DOCKETED	
Docket Number:	24-OPT-02
Project Title:	Compass Energy Storage Project
TN #:	264551
Document Title:	Geotechnical Evaluation Report (TN #255561-6) References Part 2_6 of 9
Description:	N/A
Filer:	Erin Phillips
Organization:	Dudek
Submitter Role:	Applicant Consultant
Submission Date:	7/2/2025 6:58:42 PM
Docketed Date:	7/2/2025

· 🙃	SAMPLES	Į.	(%	DENSITY (PCF)		NO	DATE DRILLED		BORING NO		B-3	·
DEPTH (feet)	SAM	BLOWS/FOOT	MOISTURE (%)	77	2	CLASSIFICATION U.S.C.S.	GROUND ELEVATIO	_		2_	_ OF _	4
T		NS/I	TUF	.ISN	SYMBOL	S.C		NG 8" hollow stem aug				
DEP.	Bulk Driven	Ş	OIS	DE	Sγ	ASS U.	DRIVE WEIGHT		DRO		30"	
'-	ă ă		Σ	DRY		ઇ	SAMPLED BY G	MC LOGGED BY			MD/C	AP
20		-			777	CL	ATTENDED TO	DESCRIPTION/IN	ITERPRETATION			
		28				CL	ALLUVIUM: (Cont Reddish brown, moi	st, very stiff, CLAY;	trace to few coarse	sand; tra	ice	
-			· · · • · · · ·			GC	fine gravel. Brown, moist, stiff,	clavey CD AVEI				
	П	1		l			biown, moist, still,	clayey ORA VEE.			r	
								×				
						CL+ML	Brown stiff CLAV	; interbedded with few	thin hade of valla	wich hear		
				·		CETIVIE	SILT; few coarse sa	nd; trace fine gravel; t	race pinhole voids.	wish bro	wn	
25 -						8						
		19					A TERM					
-							* 1 st					
	11											
-	H											
						1	e e					
1		1										
30 -		L										
		29				SC	laminations of brow	medium dense, clayey	5			
-						1	Dark brown; few cal fossils.	liche nodules up to app	proximately 1/8 inc	h in dian	neter;	
_						d						
						1						
-												
						CL+SC	Yellowish brown, m	oist, stiff, fine sandy	CLAY; few mottle	s with rec	 i	
							oxidation; interbedd	ed with clayey fine SA	ND; gradational b	edding.		
35						(
		14		ĺ	W	l e						
-		n 60.										
_												
									,			
-							,		27			
-									Ŧ			
				}			·					
40 -	Ш		L	L								
	_)					B	ORING L	OG		
	,/	VII		10	æ,	M	ore_		Oso Creek Channe n Juan Capistrano, Ca	el .		
		Y			-	y -		PROJECT NO. 201885-01	DATE 6/00	1	FIGURE A-10	

i	SAMPLES	_	(9)	CF)		Z	DATE DRILLED 4/8/99 BORING NO. B-3
DEPTH (feet)	AM	3LOWS/FOOT	E (%)	DENSITY (PCF)	×	CLASSIFICATION U.S.C.S.	GROUND ELEVATION 218' ±(MSL) SHEET 3 OF 4
I S	8	'S/F	n.	SIT	SYMBOL	50	METHOD OF DRILLING 8" hollow stem auger (A&R Drilling)
4	25	Š.	MOISTURE	OEN	SY	SSI U.S	DRIVE WEIGHT 140 lbs. DROP 30"
		9	Σ	DRY [LA Y	SAMPLED BYGMCLOGGED BYGMC REVIEWED BYMD/CAP
				تق		0	DESCRIPTION/INTERPRETATION
40						CL+SC	ALLUVIUM: (Continued)
1		38				sc	Yellowish brown, moist, stiff, fine sandy CLAY; local mottling with red oxidation; interbedded with clayey fine SAND; gradational bedding.
. }		}	.				Yellowish brown, moist, medium dense, clayey SAND; few spots of red
	╁╅╴			••••••	W K	CL+SC	oxidation. Grayish brown, moist, stiff, fine sandy CLAY; interbedded with medium
1	11	1	ı			CL + 3C	dense, clayey SAND; gradational contacts; few beds of fine sandy SILT.
1	Π						
	Ц				W		
{		į					
45							
-		9,					
†	71						
1					H		
	$\left\{ \cdot \right\}$						
1	11	1	١. ،				i ii
Ì	}}						
+	H						
-			.,				
50			끚				@ 50.0': Groundwater encountered during drilling.
4		30					Few yellowish brown beds. Minor seepage; sample slightly wet.
ł			}				
+	+	1					
Í		1					
T	\prod						
1	11				М		
ł	11	1					
55 -							
1		15					Grayish brown and gray; micaceous; oxidized spots.
T		{					oray on oray in and gray, inacaccous, oxidized spois.
1		}					
	1						·
+	+{	1					CAPISTRANO FORMATION: Dark grayish brown, moderately indurated, silty CLAYSTONE; very finely
1		1					laminated; speckled with few caliche nodules/fossils up to approximately 1/8 inch in diameter.
†	\forall						To men in diameter.
60			¥				@ 60.0': Groundwater encountered after drilling.
					=		PODING LOC
	A		72.		بو	AA	BORING LOG Oso Creek Channel San Juan Capistrano, California
		744	45	U		/ Y I'	San Juan Capitrano, California
		' 				·	PROJECT NO. DATE FIGURE

ŀ

ſ

(feet) SAMPLES	ا	(9)	DRY DENSITY (PCF)		NO	DATE DRILLED	4/8/99	BORING NO	B-3
DEPTH (feet)	BLOWS/FOOT	MOISTURE (%)	-	占	CLASSIFICATION U.S.C.S.	GROUND ELEVATION	218' ±(MSL)	SHEET	4 OF 4
S	1S/F	5	LIST	SYMBOL	다.	METHOD OF DRILLING	8" hollow stem aug	er (A&R Drilling)	
Bulk	%.	CSIC	DEN	S	SSI U.S	DRIVE WEIGHT	140 lbs.	DROP	30"
Bulk	8	Σ	RY		CLA CLA	SAMPLED BYGMC	LOGGED BY	GMC REVIEWED	BY MD/CAP
			a					TERPRETATION	
	55		-			CAPISTRANO FORM Dark grayish brown, m laminated; speckled wit 1/8 inch in diameter.	ATION: (Continue oderately indurated the few caliche nodu	d) I, silty CLAYSTONE; les/fossils up to appro	very finely ximately
; 🕌									
	52					Decrease in caliche nod	lules/fossils.		
Ш						Total Depth = 66.5 fee Groundwater encounter	et.		
						Olomidwater measured	ed at approximately at approximately 6	y 50 feet during drillir O feet after drilling.	ng.
HH						Backfilled on 4/8/99.	*		*
						,			
\prod									
1						** 6		Ē	
									Ÿ
H									
+++				1					
				}				*	
; 444									
+++			}						
Ш									
				}			·		
+++									
\prod									
,									
4) 50 #			A A.		<u>B</u> (ORING LO	G
_/	Y //	44	JU	ex.		970 <i>t</i>		Oso Creek Channel Juan Capistrano, Califo	
	7	J			7		PROJECT NO. 201885-01	DATE 6/00	FIGURE A-12

	(%)	ρ		Z O	DATE DRILLED			_	NG NO		B-4	
DEPTH (feet) Julk SAMPLES SLOWS/FOOT	RE (DENSITY (PCF)	힟	ASSIFICATION U.S.C.S.	GROUND ELEVATION				_		- OF -	4
, f L &	MOISTURE	ISN	SYMBOL	S.F.C	METHOD OF DRILL			ger (A&R				
DEP Bulk Driven BLOV	1018	DE	S	ASS U	· · · · · · · · · · · · · · · · · · ·		140		DROP		30"	
	Σ	DRY		CLA	SAMPLED BYGI					D BY	MD/C	ΑP
-				CL	FILL:	UI	SCRIPTION/I	NIERPRE	TATION			
				CL	Brown, moist, hard, brown CLAY and fingravel.	, fine s ine gra	andy CLAY; ir vel; trace wood	ntermixed pieces; fe	with nodule ew thin layer	s of da	rk ne	
5 - 52		·.										
10					Very stiff; trace med	dium S	SAND.					
				CL	ALLUVIUM: Reddish brown, mogravel; trace very fi	oist, venine cali	ry stiff, silty CI che veinlets; tra	AY; trace	e coarse sand e voids.	d and fi	ine	-
23									,	,		
20					Yellowish brown; to	race ca	liche nodules u	p to appro	oximately 1/2	8 inch i	in	
20			_v././\ =====						NG LC			_
	<u></u>	-		4 4-		ll .	D	OUIL	AG T(טע		
		W	82	$\Lambda \Lambda I$	eroc			Oso Cr	eek Channel pistrano, Califo			

