

BFAST

PROB (CONTD)

2350 (NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

DRILLING REPORT

COUNTY- HARRIS CO. STRUCTURE- SH99 @ BULL HEAD  
 HIGHWAY NO.- SH-99 HOLE NO.- 1  
 CONTROL- 3510-04-005 STATION- 835+45.57  
 PROJECT NO.- OFFSET- 19.9' RT  
 DATE- 10/26/90 CODED BY- GLS  
 GRD. ELEV.- 73.4 GRD. WATER ELEV.- 73.4 (Assumed)  
 DISTRICT- 12

D E P T H	F PEN 1ST 6IN	PEN 2ND 6IN	S A M P L E	TAT LAT- ULT PSI	WET DEN PCF	MOI %	LL %	PI %	DESCRIPTION OF MATERIAL AND REMARKS
0									CLAY, SANDY, BROWN, BLACK, STIFF, CALCS.
1	10	11							
2									
3			1	0-	20	136	18	40	-FERROUS MATERIAL
4			2	0-	25	137	15		
5	3	3							
6			3	0-	24	132	24		-SOME GRAY COLORING PRESENT
7			4	0-	20	130	25		
8			5	0-	23	137	20	45	
9			6	0-	17	134	20		
10	5	8							
11			7	0-	14	138	19		-SLIGHTLY SILTY
12			8	0-	20	138	19		
13			9			132	20		
14			10				23		SAND, SILTY, BROWN, LOOSE, MOIST
15	3	4							
16			11				22	25	
17			12				22		
18			13				19		
19			14				23		
20	5	3							
21			15				25		
22			16				26		
23			17				25		
24			18				25		
25	5	6							
26			19			127	23	24	
27			20				20		
28			21			132	24		
29			22				22		
30	2	0							SAND, SILTY, BROWN, VERY LOOSE, MOIST
31									
32									
33			23				25		SAND, CLAYEY, BROWN, LOOSE, MOIST
34			24			133	23	26	
35	11	6							

SAND, SILTY, BROWN, SL. COMPACT, W.B.

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SAND, SILTY, BROWN, COMPACT, W.B.

-END W.B. MATERIAL, GRAVEL TO 65'

25 17

DRILLER- MIKE BAHM

LOGGER- RODNEY TIBBITS  
TITLE- MAT. ANAL. 1

BFAST

PROB (CONTD)

2350 (NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

SOIL STRENGTH ANALYSIS RESULTS

HOLE NUMBER 1

STRAT NUM.	ELEVATION -FEET-		STRAT THICK NESS FEET	CEN- TROID DEPTH FEET	UNIF. SOIL CLASS	PEN TEST BLOWS/ FOOT	SOIL WET COHES TEST CONST	WET DENS LBS/ CUFT	INT. FRIC ANG.	VARIANCE		TAT RATIO	
	FROM	TO								PEAK	AVG		
1	73	60	13.0	6.5	CL	13.3	60	1462	135	0.0	3.2	1.4	5.7
2	60	44	16.0	21.0	OTHE	8.7	80						
3	44	41	3.0	30.5	OTHE	2.0	80						
4	41	37	4.0	34.0	SC	17.0	70						
5	37	24	13.0	42.5	OTHE	24.0	80						
6	24	8	16.0	57.0	OTHE	56.0	80						

BFAST

PROB (CONTD)

2350

(NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

SOIL STRENGTH ANALYSIS RESULTS  
 DISREGARD TO ELEVATION IS 99.9 FEET

HOLE NUMBER	1	ALLOWABLE STATIC FRICTIONAL RESISTANCE (DS)			REDUCED ALLOWABLE STATIC FRICTIONAL RESISTANCE			POINT BEARING		TAT TO PEN RAT
		DESIGN STRESS OF SOIL TONS/SQFT PER STRAT	TONS PER FT OF PERIMETER STRATUM	PER ACCUM- ULATIVE	PER STRATUM	ACCUM- ULATIVE	BEAR FACTOR NC	STRENGTH SNC TONS/SQFT		
STRATA NUMBER	ELEVATION -FEET- FROM TO									
1	73.4 60.4	0.37	4.75	4.75	0.7	3.33	3.33	3.62	0.00	1.6
2	60.4 44.4	0.11	1.75	6.48	0.7	1.21	4.54	4.29	0.00	0.0
3	44.4 41.4	0.02	0.07	6.56	0.7	0.05	4.59	4.29	0.00	0.0
4	41.4 37.4	0.24	0.97	7.53	0.7	0.68	5.27	4.29	0.00	0.0
5	37.4 24.4	0.31	3.98	11.51	0.7	2.79	8.06	4.29	0.00	0.0
6	24.4 8.4	0.70	11.20	22.71	0.7	7.84	15.90	4.29	0.00	0.0

