

### DRILLING LOG

County Dallas Structure Union Bower Rd. District No. 18  
 Highway No. Loop 12 Hole No. UB-1 Date 5-25-66  
 Control \_\_\_\_\_ Station 534+14.5 Grd. Elev. + 486.5  
 IPE 188 Loc. from Centerline Rt. 13.4' Lt. Grd. Water Elev. 25'

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		Base Line DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 486.5	0			CLAY, brn, sdy, stiff	0
+ 476.5	10			CLAY, tn & gr, v sdy, soft	10
+ 471.5		23	26	CLAY, tn & gr, sdy, stiff	
+ 467.5	20			SAND, yel & brn, f, WB	20
		28	20		
		40	39		
+ 447.5	40			SHALE, bl, soft to hard	40
		50(3 1/2)	50(2 1/2)		
	50	50(3 1/4)	50(3/4)		50 * 2
		50(3 3/4)	50(1 1/2)		* 3
+ 426.5	60	50(4)	50(3 1/2)		60
	70				70

\*REMARKS: 1. Hole caved in @ 22' was not able to get sample from 22'-26' & 30'-39'  
 2. 50' second half of pentest was on some loose rock  
 3. Shale hard 50'-55'. All shale footage alternates from soft to hard approximately  
 each 2'  
 Bridge location: X-2453874  
 Y-6986248

Driller Bill Willman Logger Robert P. Hamm Title Mat'l Anal II

†Indicate each foot by shading for core recovery, leaving blank for no core recovery, and crossing (X) for undisturbed laboratory samples taken.  
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### DRILLING LOG

County Dallas Structure Union Bower District No. 18  
 Highway No. Loop 12 Hole No. UB-2 Date 5-26-66  
 Control Station 534+79.7 Grd. Elev. +485.3  
 IPE 188 Loc. from Centerline Rt. 111.2 Lt. Grd. Water Elev. 25' - 37'

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING	*
		1st 6"	2nd 6"			
+ 485.3	0			CLAY, brn, sdy, soft	0-	D.Bbl.
+ 481.3				CLAY, brn & yel, stiff		
+ 475.3	10			CLAY, v sdy, dry, soft to stiff	10-	
		24	26			
+ 467.3	20			SAND, f, WB	20-	
		25	20			* 1
		26	36			* 2
+ 448.3	40			SHALE, bl, soft to hard	40-	* 3
		50(4 3/4)	50(2 3/4)			
		50(3)	50(2)			
	50	50(3)	50(2)			
		50(4 1/4)	50(3 1/2)			
+ 425.3	60	50(3 1/2)	50(2 1/4)			
	70					

\*REMARKS: 1. 25'-37' could not pick up core - hole caved in @ 25'  
 2. 37'-38' - 1' large gravel  
 3. Shale hard 45'-50'. Other footage alternates from soft to hard each 2'

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### DRILLING LOG

County Dallas Structure Union Bower Rd. District No. 18  
 Highway No. Loop 12 Hole No. UB-3 Date 5-24-66  
 Control Station 533+50.5 Grd. Elev. + 484.2  
 IPE 188 Loc. from Centerline Rt. Lt. 116.1 Grd. Water Elev. \_\_\_\_\_

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING	*
		1st 6"	2nd 6"			
+ 484.2	0			CLAY, brn, sdy, stiff	0	D.Bbl.
+ 472.2	10				10	
+ 469.2	20	20	22	CLAY, brn v stiff		
+ 465.2	20			CLAY, sdy, f, soft, moist		
		23	20	SAND, v wet	20	
+ 449.2	30				30	
		25	30	SHALE, bl, soft to hard		
	40	50(3 3/4)	50(2 1/4)		40	
		50(3)	50(1 3/4)			
	50	50(3 1/2)	50(3/4)		50	*
+ 429.2		50(3)	50(2 1/4)			*
	60				60	
	70				70	

