AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOI	B NO: 01-05697	-				LC	OG OF	BORIN	G NO.		1070	SS	(p. 1	l of 1	l)
PROJEC	T: Southwest Ligh	t Rail Tra	nsit Pro	ject,	PEC East	; Hop	kins	to Mi	nnea	poli	is, M	IN			
SURFAC	E ELEVATION: 920.0	He	ennepin Co.	Coordir	nates:	N 1	4998	5	E	4	9931'	7			
DEPTH			T		CEOLOCY			SAMI	LE R	EC	FIELD) & LA	BORAT	ORY	FEST
IN FEET	MATERIAL D	DESCRIPTION	N		GEOLOGY	N	MC	TYP		N.	WC	DEN	LL	PL	%- #2
1 —	FILL, mostly silty sand wit brown (A-1-b)	h gravel, tra	ce roots,		FILL	12	M	s N	S I	4				-	
2 — 3 —	FILL, mixture of silty sand a little gravel, trace roots, b					6	M	S s	s :	2	9				
4 — 5 —	SAND, a little gravel, fine light brown, moist, dense (to medium g SP) (A-3)	grained,		COARSE ALLUVIUM	1 32	M	Ц X s	S I	14					
6 7 8	SAND WITH GRAVEL, r grained, light brown to bro medium dense (SP) (A-1-b	wn, moist, d				34	M	E s	s	14					
9 — 10 —		,				17	М	FI X s	s	12					
11 - 12 - 13 -						25	М		s	12				- -	
13 14 15						29	M		s	14					
16 — 17 —		· ·				26		ł		12				-	
18 — 19 —	•	ʻ.			• • •			ł							
20 - 21 - 22 -	CLAYEY SAND, a little g	ravel. brow	n, stiff to		TILL	38	M		SS	12					
22 23 - 24 -	firm (SC) (A-2-4)					12	Ţ	र्थ सु	SS	16	-11				
25 - 26 -						8	M	R R	SS	18	13				
27 - 28 -	SILTY SAND, a little grav dense to loose (SM/SC) (A	/el, brown, 1 1-2-4)	medium		· · ·	17	M/W		SS	18					
29 30 31					•	. 9	M/W		ss	16				-	
	END OF BORING											<u> </u>			
DEP	TH: DRILLING METHOD				ER LEVEL M			1					NOTE:	REFI	ER T
0-2	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASIN TH DEPTI	G CA	VE-IN EPTH	DR FLUI	ILLINC D LEVI	EL	WATI LEVI	ER EL	THE A	ATTAC	CHE
0-2	<u> </u>	5/17/13	9:56	26.			24.7				24.5	5	SHEE	TS FO	R Al
		5/17/13	10:21	26.			24.4	1			23.'	7	EXPLA	NATI	ON (
BORIN	G LETED: 5/17/13	5/17/13	10:30	26.			24.4				23.4	,	FERMI	NOLO	GY (
COMP	LETED: 5/17/13 G LG: JJ Rig: 1C	5/17/13	10:40	26.			24.3				23.3		TL	IIS LO	G

03/2011



FILL, mixture of silly sand with gravel and silly sand with organic fines, pieces of concrete, trace roots, brown, black and grayish brown (A-2-4) FILL 94 M SS 17 Image: SS 17 Image: Solution of the synch size of concrete, trace roots, brown, black and grayish brown (A-2-4) Image: SS 18 19 16 14	AET JOI	B NO:	01-05697					LO	G OF	BO	RINGN	0.	1071	ST	(p. 1	lof	1)
SAMPLE Interpretent GEOLOGY N MC SAMPLE FIR. FIR.1 & LABORATORY T PHLT MATERIAL DESCRIPTION GEOLOGY N MC SAMPLE FIR.1 & LABORATORY T PHLL, mixture of silty sand with organic fines, pieces of concrete, trace roots, brown, black and grayish brown (A-2-4) PHL 94 M SS 17 L PL A LEAN CLAY, brown, firm (CL) (A-6) FINE FINE ALLUVIUM 5 M SS 18 I </th <th>PROJEC</th> <th>CT: S</th> <th>outhwest Lig</th> <th>ht Rail Tr</th> <th>ansit Pro</th> <th>ject,]</th> <th>PEC East;</th> <th>Hopl</th> <th>kins</th> <th>to]</th> <th>Minn</th> <th>eapol</th> <th>lis, M</th> <th>[N</th> <th></th> <th></th> <th></th>	PROJEC	CT: S	outhwest Lig	ht Rail Tr	ansit Pro	ject,]	PEC East;	Hopl	kins	to]	Minn	eapol	lis, M	[N			
District MATERIAL DESCRIPTION CECLORY N MC SAMPLE N wc DEN L PLO FEET FULL, mixture of silty sand with gravel and silty roots, brown, black and gravish brown (A-2-4) FILL 94 M SS 17 L L PLO 4 LEAN CLAY, brown, firm (CL) (A-6) Image: Construct and sint and	SURFAC	CE ELEVAT	ION: 889.8	E	lennepin Co.	Coordir	ates: <u>]</u>	<u>v 1</u>	55534	4		E :	51092	2			
FILL, mixture of silty sand with gravel and silty sand with organic fines, pieces of concrets, trace rots, brown, black and grayish brown (A-2-4) FILL 94 M SS 17 Image: Solution of the set o	DEPTH IN FEET		MATERIAL	DESCRIPTIO	N		GEOLOGY	N	MC	SĄ	MPLE FYPE				1	1	TEST
3 - 19 M SS 18 4 LEAN CLAY, brown, firm (CL) (A-6) FINE SS 18 26 6 - - SAND WITH SU.7, a little gravel, fine to medium dense (SP-SM) (A-3) COARSE - 19 M SS 18 26 9 - SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense, a lens of fine grained sand with silt (SP) (A-1-b) 19 M SS 18 18 11 - SAND WITH SU.7, a little gravel, fine to medium dense, a grained, light brown, moist, medium dense, a lens of fine grained sand (SP-SM) (A-3) 16 M SS 17 12 SAND WITH SU.7, a little gravel, medium to fine grained sand SP (SP-SM) (A-3) 14 M SS 17 13 medium grained, light brown, moist, medium dense (SP-SM) (A-3) 14 M SS 18 13 14 SAND WITH SU.7, a little gravel, medium to fine grained sand SP (SP-SM) (A-1-b) 14 M SS 18 13 16 M SS 18 13 14 M SS 18 13 16 M SS 18	1 -	sand with	organic fines, p	ieces of con	crete, trace		FILL	94	М	M	SS	17					
LEAN CLAY, brown, firm (CL) (A-6) PINE SAND WITH SILT, a little gravel, fine to medium grained, brown, moist, medium dense (SP-SM) (A-3) 5 M SS 18 26 9 SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense, a lens of fine grained sand with silt (SP) (A-1-b) 19 M SS 18 26 10 SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense, a lens of fine grained, shown, moist, medium dense 23 M SS 18 11 lens of fine grained, brown, moist, medium dense, a lens of fine grained sand 16 M SS 17 12 SAND WITH SILT, a little gravel, medium to fine grained sand 16 M SS 17 14 SS 19 B SS 18 13 15 SAND WITH SILT, a little gravel, brown, sist to waterbearing, medium to fine grained, sand 14 M SS 18 13 16 M SS 18 13 IIIL 15 M SS 18 13 17 GP-SM (A-1-b) SM SS 18 13 IIIL 15 M SS 18 13		·		· .				19	M	M	SS	18					
7 SAND WITH SILT, a little gravel, fine to medium grained, brown and light brown, moist, medium dense (SP-SM) (A-3) 19 M SS 20 9 SAND WITH GRAVEL, medium to fine grained, light brown, moist, medium dense, a lens of fine grained sand with silt (SP) (A-1-b) 23 M SS 18 11 lens of fine grained, brown, moist, medium dense, a medium grained, brown, moist, medium dense, medium dense, a lens of fine grained sand 16 M SS 17 13 SAND WITH SILT, a little gravel, medium to fine grained, light brown, moist to waterbearing, medium dense, a lens of fine grained sand 14 N SS 19 14 SP-SM) (A-1-b) SS 18 11 15 M SS 18 15 SAND WITH SILT, a little gravel, brown, stiff (CL) (A-6) TILL 15 M SS 18 13 19 20 21 14 M SS 20 13 21 END OF BORING UATER LEVEL MEASUREMENTS NOTE: REFER DEPTH: DRILLING METHOD WATER LEVEL MEASUREMENTS NOTE: REFER	5 —	LEAN C	LAY, brown, fir	m (CL) (A-6)			5	М	R	SS	18	26		-		
grained, light brown, moist, medium dense, a 23 M SS 18 Image: Insolve of fine grained sand with silt (SP) (A-1-b) SAND WITH SILT, a little gravel, fine to Id M SS 17 SAND WITH SILT, a little gravel, fine to Id M SS 17 SAND WITH SILT, a little gravel, medium dense, a Id M SS 17 SAND WITH SILT, a little gravel, medium to fine grained, light brown, moist waterbearing, Id M SS 19 If SAND WITH SILT, a little gravel, brown, SS 19 SS 19 If SAND WITH SILT, a little gravel, brown, TILL If M SS 18 If SANDY LEAN CLAY, a little gravel, brown, TILL If M SS 18 13 If SANDY LEAN CLAY, a little gravel, brown, If If M SS 18 13 If M SS 18 If If M SS 10 If If M SS 20 If If M If If If If	7 — 8 —	medium g	grained, brown a	nd light brov	e to vn, moist,			19	М	A N	SS	20					
SAND WITH SILT, a little gravel, melium dense (SP-SM) (A-3) 16 M SS 17 14 (SP-SM) (A-3) 14 W SS 19 15 SAND WITH SILT, a little gravel, medium to fine grained, light brown, moist to waterbearing, medium dense, a lens of fine grained sand 14 W SS 19 17 (SP-SM) (A-1-b) SANDY LEAN CLAY, a little gravel, brown, stiff (CL) (A-6) TILL 15 M SS 18 13 19 - - 14 W SS 18 13 10 SANDY LEAN CLAY, a little gravel, brown, stiff (CL) (A-6) 14 W SS 18 13 19 - - 14 M SS 20 13 20 - - 14 M SS 20 13 21 - - 14 M SS 20 13 21 - - - 14 M SS 10 14 21 - - - - - 14 - - - -	11	grained, l	ight brown, mois	st, medium d	lense, a		• • •	23	M		SS	18					
16 fine grained, light brown, moist to waterbearing, medium dense, a lens of fine grained sand 14 Note: REFER 17 (SP-SM) (A-1-b) SANDY LEAN CLAY, a little gravel, brown, stiff (CL) (A-6) 15 M SS 18 13 18 stiff (CL) (A-6) 14 M SS 20 13 14 M SS 20 13 20 14 M SS 20 13 13 14 M SS 20 13 21 END OF BORING 14 M SS 20 13 14 M SS 20 13 14 M SS 10 14 15 M 14 14 15 16 16 16 16 17 17 16 16 16 16 16 16 16 16 16 17 16	13 —	medium g	grained, brown, 1	le gravel, fir moist, mediu	ne to m dense			16	M	N A	SS	17					
11 SANDY LEAN CLAY, a little gravel, brown, stiff (CL) (A-6) 11 15 M SS 18 13 19 - 14 M SS 20 13 - 20 - 14 M SS 20 13 - 21 - 14 M SS 20 13 - 21 - 14 M SS 20 13 - 21 - - 14 M SS 20 13 - 21 - - 14 M SS 20 13 - 21 - <td>16 —</td> <td>fine grair medium (</td> <td>ed, light brown, dense, a lens of f</td> <td>moist to wa</td> <td>terbearing,</td> <td></td> <td></td> <td>14</td> <td>M N</td> <td>N/A</td> <td>SS</td> <td>19</td> <td></td> <td></td> <td></td> <td></td> <td></td>	16 —	fine grair medium (ed, light brown, dense, a lens of f	moist to wa	terbearing,			14	M N	N/A	SS	19					
21 - IA M SS 20 13 - IA M SS 2	18 —	SANDY	LEAN CLAY, a	a little gravel	, brown,		TILL	15	M	R	SS	18	13				
END OF BORING Image: Constraint of the second s								14	М	\mathbb{X}	ss	20	13				
		END OF	' BORING														
	פפת	יפת אדת	UNG METHOD			WAT	ER LEVEL ME	EASUR	 EMEN						NOTE	0.555	
0-19½' 3.25" HSA DATE DEPTH DEPTH DEPTH DEPTH FLUID LEVEL LEVEL THE ATTACK 6/11/13 12:40 19.0 17.0 17.5 16.4 SHEETS FOR	DEP				TIME						<u>DRILLI</u>	NG	WAT	ER			
6/11/13 12:40 19.0 17.0 17.5 10.4 FYDI ANATIO	0-19	91/2' 3.2	5" HSA							FI	JUID LE	VEL					
I I I I I I I I I I I I I I I I I I I																	
6/11/13 12:50 19.0 17.0 16.7 16.1 EXPLANATIO BORING 6/11/13 1:00 21.0 19.5 21.0 20.6 TERMINOLOG	BORIN	IG															
BORING COMPLETED: 6/11/13 1:00 21.0 19.5 21.0 20.6 TERMINOLOG THIS LOC DR: SG LG: SB Rig: 1C THIS LOC	COMPI	LETED: 6		6/11/13	1:00	21.	u 19.5	2	1.0				20.0	<u> </u>			

03/2011



AET JO	B NO: 01-05697					LO	GOF	BORING N	io	1072	ST	(p.]	1 of :	1)
PROJEC	CT: Southwest Ligh	t Rail Tr	ansit Pro	ject,	PEC East; I	Iopl	cins 1	to Minn	eapo	lis, M	IN			
SURFA	CE ELEVATION: 894.2	H	Iennepin Co.	Coordia	nates: <u>N</u>	1	55298	3	E	51040	7			
DEPTH	•		NT		GEOLOGY	NT	200	SAMPLE	REC	FIELD) & LA	BORAT	FORY '	FEST
IN FEET	MATERIAL I			· · · · · · · · · · · · · · · · · · ·		N	MC	TYPE	ĪN.	WC	DEN	LL	PL	%- #2
1	FILL, mostly silty sand wit clayey sand, trace roots, br and black (A-1-b)	own, grayis	h brown		FILL	23	М	ss	18					
3 — 4 —	FILL, mostly sand with silt of brick, light brown (A-1- SAND WITH SILT, a little	b) e gravel, fin	ie to		COARSE ALLUVIUM	29	М	ss B	18					
5 — 6 —	medium grained, light gray medium dense (SP-SM) (A SAND, a little gravel, med	-3) ium to fine	grained,			31	М	ss	.18					
7 — 8 —	light grayish brown, moist, SAND WITH GRAVEL, r grained, light brown, a littl	nedium to f e gray, mois	ine st, medium	1		17	M	₽ X ss	16					
9 — 10 —	dense, a lens of silt at $10\frac{1}{2}$	' (SP) (A-1-	·b)			17	M		17					
11 — 12 —	SAND, fine to medium gra		brown,					E C						
13 — 14 — 15 —	moist, medium dense (SP)	• •	ine			18	M	X SS	19					
15 — 16 — 17 —	grained, light brown, moist (A-1-b)	t, medium d	lense (SP)			26	M	X ss म	18		-			
19 — 19 —	SAND, a little gravel, med brown, moist to about 19' t medium dense (SP) (A-1-b	hen waterb				24	M T	ss R	18					
20 — 21 —		· .				12	w	ss	18					
	END OF BORING													
									¢.					
			· .						-					
		· · · ·												
							- -				-			
DEI	PTH: DRILLING METHOD		,	WAT	ER LEVEL MEA	SURI	EMEN	TS				NOTE:	REFE	RT
Ω 1	9½' 3.25" HSA	DATE	TIME	SAMPI DEP	LED CASING TH DEPTH	CAV	/E-IN PTH	DRÍLLI FLUID LI	NG EVEL	WATI LEVI	ER	THE A		
<u>U-1</u>	<u>712</u> 3.43 113A	6/11/13	1:45	21.		+	9.5			19.2		SHEE'	TS FOI	R AN
		6/11/13	1:55	21.			9.5			19.2		EXPLA	NATIO	ON C
BORIN	NG LETED: 6/11/13											TERMIN	NOLO	GY C
	LETED, U/11/13							+					IIS LO	~

03/2011



Γ	AET JO	B NO:	01-05	697						LO	G OF	BOI	RING N	0	1073	ST	(p. 1	of	1)
	PROJEC	CT:	Southv	vest Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East; I	Iopl	cins 1	to]	Minno	eapol	lis, M	[N			
	SURFAC	CE ELEV	ATION:	898.6	H	Iennepin Co.	Coordi	nates:	<u>N</u>	1:	55027	7	-	Е :	50987	6			
Ι	DEPTH IN FEET		M	ATERIAL P	ESCRIPTIO	N		GE	EOLOGY	N	мс	SA	MPLE YPE	REC	FIELD) & LA	BORAT	'ORY	TESTS
	FEET				_		•			14	WIC		YPE	IN.	WC	DEN	LL	PL	%- #200
	1				h gravel, a k brown (A			FILI	L	16	м	М	SS	7					
	2 -	EILI	mostly an	wally and	with silt, t							А							
	3 —	(A-1-ł		aveny sand	whiti Sift, t	nown				16	М	XI	SS	15	4				8
	4 —					1 11.13		4				E							
	5 -				and gravel little black					11	М	M	SS	15	9				10
	6 — 7 —											R			1.7				
	8 -			D, a little g f (SC) (A-6	ravel, trace	e roots,		TILI FIN	/	9	М	M	SS	13	17 19				
	9 —				C(CL) (A-6)		ALI	LUVIUM			A				-			
	10 -	SANI) WITH G	RAVEL, f	ine to medi e brown, m	ium oist.			ARSE LUVIUM	18	М	M	SS	18					
	11 -	mediu	m dense, a		ne to mediu			• •				A							
	12 — 13 —	SANI	WITH G	RAVEL, r	nedium to t	fine	-			25	M	M	SS	17					
	13	graine (A-1-l		own, moist	, medium c	lense (SP)				2.5		Д	55	17					
	15 —							•		07		M	SS	18					
	16 —									27	M	Д	55	18		l .			
	17 —				ID SAND,	brown,						M							
	18 -	moist,	very dens	e (GP-GM) (A-1-b)					52	M	Ŵ	SS	5					
	19 — 20 —	GRA	VELLY SA	AND, medi	um to coar	se grained						R							
	21 -	browr	ı, moist, de	ense (SP) (A-1-b)	•		•		32	M	М	SS	15					
		END	OF BOR	ING					1 V24 14 H										-
							-												
27/13				•															
DT 6/																			
ELL.G																			
N+T40																			
AET+(
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/27/13									÷ .										
1-0569	DEF	 דוו ויי	DRILLING	METHOD			WAT	ER L	EVEL MEA	SURF	 EMEN	TS		<u> </u>				DEF	
TES 0					DATE	TIME	SAMP	r	CASING DEPTH	1	/E-IN PTH		<u>JRILLI</u>	NG	WATI	ER	NOTE: THE A		
RDINA	0-1	91/2'	3.25" HSA	1	6/11/13	3:00	DEP 21.		19.5	-	РТН 1.0		UID LE	VEL	LEVE Non		SHEE		
-C00					VIIII3	2.00	1.	~	1710	.					1.101		EXPLA	NATIO	ON OF
ORPV	BORIN	IG LETED:	6/11/13													т	ERMIN	10LÒ	GY ON
AET_C(DR: S		·	g: 1C								1					TH	IS LO	G