# DRILLING LOG

COUNTY HARRIS CO.  
 HIGHWAY NO SH-99  
 CONTROL 3510-04-005  
 IPE

STRUCTURE SH99 \* DULL HEAD  
 HOLE NO 1  
 STATION 835+45.57  
 LOCATION 19.9'RT

TMD DIST 12  
 DATE 10/26/90  
 GRD. ELEV. 73.4  
 GRD. WATER ELEV. 73.4 (Assumed)

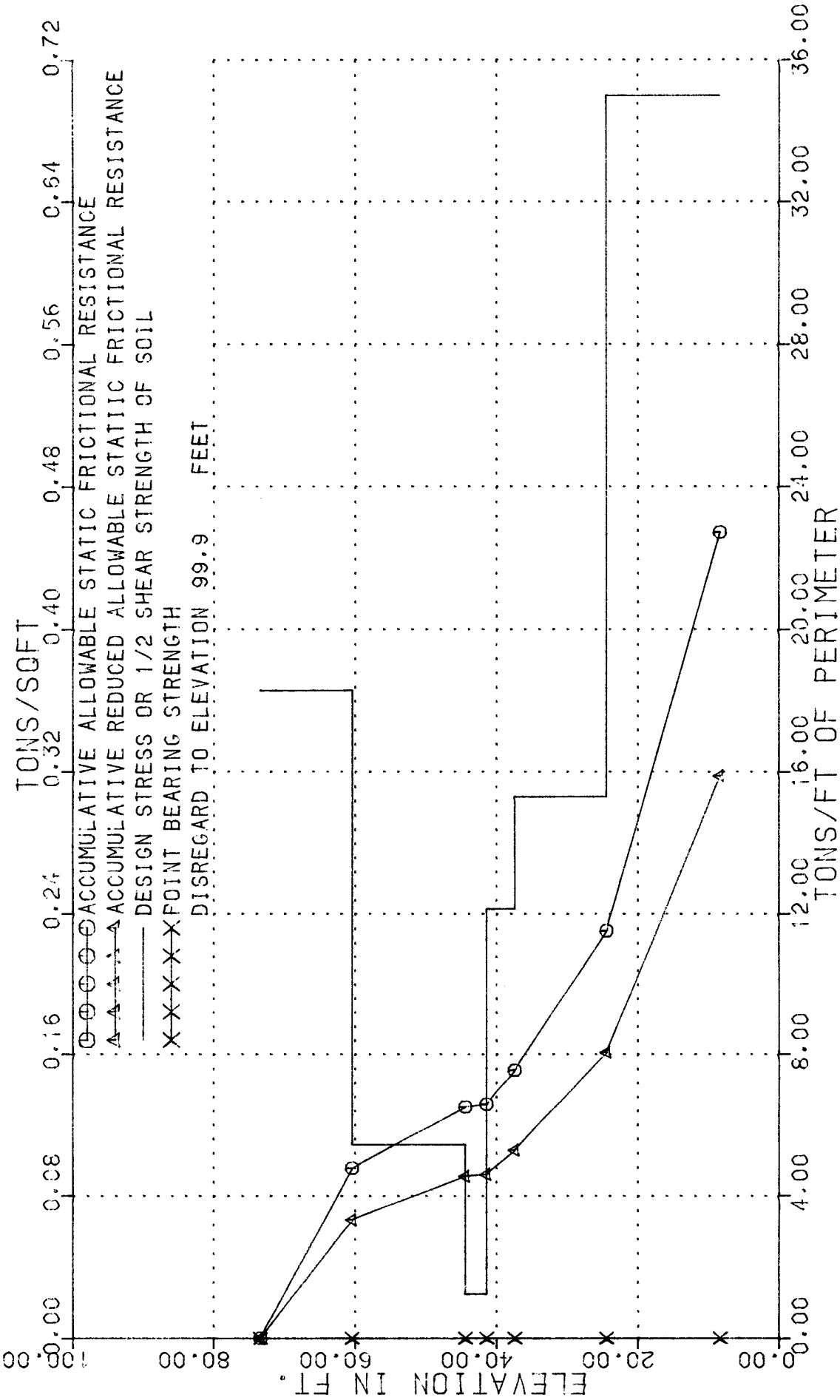
ELEV FT.	LOG	TMD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1ST 6"	2ND 6"		
73.4	0	10 (6.0")	11 (6.0")	CLAY, SANDY, BRN, BLK, STIFF, CALC.	0
		3 (6.0")	3 (6.0")		
		5 (6.0")	8 (6.0")		
60.4	10	3 (6.0")	4 (6.0")	SAND, SILTY, BROWN, LOOSE, MOIST	10
		5 (6.0")	3 (6.0")		
		5 (6.0")	6 (6.0")		
44.4	20	2 (6.0")	0 (6.0")	SAND, SILTY BROWN, VERY LOOSE, MOIST	20
41.4		11 (6.0")	6 (6.0")		
37.4	30	17 (6.0")	14 (6.0")	SAND, SILTY, BROWN, SL. COMPACT, W.B.	30
		9 (6.0")	9 (6.0")		
		23 (6.0")	19 (6.0")		
24.4	40	40 (6.0")	39 (6.0")	SAND, SILTY, COMPACT, WATER BEARING	40
		20 (6.0")	27 (6.0")		
*REMARKS: CWE @ END OF DRILLING					

