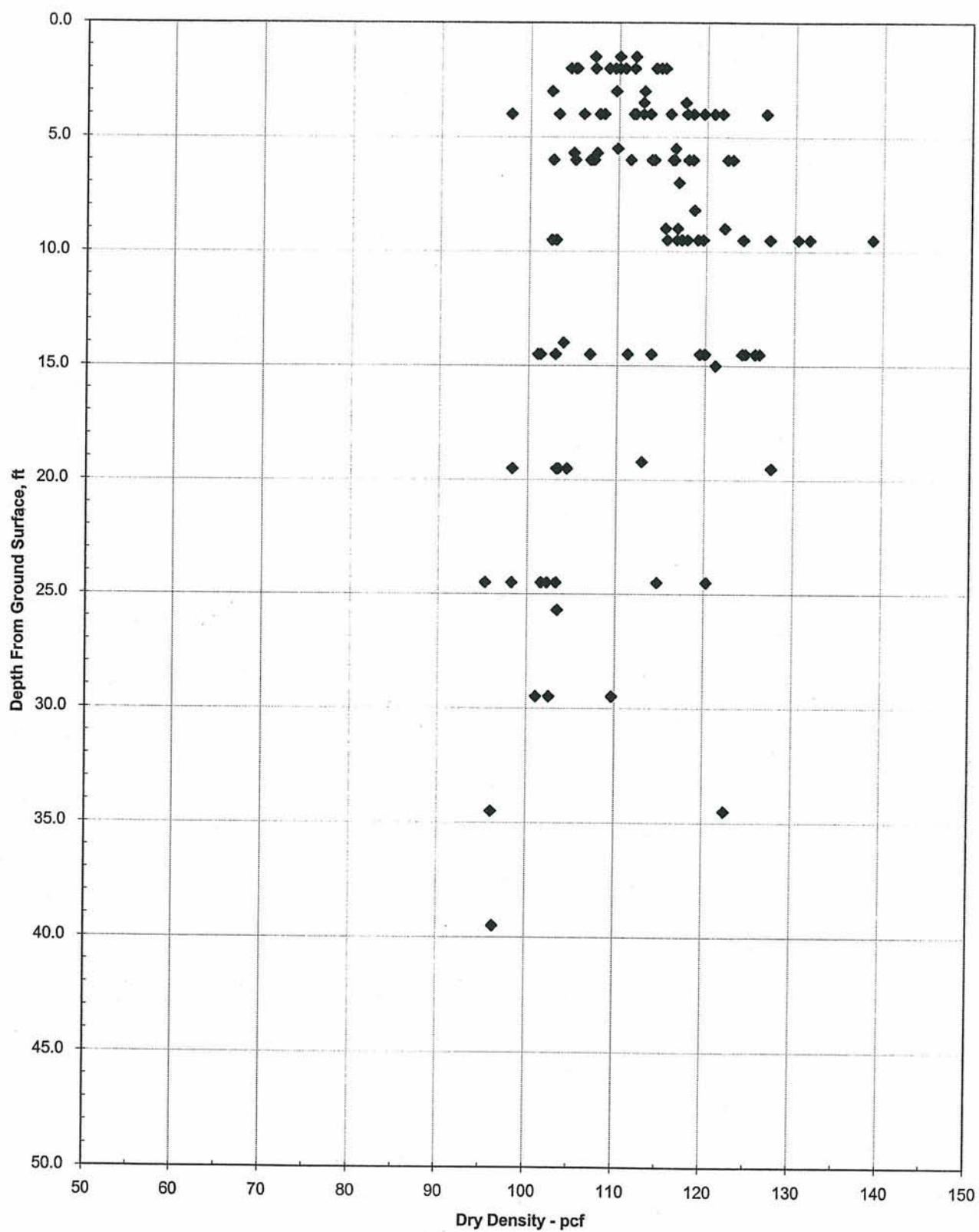
Figure 78



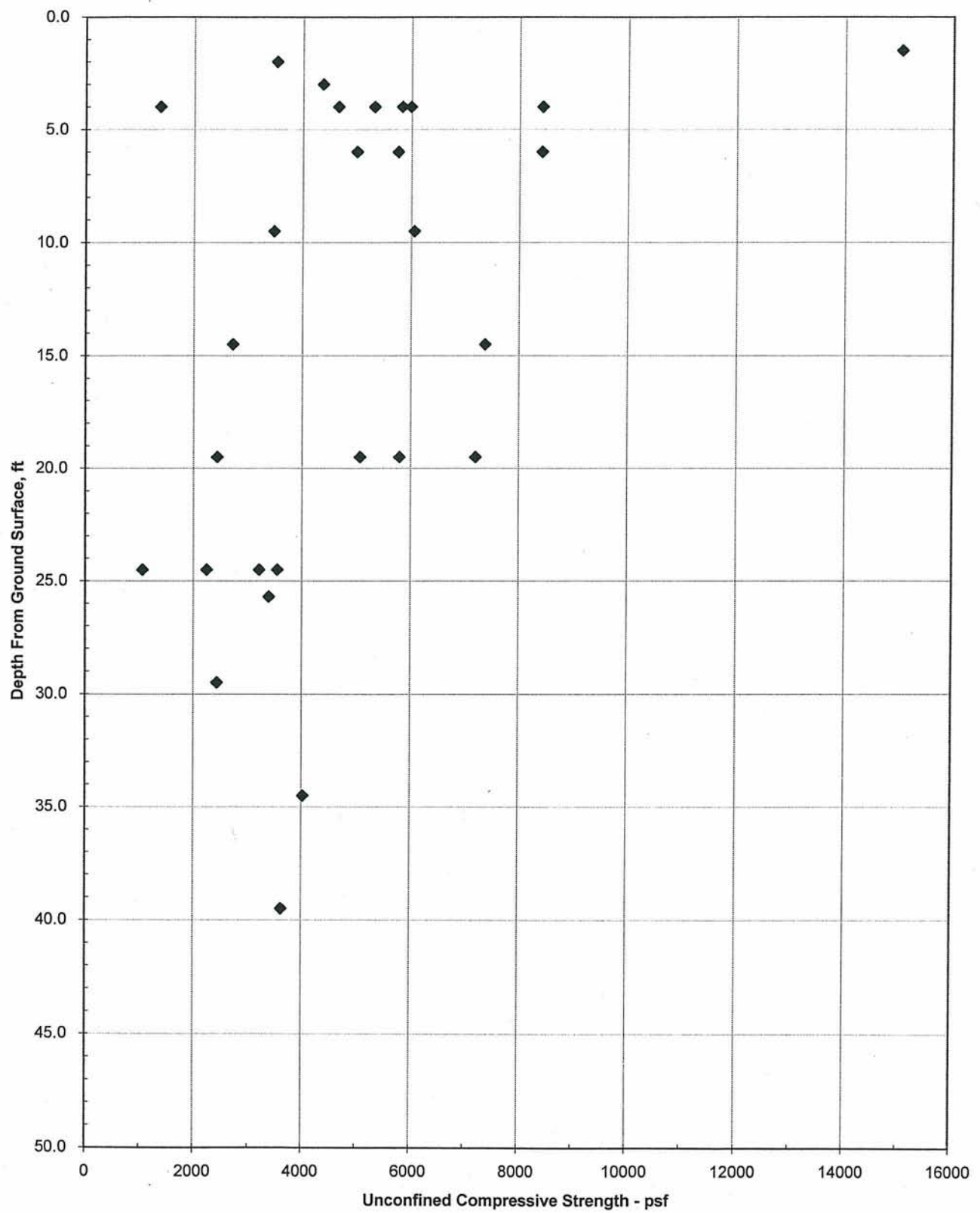
**Figure 79 - Corrected Equivalent SPT Blowcounts Profile of Reach 14
Upper Llagas Creek Protection Project**



**Figure 80 - Moisture Content Profile of Reach 14
Upper Llagas Creek Protection Project**



**Figure 81 - Dry Density Profile of Reach 14
Upper Llagas Creek Protection Project**



**Figure 82 - Unconfined Compressive Strength Profile of Reach 14
Upper Llagas Creek Protection Project**

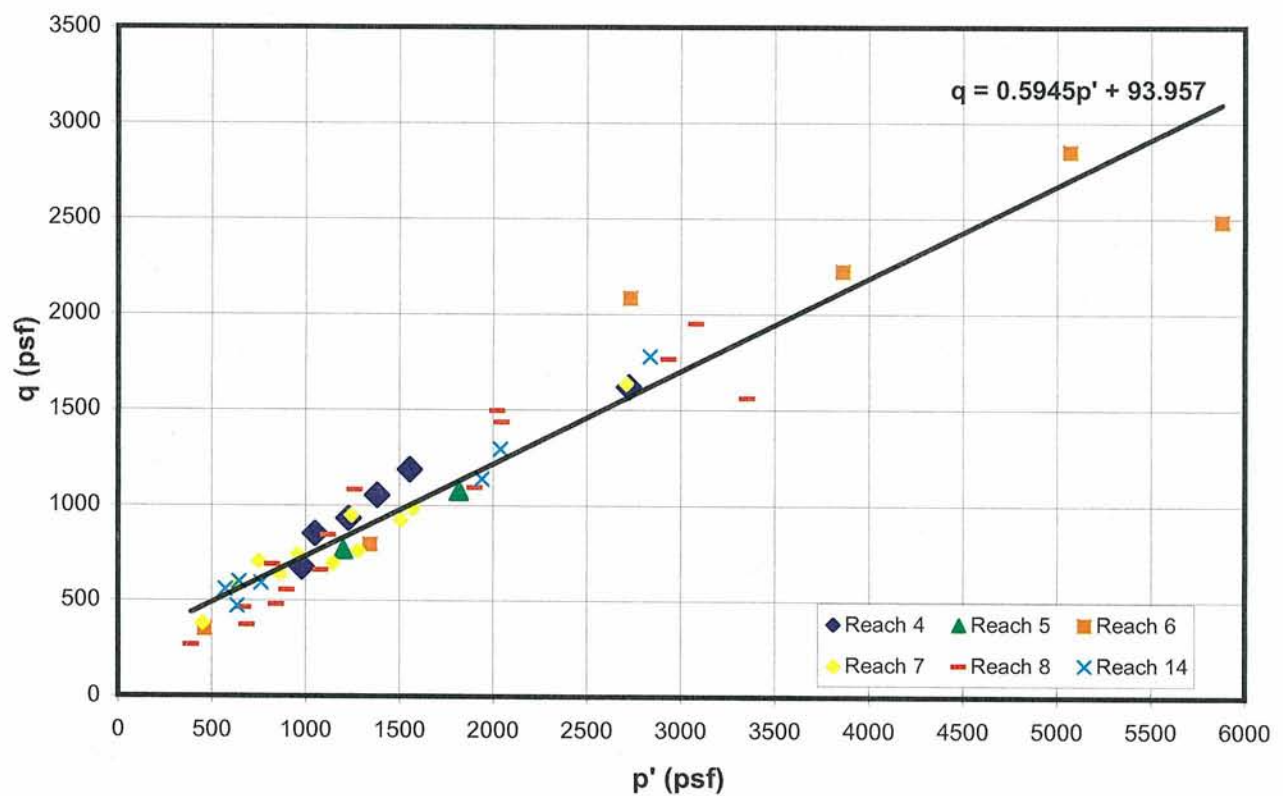
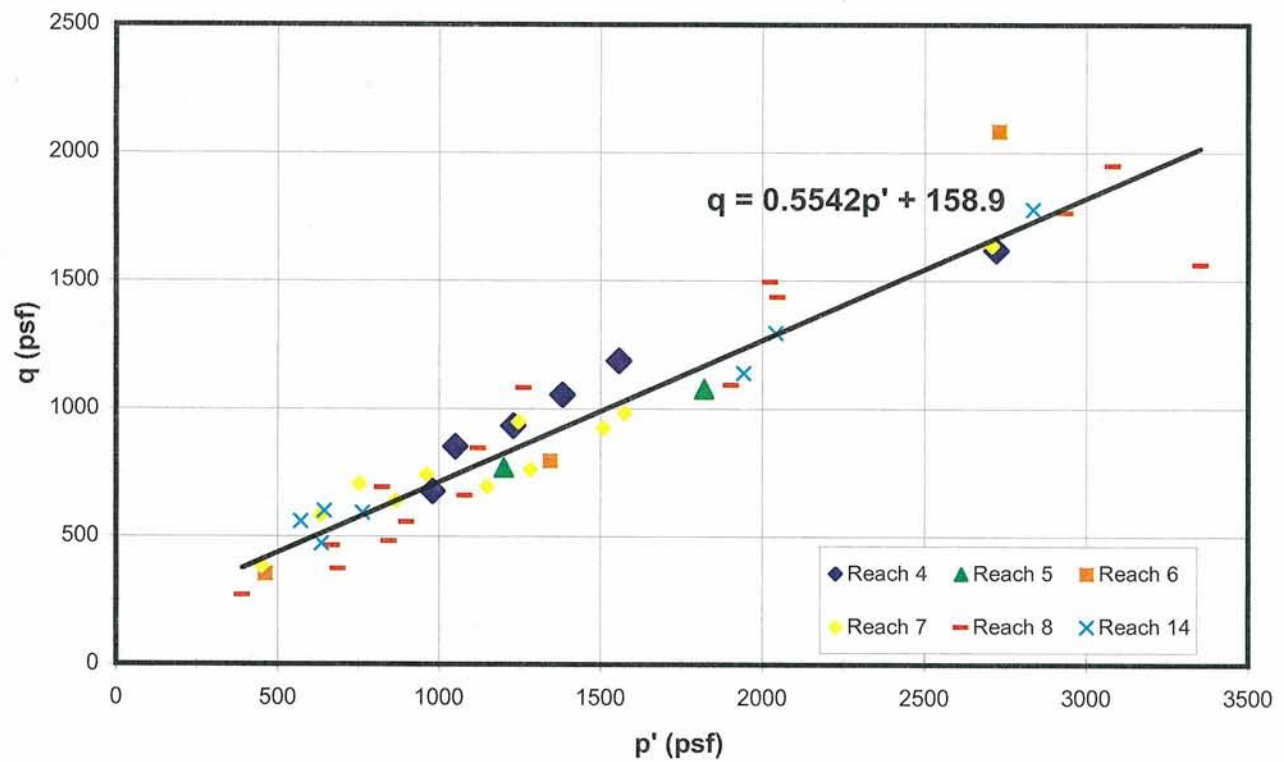


Figure 83 - SUMMARY OF CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST RESULTS
Upper Llagas Creek Flood Protection Project