T: Southwest Li E ELEVATION: 904.1 MATERIAL FILL, mostly sand with s silty sand and clayey san brown (A-1-b)	L DESCRIPTIO	Hennepin Co. N I, a little			N		54785 MC М	5	MPLE YPE SS	E REC IN. 16	50932 FIELI WC	6	BORAT		FEST %-#2
MATERIAL FILL, mostly sand with silty sand and clayey san	L DESCRIPTIO	N I, a little		GEOL	OGY	25	М		SS	16	WC	1	1		T.
FILL, mostly sand with s silty sand and clayey san	silt and gravel	l, a little				25	М		SS	16		DEN	LL	PL	%- #
silty sand and clayey san	silt and gravel d, brown, a li	l, a little ttle dark		FILL				M		· ·					
						19	м	\square							
	1	··· .					111	IΛL	SS	14	4				8
								P		-				-	
						12	М	X	SS	10			5		
						12	М	\mathbb{X}	SS	4					
						30	м	R	SS	8	-				
SAND WITH SILT AN	DGRAVEI	fine to		COAR	SE			R	55				-		
medium grained, light gr dark brown, moist, medi	ayish brown, um dense, a l	a little ens of		ALLUN	/IUM	27	М	X	SS	4					
SAND WITH GRAVEL	., medium gra	ined,				13	M		SS	12					
	· ·					11	м	e	55	10					
•	·					11	141	A F	00						
					۰ _۱	15	М	Х	SS	8					
END OF BORING															
н К													- -		
	·		-						•						
										-	-				
							-								
TH: DRILLING METHOL)		WAT	ER LEV	EL MEA	SURE	EMEN'	TS						BEEF	ר אז ר אז
	DATE	TIME				· · · · ·		· · · · ·	DRILLI JUID LE	NG VEL	WAT LEVI				
	6/12/13	12:30				2	1.4				Non	e	SHEE	FS FOI	R A
		· · · ·										H	EXPLA	NATIO	ON
G ETED 6/12/13												Т	ERMI	10LO	GΥ
	 medium grained, light gr dark brown, moist, medi clayey sand (SP-SM) (A SAND WITH GRAVEL brown, moist, medium d END OF BORING END OF BORING CH: DRILLING METHOR	medium grained, light grayish brown, dark brown, moist, medium dense, a l clayey sand (SP-SM) (A-1-b) (possib SAND WITH GRAVEL, medium gra brown, moist, medium dense (SP) (A- END OF BORING END OF BORING CH: DRILLING METHOD ½' 3.25" HSA DATE GIL2/13	CH: DRILLING METHOD ½' 3.25" HSA 6/12/13 12:30 J ETED: 6/12/13 12:30	medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) END OF BORING H: DRILLING METHOD WAT ½' 3.25" HSA DATE TIME SAMP DEPI 6/12/13 12:30 ETED: 6/12/13	medium grained, light grayish brown, a little ALLUN dark brown, moist, medium dense, a lens of COARS sAND WITH GRAVEL, medium grained, COARS brown, moist, medium dense (SP) (A-1-b) ALLUN END OF BORING COARS END OF BORING WATER LEVI WATER LEVI MATER LEVI ½' 3.25" HSA DATE TIME G/12/13 12:30 21.5 ETED: 6/12/13 12:30 21.5	medium grained, light grayish brown, a little ALLUVIUM dark brown, moist, medium dense, a lens of COARSE SAND WITH GRAVEL, medium grained, COARSE brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM COARSE ALLUVIUM COARSE ALLUVIUM COARSE brown, moist, medium dense (SP) (A-1-b) COARSE END OF BORING Value END OF BORING WATER LEVEL MEA CH: DRILLING METHOD WATER LEVEL MEA ½' 3.25" HSA DATE TIME SAMPLED CASING ½' 3.25" HSA DATE TIME SAMPLED CASING breeze 6/12/13 12:30 21.5 19.5 Breeze 6/12/13 12:30 21.5 19.5	medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) ALLUVIUM OR FILL 27 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 II 11 II 15 END OF BORING VATER LEVEL MEASURI H: DRILLING METHOD Variable VATER LEVEL MEASURI ½' 3.25" HSA DATE TIME SAMPLED DEPTH CASING DEPTH G/12/13 12:30 21.5 19.5	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) Image: COARSE ALLUVIUM OR FILL 27 M SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM 13 M Image: SAND OF BORING Image: Same State St	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) ICOARSE ALLUVIUM OR FILL 27 M SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 M END OF BORING III M III M END OF BORING VATER LEVEL MEASUREMENTS III M H: DRILLING METHOD WATER LEVEL MEASUREMENTS ½' 3.25" HSA DATE TIME SAMPLED CASING OEVE-TH III M ETED: 6/12/13 III III III IIII IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) COARSE ALLUVIUM OR FILL 27 M SS SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM OR FILL 13 M SS III M SS SS III M SS END OF BORING II M SS SS H: DRILLING METHOD WATER LEVEL MEASUREMENTS Y: 3.25" HSA DATE TIME SAMPLED CASING CAVEN DEPTH H: DRILLING METHOD UATER III DATE III DATE III H: DRILLING METHOD IIII III DATE IIII DATE IIII H: DATE IIII IIII DATE IIII DATE IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) Image: COARSE ALLUVIUM OR FILL 27 M SS 4 SAND WITH GRAVEL, medium dense, a lens of clayey sand (SP-SM) (A-1-b) COARSE ALLUVIUM 13 M SS 12 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 M SS 12 III M SS 10 Image: COARSE ALLUVIUM 13 M SS 12 Brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM 13 M SS 10 III M SS 10 Image: COARSE ALLUVIUM 15 M SS 8 END OF BORING Image: COARSE ALLUVIUM Image: COARSE ALLUVIUM </td <td>SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (DATE) 27 M SS 4 SAND WITH GRAVEL, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (DATE) COARSE ALLUVIUM 13 M SS 12 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 M SS 12 III M SS 10 III M SS 10 END OF BORING III M SS 8 III III III IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII</td> <td>SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) Image: COARSE ALLUVIUM OR FILL 27 M SS 4 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM OR FILL 13 M SS 12 11 M SS 10 Image: COARSE ALLUVIUM OR FILL 13 M SS 10 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM OR FILL 13 M SS 10 III M SS 10 Image: COARSE ALLUVIUM OR FILL 15 M SS 10 III M SS 10 Image: COARSE ALLUVIUM OR FILL 15 M SS 8 END OF BORING Image: COARSE ALLUVIUM OR FILL <t< td=""><td>SAND WITH SILT AND GRAVEL, fine to medium gravish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) Image: COARSE ALLUVIUM SSS 27 M SS 4 SAND WITH GRAVEL, medium gravined, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM SSS 13 M SS 12 SAND WITH GRAVEL, medium gravined, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM SSS 13 M SS 10 In M SS 10 Image: COARSE ALLUVIUM SSS 10 Image: COARSE ALLUVIUM SSS 10 Image: COARSE ALLUVIUM SSS Imag</td><td>SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a less of clayey sand (SP-SM) (A-1-b) (possible fill) COARSE ALLUVIUM OR FILL 27 M SS 4 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 M SS 12 11 M SS 10 E E 11 M SS 10 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE 11 M SS 10 11 M SS 10 E 11 M SS 8 END OF BORING VATER LEVEL MEASUREMENTS VATER LEVEL MEASUREMENTS NOTE: REFE NOTE: REFE 14 JATE TIME SAMPLED CASING EVEN NORE: EVEN NOTE: REFE 14 JATE TIME SAMPLED CASEN DEPTH DEPTH NORE: EVEN 15 M SS 14 IA IA IA IA IA 16 JATE TIME SAMPLED CASEN DEPTH DEPTH NORE: REFE HE ATTAC</td></t<></td>	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (DATE) 27 M SS 4 SAND WITH GRAVEL, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (DATE) COARSE ALLUVIUM 13 M SS 12 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 M SS 12 III M SS 10 III M SS 10 END OF BORING III M SS 8 III III III IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) Image: COARSE ALLUVIUM OR FILL 27 M SS 4 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM OR FILL 13 M SS 12 11 M SS 10 Image: COARSE ALLUVIUM OR FILL 13 M SS 10 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM OR FILL 13 M SS 10 III M SS 10 Image: COARSE ALLUVIUM OR FILL 15 M SS 10 III M SS 10 Image: COARSE ALLUVIUM OR FILL 15 M SS 8 END OF BORING Image: COARSE ALLUVIUM OR FILL Image: COARSE ALLUVIUM OR FILL <t< td=""><td>SAND WITH SILT AND GRAVEL, fine to medium gravish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) Image: COARSE ALLUVIUM SSS 27 M SS 4 SAND WITH GRAVEL, medium gravined, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM SSS 13 M SS 12 SAND WITH GRAVEL, medium gravined, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM SSS 13 M SS 10 In M SS 10 Image: COARSE ALLUVIUM SSS 10 Image: COARSE ALLUVIUM SSS 10 Image: COARSE ALLUVIUM SSS Imag</td><td>SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a less of clayey sand (SP-SM) (A-1-b) (possible fill) COARSE ALLUVIUM OR FILL 27 M SS 4 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 M SS 12 11 M SS 10 E E 11 M SS 10 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE 11 M SS 10 11 M SS 10 E 11 M SS 8 END OF BORING VATER LEVEL MEASUREMENTS VATER LEVEL MEASUREMENTS NOTE: REFE NOTE: REFE 14 JATE TIME SAMPLED CASING EVEN NORE: EVEN NOTE: REFE 14 JATE TIME SAMPLED CASEN DEPTH DEPTH NORE: EVEN 15 M SS 14 IA IA IA IA IA 16 JATE TIME SAMPLED CASEN DEPTH DEPTH NORE: REFE HE ATTAC</td></t<>	SAND WITH SILT AND GRAVEL, fine to medium gravish brown, a little dark brown, moist, medium dense, a lens of clayey sand (SP-SM) (A-1-b) (possible fill) Image: COARSE ALLUVIUM SSS 27 M SS 4 SAND WITH GRAVEL, medium gravined, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM SSS 13 M SS 12 SAND WITH GRAVEL, medium gravined, brown, moist, medium dense (SP) (A-1-b) Image: COARSE ALLUVIUM SSS 13 M SS 10 In M SS 10 Image: COARSE ALLUVIUM SSS 10 Image: COARSE ALLUVIUM SSS 10 Image: COARSE ALLUVIUM SSS Imag	SAND WITH SILT AND GRAVEL, fine to medium grained, light grayish brown, a little dark brown, moist, medium dense, a less of clayey sand (SP-SM) (A-1-b) (possible fill) COARSE ALLUVIUM OR FILL 27 M SS 4 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE ALLUVIUM 13 M SS 12 11 M SS 10 E E 11 M SS 10 SAND WITH GRAVEL, medium grained, brown, moist, medium dense (SP) (A-1-b) COARSE 11 M SS 10 11 M SS 10 E 11 M SS 8 END OF BORING VATER LEVEL MEASUREMENTS VATER LEVEL MEASUREMENTS NOTE: REFE NOTE: REFE 14 JATE TIME SAMPLED CASING EVEN NORE: EVEN NOTE: REFE 14 JATE TIME SAMPLED CASEN DEPTH DEPTH NORE: EVEN 15 M SS 14 IA IA IA IA IA 16 JATE TIME SAMPLED CASEN DEPTH DEPTH NORE: REFE HE ATTAC



AET.	IOB NO:	01-0569	7						LO	G OF	BOI	RING N	0	1075	5 ST	(p. 1	lof	1)
PROJ	ECT:	Southwes	t Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East; I	Iopl	cins	to I	Minn	eapol	lis, M	[N			
SURF	ACE ELEV	ATION:9	009.4	H	Iennepin Co.	. Coordii	nates:	<u>N</u>	1	54510	6		E '	50877				
DEPTH IN FEET	I	MAT	ERIAL D	ESCRIPTIO	N		GE	OLOGY	N	мс	SA 1	MPLE YPE	REC IN.	FIELI WC	D & LA	BORAT		ГЕSTS %-#200
1	FILL,	mostly clayey gravel, trace ro	y sand w	rith organic	$\frac{1}{2}$ fines, a		FILI		23	М	M	SS	16				• •	
2		mostly silty s dark brown (and with				FIN	E	20		A	55				-		
3	LEAN	V CLAY, trace CL) (A-6)		lark brown	to brown	,	ALL	UVIUM	9	M	M	SS	14	25	-			
5	SANI	O WITH SILT es, fine to me					CO/	ARSE JUVIUM	42	М	M	SS	12					
6	- moist	, dense to very	/ dense ((SP-SM) (A	A-1-b)				42	IVI	R	55	14					-
8) WITH GRA	VEL. n	edium to f	ine				53	M	M	SS	0					
9 10	- graine	ed, brown, mo (SP) (A-1-b)					*				P							
11							•		23	M	Å	SS	16					
12		O WITH SILT					•		71	M	M	SS	4					
14	very c	lense (SP-SM) (A-1-t)							R							
15 16	graine	O WITH GRA	NVEL, n n, moist,	dense (SP	coarse (A-1-b)		•		31	M	X	SS	12					
17	SANI	O WITH GRA					•				R							
18 19	brow	ed, light brown n, moist, dense	nish gray e (SP) (/	y to light g A-1-b)	rayish		•	•	36	M	Å	SS	16					
20				4			•		33	M	$\left \right $	SS	16				-	
21		OF BORING	Ţ								$\left \right\rangle$							· ·
		or boking	3														r.	
				•													4	.=
6/25/13		- <i>*</i>																
LLL.GDT			ł															
CPT+WE				•														
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/25/13 OOG UU				. •														
05697.GI					ik waa													
D 37	EPTH:	DRILLING ME	THOD			T	r	EVEL MEA	1		1	ייוקרו		WAT		NOTE:		
0 CINATE	-19½'	3.25" HSA	-	DATE	TIME	SAMP DEP		CASING DEPTH	+.	VE-IN PTH	FL	DRILLI UID LI	VEL	WAT LEVI		THE A		
				6/12/13	2:15	21.	>	19.5		1.5				Non		EXPLA		
≱ BOR	ING	(10/10								•	-							GY ON
	<u>IPLETED:</u> JM LG	6/12/13 : SHS Rig: 1	C													TH	IIS LO	G



ÀET JO	B NO: 01-05	697					. 1	.0G 0	F BO	RING N	0	1076	5 ST	(p. 1	of	l)
PROJEC	CT: Southy	vest Light	Rail Tr	ansit Proj	ject,	PEC East	; H0]	okins	to	Minn	eapo	lis, M	IN			
	CE ELEVATION:	911.8	 H	ennepin Co. (Coordi	nates:	<u>N</u>	1542	48	<u>بہ</u> ن	E :	50824				
DEPTH IN FEET	М	ATERIAL DI	ESCRIPTIO	N		GEOLOGY	/ N	M	S	MPLE FYPE	REC IN		r	ABORAT		T====
1 -	FILL, mostly silt clayey sand, piec roots, black, dar	es of brick	, ashes/cind	ders, trace		FILL	1) м	+7	SS	16	WC	DEN		PL	%-#200
2 — 3 — 4 —	FILL, mostly cla with silt, dark br black (A-6, A-1-	own, a little b)	e light brov	vn and			12	2 M	R	SS	16	16				
5 — 6 — 7 —	SAND WITH G grained, light gra (A-1-b)	ayish brown	ı, moist, de	ense (SP)		COARSE	A 3	3 M		SS	14				,	-
	SAND WITH G grained, light bro (A-1-b)	RAVEL, m own, moist,	edium to f medium d	ine ense (SP)			2	3 M		SS	14					- -
10 — 11 —	GRAVELLY SA grayish brown, r	AND, media noist, dense	um to fine (SP) (A-1	grained, -b)			3	4 M		SS	4				-	
12 — 13 — 14 —	SAND, fine to n moist, medium c and medium to f	lense, lense	s of fine gi	ained sand		• • •	1	5 M		SS	14					
15 16 17	SAND WITH G grayish brown, r (A-1-b)	RAVEL, m noist, medi	edium gra um dense (ined, light SP)		· · · ·	. 1	5 M	। य	SS	16				*	
18			1			•	2	D M	ו ע	SS	12					
20 21	SAND, a little g light brown and medium dense (light grayis SP) (A-3)	o medium h brown, r	grained, noist,		•	2	9 N	1	SS	16		· .			
	END OF BOR	NG														
			·					-								
		\sim					(
		METHOD			W7 A 'T	ER LEVEL N			NTC							
	PTH: DRILLING	METHOD	DATE							DRILLI	NG	WAT	ER	NOTE: THE A		
0-1	9 ¹ / ₂ ' 3.25" HSA	\	DATE		SAMP DEP			AVE-I DEPTH	I F	LUID LI	EVEL	LEVI	EL	SHEE		
			6/12/13	3:12	21.	5 19.5	<u> </u>	21.5				/Nor		EXPLA		
BORIN	NG PLETED: 6/12/13											-	. 	TERMI	10LO	GY ON
· [M LG: SHS Rig	т 1C												TH	IIS LO	G



	AET JO	B NO:	01-05	697				<u></u>		LO	G OF	BOF	RINGN	0.	1077	' ST	(p. 1	of	1)
	PROJE	CT:	Southv	vest Ligh	t Rail Tr	ansit Pro	ject,	PEC	East; I	Iopł	cins 1	to I	Minn	eapol	lis, M	IN			
	SURFA	CE ELEV	ATION:	913.2	H	lennepin Co.	Coordi	nates:	<u>N</u>	1:	54004	1	·	E É	50773	1			
	DEPTH IN		М	ATERIAL D	ESCRIPTIO	N		GEO	OLOGY	N	MC	SA	MPLE YPE	REC		r	BORAT		T
	IN FEET	THI			with augania	finag and		FILL						Ш.4.	WC	DEN	LL	PL	%- #200
	1 — 2 —	gravel a little	, a little si gray (A-2	ty sand, tra -4)	vith organic ace roots, da	ark brown,			,	11	М	Д	SS	6		-			
	3 —	FILL, little g (A-2-4	gravel, trac	f silty sand e roots, dar	and clayey k brown ar	sand, a nd brown				10	М	M	SS	8	9				
	4 — 5 —	FILL,	mixture o	f clayey sar little dark	nd and silty brown (A-6	sand, with 5, A-2-4)	1	4		10	M	X	SS	10	12				
	_6 7	SANI	O WITH G	RAVEL, n	nedium to f	ine		COA		•		P	G G						
	8 9	(A-1-1	b)		, medium d				UVIUM	29	M	Å R	SS	16					<i>x</i>
	10 — 11 —	mediu	ım grained		GRAVEL, : ish brown, : -1-b)					24	М	X	SS	12					
-	12 13 14	SANI grayis (A-1-	h brown, 1	RAVEL, n noist, medi	nedium grai um dense (ined, SP)				16	М	Å	SS	14					
	15 – 16 –	graine	O WITH C ed, light gr (SP) (A-1	ayish brow	nedium to f n, moist, m	ine edium				16	м		SS	4			-		
	17 18 19	SANI light g (A-1-	grayish bro	ravel, medi wn, moist,	ium to fine medium de	grained, ense (SP)				11	M	A A	SS	16					
		light s	grayish bro	ravel, fine wn, moist,	to medium medium de	grained, ense (SP)			• •	16	M	K	SS	4					
		h	OF BOR	ING					-							-			
T 6/25/13	20 		· .							-	1								
+WELL.GD																			
CORP W-COORDINATES 01-05697 GPJ AET+CPT+WELL GDT 6/25/13																			
5697.GPJ						• .					-								1
04-05	DE	PTH:	DRILLING	METHOD			ŴAΊ		EVEL MEA	1		1		,			NOTE:	REFE	ER TO
NATES	0-1	91/21	3.25" HSA	4	DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CAV DE	/E-IN PTH	FL	DRILLI JUID LI	NG EVEL	WAT LEVI	ER EL	THE A	TTAC	HED
ORDI					6/12/13	4:00	21.	.5	19.5	2	1.5				Non		SHEE		
M-CC																			ON OF
CORP	BORIN COMI	NG PLETED:	6/12/13													T			GY ON
AET		M LG	: SHS Rig	g: 1C).										Th	IS LO	<u></u>

03/2011

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

Γ	AET JO	B NO:	01-05	697						LO	GOF	BOI	RING N	O	1078	8 ST	(p. 1	lof	1)
	PROJE	CT:	Southw	vest Ligh	t Rail Tr	ansit Pro	ject,]	PEC	C East; I	Iopł	cins (to _, I	Minn	eapol	lis, M	ÍN			
	SURFA	CE ELEV	ATION:	918.1		Hennepin Co.	Coordir	nates:	<u>N</u>	1:	53465	5		E :	50662	4			
Ι	DEPTH		м	ATERIAL D	ESCRIPTIO	N		GF	EOLOGY	N	MC	SA	MPLE	REC	FIELI) & LA	BORAT	ORY	TESTS
	IN FEET		-	1		-			1				YPE	IN.	WC	DEN	LL	PL	%-#200
	1 —			yey sand we roots, bla			/	FIL	L	28	М	M	SS	8	24				
	2 —	FILL,	mostly silt	y sand wit	h gravel, a	little lean						(A)							
	3 —	(A-1-1)		tle black a	nd dark bro	own				21	М	XI	SS	12	10				19
	.4 —	•				·						E							
	5 —	LEAN	√ CLAY, tı CL) (A-6)	race roots,	brown, a li	ttle black,		FIN ALI	E LUVIUM	6	М	М	SS	12	23				-
	6 -											\square							
	- 7 -			ILT, a little		ne to im dense, a			ARSE LUVIUM	19	м	M	SS	10					
	8 9					-SM) (A-3)			20110101	19	IVI	Д	55	10					
	10 -			ILT, mediu								M							-
	11 -	brown	n, moist, m	edium dens	se (SP-SM) (A-1-b)				11	M	M	SS	16				-	
	12 -	SANI	WITH S		GRAVEL	medium to						R				-			
	13 -	fine g	rained, bro	wn, moist,	medium d	ense,				16	M	X	SS	18					
	14 -			layey sand				· .				E	· .						
	15 —	SANI graine	O WITH G ed, grayish	RAVEL, n brown, mc	nedium to : bist, mediu	fine m dense				30	M	M	SS	14					-
	16 -		(A-1-b)									A							
	17 18			AND, medi lense (SP)		d, brown,				21	M	\mathbb{N}	SS	12					
	19 -	moist	, mourum c		(A-1-0)					21		Д	66	12					
	20 -			ravel, medi								\mathbb{N}	~~	1.0					
	21 -	brown	n, moist, m	edium dens	se (SP) (A-	-l-b)				21	M	Ŵ	SS	18					
		END	OF BORI	NG															
_								9									-		
5/27/13																			
GDT							1												
WELL																			
+CPT+		5				. · ·													
J AET																			
97.GP	•																		
CORP W-COORDINATES 01-05697 GPJ AET+CPT+WELL GDT 6/27/13	DEI	PTH:	DRILLING	METHOD			WAT	I ER L	EVEL MEA	SURI	EMEN	TS		1	1		NOTE:	REFF	R TO
ATES			3 A.F.I. TTC -		DATE	TIME	SAMPI DEP1	ED	CASING DEPTH	CAV	/E-IN PTH	[]	DRILLI UID LE	NG	WAT LEVI		THE A		
NIDIN.	0-1	91/2'	3.25" HSA	\	6/14/13	1:23	21.		19.5	i	1.5			.,	Non		SHEET	IS FOI	R AN
M-COC																	EXPLA	NATIO	ON OF
CRP	BORIN	NG PLETED:	6/14/13	······································													FERMIN		
AET	DR: J		: SHS Rig	;: 1C			. (TH	IS LO	G

03/2011



PROJEC	E ELEVATION:	915.2		ennepin Co.		PEC East;		53205			_	50608		· · ·		
												FIELI) & LA	BORAT	ORY	TEST
DEPTH IN FEET	N	IATERIAL D	ESCRIPTIO	Ň.	•	GEOLOGY	N	MC		MPLE YPE	REC IN.	WC	DEN	LL	PL	%- #2
1 -	FILL, mostly sil sand, ashes/cind (A-2-4)	ty sand, a l ers, dark b	ittle gravel a rown and bl	and clayey ack		FILL	18	M	M	SS	12	-				
2	SAND WITH S medium grained moist, dense, a l (SP-SM) (A-3)	, light brow	n. a little b	rown,		COARSE ALLUVIUM	39	М	X X	SS	18		-			
5 - 6 - 7 -	SAND WITH C grained, light gr (A-1-b)	ayish brow	n, moist, de	nse (SP)		4 • • •	46	M	X H	SS ·	16	-		٠		
8 9	SAND, medium little brown, mo of silt (SP) (A-1	ist, mediun -b)	i dense, larr	ninations		· • • •	20	M	X	SS	.18					
10 11 12	SAND, medium moist, medium (A-1-b)	lense, lami	nations of s	ilt (SP)			.19	M	X H	SS	12					
13 — 14 —	SAND, a little g brown, moist, m (SP) (A-1-b)	edium den	se, laminati	ons of silt		•	17	M	X N	SS	10					
15 — 16 — 17 —	SAND WITH C grained, light gr dense (SP) (A-1	ayish brow -b)	n, moist, m	edium			20	M	X	SS	16	-				
17 18 — 19 —	GRAVELLY S. light brown, mo	ist, very de	nse (SP) (A	-1-b)			71	M	X H	SS	10					• .
20 - 21 -	GRAVELLY S moist, dense (S)	P) (A-1-b)	um grained	, brown,		•	40	M	M	SS	8	•				,
	END OF BOR	ING	•													
							-	-								
	•															
		,														
DEP	TH: DRILLING	METHOD			WAT	ER LEVEL ME	ASURI	EMEN	TS					NOTE:	REF	ER TO
0-19	9½' 3.25" HS	A	DATE	TIME	SAMP DEP	LED CASING TH DEPTH	CAV	VE-IN PTH] FL	DRILLI UID LE	NG VEL	WAT LEVI	ER EL	THE A	TTA	CHEL
U-1.		-	6/14/13	2:30	21.			1.5				Non	e	SHEE	ΓS FO	R AN
									1					EXPLA	NATI	ON C
BORIN	G LETED: 6/14/13												1	TERMI	VOLO	GY
DR: JI	1000 B 1000 W													TH	IIS LC	G