(feet)	_	(6)	CF)		Z	DATE DRILLED	4/8/99	·	BORIN	G NO		B-4	
DEPTH (feet)	BLOWS/FOOT	MOISTURE (%)	DENSITY (PCF)	۲	CLASSIFICATION U.S.C.S.	GROUND ELEVATION	ON 217' ±(M	SL)		SHEET	2	OF _	4
H (fe	/S/F	J.	ISIT	SYMBOL	55.0 50.0	METHOD OF DRILL	NG 8" hollow	stem aug	ger (A&R E	Drilling)			
EP X	8	TSIC	DEN	SYI	SSI U.S	DRIVE WEIGHT	14	0 lbs.	· · · · · · · · · · · · · · · · · · ·	DROP		30"	
	88	Σ	DRY	{	SLA	SAMPLED BYG	MC LOGO	ED BY	GMC	REVIEW	ED BY	MD/C	ΛP
			ے ۔						TERPRE				
20					CL+ML	diameter.							
	19					ALLUVIUM: (Con Yellowish brown, n fine gravel; trace ve approximately 1/8 is with trace very thin	noist, very sti ry fine calich nch in diamet	er: trace	pinhole vo	ids: interb	sand and bedded		
							*						}
' 1] '					al .							}
, }}		l											}
25													∦
	28					*							
						Brown; increase in diameter; trace coar	caliche nodule se gravel; fev	es up to a coarse s	pproximat and.	ely 1/8 inc	ch in		
						٠							
	1 :												
-													∦
Π		}			ì								1
30													}
30	18												ł
17		}											-
													1
		{		翢									}
+	{ !	j											1
	} {			幽									1
1	}					•							Ĭ
35				幽									
				幽									}
-	20			齫		Stiff; sandy,							
	}						*						1
	1 }					•							Ĭ
	 			幽			••••						
		}			CL+ML	Gray and grayish br interbeds of red SIL	own, moist, s	tiff, fine	sandy CL.	AY; few v	ery thin	*********	
++-				翻		moreous or rea SIL	i i ovidized;	incaceou	J.				
10	}			羅		13							}
40 -1 -				THIR									
			IN	رو	AAr	ınro	<u> </u>	B	ORIN	G L(JG		
/	V	13	U		AI,	eroc	BBB #55		n Juan Capis	trano, Calif		FIGURE	
	•				•		PROJECT 201885-		DA1 6/0		t	FIGURE	11

(feet) SAMPLES		=	CF)		Z	DATE DRILLED	4/8/99	BORING NO	B-4
DEPTH (feet)	BLOWS/FOOT	MOISTURE (%)	DENSITY (PCF)	ایرا	S.	GROUND ELEVATION	ON 217' ±(MSL)	SHEET	3 OF4
E S	1S/F	U.B.	SIT	SYMBOL	5.0	METHOD OF DRILL	ING 8" hollow stem at	iger (A&R Drilling)	
EP TP	8	TSIC	OE'N	SY	SSI U.S	DRIVE WEIGHT	140 lbs.	DROP	30-
DEP Bulk Driven	В)	Σ	DRY I		CLASSIFICATION U.S.C.S.	SAMPLED BYG	MC LOGGED BY	GMC REVIEW	ED BY MD/CAP
							DESCRIPTION/	INTERPRETATION	
40	20				CL+ML	ALLUVIUM: (Con Gray and grayish be interbeds of red SIL	ntinued) rown, moist, stiff, fin T; oxidized; micaceo	e sandy CLAY; few tous.	hin
 		1							
	}	*							
111	1	-		齫		@ 44.0': Groundwa	ater measured after dr	illing.	
45	1								
-	39					Finely laminated; li clayey sand and clay	ght gray and gray; in y; convoluted/wavey;	terlayered with few the shallow dip.	in, red
	1	프							
1 11	1	-				@ 47.0': Groundwa	ater encountered durir	ng drilling.	
\ \ 	1	}							
				齫					
		}							
50			 -		SP+SC	TERRACE PERCE			
	84	}	o .		3F + 3C	TERRACE DEPOS Light brown and br moderately and stro fine gravel.	on Saturated, SANI on Sani on Sani on Saturated, SANI on Saturated silty (D; interbedded with f CLAYSTONE and cla	ractured yey SAND; few
		1				······································			
1 111		Ì							
	}								
		}							G.
									•••••
55	34				SP/GP	Reddish brown, sati	urated, medium dense	, poorly graded medi	um SAND to
5	0/3"	ļ					w.		
					GC	Light brown, satura hard claystone.	ited, very stiff, clayey	GRAVEL; gravel is	dark gray,
 								•	
							ri .		
1 111	1		*******		SC	Reddish brown, sat	urated, medium dense	, clayey SAND.	
60		1						· · · · · · · · · · · · · · · · · · ·	
	ه بر		~				R	ORING L	OG
		74	10	æ,	$\Lambda\Lambda_0$	aroc		Oso Creek Channel	
	, 1	J		4	A 		PROJECT NO.	an Juan Capistrano, Cali	FIGURE
<u></u>			_				201885-01	6/00	A-15

li	S		1	ء ا	1 1		1
=	SAMPLES	=	78	DENSITY (PCF)		N O	DATE DRILLED 4/8/99 BORING NO. B-4
DEPTH (feet)	SAN	BLOWS/FOOT	MOISTURE (%)	}	ŭ	CLASSIFICATION U.S.C.S.	GROUND ELEVATION 217' ±(MSL) SHEET 4 OF 4
I	<u> </u>	S	5	NSI	SYMBOL	S.C.	METHOD OF DRILLING 8" hollow stem auger (A&R Drilling)
DEP	Bulk Driven	3,00	SIOI	DE	S	ASS U.	DRIVE WEIGHT 140 lbs. DROP 30"
۵	B C		2	DRY	,	ರ	SAMPLED BY GMC LOGGED BY GMC REVIEWED BY MD/CAP
60					222	SC	DESCRIPTION/INTERPRETATION TERRACE DEPOSITS: (Continued)
	⅃ͳ	15			:X7:X		Reddish brown, saturated, medium dense, clayey SAND; little fine gravel.
	L	}					CAPISTRANO FORMATION: Dark gray, saturated, weakly indurated, silty CLAYSTONE; trace coarse sand and moderately indurated claystone; few laminations; mostly massive.
	+-						sand and moderately indurated claystone; few laminations; mostly massive.
	$\dagger \dagger$	1					·
	1]					
	11						
65 -							*
}	}	97/8"					Moderately indurated.
ľ		,		<u> </u>		·	
	╁┼	}		ļ			Total Depth = 66.5 feet. Groundwater encountered during drilling at approximately 47 feet.
]		Groundwater encountered during drilling at approximately 47 feet. Groundwater measured after drilling at approximately 43 feet. Backfilled on 4/8/99.
	\prod				} }		Bushined on 4/0/99.
) }			
	11)				
70 -	11	1]]	{		
	11			l I			
							•
	$\dagger \dagger$	1		ĺ		6	
				ţ			
,	+	}		Ċ			
75 -		}		l			
'``	\prod						
	+	}					
	 •						
	11]					
	- -						
	††			}			
80 -	Ш						
	_				_		BORING LOG
			711	m	82	ΛΛı	Oso Creek Channel
	, [7-1	J	, •			San Juan Capistrano, California PROJECT NO. DATE FIGURE
							20188 <u>5</u> -01 6/00 A-16

	ES			Œ.		<i>z</i>	DATE DRILLED	4/8/99	BORING NO	R.5
eti	SAMPLES	700	(%)	(P(<u>ا</u> ـ ا	†	ON 194' ±(MSL)		1OF3
1 (fe	SA	S/FC	J.R.	SIT	180	C.S	(ager (A&R Drilling)	
DEPTH (feet)	Vel Vel	BLOWS/FOOT	MOISTURE	DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	Į		DROP	
ă		В	M	DRY [Z.A.	ì		GMC REVIEW	
				ā		0			INTERPRETATION	
0						CF	LANDSLIDE DEP	OSITS (DISTURBED	FILL): dy CLAY; few fine gr	and a
,	++4	5					Surface is covered b	y mostly fine to coar	se granitic gravel (bal	last).
	\prod									
								Ξ		
		7								
5 ~		33								
		4					Firm.			
	1			ngrownia ago maga			}			
	/	6				GC	Dark brown and bro	own, moist, loose, cla	iyey GRAVEL.	**************
٠.										
	\prod									,
10 -										
		8					٠		*	
					35					
	$\left\{ \cdot \right\} \left\{ \cdot \right\}$									
			-			SC+CL	Gray and light brow	OSITS (DISTURBED on, moist, firm, fine s	ALLUVIUM): sandy CLAY; interbed	lded with
							clayey fine SAND;	gradational; few red	oxidation.	
	H				\mathbb{Z}					
					X					
15 -		0		si.				d .		
		б								
	IH	3								
						40				
	Ш.									
						sc	Gray and yellowish spots of red oxidation	brown, moist, mediu	m dense, clayey fine	SAND; some
	1						spore or rea oxidatio	J11.		
20 -									er .	
20-								1	OBING L	30
	A	Vii		In	æ.	AAs	aroc		ORING LO	
			J		-/	A		PROJECT NO.	an Juan Capistrano, Calif	fornia FIGURE
								201885-01	6/00	A-17