Reach 4 - Fine Grained Soils

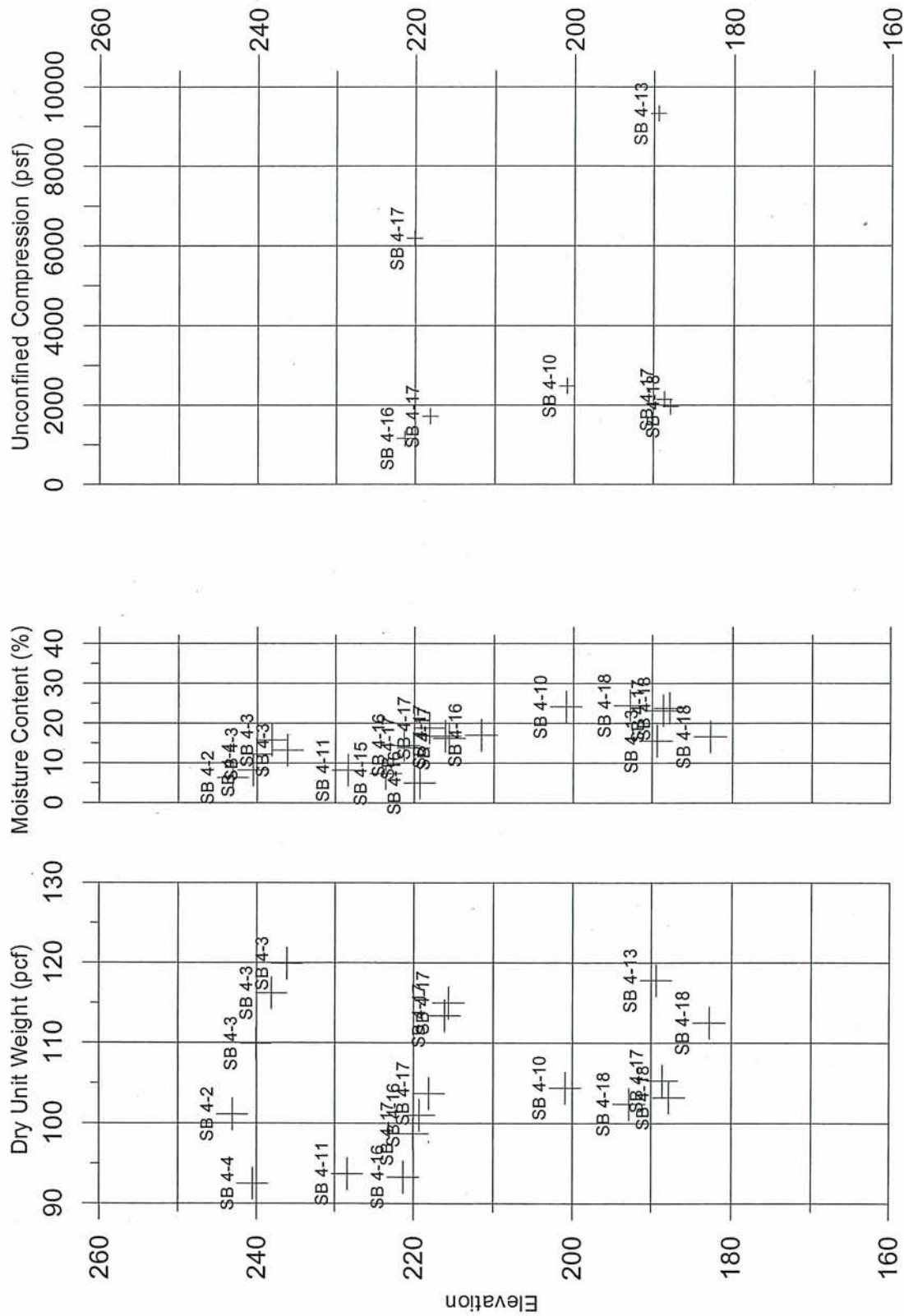


Figure 84

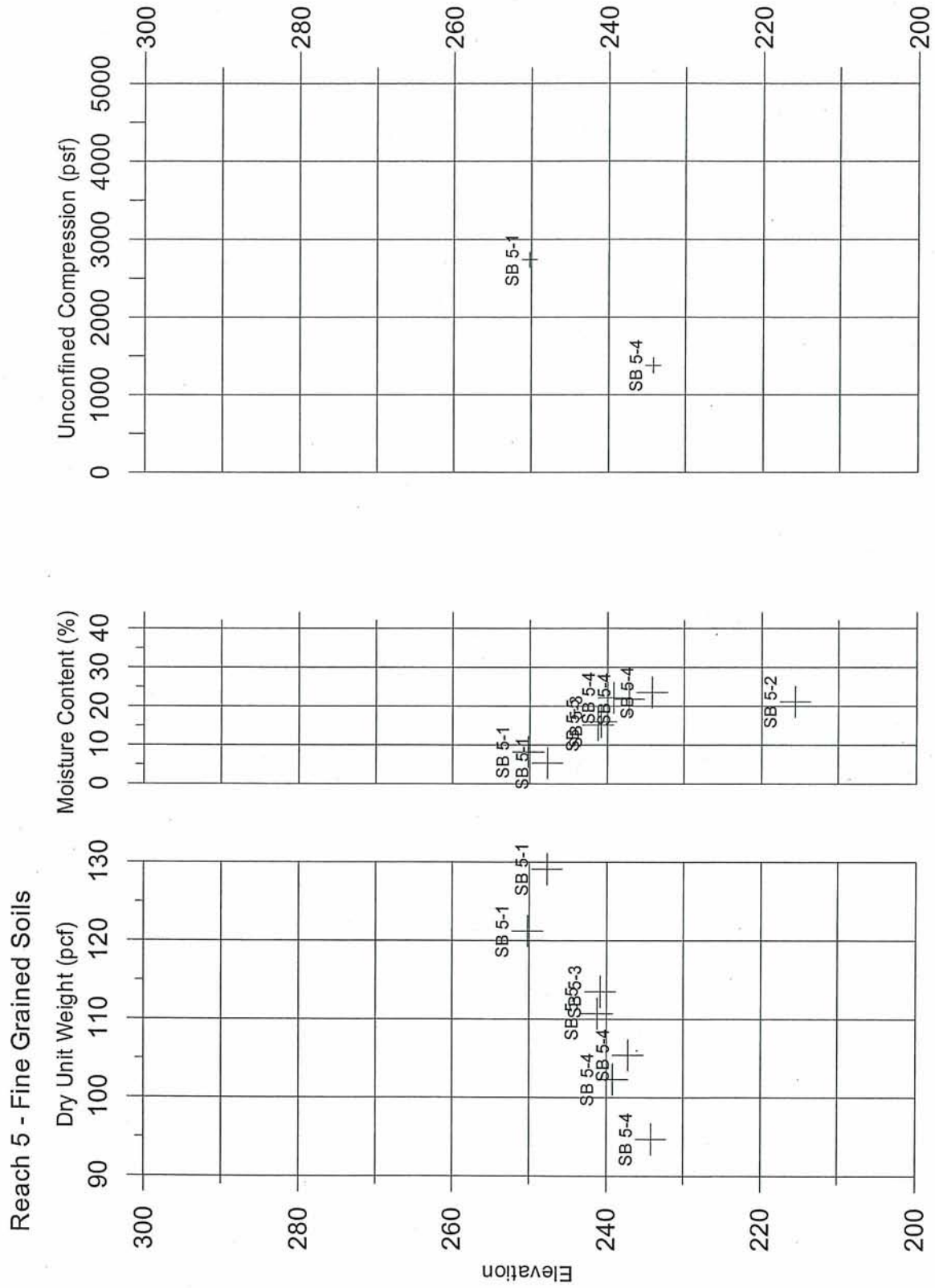


Figure 85

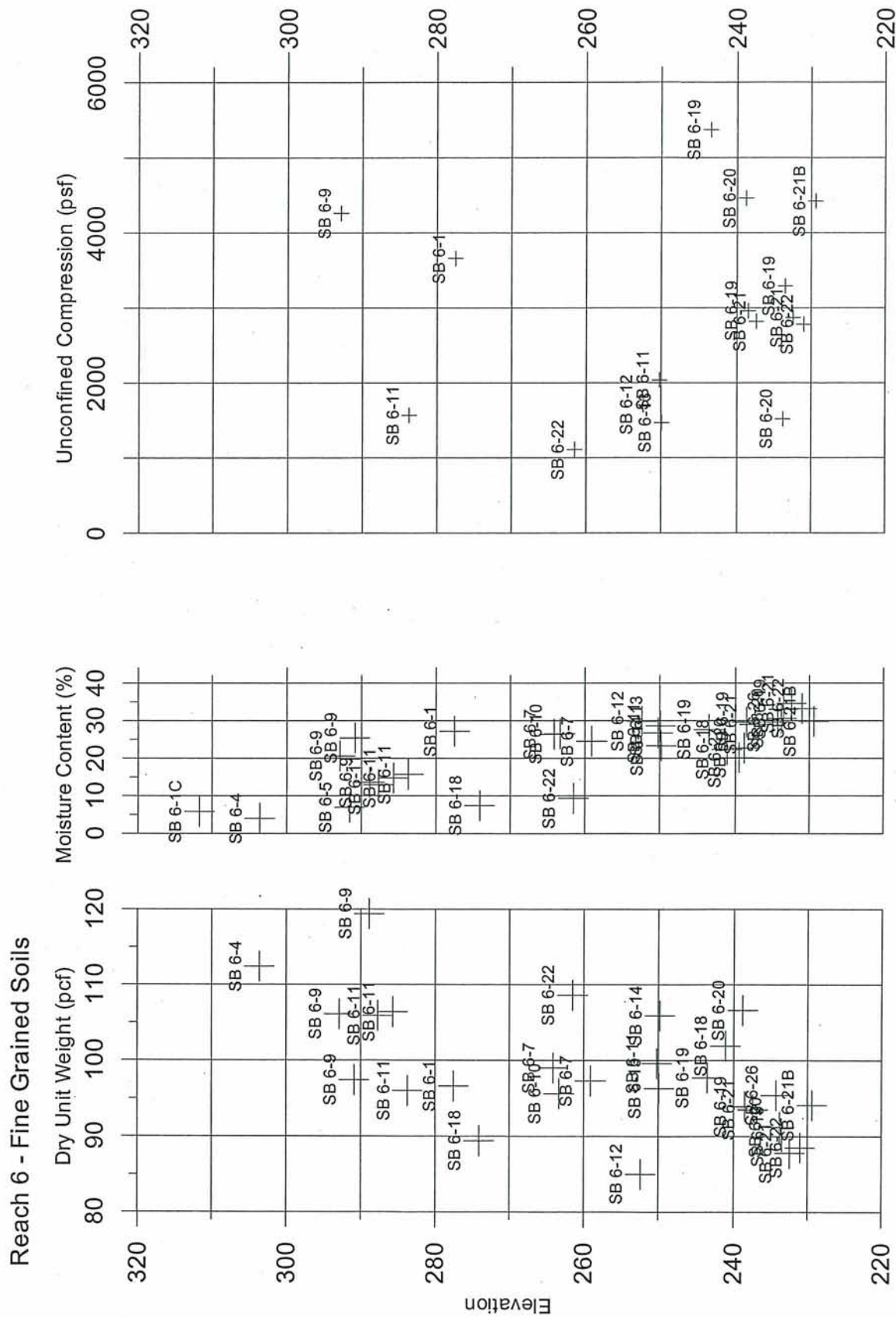


Figure 86

Reach 7A - Fine Grained Soils

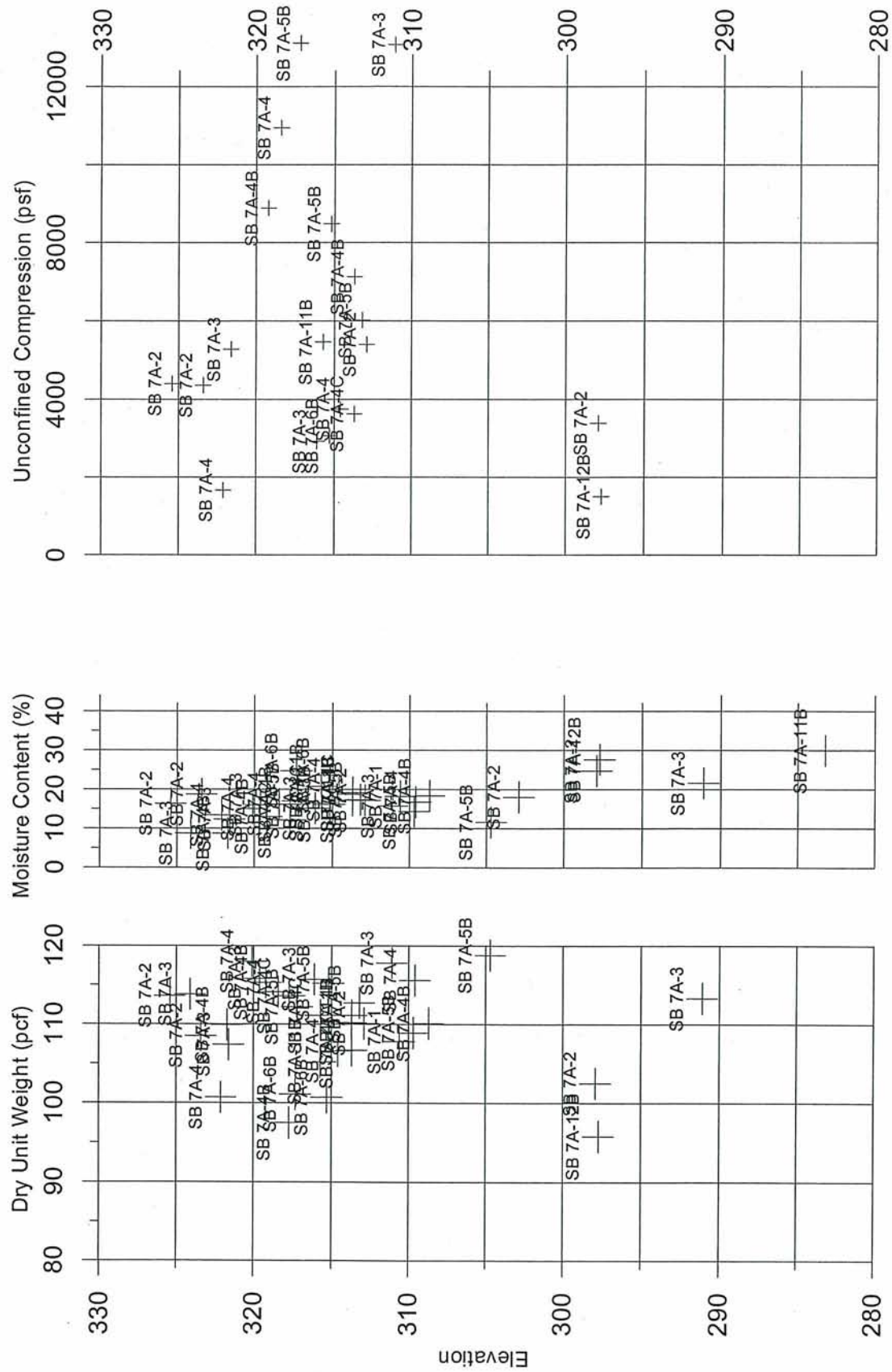


Figure 87

Reach 7B - Fine Grained Soils

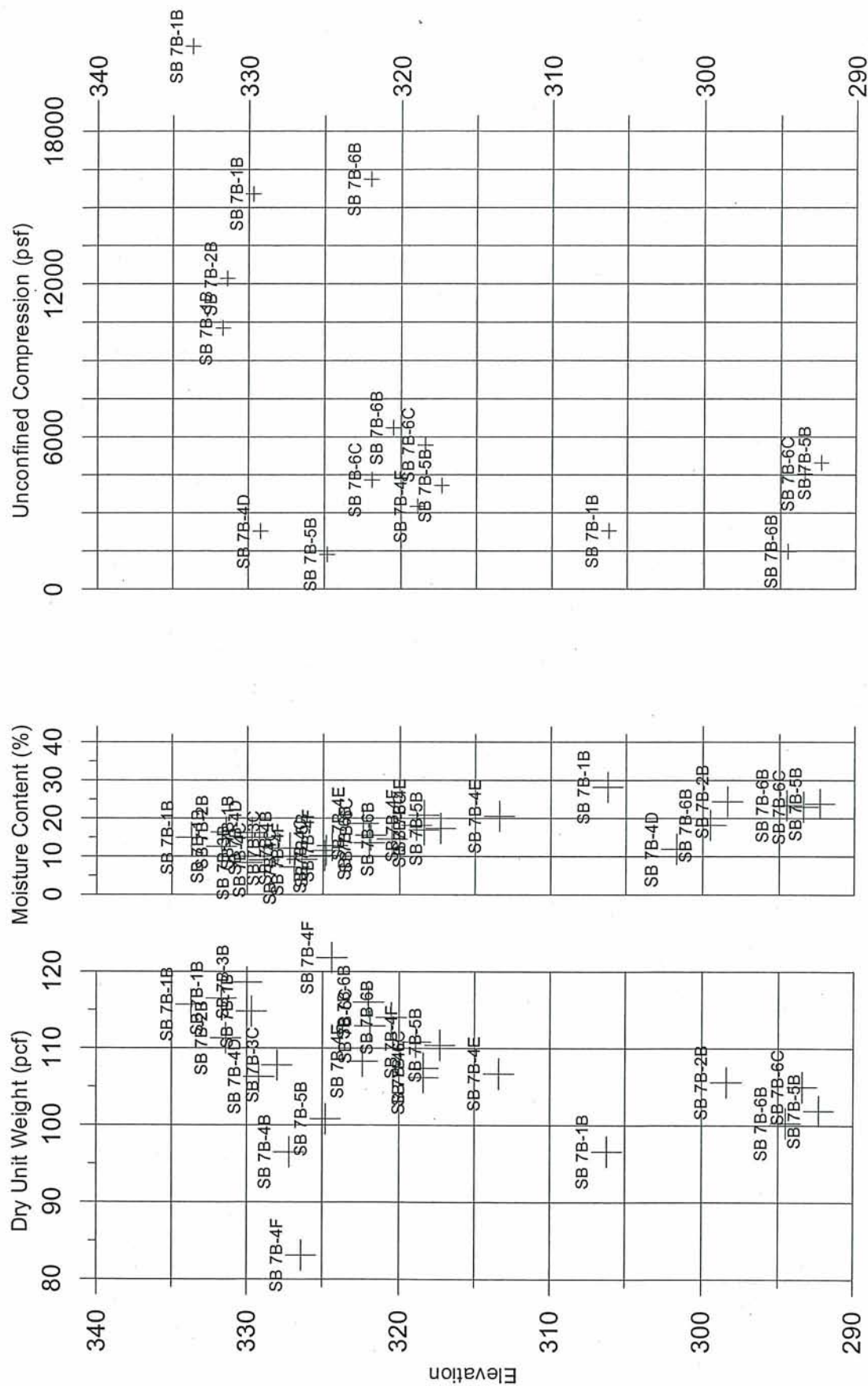


Figure 88

Reach 8 - Fine Grained Soils

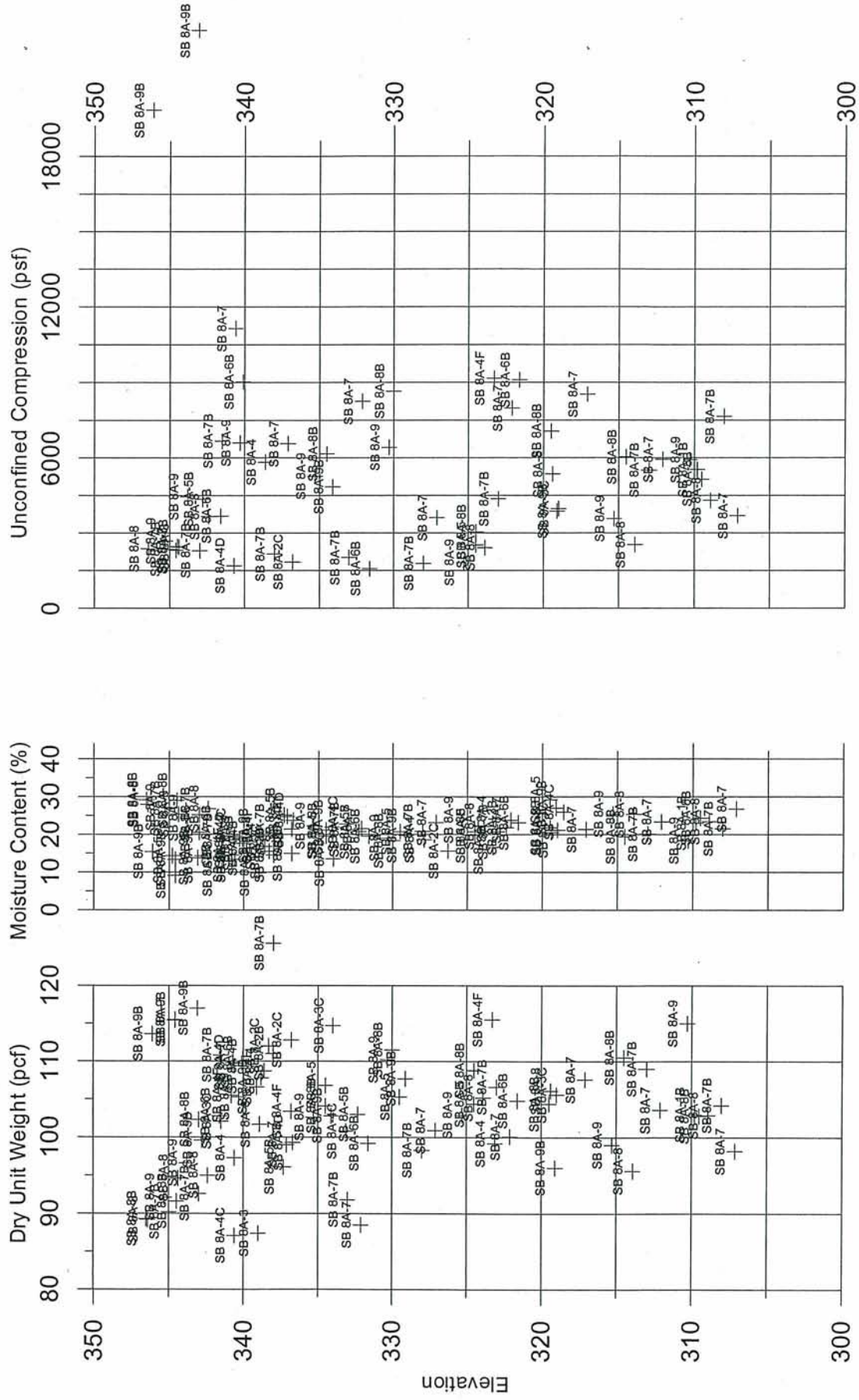


Figure 89

Reach 14 - Fine Grained Soils

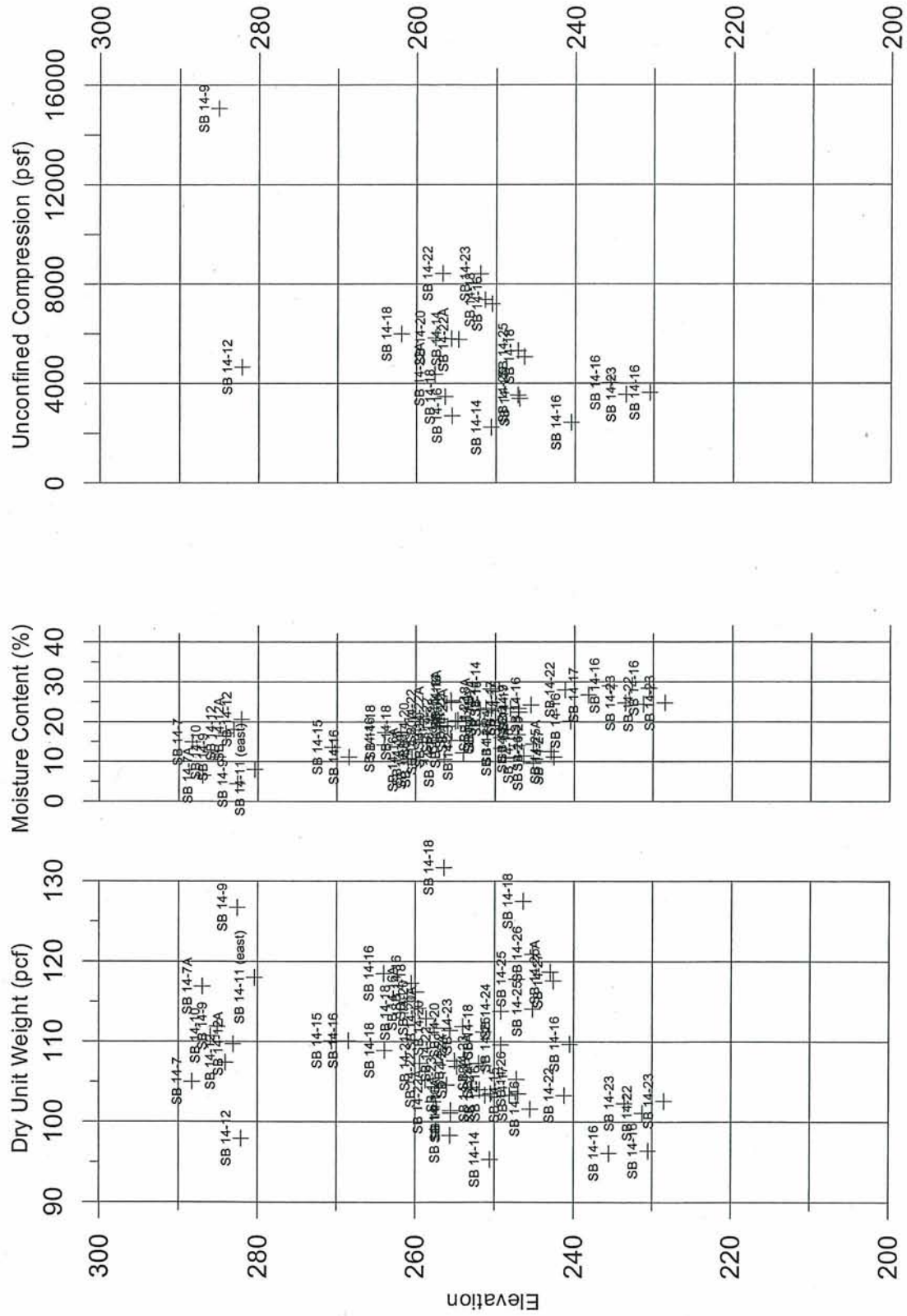


Figure 90

Reach 4 - Fine Grained Soils

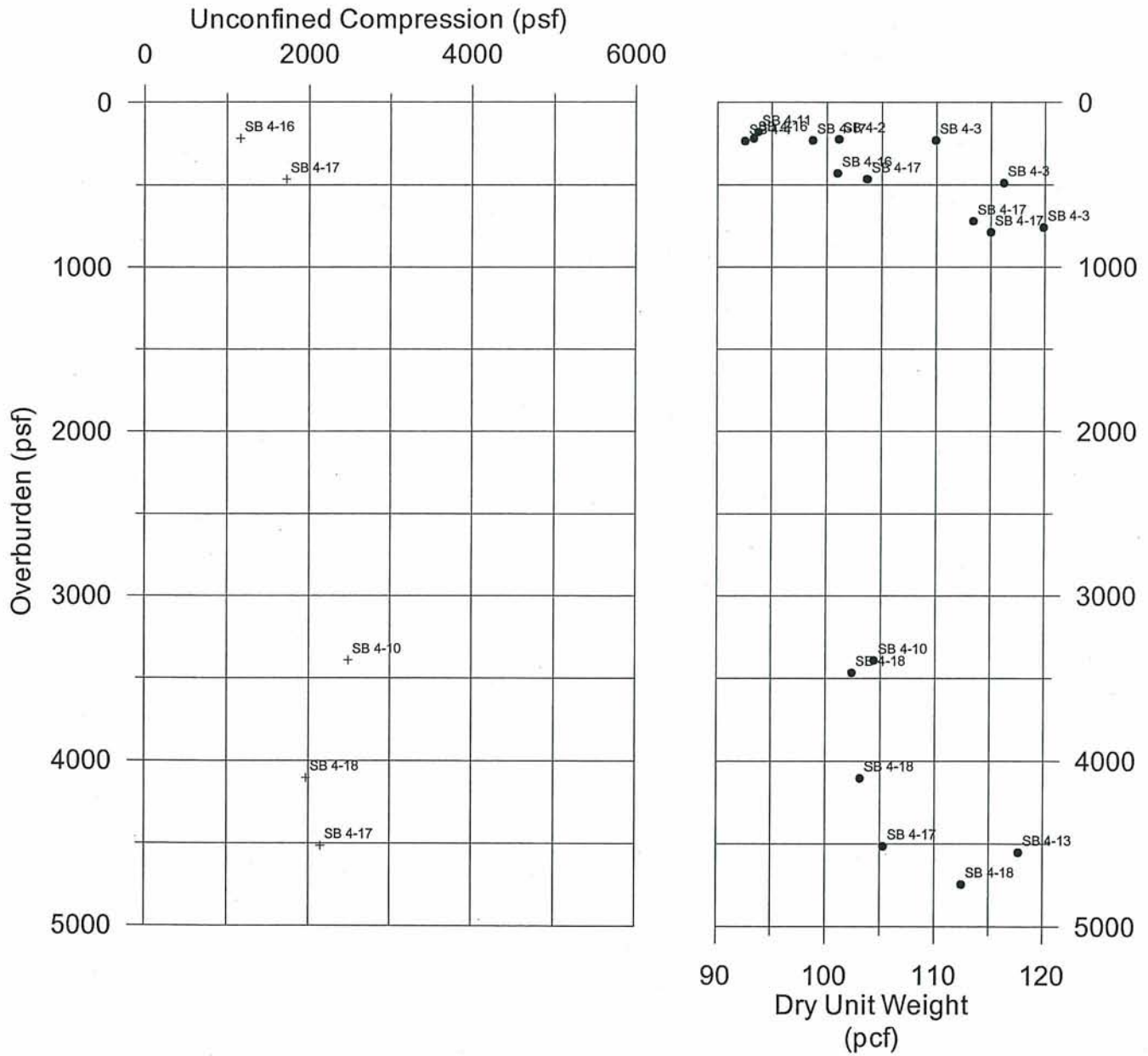


Figure 91

Reach 5 - Fine Grained Soils

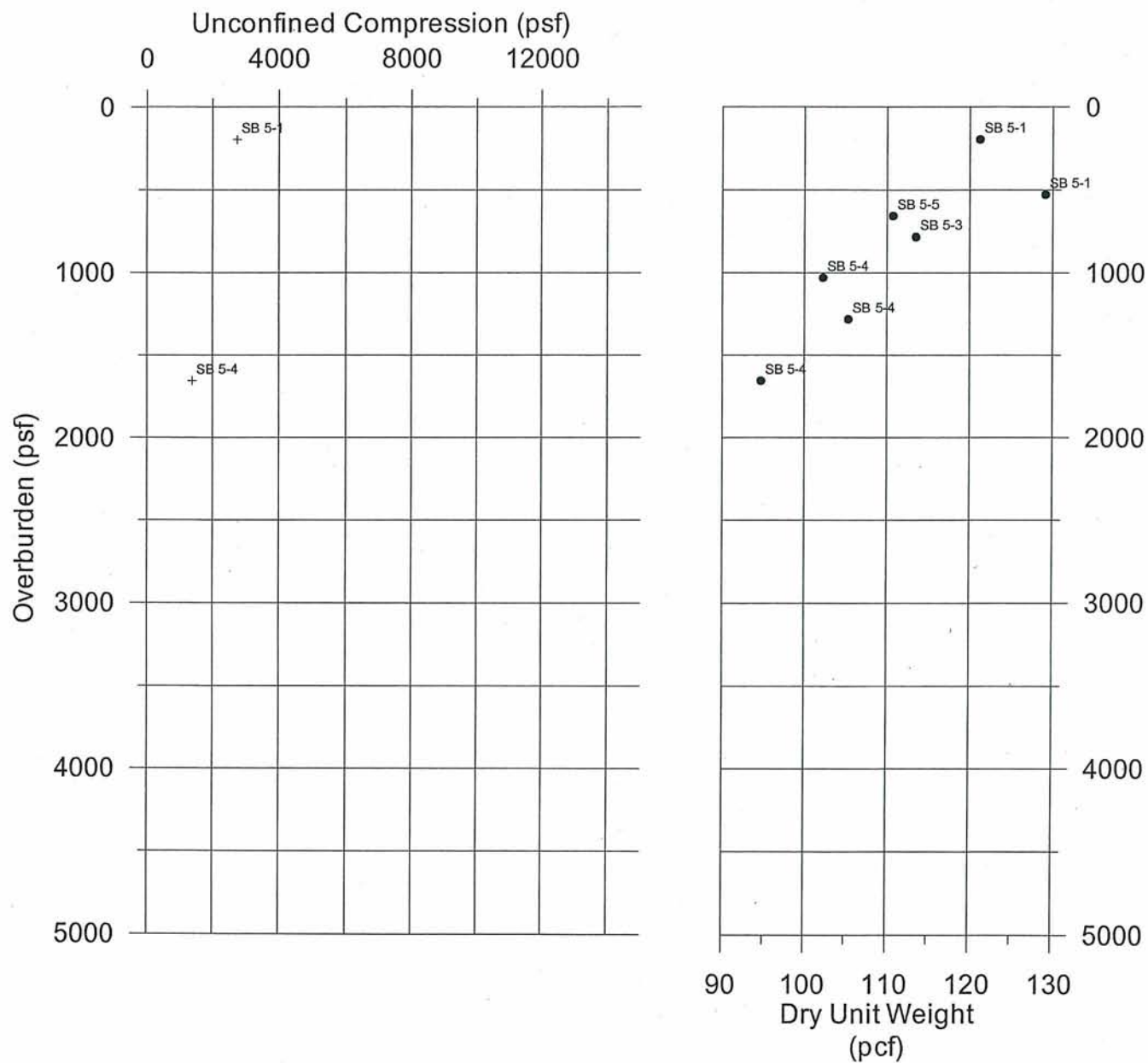


Figure 92

Reach 6 - Fine Grained Soils

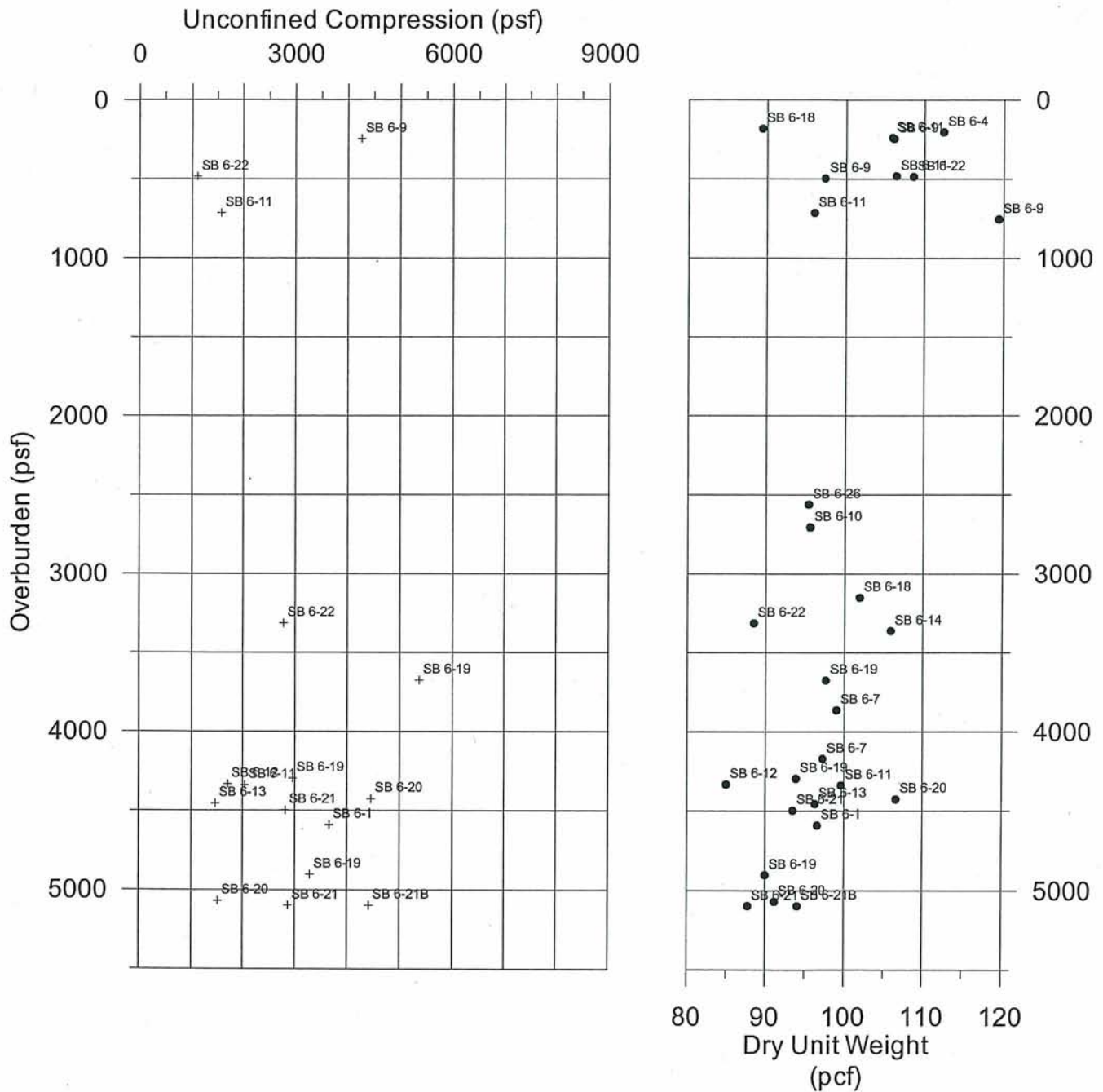


Figure 93

Reach 7A - Fine Grained Soils