\*REMARKS: 1. Loose rock 2nd half of pentest  
 2. Shale hard from 44'-50', remaining footage variable hardness

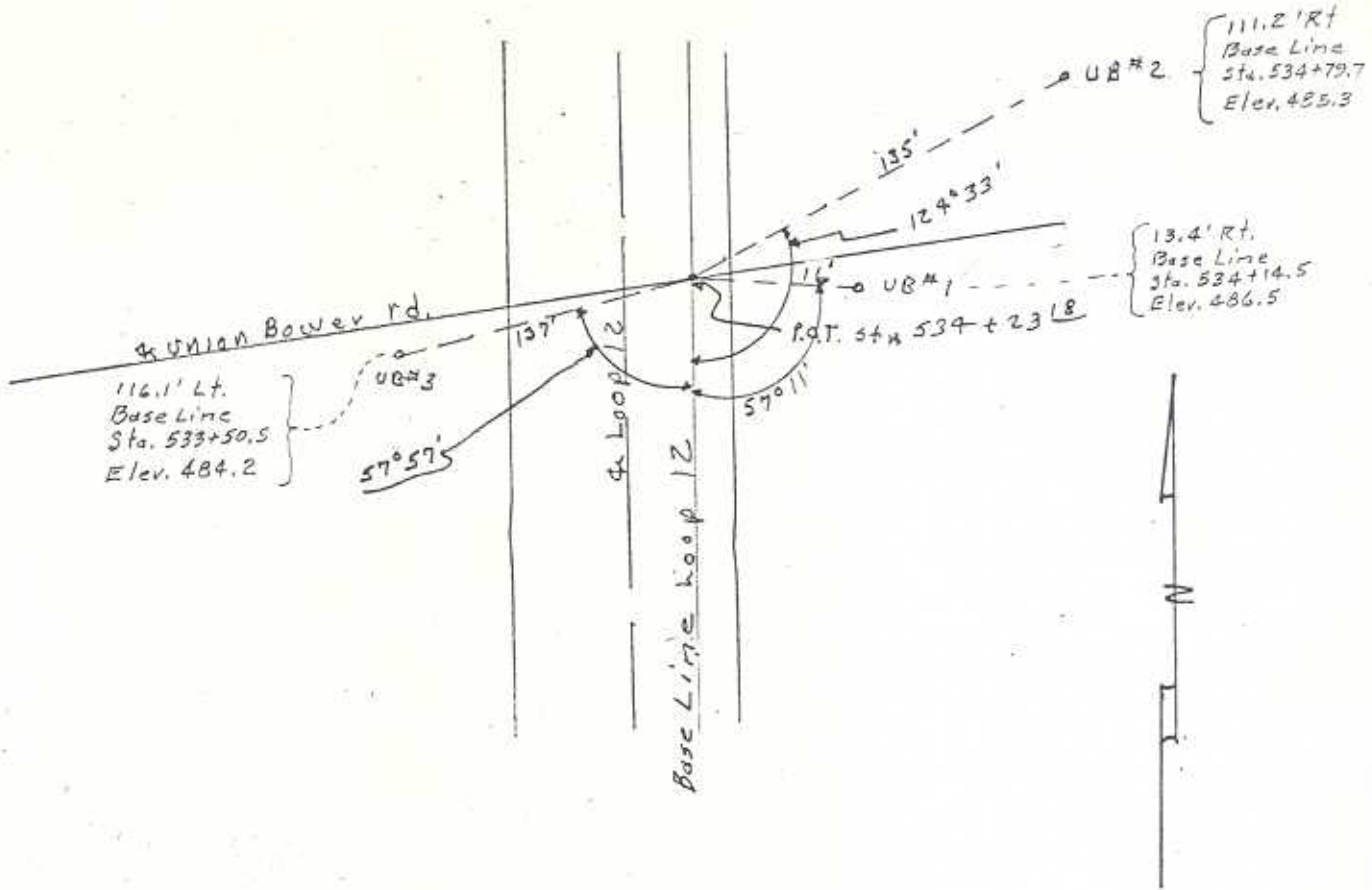
Driller Bill Willman Logger Robert P. Hamm Title Mat'l Anal II