DF	JRFACE EL	EVATION 913.5			'oondi-	nates: N		52946)		н -	50554				
FI			<u> </u>	Iennepin Co.		14100. <u>I</u>	<u> </u>		<u> </u>			r		BORA	ORY	Т
	IN EET	MATERIAL	DESCRIPTIO	N		GEOLOGY	N	MC	SA]	MPLE TYPE	REC IN.	WC	DEN	1	PL	Т
	1 – pie	L, mostly silty sand v ces of bituminous, dar 1-b)	vith gravel, a k brown, a lit	little sand, ttle brown		FILL	19	М	X	SS	10					
	FII	L, mostly gravelly sand, dark brown, a little	nd with silt, a brown (A-1-	little silty b)			26	M	M	SS	12	5				
	FIL FIL	L, mostly sand with s wn, a little brown (A-		, dark			19	М	X	SS	14	4				
	8 – silt	L, mostly sand with g , light brown, a little b	gravel, a little prown (A-1-b)	sand with)			18	M	R	SS	16					
		ND, a little gravel, fir ist, medium dense, lar 3)				COARSE ALLUVIUM	21	M	R	SS	12					
	13 – ligl	ND, a little gravel, me nt brown, moist, medi silt (SP) (A-1-b)	edium to fine um dense, lan	grained, ninations			20	М	H H	SS	10					
	14 15 16	•	• • •				17	M		SS	18					
	18 - col	AVELLY SAND WI bble at 18 ¹ /2 ¹ , medium own, moist, dense (SP	to coarse grai	ned,			42	M		SS	10					
		ND WITH GRAVEL					18	M	$\left \right\rangle$	SS	14					
	EN	D OF BORING													-	
13																
L.GDT 6/27/										-						
01-05697.GPJ AET+CPT+WELL.GDT 6/27/13																
15697.GPJ A													 .			
	DEPTH:	DRILLING METHOD		rr	WAT	ER LEVEL ME.								NOTE:	REF	EI
DINATES	0-19½'	3.25" HSA	DATE	TIME	SAMPI DEP1	LED CASING TH DEPTH	CA DI	VE-IN EPTH	FL	DRILLI JUID LE	NG EVEL	WAT LEVI	ER EL	THE A		
CORP W-COORDINATES			6/17/13	9:35	21.	5 19.5	2	1.3	· 			Non		SHEE EXPLA		
ORP W	BORING COMPLETE	D: 6/17/13												FERMI		G



AET J	OB NO:	01-05	697	-					LO	G OF	BOI	RING N	0	1081	ST	(p. 1	of	1)
PROJE	ECT:	Southw	vest Ligh	t Rail Tra	ansit Pro	ject,	PEC	C East; 1	Hopl	cins	to I	Minn	eapol	lis, M	N		1 - 1 1	
SURFA	ACE ELEV	VATION:	911.7	H	ennepin Co.	Coordi	nates:	<u>N</u>	1:	5267	7		E É	50498				
DEPTH IN FEET	-	М	ATERIAL D	ÉSCRIPTION	N		GE	OLOGY	N	мс	SA 1	MPLE YPE	REC IN.	FIELI WC	D & LAI	30RAT LL		FESTS %-#200
1 -	FILL	silt, dark br	f gravelly s own and b	ilty sand an rown, a littl	id sand e black		FILI	- 	15	М	M	SS	12					
2 3 4	FILL sand,	, mostly sar		and gravel rown (A-1-				. ·	15	М	X	SS	14	4				5
	- FILL claye	, mostly sar y sand, ligh n (A-1-b)	nd, a little g at brown an	gravel, silty id brown, a	sand and little dark				11	M	X	SS	16					
7 - 8 -					*			•	15	М	R	SS	4					
9 · 10 · 11 ·	silt a	nd ashes/cir	nd with gra nders, light	vel, a little brown, a li	sand with ttle black				12	М	R	SS	12					
12 · 13 ·	FILL dark		avelly sand I-b)	with silt, b	rown and				14	M	R	SS	14					
14 · 15 · 16 ·									14	М	R	SS	10					
17 18	-							• •	15	М	R	SS	4					
19 20 21	FILL	, mostly gr y sand (A-	avelly sand 1-b)	l with silt, a	little				9	M	R	SS	10					-
	END	OF BOR	ING															
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/27/13		• • *																-
ET+CPT+WEL	×.											•				-		
5697.GPJ /				1														
б Di	EPTH:	DRILLING	METHOD					EVEL ME			· T-	• • • • •	NO			NOTE:		
-0	-19½'	3.25" HSA	A	DATE	TIME	SAMP DEP	TH TH	CASING DEPTH	DI	VE-IN PTH	FI	DRILLI JUID LI	EVEL	WAT LEV	EL	THE A		
OORD				6/17/13	10:08	21	.5	19.5	2	1.3				Nor		SHEE		
Ň																		ON OF
BOR COM	ING 1PLETED	: 6/17/13						-							1			GY ON
DR:	JM LO	3: SHS Ri	g: 1C													· 11	IIS LO	

03/2011

4



AET JO		-								RING N				(p. 1	lof	1)
PROJEC	CT: Southwest Ligh	t Rail Tra	ansit Pro	ject,	PEC	East;				Minn				<u>.</u>		-
SURFAG	CE ELEVATION:911.0	He	ennepin Co.	Coordi	nates:	N	1	5243	1		<u>E </u> :	50445		· · ·		
DEPTH	MATERIAL D	DESCRIPTION	V		GE	OLOGY	N	MC	SA	MPLE YPE	REC			BORAT		1
IN FEET										IFE	<u>ш</u> я.	WC	DEN	LL	PL	%-# 2
1 — 2 —	FILL, mostly gravelly silty ashes/cinders, dark brown little black (A-1-b)	and light bro	own, a		FILL	• • • • •	20	M	X	SS	- 12					
3 -	FILL, mostly sand with silt silt, brown (A-1-b)						19	M	X	SS	10					
4 — 5 — 6 —	FILL, mostly sand with gra light brown, a little brown	avel, a little (A-1-b)	lean clay,				12	M	A A A	SS	16	N		-		
7 — 8 — 9 —	FILL, mostly sand with silt clayey sand, brown, a little						17	M		SS	12	6 -1				
10 — 11 —	FILL, mostly sand with sill lean clay, brown (A-1-b)	t and gravel,	, a little			,	9,	M	Image: A state of the state of	SS	10	- a ₁				
12 - 13 - 14 -	FILL, mostly sand with gra brown, a little brown (A-1-	avel, a little -b)	silt, light				17	М		SS	16					
15 16 17	FILL, mostly sand with gra sand, light brown, a little d					•	9	M		SS	10					
18 – 19 –							9	M	X H	SS	8					
20 21	FILL, mostly sand with sil brown, a little dark brown		ivel,			-	8	М	X	SS	16					
	END OF BORING				-											
						X										
		(1	-	-	-		
DE 0-1 BORI COMI				X												
	DDILING METHOD		-			EVEL ME	ASUP	EMEN	 JTS	L]	1	1			
	PTH: DRILLING METHOD 19 ¹ / ₂ ' 3.25" HSA	DATE	TIME	SAMI		CASING		VE-IN EPTH		DRILLI JUID LI	NG EVEL	WAT LEV	ER EL	NOTE	: REF	
	LY14 JIMU HUR	6/17/13	11:37	21		19.5		21.5	-			Noi	ne	SHEE	TS FO	R AN
	· · · ·	6/17/13	12:10	21	.5	19.5	2	21.5				Nor	ne	EXPLA	NATI	ON C
BORI	NG PLETED: 6/17/13			1										TERMI	NOLO	GY (
DR: J	M LG: SHS Rig: 1C								1					· Tł	IIS LO)G

03/2011



AET JO							GOF						(p. 1	of	1)
PROJEC	CT: Southwest Ligh	t Rail Tra	ansit Proj	ect,	PEC East; I				inne						
SURFAC	CE ELEVATION:910.1	Н	ennepin Co. (Coordii	nates: <u>N</u>	1	<u>51913</u>	<u> </u>	<u> </u>	3	50339				
DEPTH	MATERIAL D	ESCRIPTION	Ň		GEOLOGY	N	MC	SAM TY	PLE	REC	· · · · ·		BORAT		1
IN FEET							ļ		r£	IN.	WC	DEN	LL.	PL	%- #2(
1 - 2 -	FILL, mostly silty sand wit with silt, trace roots, dark b (A-2-4)	rown, a litt	le black		FILL	20	M	X	SS	12					-
- 3 - 4 -	FILL, mixture of silty sand little gravel and ashes/cinde black (A-2-4)	and sand w ers, brown,	vith silt, a a little			15	M	A	SS	10				•	
5 - 6 -	FILL, mostly sand with silt silty sand, brown, a little da	and gravel ark brown (, a little A-1-b)		· ·	13	M		SS	8					
7 — 8 — 9 —	FILL, mostly sand with silt sand and ashes/cinders, bro (A-2-4)					10	M		SS	12					
10 — 11 —	FILL, mostly sand with gra silt, brown, a little dark bro					, 18	M		SS	16					
12 — 13 — 14 —	FILL, mostly sand with silt clayey sand (A-1-b)	, a little gra	vel and			11	М		SS	4					
15 — 16 —		. *				8	M		SS	12					
17 — 18 — 19 —	FILL, mostly sand, a little sand, brown, a little dark b					5	M		SS	-12			- - -		
20 — 21 —	FILL, mostly sandy lean cl sand, dark brown, a little li					7	M		SS	16	15				
	END OF BORING		•							· .					
											1				
			•												
	l	1									<u> </u>				
DEI	PTH: DRILLING METHOD				ER LEVEL MEA	· ·		· · · ·			XX 7 A 777		NOTE:		
0-1	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASING TH DEPTH		VE-IN EPTH	FLU	RILLIN ID LE	VEL	WAT LEVI	EK EL	THE A		
		6/17/13	1:01	21.	5 19.5	2	1.5				Nor		SHEE		
i		6/17/13	1:11	21.	5 19.5	2	1.5				Nor	le	EXPLA		
BORIN COMP	NG PLETED: 6/17/13												FERMI		
	M LG: SHS Rig: 1C												Tł	HS LC)G

03/2011



	AET JO	B NO: 01-05	697						LO	GOFI	BOI	RING N	O	1084	ST	(p. 1	lof	<u>l)</u>
	PROJEC	CT: Southy	vest Light	t Rail Tr	ansit Pro	oject,	PEC	C East; H	Iopl	tins t	to]	Minno	eapol	lis, M	N			
	SURFA	CE ELEVATION:	911.5	F	Iennepin Co.	Coordi	nates:	N	1:	51652	2		E ź	50284	2			
	DEPTH IN FEET		ATERIAL D	FSCRIPTIO	N	. •	GF	OLOGY	N	MC	SA	MPLE YPE	REC	FIELD) & LA	BORAT	ORY	FESTS
	FEET								IN	IVIC	ſ	YPE	IN.	WC	DEN	LL	PL	%- #200
	1	FILL, mostly gra with silt, pieces and black (A-2-4	of brick, tra	sand, a litt ace roots, c	le sand lark brown		FILI	, ··	17	М	M	SS	12					
	2 — 3 —	FILL, mostly sar sandy lean clay, (A-1-b)	nd with silt						22	М	\mathbb{N}	SS	16	4				8
	4 5	FILL, mostly sar sand and sandy			avel, silty				26	М	R	SS	12					·
	6 — 7 —	FILL, mostly sil	ty sand, a li	ttle gravel	and sandy						R							
	8 — 9 —	lean clay, trace r	oots, brown	n (A-2-4)					48	M	X	SS	4					
	10 — 11 —	SAND, a little g light brown, mo of silt (SP) (A-3	ist, medium	o medium dense, lar	grained, ninations			ARSE JUVIUM	24	М		SS	16				- -	
	12 — 13 —						•		26	M		SS	18					
	14 — 15 —	GRAVELLY SA light brown, a li	ttle brown,	moist, mea	lium dense	,,			22	М	¥	SS	12					
	16 17 18	a lamination of l SILTY SAND, a brown, moist, m laminations of f	a little grave edium dens	el, fine gra	ined, f lean clay,				22	M	P	SS	14					
	19 20 21	silt (SM) (A-2-4 SAND WITH S medium grained (A-3)) ILT,a little	gravel, fin	e to			-	- 38	М	R	SS	18					
		END OF BORI	NG		······					6								
						-			,									
DT 6/27/13	,		·		 i													
T+WELL.G																		•
AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/27/13								н. -		-								
05697.GP		•						· · · · · · · · · · · · · · · · · · ·							 . 			
S 01-1	DEI	PTH: DRILLING	METHOD		I			EVEL MEA						XX 7 4 /7		NOTE:	REFE	R TO
ZDINATE	0-1	9½' 3.25" HSA	\	DATE	TIME	SAMP DEP		CASING DEPTH	DE	/E-IN PTH	FL	DRILLI UID LE	NG EVEL	WATI LEVE	SL	THE A		
COOF		·		6/17/13	2:06	21.		19.5		1.5				Non Non	— I .	EXPLA		
RP W-	BORIN	1G		6/17/13	• 2:13	21.	3	19.5	<u> </u>	1.5	-			INON	C	ERMIN		
ίΟ L	COMP	LETED: 6/17/13	10								+-						IS LO	
ģ	DR: J	M LG: SHS Rig	g: 1C															-



AET JO	B NO: 01-()5697					L	OG OF	BO	RING N	0	1085	ST	(p.]	l of	1)
PROJEC	CT: Sout	hwest Ligh	t Rail Tra	ansit Pro	ject,	PEC East	; Hop	kins	to	Minn						
SURFAC	CE ELEVATION:	913.1	Н	ennepin Co.	Coordin	nates:	N	15139	1		<u>E </u>	50229			-	
DEPTH IN FEET		MATERIAL E	DESCRIPTION	N		GEOLOGY	Z N	MC	SA	MPLE FYPE	REC IN.	FIELI WC	D&LA	ABORAT	T	TEST: %- #2
1 -	FILL, mostly concrete, trace					FILL	27	M	X	SS	6					
2 — 3 — 4 —	FILL, mostly with sand, app little brown (A	parent cobble	avel, a little at 4', light l	lean clay prown, a	, in the second s		25	М		SS	10					
5 — 6 —	GRAVEL WI light brown, n (possible fill)	TH SAND, a noist, mediun	npparent col n dense (GP	bble at 9', ') (A-1-b)		COARSE ALLUVIUI OR FILL	vi 28	M		SS	18					
7 — 8 — 9 —	SAND WITH grained, light (A-1-b) (poss	brown, moist	ine to medi t, medium d	um ense (SP)			29	M		SS	6					
10 — 11 —	SAND, a little light brown, n fill)	noist, mediur	n dense (SP) (possible	Г. <i>С</i> ГЛД	TILL	20	M	A A	SS	18	16				
12 — 13 — 14 —) (A-6) N CLAY, a rown, very st	little gravel, tiff, laminat	brownish ions of			19	M	N N N	SS	3.	16				
15 — 16 —	fine grained s	and with silt	(CL) (A-6)				17	/ M	R	SS	23	14				
17 — 18 — 19 —	SAND WITH grained, light medium dense grained sand	brown, a littl e, a lens of gi	le brown, m ravelly medi	oist, um		COARSE	M 23	8 M	R	SS	12		-			
20 — 21 —	gruniou sund	With one at 15				• • •	.15	5 М	X	SS	15					
	END OF BO	RING														
-		-	- - -													
DEI																
DEI	L PTH: DRILLIN	IG METHOD		· · · · · · · · · · · · · · · · · · ·	WAT	ER LEVEL N	/ÈASU	REMEN	٩TS			<u></u>	<u>'</u>	NOTE	REF	ER TO
	9½' 3.25" H		DATE	TIME	SAMP DEP	LED CASI TH DEPT	NG CA	AVE-IN DEPTH	I F	DRILLI LUID LI	NG EVEL	WAT LEVI	ER EL	THE A	ATTA(CHEI
			6/18/13	9:48	21.	5 19.5	5	19.7				Nor	ne		TS FO	
0-1 BORIN COMP	NC		6/18/13	9:53	21.	5 19.5	5	19.9				Nor		EXPLA TERMI		
BORIN COMP	NG PLETED: 6/18/1	.3	· · ·												HIS LC	
DR: S	HS LG: JM	Rig: 1C			:									11	01-I	

03/2011



AET JC	OB NO:	01-05	697						LO	GOF	BOF	RING N	0	1086	ST	(p. 1	of	1)
PROJE	CT:	Southv	vest Ligh	t Rail Tr	ansit Pro	ject,	PEC	C East; I	Hopł	cins 1	to I	Minne	eapol	lis, M	IN			
SURFA	CE ELEV	ATION:	914.2	H	lennepin Co.	Coordi	nates:	<u>N</u>	15	51132	2		Е :	50175				
DEPTH IN FEET		Μ	ATERIAL D	ESCRIPTIO	N		GE	OLOGY	N	MC	SA T	MPLE YPE	REC IN.	FIELD WC	D & LA DEN	BORAT		TESTS %-#200
1 -	with s	silt, pieces	ty sand, a li of bituminc s, dark brov	ous, concre	te and		FILI		21	M	М	SS	16					
2	(A-2-		, uun 010 (, , , , , , , , , , , , , , , , , , , ,					25	М	\square	SS	6					
4			nd with silt prown and			· .			15	M	R	SS	. 12		-			
6 - 7 -	SAN	D WITH G	RAVEL, fi	ine to medi	um			ARSE LUVIUM	25	M	R	SS	17					
8 9	(poss	ible fill)	own, moist,					FILL	35	M	R	SS	17					
10 -	cobbl	es, mediun dense (SP-	ILT AND (n to fine gra SM) (A-1-b	ained, brow) (possible	vn, moist, fill)	/		ARSE	50/.4	M	APT-	22	1					-
12	Grain grain (A-1-	ed, light br	RAVEL, n own, moist	, very dens	e (SP)			LUVIUM	59	М	$\left[\right]$	SS	14					
15 -	SAN	D WITH C n, moist, m	RAVEL, n edium dens	nedium gra se (SP) (A-	ined, 1-b)				15	М	X	SS	18					
17 - 18 -	fine g	grained, bro	AND WITH						21	М	R	SS	18					
19 - 20 -	SAN gray,	SM) (A-1-b D WITH S moist, med clay (SP-SI	ILT, fine g lium dense,	rained, ligh , lamination	nt brownish ns of sandy				25	M	R	SS	20					
21 -	SAN	D, fine to r t, medium o	nedium gra lense (SP)	(A-3)				<u>``</u>								-		
~	grayi (A-1-	sh brown, 1 -b)	AND, medi moist, medi	ium dense ((SP)													
3DT 6/25/1:	END	OF BOR	ling															
PT+WELL.0	-	-														-		
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/25/13 MDOB TO TO TO TO TO TO TO TO TO TO TO TO TO		·																
5697.0												-			<u> </u>		<u> </u>	
5 DE	EPTH:	DRILLING	METHOD		r1		r	EVEL MEA	-1							NOTE:	REFI	ER TO
-0 NATE	19½'	3.25" HS.	4	DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CAV DE	VE-IN PTH	FL	DRILLI JUID LI	NG EVEL	WAT LEVI	ER EL	THE A	TTAC	CHED
ORDI				6/18/13	11:08	21.	5	19.5	2	1.3				Non		SHEE		
M-CO				6/18/13	11:14	21.	.5	19.5	2	1.2				Nor		EXPLA		
BORI COM	NG PLETED:	6/18/13]			GY ON
	SHS LC	3: JM Ri	g: 1C				•									TI	IIS LO	G



AET JO	01-05697						LC	OG OF	BÓI	RING N	0.	1087	'ST	(p. 1	of	1)
PROJEC		t Rail Tra	ansit Pro	iect.	PEC	East:										<u> </u>
	CE ELEVATION:913.7		ennepin Co.					50619				, 50068				
DEPTH										MPLE		FIELI) & LA	BORAT	'ORY '	FESTS
IN FEET	MATERIAL D					OLOGY	N	MC		TYPE	IN.	WC	DEN	LL	PL	%- #200
1	FILL, mostly clayey sand w pieces of concrete, trace roc (A-2-4) FILL, mostly sand with silt	ots, dark bro	own		FILI		25	M	M	SS	12 12	8				
3 — 4 — 5 —	clayey sand, a piece of bitur (A-1-b)	ninous at o	, Drown				13	M	R	SS	12				,	
6							30	M	A R M	SS	5					
9	SAND WITH GRAVEL, m grained, light brown, moist, (A-1-b) (possible fill)	nedium to c medium d	coarse ense (SP)		ALL	ARSE LUVIUM FILL	21	M	21 × 14	SS	12					
12 13 14	SAND, fine grained, light b moist, medium dense, lamin (A-3)	nations of s	silt (SP)			ARSE LUVIUM	20	М	A A A	SS	18					
15 - 16 - 17 -	SAND, fine to medium gra little brown, moist, medium of silt (SP) (A-3) SAND, a little gravel, medi	ı dense, lan	ninations				17	M	A	SS	16					
18 - 19 -	SAND, a fittle gravel, medi brown, moist, medium dens (SP) (A-1-b) SAND WITH GRAVEL, n	se, laminati	ons of silt				14	<u>₩</u>	R	SS	12	ō				
20 - 21 -	SAND WITH GRAVEL, in brown, waterbearing, media (A-1-b) END OF BORING	um dense (SP)			-	16	W	X	SS	18					
STR17/ 10														-		
0-1 -00401/141ES 01-0999/1910 DE -0 -0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1																
-72000				3747			EASID	EMEN	ITC				<u> </u>			
DE	PTH: DRILLING METHOD	DATE	TIME	SAMP DEP		EVEL M CASINO DEPTH		VE-IN EPTH		DRILLI LUID LI	NG	WAT	ER	NOTE: THE A		
<u>0-1</u>	19½' 3.25" HSA	DATE							Fl		EVEL				TS FO	
		7/11/13	1:30	21		19.5		19.5				<u>19.</u>		EXPLA		
o ≱ BORI	NG	7/11/13	1:40	21.	.5	19.5		19.5	_			19.	U	TERMI		
	PLETED: 7/11/13					•									HIS LC	
DR: C	GH LG: JMM Rig: 1C															DHR-0