DRILLER MIKE BAHM

LOGGER RODNEY TIBBITS

TITLE MAT. ANAL. I

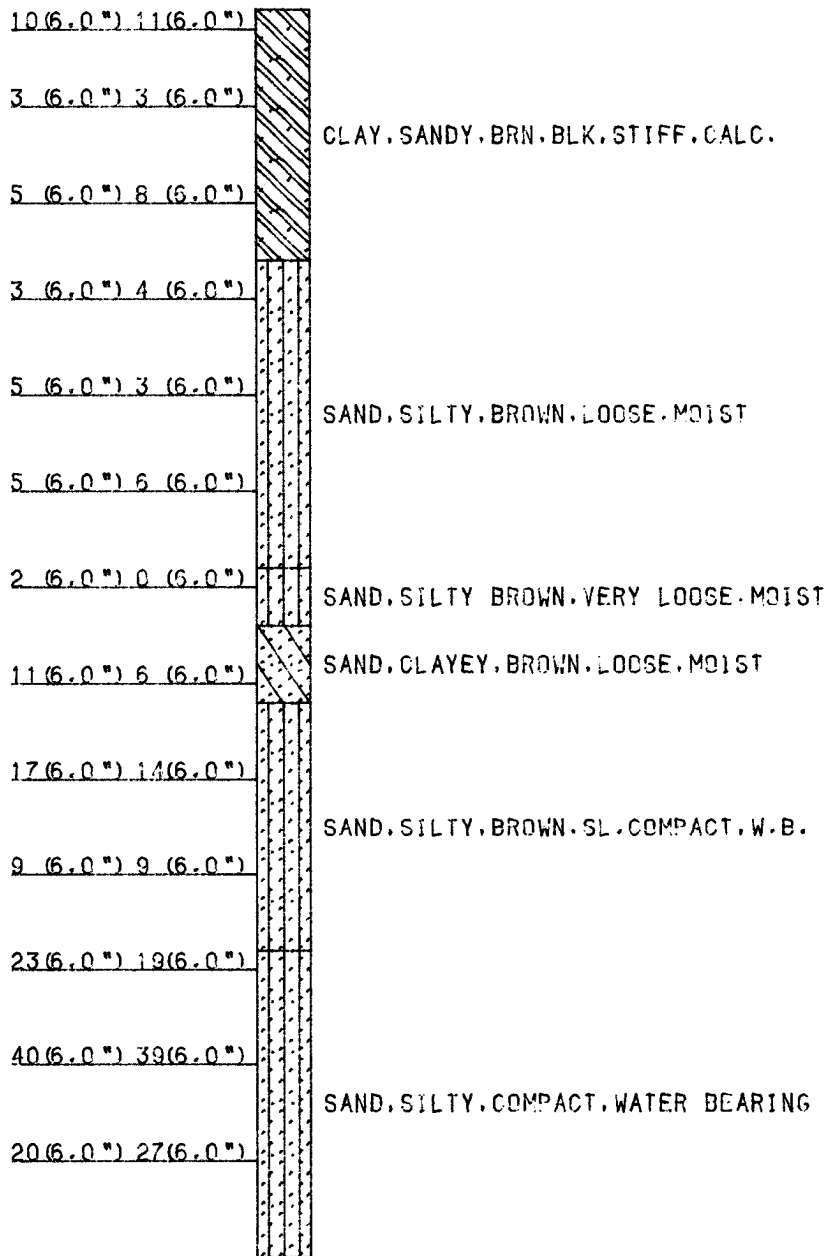
# FOUNDING MATERIAL PROPERTIES



COUNTY	HARRIS CO.	STRUCTURE SH99 @ BULL HEAD	THD DIST	12	
HIGHWAY NO	SH-99	HOLE NO	1	DATE	10/26/90
CONTROL	3510-04-005	STATION	835+45.57	BY	GLS
IPE		LOCATION	19.9' RT		

TEST HOLE NO. 1

GROUND ELEV. 73.4



PROB (CONTD)