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5-31-66  
Denny & Party

# Core hole locations at Union Bower Rd



No.	+	M.	-	Elev.
BM	761	468.41		460.80
TP	11.78	478.36	1.83	466.58
TP	10.70	488.11	0.95	477.41
UB-1			1.6	486.5
UB-2			2.8	485.3
UB-3			3.9	484.2
TP	0.90	478.31	10.70	477.41
TP	1.55	468.30	11.56	466.75
BM			7.51	460.79

Nail & washer w/ 1/4" dia. culvert 522 x 00 ±

same

$$135 (\sin 55^{\circ} 27') = 135 (.823632) = 111.19$$

$$16 (\sin 57^{\circ} 11') = 16 (.840409) = 13.45$$

$$137 (\sin 57^{\circ} 57') = 137 (.847585) = 116.12$$

$$135 (\cos 55^{\circ} 27') = 135 (.567125) = 76.56$$

$$16 (\cos 57^{\circ} 11') = 16 (.541953) = 8.67$$

$$137 (\cos 57^{\circ} 57') = 137 (.530659) = 72.70$$

Calc. 6-1-66  
H.G.H.

### DRILLING LOG

County Dallas Structure Loop 12 & Grauwylar Rd District No. 18  
 Highway No. Loop 12 Hole No. G-1 Date 5-13 & 5-16-66  
 Control Station 559+76.6 Grd. Elev. + 491.8  
 IPE 188 Loc. from Centerline Rt. Lt. 63.8 Grd. Water Elev. 11'

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 491.8	0			CLAY, rd & gr, sdy, stiff	0
+ 480.8	10	28	27	SAND, brn, f, v wet, cmpt	10
+ 466.8	20	20	24	CLAY, rd & gr, blk, v stiff	20
+ 456.8	30	27	29	CLAY, gr, v soft	30
+ 451.8	40	40	50(3 3/4)	SHALE, bl, soft to hard	40
+ 446.8	50	50(3)	50(2)	SHALE, bl, hard	50
+ 430.8	60	50(2 3/4)	50(3/4)		60
	70	50(3 1/4)	50(1 1/4)		70

\*REMARKS: Some water seepage at 18'

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### DRILLING LOG

County Dallas Structure Loop 12 & Grauwylar Rd. District No. 18  
 Highway No. Loop 12 Hole No. G-2 Date 5-11 & 12-66  
 Control Station 560+29.9 Grd. Elev. + 492.0  
 IPE 188 Loc. from Centerline Rt. 33.6' Lt. Grd. Water Elev. 14'

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 492.0	0			CLAY, rd, blk, gr, sdy, stiff	0
+ 482.0	10			CLAY, rd & gr, v sdy, soft	10
+ 478.0		33	36	SAND, or & gr, v f, v wet	* 1
		25	23		
+ 466.0				CLAY, gr, v stiff	
+ 461.0	30	26	31	CLAY, rd, v stiff, w/sand seams soft to v stiff	
+ 455.0		30	50	SHALE, clayey, soft	* 2
		50(4 1/2)	50(3)		
+ 445.00		50(3)	50(2)	SHALE, gr, hd	
		50(2 1/2)	50(1 1/4)		
+ 434.0				SHALE, gr, soft	
+ 431.0	60	50(3 1/4)	50(4 3/4)	SHALE, gr, hd	
+ 428.0				SHALE, gr, hd	
+ 425.0		50(3 3/4)	50(3 1/4)	SHALE, gr, soft	
+ 422.0	70	50(1 3/4)	50(1 1/4)	SHALE, gr, v hd	