₩	ES			E.	j -		DATE DRILLED	4/8/00	PODING NO	D. 5
et	SAMPLES	PO	(%)	(PC	١.	01		ON 194' ±(MSL)	BORING NO.	
1 (fe	SA	S/FO	JRE	YT!	BOL	C.S.	f	ING 8" hollow stem au		OF3
DEPTH (feet)	٦	BLOWS/FOOT	MOISTURE	DENSITY (PCF)	SYMBOL	ASSIFICATION U.S.C.S.		140 lbs.		30"
ă	Bulk Driven	BL.	MOM	DRY C	"	CLAS		MC LOGGED BY		
				مَّ		-			NTERPRETATION	
20		27				sc	LANDSLIDE DEPO Gray and yellowish spots of red oxidation	OSITS (DISTURBED brown, moist, mediur on.	ALLUVIUM): (Corn dense, clayey fine	ntinued) SAND; some
							@ 21.5': Begin con	tinuous coring.		
25 -						SC+CL	fine sandy CLAY ar	noist, medium dense, on CLAY; thinly laming the character of clayey ar.	nated to 1 inch thick	beds within
							@ 27.0' - 28.0': Ye	ellowish brown, wet, f	īrm fine sandv CLA	Y· few very
			δ	}			thin beds with red o	xidation; seepage.	mi, fine saidy czn	it, iew very
							@ 28.0' - 29.0': Mo	oist; firm; few very th	in beds of fine SANI	D.
							@ 29.0' - 30.0': Broincreases downward	own, moist, stiff; fine ; few very thin beddin	sandy CLAY; clay on apparent; relatively	content y flat.
30 -						SP	@ 30.0' - 32.5'; Brofine gravel.	own, wet, fine to coar	se poorly graded SA	ND; trace
					77	CH	@ 22 5t. Landalida			
	†††	••••••	푸	}	 	ML	\approximately 1/2-in	rupture surface. Gray nch-thick clay seam m	, wet, son, silty CLA ixed with gravel.	A1;
1	\coprod		.			CL	TERRACE DEPOS Yellowish brown, w	et, fine sandy SILT.		
	$\left\{ \right\} \left[\right]$						@ 33.0': Groundwa	ter encountered during	very stiff silty CLA	V in this
35 -							beds; interbedded w brown, fine sandy C	ith very thin and thin, LAY; relatively flat better measured after dril	light brown and yel	lowish
-										
	$ \cdot $					CD	A 27 51 20 01 11			
1	†††	·			unnon	SP	thin laminations of i	*		
	\prod					ML+CL	@ 38.3' - 39.0': Lig sandy CLAY and fir	ght brown and yellowine sandy SILT in thin	sh brown, saturated, interbeds.	stiff, fine
40 -							CAPISTRANO FO			
)		-			В	ORING LO	ÖĞ
	_/	VII	7/4	10	æ	M	saoc		Oso Creek Channel n Juan Capistrano, Cali	
		7		•	-	7 -		PROJECT NO.	DATE 6/00	FIGURE

1	SAMPLES	F	(%)	DENSITY (PCF)		NOI	DATE DRILLED		4		B-5	
DEPTH (feet)	AN	BLOWS/FOOT	H (Ţ	5	CLASSIFICATION U.S.C.S.	NO.07	ON 194' ±(MSL)	_	3	_ OF	3
Ĩ Ţ	\vdash	WS/	MOISTURE	NSI	SYMBOL	SIFIC S.C.		NG 8" hollow stem auge				
DEP	Bulk Driven	350	OI		S	ASS		140 lbs.				
	ā	ш	2	DRY		ರ	SAMPLED BYGI	MC LOGGED BY _		D BY	MD/C/	AP
40			===				moderately indurate	d, silty CLAYSTONE of		.1 ! d	===	===
ļ ·	{						silty CLAYSTONE;	massive.		ery inot	irated	
		-		-			Black, saturated, we finely laminated. @ 40.0' - 42.0': Mo relatively planar; no @ 42.0' - 44.3': Hi surfaces observed.	RMATION: (Continued) askly to moderately industry undisturbed; few be polished surfaces obserghly fractured; weakly in assive; undisturbed; dark	rated, silty CLAYS eds are highly fract ved. ndurated; no polish	ured; ed	very	
45 -							indurated, @ 45.0' - 45.5': Fra bottom is highly frac Undisturbed, @ 46.0': Approxim relatively flat, very	actured along lamination ctured. ately 3 inches thick high shallow dip; no polished	as; approximately 1 aly fractured zone; a	inch or		
							@ 46.5': Slightly from surfaces; undisturbed	actured thin seam < 1 in d; massive.	nch thick; no polish	ed		
								ghly fractured; no polish				
1 -	H						@ 48.5' - 48.7': Sli	ghtly fractured; no polis	shed surfaces.			1
1 -0	}		. (,					
50 -							Total Depth = 50.0 Groundwater encour	ntered during drilling at red after drilling at appr	approximately 33 f	eet.		
55 -	- - 											
	Ш						•					
							.					
	- -		} }		{ }		,					
		ν:							*			
} }												
	Н											
(0)												
60 -	===		===				<u> </u>		DINA 1			
				ın	ىھ	A A c	nne	BC.	DRING LO)G		
		Y **	44		at	ΛI,	ore_		Oso Creek Channel Juan Capistrano, Calife	ornia		
L		T				, 		PROJECT NO. 201885-01	DATE 6/00		FIGURE A-19	

Medall Boring Logs

BORING LOG

ogged By:	Date Orilled:	Orill Rig:	Boring Diameter:	Boring Number:
AOM This log is a representati	5-22-84 ion of subsurface conditions at the	Bucket Auger time and place of drilling. With the	Boring Elevation:	D 1
	ny other location there may be con-	sequential changes in conditions.	463'+	B-1
SAMPLE SOLVE		The of Road C ML SLOPEWASH/TERR Clayey SILT Firm to medium SAND, s Silt cont tal	with SAND - moderately (mod.) stir (med.) brown (brn.), ve lightly (sli.) mottled y CLAY - dark (dk.) broacts approximately (app (horiz.).	on Road. If, moist (mst.), Pry (v.) fine porous, roots. I., irregular
	10	Light (orange filled Nume calc	TS (Qt): with SAND - lt.) to med. greenish legasts/mottles, w/rare burrows, some roots. rous orange oxide stringium carbonate (CaCo3) see see in CLAY, sli. stilleges	gravels, few ngers, few stringers.
		Less rare few hori	CLAY, few cemented Carrounded siliceous SIL thin dk. brn. layers, 12.	Co, nodules,
	15 -	thin buri disp shea grey	buried soils (?), w/ce ed soils - SHEAR - N6E lacement, west side up rs - SHEAR - N4W 50N, SILTSTONE clasts, numb les.	65-70S, 3-10" , drag along gravel sized
	- 20	w/ oran mineral dk. brn BEDD SHEA	& SAND - stiff, mst. brnish gr ge oxide, white carbon /carbonate fragments (. laminae, no apparent DING(?): N25E 35N R - N16W 72S, north si ", some drag, features	ate & black (blk) frag.'s),w/thin bedding.; de up offset
HER DROP:				
ill, Aragon, W	Vorswick & Associates and Geologists	, Inc. LOS ANGI SANTA AN RIVERSID	NA	FIGURE NO.:

	E	BORING LO	G
Logged By: AOM This log is a representat	Date Drilled: 5-22-84 tion of subsurface conditions at the	Drill Rig: Bucket Auger	Boring Diameter: 24" Boring Elevation:
passage of time or at a	ny other location there may be con-	sequential changes in conditions.	B-1 (Cont.)
TAMPLE STATE OF THE STATE OF TH		ML SILT w/CLAY & w/thin br	Description and Remarks SAND (Continued) - n. white & grey laminae, w/small dk. brn. nodules.
	30	SHEAR: SHEAR: N35E, BEDROCK (Tc): Clayey SILTST Soft to m SANDSTONE staining, v. fine S lense. Highly JOINT oxidiz JOINT Mod. h	mod. hard, mst., lt. grey w/orange interbeds, yellow to orange oxide some white mineral staining, some SAND, BEDDING - N35W, 19°S on sand reactured. N85E 15S, NS70E; fractures thin, med & gypsum lined. N12W 10N offset on fracture JOINT - N35E 75-80
	- 40	,	
HAMMER DROP:			
Medall, Aragon, W Consulting Engineers	Vorswick & Associates	, Inc. LOS ANGELE SANTA ANA	S PROJECT NO.: FIGURE NO.:

		ВС	ORING L	OG		
Logged By:	Date Drilled:	Di	ill Rig:	Boring Dia		Boring Number:
AOM This log is a represer passage of time or a	5-22-84 ntation of subsurface condition other location there	tions at the time may be consequ	Bucket Auger and place of drilling. With the ential changes in conditions	e Boring Elev	24" vation:	B-1 (Cont.)
	1841	7	7 7			B-1 (cont.)
		str.	/ _č / GE	OLOGICA	L/ENGINEEF	≀ING
			GE		n and Remarks	
WEIGH		50	Mod. haw/tl	nin white firly bedded, and, increase DING: N60E AR: N35E, 4 and to hard, interbeds of egular upper 15W dk. greenish unoxidized")	med. to dk. ne SAND lense se in % of CLA 10S (poor) 44S; NS, 45E mst. dk. gre of oxidized SI contact - tr	y, micaceous LTSTONE. ends approx. ous, odorifer-
HAMMER DROP:						,
Medall, Aragon, Consulting Enginee	Worswick & Ass ers and Geologists	ociates, In	C. LOS ANG SANTA A RIVERSID	NA	PROJECT NO.: S2262A	FIGURE NO.: A-1c