2351 (NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

DRILLING REPORT

COUNTY- HARRIS CO. STRUCTURE- S499 @ BULL HEAD  
 HIGHWAY NO.- SH-99 HOLE NO.- 2  
 CONTRL- 3510-04-005 STATION- 837+01.94  
 PROJECT NO.- OFFSET- 32.7'LT  
 DATE- 10/26/90 CODED BY- GLS  
 GRD. ELEV.- 75.2 GRD. WATER ELEV.- 75.2 (Assumed)  
 DISTRICT- 12

D	E	F	PEN	PEN	S	TAT	WET	LL	PI	DESCRIPTION OF MATERIAL AND REMARKS
P	T	1ST	2ND	M N	LAT-	DEN	MOI			
T	.	6IN	6IN	P O	ULT	PCF	%	%	%	
H				L .	PSI					
	0									CLAY, BROWN, ORGANIC, FERROUS, WET
	1			1	0-	30	156	39	64	
	2	6	8							
	3			2						
	4			3						
	5	11	11							
	6									
	7									
	8									CLAY, SANDY, BROWN, STIFF, MOIST
	9			4			20	44		
	10	5	7							
	11									
	12									
	13			5	0-	20	133	20	42	-CALCAREOUS NODULES
	14			6						-CALCAREOUS NODULES
	15			7	0-	27	137	20		-CALCAREOUS NODULES
	16	7	7							
	17			8	0-	12	132	21		-MOTTLED
	18			9	0-	18	134	21	35	-MOTTLED
	19			10			24			SAND, CLAYEY, BROWN, LOOSE, MOTTLED
	20			11			25	26		
	21	7	4							
	22									
	23									
	24									
	25									
	26	15	9							
	27									
	28									
	29			12			27	30		SAND, CLAYEY, BRN, FIRM, W/SILTSTONE
	30			13			25			
	31	8	10							
	32									
	33			14			24			
	34			15			26	25		SAND, CLAYEY, BROWN, SL. COMP, FINE
	35			16			22			

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71 50/6.00 50/2.50

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76 46/6.00 54/5.50

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28 26

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SAND,SILTY,COMPACT,NO RECOVERY

SAND,SILTY,GRAVEL AND ROCK,NO RECOV

SAND,SILTY,DENSE,NO RECOVERY

DRILLER- MIKE BAHM

LOGGER- RODNEY TIBBITS  
TITLE- MAT.ANAL.I

BFAST

PROB (CONTD)

2351

(NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

SOIL STRENGTH ANALYSIS RESULTS

HOLE NUMBER 2

STRAT NUM.	ELEVATION -FEET-		STRAT THICK NESS FEET	CEN- TRID DEPTH FEET	UNIF. SOIL CLASS	PEN TEST BLOWS/ FOOT	TEST CONST	SOIL WET		INT. FRIC ANG.	VARIANCE TAT		
	FROM	TO						COHES LBS/ SQFT	DENS LBS/ CUFT		PEAK	AVG	RATIO
1	75	68	7.0	3.5	CH	18.0	50	2160	166	0.0			
2	68	57	11.0	12.5	CL	13.0	60	1423	134	0.0	3.9	2.6	4.2
3	57	47	10.0	23.0	SC	17.5	70	1332	134	0.0			
4	47	42	5.0	30.5	SC	18.0	70						
5	42	35	7.0	36.5	SC	20.0	70						
6	35	0	35.0	57.5	UTHE	72.9	80						

PROB (CONTD)

2351

(NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

SOIL STRENGTH ANALYSIS RESULTS  
 DISREGARD TO ELEVATION IS 75.2 FEET

HOLE NUMBER	ELEVATION -FEET- FROM TO		DESIGN STRESS OF SOIL TONS/SQFT PER STRAT	ALLOWABLE STATIC FRICTIONAL RESISTANCE (QS)		REDUCED ALLOWABLE STATIC FRICTIONAL RESISTANCE			BEAR FACTOR	POINT BEARING STRENGTH SNC TONS/SQFT	TAT TU PEN RAT
				TONS PER FT OF PERIMETER PER STRATUM	ACCUM- ULATIVE	PER SR	ACCUM- ULATIVE	PER STRATUM			
2											
1	75.2	68.2	0.54	3.78	3.78	0.7	2.65	2.65	2.57	0.00	1.5
2	68.2	57.2	0.36	3.91	7.69	0.7	2.74	5.39	3.62	0.00	1.6
3	57.2	47.2	0.33	3.33	11.02	0.7	2.33	7.72	4.29	0.00	1.3
4	47.2	42.2	0.26	1.29	12.31	0.7	0.90	8.62	4.29	0.00	0.0
5	42.2	35.2	0.29	2.00	14.31	0.7	1.40	10.02	4.29	0.00	0.0
6	35.2	0.2	0.91	31.89	46.20	0.7	22.32	32.34	4.29	0.00	0.0