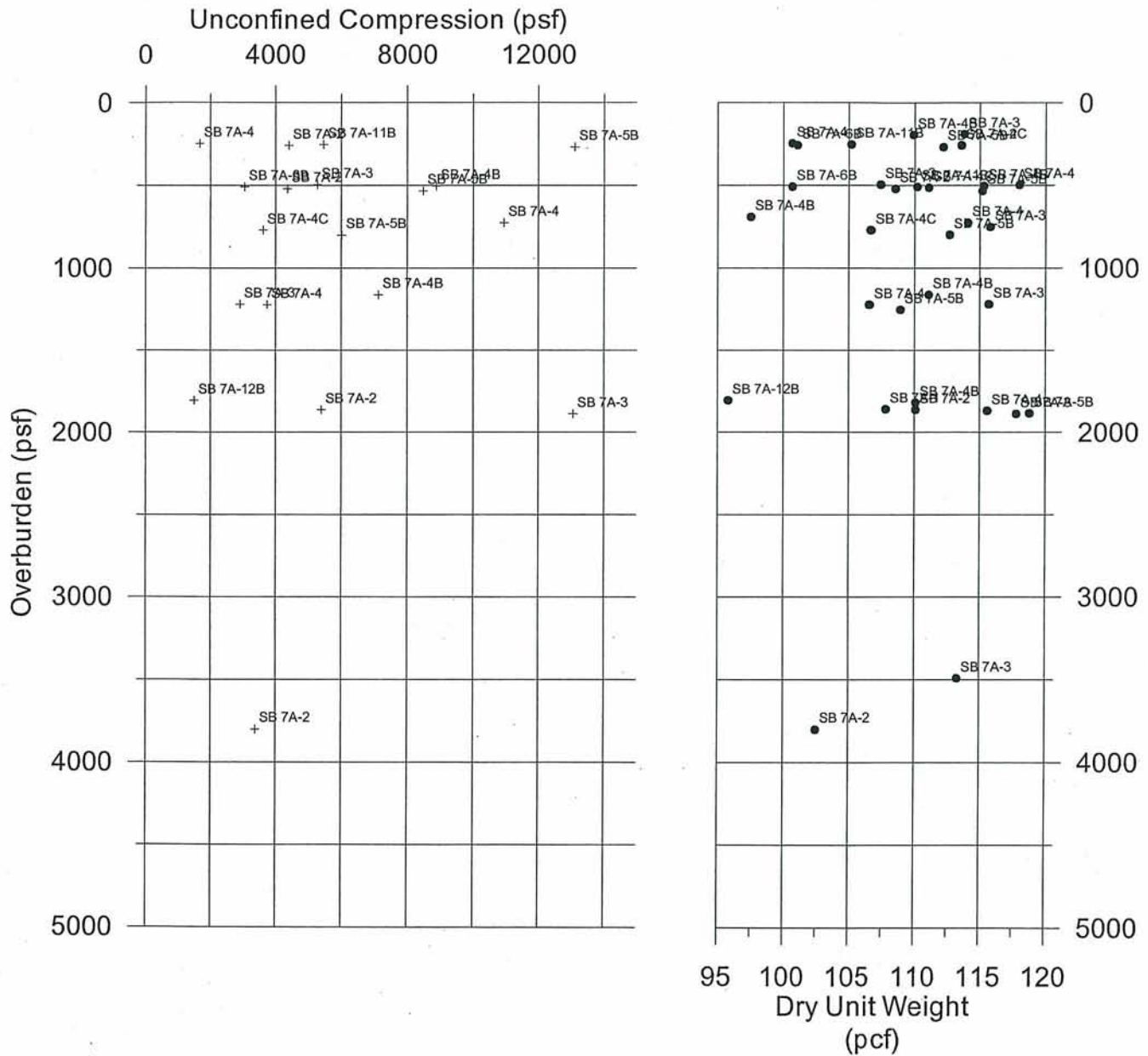


Figure 94

Scatter plot showing Overburden (psf) on the Y-axis (0 to 5000) versus Depth (ft) on the X-axis (0 to 100). The plot displays data points for various soil borings (SB 7B-4D, SB 7B-6B, SB 7B-13, SB 7B-2B, SB 7B-6C, SB 7B-4F, SB 7B-5B, SB 7B-6C, SB 7B-6B, SB 7B-13, SB 7B-5B, SB 7B-6C). The data points are marked with '+' and labeled with their respective boring numbers.

Boring	Depth (ft)	Overburden (psf)
SB 7B-4D	~10	~200
SB 7B-6B	~20	~200
SB 7B-13	~30	~200
SB 7B-2B	~90	~200
SB 7B-6C	~40	~700
SB 7B-4F	~20	~1100
SB 7B-5B	~30	~1100
SB 7B-6C	~40	~1100
SB 7B-6B	~20	~3900
SB 7B-13	~30	~4000
SB 7B-5B	~40	~3900
SB 7B-6C	~40	~4400



Reach 8 - Fine Grained Soils

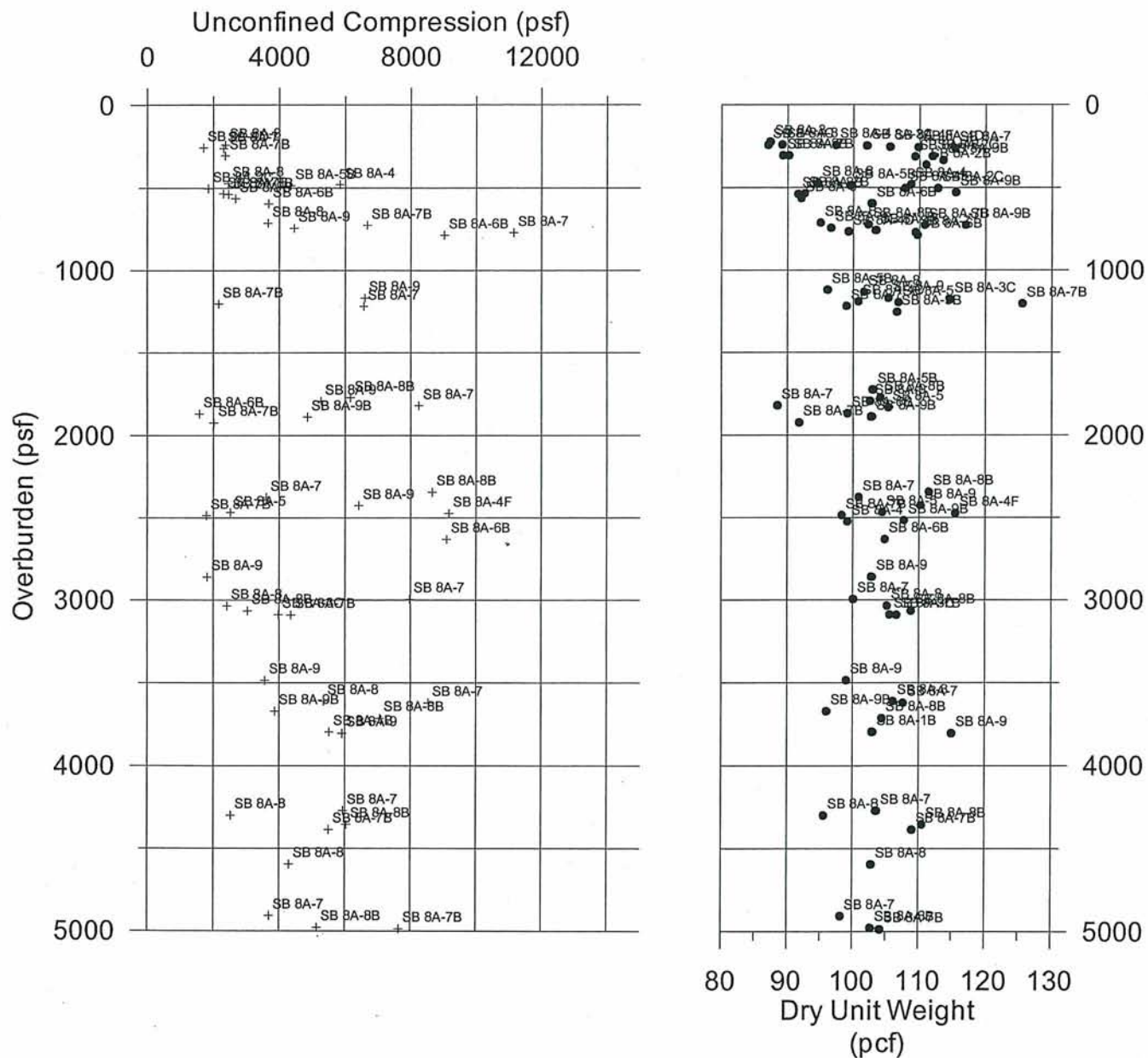


Figure 96

Unconfined Compression (psf)