	,	BO	RING LO)G	
Logged By: AOM	Date Drilled: 5-22-84	Drill I	Rig: Eket Auger	Boring Diameter:	Boring Number:
			place of drilling. With the al changes in conditions.	Boring Elevation:	B-1 (Cont.)
		7	//	LOGICAL/ENC Description and R	
			CLAYEY SILTS	TONE (Continued	1) -
		- 65	END OF BORING @ SLIGHT SEEP @ 5 NO CAVING. HOLE BACKFILLED	2'.	
HAMMER DROP: Medail, Aragon,		ociates Inc	LOS ANGEL	ES PROJEC	CT NO.: FIGURE NO.:
Consulting Engineer	rs and Geologists	Colates, INC.	SANTA ANA RIVERSIDE		262 A A-1d

		BORING L	OG	
ogged By: AOM	Date Drilled: 5-22-84	Orll Rig: Bucket Auger	Boring Diameter:	Boring Number:
This log is a representa passage of time or at a	tion of subsurface cond	titions at the time and place of drilling. With the may be consequential changes in conditions	Boring Flevation:	B-2
SAMPLE STATE OF THE SERVICE OF THE S		GE SE SE	OLOGICAL/ENGINEE Description and Remarks	RING
		ML SLOPEWASH (Qs Clayey SIL Stiff, burrow		· · · · · · · · · · · · · · · · · · ·
		filled Lt.	1,7	erous carbonatorn.
		CaC	s CLAY, firm to stiff, rog nodules, sm. grey SIIs than '2" diam.	numerous soft LTSTONE clast:
		cre dis	grey brn. to brn. mott ase in % of SAND, faint! tinct pods of lt. grey t ined material.	y bedded w/in
HAMMER DROP:		sociates Inc. LOS ANG	ELES PROJECT NO.:	FIGURE NO.:

		BC	RING	LOG		
Logged By:	Date Drilled:	1	Il Rig:	4	ng Diameter:	Boring Number:
AOM This log is a representa	5-22-84	itions at the time a	Bucket Auger	ith the Borin	24" ng Elevation:	_
passage of time or at a	any other location there	may be conseque	ntial changes in cond	litions.		B-2 (Cont.)
SAMPLE SIL			\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\		ICAL/ENGINEE	RING
		-	SILT w/	Clayey SIL	[(Continued) -	
		25		Lt. grey & no bedding,	orange color (weatracturing or Cac	athered rock?)- Co3 staining.
	1 1	[]		staining NS	5 24E (poor) on up	oper contact.
		30	SILT w/s First	horiz. orients orients or some staining of the	stiff, mst., lt. g g mottled, numerou oxidized angular g apparent bedding	grey w/orange as CaCo ₃ string- SILTSTONE s, chaotic
		35		SHEAR: N3W displacemer	7N, N64W 68N all t	, few inches
HAMMER WEIGHT		-40 -Tc	Sandy Mod. SILT oran bedo	SILTSTONE - hard, mst nge oxide, led. JOINT: NS, SHEAR: N32W	., lt. grey, high gypsum filled fra	ct., poorly against Sandy
Medall, Aragon, \ Consulting Engineers	Worswick & Ass and Geologists	sociates, Inc	SAIN	ANGELES TA ANA ERSIDE	PROJECT NO.: S2262 A	FIGURE NO.: A-2b

BORING LOG

			L	CUIIA	G LU	G		
Logged By	AOM	Date Drilled: 5-22-84		Drill Rig: Bucket Au	~~~	Boring Diameter: 24		Boring Number:
This loc	is a representa	tion of subsurfac	ce conditions at the ti	me and place of drill	ion With the	Boring Elevation:		D 0 (0)
SAMP			n there may be cons	equential changes in	n conditions.			B-2 (Cont.)
XIII SE					GEOL	OGICAL/ENGI Description and Rem		NG
			LJ		BEDDIN lense. JOINT: SANDY above.		w/oranghears, rehears, rehears	orange SAND brnish grey,
			60					
НАММЕ	R DROP:	:						
Medall, Consultin	Aragon, \	Worswick &	k Associates,	Inc.	LOS ANGELE SANTA ANA RIVERSIDE	S PROJECT	100 to 10	FIGURE NO.: A-2C

		B	ORING I	_OG		
Logged By: AOM	Date Orilled: 5-22-84		Drill Rig: Bucket Auger	Boring Diar	neter: 24"	Boring Number:
This log is a represen passage of time or a	tation of subsurface cond t any other location there	ditions at the tire may be conse	ne and place of drilling. Will equential changes in conditi	the Boring Elevons.	ation:	B-2 (Cont.)
SAMPLE STATE OF THE SAMPLE			S S S S S S S S S S S S S S S S S S S	EOLOGICAI Description	L/ENGINEE	RING
			Clayey S I w J Hard shea SILT (uno	ILTSTONE (Contincrease in num /irregular zor OINT: N32W 59F noxidized SILT , mst., dk. gr r, gypsum fill STONE bounding xidized) JOIN	nes of dk. gr E, gypsum fil TSTONE betwee Tey, mod. fra Led, w/zones g fractures. NT: NS 90	rey led. en joints.
		70-	← S B	eepage along d EDDING: N20W 1	lisc. SAND le L5W (poor)	ense, minor flow
				HEAR: N2OW 60E		flow.
WEIGH	7.	80		NG @ 80'. AGE @ 73' & 79 LLED AND TAMPE		
HAMMER DROP: Medall, Aragon, Consulting Engineer	Worswick & As	sociates,	Inc. LOS A SANT/ RIVER		PROJECT NO.: \$2262 A	FIGURE NO.: A-2d

	E	BORING LO	G	
Logged By:	Date Orilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM This log is a represental	5-23-84 tion of subsurface conditions at the	Bucket Auger	Boring Elevation: 5001+	
passage of time or at a	ny other location there may be con	sequential changes in conditions.	Boring Elevation: 500'+	В-3
SAMPLE STATES			LOGICAL/ENGINEER Description and Remarks	RING
	5 -	Stiff, do sli. porcom. ML SLOPEWASH (Qsw) Clayey SILT - Stiff, s. roots, c.	li. mst., med. brn-dk. Lay_skins. iff, blocky.	
		mottled, porous.	SILT - stiff, mst., lt. to m sli. Sandy, some CaCog	ed. brn.green stringers, v.
	- 10-		ous fine CaCo3 stringer cange oxide clasts, sli	
	20	Fewer V. hig	hly weathered (weath.) clasts, boundary indis	, grey SILT-
		}		
HAMMER DROP:		I I I I I I I I I I I I I I I I I I I	ES PROJECT NO.:	FIGURE NO.:
Consulting Engineers	Vorswick & Associates and Geologists	, Inc. LOS ANGELE SANTA ANA RIVERSIDE	S2262 A	A-3a