# DRILLING LOG

COUNTY	HARRIS CO.	STRUCTURE	SH99 * BULL HEAD	THD DIST	12
HIGHWAY NO	SH-99	HOLE NO	2	DATE	10/26/90
CONTROL	3510-04-005	STATION	837+01.94	GRD. ELEV.	75.2
IPE		LOCATION	32.7'LT	GRD. WATER ELEV.	75.2 (Assumed)

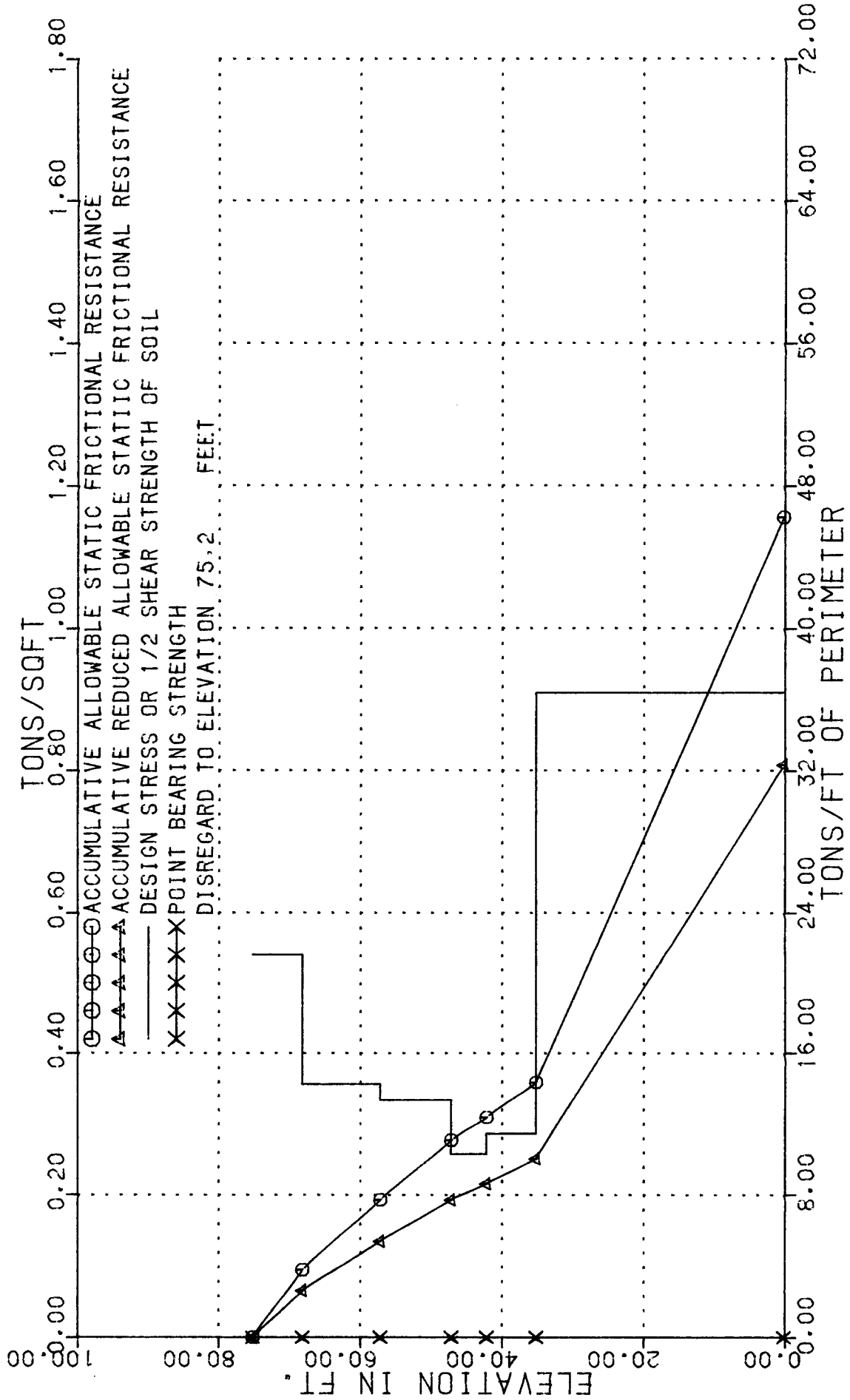
ELEV FT.	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1ST 6"	2ND 6"		
75.2	0	6 (6.0")	8 (6.0")	CLAY, BROWN, ORGANIC, FERROUS, WET	0
		11 (6.0")	11 (6.0")		
68.2	10	5 (6.0")	7 (6.0")	CLAY, SANDY, BROWN, STIFF, MOIST	10
		7 (6.0")	7 (6.0")		
57.2	20	7 (6.0")	4 (6.0")	SAND, CLAYEY, BROWN, LOOSE, MOTTLED	20
		15 (6.0")	9 (6.0")		
47.2	30	8 (6.0")	10 (6.0")	SAND, CLAYEY, BRN, FRIM, W-SILTSTONE	30
42.2		10 (6.0")	10 (6.0")	SAND, CLAYEY, BROWN, SL, COMPACT, FINE	
35.2	40	17 (6.0")	12 (6.0")	SAND, SILTY, BROWN, COMPACT, W-GRAVEL	40
		14 (6.0")	8 (6.0")		
	50	32 (6.0")	25 (6.0")		50
		11 (6.0")	13 (6.0")		
	60	41 (6.0")	48 (6.0")		60
		42 (6.0")	46 (6.0")		
	70	50 (6.0")	50 (2.5")		70
		46 (6.0")	54 (5.5")		
*REMARKS: GWE @ END OF DRILLING					