AET JO	B NO: 01-05697					LC	OG OF	BOI	RING N	0	1088	ST	(p. 1	l of 1	<u>I)</u>
PROJEC	CT: Southwest Ligh	t Rail Tra	ansit Pro	ject,	PEC East;	Hop	kins	to I	Minn	eapol	lis, M	IN			
SURFAC	CE ELEVATION: 916.2	Н	ennepin Co. (Coordi	nates: <u>1</u>	<u>1</u>	50355	5		E :	50012	8			
DEPTH	MATERIAL D	ESCEDITIO	NT		GEOLOGY	N	MC	SA	MPLE	REC	FIELI) & L/	ABORAT	FORY 7	TEST
IN FEET	WATERIAL D	ESCRIF HUI	.N		GEOLOGI	IN	IVIC	Γ	YPE	IN.	WC	DEN		PL	%- #2
1 - 2 -	FILL, mostly clayey sand w little gravel, pieces of conce brown (A-2-4)				FILL	15	М	M	SS	8	6				
2 — 3 — 4 —	FILL, mostly clayey sand, a brown (A-6)	a little grave	el, grayish			15	M	X	SS	10	15				
5 6	FILL, mixture of sand with a little gravel, brown (A-2-		iyey sand,			8	M		SS	12					
7 — 8 — 9 —	SAND, a little gravel, fine light brown, moist, medium	to medium n dense (SP	grained,) (A-1-b)		COARSE ALLUVIUM	23	M		SS	18					
10 — 11 —	SAND WITH GRAVEL, n grained, light brown, moist (A-1-b)	nedium to f , medium d	ine ense (SP)			25	М		SS	18					
12 — 13 — 14 —)			14	М		SS	18					
15 — 16 —	SAND WITH GRAVEL, r brown, moist to about 18 ¹ / ₂ medium dense (SP) (A-1-b	then water	ined, bearing,			12	М	R	SS .	18					
17 — 18 — 19 —					•	12	M	/M H	SS	18		2			
20 — 21 —	GRAVELLY SAND, med waterbearing, medium den				•	22	W	M	SS	18					
	END OF BORING														
1 a															
										•					
·		1										1.,]		
DEI	PTH: DRILLING METHOD	 			ER LEVEL ME								NOTE:	REF	ER T
0_1	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASING TH DEPTH	i CA D	VE-IN EPTH		DRILLI JUID LI		WAT LEVI		THE A	ATTAC	CHEI
		7/11/13	12:20	21.	5 19.5	1	9.5	-			18.	4	SHEE	TS FO	R AN
		7/11/13	12:30	21.	5 19.5	1	9.5				18.	4	EXPLA	NATI	ON (
BORIN	NG PLETED: 7/11/13										-		TERMI	NOLO	GY (
	GH LG: JMMRig: 1C							1					TF	IIS LO	юG



AET JO	· · · · · · · · · · · · · · · · · · ·								RING N			60	(p. 1	LUI.	1)
PROJEC	001.6														
	CE ELEVATION: 921.6	H	Iennepin C	o. Coo	rdinates: <u>1</u>		4982	6		<u>E '</u>	49905				
DEPTH IN FEET	MATERIAL I	DESCRIPTIO	N		GEOLOGY	N	MC	SĄ	AMPLE FYPE	REC IN.	WC	DEN	BORA		TEST %-#2
1 -	FILL, mostly gravelly silty fines, trace roots, dark brow				FILL	14	M	\mathbb{V}	SS	12		DEN			0.1
2 -	SAND WITH SILT, a little				COARSE	-	IVI	\mathbb{A}	000	12					
3 — 4 —	medium grained, brown, m (SP-SM) (A-3)	noist, mediu	ım dense		ALLUVIUM	20	M	R	SS	12					
5 — 6 — 7 —	SAND WITH GRAVEL, 1 brown, moist, medium den	nedium gra	uined, light f fine sand			29	-	R	SS	0					
8 - 9 -	(SP) (A-1-b)					15	М	R	SS	14					
10 - 11 -	GRAVELLY SAND, med grayish brown, moist, med (A-1-b)	lium dense	(SP)			15	М	X B	SS	12					
12 — 13 — 14 —	SAND WITH GRAVEL, 1 grained, light brown, mois (A-1-b)	fine to med t, medium o	ium dense (SP)			21	М	N H	SS	12					
15 — 16 —					•	50	-	X H	SS	0					
17 — 18 — 19 —	SILTY SAND, a little grav dense (SM/SC) (A-2-4)	vel, brown,	medium		TILL	22	М		SS	18					
20 — 21 —						21	M		SS	18					
-	END OF BORING														
DEP	TH: DRILLING METHOD			WAT	ER LEVEL ME	ASURI	EMEN	TS							
		DATE	TDAT		······	-			DRILLI	NG	WATE	ER	NOTE:		
0-19	9½' 3.25" HSA	DATE	TIME	SAMP DEP			VE-IN PTH	FI	UID LE	VEL	LEVE	L	THE A		
		7/11/13	10:35	21.			9.5	<u> </u>			Non		SHEET		
DODD	C	7/11/13	10:45	21.	5 19.5	1	9.5				Non	C	EXPLA		
BORIN COMPI	IG LETED: 7/11/13]]	ERMIN		
$DR \cdot G$	H LG: JMM Rig: 1C												TH	IS LO	G



AET JO	B NO: 01-05697						LO	GOF	BOI	RING N	iO	1090	ST	(p.]	lof	1)
PROJEC	CT: Southwest Light	it Rail Tr	ansit Pro	oject,	PEC F	Cast; I	Hop	kins	to	Minn	eapo	olis, N	/IN			
SURFAG	CE ELEVATION: 924.3	ŀ	Iennepin C	o. Cooi	dinates:	N	14	49569)		E é	49851	9		_	
EPTH			· N		GEOL	OGV	NT	M	SA	MPLE	REC	FIELI)&L/	BORA	ÌORY '	TEST
IN EET	MATERIAL I	DESCRIPTIO	IN		GEOL		Ν	MC	T	MPLE YPE	IN.	WC	DEN	LL	PL	%- #:
1 - 2 -	FILL, mostly gravelly silt sand with organic fines, tra (A-1-b)	ace roots, d	ark brown		FILL		15	М	M	SS	12					
3 — 4 —	FILL, mostly silty sand wi ashes/cinders, dark brown FILL, mostly clayey sand sandy lean clay, brown (A	and black (with grave	(A-1-b)		-	÷	5	М	X	SS	14	10				
5 - 6 -		. ,					3	М	X	SS	14	13				
7 - 8 - 9 -	FILL, mostly sand with sil sandy lean clay, brown, a (A-1-b)	little dark b	orown				8	М		ŚS	12			-		
9	CLAYEY SAND, with or gravel, black to dark brow				TILL		9	М	Å	SS	6	16		-		
12 — 13 —	SAND WITH GRAVEL, grained, light brown, mois (A-1-b)	medium to t, medium	fine dense (SP))	COARS ALLUV		14	M	H H	SS	12					
14 — 15 — 16 —	SAND WITH GRAVEL, grained, grayish brown, m (SP) (A-1-b)	medium to oist, mediu	coarse im dense				20	М	R R R	SS	12	•				
17 — 18 — 19 —	SAND WITH GRAVEL, brown, moist, medium der			t			24	M		SS	14					
20 — 21 —	GRAVELLY SAND, mec grayish brown, moist, mec (A-1-b)	lium graine lium dense	d, light (SP)			-	28	М	X	SS	12					
22 — 23 — 24 —	GRAVELLY SAND, mec grained, brown, waterbear (SP) (A-1-b)						21′	▼ ₩		SS	12					
25 — 26 — 27 —	CLAYEY SAND, a little hard (SC/SM) (A-2-4)	gravel, brov	wn, stiff to		TILL		24	-	X H	SS	0					
28 — 29 —							42	M/W	,X	SS	6	10				
30 — 31 —							14	M/W		SS	12	12				
	END OF BORING															
DEP	PTH: DRILLING METHOD			WAT	ER LEVE		SURF	L EMEN'	1 TS			1	1		` <u>Ď₽₽₽</u>	 7D 7
				1			r—			ORILLT	NG	WAT		NOTE:		
0-2	9½' 3.25" HSA	DATE	TIME	SAMP DEP	TH D	SING EPTH	DE	/E-IN PTH	FL	DRILLI UID LE	ÈVEL	WAT LEVI	ΞÎ.	THE A		
	-	6/28/13	1:10	24.	0 2	22.0	23	3.5				22.		SHEE		
		6/28/13	1:15	24.	0 2	22.0	23	3.5				22.	5	EXPLA		
BORIN	NG LETED: 6/28/13	6/28/13	1:45	31.	5 2	29.5	2	9.9				26.	0	FERMI	10LO	GY
	OTS LG: TM Rig: 1C	6/28/13	2:00	31.	5 7	29.5	2	8.8	+			25.	1	TH	IIS LO	G



AET JO	B'NO: 01-05697					LC	G OF	во	RING N	0	1091	ST	(p. 1	lof	1)
PROJEC	CT: Southwest Ligh	nt Rail Tr	ansit Pro	oject,	PEC East;	Нор	kins	to	Minn	eapo	olis, N	AN			
SURFAC	CE ELEVATION: 925.4	H	Iennepin Co	o. Cooi	dinates: <u>N</u>	1	4931(0		E 4	49797	0			
DEPTH			N		CEOLOGY			SA	MPLE	REC	FIELI) & LA	BORA	FORY '	TEST
IN FEET	MATERIAL I	DESCRIPTIO	IN	ъ.	GEOLOGY	N	MC		FYPE	ÎN.	WC	DEN	LL	PL	%-# 2
1 -	FILL, mostly gravelly silt sand with organic fines, tra and black (A-1-b)	ace roots, d	ark brown		FILL	15	М	M	SS	12		-			
	SAND WITH GRAVEL, 1 brown, moist, medium der (possible fill)	medium gra nse (SP) (A	ained, light -1-b)		COARSE ALLUVIUM OR FILL	21	M	X	SS	12		• ³			
5 - 6 -	SAND, fine to medium gr. brown, a little brown, moi laminations of silt (SP) (A	st, medium	grayish dense,		COARSE ALLUVIUM	23	М	X X	SS	12					
7	SAND, a little gravel, fine light brown, a little brown dense, laminations of silt (, moist, me	i grained, dium			13	M	Å	SS	12					
10 — 11 —	SAND WITH GRAVEL, grained, brown, moist, me laminations of silt (SP) (A	dium dense				20	`M		SS	12					
12 — 13 — 14 —	GRAVELLY SAND, med brown to brown, moist, me (A-1-b)	lium graine edium dens	d, grayish e (SP)			14	М	A	SS	12					
15 — 16 —						21	М	X X	SS	12					
17 — 18 — 19 —	CLAYEY SAND, a little very stiff (SC/SM) (A-2-4		wn, stiff to		TILL	14	М		SS	12	10	•			
20 -						22	М	$\left \right\rangle$	SS	12	10				
21 -	END OF BORING				1			┢							
DEP	TH: DRILLING METHOD			WAT	ER LEVEL MEA	ASURI	EMEN	TS				·	NOTE:	REFF	ER T
		DATE	TIME	SAMP DEP	LED CASING TH DEPTH	CAN	/E-IN PTH	ן זק	DRILLI JUID LE	NG VFI	WATI LEVI		THE A		
0-19		6/28/13	10:55	21.			0.0	+			Non		SHEE		
		6/28/13	11:10	21.			0.0		=		Non	,	EXPLA	NATI	ON C
BORIN	IG (129/12	0/20/13	11.10								1.00		ERMI	NOLO	GY (
COMP	LETED: 6/28/13													IIS LO	_



AET JO	B NO: 01-05697	<u></u>	<u></u>		·:	T	OG OF	BO	RING N	0.	1092	ST	(p. 1	l of 1	I)
		t Rail Tra	unsit Proi	ect.	PEC East										,
PROJEC			ennepin Co. C				14905				19742	7			
	CE ELEVATION:925.1	1K				<u> </u>	1	Τ					BORAT	ORY	TESTS
DEPTH IN FEET	MATERIAL D				GEOLOGY	' N	MC	SĘ	MPLE FYPE	REC IN,	WC	DEN	LL	PL	%-#200
1 — 2 —	FILL, mixture of sand with with gravel, a little organic brown, a little dark brown (fines, trace A-2-4)	roots,		FILL	15	M	A	SS	14					
3 — 4 —	FILL, mostly sand with silt cobble at 5', a little silty san grayish brown, a little dark	id, trace roo	ots, light			17	/ M	R	SS	12	6				11
5 — 6 —	GRAVELLY SAND WITH fine grained, grayish brown	ı, moist, ver	dium to y dense to		COARSE ALLUVIUN) М	N H	SS	0	-				
7 — 8 — 9 —	medium dense (SP-SM) (A	-1-b)			•	2	3 M		SS	12					
10 — 11 —	SAND, a little gravel, medi brown, moist, medium dens				- - - - -	20	M		SS	12					
12 13 14	GRAVELLY SAND WITH grained, brown, moist, very (A-1-b)	I SILT, med dense (SP-	dium -SM)			5	3 M		SS	12					
15 - 16 -	SAND WITH GRAVEL, n brown, moist, medium dens medium grained sand at 18	se, a lens of	fine to			2	9 M		SS	12					
17 - 18 - 19 -	- 					2	9 ⊻		SS	12					
20	grained, brown,waterbearir	nedium to c ng, medium	eoarse dense	/	• • • •	2	7 W		SS	12					
	END OF BORING														
DE															
	PTH: DRILLING METHOD	 	F		TER LEVEL N								NOTE	: REF	ER TO
n	19½' 3.25" HSA	DATE	TIME	SAMI DEP	TH CASIL	NG C H	AVE-IN DEPTH	√ F	DRILL LUID L	ING EVEL	WA] LEV	ER EL	THE 4	ATTA	CHED
BORI COMI	1772 5.45 11571	6/28/13	9:36	21	.0 19.	5	19.3				19			ETS FC	
		6/28/13	9:50	21	.0 19.	5	19.0				18	.0	EXPLA		
BORI	NG PLETED: 6/28/13												TERMI		
	DTS LG: TM Rig: 1C	†						1					T	HIS LO)G
DK:	UID LO. INI Mg. IC	L	L		Louis									01-1	DHR-



AET JO	·····													(p. 1	l of	1)
PROJEC	······································					st; H				inne						
SURFA	CE ELEVATION: 921.8	H	Iennepin Co.	Coordir	nates:	N	14	18263			<u> </u>	1957 7				
DEPTH IN FEET	MATERIAL D	ESCRIPTIO	N		GEOLOG	Y	N	MC	SAM TY	IPLE PE	REC IN,	FIELI WC) & LA DEN	BORAT		TEST %-#2
1 2 3 4 5	4" Bituminous pavement 5" FILL, mostly sand with of brick, brown (A-1-b) FILL, mostly clayey sand v gravel, black (A-1-b) SAND WITH SILT AND fine grained, light grayish b medium dense (SP-SM) (A	vith organic GRAVEL, prown, moi	c fines and medium to] /	FILL COARSE ALLUVIU	JM	14	M -	R	SS SS SS	4 0					
6 7 8 9 10 11	SILTY SAND, a little grav dense (SM/SC) (A-2-4)		medium		TILL		19 12 13	M M M	A A A A	SS SS	12					,
11 - 12 - 13 - 14 - 15 - 16 - 16 - 16 - 11 - 11 - 11 - 11	CLAYEY SAND, a little g stiff, laminations of medium (A-2-4) CLAYEY SAND, a little g (SC/SM) (A-2-4)	m sand (SC	C/SM)				16 12	M	R	SS SS	18 18	8				
17 18 19	SAND WITH SILT, a little grained, brown, waterbeari (SP-SM) (A-1-b)	ng, mediun	n dense		COARSE ALLUVIU	JM	16	W	R K	SS	12		7			
20 - 21 -	SAND, a little gravel, fine light brown, waterbearing, of fine grained sand (SP) (medium de	grained, ense, a lens				17	W	X.	SS	18					
	END OF BORING		а 4. • • •													
				-												
DE	PTH: DRILLING METHOD			r	ER LEVEL									NOTE:	REF	ER T
0-1	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASI TH DEP	NG TH	CAV DE	/E-IN PTH	DI FLU	RILLI ID LE	NG EVEL	WAT LEVI	ER EL	THE A		
		7/11/13	9:15	21.	5 19	.5	1	9.5				17.		SHEE		•
BORI	NG	7/11/13	9:20	21.	5 19	.5	1	0.0				15.	0	EXPLA FERMI		
	PLETED: 7/11/13											·····			HOLO HIS LC	
DR: C	GH LG: JMM Rig: 1C													11	01-I	

03/2011



AET JOH	B NO: 01-05697		-1			LC)G OF	BOF	UNG N	0	1094	ST	(p. 1	lof	1)
PROJEC	T: Southwest Ligh	nt Rail Tr	ansit Pro	oject,	PEC East;	Hop	kins	to I	Minn	eapo	lis, M	IN			
SURFAC	E ELEVATION: 921.9	Н	Iennepin Co.	Coordi	nates: <u>N</u>	1	4803	5		E (49524	5			
1			N.T.		CEOLOCY			SA	MPLE	REC	FIELI) & LA	BORAT	ORY	TESTS
DEPTH IN FEET	MATERIAL I	JESCRIPTIO	IN .		GEOLOGY	N	MC	T	MPLE YPE	IN.	WC	DEN	LL	PL	%- #20
1 2	FILL, mostly silty sand wir clayey sand, sand with silt, ashes/cinders, pieces of bir dark brown, a little brown	, lean clay a tuminous, tr	nd	×	FILL	13	M	M	SS SS	16 6					
3 - 4 -						8	M	Д	22		÷.,				
5 — 6 —	LEAN CLAY WITH SAN (CL) (A-6) SANDY LEAN CLAY, a				TILL	5	М		SS	14	24 16			,	
7	firm (CL) (A-6) SAND WITH SILT AND fine grained, brown, a little loose (SP-SM) (A-1-b)				COARSE ALLUVIUM		M	A	SS	10					
10 - 11 -	GRAVELLY SAND WIT grained, moist, medium de	H SILT, me nse (GP-GN	edium √1)			14	M	A A	SS	16					
. 12 — 13 — 14 —	SAND, a little gravel, med brown, moist (SP) (A-1-b)		1, light			9	М	A	SS	16					
15 — 16 —	SAND, a little gravel, mec light brown, moist, loose (9	М		SS	14					
17	GRAVELLY SAND, med waterbearing, medium den	se (SP) (A-	1-b)			15	V		SS	14					
20 — 21 —	CLAYEY SAND, a little ((SC/SM) (A-2-4)	gravel, brow	vn, stiff		TILL	12	M	X	SS	16	11			s	
	END OF BORING													-	
~										-			• • • •		
DEP	· · · ·														
DEP	TH: DRILLING METHOD			WAT	ER LEVEL ME	ASUR	EMEN	TS					NOTE:	REF	ER TC
0-19	9½' 3.25" HSA	DATE	TIME	SAMP	LED CASING TH DEPTH	CA DI	VE-IN EPTH	I FL	DRILLI UID LI	NG EVEL	WAT LEVI	ER EL	THE A	TTA	CHED
<u> </u>	7/2 J.43 NJA	6/25/13	11:15	19.			8.9				18.		SHEE	TS FO	R AN
		6/25/13	11:30	21.			0.2				20.		EXPLA	NATI	ON O
0-19 BORIN COMPI	G LETED: 6/25/13	6/25/13	11:45	21.		-	0.1				19.	,	FERMI	NOLO	GY O
1		0.20,10		1							•		TH	IIS LC	G
DR: T	K LG: MIF Rig: 1C		1	L				1						01-T	OHR-

03/2011



AET JO	B NO: 01-05697						LO	GOF	BORING	NO	1095	ST	(p. 1	_ of 1	<u>l)</u>
PROJEC	CT: Southwest Ligh	t Rail Tr	ansit Pro	ject,	PEC Eas	st; E	lopł	cins (to Min	neapo	lis, M	IN			
SURFA	CE ELEVATION:923.0	Н	ennepin Co.	Coordir	ates:	<u>N</u>	14	47799)	E	49470	3			
DEPTH IN	MATERIAL D	ESCRIPTIO	V		GEOLOG	γ	N	MC	SAMPI	E REC		1	BORAT		
IN FEET									TYPE	IN.	WC	DEN	LL	PL	%-# 2
1 —	FILL, mostly sand with org roots, dark brown (A-2-4) FILL, mostly gravelly sand				FILL		12	М	ss	14					
2	bituminous and concrete, translated bituminous and concrete bituminous and concrete, translated bituminous and concrete, translated bituminous and concrete bitumi	ace roots, t	brown, a	ſ.	-	1999 - S.	14	М	\int ss	8	12	-			
4 5 6	FILL, mostly gravelly clay dark brown (A-2-4) SAND WITH GRAVEL, r brown, moist, medium den	nedium grai	ined,		COARSE ALLUVIU	Л	23	` M	₽ ss	16			<i>x</i>		
7 — 8 — 9 —	SAND WITH SILT AND cobble around 71/21, medium moist, medium dense (SP-5	n grained, b	rown,				27	М	R 	18					
10 — 11 —	SAND WITH SILT AND fine grained, brown, moist (SP-SM) (A-1-b)						24	М		14					
12 13 14	SAND WITH GRAVEL, 1 grained, light brown, moist (A-1-b)	nedium to f t, medium d	ine ense (SP)				17	М	P Ss B	16					
15 16	SAND WITH SILT, fine g waterbearing, medium den grained sand with silt (SP-	se, a lens of					19	M	A A A A	18					
,17 - 18 - 19 -	CLAYEY SAND, a little g stiff (SC/SM) (A-2-4) SILTY SAND WITH GRA	AVEL, brov	vn, a little		TILL		16	 M/W	ss B	18	12				
20 21	light brown, medium dense \grained sand with silt (SM CLAYEY SAND, a little g \lenses of fine grained sand) (A-2-4) gravel, brow	/n, stiff,				12	M/W		18	12				
	(A-2-4) END OF BORING				-	ĸ									
-								,							
DE	PTH: DRILLING METHOD			WAT	ER LEVEL	MEA	SUR	EMEN	TS				NOTE:	REFE	ER TO
n_1	9½' 3.25" HSA	DATE	TIME	SAMP	LED CAS TH DEP	ING TH	CA DE	VE-IN PTH	DRII FLUID	LING LEVEL	WAT LEV		THE A	ATTAC	HEI
		6/25/13	9:55	19.			1	7.7			17.	2	SHEE	TS FOI	R AN
		6/25/13	10:10	21.	5 19	.5	2	0.0			18.	U	EXPLA		
0-1 BORI COME	NG PLETED: 6/25/13	6/25/13	10:15	21.	5 19	.5	1	0.8			17.	9	FERMI		
1	TK LG: MF Rig: 1C												Tŀ	IIS LO	