Description and Remarks GEOLOGICAL/ENGINEERING Description and Remarks GEOLOGICAL/ENGINEERING Description and Remarks Clayey SILT W/Sandy SILT (Continued) Firm, mst., med. brn., v. porous, sli. mottled color, few carbonate stains. Upper contact - N246 98 Med. brn. to lt. grey brn. mottled. Lt. grey brn. Med. brn. layer, irregular upper 6 lower contacts. BEDDING: N15E, 12S Amed. brn. SILT layer dipping E at low angle.			B	ORING LO)G		
The logical ampresentation of whosulace consultance and placed of colling. With the part of the part o	Logged By:		Į¢.	•	Boring Diam		Boring Number:
GEOLOGICAL/ENGINEERING Description and Remarks M. Clayey Silt W/Sandy Silt (Continued) - Firm, mst., med. brn., v. porous, sli. mottled color, few carbonace stains. Upper contact - %245 98 Med. brn. to it. grey brn. mottled. Lt. grey brn. Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. Silt W/trace organics & carbona nodules BEDDING: N5 7E Med. brn. Silt layer dipping E at low angle. —Med. brn. Silt layer Med. brn. Si	This log is a represent	tation of subsurface con-	ditions at the time	e and place of drilling. With the	Boring Eleva		P-2 (Cort)
ML Clayey SILT W/Sandy SILT (Continued) - Firm, mst., med. brn., v. porous, sli. mottled color, few carbonate stains. Upper contact - N24E 9S Med. brn. to lt. grey brn. mottled. Lt. grey brn. Med. brn. lenses dipping to N, less than 1" thick. I-Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer (psessibly channel fill) BEDDING: N65E 31S Meddal, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTAMAM STANTAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMAMAMA STANTAMAMAMAMAMAMA STANTAMAMAMAMAMAMAMAMAMAMAMA STANTAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAM	SAMDIE /	7. 7	I I de conseq	Dential changes in conditions.			B-3 (Cont.)
ML Clayey SILT W/Sandy SILT (Continued) - Firm, mst., med. brn., v. porous, sli. mottled color, few carbonate stains. Upper contact - N24E 9S Med. brn. to lt. grey brn. mottled. Lt. grey brn. Med. brn. lenses dipping to N, less than 1" thick. I-Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer (psessibly channel fill) BEDDING: N65E 31S Meddal, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTAMAM STANTAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMAMAMA STANTAMAMAMAMAMAMA STANTAMAMAMAMAMAMAMAMAMAMAMA STANTAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAM	1/200		St.	GEO	LOGICAL	JENGINEER	ING
ML Clayey SILT W/Sandy SILT (Continued) - Firm, mst., med. brn., v. porous, sli. mottled color, few carbonate stains. Upper contact - N24E 9S Med. brn. to lt. grey brn. mottled. Lt. grey brn. Med. brn. lenses dipping to N, less than 1" thick. I-Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer (psessibly channel fill) BEDDING: N65E 31S Meddal, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTAMAM STANTAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMA STANTAMAMAMAMAMA STANTAMAMAMAMAMAMA STANTAMAMAMAMAMAMAMAMAMAMAMA STANTAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAM				/			
Firm, mst., med. brn., v. porous, sli. mottled color, few carbonate stains. Upper contact - N24E 9S Med. brn. to lt. grey brn. mottled. Lt. grey brn. Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona endules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer w/irregular upper & lower cortexts. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer (possibly channel fill) Firm to mod. sciff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower cortexts (possibly channel fill) BEDDING: N65E 31S MedMedl. Aragon, Worswick & Associates, inc. LOSANGELES SANTAANA STATES PROJECTING: FIGURE NG: SANTAANA STATES PROJECTING: TATES PROJECTING: FIGURE NG: SANTAANA STATES PROJECTING: TATES PROJECTING: T		1. 1. 2. 2. 3. 3. 6. 6. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.			/6 1 7	/-	
mottled color, few carbonate stains. Upper contact - N24E 98 Med. brn. to 1t. grey brn. mottled. Lt. grey brn. Med. brn. lenses dipping to N, less than 1" thick. J-Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Amed. brn. SILT layer dipping E at low angle.			† 1'				
Med. brn. to lt. grey brn. mottled. Lt. grey brn. Med. brn. lenses dipping to N, less than l" thick. J-Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Amed. brn. SILT layer dipping E at low angle.			1	mottled	color, few	carbonate st	ains.
Lt. grey brn. Med. brn. lenses dipping to N, less than 1" thick. Image: history and contacts No. N							ottled.
Med. brn. lenses dipping to N, less than 1" thick. J-Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. ← Med. brn. SILT layer dipping E at low angle. ← Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. Consulting argicular and Cut acts at the Santa ANA Section 1. Property of Cut acts at the Santa ANA Section 2. Project No.: Figure No.: Santa ANA Section 2. Project No.: Project No.: Figure No.: Santa ANA Section 2. Project No.: Project No.: Santa ANA Section 2. Project No.: Project No.: Project No.: Santa ANA Section 2. Project No.:			<u> </u>	ſ			
1" thick. I Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. ← Med. brn. SILT layer Med. brn. SILT layer dipping E at low angle. ← Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer dipping E at low angle. ← Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Med.			FF		stey bin.		
Medall, Aragon, Worswick & Associates, Inc. J-Med. brn. layer, irregular upper & lower contacts. BEDDING: N15E, 12S Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. - Med. brn. SILT layer - Med. brn. SI			25			s dipping to	N, less than
Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Firm to mod. stiff, increase in C		1	F 7	1" th	ick.		
Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer Firm to mod. stiff, increase in C	111		† †	J-Med.	brn. layer	, irregular u	oper & lower
Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E			F 1	conta	icts.		
Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A 3 3b]		DE DE I	ng. Mile	123	
Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A 3 3b			}				
Med. brn. SILT w/trace organics & carbona nodules BEDDING: NS 7E Med. brn. SILT layer dipping E at low angle. Med. brn. SILT layer Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A 3 3b			[]				
Medall, Aragon, Worswick & Associates, Inc. Med. brn. SILT layer dipping E at low angle.		1 1	- 30 -		•		
Medall, Aragon, Worswick & Associates, Inc. Med. brn. SILT layer dipping E at low angle.		}	1	Med	hrn SIIT	w/trace organ	ice & carbonat
## WEIGHT: DROP: Med. brn. SILT layer dipping E at low angle. ← Med. brn. SILT layer Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S PROJECT NO: FIGURE NO: SANTA ANA S2362A Da 3b 3b		1 1	+ +	← nodu]	es	_	ics a carbonal
And angle. - 35 - And And angle. - 40 - Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES PROJECT NO: FIGURE NO: SANTA ANA S2262A Angle An		1 1	F 7	BEDDI	ING: NS 7E		*
And angle. - 35 - And And angle. - 40 - Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES PROJECT NO: FIGURE NO: SANTA ANA S2262A Angle An			t 1	1			
And angle. - 35 - And And angle. - 40 - Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES PROJECT NO: FIGURE NO: SANTA ANA S2262A Angle An		1 1	+ +		_		
Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A-3b						layer dipping	E at low
Firm to mod. stiff, increase in CLAY. Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A 3-3b			- 33)		layer	
Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S HAMMER DROP: Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A-3b S2262A A-3b							
Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S HAMMER DROP: Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A-3b S2262A A-3b			+ +	1			
Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S HAMMER DROP: Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A-3b S2262A A-3b		1 1		}			
Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S HAMMER DROP: Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A-3b S2262A A-3b		1	+ +	- {			
Med. brn. SILT layer w/irregular upper & lower contacts - (possibly channel fill) BEDDING: N65E 31S HAMMER DROP: Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S2262A A-3b S2262A A-3b			1				
HAMMER WEIGHT: DROP: Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA S22624 A = 3b			- 40 - 	Med.	brn. SILT	, increase in layer w/irrego	CLAY. Llar upper &
HAMMER WEIGHT: DROP: Medall, Aragon, Worswick & Associates, Inc. Consulting Engineers and Coolering SANTA ANA S22624 A=3b				lower	contacts-	- (possibly cha	
Medall, Aragon, Worswick & Associates, Inc. Consulting Engineers and Coolering			<u> </u>	ַ עַעַקונט	מכטון , טייי	J±0	
Medall, Aragon, Worswick & Associates, Inc. Consulting Engineers and Coolering		T:					······································
Consulting Engineers and Contaminate . SANTA ANA	DROP.				·		
AP 3D SUCRASIDE S2202A AP 3D	Medall, Aragon, Consulting Engineer	Worswick & As	sociates, l	SANTA AN	ES	PROJECT NO.: S2262A	FIGURE NO.: A-3b

Cogned Br. Date Orlillar: Boring Diameter: Boring Diameter: 24" Boring Number: 24" Bard Nu			BORI	NG LO	G	
This is a sepsentation of subsurface conditions at the time and piece of defining Winthing Passage of time of at lawy other focusion where may be consequented changes in conditions. SAMPLE GEOLOGICAL/ENGINEERING Description and Remarks PAL Sandy SILT W/Clayey SILT (Continued) — San. soft carbonate condules increase in % SAND Within fine white SAND laminae w/scattered 1t. grey SILTSTONE clasts. Increase in visible white mineral staining. Sandy SILT — Silty SAND — Soft to firm 1t. braish grey, numerous white mineral stringers, numerous white mineral stringers, numerous short discontinuous v. fine, SAND laminae, possibly bioturbated. Tucrease in fines BEDDING: N20E 3-4S (poor) Clayey SILT — Mod. stiff, mst., it. grey brn., w/fine SAND interbeds & rounded white siltceous SILTSTONE and irregular 1t. grey SILTSTONE clasts. Large gravel size blocks of SILTSTONE in matrix., almost silty CLAY. Clayey SILT — Silty CLAY — Stiff, mst., med. brn. — Tringular contact Rock BEDDING: N20E 3-4S (poor) Clayey SILT — Silty CLAY — Stiff, mst., med. brn. — Tringular contact Rock BEDDING: N20E 3-4S (poor) Clayey SILT — Silty CLAY — Stiff, mst., w/fine SAND interbeds & rounded white siltceous SILTSTONE and irregular lt. grey SILTSTONE clasts. Large gravel size blocks of SILTSTONE in matrix., almost silty CLAY. Clayey SILT — Silty CLAY — Stiff, mst., t. grey w/orange oxide staining, highly fract., w/oxidized fractures. SIERR: NSW 22E minor offset fractures oxidised w/gypcum. JOINT: NISW 30N w/low angle joints dipping 20-30' to NE Medall, Aregon, Worswick & Associates, Inc. SOCHANGEES SANTA MAS FROJECT NO: FIGURE NO:	Logged By:	a sa				Boring Number:
GEOLOGICAL/ENGINEERING Description and Remarks No. Sandy SILT w/Clayey SILT (Continued) - Sm. soft carbonate nodules increase in Z SAND W/thin fine white SAND laminae w/scattered 1t. grey SILTSTONE clasts. Increase in visible white mineral staining. Sandy SILT - Silty SAND - Soft to firm 1t. brnish grey, numerous white mineral stringers, numerous short discontin- uous v. fine, SAND laminae, possibly biotur- bated. Tucrease in fines BEDDING: N20E 3-45 (poor) Clayey SILT - Mod. stiff, mst., lt. grey brn., w/fine SAND interbeds & rounded white silicous SILTSTONE and irregular lt. grey SILTSTONE clasts. Large gravel size blocks of SILTSTONE in matrix., almost silty CLAY - SILTSTONE - Large gravel size blocks of SILTSTONE in matrix., almost silty CLAY - SILTSTONE - W/Oxidized fractures. SILTSTONE - W/Oxidized fractures. SILTSTONE - SILTSTONE - JOHN: NSW 22E minor offset fractures oxidized w/gypum. JOHN: NISW 30N w/low angle joints dipping 20-30' to Ng Medall, Aregon, Worswick & Associates, Inc. CORMINGED - SANTA ANAS SANTA ANA SAN	This log is a representat	tion of subsurface cond	itions at the time and place	of drilling. With the		B-3 (Cont.)
M. Sandy SILT w/Clayey SILT (Continued) Sn. soft carbonate nodules increase in % SAND w/thin fine white SAND laminae w/scattered lt. grey SILTSTONE clasts. Increase in visible white mineral staining. Sandy SILT - Silty SAND - Soft to firm lt. braish grey, numerous white mineral stringers, numerous short discontinuous v. fine, SAND laminae, possibly bioturbated. Increase in fines BEDDING: NZOE 3-4S (poor) Clayey SILT - Mod. stiff, mst., lt. grey brn., w/fine SAND interbeds & rounded white siliceous SILTSTONE and irregular lt. grey SILTSTONE clasts. Large gravel size blocks of SILTSTONE in matrix., almost silty CLAY - Stiff, mst., med. brn. Irregular contact Rock BEDROCK (TG): NZOE 3-4S (poor) Clayey SILT - Silty CLAY - Stiff, mst., med. brn. Irregular contact SILTSTONE - NZOE 3-4S (poor) Clayey SILT - Silty CLAY - Stiff, mst., med. brn. Irregular contact SILTSTONE - NZOE 3-4S (poor) NJOINT: NZOE 3-4S (poor) Clayey SILT - Silty CLAY - Stiff, mst., med. brn. Irregular contact SILTSTONE - NZOE 3-4S (poor) NZOE 3-4S (poor) Clayey SILT - Silty CLAY - Stiff, mst., med. brn. Irregular contact SILTSTONE - NZOE 3-4S (poor) NZOE 3-4S (poor) NZOE 3-4S (poor) Clayey SILT - Silty CLAY - Stiff, mst., med. brn. Irregular contact NZOE 3-4S (poor) NZOE 3-4S	SAMPLE SAMPLE			GEOL		RING
Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA PROJECT NO.: FIGURE NO.:	WEIGHT		45 ML/SM	Sm. so SAND w/thin lt. gr Increa Sandy SILT - Soft to f mineral s uous v. f bated. Increa BEDDIN Clayey SILT - Mod. stif interbeds and irreg Large matrix Clayey SILT - Mod. hard w/orange w/oxidize SHEAR: oxidiz JOINT:	fine white SAND laming and sey SILTSTONE clasts. se in visible white must be seen visible white must be seen fines and seen seen fines are seen fines are seen fines are seen fines are seen fines almost silty CLAY. Silty CLAY - Stiff, lar contact soft, mst. to v. oxide staining, highly discussed w/gypsum. N15W 30N w/low angle.	increase in % Inae w/scattered Inineral staining. Inumerous white Bort discontin- Bort disc
TO THE PROPERTY OF THE PROPERT	Medall, Aragon, V	Vorswick & Ass	sociates, inc.	SANTA ANA		