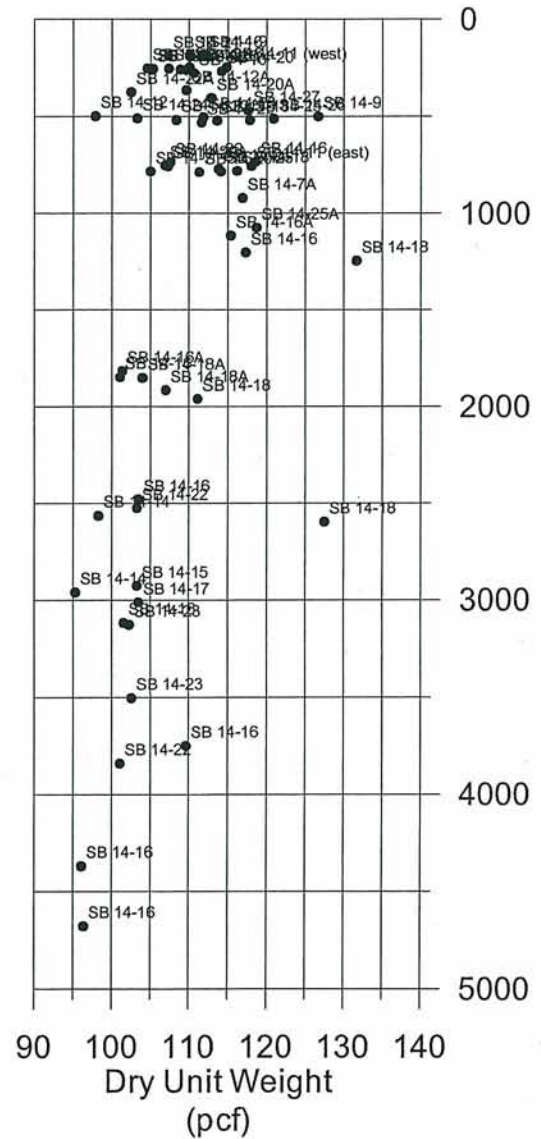


Figure 97

Reach 4 - Coarse Grained Soils

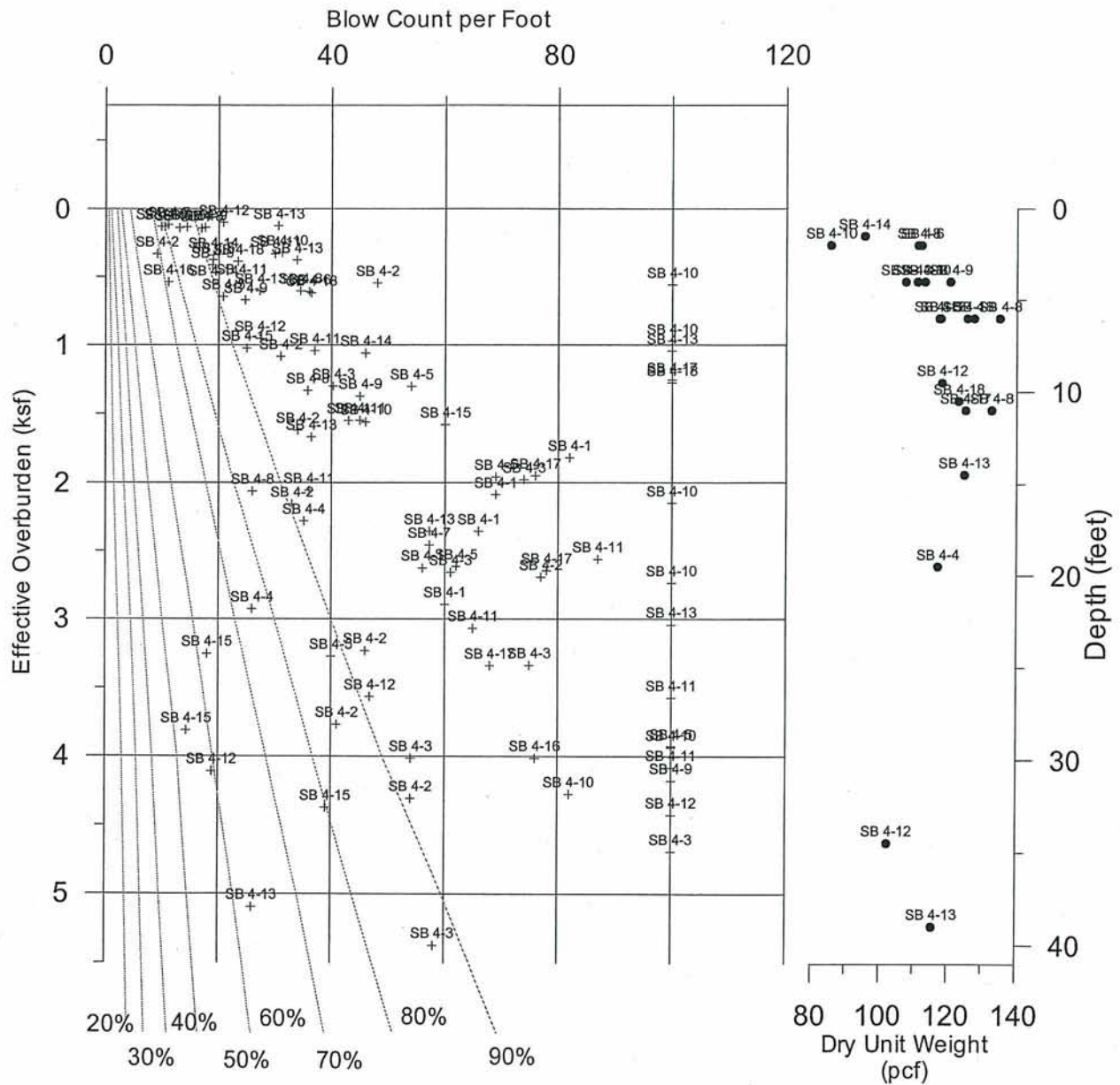


Figure 98

Reach 5 - Coarse Grained Soils

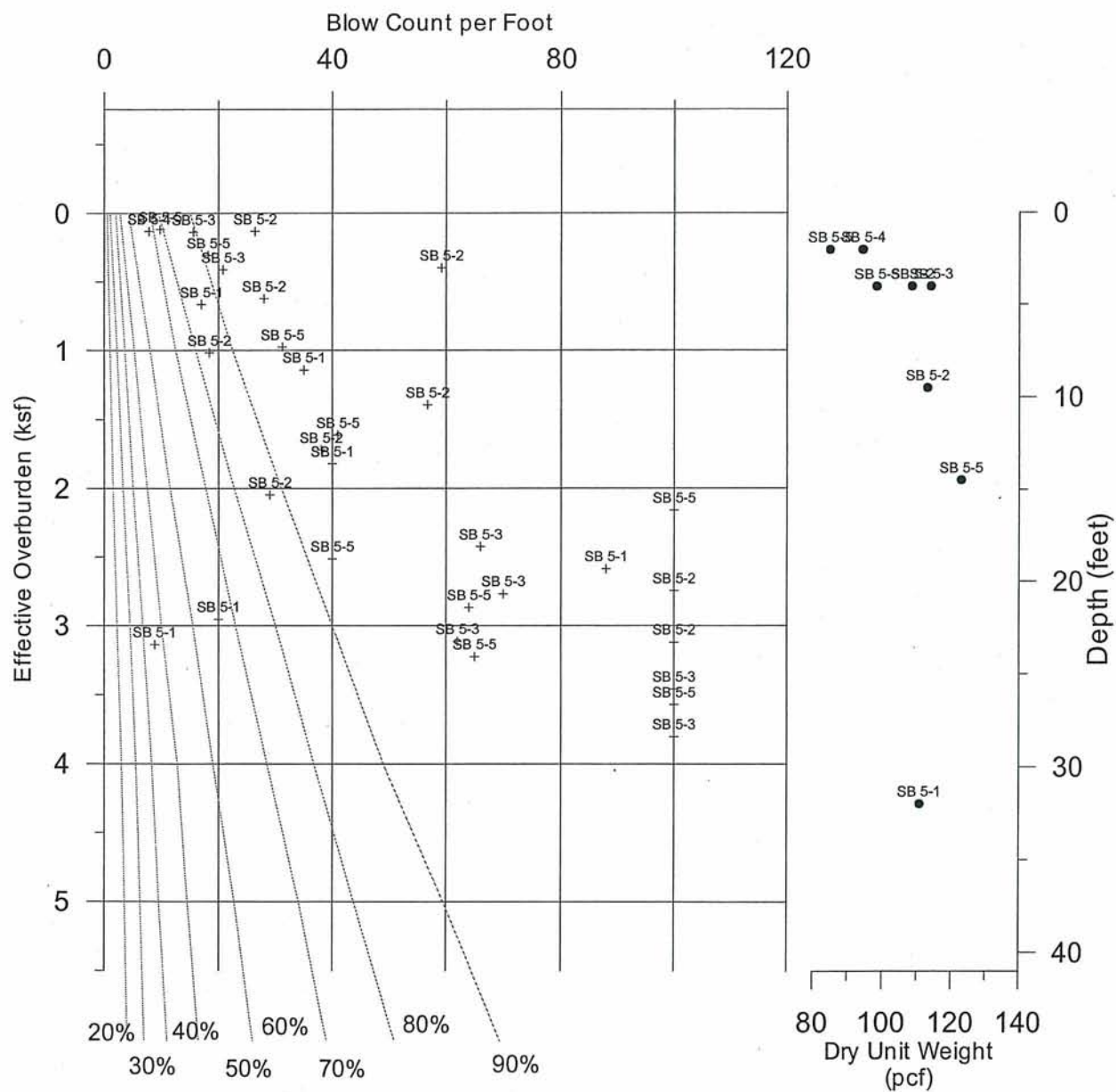


Figure 99

Reach 6 - Coarse Grained Soils

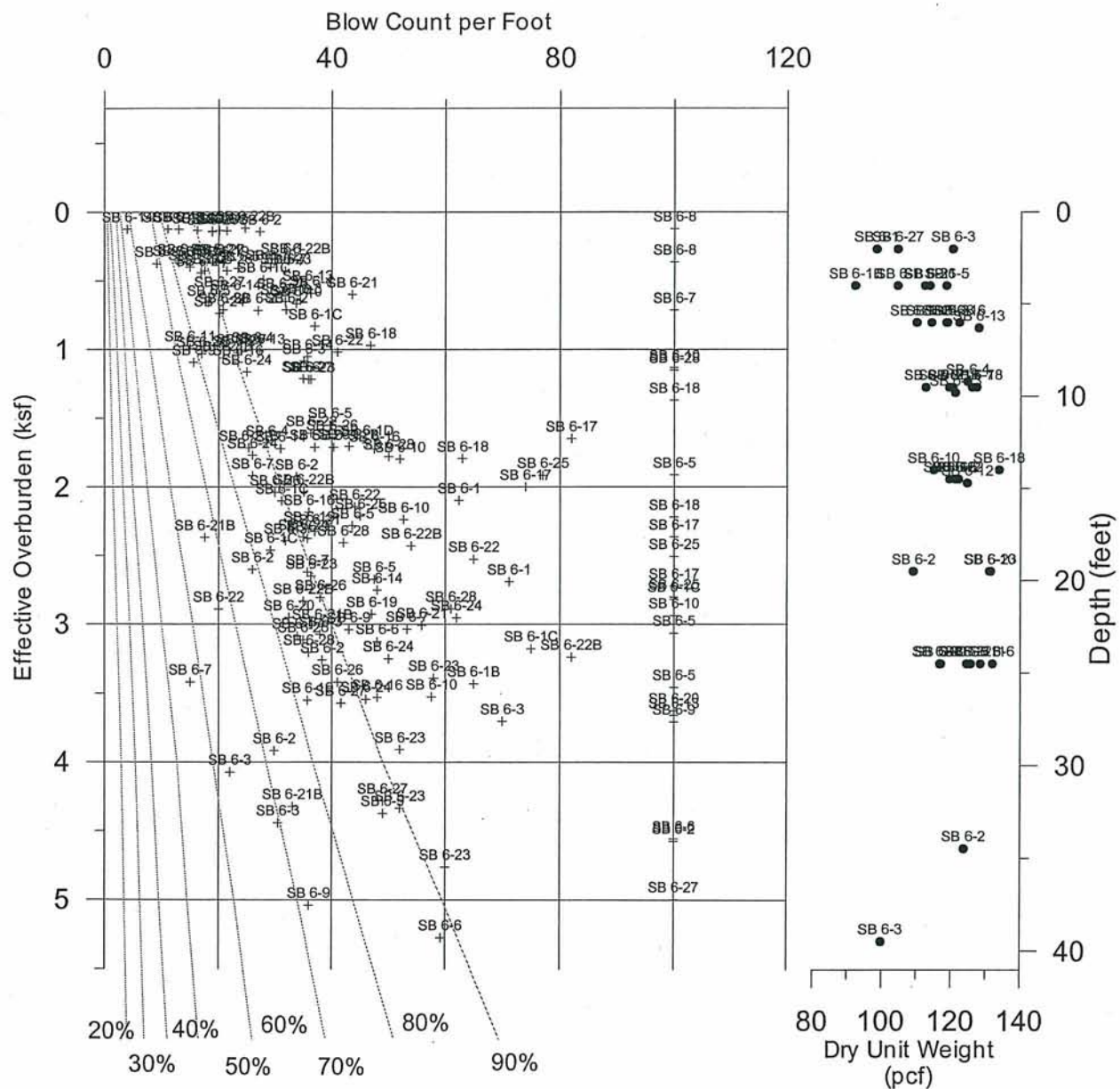


Figure 100

Reach 7A - Coarse Grained Soils

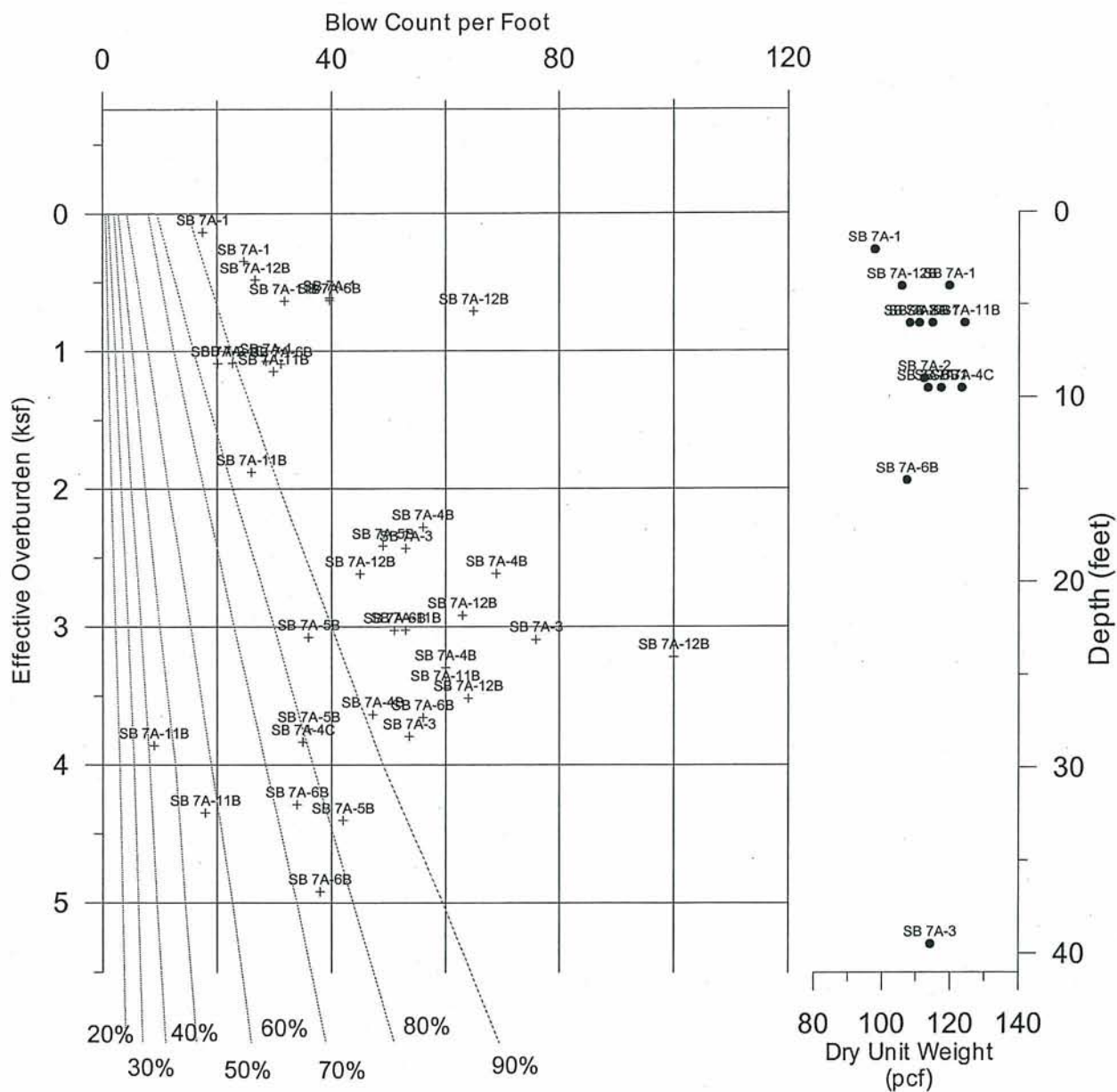


Figure 101

Reach 7B - Coarse Grained Soils

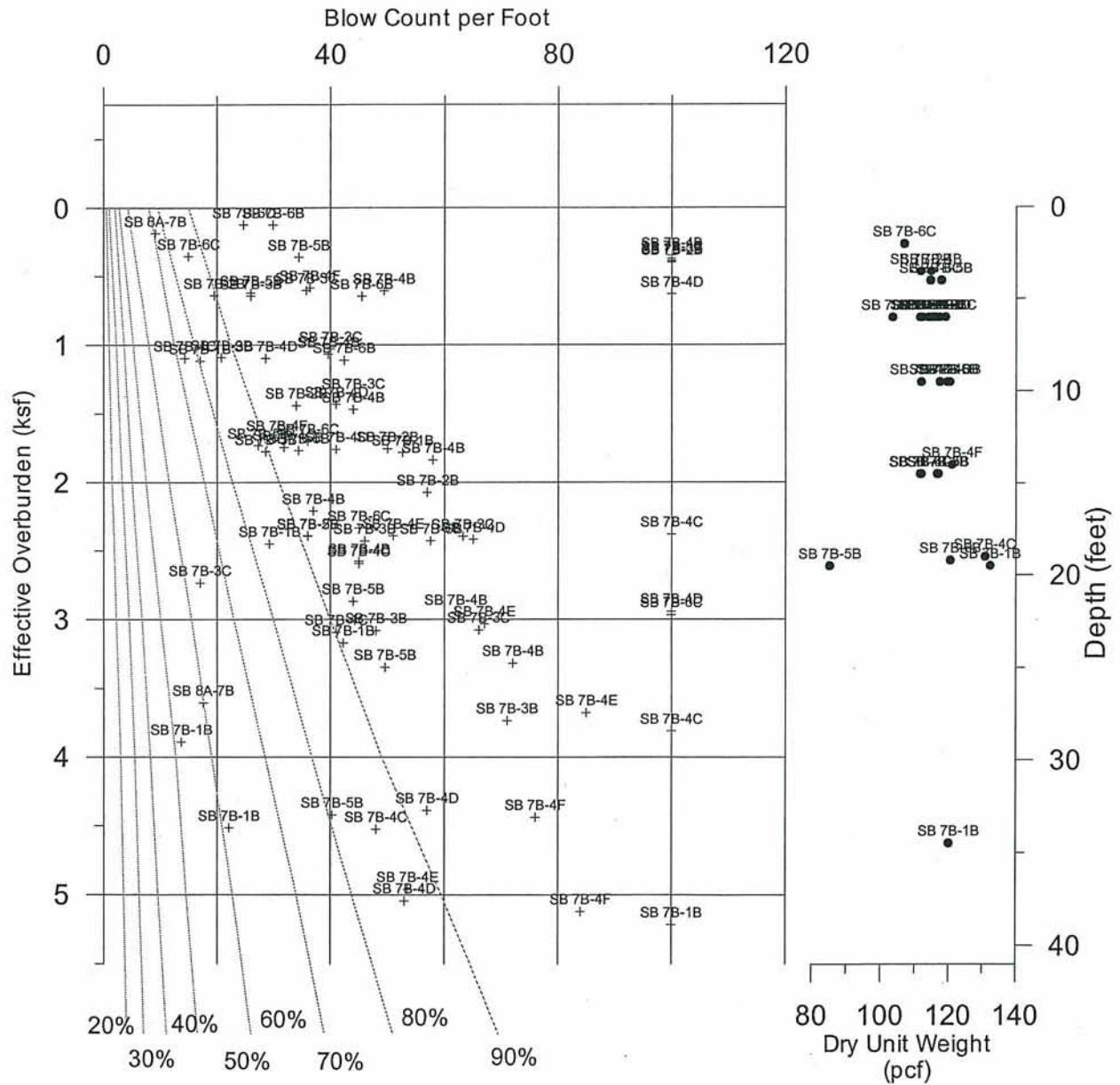


Figure 102

Reach 8 - Coarse Grained Soils

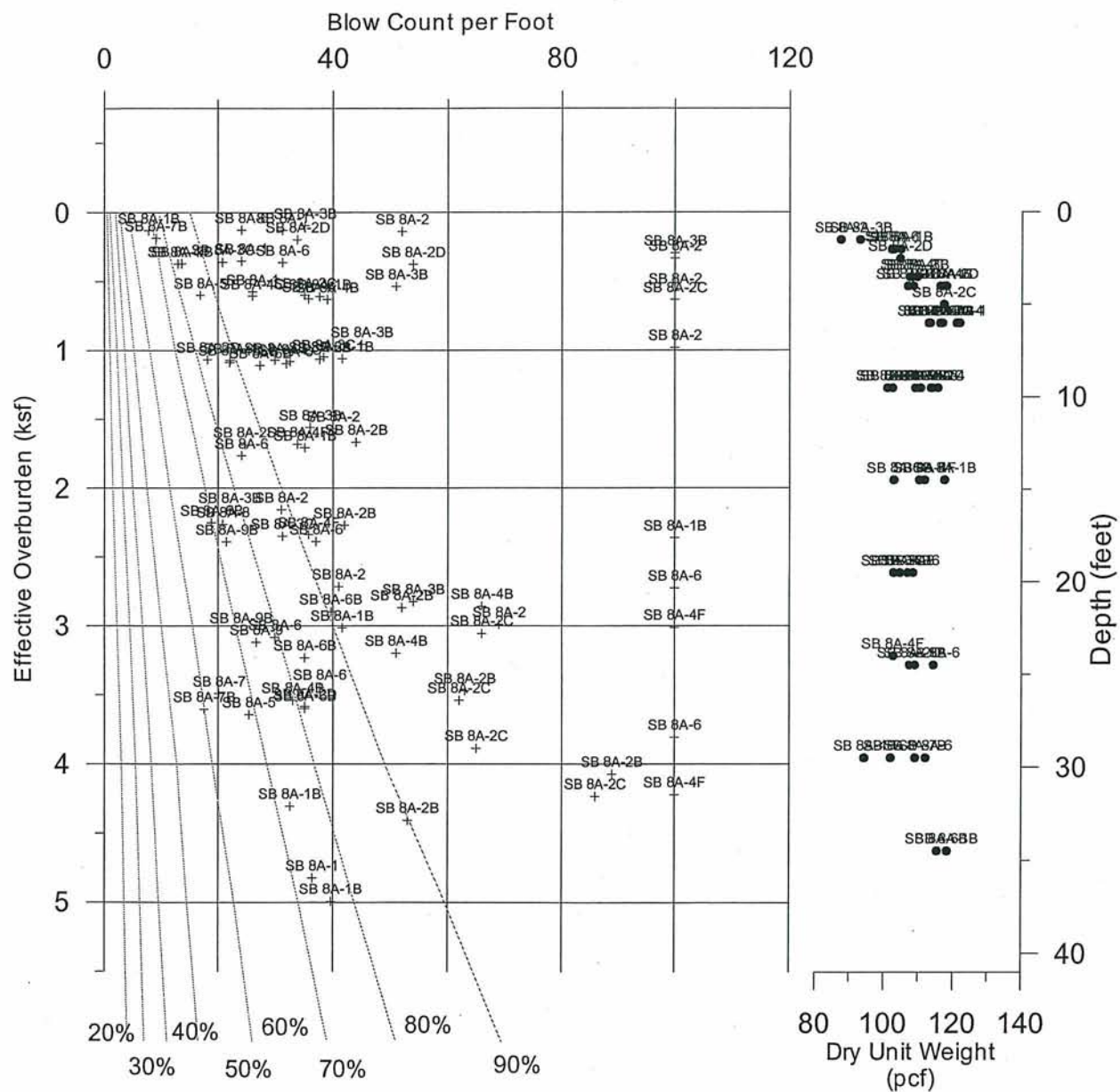


Figure 103

Reach 14 - Coarse Grained Soils

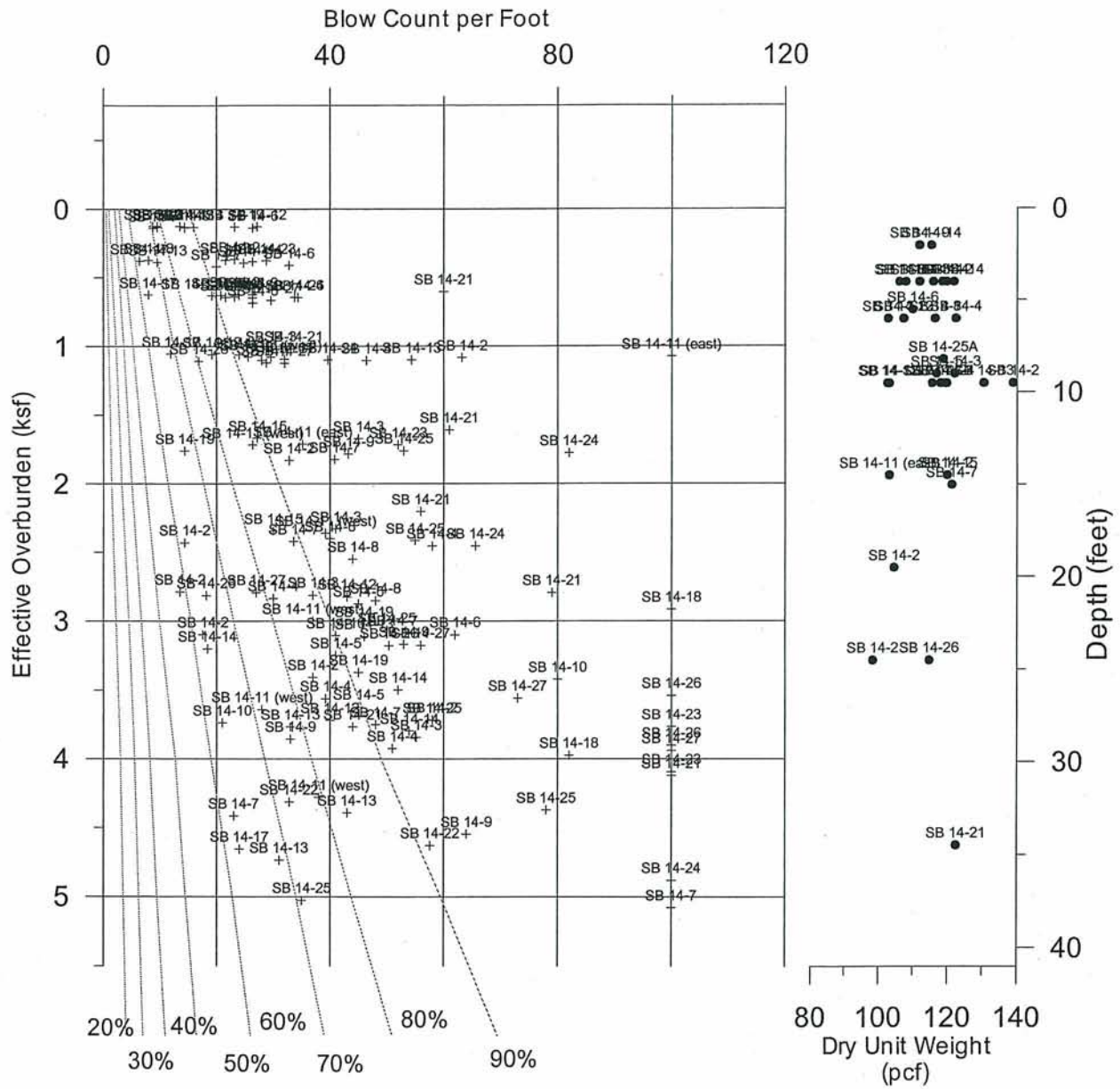
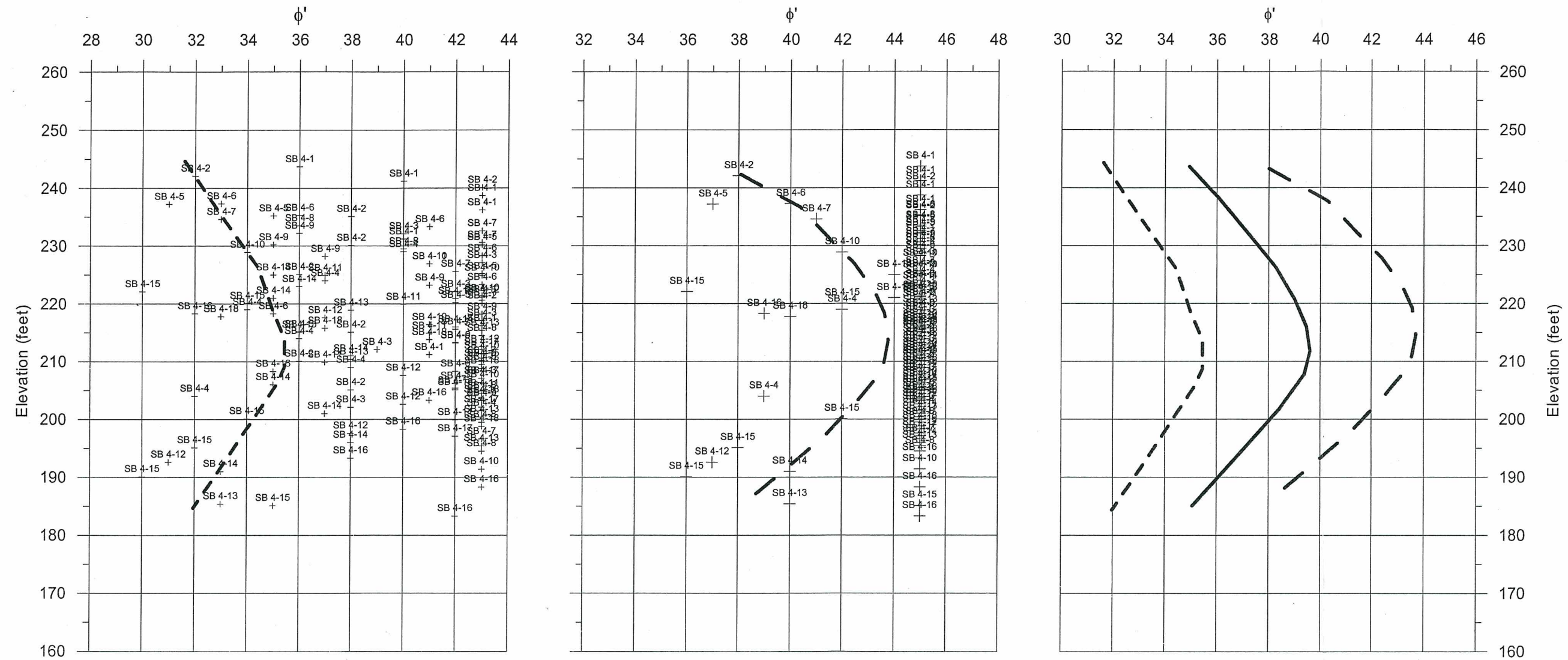


Figure 104

Reach 4 - Coarse Grained Soils