03/2011



AET JO	B NO: 01-05697		<u></u>				LO	GOF	BOI	RING N	0	1096	ST	(p.]	lof	1)
PROJEC	T: Southwest Ligh	t Rail Tr	ansit Pro	oject,]	PEC E	ast; H	lopł	kins (to I	Minn	eapol	lis, M	[N			
SURFAC	CE ELEVATION: 923.2	H	Iennepin Co.	Coordin	ates:	N	14	47592	2	-	E '	49414	0			
DEPTH					CEOL				SA	MPLE	REC	FIELI)&LA	BORAT	ORY	FESTS
IN FEET	MATERIAL D	ESCRIPTIO	N		GEOL	JGY	Ν	MC	Ĩ	YPE	ĪN.	WC	DEN	LL	PL	%- #20
1	FILL, mostly sand with silt clayey sand with organic fir trace roots, dark brown, a li	nes, pieces ttle black (of brick, A-1-b)		FILL	-	40	М	M	SS	12					
3 -	FILL, mostly clayey sand v sand, dark brown, a little light	yith gravel, ght brown (a little (A-6)				14	М	M	SS	12	9				
4 — 5 — 6 —	FILL, mostly clayey sand, a brown (A-2-4)	a little grav	el, dark				2	М	R	SS	12	10				
7 - 8 -	FILL, mixture of clayey san clay, a little gravel, trace ro brown (A-6)	nd and sand ots, dark b	dy lean rown and				4	М	R	SS	2	11				
9	LEAN CLAY, black to bro LEAN CLAY, brown, firm	<i>,</i> ,	/ \ /		FINE ALLUV	IUM	5	М	R	SS	14	29				
12 — 13 — 14 —	LEAN CLAY, gray, a little laminations of sandy silt (C	CL) (A-4)	- -		<u></u>		4	M	H H	SS	12	28				
15 — 16 —	GRAVELLY SAND WITI fine grained, brown, water dense (SP-SM) (A-1-b)	I SILT, me bearing, me	edium to edium		COARS ALLUV	SE VIUM	14	*		SS	12					
17	GRAVELLY SAND, medi waterbearing, medium den						11	w		SS	12					
20 21	SANDY LEAN CLAY, a	ittle gravel	, light		TILL		13	W/M	ſ	SS	16	20				· ·
	grayish brown, stiff (CL) (. END OF BORING	A-6)				r				N.						
e1771 100																
01-0007.1641 AE1+0111 MEEL 6001 722 12										· .						
1-15-7800																
	TH: DRILLING METHOD			WAT	ER LEVI	EL MEA	SURI	EMEN	TS					NOTE:	REFE	ER TO
BORIN COMP	9½' 3.25" HSA	DATE	TIME	SAMPI DEPT	LED CA	ASING EPTH	CAV DE	/E-IN PTH	FI	DRILLI JUID LI	NG EVEL	WAT LEVI	ER EL	THE A	ATTAC	HED
		6/24/13	1:31	16.		14.5		5.4				Nor	ie	SHEE	TS FO	R AN
	- However, and a second s	6/24/13	1:41	16.	5 1	14.5	1	6.0	1	-		15.	4	EXPLA	NATIO	ON OF
BORIN	IG LETED: 6/24/13	6/24/13	1:50	21.		19.5		9.5				16.	,	FERMI	NOLO	gy of
		6/24/13	1:55	21.		19.5		9.5	+			15.		Tŀ	IIS LO	G
DR: J	M LG: JM Rig: 1C	0/24/15	1.00	41.	<u> </u>										01-E	

03/2011



AET JO	OB NO:	01-05697						LO	GOF	BOI	RING N	0.	1097	' ST	(p.]	l of	1)
PROJE	CT:	Southwest Ligh	t Rail Tra	ansit Pro	ject,	PEC E	Last; E	Iopł	cins 1	to]	Minn	eapo	lis, M	[N			
SURFA	CE ELEV	ATION: 923.3	H	ennepin Co.	Coordi	nates:	<u>N</u>	1	47401	l 		E	49356				
DEPTH		MATERIAL D	ESCRIPTIO	N		GEOL	OGY	N	MC	SĄ	MPLE FYPE	REC		1	BORA	[1 .
IN FEET									· · ·				WC	DEN	LL	PL	%- #20
.1 -	sand v	mixture of sand with with organic fines, tra rown (A-1-b, A-6)	ce roots, br	own and		FILL		8	М	X	SS	3					
3-		mostly clayey sand, a al, ashes/cinders, trac						4	М	\mathbb{X}	SS	2	18				
	FILL,	mostly lean clay, trac own (A-6)	e roots, da	rk brown			- THE SECTION OF A	4	М	X	SS	12	25		-		
7		CLAY, trace roots, lens of organic clay				FINE ALLUV OR FIL		4	М	R	SS	14	29				
9 - 10 -	SANE mediu) WITH SILT, a little m grained, brown, m	e gravel, fin oist, loose (e to (SP-SM)		COARS ALLUV OR FIL	SE VIUM	10	M	R	SS	14			1		
11 - 12 - 13 -	SANE	(possible fill)) WITH GRAVEL, n h brown, a little brow					5	M	R	SS	12						
14 -	moist, silty s	loose, lenses of fine and (SP) (A-1-b) (po), a little gravel, med	sand and		COAR				R		14						
16 - 17 -	_ light b	orown, moist, mediun	n dense (SP) (A-1-b)			VIUIVI	16	M	R	SS	14					
18 - 19 -		bearing, medium dens				• •		11		R	SS	14					
20 - 21 -	brown	D WITH GRAVEL, r a, waterbearing, loose				•		9	W	X	SS	14					
	END	OF BORING		Ç								-					
						~				1							
																	-
							1			-						-	
																× .	-
			[CI ID I						<u> </u>			
	EPTH:]	DRILLING METHOD			1	ER LEV		1			DRILLI	NG	WAT		NOTE		
0-	19½'	3.25" HSA	DATE	TIME	SAMP DEP		ASING DEPTH		VE-IN PTH	FI	JUID LI	EVEL	LEVI	EL	THE A		
			6/24/13	12:22	19.		17.0		8.5	_			18.		SHEE EXPLA	1	
	NG		6/24/13 6/24/13	12:27	19.		17.0		8.5				18.	. ,	FERMI		
	NG PLETED:	6/24/13	12:33	21.		19.5		0.0				18.	•		IS LC		
Į DR: J	JM LG	TM Rig: 1C	6/24/13	12:40	21.	5	19.5	2	0.0				18.	D	11)HR-(

03/2011



AET JO	DB NO: 01-05697					LC	G OF	BORIN	IG NO.	1098	8 ST	(p.]	lof	1)
PROJE	CT: Southwest Ligh	t Rail Tr	ansit Pro	oject,	PEC East;	Нор	kins	to M	[innea]	polis, I	MN			
SURFA	CE ELEVATION: 922.5	Н	lennepin C	0. Cooi	dinates: <u>N</u>	1	47197	7	E	49299	98	۰.		
DEPTH	MATERIAL D		NT		GEOLOGY	N	мс	SAM	PLE RE	C	D&L/	BORA	FORY	TEST
IN FEET		LSCRIPTIO	.х ~			IN	WIC	TYI	PE IN	· wc	OC	LL	PL	%- #2
1	FILL, mostly clayey sand little gravel and sand with brown, a little grayish brow	silt, trace ro	oots, dark		FILL	9	М		SS 6	24	4.9			~
3 — 4 —	SAND WITH SILT AND to fine grained, brown, mo (SP-SM) (A-1-b)	ist, mediun	n dense		COARSE ALLUVIUM	12	M	R R	SS 12				· · ·	
5 — 6 — 7 —	SAND WITH GRAVEL, 1 brown, moist, medium der (SP) (A-1-b)	ise, laminat	ions of sil	t t		25	М	R R	SS 14	1	-			
7 8 9	SAND, a little gravel, med light brown, moist, mediun of silt (SP) (A-1-b)	lium to fine n dense, lar	grained, minations			16	M		SS 14	1				
10 — 11 —	SAND WITH SILT AND to fine grained, light brown dense, laminations of claye (A-1-b)	n, moist, m	edium			23	M		SS 14	4				
12 — 13 — 14 —	CLAYEY SAND, a little g light brown, very stiff to st sand from 12' to 14' (SC/S	tiff, laminat	tions of		TILL	16	М		SS 12	2 10				
15 — 16 —						17	М	$\left \right $	SS 12	2 6				
-17 -								E						
18 -						17	M	M	ss 12	2 10				
19 -								N F						
20 - 21 -						13	T		5S 1	4 10				
	END OF BORING			/_////							-			
											-	-		
DEI		•				-								
	-													
DFI	PTH: DRILLING METHOD	-		WAT	ER LEVEL ME.	ASURI	L EMEN	TS]	<u>I</u>		NOTE	DEFT	
	9½' 3.25" HSA	DATE	TIME	SAMPI DEPT			/E-IN PTH	DR	ILLING D LEVEI	L WAT	ER	NOTE: THE A		
	······································	6/24/13	10:48	21.	5 19.5	2	1.5			Nor	ne	SHEE	ſS FOI	R AN
	· · · · · · · · · · · · · · · · · · ·	6/24/13	10:58	21.	5 19.5	2	1.1			21.	0	EXPLA	NATI(O NC
BORIN COMP	NG PLETED: 6/24/13										· · · ·	FERMIN		
DR: J												TH	IIS LO	G

03/2011



AET JOI									RING N				(p.]	l of	1)
PROJEC	T: Southwest Light	ht Rail Tr	ansit Pro	ject,]	PEC East;]	Hopl	kins 1	to I	Minno	eapo	lis, M	[N			
SURFAC	CE ELEVATION:917.5	I	Iennepin Co.	Coordir	nates: <u>N</u>	1	46989	9		E '	19243	5			
DEPTH	MATERIAL	DESCRIPTIO	N		GEOLOGY	N	MC	SA	MPLE	REC	FIELI) & LA	BORA	FORY	TEST
IN FEET							IVIC	T	YPE	IN.	WC	DEN	LL	PL	%- #2
1 -	FILL, mixture of clayey sa sand, slightly organic and pieces of brick, trace roots	silty sand, w	vith gravel,		FILL	9	М	M	SS	6	14				
2	And grayish brown (A-2-4) CLAYEY SAND, with or roots, black, firm (SC) (A-) ganic fines,	trace		MIXED ALLUVIUM OR FILL	7	M	\mathbb{N}	SS	14	27				
4	SAND WITH SILT, a littl fine grained, dark brown, (A-1-b) (possible fill)	e gravel, me moist, loose	edium to (SP-SM)		COARSE ALLUVIUM COARSE ALLUVIUM	9	М		SS	12					··
7	SAND WITH SILT AND fine grained, brown, moist (A-1-b) (possible fill) SAND WITH GRAVEL,	t, loose (SP-	SM)		OR FILL	7	М	R	SS	12					
9 10 11	brown, moist (SP) (A-1-b) SAND, a little gravel, mee brown, moist, loose (SP) () (possible fi lium to fine	ill) grained,			10	М	P	SS	3					
12 — 13 —	CLAYEY SAND, a little stiff (SC/SM) (A-2-4)	gravel, brow	vn, very		TILL	20	M	R	SS	2	10				
14 — 15 — 16 —	CLAYEY SAND, a little very stiff, laminations of s					14	M	R	SS	14	11				
17 18 19						20	M	R	SS	6	. 9				
20 - 21 - 21	SAND WITH SILT, fine a moist, medium dense (SP-	-SM) (A-3)			COARSE*	23	М	X	SS	16	10 9	4			
-	CLAYEY SAND, brown, of sand (SC/SM) (A-2-4) END OF BORING	very stiff, la	aminations		*ALLUVIUM										
r X															
DEP	TH: DRILLING METHOD			WAT	ER LEVEL MEA	I ASURI	I EMEN	TS		1		 	NOTE:	BEE	<u>ן</u> עד קי
0-19		DATE	TIME	SAMPI DEPT		1	/E-IN PTH		DRILLII UID LE	NG VEL	WATI LEVI	ER	THE A	TTAC	HEL
		6/24/13	9:44	21.5	5 19.5	2	1.4				Non		SHEE		
BORIN COMPI	G LETED: 6/24/13	6/24/13	9:55	21.5	5 19.5	2	1.4				Non	C	EXPLA FERMIN		
	M LG: TM Rig: 1C	1				+		1					TH	IIS LO	G



,

AET JC	DB NO: 01-05697.1						LO	GOF	BO	RING N	0.	1100) ST	(p.]	l of 1	l)
PROJE	CT: Southwest Ligh	t Rail Tr	ansit Pr	oject,	PE	C East;]	Нор	kins	to	Minn	eapo	olis, N	ΛN			
SURFA	CE ELEVATION: 842.9	ŀ	Iennepin C	o. Coo	rdina	tes: <u>N</u>	1	68772	2		Е :	52592				
DEPTH IN FEET	MATERIAL D	DESCRIPTIO	N		GE	OLOGY	N	мс	SA	MPLE YPE	REC IN.			BORAT		ESTS PID
FEET	FILL, a mixture of sand w	ith gilt and	cilty cond		FILI	-						WC	DEN	LL	PL	(ppm)
1	a little gravel, pieces of wo roots, brown, dark brown	ood and bri and gray	cks, trace			_	5	М	Д	SS	17					0.0
3 -	FILL, mostly silty sand, pi cinders, trace roots, black FILL, mostly sand with sil	and dark bi	rown				5	М	M	SS	15					0.0
4	roots, brown	· . · ·	_	_+					R							
6	FILL, mostly sand, a little silt, brown, grayish brown brown	and light g	rayish				8	M	Х И	SS	16		-			0.0
8 -							10	М	M	SS	15					0.0
9									e							
11 -				-			- 8	M	Å	SS	17					0.0
12 – 13 –	FILL, mostly sand with gr	avel, brown	nish gray,				10	M	M	SS	19					0.0
14 15	a little black	1-40-17-10- 400 O	int		CO	ARSE	16	M	P	SS	14					0.0
16 -	SAND, fine grained, light medium dense (SP) SAND WITH GRAVEL, 1			+	ALI	LUVIUM	10		\ ₹]	55			-			
17 - 18 -	brown, a little grayish brown dense, lenses of silt (SP)						11	М	\square	SS	16	-	-		•	0.0
19 - 20 -	LEAN CLAY, grayish bro				FIN	E LUVIUM	11	M	P	SS	18	26 26				0.0
21 -	FAT CLAY, brownish gra END OF BORING	ıy, stiff (CH	<u>4)</u>									20				
										•	•					
25/13																
L.GDT 7/			-							•						
PT+WEL			· ·									L				
AET+C																
CORP W-COORDINATES 01-05697-1.GPJ AET+CPT+WELL.GDT 7/25/13 ITAO I-0 ITAO IT						,-										
5 DEI	PTH: DRILLING METHOD			WAT	ER LI	EVEL MEA	SURÌ	EMEN	TS		L	.I		NOTE:	REFE	R TO
INATES	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CAV DE	/E-IN PTH	I FL	DRILLI UID LE	NG EVEL	WAT LEVI		THE A	TTAC	HED
OORD		11/11/10	12:11	21.	0	19.5	2	0.9				Non		SHEE		
Ŭ N		11/11/10	12:21	_ 21.	0	19.5	2	0.9				Non	C	EXPLA		
BORIN COMP	NG PLETED: 11/11/10	· .]	TERMIN		
	DTS LG: GM Rig: 33C		а. С.											TH	IS LO	J



AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

	AET JC	OB NO:	01-05697	7.1						LC	OG OF	BOI	RING N	0	1101	ST	(p. 1	lof	1)
	PROJE	CT:	Southwes	st Ligh	t Rail Tr	ansit Pro	oject,	PE	C East;	Нор	kins	to	Minn	eapo	olis, N	ΛN			
	SURFA	CE ELEV	VATION:	844.8	H	Iennepin Co	o. Cooi	rdina	tes: <u>N</u>	1	69074	1		E :	52592				
	DEPTH IN FEET		MAT	ERIAL D	ESCRIPTIO	N		GE	OLOGY	N	MC	SA T	MPLE YPE	REC IN.	FIELI WC) & LA DEN	BORAT	PL	IESTS PID (ppm)
	1 -	FILL, little	, mostly claye gravel, trace r	ey sand v roots, da	with organi rk brownis	c fines, a h gray and		FILI	Ĺ	8	М	М	SS	23	26				0.0
	2 - 3 -	FILL claye	, mostly sand y sand, pieces n, a little dark	s of bitu			/	-		8	M	\square	SS ·	16					0.0
	4 5	Sieve	analysis perf $200 = 5.8\%$	ormed o	on sample f	rom 2' to				2	M	R	SS	15					0.0
	.6 7 8	grain	D WITH GRA ed, brown, mo D, a little grav	oist, loos	se (SP) (po	ssible fill)	 	ALI OR	ARSE JUVIUM FILL	8	М	E	SS	16					0.0
>	9 10	grayis SANI	sh brown, mo D WITH GRA nish gray, mo	ist, loos AVEL, r	e (SP) nedium gra	.			ARSE LUVIUM	8	M	ł	SS	15					0.0
	11 - 12 - 13 -	1	D, fine graine			own, moist	· · · · · · · · · · · · · · · · · · ·	•		9	M	Ŧ	SS	19					0.0
	13 14 15	loose	DY SILT, lig , a lamination	•			E LUVIUM ARSE	18	M	A Pr	SS	13	20				0.0		
	16 -	grayi lamin	D, a little grav sh brown, mo ations of silt OF BORING	_	<u></u>		LUVIUM	10	IVI	Λ		15					0.0		
								Ţ											
																	-		
с,														•					
GDT 7/25/1				· ·															
+CPT+WELI					·														
CORP W-COORDINATES 01-05697-1.GPJ AET+CPT+WELL.GDT 7/25/13				·															
1-0569	DFI	 PTH:	DRILLING ME	THOD			 WAT	ER L	EVEL ME	ASUR	 EMEN	TS		<u> </u>	<u> </u>	L	NOTE:	DEEL	
		111. [4½'	TIME	SAMP DEP	1	CASING DEPTH	CA	VE-IN PTH	T	ORILLI UID LE	NG EVEL	WAT LEVI	ER	THE A	TTAC	HED			
OORD				11/11/10	11:02	16.	0	14.5	1	5.7				Non		SHEET			
Ň					11/11/10	11:12	16.	0	14.5	1	5.7				Non	C	EXPLA		
COR	BORIN COMI	NG PLETED:	11/11/10							<u> </u>	-						TU		
AET	DR: I	DTS LG	: GM Rig: 3	3C													TH	IIS LO	U



AET JC	DB NO: 01-05697.1					LC	G OF	BO	RING N	Ю.	1102	SS	(p. 1	of 1	l)
PROJE	CT: Southwest Ligh	nt Rail Tr	ansit Pr	oject,	PEC East;	Нор	kins	to	Minn	ieapo	olis, N	/IN			
SURFA	CE ELEVATION: 844.5	H	Iennepin C	o. Coor	dinates: <u>N</u>	1	6926	7		E :	52592				
DEPTH	MATERIAL I	DESCRIPTIO	N		GEOLOGY	N	MC	SA	MPLE	REC	FIELD	6	BORAI	ORY	
IN FEET					· · ·				ГҮРЕ	IN.	WC	DEN	LL	PL	PID (ppm)
1 -	SANDY ORGANIC CLA gravel, trace roots, black, s	Y, with wo	od, a little		TOPSOIL	12	M	M	SS	24	20				0.0
2 -	\silty sand (OL/OH)			_ ────────────────────────────────────	COARSE ALLUVIUM			Д							
3 -	SILTY SAND, trace roots moist, medium dense (SM		ed, brown			11	M	M	SS	21					0.0
4 -	SAND WITH SILT, fine t	o medium						A	•						
5 -	brown, moist, medium der SAND, a little gravel, fine					-		\square		10					
6 -	\brown, moist, loose (SP)		_			7	M	Ŵ	SS	18					0.0
7 -	SAND, fine grained, light brown, a little brown, moi							P	•						
8 -	\of silt (SP)					8	M	X	SS	17					0.0
9	SAND, a little gravel, med		e grained,	 /				P							
10 -	\brownish gray, moist, loos SAND, a little gravel, med		ed,			11	M	M	SS	18					0.0
11 -	brownish gray, moist, mee	lium dense	(SP)				11/1	\square		10					0.0
- 12 -	SAND, a little gravel, fine brownish gray, moist, med	to medium	n grained,					R	aa	10					
13 -	brownish gray, moist, met	num dense				20	M	Å	SS	16					0.0
14 -	SAND WITH SILT, fine	grained, lig	ht					I							
15 —	brownish gray, a little bro dense, laminations of silt (wn, moist, SP-SM)	medium			18	M	X	· SS	17					0.0
16 -	SAND, a little gravel, med	lium graine	d, grayish					रि							
17 -	brown, a little brownish gu dense, a lens of silt (SP)	ay, moist, :	medium			24	M	\square	SS	10			•		0.0
18 -	SAND WITH SILT, a littl							R	55		1				0,0
19 -	fine grained, grayish brow dense (SP-SM)	n, moist, m	nedium					논							
20 -	SAND, fine grained, gray	sh brown,	moist,			17	M	Х	SS	16					0.0
-21 -	Imedium dense (SP) END OF BORING	-	·····												
	END OF BORING														
5/13															
1 1/2															
			х. 										· ·		
HWE															
11+CP		`							÷ .						
PJ AE															
7-1.6															
CORP W-COORDINATES 01-06697-1.6PJ AET+CPT+WELL.GD1 725/13	PTH: DRILLING METHOD	, . .		1. XV A TT	ER LEVEL ME		EMEN			<u> </u>]			l	
	PTH: DRILLING METHOD			1	·····	-1		Τ	DRILLI	NG	WATI		NOTE:		
0-1	9 ¹ / ₂ ' 3.25" HSA	DATE	TIME	SAMPI DEPT			VE-IN 2PTH	FÍ	LUID LE	EVEL	WATH		THE A		
N000		11/11/10	9:48	21.0		2	0.9				Non		SHEET EXPLA		
	NG	11/11/10	9:59	21.0) 19.5						Non	e	ERMIN		
	PLETED: 11/11/10	· · · · ·						+-						IS LO	
DR: L	DTS LG: GM Rig: 33C			ļ									111		~