\*REMARKS: 1. Water seepage at 18'  
 2. Clay has almost formed shale

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### DRILLING LOG

County Dallas Structure Loop 12 & Grauwylers Rd. District No. 18  
 Highway No. Loop 12 Hole No. G-3 Date 5-12-66  
 Control Station 561+84.6 Grd. Elev. + 492.2  
 IPE 188 Loc. from Centerline Rt. 62.8' Lt. Grd. Water Elev. 14'

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		Base Line DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 492.2	0			CLAY, rd, sdy, stiff to soft	0 D.Bbl.
+ 478.2	10			SAND, f, v wet	10
+ 467.2	20			CLAY, rd, sdy, stiff	* 1
+ 466.2				GRAVEL, f, sdy, v wet	
+ 465.2		33	34	CLAY, gr, v stiff	
+ 460.2	30	27	29	CLAY, w/ shale, soft	30
+ 456.2	40	50(5 1/4)	50(3 1/2)	SHALE, soft to hard	* 2
		50(3 3/4)	50(2 3/4)		
+ 446.2	50	50(3)	50(1 3/4)	SHALE, bl & gr, hd	50
+ 439.2	60	50(3)	50(2 1/2)	SHALE, bl, soft to hard	* 3
+ 432.2	60	50(2 3/4)	50(1 1/2)		60
	70				70

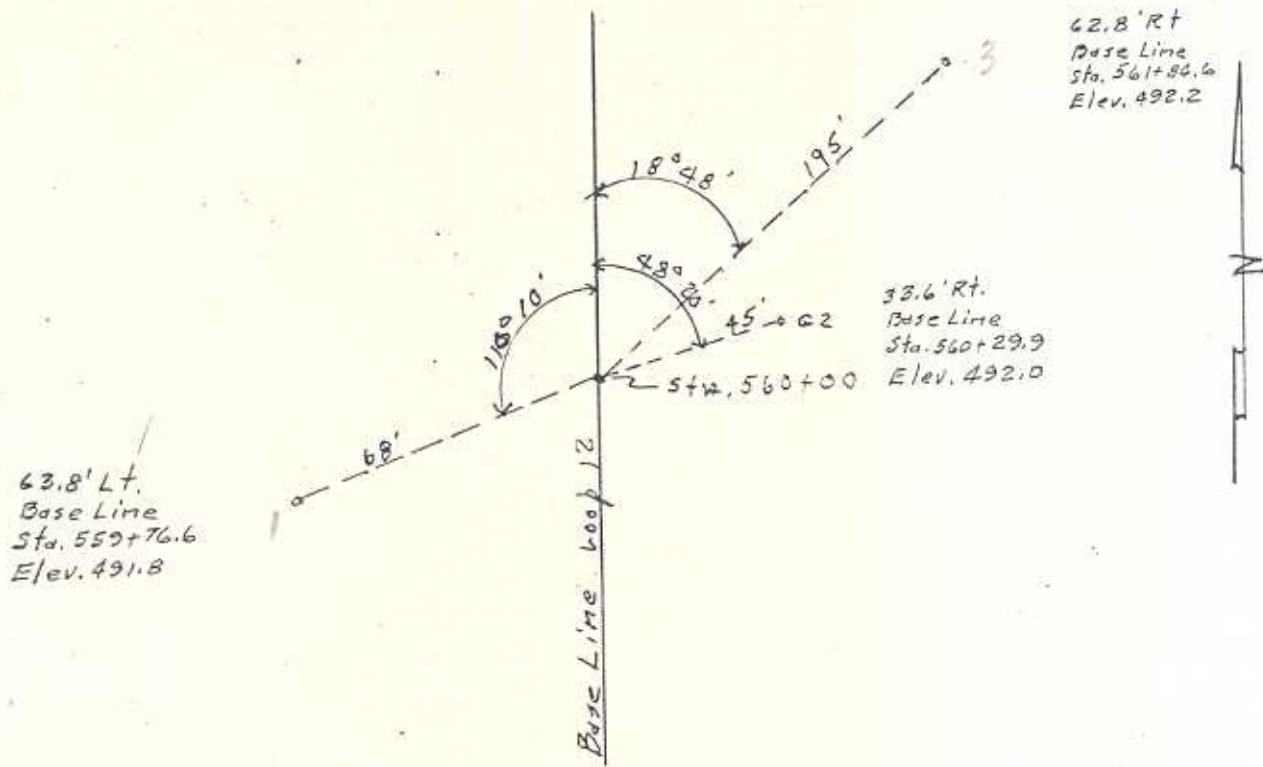
\*REMARKS: 1. Water seepage at 18'  
 2. 36' - 48' shale alternates from soft to hard approximately every 3'  
 3. 53' - 60' alternating shale layers of soft to hard