- ϕ' -envelope based on Peck, Hanson & Thornburn (1974)
- ϕ' -envelope based on Schmertmann (1975)
- Design ϕ' -envelope estimated between Peck, Hanson & Thornburn and Schmertmann.

Figure 105

Reach 5 - Coarse Grained Soils

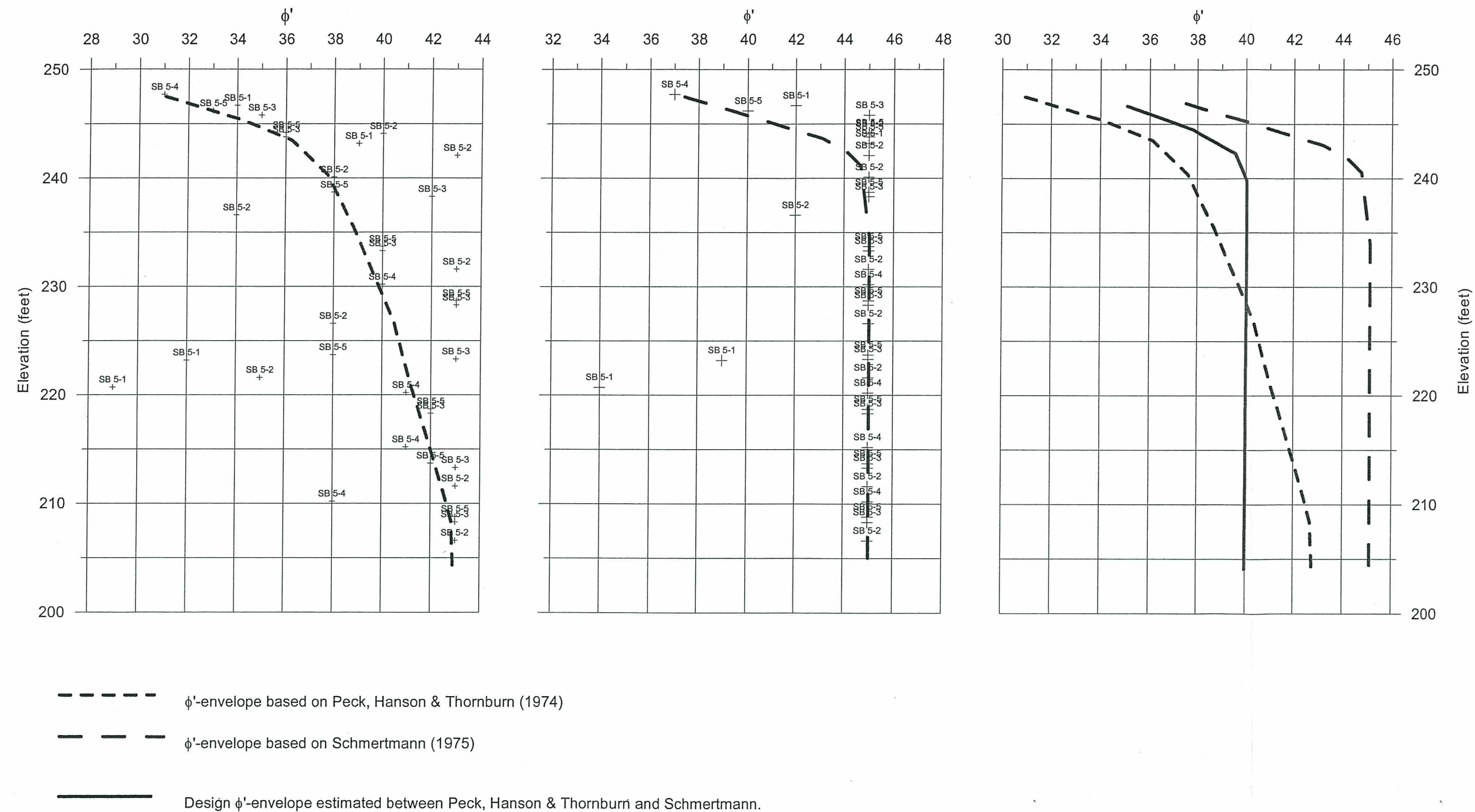


Figure 106

Reach 6 - Coarse Grained Soils

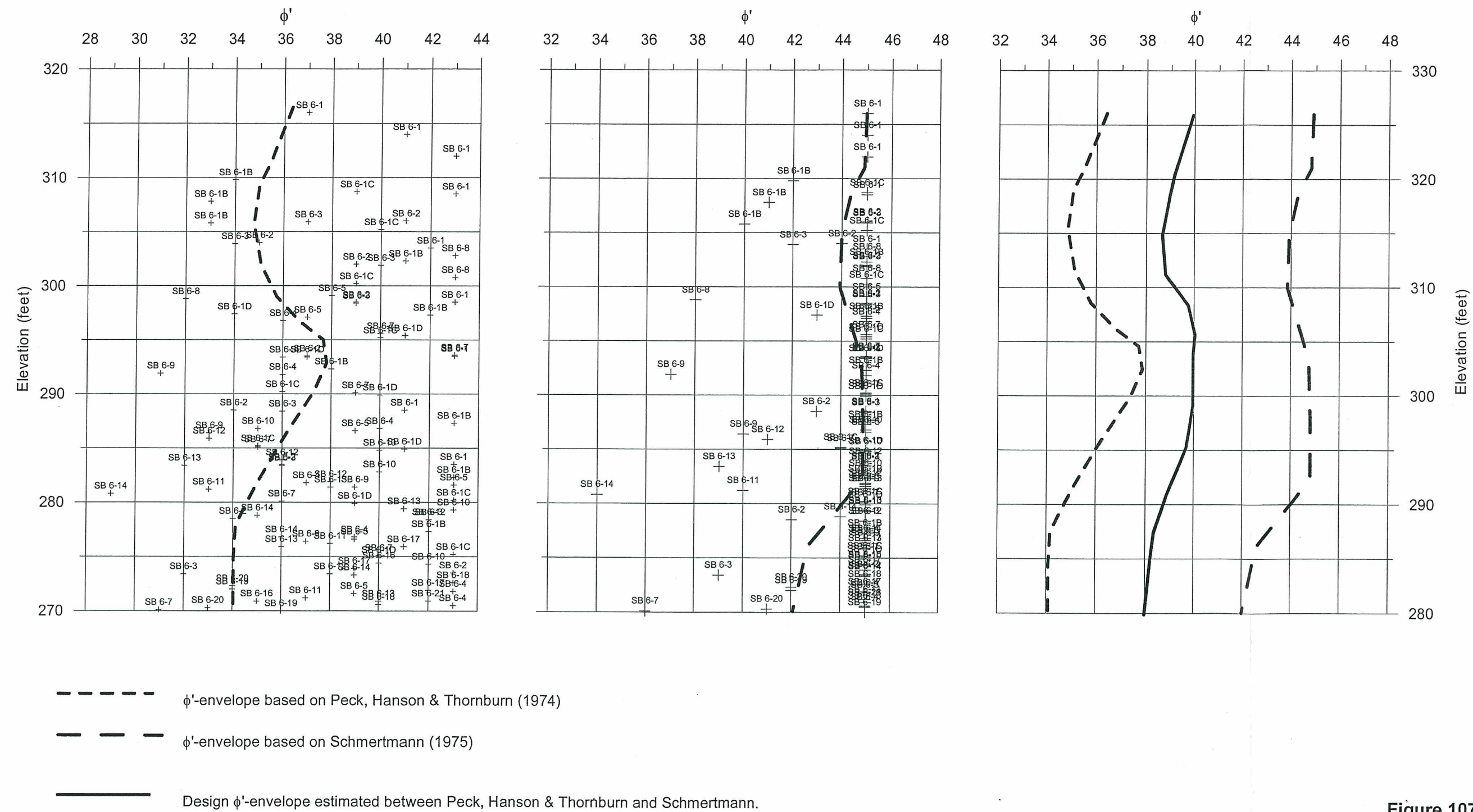
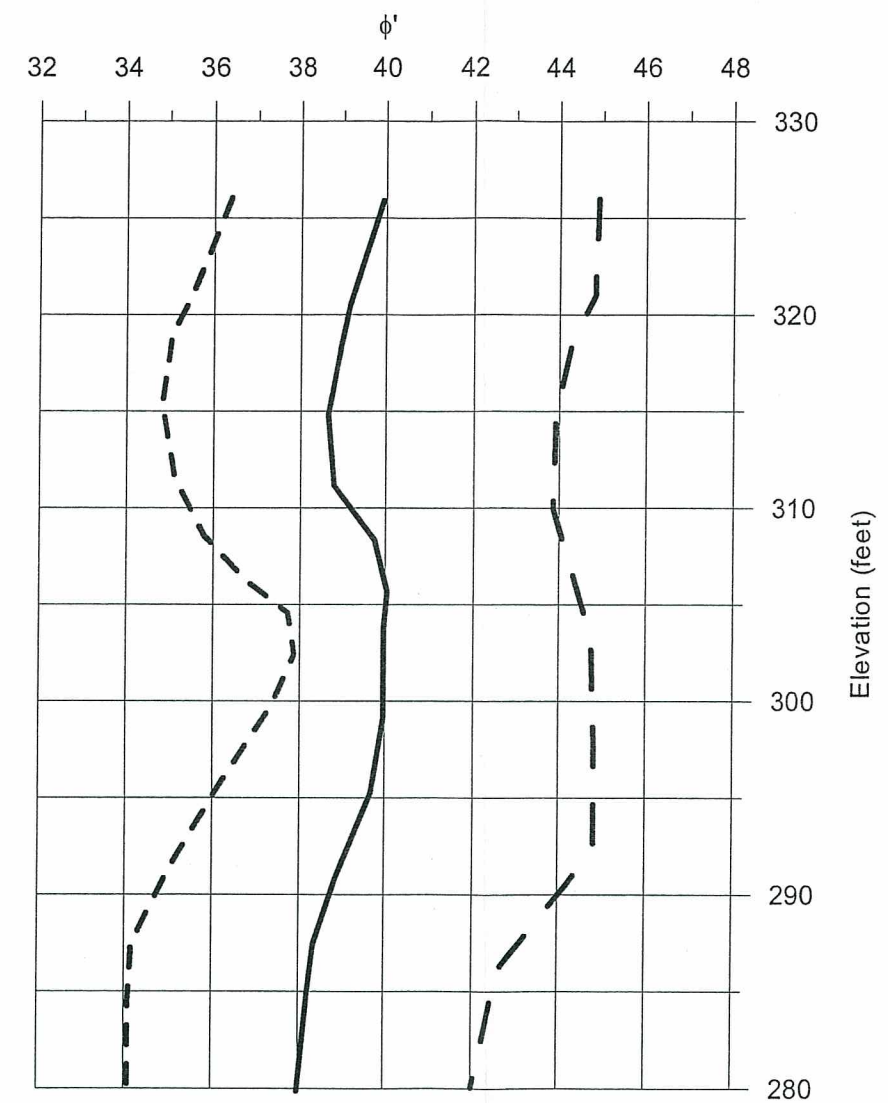
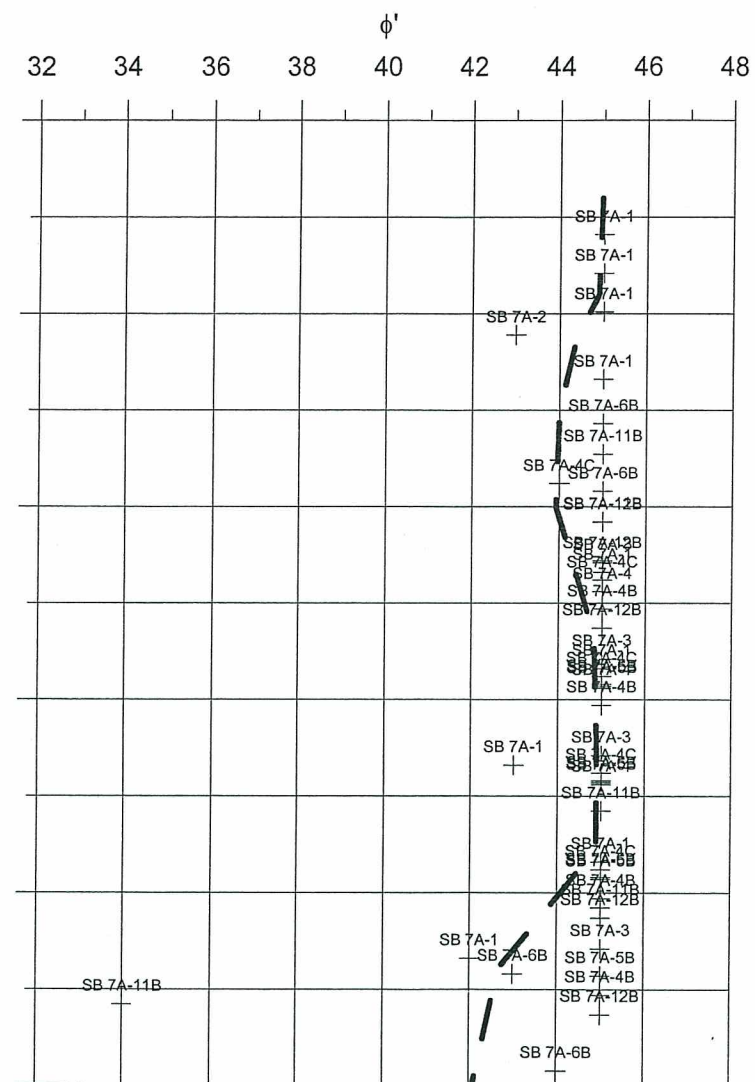
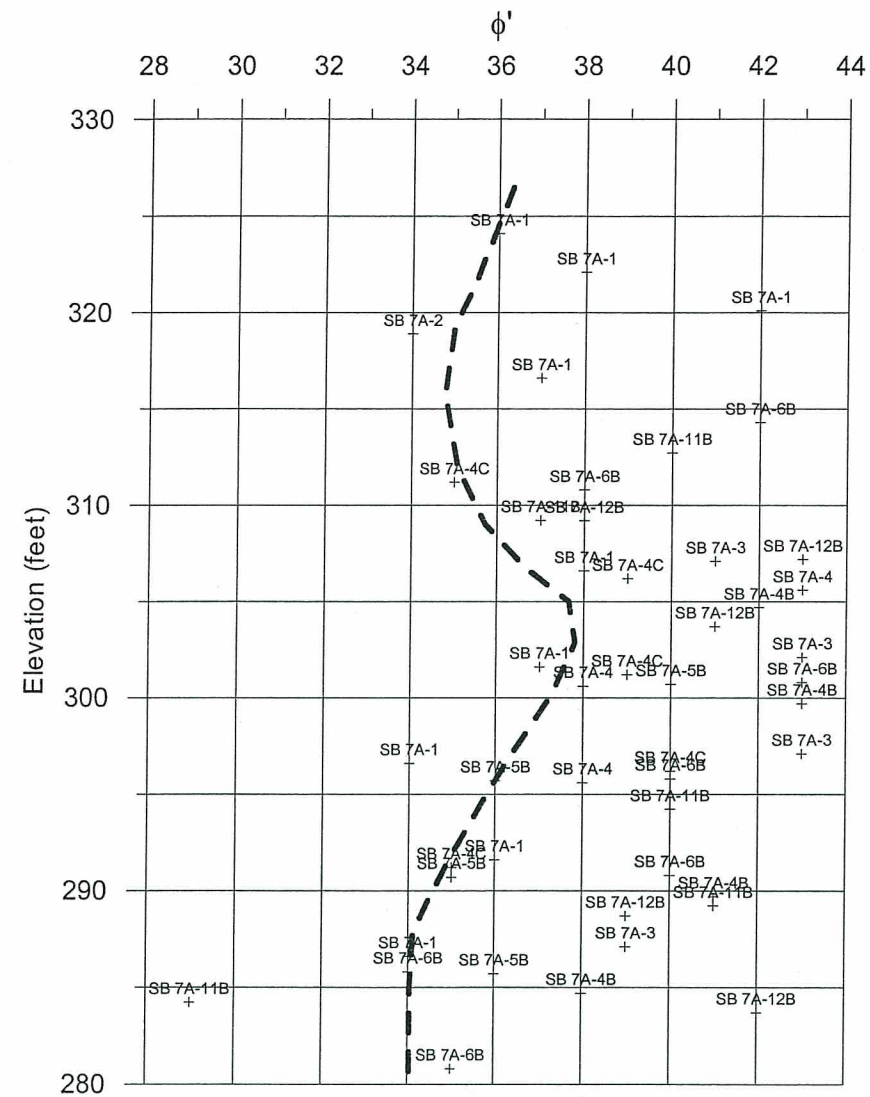


Figure 107

Reach 7A - Coarse Grained Soils



 ϕ' -envelope based on Peck, Hanson & Thornburn (1974)

 ϕ' -envelope based on Schmertmann (1975)

 Design ϕ' -envelope estimated between Peck, Hanson & Thornburn and Schmertmann.