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

Ī	AET JO	OB NO:	01-05697.1						LO	GOF	BO	RING N	О.	1103	SS	(p. 1	of 1)
	PROJEC	CT:	Southwest Lig	nt Rail Tr	ansit Pr	oject, I	PEC E	ast;]	Hop	kins	to	Minn	eapo	olis, N	ΛN			
	SURFA	CE ELEVA	TION: 842.6	I	Iennepin C	o. Coor	dinates:	N	1	69543	3		E :	52592	7			
	DEPTH IN		MATERIAL I	DESCRIPTIC	N		GEOLO	OGY	N	мс	SĄ	MPLE	REC			BORAT		TESTS PID
	IN FEET						-	-				YPE	IN.	WC	DEN	LL	PL	(ppm)
	1		SAND, with organ ined, black, moist,				TOPSOI MIXED	L	6	М	M	SS	24	20				0.0
	· 2 —	CLAYE	EY SAND, trace ro	ots, brown	, firm (SC)		ALLUV				Д			.11		-		
	3 —	SAND	WITH SILT, fine and dense to loose (S	grained, bro P-SM)	own, moist		COARS ALLUV		12	М	X	SS	24					0.0
	4 —	Sieve ai	nalysis performed		from 2' to						Б	. •						
	5 —	4': -#20	0 = 9.5%						9	М	M	SS	24					0.0
	6 —		WITH SILT, fine		ht grayish				9	IVI	\square	ວວູ	24				-	0.0
	7 —		moist, loose (SP-S a little gravel, fine		grained,						R							
	. 8 -	light gra	ayish brown, moist ions of silt (SP)						14	M	XI	SS	18					0.0
	9 —		a little gravel, me	tium to fine	e grained,						P							
	10 —	brownis	sh gray, moist, meo	lium dense	(ŠP)				22	M	M	SS	13					0.0
	11 —	-									\square							
	12 —	-							17	М	M	SS	16					0.0
	13 -	-							17	141	A	00	10		,			010
	14 -		medium to fine gr		vnish gray,						붬							
	15 -	moist, r	nedium dense (SP))	· . ·				13	M	М	SS	14					0.0
	16 — 17 —	SAND	fine grained, light	gravish bro	own, moist						ß							
	17	medium	n dense (SP)						15	M	М	SS	12					0.0
	19 -		fine grained, brow nedium dense, lam			,					रि		•				•	
	20	LEAN	CLAY, gravish bro	own, a little	brown,		FINE		13	м	∇	SS	18	28		-		0.0
	21 —		ninations of sand v LAY, gray, a little				ALLUV	IUM	15		А		10	27				
			minations of silt (C		lisii gray,													
		END O	F BORING															
_																		
//25/13																		
GDT 1														1.				
VELL		2 2 2	· · · ·															
CPT+			· · · ·						-									
AET+																		
CORP W-COORDINATES 01-05697-1.GPJ AET+CPT+WELL.GDT 7/25/13		-														-		
2697-1			. * `															
6-10	DEF	PTH: DF	RILLING METHOD			WATE	ER LEVE		·····		TS					NOTE:	REFE	R TO
NATES	0 <u>⊥</u> 1	9½' 3.	25" HSA	DATE	TIME	SAMPL DEPT	ED CA H DE	SING PTH	CAV DE	/E-IN PTH	FL	ORILLII UID LE	NG VEL	WATI LEVI	ER EL	THE A	TTAC	HED
ORDI				11/11/10	8:45	21.0		9.5).9				Non	e	SHEET	'S FOR	R AN
00-X		 ,		11/11/10	8:58	21.0) 1	9.5	20).9				Non	e	EXPLA	NATIC	N OF
S S S C R P	BORIN COMP	NG PLETED:	11/11/10									· · · · · ·			7	FERMIN		
μ			GM Rig: 33C													TH	IS LOO	3

03/2011



AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JO										RING N			51	(p. 1	1 01	1)
PROJEC		t Rail Tr	ansit Pro	oject,	PE	C East;]				Minn						
SURFAC	CE ELEVATION: 836.9	H	ennepin Co	o. Coo	rdinat	tes: <u>N</u>	1	65292	2		E :	52091	7			
DEPTH IN	MATERIAL I	FSCRIPTION	V		GF	OLOGY	N	MC	SA	AMPLE FYPE	REC	<u> </u>) & LA	BORA	FORY	TEST
FEET	,						1.4			TYPE	IN.	WC	DEN	LL	PL	%-# 2
1 -	FILL, mostly silty sand wi grayish brown and dark br	th gravel, tr own (A-2-4	race roots,		FILI		17	М	M	SS	13					
2 - 3 -	FILL, mixture of silty sand light grayish brown and lig A-3)				-		16.	M		SS	9					
4	FILL, mostly sand with sil brown (A-3)	t, a little gra	avel,				26	М	K	SS	13					
6 – 7 – 8 –	FILL, mostly sand with sil brownish gray (A-1-b)	t and grave	l, light		-		30	М	ET X	SS	10					
9	FILL, mostly gravelly san clay, grayish brown (A-1-	d with silt, a b)	a little lean	1			31	М		SS	7		-			
12 - 13 -	FILL, mostly sand with sil brown, a little brown (A-1 FILL, mixture of lean clay brownish gray and brown	-b) and clayey	sand,				22	X	EX EX EX EX	SS	12	21				and the second se
14 — 15 — 16 —	SAND WITH GRAVEL, 1 brown, waterbearing, med (A-1-b)	medium gra	ined,			ARSE LUVIUM	20	W	H H	SS	12					
17 — 18 —	SAND, a little gravel, med waterbearing, loose (SP) (d, brown,		· · ·		10	w	1 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	SS	16					2
19 — 20 —	SAND WITH GRAVEL, brown, waterbearing, loos						8	W		. SS	10					
21 -	END OF BORING															
														~		
DEP	TH: DRILLING METHOD			WAT	ER LI	EVEL MEA	SURI	EMEN	TS					NOTE:	REFI	ER T(
0.44		DATE	TIME	SAMP DEP	LED	CASING DEPTH	CAN	/E-IN PTH		DRILLI LUID LE		WATI LEVI		THE A	TTAC	HEL
0-19	9½' 3.25" HSA	12/2/13	9:25	16.		14.5		4.5	+		. ,	14.		SHEE	TS FO	R AN
		12/2/13	9:25	16.		14.5		4.0				13.		EXPLA	NATI) NC
BORIN	G					14.5		4.0 7.4				15.		ERMI	VOLO	GY (
COMPI	LETED: 12/2/13	12/2/13	9:45	21.	v	19.5		/.+				13.4	•		IIS LO	
$\frac{DR: S}{03/2011}$	G LG: SB Rig: 91C						<u>l · ·</u>								01-E	_

03/2011



AET	JOB NO:	01-05	5697						LO	GOF	BOF	RING N	0.	1116	ST	(p. 1	of	l)
PROJ	ECT:	South	west Ligh	t Rail Tr	ansit Pro	ject,	PEC	CEast; I	Iopl	cins t	to I	Minn	eapo	lis		í.		
SURF	ACE ELI	EVATION:	834.9	H	Iennepin Co.	Coordir	nates:	<u>N</u>	1	65430)		<u>E :</u>	52113		-		
DEPTH	H	Ν	IATERIAL D	ESCRIPTIO	N		GE	OLOGY	N	мс	SĄ	MPLE YPE	REC			BORAI		
IN FEET												SS	IN.	WC	DEN	LL	PL	%-#2 00
1			lty sand with and gray (A		oparent		FILL	4		F F	2	SU	4		7			
2	\FIL	, mostly si	Ity sand with	n gravel, pi	eces of	<u> / </u>				M	1	SU						
3			zen (A-2-4) Ity sand, a li		brown				25	M	Х	SS	13					
4	1114		ity sailu, a fi	ttie gravei,	DIOWII]					रि							
5			nd with silt, wn (A-2-4,		ivel and				9	М	M	SS	12	11				
6	- FIL	L, mostly cl	ayey sand w	vith gravel,	a little						A	00	1,2					
7	_\ sanc	ly lean clay	, brown, a li	ttle gray an	nd black		SWA	AMP OSIT			뉟			-				
8	$-\frac{(A-6)}{SAI}$	/	, black, a lit	tle gray, a	lens of			0311	7	M	М	SS	16	304				
9	sanc	l with silt (F	PT) (A-8)				FINI				3							
10	FA]	CLAY, br	ownish gray silty sand (C	v, firm to st (A-7-6)	iff,)		ALL	ŨVIUM	5	4	\square	SS	17	37				
11			(0) ()						_	F							
12	_										R			25				
13		JD WITH S	SILT, a little	gravel me	edium to		COA	RSE	20	M/W	М	SS	16	2.5				
14	+ fine	grained, gr	ay, waterbea	aring, medi	um dense		ALL	UVIUM_			Ľ							
15		-SM (A-1-1	o) I CLAY, bro	wnish ora	v firm		ŢILI		8	W/M	Μ	SS	6	24				
16	lens	es and lami	nations of s	ilty sand (C	CL) (A-6)	_///					R							
17			SILT AND (ay, waterbea					ARSE JUVIUM	20	117	K	SS	12					
18			lean clay (S						30	W .	Д	22	12					
19	SAI		medium gra		sh brown,						E,						1	
20		erbearing, le	bose (SP) (A	A-3)			•		5	W	X	SS	18					
21	EN	D OF BOR	ING .										1					
ñ																		
12/20/																		
GDT																		
VELL																		
1+140																		
AET+(•							-				
GPJ																		
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13								•	_									
70 S	EPTH:	DRILLING	METHOD		· · ·			EVEL MEA	1		1			XX 7 4 7		NOTE:		
NATE 0	-19½'	3.25" HS	A	DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CA' DE	VE-IN PTH	FL	DRILLI JUID LI	NG EVEL	WAT LEVI	ER EL	THE A	TTAC	HED
ORDI				12/2/13	10:25	16.	0	14.5	1	4.3				12.		SHEE		
N-CC				12/2/13	10:35	16.	0	14.5	1	3.0				11.	0	EXPLA		
BOI CON	RING MPLETEI	D: 12/2/13	······································	12/2/13	10:50	21.	0	19.5	1	5.6				13.	5 ¹	ERMI		
. 4	SG 1	.G: SB R	ig: 91C													TH	IIS LO	G



Ī	AET JC	B NO:	01-05	697						LC	G OF	BOI	RING N	10.	1117	'ST	(p. 1	l of	1)
	PROJE	CT:	Southw	vest Ligh	t Rail Tr	ansit Pr	oject,	PE	C East;	Нор	kins	to	Minr	ieapo	olis				
	SURFA	CE ELEV	ATION:	831.7	. I	Iennepin C	o. Coo	rdina	ntes: <u>N</u>	1	6563()		<u>Е</u>	52135		•		
	DEPTH IN FEET		M	ATERIAL D	ESCRIPTIO	N		G	EOLOGY	N	MC	SĄ	MPLE YPE	REC			ABORA	1	
) 	FÊET						~	TIT	<u>, </u>		F		SU	IN.	WC	DEN		PL	%-#200
 	1 -				t, a little gi dark brow		/	FIL	ιL,		F	2	SU						1
	2 —	$\left(A-3, A\right)$		· · · · · · · · · · · · · · · · · · ·	41	iaaa af		1			M	Ħ	SU						
	3 —	metal,	black, fro	zen (A-2-4						26	M	М	SS	6					
	4 —	FILL,	mostly sil	ty sand wi wn (A-2-4	th gravel, a	alittle		-				I							
	5 —	FILL,	mostly sa	nd with sil	t, a little gi	avel,				14	M	M	SS	6					
	6 —		*		sand, brov)	4				R							
	. 7	clayey	sand and		t and grave i clay, brov					8	M	\square	SS	6	-				-
	8	black	(A-1-b)									P	~~						
	9 10											붬							1
	10									8	M	Д	SS	4					
	12	Ì					-					1							
۲.	13 -	-								13	M	Х	SS	6					
	14 —											Z							
- 1	15 -	-								9	М	\square	SS	10					
	16 -							_				सि							
	. 17 —	FILL, sand v	mostly cla vith silt. tra	iyey sand,	a little gra brown, a li	vel and ttle black				12	м	M	SS	7	11				
	18 —	(A-6)	,	,				-		12	M W	A	66						
	19 -				GRAVEL,				ARSE LUVIUM		-	뙵							
	20 21	mediu	m dense (srown, wa SP-SM) (A	terbearing, A-1-b)	loose to			LOVION	7	W	Д	SS	3					
	21 - 22 -											I							
	23 -	-								7	W	X	SS	3					
	24 -	-										मि							
10/13	25 —	-								21	W	M	SS	5					
DT 12/	26 -	END	OF BORI	NG			<u> </u>	·				\mathbb{P}							
ELL.GC																			
PT+WE																		l,	
ET+CI																			
3PJ A																			
15697.0																 			
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/10/13	DEI	PTH: I	DRILLING N	/IETHOD		p	1		EVEL MEA					1			NOTE:	REFE	ER TO
INATE	0-2	41/2' 3	5.25" HSA		DATE	ŢIME	SAMP DEP	LED TH	CASING DEPTH		/E-IN PTH	FL	ORILLI UID LE	NG EVEL	WATI LEVE	ER EL	THE A	TTAC	HED
DORD,					12/2/13	11:45	21.	0	19.5	1	9.5				19.1		SHEE		
) W-C	0.000				12/2/13	12:00	21.	0	19.5	1	9.5	_			18.9	/	EXPLA		
	BORIN COMP	NG PLETED:	12/2/13		12/2/13	12:30	26.	0	24.5	2:	3.3				19.1	L	TERMIN		
AET	DR: S	G LG:	SB Rig	: 91C													1H	IS LO	G



AET JO	B NO: 01-05697		•			LC)G OF	BOF	RING N	O	1118	B ST	(p.]	lof	1)
PROJEC	CT: Southwest Light	nt Rail Tr	ansit Pro	oject,	PEC East;	Нор	kins	to	Minn	eapo	olis				
SURFAC	CE ELEVATION: 829.3	H	Iennepin Co	o. Coo	rdinates: <u>N</u>	1	65827	7]	E :	52157	6			
DEPTH			N		GEOLOGY	N	MC	SA	MPLE YPE	REC	FIELI) & LA	BORAT	FORY	TES
ÎN FEET	MATERIAL I		1 N			N	INIC	T	YPE	IN.	WC	DEN	LL	PL	%-#
1	FILL, mostly silty sand w ashes/cinders, black, froze				FILL		F/M	M	SS	12					
2 — 3 —	FILL, mostly sand with si silty sand, brown (A-2-4)	lt, a little gr	avel and		- - -	29	М		SS	12					
4 — 5 —	FILL, mostly sand with si clayey sand, brown (A-1-1		el, a little			13	M	1 X	SS	10					
6 — 7 —	•							E							
8 - 9 -		1, 1, 1	<u>.</u>		- -	13	M	X R	SS	6.					
10 — 11 —	FILL, mostly sand with si clayey sand, brown (A-3)	lt, a little gr	avel and			7	M	Å	SS	7					
12 — 13 —	FILL, mostly sand with si (A-1-b)	lt and grave	el, brown		- - - -	6	M		SS	1½					
14 — 15 — 16 —	FILL, mostly sand with si clayey sand, brown (A-1-		ravel and			7	M′		SS	10					
17 – 18 –	SAND WITH SILT AND to fine grained, brown, wa (SP-SM) (A-1-b) (possibl	terbearing,	medium very loose		COARSE ALLUVIUM OR FILL	2	W		SS	10					
19 - 20 - 21 -					· · ·	3	W	ľ	SS	7					
22 – 23 –	SAND, a little gravel, met waterbearing, very loose, (SP) (A-1-b)	dium graine lenses of cl	ed, brown, ayey sand		COARSE ALLUVIUM	3	W		SS	12					
24 – 25 –					•	2	W	ł	SS	6					
26 —	END OF BORING							$\left \right\rangle$							
													B. Walter and the second s		
DEP	TH: DRILLING METHOD			WAT	ER LEVEL ME.	ASURI	EMEN	TS			·	1	NOTE:	REFE	ER T
0.0		DATE	· TIME	SAMP DEP	LED CASING TH DEPTH	CAN	VE-IN PTH	FI	DRILLII UID LE	NG VEI	WAT LEVI		THE A		
0-24	4 ¹ / ₂ ' 3.25" HSA	12/3/13	8:45	18.			7.2				Non		SHEE	rs foi	R A
		12/3/13	8:50	21.			9.5	-			18.		EXPLA	NATI	NC
BORIN	IG LETED: 12/3/13	12/3/13	9:00	$\frac{21}{21}$			9.3 9.2				16.0	m	ERMIN	10LO	GY '
COMPI	LETED: 12/3/13	12/3/13	9:00	<u></u> 26.			3.5	-			19.4		ודד	IIS LO	0



AET JC	OB NO: 01-05	697						LC	GOF	BOR	JNG N	0	1119	ST	(p. 1	lof	l)
PROJE	CT: Southw	est Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East; l	Hop	kins 1	to I	Ainne	eapol	lis				
SURFA	CE ELEVATION:	825.7	H	Iennepin Co.	Coordi	nates:	<u>N</u>	1	66037	7		Е :	52179				
DEPTH IN FEET	М	ATERIAL D	ESCRIPTIO	N		GE	EOLOGY	N	MC	SA T	MPLE YPE	REC IN.	FIELD WC	0 & LA DEN	BORAT		rests %-#200
1 2 3	FILL, mostly silt clayey sand, piec ashes/cinders, bl to 1' (A-2-4)	es of conc	rete, bitum	inous and		FILI	L	27	F/M M		SS SS	16 3					
4 5 6	FILL, mostly sar clayey sand, bro			, a little				12	M		SS	6				-	
7 - 8 -	FILL, mostly sar clayey sand, bro	nd with silt wn (A-2-4)	, a little gra	avel and				10	M		SS	4			-		
9 10 11	FILL, mostly sar clayey sand, ligh							12	М		SS	7					
12 13 14							1000	14	¥	H R	SS	5	-			· .	
15 16	SAND WITH G brown, waterbea and laminations	ring, very	loose to loo	ose, lenses			ARSE LUVIUM	4	w		SS	4					
17 - 18 - 19 -		1.		<u></u>				10	W	X 73	SS	14					
20 -	SAND, fine to n waterbearing, lo	ose (SP) (A	A-3)	orown,		· . · . · .		7	w	$\left \right\rangle$	SS	3					
21 -	END OF BORI	NG				·				Í							
LL. OP 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								•			~						
													<u> </u>	<u> </u>			
DE	PTH: DRILLING	METHOD			·r		EVEL ME			- <u>-</u>	ORILLI	NG	WAT	ER	NOTE:		
0-1	19½' 3.25" HSA		DATE	TIME	SAMP DEP		CASING DEPTH	-	VE-IN EPTH	FL	ORILLI UID LE	ÉVEL	LEVI	EL	THE A		
	,		12/3/13	10:10	16.		14.5		4.5	+-			13. ⁴ 13.4		EXPLA		
BORI	NG PLETED: 12/3/13		12/3/13 12/3/13	10:20 10:30	16. 21.		14.5 19.5	-	4.5 9.4	-			<u> </u>	<u> </u>			GY ON
$\frac{\overline{COM}}{\overline{P}}$ DR: S		;: 91C	12/3/13	10:30	21.				7.4				10.		TH	IIS LO	G

03/2011

01/00/01



	AET JOI	B NO: (1-056	97					,	LO	GOFI	BOF	RING N	O	1120	ST	' (p.	1 of	1)
	PROJEC	T: So	outhwe	est Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East; I	Iopł	cins (to I	Minne	eapol	lis				
	SURFAC	E ELEVATI	ON:	823.8	ŀ	Iennepin Co	. Coordi	nates:	N	10	66265	5		E É	52202	5			
	DEPTH		MA	TERIAL D	ESCRIPTIO	N		GE	EOLOGY	N	мс	SA	MPLE YPE	REC	FIELD) & L/	ABORA	TORY	TESTS
	IN FEET												YPE	IN.	WC	oc		PL	%- #200
	1	cobbles, p little ashe	ieces of s/cinders	concrete , black, f	h gravel, and bitumi rozen to 1	nous, a (A-2-4)		FIL	L	r.	F/M	M	SS	24					
	3 - 4	clayey sar	nd, brow	n (A-1-b)						24	М	X R	SS	13					
	5 — 6 —	FILL, mos (A-1-b)	stly sand	with gra	wel, light b	rown				10	М	X	SS	12					
	7									11	M	Ī	SS	7					
	9 — 10 —	FILL, mix	ture of gailty sand	gravel and d, light br	d sand, a lit rown, a littl	ttle clayey le brown				8	М	Ŧ	SS	12				а. 10	
	11 — 12 —	and black	(A-1-b) C CLAY	, trace ro	oots, piece	of wood,			AMP	0	171	E		12					
	13 — 14 —	,	,		sand (OH)		183 183 183 183		POSIT	8	M	X R	SS	16	84	18.5	5		
	15 — 16 —	ORGANI brownish			hells and ro DH) (A-8)	oots, light	- <u></u> 	-		wн	-M-		SS	18	76		57	44	
	17 — 18 —	SAND W waterbear			rained, dar M) (A-3)	k gray,			ARSE LUVIUM ,	9	w	TH A	SS	13					
	19 — 20 — 21 —	gray, wate sand (SP-	erbearing SM) (A-	g, very lo 2-4)	rained, bro ose, lenses	of silty				2	w		SS	15					
	22 — 23 —	brownish (A-3)	gray, wa	aterbearin	o medium g 1g, loose (S	P-SM)				9	w	H H	SS	8					
01-05697.GPJ AET+CPT+WELL.GDT 12/20/13	24 — 25 — 26 —	SAND W brownish (A-2-4)	ITH SIL gray, wa	.T, fine g aterbearin	rained, gra 1g, loose (S	y to P-SM)				. 8	W	LA R	SS	4					
WELL.GD	27 — 28 —									8	W	X	SS	8					
+CPT+\	20 29 —											E							
J AET	30 —									8	w	\square	SS	8					
97.GP.	31 —	END OF	BORIN	G				· <u> </u>										+	
01-056	DEP	TH: DRI	LING M	ETHOD			WAI	ER L	EVEL MEA	SURI	EMEN	TS				1	NOTE	: REF	ER TO
			" HSA		DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CAV	/E-IN PTH	FL.	DRILLI UID LE	NG EVEL	WATI LEVI	ER EL		ATTA	
ORDIN	<u>0-1</u> 19½-29		F w/DM		12/3/13	11:45	18.		17.0	+	7.0				16.0		SHEE	TS FO	R AN
W-CO(1712-4.	·/2 ND			12/3/13	12:00	18.		17.0	1	6.0				15.2	2	EXPL	ANATI	ON OF
CORP W-COORDINATES	BORIN COMPI	G LETED: 12	/3/13																GY ON
AET_C	DR: S			91C													T	HIS LO)G