	BORING	LO	G	
Logged By: Date Drilled: AOM 5-23-84	Drill Rig:		Boring Diameter:	Boring Number:
This log is a representation of subsurface condition passage of time or at any other location there may	Bucket Aug ns at the time and place of drillin y be consequential changes in o	n With the	Boring Elevation:	B-3 (Cont.)
SAMPLE SA		GEOL	OGICAL/ENGINE Description and Remarks	
WEIGHT:	65 - Q. 70	Mod. hard fine SAND oxide sta Orange Seepag Irregu BEDDIN w/mod. ham mod. frac Orange sli. so Irregular JOINT:	ntinued) - , mst., lt-med. gree , mod. fract., poor ining & gypsum alon , friable, v. wet SAN e in SAND on SE sid lar upper & lower of G: N41W 11S (poor) rd to hard, some SA t., less oxidation. fine SAND, loose to eep, minor caving. fine SAND on SE sid to hard, some SA t., less oxidation. fine SAND, loose to eep, minor caving. unoxidized").	greenish-grey, on joints,
Medall, Aragon, Worswick & Associating Engineers and Geologists	7.	LOS ANGELES SANTA ANA RIVERSIDE	PROJECT NO.: S2262 A	FIGURE NO.: A-3d

BORING LOG

,						JIIA	G LU	G		
ogged By:		Date Drill 5-23-		·	Orill F	Rig: cket Au	707	Boring Diame		Boring Number:
This log is a repr	resentatio	on of subsu	rtace condi	tions at the	ime and	place of delt	line With the	Boring Eleva	24" tion:	
passage of time	7	7	ation there	may be con:	sequenti	al changes i	n conditions.			B-3 (Cont.)
		The Main of the Court of the Co						Description	/ENGINEE	RING
				90	Q		Hard, dk. grey SAND Thin d seepag	grey, w/l lenses; f	along SAND :	iscontinuous grained
						SEEPAGE		68' & 83'		
							CAVING IN		.5' & 68'.	
HAMMER DRO	IGHT: OP:			······································	-	noun pe	CAL LUDED	C IATH ED.		
Medall, Arage Consulting Engi	on, Wo	orswick	k & Ass	ociates,	Inc.		LOS ANGELE SANTA ANA	s	PROJECT NO.:	FIGURE NO.:

				E	30	RING L	-00	3		
Logged By:	AOM	Date Drii	lled: 24-84		Drill Br	Ri g: icket Auger		Boring Diam	eter: 24"	Boring Number:
This log is passage	s a represent of time or at	ation of subs	urface condition	ons at the tay be cons	ime an	place of drilling. With	the	Boring Eleva		B-4
SAMPLE SAMPLE		### #### ### #### #### #### #### #### #### #### #### ######				G			/ENGINEEF	RING
			-	· • • • • • • • • • • • • • • • • • • •	CL/ ML	5Y 2. crack SLOPEWASH (C Silty CLA Stiff 10 YE	f, dry .5/1(W cs. Qsw): AY-Cla f, sli R 3/2	yey SILT . mst., (, sli. porous	funsell Color desiccation funsell Color clocky struc-
	4			5	ML	SLOPEWASH/TH Clayey SI Firm,	ERRACE	DEPOSITS SILT w/mst.,[M	ate stringers CLAY - unsell Color	10YR-2.5Y 3/2
				10		upper oxide	1-2' e stai	transit ning.	trace carbo	
	6			- 15	,	poro	, sli. us.	mst., m		reen-brn., v.
				20		porov w w: SI	, sli us. /few r ith" b HEAR:	near vertorn. SILT	ical "fractur	green-brn., v. res filled to bedrock below inches offset
HAMMER	WEIGH	7: 0'-2 NOTE:	5'=2500 . Munsell	lbs.;	25'- des	43'=1500 lbs.	; 43'	-65 '=7 50	lbs.	
Medall, A	Aragon, Engineer	Worswic	k & Asso	ciates,	Inc.	cribed in Int LOS AN SANTA RIVERS	NGELES ANA	tion to A	PROJECT NO.: S2262A	FIGURE NO.:

		ВО	RING LO	G	
Logged By: AOM	Date Drilled: 5-24-84	Drill	Rig: icket Auger	Boring Diameter:	Boring Number:
This log is a represen	ntation of subsurface condi at any other location there	tions at the time and	d place of drilling. With the	Boring Elevation:	B-4 (Cont.)
SAMPLE	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	"	/ /		
			GEO	LOGICAL/ENGINE	ERING
			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Description and Remarks	
		ML	Sandy SILT w SHEAR Med.	brn. SILT layer, irr	down.
		ML	Sandy SILT -	contacts.	
				firm, sli. mst-mst., 2.5Y-5Y 4/2], laminat	
		25 4	w/a f	ew thin, med. brn. SI ed fractures ½" - 3/	
9		25 -	SHEAR	: N25W 73N	
			12" w	ous,small thin shear //some slicks. .NG: N25W 12S	s, offset up to
			SHEAR	: N20W 29N	
		 	Med. tinuo	brn., mod. stiff, sil us.	-
17		30 Rock	BEDROCK (Tc): SILTSTONE (S SILTSTONE (Mod. har	Contact w filling N (See Sketch Clayey) - CONTACT: N d, mst., lt. grey[Mu	10E 11S nsell Color 2YR
Q+?	Qt med bra		w/gypsum	sandy, sli. clayey, a filled fract. yellow orange oxide	1
TESANOY	TE SANOLO	+ + 1	stair SHEAR SILTS	2 @ 31' N10E 60E offs	ets clayey/sandy
To arrior	Tecusyer	35	Very	lect 12". low angle fractures. S: N8W 4-6S	
INSERT	TC CLAVES DETAIL		w/dk. tures	brn. SILT filled ir	_
			₩ DISCO	ontinuous oranģe-whit	e DAND Tellses.
		<u> </u>			
		40			
			-		
HAMMER DROP:	_	000 lbs.; 25	'-43'=1500 lbs.;	43'-65'=750 lbs. troduction to Appendi	
Medall, Aragon,	Worswick & Ass	sociates, Inc.	LOS ANGELI		FIGURE NO.:

Consulting Engineers and Geologists

SANTA ANA RIVERSIDE

S2262 A A-4c

BORING LOG Logged By: Date Drilled: Drill Rig: Boring Diameter: Boring Number: 24" 5-24-84 Bucket Auger This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location there may be consequential changes in conditions. Boring Elevation: B-4 (Cont.) **GEOLOGICAL/ENGINEERING** Description and Remarks Clayey SILTSTONE (Continued) -% of CLAY varies Vertical brn. SILT stringer pinches out, planar feature EW 60S Mod. hard to hard, increase in CLAY, med. brn-grey. Steeply-dipping SAND lense 640 south, no apparent fault. w/discontinuous, irregular SAND lenses. 50 35 JOINT: N30W, 80W possibly offset beds along fracture. ←Irregular brn. SILT filled fractures, almost vertical. 55 V. mst. Grey-brn., highly oxidized. 60 0'-25'=2500 lbs.; 25'-43'=1500 lbs.; 43'-65'=750 lbs. WEIGHT: HAMMER DROP: Munsell color described in Introduction to Appendix A.