Figure 108

Reach 7B - Coarse Grained Soils

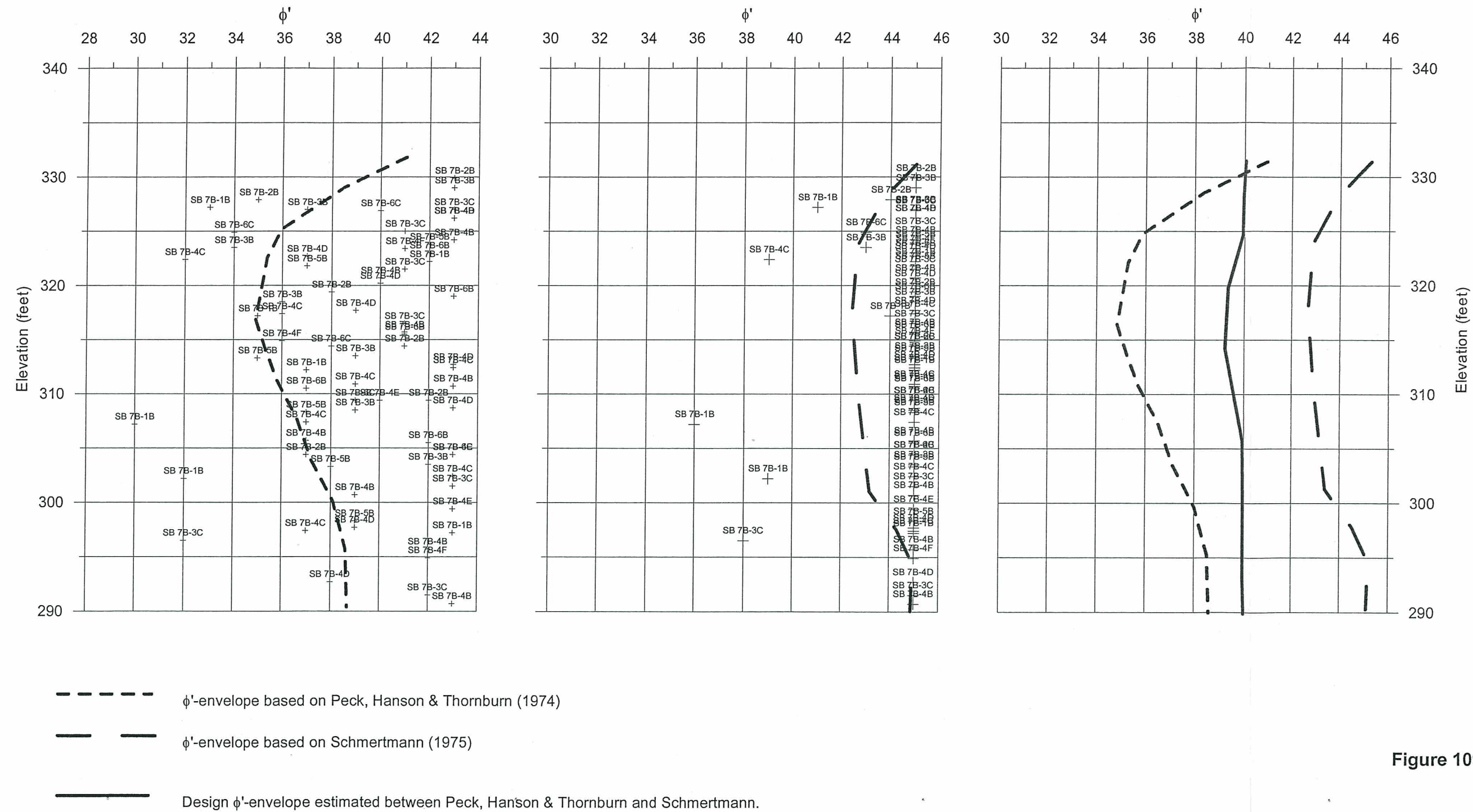


Figure 109

Reach 8 - Coarse Grained Soils

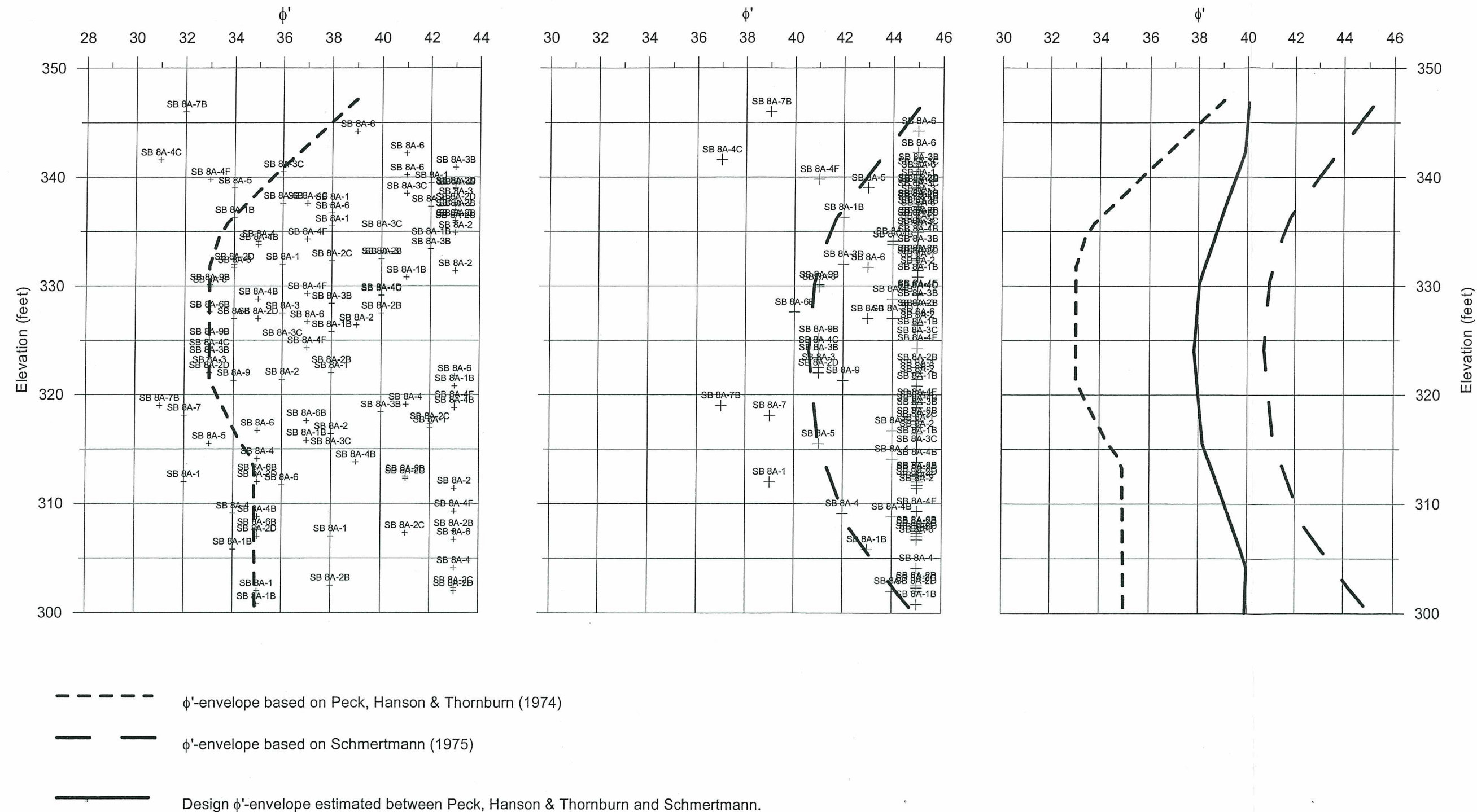
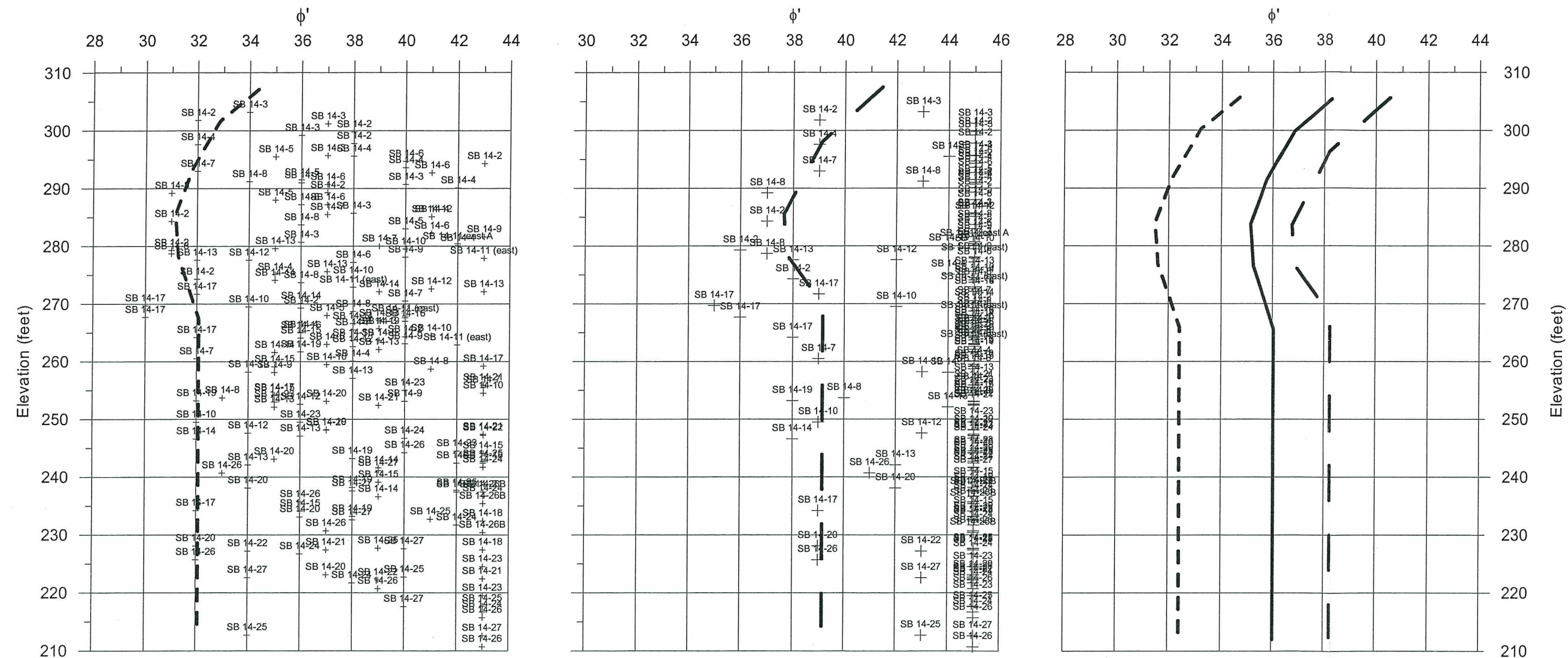


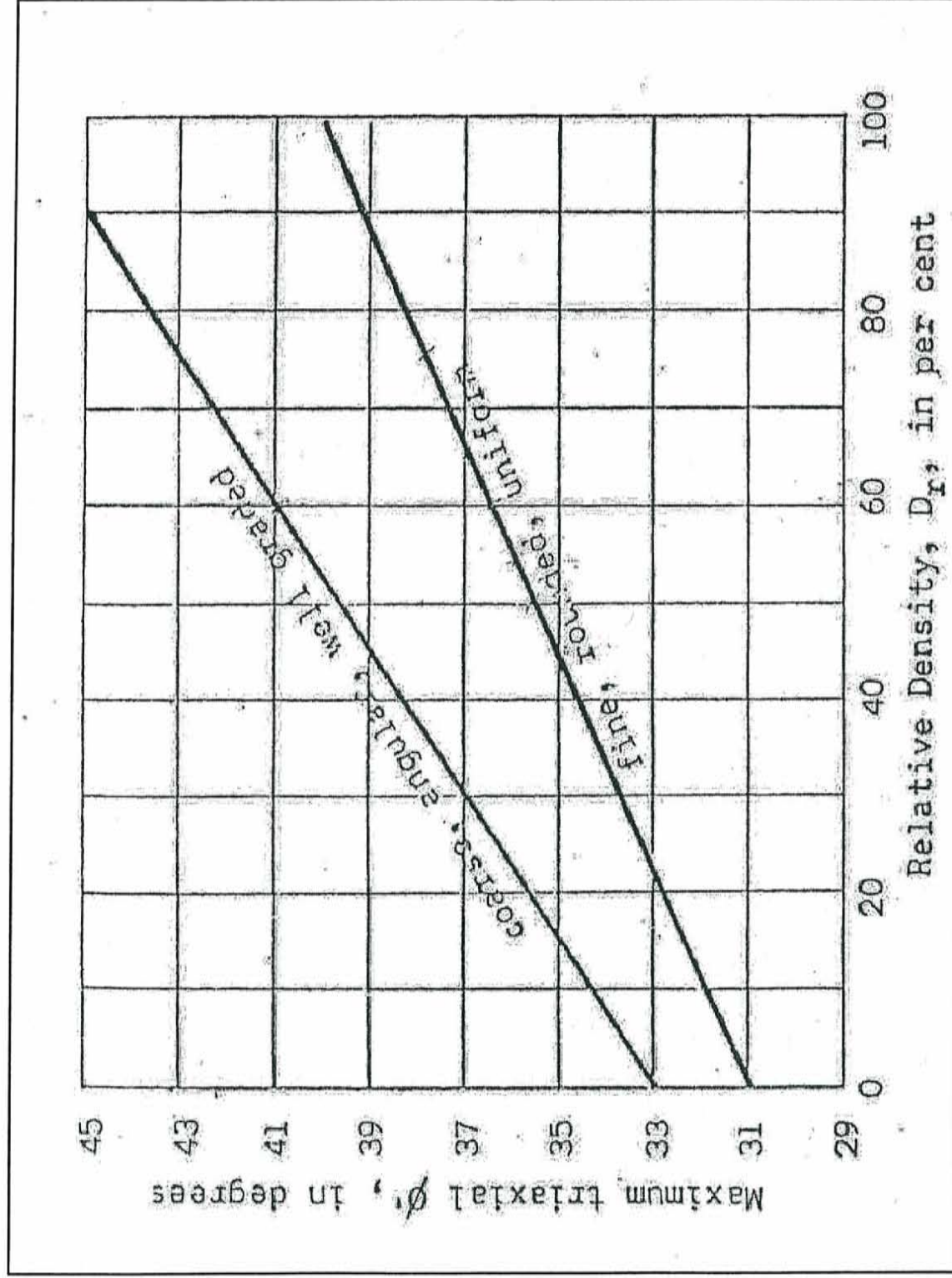
Figure 110

Reach 14 - Coarse Grained Soils



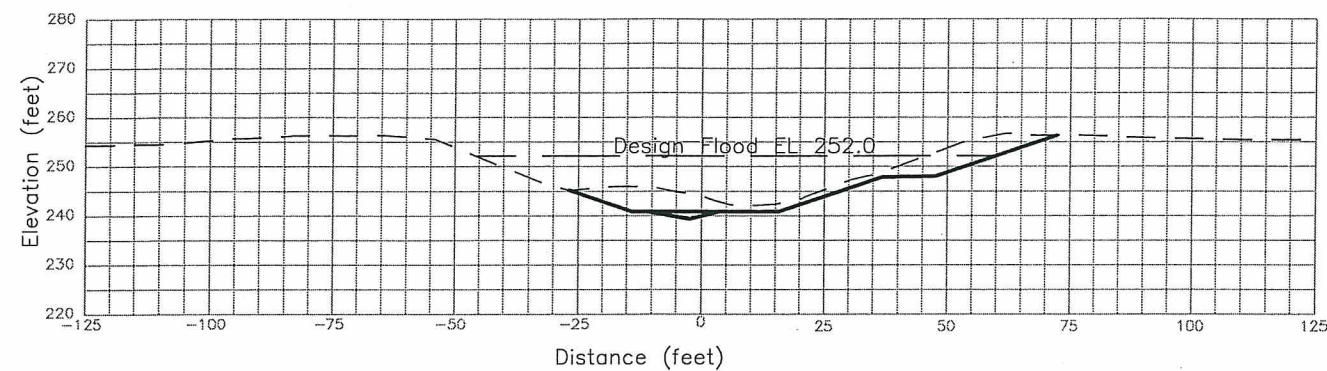
- ϕ' -envelope based on Peck, Hanson & Thornburn (1974)
- ϕ' -envelope based on Schmertmann (1975)
- Design ϕ' -envelope estimated between Peck, Hanson & Thornburn and Schmertmann.

Figure 111

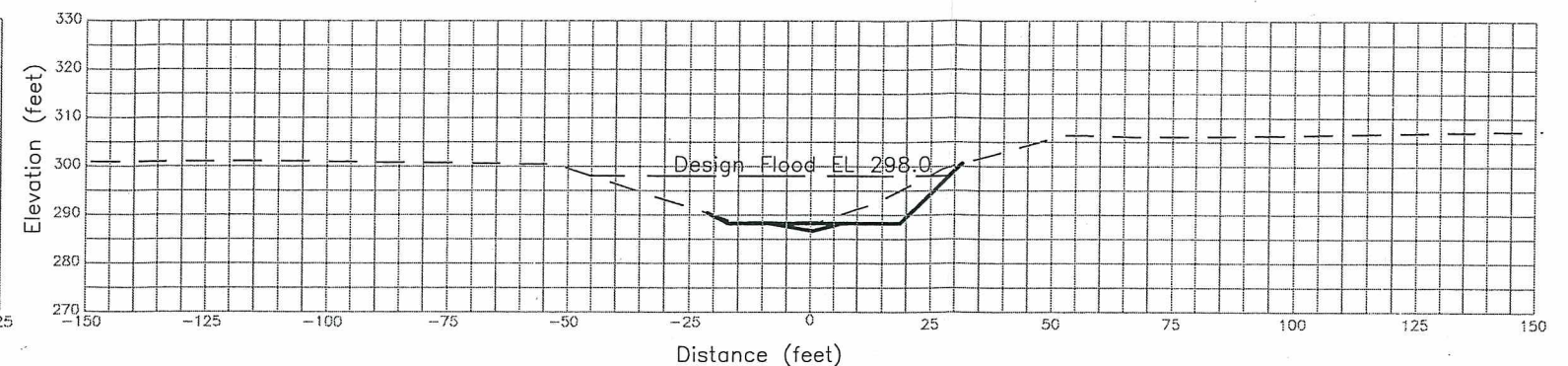


(AFTER SCHMERTMANN, 1975)

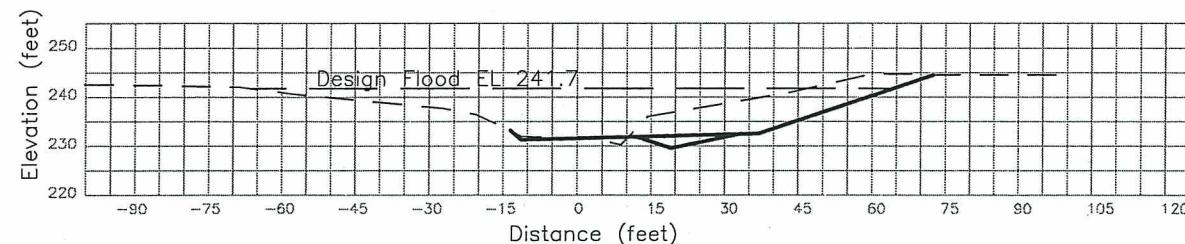
Q:\CADD\2005\28649692_UllagosFPF\Report_Figures\GE-692009.dwg



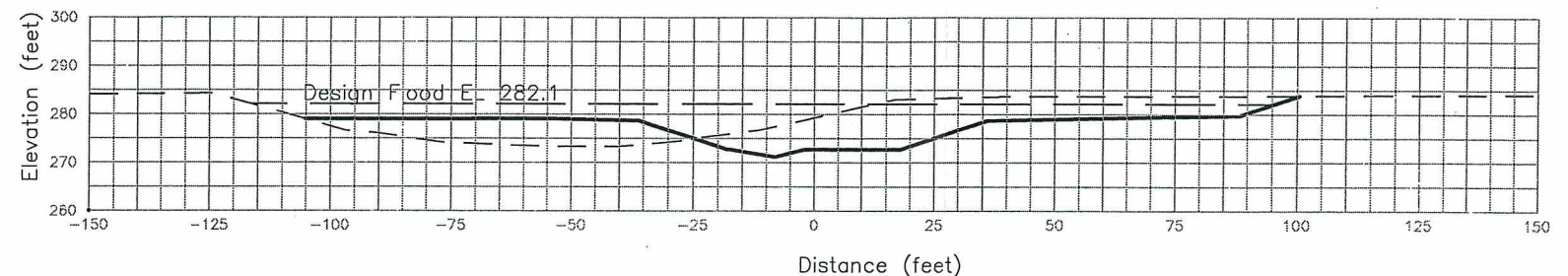
SECTION 3 (Reach 5)
Looking Upstream
Approx. Corps Hyd and Design Sta 518+00
PRELIMINARY