A	ET JO	B NO:	01-05	697					•	LO	G OF	BOF	RING N	0	1121	ST	(p.]	l of 1	1)
P	ROJEC	CT:	Southv	vest Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East; I	Hopl	cins ⁻	to I	Minn	eapo	lis				
ST	JRFA	CE ELEV	ATION:	822.4	Н	lennepin Co.	Coordin	nates:	N	1	66425	5		E :	52223				
DE	PTH IN EET		M	ATERIAL D	ESCRIPTIO	N		GE	EOLOGY	N	мс	SA T	MPLE YPE	REC IN,	FIELI WC	O&LA	LL	r——	FESTS %-#200
	1 -	FILL, \(A-2-4		ty sand wit	h gravel, br	own		FILI	L .	50/.3	M	Ê	SS SU	3					
	2 -	 _\dark b	mostly sil prown (A-2	-4) (petrol	h gravel, tra eum-type o	dor)				22	M	¥	SS	12					
	3 — 4 —	silty s	and and as	hes/cinders	and gravel s, pieces of petroleum-)			22		A	00	12					
	5 — 6 —	FILL, brown	mostly san (A-1-b)	nd with gra	vel, light g	rayish				16	M	M	SS	6					
÷.	7 8	∖sandy	lean clay,	brown (A-	, a little gra 1-b) gravel and s					9	M	M	SS	18					
	9 — 10 —	clay, l	ight grayis	h brown, a	ittle gray	(A-1-b)						R							·
	11 -	(A-1-)			, \	,				11	M	Å	SS	10					
	12 — 13 —			black (PT)) (A-8) n (OH) (A-'	7-5)			AMP POSIT	7	М	X	SS	.16	99 45	26.5			
	14 — 15 —	ORG	ANIC CLA	Y, trace sl	hells and ro							R							
	16 — 17 —			oft (OH) (.	A-7-5) rained, ligh	nt gravish		: CO/	ARSE	2		Å R	SS	20	84	4.6			
	18 —	brown (A-3)	n, waterbea	aring, medi	um dense (SP-SM)		ALI	LUVIUM	25	w	X F	SS	16				1	
	19 - 20 -	light l	D, fine to r prownish g (SP) (A-3	ray, waterl	ined, brow bearing, me	n, a little dium		•		30	W		SS	18					
	21 – 22 –			~						21	w	ł	SS	16					
	23 –	END	OF BOR	ING						21		\square		10			3		
12/20/13																			
VELL.GDT												÷							
ET+CPT+V																			
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 12/20/13																			
01-056	DEI	L PTH:	DRILLING	METHOD			 WAT	ER L	EVEL ME	4SURI	EMEN	ITS	<u> </u>	<u> </u>		<u> </u>	NOTE:	REFF	ER TO
NATES (3.25" HS/		DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CA DE	VE-IN PTH	FL	DRILLI JUID LI	NG EVEL	WAT LEV	ER EL		ATTAC	
DNOKDI				:	11/27/13	1:40	18.	5	17.0	1	7.8				16.	9		TS FOI	
N-02	·				11/27/13	1:55	23.	5	22.0	1	9.9				17.		EXPLA		
CORP	BORIN COMP	NG PLETED:	11/27/13														TERMI		
	DR· D	DS LG	CD Ri	r: 33C	1												T	IS LO	G



AET JO	OB NO: 01-05	697						LO	GOF	BOF	RINGN	0	1122	ST	(p. 1	lof	1)
PROJEC	CT: Southw		t Rail Tra	ansit Pro	oject,	PEC	C East;]				Minn			-			
	CE ELEVATION:	819.3	Н	ennepin Co.	Coordi	nates:	<u>N</u>	1	66659)		E É	52245		00013	0001/	PROTO
DEPTH IN FEET	М	ATERIAL D	ESCRIPTIO	N		GE	EOLOGY	N	MC	SA T	MPLE YPE	REC IN.	FIELC WC	0 & LA	BORAT		rests %-#200
FEE 1 1	FILL, mostly silt brown (A-2-4)	y sand wit	h gravel, tra	ace roots,		FIL	Ĺ	16	M	M	SS	6					
2 -	FILL, mostly silt black (A-2-4)	y sand, a li	ittle ashes/c	inders,				10		Д							
3 — 4 —	FILL, mostly sar ashes/cinders, br	d with gra own, a littl	vel, a little e black (A-	-1-b)				5	M	X	SS	8					
5 — 6 —	FILL, mostly lea roots, gray, a litt (A-6, A-8)	n clay, a li le dark bro	ttle organic wnish gray	clay, trace and black	>			9	М	X	SS	12	32				
7							,	5	М		SS	10	28				
9 10 11								4	М	R	SS	18	14				
11	ORGANIC CLA gray, soft to firm	(ÓH) (A-	7-5)			DEI	AMP POSIT	- 5	M	R	SS	20	85 80	3.0			
14 -	SAND WITH S loose, lenses and (SP-SM) (A-3)	laminatio	ns of silty s	and		ALI	ARSE LUVIUM		Ţ	R	~~						
16 -	SAND, fine to n waterbearing, lo	edium gra ose to med	ined, brown ium dense (nish gray, (SP) (A-3)		•	· .	9	W	Å	SS	18					
17 18								12	W	$\left \right\rangle$	SS	22					
19 -				• 1		-			÷ .	P							~
20 - 21 -	SAND, with a li brownish gray to dense (SP) (A-1	brown, w -b)	aterbearing	ained, , medium				14	. W	X	SS	24					· ·
	END OF BORI	NG															
																	1
5				۶.													
							•										
	PTH: DRILLING	AETHOD			 WAT		EVEL ME		EMEN								
2	· .		DATE	TIME	SAMP		CASING DEPTH		VE-IN		DRILLI JUID LI	NG	WATI LEVE	ER	NOTE: THE A		
0-1	19 ¹ / ₂ ' 3.25" HSA		11/27/13	12:15	16.		14.5		5.1			- 131 9	14.2		SHEE		
			11/27/13	12:40	21.		19.5		9.1				15.4	,	EXPLA	NATI	ON OF
BORI	NG PLETED: 11/27/13		11/27/13	12:45	21.		19.5	1	7.8				15.3	3	TERMI	NOLO	GY ON
$DR: \mathbf{I}$: 33C													Tŀ	IIS LO	G

10/00/12



AET JO	B NO: 01-05697		1				LO	G OF	BOR	ING N	0.	1123	s ss	(p. 1	of 2	2)
PROJEC	CT: Southwest Light	nt Rail Tr	ansit Pr	oject,	PEC Ea	st; H	[op]	kins	to I	Minn	eapo	olis				
SURFAC	CE ELEVATION: 818.1	H	Iennepin C	o. Coo	dinates:	N	16	66850)]	E :	52265	6	-		9
DEPTH			NĬ		GEOLOG	v	N	MC	SAN	MPLE	REC	FIELD)&L	ABORAT	FORY 1	ſEST
IN FEET	MATERIAL I	JESCRIPTIO	IN		GEOLOG		N	MC		YPE	IN.	WC	ОС	LL	PL 9	% -#2
1 - 2 -	FILL, mostly silty sand w ashes/cinders, trace roots, (A-2-4)	black, a litt	le brown		FILL		7	М		SS	18					
2 3 4	FILL, mostly sand with si sandy lean clay and ashes, wood, dark brownish gray	cinders, pie	eces of				9.	м <u>Т</u>	X FI	SS	17					
5 — 6 —	A-6) FILL, mostly fat clay, a li	ttle silt, gray	y (A-7-6)				3	М	R	SS	14	44				
7 - 8 -	FILL, mostly clayey sand little sand, trace roots, bla brownish gray (A-6)	with organi ck, a little d	ic fines, a ark				4	М		SS	16	23				
9	FILL, mixture of fat clay and sand, possible cobbles gray (A-7-6, A-1-b)						11	M/W		SS	14	39				
12 — 13 —	FILL, mostly clayey sand wood, brownish gray (A-6		and				5	W		SS	1					
14 — 15 — 16 —	ORGANIC CLAY, with s brownish gray to grayish			t <u>111</u>	SWAMP DEPOSIT		5	W		SS	-					
17 — 18 —	(A-7-5)	,	()	<u>188</u>			5	W		SS	18	106	4.6			
19 - 20 - 21 -			- 4.				2	М		SS	18	120	6.5			
22 - 23 -				. <u></u>	1		2	M		SS	18	120		108	68	
24 — 25 — 26 —	ORGANIC CLAY, trace to brown to gray, soft (OF		ish brown				3	M		SS	18	94		. 88	47	
26 – 27 – 28 –							3	M		SS	18	84	5.2			
29 - 30 - 31 -							4	M		SS	18	101		89	48	and the second se
													<u> </u>			
DEP	TH: DRILLING METHOD				ER LEVEL				T	ם דוום		117 A TT	70	NOTE:		
0-3	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASI TH DEP	ING TH	DE	/E-IN PTH	FLU	RILLП ЛD LE	VEL	WATE LEVE		THE A		
	, ,	11/27/13	11:25	11.	0 9.5	5	1().5				4.0		SHEET		
		11/27/13	11:45	11.	0 9.5	5	1().5				4.6		EXPLA		
BORIN	IG LETED: 11/27/13	11/27/13	1:20	41.	0 39.	5	29	9.0				22.0)	TERMIN		
· · · · · · · · · · · · · · · · · · ·	A LG: SB Rig: 85C								1			-		тц	IS LOO	7

03/2011



AET JOI	B NO: 01-05697				LC)G OF B	ORING N	0	1123	S SS	(p. 2	2 of 2	2)
PROJEC	T: Southwest Ligh	t Rail Transit Pro	ject,	PEC East; I	Iop	kins to) Minn						
		Hennepin Co.	Coordir	nates: <u>N</u>	1	66850		E :	52265				
EPTH IN FEET	MATERIAL D	ESCRIPTION		GEOLOGY	N	MC	SAMPLE TYPE	REC IN.) & LAI		1	Υ
ÊÊT								<u> </u>	WC	OC	LL	PL •	%-#:
33 -	FAT CLAY, brownish gray laminations of waterbearing	s and (CH) (A-7-6)		FINE ALLUVIUM	5	M/W	ss	18	29				
34 -	<i>(continued)</i> FAT CLAY, brownish gray		-4//	(continued)			1						
35 —	TAT CLAT, brownish gray	, IIIII (CII) (A-7-0)			5	M	ss	18	55				
36 -				COADCE			7						
37 —	SAND, fine grained, trace i waterbearing, loose to very	oots, brownish gray, loose (SP) (A-3)		COARSE ALLUVIUM	5	w	ss	18					
38 -							7	10					
39 - 40 -							1						
40	•				4	W	x ss	18					
71	END OF BORING			-									
4													
1		•											



AET JO	B NO: 01-05697					LC)G OF	BOR	ING N	0.	1124	ST	' (p. 1	lof2	2)
PROJEC	CT: Southwest Lig	ht Rail Tr	ansit Pr	oject,	PEC East	; Нор	kins	to I	Minn	eapo	olis				
SURFA	CE ELEVATION: 817.8	F	Iennepin C	co. Cooi	dinates:]	1	6703	8	_]	E t	52289	2			
1								SÁN	MPLE	REC	FIELD)&L/	ABORAT	'ORY	TEST
DEPTH IN FEET	MATERIAL	DESCRIPTIO	N		GEOLOGY	N	MC	T	YPE	IN.	WC	ос	LL	PL	%-#2
1 - 2 -	FILL, mostly clayey sand silty sand and silt, pieces brown and black (A-2-6)	of concrete,	dark	1	FILL	13	М	X	SS	18	11				
2 3 — 4 —	FILL, mixture of sand wi lean clay, brown and blac A-7-6)	th silt and gi k, a little gra	ravel and ay (A-1-b,	1		17	M	R	SS	18					
5 - 6 -	FILL, mostly fat clay, a librown and gray, a little b				· · ·	7	M		SS	18	43				
7 - 8 -				-		4	M	X	SS	20	38				
9 — 10 — 11 —	FILL, mostly lean clay, a and organic clay, light gradering	little gravel ay, gray and	, silty sand black	đ		6	M	R	SS	21	30				
12 — 13 —	LEAN CLAY, brown and black, firm to soft, a lens laminations of sandy silt	of organic c	lay,		FINE ALLUVIUM OR FILL	5	M/W		SS	20	33				
14 — 15 — 16 —	(A-6)					4	M	R	SS	18	36				
17 — 18 — 19 —	ORGANIC CLAY, trace pieces of wood, grayish b (OH) (A-7-5)	shells and ro brown to bro	oots, wn, soft		SWAMP DEPOSIT	2			SS	22	107	9.6	- T		
20 - 21 -						3	M	A	SS	22	106		100	63	
22 — 23 — 24 —	FAT CLAY, slightly orga very soft, laminations of	anic, browni silt (CH) (A	sh gray, -7-6)		FINE ALLUVIUM	WH	M	X	SS	24	67	2.0			
24 — 25 — 26 —	FAT CLAY, slightly orga gray, firm (CH) (A-7-6)	anic, dark br	ownish			5	M	X	SS	24	52	2.8			
27 — 28 — 29 —	SAND WITH SILT, fine gray, waterbearing, very				COARSE ALLUVIUM	3	W	A	SS	18					
29 30 31	SAND, fine grained, brow waterbearing, loose to me	wnish gray, edium dense	e (SP) (A-3	3)		6	W	Å	SS	18					
DEP	PTH: DRILLING METHOD			WAT	ER LEVEL ME	ASUR	L EMEN	TTS		I			NOTE:	ppp	I IP T
			(TTA (T)	r				D	RILLI	NG	WATI	ER			
0-2	9 ¹ / ₂ ' 3.25" HSA	DATE	TIME	SAMPI DEPT			VE-IN EPTH	FLI	JD LE	VEL	WATI LEVE		THE A		
291/2-3	9 ¹ / ₂ ' RDF w/DM	11/27/13	10:54	29.	0 27.0	2	3.3				20.0		SHEET		
		11/27/13	11:04	29.	0 27.0	2	1.8				19.0	,	EXPLA		,
BORIN COMP	NG LETED: 11/27/13											′	TERMIN		
	M LG: SHS Rig: 91C					1		- E					TU	IS LO	G



AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO							RING N		1124	ST	(p. 2	2 of 2	2)
PROJECT:	Southwest Light Rail Transit Proj									-			
	Hennepin Co. C	Coordin	ates: <u>N</u>	1	67038	3		E, ť	522892				
DEPTH IN FEET	MATERIAL DESCRIPTION		GEOLOGY	N	мс	SA 1	MPLE TYPE	REC IN,	FIELD	0 & LAI	BORAT LL		FEST %-#2
33 - Wa	AND, fine grained, brownish gray, aterbearing, loose to medium dense (SP) (A-3) ontinued)		COARSE ALLUVIUM (continued)	18	W	X	SS	12					
35 - SA	AND WITH GRAVEL, medium to fine ained, brownish gray, waterbearing, medium onse (SP) (A-1-b)			17	W	Å	SS	10					
37 <u>SA</u> 38 wa 39 -	AND, fine to medium grained, brownish gray, aterbearing, medium dense (SP) (A-3)			18	W	Á	.SS	12	~-				
40 - SA	AND, fine grained, brownish gray, aterbearing, medium dense (SP) (A-3)			18	w	Ŕ	SS	12					
	ND OF BORING												
									•				
							-					01-D	

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JC	DB NO: 01-05697	<u>,, , , , , , , , , , , , , , , , , , ,</u>	нат т. ц. т.			LC	OG OF I	BOR	ING N	0	1125	ST	(p. 1	of	1)
PROJE	CT: Southwest Ligh	t Rail Tra	ansit Pro	oject,	PEC East;	Hopl	kins (to N	Iinno	eapol	lis				
SURFA	CE ELEVATION: 818.0	He	ennepin Co.	Coordir	nates: <u>N</u>	1	67231	l		Е :	52312				
DEPTH IN FEET	MATERIAL I	DESCRIPTION	1		GEOLOGY	N	MC	SAN	MPLE YPE	REC IN.	FIELD	0 & LA	BORAT		TESTS 1 1/6-#20
1 - 2 -	FILL, mostly sand with silt silty sand and ashes/cinder dark brown (A-1-b, A-2-4)	s, brown, bl			FILL	17	, M	M	SS	16					
3 - 4 -	FILL, mostly fat clay, a litt brownish gray (A-7-6)	le silt, gray	and			13	М	E E	SS	0					
5 6 7	FILL, mixture of sandy lea	n clay and s	ilty sand, ots (A-6,			8	<u>₹</u>	R	SS	14	35 31		-		
8 9	A-2-4) FILL, mostly fat clay, gray		(176)			8	M	X P	SS	8	. 46				
10 - 11 - 12 -	FILL, mostly fat clay with				SWAMP	26	M/W	, X F	SS	8	39				
13 - 14 -		sapric peat (OH)			6	M	R R	SS	12	43				
15 - 16 - 17 -	ORGANIC CLAY, trace r soft (OH) (A-7-5)					4	M	R	SS	18	85	7.1			
18 – 19 –	FAT CLAY, brownish gra	y, soft (CH)	(A-7-6)		FINE ALLUVIUM	3	M	R	SS	24	45				
20 - 21 -	END OF BORING					4	M	A	SS	24	56		105	27	
	END OF DOMING	·													
ũ															
DE	EPTH: DRILLING METHOD	Г		1	ER LEVEL ME			1			11/1		NOTE:	REF	ER TO
0-1	19½' 3.25" HSA	DATE	TIME	SAMP DEP			VE-IN EPTH	FLU	ORILLI UID LE	NG EVEL	WATI LEVI		THE A		
		11/27/13	10:30	9.0			8.3				6.2		EXPLA		
	NO	11/27/13	11:00	21.		-	1.2				18.		TERMI		
BORI	PLETED: 11/27/13	11/27/13	11:15	21.	5 19.5	1 7	1.2			1	17.4	4	I TATATAT	10LO	



AET JO				•			G OF :						(p. 1	. 01 1	· <u>J</u>
PROJEC						-									
SURFA	CE ELEVATION:818.9	H	ennepin Co.	. Coordir	nates:	<u>N 1</u>	67378	}]	E :	52338				
DEPTH IN FEET	MATERIAL I	DESCRIPTION	N		GEOLOGY	N	MC	SAM TY	IPLE PE	REC IN,	FIELD WC	O&L/	ABORAT		ES1 %-#2
1 - 2 -	FILL, mostly silty sand, a ashes/cinders, trace roots,	ittle gravel a plack (A-2-4	and 4)		FILL	14	М	X	SS	12					
3 - 4 -	FILL, mostly lean clay, a l	brown (A-4	i, A-3)			16	М	X R	SS	12	18				
5 — 6`—	FILL, mostly sand with sil brown (A-3) FILL, mostly sand with sil clayey sand, brown, a little	t and gravel	, a little			11	М	R	SS	8					
7 — 8 — 9 —	FILL, mostly sand with sil light brown (A-3)	t, a little silt	y sand,			12	M	F	SS	10					
10 — 11 —	FILL, mostly sand with sil clayey sand, brown (A-3)	t, a little gra	vel and			8	М		SS	14					
12 13 14	FILL, mixture of silty sand trace shells and roots, ligh little dark brown (A-4) BOGLIME, light gray (MI	brownish g	c clay, gray, a		SWAMP DEPOSIT	7	M		SS	16	24 44		-		
15 — 16 —						2	M	H	SS	24	60	0.9			
17	FAT CLAY, grayish brow laminations of silt (CH) (A		,		FINE ALLUVIUM	WH		X H	SS	24	57				
20 - 21 -					2	WH	M	R	SS	24	69				
22 23 24	FAT CLAY, brownish gra (A-7-6)	y, soft to fii	rm (CH)			2	M	A H	SS	16	72		105	28	
25 — 26 —	SAND, fine grained, brow	nish gray,			COARSE	6	M/W		SS	24	73			-	
25 - 25 - 26 - 26 - 27 - 28 - 28 - 29 - 30 - 30 - 29 - 30 - 29 - 30 - 20 - 20 - 20 - 20 - 20 - 20 - 20	waterbearing, medium der clayey sand above 27' (SP	ise, laminati) (A-3)	ons of			L		2222	<u>.</u>						
					•	27	w	X	ŞS	16					
31 – 31 – DEI	END OF BORING														
DEJ	PTH: DRILLING METHOD			WAT	ER LEVEL M	EASUR	EMEN	TS					NOTE:	REFE	R T
	.9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASING	G CA I DE	VE-IN PTH	DI FLU	RILLI ID LE	NG EVEL	WAT LEVI	ER EL	THE A		
		11/27/13	9:30	26.	5 24.5	2	4.3				21.	7	SHEE		
0-2 BORIN	JG	11/27/13	9:55	31.	0 29.5	2	7.1				18.		EXPLA TERMIN		
BORIN COMP	LETED: 11/27/13			1											



ſ	AET JC	B NO:	01-05	697				-		LO	GOF	BOI	RING N	0	1127	ST	(p. 1	of	<u>l)</u>
	PROJE	CT:	Southv	vest Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East; l	Hopl	cins 1	to I	Minne	eapol	lis				
	SURFA	CE ELEV	ATION:	821.7	H	lennepin Co.	Coordi	nates:	<u>N</u>	1	67506	5		<u>E</u> :	52365				
	DEPTH IN FEET		М	ATERIAL D	ESCRIPTIO	N		GE	ÓLOGY	N	мс	SA T	MPLE YPE	REC IN.	FIELD WC	0 & LA DEN	BORAT		FESTS %-#200
	1	ashes	cinders, tr		a little grave black, froze			FILI			F/M	M	SS	24	12				
	2 3	grave	, mixture o l, clayey sa	nd and silt	silt and sar y sand, bro					25	М	\square	SS	17					
	4 — 5 —	FILL.	mostly sa	wn (A-2-4 nd with gra	, A-3) ivel, a little rown (A-1-	clayey	-			16	M	ł	SS	15					
	6 — 7 —				brown, a lit			COA	ARSE		101	A FI	55	15					
	7 8 9	moist	, medium c	lense (SP)	(A-3) (poss	ible fill)		ALL	LUVIUM FILL	16	М	X F	SS	16					
	10 - 11 -	-						* * *		16	M	A P	SS	18					
	12 13				Ĩ					17	M		SS	18					
	14 15									17	M		SS	17					
	16 - 17 -				little gravel ry stiff (CL			TIL	L	22	М		SS	14	17				
	18 - 19 - 20 -		VEY SAN	D. gravish	brown, a lit	ttle brown.						F	~~~						
	20 -	stiff,	lamination OF BOR	s of sand (SC) (A-6)					13	M	А	SS	1					
12/20/13																			
LL.GDT 12																			
T+CPT+WE																			
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT						·					-					-			
01-05	DE	PTH:	DRILLING	METHOD			WAT	ER L	EVEL MEA	ASURI	EMEN	TS					NOTE:	REFE	ER TO
DINATES	0-1	19½'	3.25" HS2	4	DATE	TIME	SAMP DEP		CASING DEPTH		VE-IN PTH	FL	DRILLI JUID LE	NG EVEL	WAT LEVI	<u>EL</u>	THE A		
COOF					11/27/13	10:40	21.	U	19.5		1.0				Non		EXPLA		
RP W-	BORI	NG										-							GY ON
AET_COF	DR: 7	PLETED:		g: 85	<u>``</u>				भाषात में र प्रह ार र								TH	IIS LO	G