Medall, Aragon, Worswick & Associates, Inc. Consulting Engineers and Geologists

LOS ANGELES SANTA ANA RIVERSIDE PROJECT NO.: S2262A FIGURE NO.: A-4b

	BORING LOG						
Logged By:	Date Orilled:	Drill Rig:	Boring Dian		Boring Number:		
This log is a represent	5-24-84 ation of subsurface condition any other location there may	Bucket Au s at the time and place of dil	line With the Borine Flav	ation:	B-4 (Cont.)		
041451.5	···,	be consequential changes	in conditions.		IB-4 (conc.)		
3 / 4 / 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6			GEOLOGICAL	JENGINEER	RING		
				Tand Hemana			
		Cla	yey SILTSTONE (Cont ←Discontinuous s		eepage.		
		1	SAND lense, 4-6 BEDDING: N50W				
		65	←Orange fine SAN up to 3' on SW w/blk. manganes seepage along S	side of hole. se(?) staining	, moderate		
]	(No downhole lo	ogging below	63' due to		
HAMMER DROP	T: 0'-25'=2500	70	Mod. hard-hard, ms Color 10YR 3/1 (W) poorly bedded, w/r SAND interbeds & 1),(unoxidized) are thin whit aminae.	, sli. fract., e to grey		
DNOP.	Appendix	A. A	In Introduction to	(inclu	uding stem)		
Medall, Aragon, Consulting Engineer	Worswick & Assoc s and Geologists	iates, Inc.	LOS ANGELES SANTA ANA RIVERSIDE	PROJECT NO.: S2262A	FIGURE NO.: A-4d		

		ВО	RING LO	G	
Logged By:	Date Drilled:		Rig:	Boring Diameter:	Boring Number:
AOM This log is a representat	5-24-84 tion of subsurface condi	lions at the time an	cket Auger	Boring Elevation:	
passage of time or at a	ny other location there	may be consequen	itial changes in conditions.		B-4 (Cont.)
			geol	OGICAL/ENGINEE	RING
		90-	Clayey SILTST Hard, mst sandy, sl fractures Dk. gr		ded, gypsum alon
		100_	END OF BORING @ SEEPAGE @ 61' & SILTSTONE. CAVING IN SANDS HOLE BACKFILLED	63' AT UNKNOWN DEPTHS @ 63'.	IN DK. GREY,
HAMMER WEIGHT	0'-25'=250 NOTE: Mun	0 lbs.; 25' sell color	-43'=1500 lbs.; 4 described in Intr	3'-65'=750 lbs. oduction to Appendix A	. ·
Medall, Aragon, V Consulting Engineers	Vorswick & Ass and Geologists	ociates, inc.	LOS ANGELE SANTA ANA RIVERSIDE	S PROJECT NO.: S2262A	FIGURE NO.: A-4e

		BORING	G LO	G	
Logged By:	Date Drilled:	Drill Rig:		Boring Diameter:	Boring Number:
AOM This log is a repres passage of time or	5-25-84 entation of subsurface cond r at any other location there	Bucket Auge litions at the time and place of drilli may be consequential changes in	og With the	Boring Elevation: 466'+	B-5
SAMPLE SELECTION OF THE			GEOL	OGICAL/ENGINEE Description and Remarks	RING
WEIG		ML SLOPEWA SILT	Stiff, dr roots. Mottle blocky SH/TERRAC W/SAND 8 Firm, sli tled, v. bonate st W/thir Clayey approx Weakly Clayey grey-b Med. b Irregu N10E 8 (Tc): y SILTSTO Soft to m oxide sta fract. Low an ey SILTSTO Mod. hard interbeds y SILTSTO Mod. hard staining,	ed, SILT w/SAND to Clared, SILT w/SAND to Clared. CE DEPOSITS (Qsw/Qt) CLAY - mst., lt. to med. groous, v. fine SAND ringers. med. brn. SILT interest contact, horizontal. SILT interbed, mod. rn. SILT w/CLAY. Clar contact, med. brn. CE - Horizontal ONE - mod. hard, mst., lt. grows, siliceous SILT regular contact, med. contact, med. brn. SILT w/CLAY.	green brn. mot- roots w/car- rbeds. act, blocky, SILT laminae stiff, med. SILT grey w/orange C. clasts, mod. N60W 7E ey, w/thin SAND range oxide CONE interbeds.
HAMMER DROP);				
Medall, Aragor Consulting Engine	n, Worswick & Assects and Geologists	sociales, Inc.	LOS ANGELES SANTA ANA RIVERSIDE	S PROJECT NO.: S2262 A	FIGURE NO.: A-5a

		BORIN	G LOG		
Logged By:	Date Drilled:	Drill Rig:	Boring Di	ameter:	Boring Number:
AOM This log is a represen	5-25-84	Bucket Augitions at the time and place of dril	er ling. With the Boring El	evation:	4
passage of time or at	t any other location there	may be consequential changes i	n conditions.	evation.	B-5 (Cont.)
SAMPLE SAM				AL/ENGINEER	ING
			Descript	ion and Remarks	
			dy SILTSTONE w/CL	AY (Continued)	
			SILTSTONE, no	w/zones of med bedding. 9S, N75W 10N ox	n n
		[] [← Few open void	s - (may be due	to drilling)
		25	Steeper dippingstained.	ng joints, thin	orange oxide
		- 30 - Clay	JOINT: N78W yey SILTSTONE w/S Mod. hard, mst., staining., v. fir fractured, w/gyps	ANDSTONE - med. grey w/ora ne to fine SAND	ange oxidation, micaceous,
		- 35 -	Increase in CI CONTACT N30W	LAY - Sandy to o	clayey —
			Mod. hard to h	nard, med. to dk	grey.
		40	← Orange SANDSTO	ONE interbed.	
HAMMER DROP:					
Medall, Aragon, Consulting Engineer	Worswick & Ass	ociates, Inc.	LOS ANGELES SANTA ANA RIVERSIDE	PROJECT NO.: S 2262 A	FIGURE NO.: A-5b

	BORING LOG						
Logged By:	Date Drilled:	Drill Rig:		Boring Diameter:	Boring Number:		
AOM This log is a represer	5-25-84	Bucker ditions at the time and placer e may be consequential ch	et Auger e of drilling. With the	Boring Elevation:			
·		may be consequential ch	anges in conditions.	1	B-5 (Cont.)		
1/8		54 /x	GEOL	OGICAL/ENGINE	FRING		
* # * # # # # # # # #			,	Description and Remarks			
		45 - 50 - 60 - 60	Med. grey fract., o micaceous -2"-6" Minor on SE First discontard, mst poorly be	ONE w/SAND (Continu lar orange, fine SAN offsets on order of G: N38W, 28S brn., mod. hard to xidized & gypsum al. thick fine orange S seep on NE side of side of hole. trace of blk. unoxitinuous contact. , dk. grey, micacedded, sli. fract., nae. (unoxidized)	hard, mst., mod. ong joints, AND bed. dized SILTSTONE, ous, sli. sandy,		
1							
HAMMER DROP:							
Medall, Aragon, Consulting Enginee	Worswick & Assers and Geologists	sociates, Inc.	LOS ANGELES SANTA ANA RIVERSIDE	S PROJECT NO.: S2262 A	FIGURE NO.: A-5c		

		BO	DRING LO	OG		
Logged By:	Date Drilled:	1	III Rig:	Boring Diame	oter:	Boring Number:
AOM This log is a represer	5-25-84 ntation of subsurface con-	ditions at the time	Sucket Anger and place of drilling. With the ential changes in conditions.	Boring Eleva	24" tion:	-
		may be consequ	ential changes in conditions.			B-5 (Cont.)
1 / 8%		45	// 050	N OCIOAL	ENOINEED	INIC
1 23 / 23 /	\$\$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		/or GEC		ENGINEER	ING
* 3 3 5 5 5 5 5 5 5 5			GEC	Description	and Remarks	
		-	Clayey SILT	STONE (Cont	inued) -	
		t 1	Hard, d	k. grey, ms: sli. fract.	., poorly be	dded, mica-
		F 7				
		 				
	1 1	F7				
	, ,					
		65				
		-	END OF BORING SLIGHT SEEPAGE			
	1 4		NO CAVING.	w 55.5°.		•
	1 1	<u> </u>	HOLE BACKFILLE	D AND TAMPE) .	
	} }	F 7	Ţ			
	1 1	<u>t</u> 1	1			
	1		l			
		70 -				
	1 1		1			
	} }	+ +	· ·			
		1	,			
		}	1			<i>:</i>
	j	1				
		-				
	1 1	75				
		-	1			
		[]	1			
					*)	
	1	1				ī
		L]	1			
		80	1			
[
HAMMER DROP:	<u>IT:</u>					
Medall, Aragon,	Worswick & As	sociates, In	c. LOS ANGEI	LES	PROJECT NO.:	FIGURE NO.:
Consulting Enginee	ers and Geologists	1	SANTA ANA RIVERSIDE	A	S2262A	A-5d