DRILLER MIKE BAHM

LOGGER RODNEY TIBBITS

TITLE MAT. ANAL. I

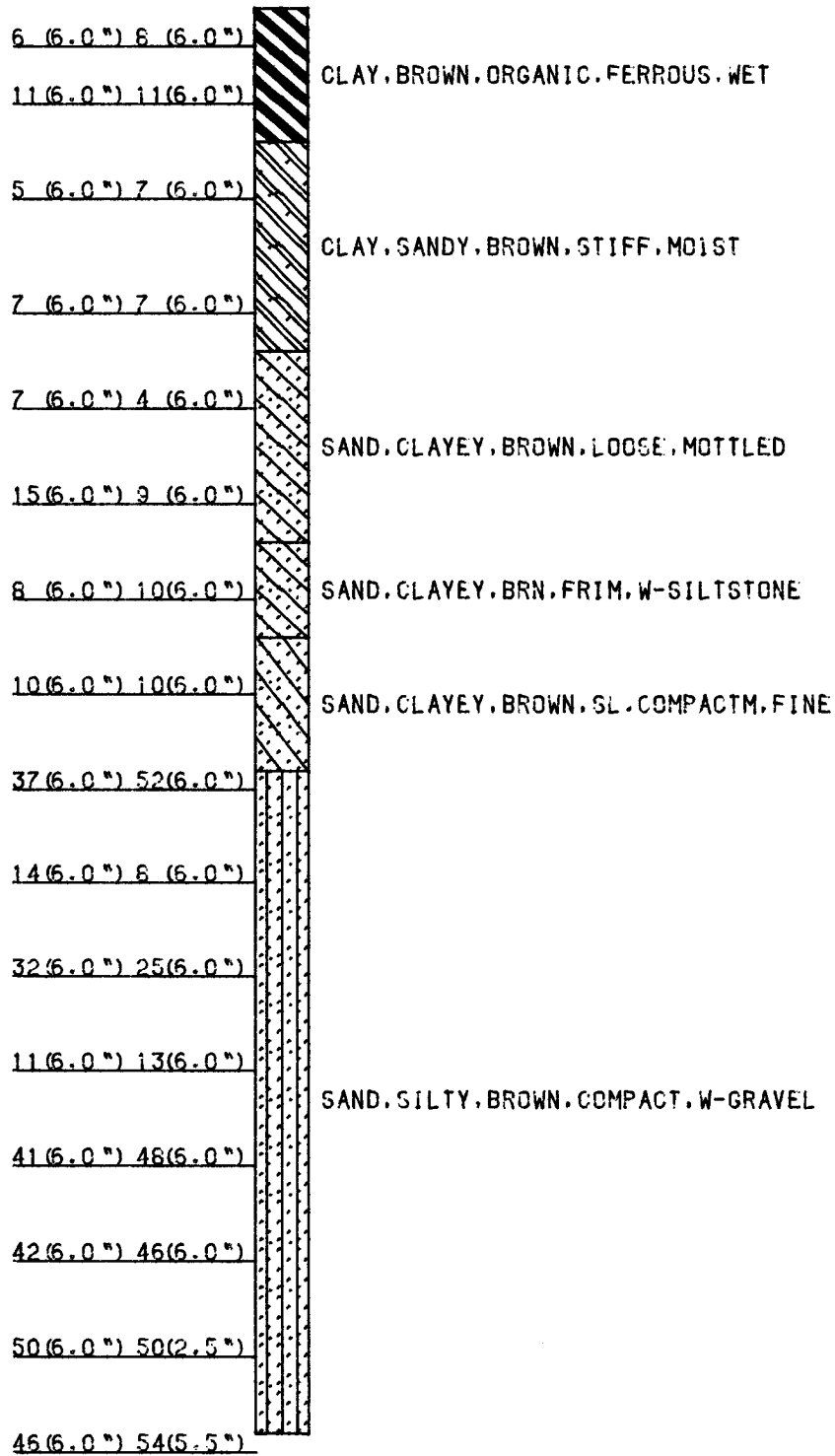
# FOUNDING MATERIAL PROPERTIES



COUNTY	HARRIS CO.	STRUCTURE	SH99 & BULL HEAD
HIGHWAY NO	SH-99	HOLE NO	2
CONTROL	3510-04-005	STATION	637+01.94
IPE		LOCATION	32.7'LT
		THD DIST	12
		DATE	10/26/90
		BY	GLS