Bridge Location: X: 2454725  
 Y: 6988786

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Core hole locations on Gradyway Rd.



NO	T	HI	-	elev.	
BM	3.33	497.74		494.41	Nail & Washer on S. end Hdwl, 562+18.3
			5.9	491.8	in S.W. guard,
G-Z			5.7	492.0	
			5.5	492.2	in N.E. guard.
BM			3.33	494.41	same

$195 (\sin 18^\circ 48') = 195 (.322266) = 62.84$   
 $45 (\sin 48^\circ 20') = 45 (.747025) = 33.62$   
 $68 (\sin 69^\circ 50') = 68 (.938694) = 63.82$

$195 (\cos 18^\circ 48') = 195 (.946649) = 184.60$   
 $45 (\cos 48^\circ 20') = 45 (.664796) = 29.92$   
 $68 (\cos 69^\circ 50') = 68 (.344752) = 23.44$

Calc. 6-1-66  
A.C.H.



### DRILLING LOG

County Dallas Structure SH 114 District No. 18  
 Highway No. Spur 348 Hole No. # 2 Date 8-10-66  
 Control Station 696+97 Grd. Elev. + 425.2  
 IPE 150 Loc. from Centerline Rt. \_\_\_\_\_ Lt. 51' Grd. Water Elev. No Water

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING	*
		1st 6"	2nd 6"			
+ 425.2				SILT, sdy	0-	D.Bbl.
+ 423.2				CLAY, sdy, slty, tn		
+ 417.2		10	11	GRAVEL, sdy, slty, moi	10	
+ 409.2		50(3 1/2)	50(2 1/2)	SHALE, slty, gr, med hd, dry	20	
		50(3 1/2)	50(2 1/2)		20	
	50(2 1/2)	50(1 1/4)		30		
	50(2 1/2)	50(1 1/4)		30		
+ 388.2	50(2 1/2)	50(1 1/4)		40		
				40		
				50		
				50		
				60		
				60		
				70		
				70		

\*REMARKS:

Driller Randall M. Jones Logger Randall M. Jones Title Engr. Aide III

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### DRILLING LOG

County Dallas Structure SH 114 District No. 18  
 Highway No. Spur 348 Hole No. # 3 Date 8-9-66  
 Control 150 Station 553+45 Grd. Elev. + 422.0  
 IPE 150 Loc. from Centerline Rt. 51' Lt. Grd. Water Elev. No Water

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 422.0	0			SILT, sdy, clay binder (Topsoil)	0
+ 416.0					
+ 414.0				CLAY, slty, tn	
+ 412.0	10	13	14	GRAVEL, sdy, moi	10
				SHALE, gr, soft	
		50(4)	50(2 1/2)		
	20	50(4)	50(3)		20
+ 397.0		50(3)	50(1 3/4)	SHALE, gr, med hd, dry	
	30	50(3)	50(1 1/2)		30
		50(3)	50(1 1/2)		
+ 382.0	40	50(3)	50(1 1/4)		40
	50				50
	60				60
	70				70

\*REMARKS:

Driller Randall M. Jones Logger Randall M. Jones Title Engr. Aide III

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### DRILLING LOG

County Dallas Structure SH 114 District No. 18  
 Highway No. Spur 348 Hole No. # 4 Date 8-10-66  
 Control Station 552+45 Grd. Elev. + 421.1  
 IPE 150 Loc. from Centerline Rt. Lt. 49' Grd. Water Elev. No Water

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 421.1	0			SAND, slty, tn	0
+ 417.1				CLAY, sdy, slty, tn	
+ 415.1				GRAVEL, sdy, moi	
+ 409.1	10				10
		50(3 1/2)	50(2 1/2)	SHALE, gr, soft	
	20	50(3 1/2)	50(2 1/2)		20
		50(3 1/4)	50(3 1/4)		
+ 394.1				SHALE, gr, med hd, dry	
	30	50(2 1/2)	50(1 1/4)		30
		50(2 1/2)	50(1 1/4)		
+ 381.1	40	50(2 1/2)	50(1 3/4)		40
	50				50
	60				60
	70				70

\*REMARKS:

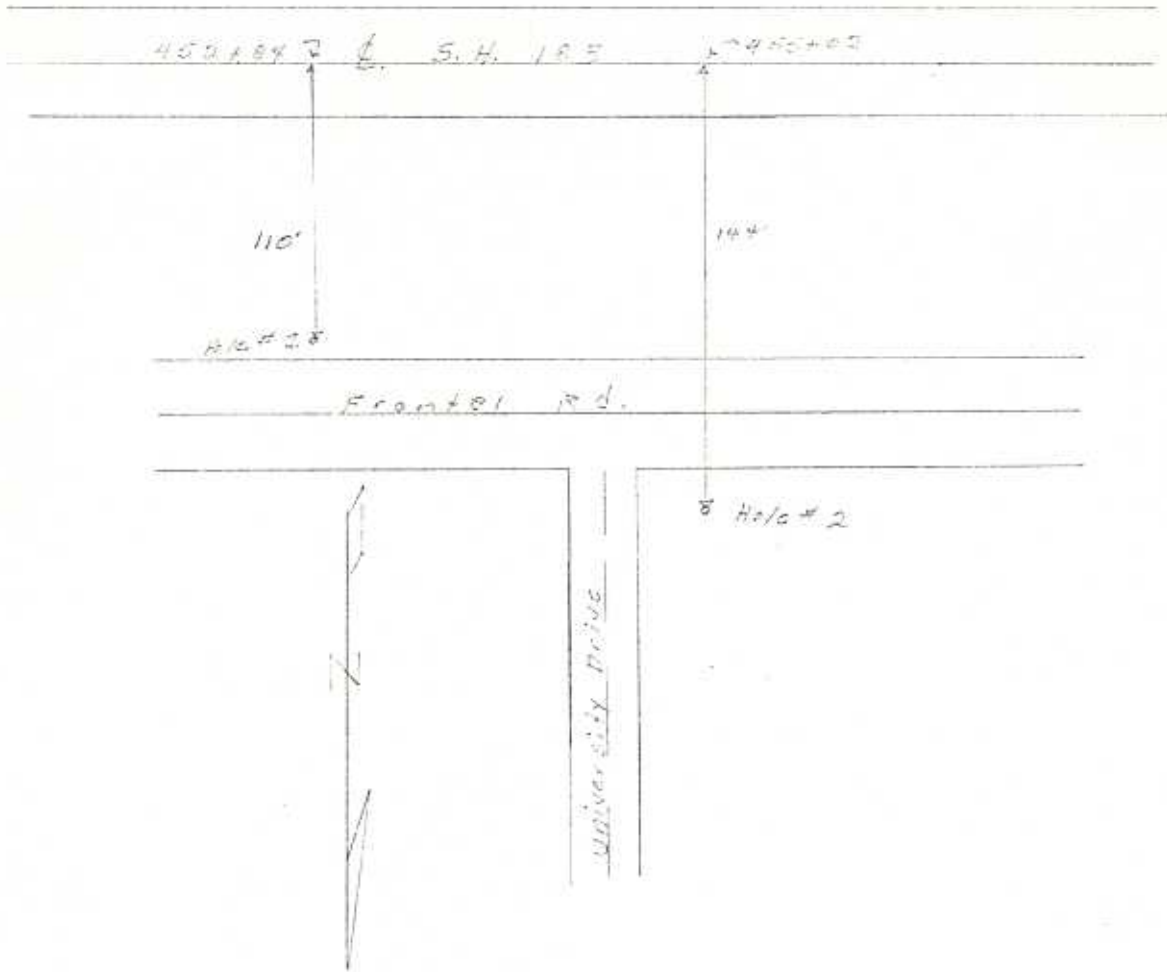
Driller Randall M. Jones Logger Randall M. Jones Title Engr. Aide. III