BORING LOG Logged By: Date Drilled: Orll Rig: Boring Diameter: Boring Number: 5-25-84 Bucket Auger 24" This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location there may be consequential changes in conditions. Boring Elevation: 4751+ B-6 GEOLOGICAL/ENGINEERING Description and Remarks TOPSOIL: Silty CLAY -Stiff, dry to sli. mst., dk. brn., w/roots. SLOPEWASH (Qsw): MLClayey SILT -Stiff, sli. mst., dk. red-brn., porous. w/trace carbonates along roots. Firm to stiff, mst., dk. red-brn., porous. 10 TERRACE DEPOSITS ML SILT & Clayey SILT -Soft to firm, 1t.-med. brn., v. porous. "mottled", w/rootlets. w/scattered to rare gravel, rounded, less than 1" diam. w/Sandy SILT 15 w/scattered pebbles & clasts of SILTSTONE. -Slight offset 3" to 4" at contact ✓ Irregular Contact. SILT w/Silty CLAY lenses -Soft to firm, lt. brn. to brn. to mottled, sli. porous. 20 WEIGHT: HAMMER DROP: Medall, Aragon, Worswick & Associates, Inc. LOS ANGELES SANTA ANA RIVERSIDE PROJECT NO .: FIGURE NO .: Consulting Engineers and Geologists S2262 A A-6a

	8	BORING LO	G	
Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM This log is a representa	5-25-84 tion of subsurface conditions at the	Bucket Auger	Boring Elevation:	
passage of time or at a	any other location there may be cons	sequential changes in conditions.		B-6 (Cont.)
SAMIPLE		// 250	001041/511011555	
		GEO!	LOGICALIENGINEER	ling
		GEOI	Description and Remarks	
			CLAY lenses (Continued	.) -
		w/scatter	red pebbles.	
		, 554555	coa possito.	
		/ 11	5. 11 6.11 1	
		w/small s white min	soft nodules of dk. brn nerals.	. SILT &
			led fract; NS, 76W	
				4741
{	25			
	1 1 -		NO trail at MAON O 1511	
]]]		FEDDII	NG Weak at N40E, 9-15W	
1 1 1				
}	30 -			
		Alt. Sandy Si	ILT & SILT - v. firm, lt. grey to gr	ov-brn v
			edded to laminated,	ey-bin., v.
		BEDS:	N45E 14N	
1 1 1				
		Beddir	ng less distinct.	
i		Local	"cut-fill" features	
	35 -			
		BEDROCK:	ular CONTACT N45W 9N (±)
{ } }			TONE w/SANDSTONE clasts	. –
			mod. hard, lt. grey w/o d SANDSTONE beds & lens	
	-	to v. fra		es, intensely
	40			
				¥
HAMMER DROP	:			
HAMMER DROP:				
Medali, Aragon, V	Norswick & Associates,	inc. LOS ANGELE	S PROJECT NO.:	FIGURE NO.:
Consulting Engineers	and Geologists	SANTA ANA RIVERSIDE	S2262 A	A-6b

		BORING	LOG	
Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM This log is a repre	5-25-84	Bucket Auger ns at the time and place of drilling. W	24 ^t in the Boring Elevation:	
passage of time	or at any other location there ma	y be consequential changes in cond	itions.	B-6 (Cont.)
SAMPLE			GEOLOGICAL/ENGIN	IEERING
			Description and Rema	rks
		Clayey	SILTSTONE w/SAND (Conti	nued) -
		4 1	SAND lenses, N16W, 39S Less fractured.	-
			Irregular JOINT: N40E,	Vert.
		45	Mod. hard.	
		- - - -	SAND lense l"-2" thick,	N45W, 32S
		50 _		
		Clayey	SILTSTONE -	TO TOWN
			Nodules of cemented SII staining.	TSTONE, heavy oxide
		55 - Sandy S	ILTSTONE & Clayey SILTS	TONE
		60 Har	First occurrence of dk. SILTSTONE.	
			us w/gypsum filled join	
HAMMER DRO	GHT: P:			
Medall, Arago Consulting Engli	on, Worswick & Asso neers and Geologists	, SAN	ANGELES PROJECT N TA ANA RSIDE \$2262 A	O.: FIGURE NO.: A-6c

	E	ORING LO	G	1
Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Baring Number:
AOM This log is a concessora	5-25-84	Bucket Auger	Boring Elevation:	
	tion of subsurface conditions at the tany other location there may be cons	equential changes in conditions.	Borning Elevation.	B-6 (Cont.)
SAMPLE	/ <u>#</u>			
		/	LOGICALIENGINE	ERING
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		GEOI	Description and Remarks	
WEIGHT	70-	Sandy SILTSTO Hard, med micaceous Clayey w/SHEA Slight Mod. hard sli. sand w/thin Thin JOINT FRACT Thin NS 29	th fine SAND laminae dk. grey fracture 4": N30E 34S no slicks URE: N70E, 45W dk. grey fracture 1/8 E lense 1-2" thick w/se	ey to grey-brn., m filled fract. CONTACT rey, micaceous, thick thick thick
HAMMER DROP:		Inc. LOS ANOTIS	PROJECT NO.:	FIGURE NO.:
Consulting Engineers	Worswick & Associates, and Geologists	Inc. LOS ANGELE SANTA ANA RIVERSIDE	S 2262 A	A-6d

. .

	E	BORING LO	G	
Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM This log is a representa	5-25-84	Bucket Auger	Boring Elevation:	_
	tion of subsurface conditions at the iny other location there may be con	sequential changes in conditions.	Borning Clevation.	B-6 (Cont.)
SAMPLE				
		/st / GEOL	.OGICAL/ENGINEEF	RING
		GEOL	Description and Remarks	
	85	Hard, dk. bedding, G. Slight	ik. SILT joint 1/8" th	
	90 -	FND OF BORING @	90'	
WEIGHT	95 -	END OF BORING @ SLIGHT SEEPAGE @ NO CAVING. HOLE BACKFILLED	2 77' & 84 ' .	
HAMMER DROP: Medall, Aragon, V Consulting Engineers	Norswick & Associates and Geologists	, Inc. LOS ANGELE SANTA ANA RIVERSIDE	S PROJECT NO.: S2262 A	FIGURE NO.: A-6e

EJN Boring Logs

Maj	or Diviso	ons	Group Symbol	- 1	Soil Description
		Clean GRAVEL	GW	0	Well Graded Gravel, Sandy GRAVEL. Must have an equal distribution of Fine and Coorse Gravel.
COARSE	GRAVEL	(Less Than 5% Fines)	GP		Foorly Graded Gravel , Sandy GRAVEL . Gap Graded, little or no Fines.
GRAINED	Material Lorger Than *4 Sieve)	GRAVEL With Fines	GM		Silly CRAVEL, Silly, Sondy GRAVEL.
SOIL	riidii 4 Siever	(More Than 12% Fines)	GC		Cloyer GRAVEL. Clayer, Sandy GRAVEL.
Material Larger	SAND (More Than 50% Material Smoller Than *4 Sieve)	Clean SAND	sw .		Well Graded Sand , Gravelly SAND. Must have an equal distribution of fine, medium, and coarse Sand.
Than The *200 Sieve)		[less Than 5% Fines]	SP		Poorly Graded Sand , Gravelly SAND. Gap Graded, little or na fines.
		SAND With Fines	SM		Silty SAND, Silty, Grovelly SAND.
		(More Than 12% Fines)	SC &	1	Clayey SAND . Clayey, Grovelly SAND.
51NF		•	МL		Inorganic Silt . Sandy or Clayey SILT . Low to No plasticity
FINE GRAINED	SILT (CL		Inorganic Clay . Sandy or Silty CLAY. Low to Medium plasticity.	
SOIL		, enqual committees and some			Organic SILT or Organic Silly CLAY . Low to Medium plasticity
(More Than 50% Material Smal			жн		Inorganic SILT Micocaous or Diolomoteous Sandy SILT Elostic SILT Madium to High plasticity
fer Than The	SILT &	СН		Inorganic CLAY with High plasticity.	
200 Smite)			ОН		Organic CLAY & SILT with High plasticity
HIG	HLY ORGANI	C SOIL	PT		PEAT & other Highly Organic soils.

E.J.N. & ASSOCIATES INC.

su	RFACE	ELEV	OITA	1 = 2	95'			*
					1 -		ML	TOPSOIL: SANCY SILT- SOFT, EROWN, MOIST POROUS, SOME PIECES OF CONCRETIONS, VIF.GR. SAND.
					3 - 4 - 5 - 6 - 7 - 8 - 10 -		ML	SLOPEWARA (QSW): SANDY SILT- SOFT TO VERY FIRM, ERGISN, MOIST FORDOS, CONCRETION CLASTS, V.F. GR. SAND.
					12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 -		ALS. ML TE.	LANBSCIDE MATERIAL (QIS): CLAVEY SILTSTONE - IHARD, BROWN, SUBIFTY MOIST, MASSIVE, VERY FRACTURED, MOD, WEATH,, Casoy FILLING. JOINT: NTOE, TON CLAYEY SILTSTONE - HARD, GREY TO BROWN, MOIST, MASSIVE, MOD. FARE & WEATH. VERY SHEARED CONTACT:
RELATIVE COMPACTION	MAX. DENSITY (pcf)	DRY DENSITY (pcf)	MOISTURE (%)	PENETRATION (N)	DEPTH (ft.)	MATERIAL SYMBOL	UNIFIED SOIL	Logged by: R, MERKER