TEST HOLE NO. 2

GROUND ELEV. 75.2





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SAND, BROWN, COMPACT, NO RECOVERY

DRILLER- MIKE BAHM

LOGGER- BOBBY CAYTON  
TITLE- MAT. ANAL. I

BFAST

PROB (CONTD)

2420 (NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

SOIL STRENGTH ANALYSIS RESULTS

HOLE NUMBER PS1

STRAT NUM.	ELEVATION -FEET-		STRAT THICK NESS FEET	CEN- TRID DEPTH FEET	UNIF. SOIL CLASS	PEN TEST BLOWS/ FOOT	TEST CONST	SOIL WET			VARIANCE PEAK	TAT RATIO
	FROM	TO						COHES LBS/ SQFT	DENS LBS/ CUFT	INT. FRIC ANG.		
1	75	68	7.0	3.5	CL	18.5	60	2520	142	0.0		
2	68	57	11.0	12.5	OTHE	28.5	80					
3	57	53	4.0	20.0	OTHE	18.0	80					
4	53	47	6.0	25.0	SC	10.0	70					
5	47	36	11.0	33.5	OTHE	28.0	80					
6	36	24	12.0	45.0	OTHE	57.5	80					

PROB (CGNTD)

2420

(NOTE: NO SOIL IS DISREGARDED FOR STRENGTH ANALYSIS)

SOIL STRENGTH ANALYSIS RESULTS  
 DISREGARD TO ELEVATION IS 74.9 FEET

HOLE NUMBER	PS1		ALLOWABLE STATIC FRICTIONAL RESISTANCE (DS)			REDUCED ALLOWABLE STATIC FRICTIONAL RESISTANCE			POINT BEARING STRENGTH		TAT TO PEN RAT
	STRATA NUMBER	ELEVATION -FEET- FROM TO	DESIGN STRESS OF SOIL TONS/SQFT PER STRAT	TONS PER FT OF PERIMETER PER STRATUM	ACCUM- ULATIVE	PER STRATUM	ACCUM- ULATIVE	BEAR FACTOR NC	SNC TONS/SQFT		
1	74.9	67.9	0.63	4.41	4.41	0.7	3.09	3.09	3.62	0.00	2.0
2	67.9	56.9	0.36	3.92	8.33	0.7	2.74	5.83	4.29	0.00	0.0
3	56.9	52.9	0.22	0.90	9.23	0.7	0.63	6.46	4.29	0.00	0.0
4	52.9	46.9	0.14	0.86	10.09	0.7	0.60	7.06	4.29	0.00	0.0
5	46.9	35.9	0.35	3.85	13.94	0.7	2.69	9.76	4.29	0.00	0.0
6	35.9	23.9	0.72	6.63	22.56	0.7	6.04	15.79	4.29	0.00	0.0

# DRILLING LOG

COUNTY HARRIS CO.  
 HIGHWAY NO SH-99  
 CONTROL 3510-04-005  
 IPE

STRUCTURE SH99 # BULL HEAD  
 HOLE NO PSI  
 STATION 817+29.77  
 LOCATION 342.1' RT

THD DIST 12  
 DATE 1/11/91  
 GRD. ELEV. 74.9  
 GRD. WATER ELEV. 74.9 (Assumed)