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4-24-67

H. M. McKay & Party



Hole #10	1.92	503.90	501.78
Hole #2		5.6	498.1
Hole #1		7.8	495.9
Hole #10		1.92	501.78

### DRILLING LOG

County Dallas Structure \_\_\_\_\_ District No. 18  
 Highway No. SH 183 Hole No. 1 Date 4-10-67  
 Control \_\_\_\_\_ Station 452+84 Grd. Elev. + 495.9  
 IPE 150 Loc. from Centerline Rt. 110' Lt. \_\_\_\_\_ Grd. Water Elev. No Water

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 495.9	0			CLAY, sdy, f, slty, brn, v stiff, dry	0- D.Bbl.
+ 492.9				SAND, f, slty, brn, cmpt, dry	
+ 484.9	10	21	18	CLAY, sdy, f, slty, tn & gr, stiff, dry	10
+ 474.4	20	13	23	CLAY, shaley, slty, tn & gr, v stiff, dry	20
		24	26		
	30	34	47		30
+ 457.9		50(6)	50(2)	SHALE, slty, gr, hd, dry	40
	40	50(1 1/2)	50(3/4)		40
+ 449.9				SHALE, slty, gr, hd, dry, w/soft shale layers	1
+ 446.9	50	50(3)	50(3)	(1" to 8" thick)	50
	60				60
	70				70

\*REMARKS:

1. Pen test at 49' taken in soft layer

Driller David O. Cleveland Logger David O. Cleveland Title Engr. Tech. III

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### DRILLING LOG

County Dallas Structure \_\_\_\_\_ District No. 18  
 Highway No. SH 183 Hole No. 2 Date 4-11-67  
 Control \_\_\_\_\_ Station 455+02 Grd. Elev. + 498.1  
 IPE 150 Loc. from Centerline Rt. 144' Lt. \_\_\_\_\_ Grd. Water Elev. 21'

ELEV. (FT.)	LOG	THD PEN. TEST NO. OF BLOWS		DESCRIPTION OF MATERIAL	METHOD OF CORING
		1st 6"	2nd 6"		
+ 498.1	0			CLAY, sdy, f, slty, brn, v stiff, dry	0 D.Bbl.
+ 492.1		20	26	SAND, f, slty, brn, cmpt, dry	
+ 488.1	10			CLAY, sdy, f, slty, tn & gr, stiff, dry	10
		17	18		
+ 477.1	20			SAND, f, brn, cmpt, wet	20
+ 473.1		25	27	CLAY, shaley, slty, tn & gr, v stiff, dry	
	30	50(5)	50(6)		30
		50(5 1/2)	50(5)		
+ 455.6	40	50(5)	50(3)		40
+ 453.6				SHALE, slty, gr, hd, dry, w/clay seams	
		50(3)	50(1)	SHALE, slty, gr, hd, dry	
	50	50(2 1/2)	50(3/4)		50
+ 441.1	60	50(3)	50(1)		60
	70				70

\*REMARKS:

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