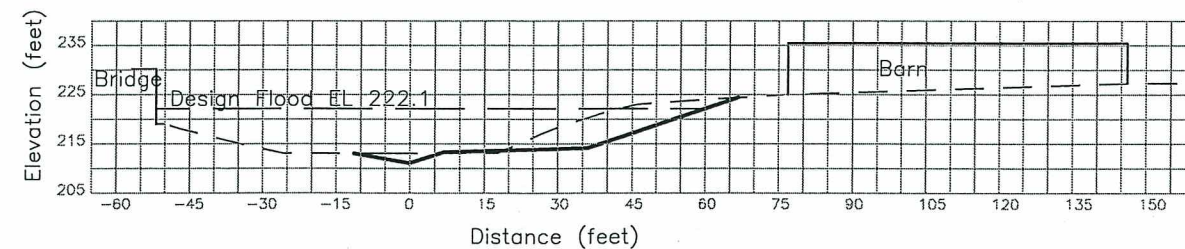
SECTION 6 (Reach 6)
Looking Upstream
Approx. Corps Hyd and Design Sta. 673+00
PRELIMINARY



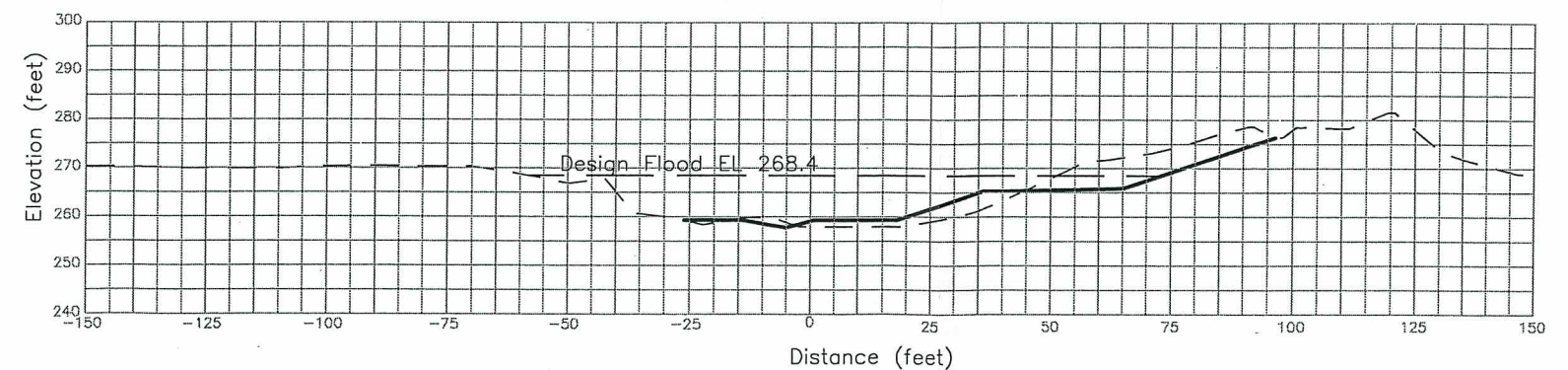
SECTION 2 (Reach 4)
Looking Upstream
Approx. Corps Hyd and Design Sta 472+00
PRELIMINARY



SECTION 5 (Reach 6)
Looking Upstream
Approx. Corps Hyd and Design Sta. 619+00
PRELIMINARY



SECTION 1 (Reach 4)
Looking Upstream
Approx. Corps Hyd and Design Sta 378+00
PRELIMINARY



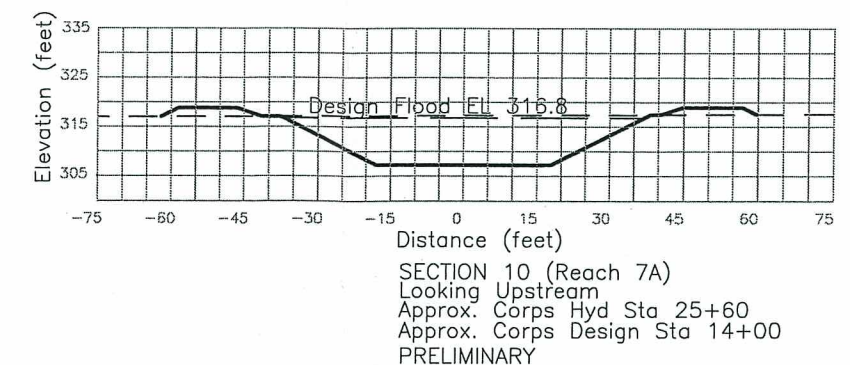
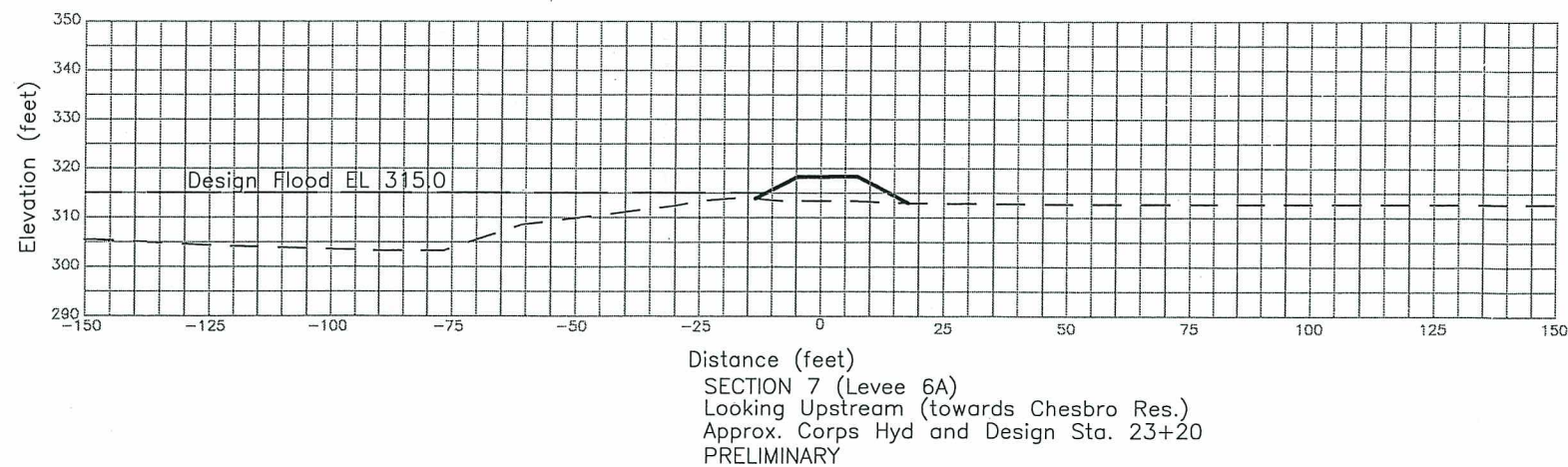
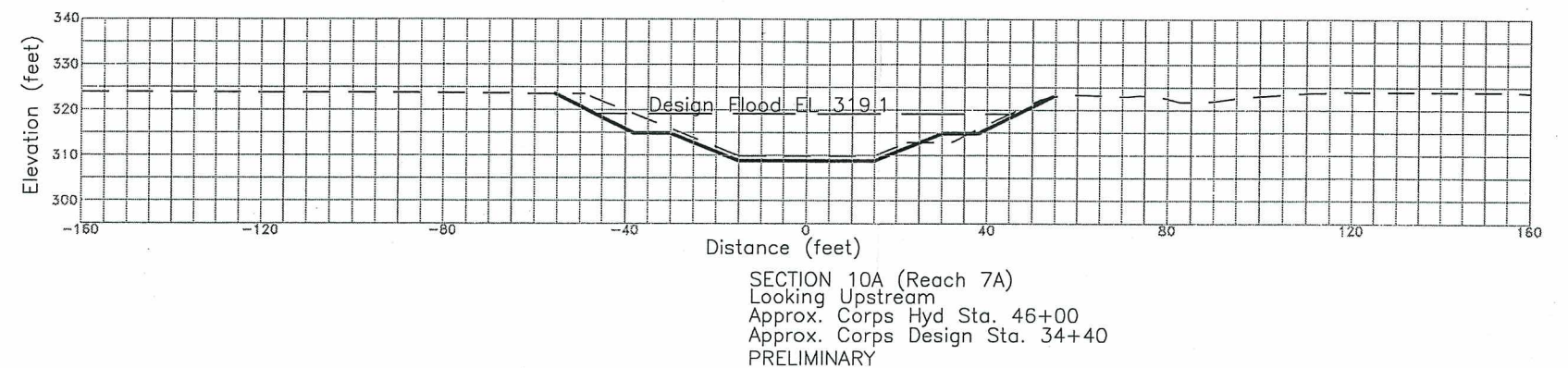
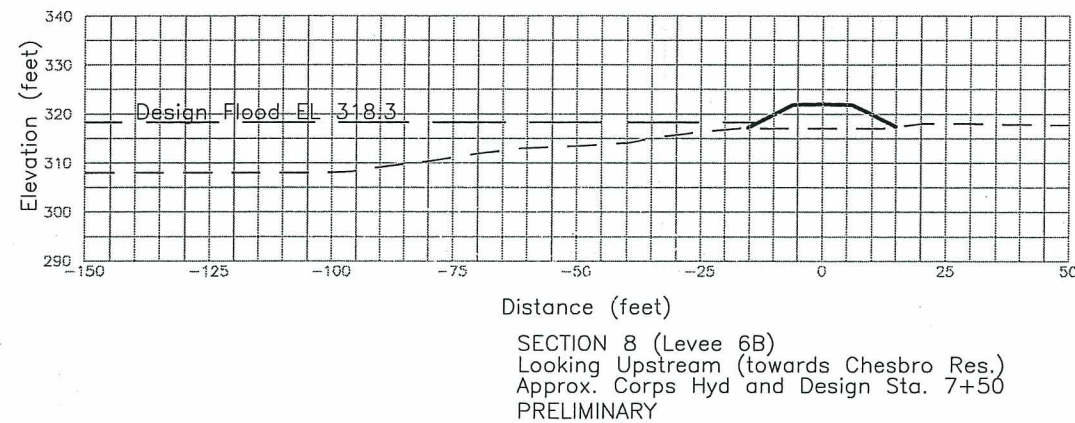
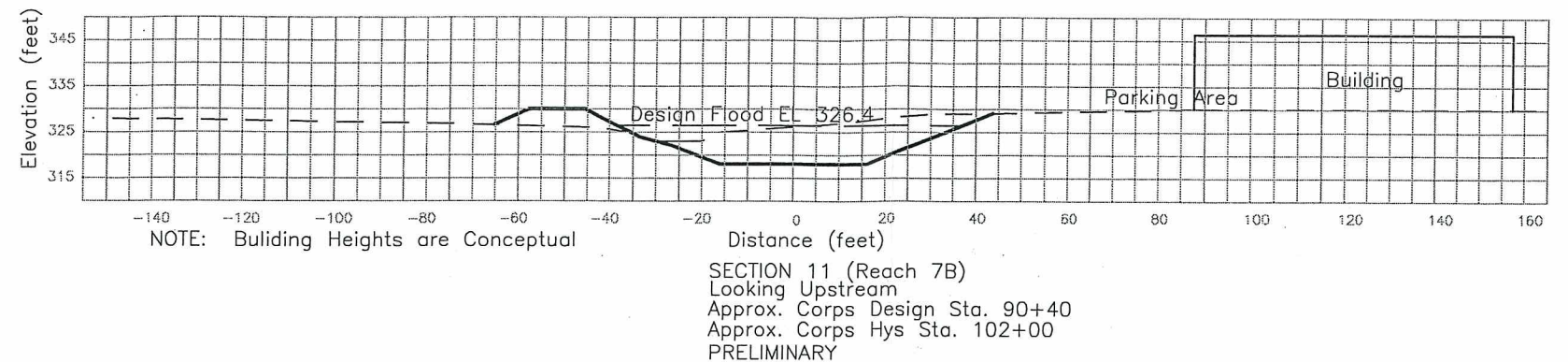
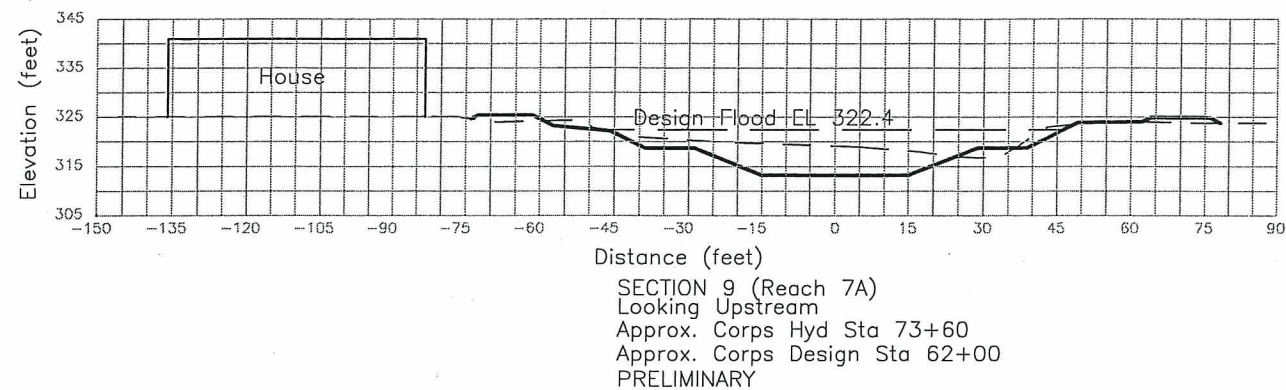
SECTION 4 (Reach 6)
Looking Upstream
Approx. Corps Hyd and Design Sta. 573+00
PRELIMINARY

LEGEND: — Design Finished Grade
- - - Existing Ground/Channel
— Design Channel Water Level

NOTE: Vertical Datum NAVD 88

	Project No. 28649692	CROSS SECTIONS FOR SECTION NO. 1 THROUGH 6	Figure 113
	Upper Llagas Creek Flood Protection Project Santa Clara County, CA		

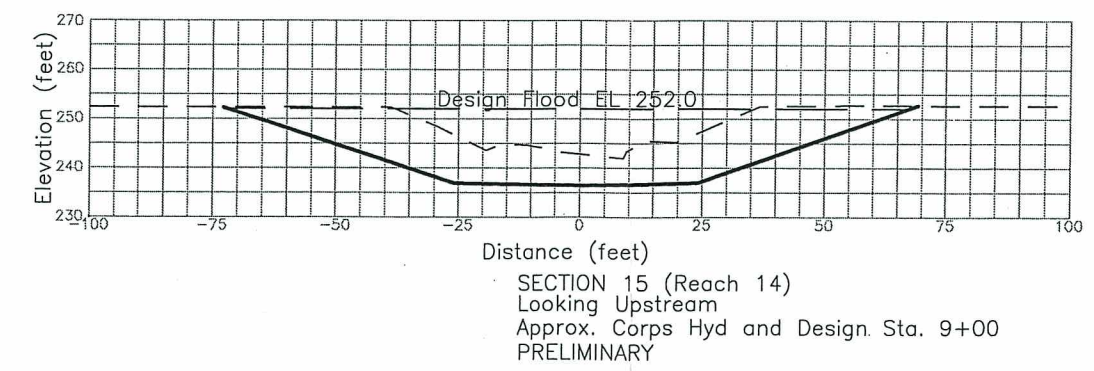
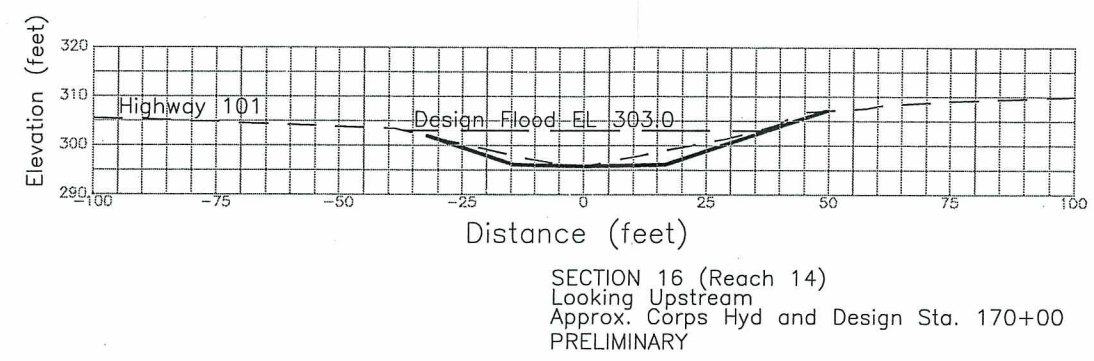
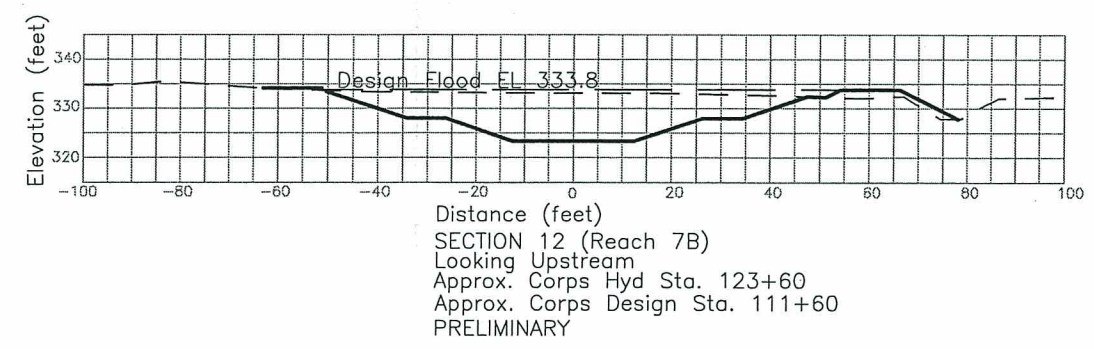
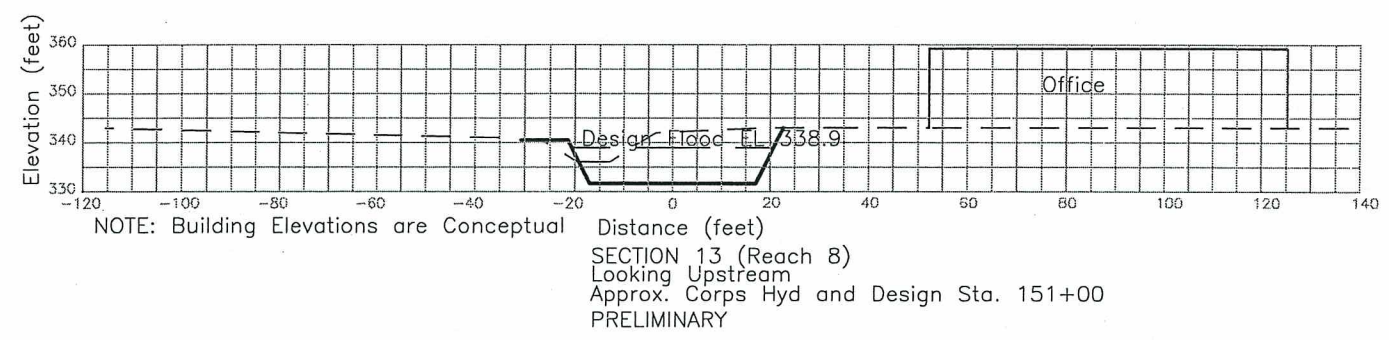
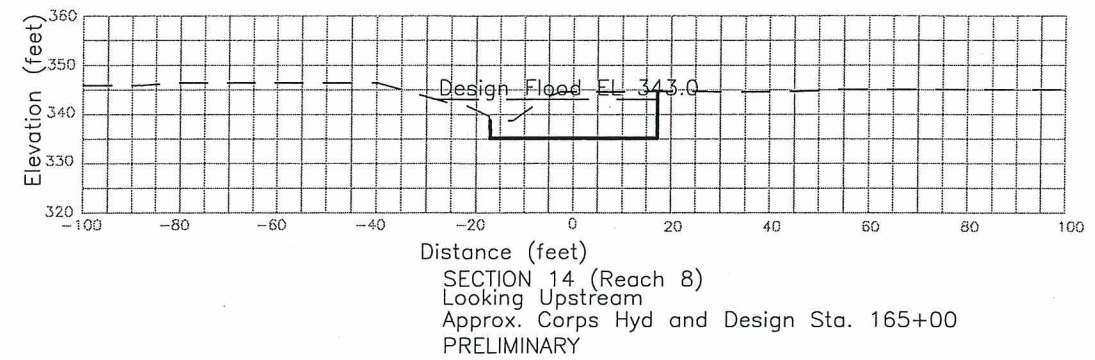
Q:\CADD\2005\28649692_UllagatPP\Report_Figures\GE-692005.dwg



LEGEND: ——— Design Finished Grade
—— Existing Ground/Channel
—— Design Channel Water Level

NOTE: Vertical Datum NAVD 88

Q:\CADD2\2005\28649692_UllagasFPP\Report_Figures\GE-892009.dwg



LEGEND: ——— Design Finished Grade
- - - Existing Ground/Channel
——— Design Channel Water Level

NOTE: Vertical Datum NAVD 88

Coefficient of Permeability k in cm per sec (log scale)														
	10^4	10^3	10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}
Drainage	Good						Poor		Practically Impervious					
Soil types	Clean gravel	Clean sands, clean sand and gravel mixtures					Very fine sands, organic and inorganic silts, mixtures of sand silt and clay, glacial till, stratified clay deposits, etc.					"Impervious" soils, e.g., homogeneous clays below zone of weathering		
							"Impervious" soils modified by effects of vegetation and weathering							
Direct determination of k	Direct testing of soil in its original position—pumping tests. Reliable if properly conducted. Considerable experience required													
Indirect determination of k	Constant-head permeameter. Little experience required										Falling-head permeameter. Fairly reliable. Considerable experience necessary			
	Falling-head permeameter. Reliable. Little experience required					Falling-head permeameter. Unreliable. Much experience required								
	Computation from grain-size distribution. Applicable only to clean cohesionless sands and gravels										Computation based on results of consolidation tests. Reliable. Considerable experience required			

After A. Casagrande and R. E. Fadum

(AFTER TABLE 6, P. 48, OF SOIL MECHANICS IN ENGINEERING PRACTICE, BY K. TERZAGHI AND R. B. PECK, JOHN WILEY AND SONS, NEW YORK, 1948.)