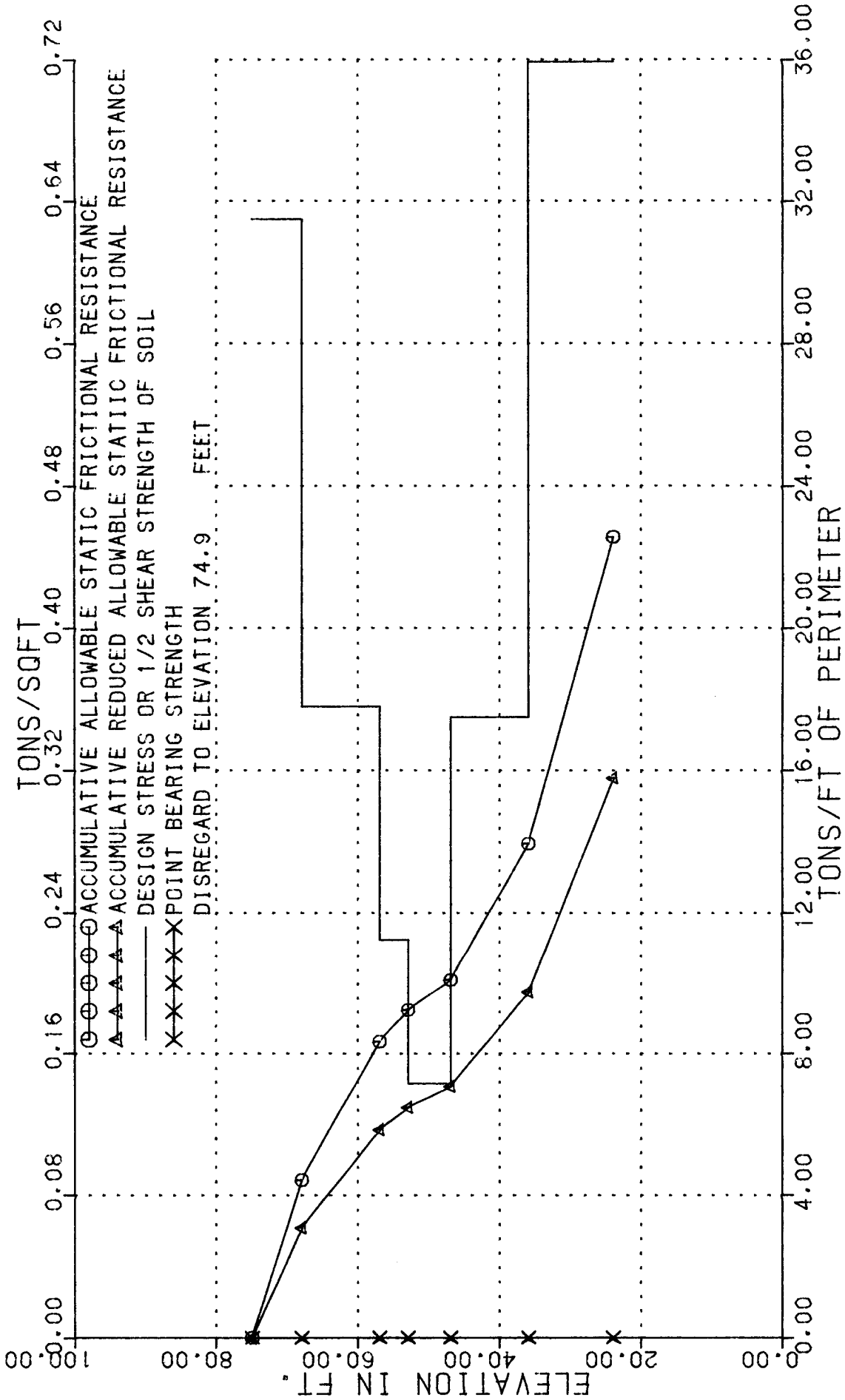
ELEV FT.	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1ST 6"	2ND 6"		
74.9	0			CLAY, SANDY, BLK. BRN. V. STIFF, MOIST	C
		7 (6.0")	8 (6.0")		
		12 (6.0")	10 (6.0")		
67.9				SAND, SILTY, BROWN, SL. COMP. W/ GRAVEL	
10		20 (6.0")	16 (6.0")		10
		10 (6.0")	11 (6.0")		
56.9				SAND, BROWN, LODGE NO RECOVERY	
20		7 (6.0")	11 (6.0")		20
52.9				SAND, CLAYEY, BRN. GRAY, SOFT, WET	
		4 (6.0")	6 (6.0")		
46.9				SAND, SILTY, BROWN, SL. COMP. NO RECOV.	
30		15 (6.0")	15 (6.0")		30
		8 (6.0")	18 (6.0")		
35.9				SAND, BROWN, COMPACT, NO RECOVERY	
40		32 (6.0")	30 (6.0")		40
		29 (6.0")	24 (6.0")		
50		16 (6.0")	19 (6.0")		50
*REMARKS: GWE @ END OF DRILLING					

DRILLER MIKE BAHM

LOGGER BOBBY CAYTON

TITLE MAT. ANAL. I

# FOUNDING MATERIAL PROPERTIES



COUNTY	HARRIS CO.	THD DIST	12
HIGHWAY NO	SH-99	DATE	1/11/91
CONTROL	3510-04-005	BY	GLS
IPE			
STRUCTURE	SH99 @ BULL HEAD		
HOLE NO	PS1		
STATION	817+29.77		
LOCATION	342.1' RT		

TEST HOLE NO. PSI

GROUND ELEV. 74.9