Upper Llagas Creek Flood Protection Project
Santa Clara County, CA

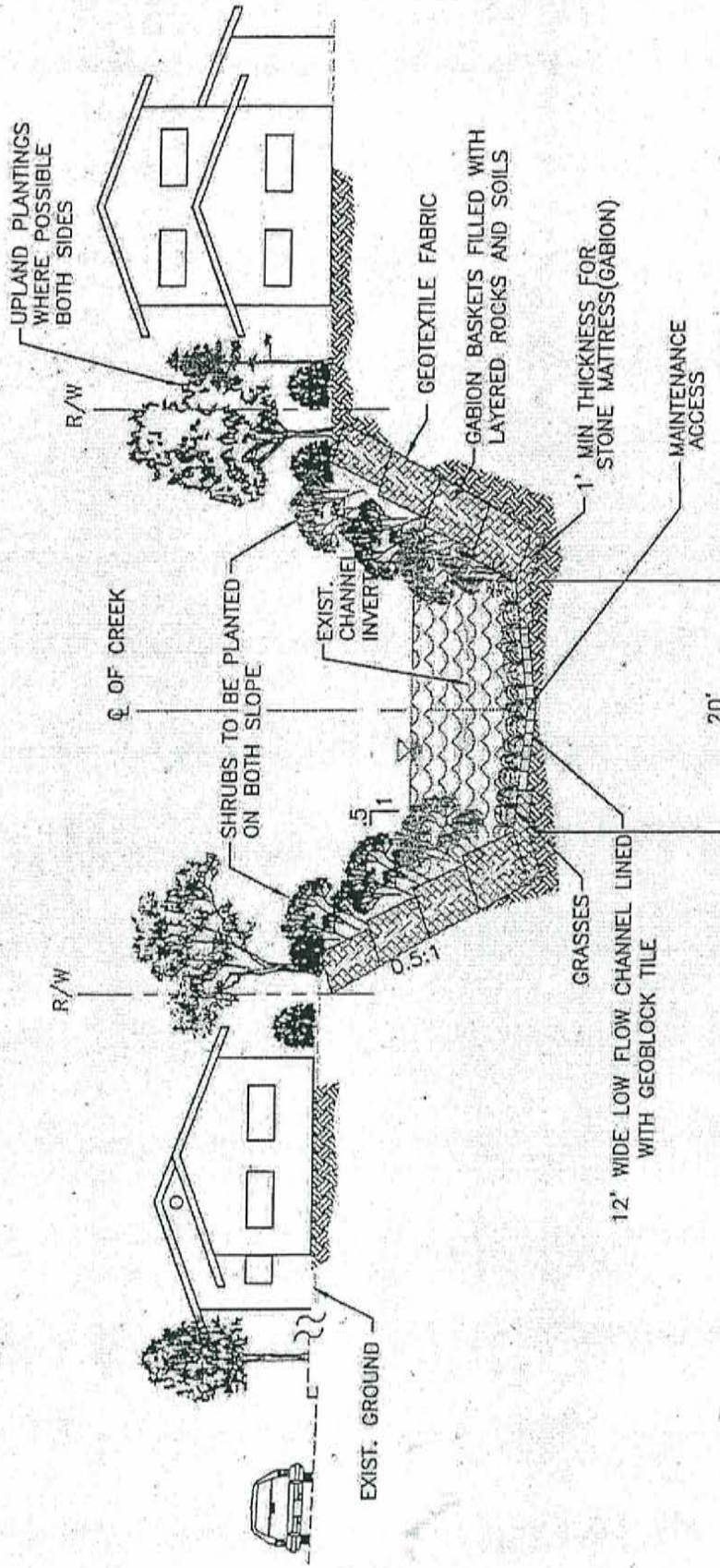
PERMEABILITY AND DRAINAGE CHARACTERISTICS OF SOILS

NOT TO SCALE

Figure

116

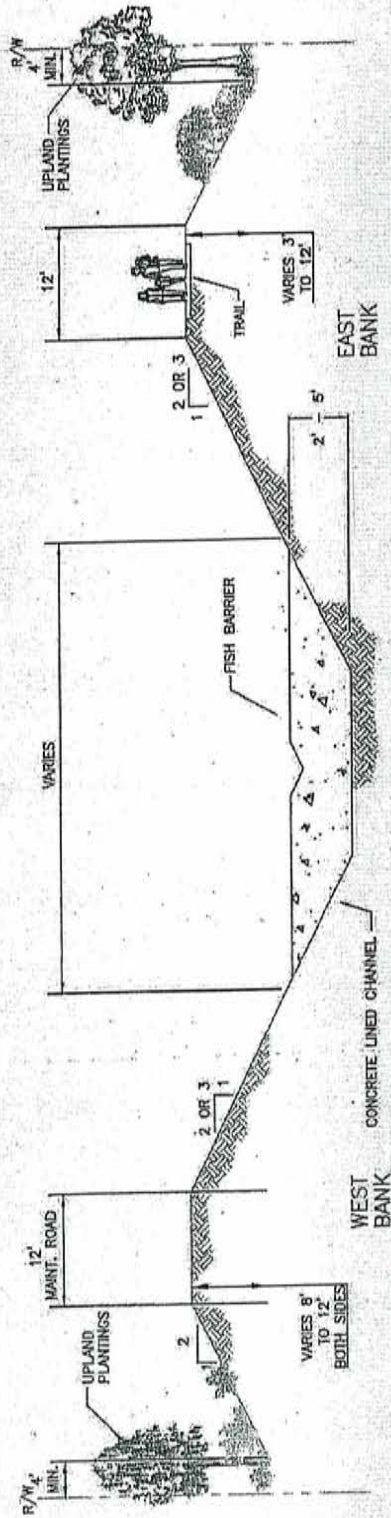
5/19/06



TYPICAL SECTION

LLAGAS CREEK REACH 8
 MORGAN HILL (DOWNTOWN)
 VEGETATED GABION ROCK LINING
 2002 PLAN
 NTS

PLATE 13

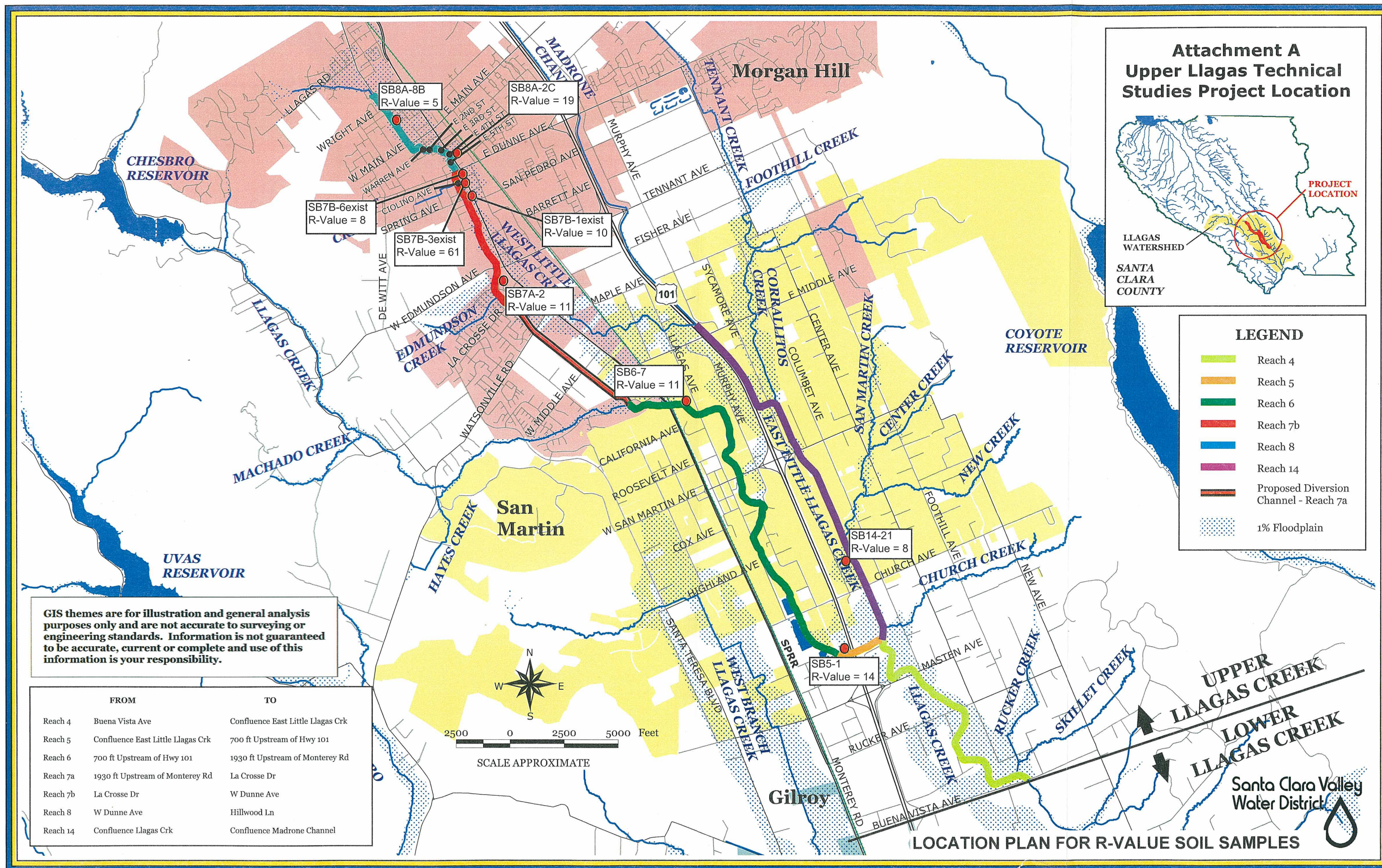


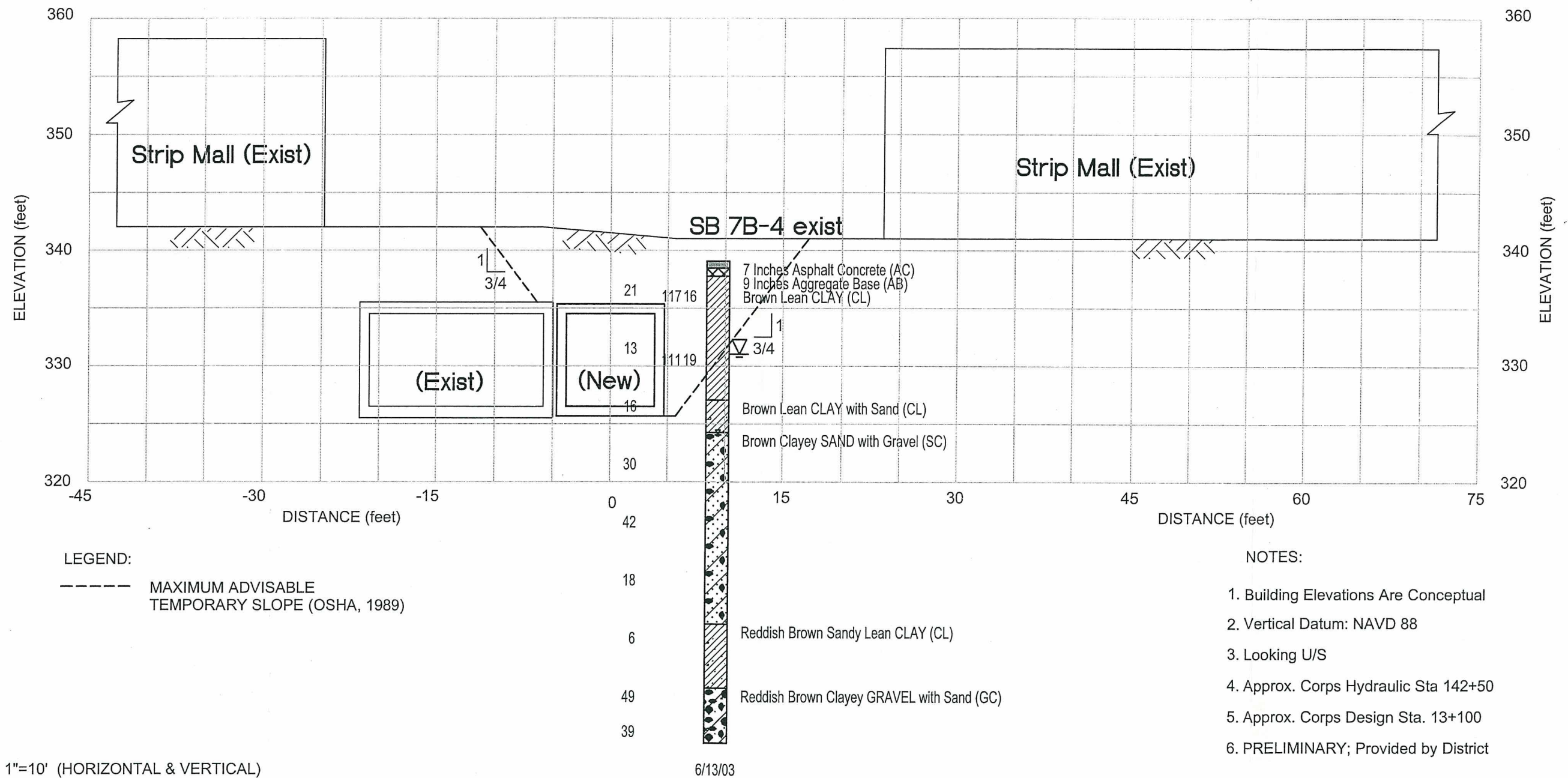
TYPICAL SECTION

WEST LITTLE LLAGAS CREEK DIVERSION CHANNEL - REACH 7a STATION 14+00
 AND EAST LITTLE LLAGAS CREEK - REACH 14 STATION 10+00
 (LOOKING DOWNSTREAM)
 NTS
 2002 PLAN

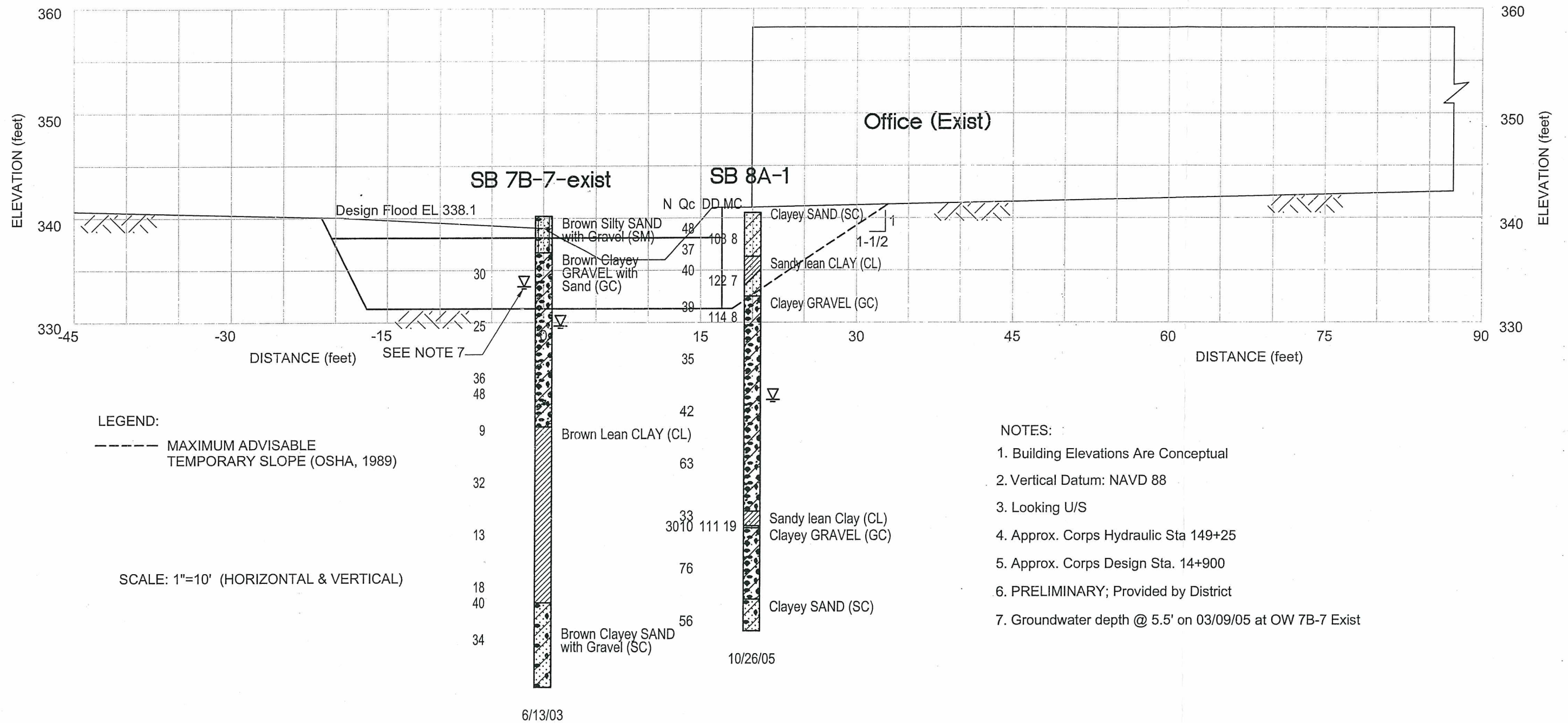
PLATE 18

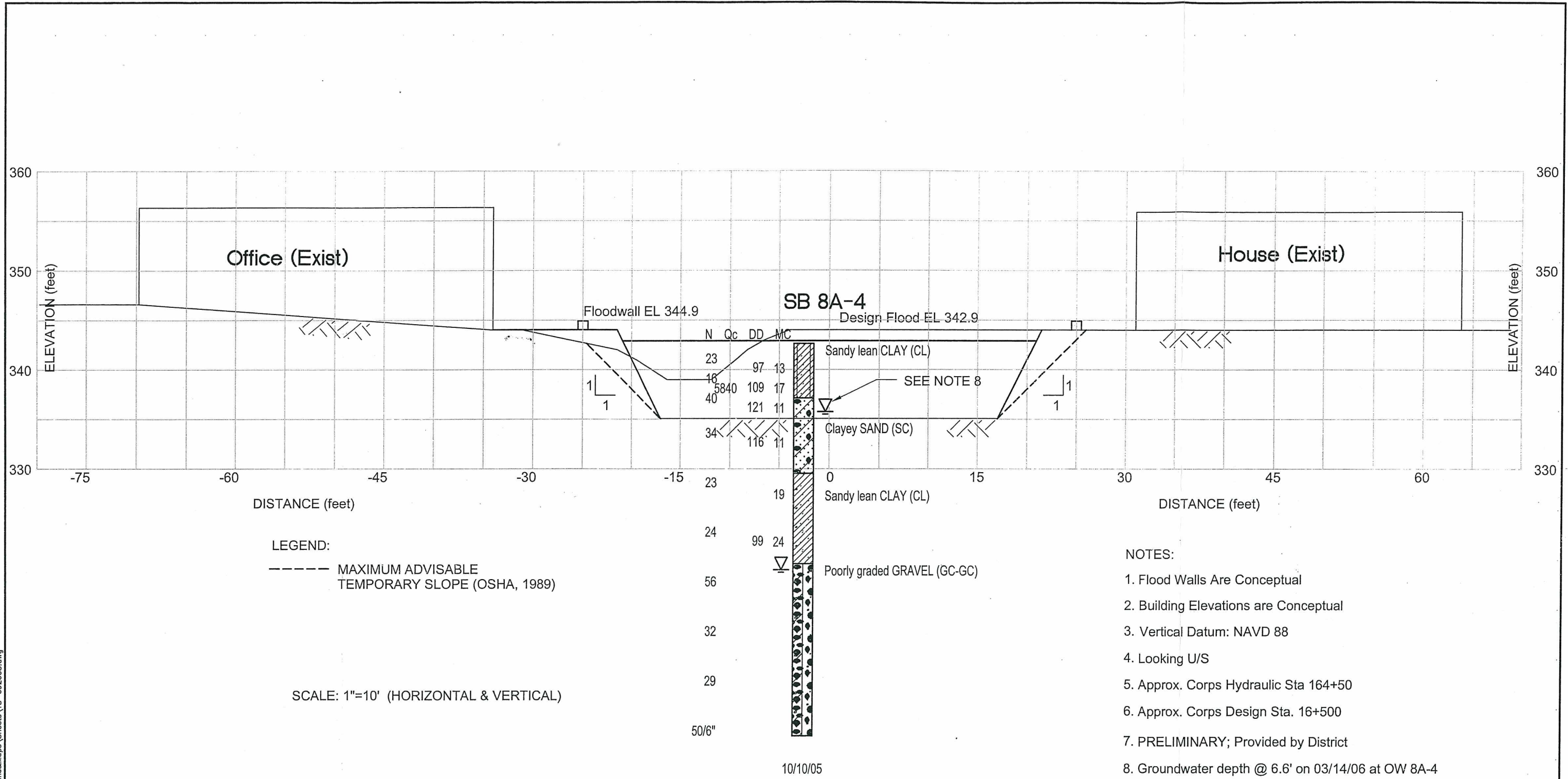
	Upper Llagas Creek Flood Protection Project Santa Clara County, CA		NOT TO SCALE
	TYPICAL SECTION FISH BARRIERS		Figure 118
			5/19/06





X:\DOC\2005\28649692\Plans&Maps\Sheets\TS-692001.dwg





X:\DOC\2005\28649692\Plans&Maps\Sheets\TS-692003.dwg

x:\DOC\2005\28649692\Plans&Maps\Sheets\TS-692004.dwg