03/2011



Southwest LighELEVATION:822.1MATERIAL IILL, mostly silty sand wir oncrete and brick, a little rown, frozen to 4" (A-2-4)ILL, mostly gravelly silty and, grayish brown (A-2-4)ILL, mixture of sand with ttle gravel and clayey san rown (A-2-4)ILL, mostly sand, a little rown, a little grayish browILL, mostly sand, a little rown, a little grayish browILL, mostly sand with sil lay, brown and light gray A-1-b, A-7-6)AT CLAY, brownish gra ilt (CH) (A-7-6)	H DESCRIPTION th gravel, pic ashes/cinden t) / sand, a littl 4) h silt and silt id, light brow clayey sand, wn (A-3)	Tennepin Co. N eces of rs, dark e clayey ty sand, a wn and , light , a little fat noist	Coordi	GEC FILL	<u>N</u> DLOGY		cins 67628 мС F/M М М М	8 SA		E :	52392		BORAT		rests %-#2!
MATERIAL I ILL, mostly silty sand wi oncrete and brick, a little rown, frozen to 4" (A-2-4 ILL, mostly gravelly silty and, grayish brown (A-2- ILL, mixture of sand with ttle gravel and clayey san rown (A-2-4) ILL, mostly sand, a little rown, a little grayish brow ILL, mostly sand with sil lay, brown and light gray A-1-b, A-7-6)	DESCRIPTION th gravel, pic ashes/cinden 4) / sand, a little 4) h silt and silt ad, light brow clayey sand, wn (A-3) t and gravel ish brown, n	N eces of rs, dark e clayey ty sand, a wn and , light , a little fat noist		GEC FILL	DLOGY	N 34 12 32 26 14	MC F/M M M M	SA	MPLE YPE SS SS SS SS SS	REC IN. 8 3 18 18 18	FIELD) & LA	1		1
ILL, mostly silty sand wir oncrete and brick, a little rown, frozen to 4" (A-2-4 ILL, mostly gravelly silty and, grayish brown (A-2- ILL, mixture of sand with ttle gravel and clayey san rown (A-2-4) ILL, mostly sand, a little rown, a little grayish brow ILL, mostly sand with sil lay, brown and light gray A-1-b, A-7-6)	th gravel, pid ashes/cinden 4) / sand, a littl 4) h silt and silt ad, light brow clayey sand, wn (A-3) it and gravel ish brown, n	eces of rs, dark e clayey ty sand, a wn and , light , a little fat noist		FILL		 34 12 32 26 14 	F/M M M M		SS SS SS SS SS	IN. 8 3 18 18 14	WC		1		т —
oncrete and brick, a little rown, frozen to 4" (A-2-4 ILL, mostly gravelly silty and, grayish brown (A-2- ILL, mixture of sand with ttle gravel and clayey san rown (A-2-4) ILL, mostly sand, a little rown, a little grayish brow ILL, mostly sand with sil lay, brown and light gray A-1-b, A-7-6) AT CLAY, brownish gra	ashes/cinder 4) 7 sand, a littl 4) h silt and silt id, light brow clayey sand, wn (A-3) It and gravel, ish brown, n	rs, dark e clayey ty sand, a wn and , light , a little fat noist		FINE		12 32 26 14	M M M		SS SS SS	3 18 18 18					
ILL, mostly gravelly silty and, grayish brown (A-2- ILL, mixture of sand with ttle gravel and clayey san rown (A-2-4) ILL, mostly sand, a little rown, a little grayish brow ILL, mostly sand with sil lay, brown and light gray A-1-b, A-7-6) TAT CLAY, brownish gra	v sand, a littl 4) h silt and silt id, light brov clayey sand, wn (A-3) lt and gravel, ish brown, n	ty sand, a wn and , light , a little fat noist				32 26 14	M M M		SS SS SS	18	45				
ttle gravel and clayey san rown (A-2-4) ILL, mostly sand, a little rown, a little grayish brow ILL, mostly sand with sil lay, brown and light gray A-1-b, A-7-6) AT CLAY, brownish gra	clayey sand, wn (A-3) t and gravel ish brown, n	, light , a little fat noist				26	M		SS SS	18	45				
rown, a little grayish brow ILL, mostly sand with sil lay, brown and light gray A-1-b, A-7-6) AT CLAY, brownish gra	wn (A-3) It and gravel ish brown, n	, a little fat noist				14	М		SS	14	45				
lay, brown and light gray A-1-b, A-7-6) AT CLAY, brownish gra	ish brown, n	noist				-					45				
	ay, firm, lam	inations of				6	М		SS	24	45				
										1				1	1
						6	M		SS	21	40				
· .						8	M		SS	24	37				
AT CLAY, brownish gra and (CH) (A-7-6)	ay, firm, lam	inations of				8	М	X	SS	.24	30		56	21	
END OF BORING			•												
	1		11/4 7		VELME										
I; DKILLING METHOD						-			ייזקח		11/AT	ED			
2' 3.25" HSA	DATE	TIME	DEP	TH	DEPTH	DE	PTH	FI		EVEL	LEVI	EL			
	11/27/13	9:20	21	.5	19.5	2	1.5				Nor				
4	11/27/13	9:30	21	.5	19.3	2	1.5				Nor	IC			
TED: 11/27/13												1			
	nd (CH) (A-7-6) ND OF BORING DRILLING METHOD 3.25" HSA	DRILLING METHOD 3.25" HSA DATE 11/27/13 ED: 11/27/13	DRILLING METHOD 3.25" HSA DATE TIME 11/27/13 9:30 ED: 11/27/13	ND OF BORING WAT DRILLING METHOD WAT 3.25" HSA DATE TIME SAMP 11/27/13 9:20 21 11/27/13 9:30 21 ED: 11/27/13 9:30 21	Ind (CH) (A-7-6) Image: Constraint of the system of th	Ind (CH) (A-7-6) Image: Character of the system of the	Ind (CH) (A-7-6) 8 ND OF BORING 8 DRILLING METHOD WATER LEVEL MEASURI 3.25" HSA DATE TIME SAMPLED DEPTH CASING DEPTH CASING DEPTH 11/27/13 9:20 21.5 19.5 2 11/27/13 9:30 21.5 19.3 2 ED: 11/27/13 9:30 21.5 19.3 2	Ind (CH) (A-7-6) 8 M ND OF BORING 8 M DRILLING METHOD WATER LEVEL MEASUREMEN 3.25" HSA DATE TIME SAMPLED DEPTH CASING DEPTH CAVE-IN DEPTH 11/27/13 9:20 21.5 19.5 21.5 ED: 11/27/13 9:30 21.5 19.3 21.5	md (CH) (A-7-6) 8 M ND OF BORING	md (CH) (A-7-6) 8 M X SS ND OF BORING Image: Signal state	md (CH) (A-7-6) 8 M X SS 24 ND OF BORING Image: Signal System of Signal	md (CH) (A-7-6) 8 M SS 24 30 ND OF BORING Image: Signature of the second secon	Ind (CH) (A-7-6) 8 M X SS 24 30 ND OF BORING Image: Signal Ample and Signa	Ind (CH) (A-7-6) 8 M SS 24 30 56 ND OF BORING Image: Signal Stress Str	Ind (CH) (A-7-6) 8 M SS 24 30 56 21 ND OF BORING Image: Signal Stress

03/2011



AET JO	DB NO: 01-05697						LC	GOF	BOI	RING N	0,	1129	ST	(p.]	l of 1	l)
PROJEC	CT: Southwest Ligh	t Rail Tra	ansit Pro	ject,	PEC	C East; I	Iopl	kins 1	to]	Minn	eapol	lis				
SURFA	CE ELEVATION: 822.6	He	ennepin Co.	Coordi	nates:	<u>N</u>	1	67789)		E :	52422	3			
DEPTH	MATERIAL D	ESCRIPTION	J		GF	EOLOGY	N	MC	SA	MPLE	REC	FIELI) & LA	BORAT	FORY T	ESTS
IN FEET										ГҮРЕ	IN.	WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a la ashes/cinders, black, frozer	ittle gravel a a to 4" (A-2-	and -4)		FILI	Ĺ	56	F/M	M	SS	18					
2	FILL, mostly silty sand wit ashes/cinders, black (A-2-4	h gravel, a l)	ittle				28	M	\mathbb{N}	SS	18					
4 — 5 —	FILL, mostly lean clay, a li little light brown (A-7-6)	ttle sand, br	own, a				16	М	ł	SS	16	19				
6 7	FILL, mostly silty sand, bla	nck (A-2-4)							E							
8							4	M	X A	SS	16					
10 - 11 -	FILL, mostly sand, grayish	brown (A-3	3)				17	W	X	SS	18					
12 - 13 -	FILL, mostly sand with silt	, brown (A-	-3)				9	w	K	SS	24					
14 -	FAT CLAY, grayish brown	n, firm (CH)) (A-7-6)		FIN ALI	ie Luvium	8	М	R	SS	20	39				
16 17	FAT CLAY, brownish gra	y, firm, lam	inations of						R							
18 19	silt (CH) (A-7-6)	<u> </u>	• • • •				7	M	A	SS	20	44				
20 - 21 -	FAT CLAY, grayish brown waterbearing sand (CH) (A	n, firm, lam -7-6)	inations of			anna 144	5	M/W	ľ	SS	24	34				
	END OF BORING															
-) j		Å														
5																
										1						
DE	PTH: DRILLING METHOD			WA1	L FER L	EVEL MEA	4SUR	L EMEN	ITS	1			<u> </u>	NOTE:	REE	
		DATE	TIME	SAMP		CASING DEPTH		VE-IN EPTH		DRILLI	NG	WAT	ER		ATTAC	
DE DE BORI COMI	19½' 3.25" HSA			<u> </u>			+			LUID LI	LVEL	LEV.			TS FOI	
5		11/26/13	1:03	11		9.5		0.6 9.9	+			 		EXPLA		
BORI	NG	11/26/13 11/26/13	1:13	11. 21.		9.5 19.5	_	1.2				18.		FERMI		
11	PLETED: 11/26/13	11/26/13	1:30	21		19.5		9.7	+			18.		Tŀ	IS LO	G
DR: J	IM LG: SHS Rig: 91C	11/20/13	1947	41		17.5		2.1			1				01-D	HR-0

03/2011



AET	`JOE	B NO: 01-05697						LO	G OF I	BOR	UNG N	0	1130) ST	(p.)	lof	2)
PRO.	JEC	T: Southwest Ligh	t Rail Tra	ansit Pro	ject, P	EC East	t; Ho	opk	ins t	to N	Minne	eapol	lis				
SURI	FAC	E ELEVATION: 822.4	He	ennepin Co.	Coordina	tes:	N	16	57899)		E;	52451	3			
DEPTI	Ή	MATERIAL I	DESCRIPTION	J		GEOLOGY		N	MC	SA	MPLE YPE	REC		r	BORA	ORY	TEST
IN FEET	Г								me	1	YPE	IN.	WC	DEN	LL	PL	%- #2
	1	FILL, mixture of silty sand wood, a little gravel, dark b frozen to 4" (A-2-4)	prown and b	lack,	F	FILL	1	14	F/M	X	SS	12					
3		FILL, mixture of clayey sa sand, dark brown and light (A-2-6, A-1-b)					. 2	27	M	X F	SS	12	7				
- 5 6	5 -	FILL, mostly silty sand, da little grayish brown (A-2-4	rk brownish)	gray, a				32	M	X A	SS	0					
8				•]	16	_ ⊻_ M/W	Ň	SS	10					
10 11		FILL, mostly sand, gray an	d brown (A	-3)				5	W		SS	12					
12 13 14	3 -	FAT CLAY, trace roots, g mottled, soft (CH) (A-7-6)	ray and brow	vn		FINE ALLUVIUI	M	3	М	H I	SS	8	42				
15 16	5 — 6 —	FAT CLAY, brownish gra soft to very soft, lamination sand (CH) (A-7-6)	y to grayish ns of waterb	brown, bearing				2	M/W		SS	6	56				
17 18 19								1	M/W		SS	12	63				
20	0 -						v	VH	M/W	X	SS	18	54				
23	2 - 3 -						v	VН	М	R	SS	18	81		82	26	
25	4 — 5 — 6 —	1					v	VН	M/W	R	SS	20	74				
27	7						V	VН	M/W	R	SS	22	70				
29 30 31	9 - 0 - 1 -						V	VН	M/W	R	SS	22	70			-	
т	DEP'	TH: DRILLING METHOD			WATE	R LEVEL M	/FASI		MFN'	IHI TS		I			NOTE		
									E-IN	1	ORHIT	NG	WAT	-	NOTE:		
	0-39	0 ¹ / ₂ ' 3.25" HSA	DATE	TIME	SAMPLI DEPTI	ED CASIN H DEPT	Η	DE	PTH	FL	DRILLI UID LE	ÈVEL	WAT LEVI		THE A		
		· ·	11/26/13	9:26	11.0	9.0		1().1				7.3		SHEE		
BOI	RIN	G ETED: 11/26/13													EXPLA FERMI		
; <u> COI</u>		LETED: 11/26/13 /1 LG: SHS Rig: 91C													Tł	IIS LC)G



AET JOI	B NO:	01-05	5697						LO	GOF	BOF	AING N	0	1130	ST	(p. 2	2 of 2	2)
PROJEC	T:	South	west I	light Ra	il Transit P	roject	PEC Ea	st; I	Iopl	cins (to I	Minno						÷
					Hennepin C	Co, Coord	inates:	N	1	67899)		E :	52451	3			
DEPTH IN FEET		N	MATERI	AL DESCR	IPTION		GEOLO	GY	N	MC	SA	MPLE YPE	REC) & LAI	BORAT	ORY	TES I
FEET								0.	14	MC		YPE	IN.	WC	DEN	LL	PL	%-#2
33 —	FAT (CLAY, br	rownish	gray to g	rayish brown, waterbearing		FINE ALLUVI	IM	wн	M/W	М	SS	22	66				
34	sont it	CH) (A-7	7-6) <i>(co</i> i	ntinued)	water bearing		(continue	d)	VY II	141/ 44	Δ	00	22					
34	FAT	LAY tr	ace root	ts dark br	ownish gray,						R			-52				
-	very s	oft, lamir	nations of	of organic	clay (CH)		COARSE		10	M	XI	SS	24	52				
36 -	(A-7-6		UT F	no araina	d grou moist	[_]	ALLUVI	UM			P		,					
37 —	loose	(SP-SM)	(A-3)	ne grame	d, gray, moist,						M	<u> </u>	1.6					
38 -	SANI	WITH S	SILT, a	little grav	el, medium to		· . •		8	W	M	SS	16					
39 -	fine g	rained, da (SP-SM)	ark brov	vnish gray	v, waterbearing	, <u></u>					Ø							
40 -					d, brown,		· .		16	W	M	SS	18					
41 -	water	bearing, n	nedium	dense (SI	P-SM) (A-3)		<u>.</u>				Д							
	END	OF BOR	ING															
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AET JO	B NO: 01-05697						LOG	GOF I	3OF	RING NO	D	1143	ST	(p. 1	of	2)
PROJEC	CT: Southwest Light	t Rail Tra	ansit Proj	ject,]	PEC East	t; Ho	pki	ins t	o I	Minne	eapol	is				
SURFAC	CE ELEVATION:866.2	H	ennepin Co. (Coordin	ates:	<u>N</u>	16	0773]	Ε :	51772				
DEPTH N	MATERIAL D	ESCRIPTION	Ā		GEOLOGY	Y 1	N	мс	SA	MPLE YPE	REC IN.			BORAT		1
IN FEET			.1. 1	1	FILL							WC	DEN	LL	PL	%-# 20
1	FILL, mostly silty sand, trac to black (A-2-4) FILL, mostly sand with silt		/	/		2	22	М	X	SS	16					
2 — 3 —	FILL, mostly said with shi roots, dark brown (A-1-b) FILL, mixture of clayey sar	_	/	/		12	23	M	X	SS	14	11				
. 4 -	a little gravel, dark brown a	nd light bro	own	/===	FINE				Ð							
5 — 6 —	SANDY ORGANIC CLAY roots, black, stiff (OH) (A-				110001101	M	9	М	X म	SS	10	39				
7 — 8 —	SILTY SAND, a little grav grained, dark brown, moist, (A-2-4) (possible fill)	el, medium , loose (SM	to fine /SC)		COARSE ALLUVIU OR FILL	М	7	Μ		SS	16					
9 — 10 —	GRAVELLY SAND WITH cobbles, trace roots, medius light brownish gray, a little	m to fine gr brown, mo	ained, ist, dense,				33	Μ	¥ X	SS	6					
11 — 12 —	laminations of clayey sand (possible fill) GRAVELLY SAND, medi			/	COARSE ALLUVIU	M	20	М	Ĭ	SS	16					
13 — 14 —	grayish brown and brown, a waterbearing, medium dens	moist to 14 se, lenses o	1⁄2' then f fine to					Ţ	E							
15 -	medium grained sand with	silt (SP) (A	-1-b)				25	W	M	SS	6					
16 – 17 –					•				1							
18 19					• .		14	W	Å	SS	10					
20 - 21 -	SAND WITH GRAVEL, r brown, waterbearing, medi (A-1-b)	nedium gra um dense (i	ined, SP)		•		18	W	Ķ	SS	12					
22 - 23 -					•		21	w	X	SS	10					
24 - 25 -	-		·				22	W	X	SS	12)				
26 - 27 -	SAND, a little gravel, med waterbearing, medium den						19	W	X	SS	14					
28 - 29 -	GRAVELLY SAND, med	ium argina	1 arosz	-					$\sum_{i=1}^{n}$							
30 -	- waterbearing, medium den	se (SP) (A-	1-b)				22	w	\square	SS	10					
31 -	· · · · · · · · · · · · · · · · · · ·	.		_	·] ·]				\mathbb{Z}				 			
DE	PTH: DRILLING METHOD	 			ER LEVEL			· · ·		•	1			NOTE	REF	ER TO
)-17' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASE TH DEPT	NG IH	CAV DEI	'E -IN PTH	FI	DRILLI JUID LI	NG EVEL	WAT LEV	ER EL	THE A		
	59½' RDF w/DM	8/28/13	3:00	16.	0 14.	5	14	1.5				14.	4	SHEE		
		8/29/13	8:15	16.	0 14.	5	14	1.5				14.		EXPLA		
BORI	NG PLETED: 8/29/13	8/29/13	8:30	18.	5 17.	0	17	7.0		_		15.	<u>v</u>	TERMI		
	GH LG: TK Rig: 1C	8/29/13	8:40	18.	5 17.	0	17	7.0				15.	0	Tł	HIS LO	



AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

PROJEC	T: Southwest Light Rail Transit Pro	ject, I	PEC East; I	Iopk	cins-1	to N	linne	eapol	is				
FROJEC	Hennepin Co. (50773		.]		51772	6			
EPTH							,		FIELI) & LA	BORAT	FORY	TEST
IN FEET	MATERIAL DESCRIPTION		GEOLOGY	N	MC	SAI	MPLE YPE	REC IN.	WC	DEN	LL	PL	%-# 2
33 - 34 -	SAND, a little gravel, medium to fine grained, gray, waterbearing, medium dense (SP) (A-1-b) (continued)			22	W	Ŗ	SS	14					
35 —				18	w	\square	SS	14				-	
36 — 37 —	• •					Z					-		
38 — 39 —	SANDY SILT, gray, wet, medium dense (ML) γ (A-4)		FINE ALLUVIUM	22	W	Å	SS	14	20				
40 - 41 -	GRAVELLY SAND WITH SILT, possible cobbles, medium to fine grained, brownish gray, waterbearing, medium dense (SP-SM) (A-1-b)		COARSE ALLUVIUM	23	w	Å	SS	12		•		•	
42 — 43 — 44 —									•				
45 — 46 —	SAND WITH GRAVEL, medium grained, grayish brown, a little brown, waterbearing, medium dense to very dense, a lens of silt at 55'			55	W	M	SS	0	•				
47 48 49	(SP) (A-1-b)			-									
50 51			,	29	w	Ŗ	SS	6					
52 - 53 -			~			$\left \right\rangle$							
54 55 56				51	W	X	SS .	12					
50			· · · · · · · · · · · · · · · · · · ·										
59 - 60 -	SAND WITH SILT, fine grained, brown, waterbearing, very dense, laminations of medium grained sand (SP-SM) (A-3)	1	· · ·	61	w	X	SS	10					
61 -	END OF BORING												



AET JC	DB NO: 01-05697		· · · · · · · · · · · · · · · · · · ·				LO	GOFI	BOF	RINGN	0	1144	ST	(p. 1	lof	2)
PROJE	CT: Southwest Ligh	t Rail Tr	ansit Pro	ject,]	PECI	East; H	Iopk	cins (to I	Minne	eapol	lis		_		
SURFA	CE ELEVATION:868.9	[.] H	lennepin Co.	Coordin	nates:	<u>N</u>	10	52372	2]	Е :	51782				
DEPTH IN FEET	MATERIAL D	ESCRIPTIO	N		GEOI	LOGY	N	MC	SA T	MPLE YPE	REC IN.	FIELI WC	1	BORAT	T	TESTS %-#200
1 2 3	FILL, mostly silty sand, a li concrete, glass, trace roots, 8" Crushed limestone base, FILL, mostly sand with silt, sand and clayey sand, brow	dark brown light brown , a little gra	n (A-2-4) n (A-1-b) wel, silty		FILL		30 7	M		SS SS	16 14					
4 5 6	grayish brown (A-3) FILL, mostly sand, a little g FILL, mostly sand with silt brown (A-3)	, trace roots	s, dark				6	М		SS	12				1	
7 8 9	SAND WITH SILT, mediu brown to dark brown, water (SP-SM) (A-1-b)				COAR ALLU	SE VIUM	3	w Y		SS	10					
10 -							2	w	Ą	SS	10					
12 - 13 - 14 -	SANDY LEAN CLAY, a 1 to very stiff (CL) (A-6)	ittle gravel	, gray, firm		TILL		8	М	X	SS	10	19				
15 - 16 -	-						17	w	K	SS	14	13				
17 - 18 - 19 -	CLAYEY SAND, a little g (SC) (A-6) SAND WITH SILT, a little medium grained, brown, w	e gravel, fir aterbearing	ne to		COAR ALLU	RSE IVIUM	37	М		SS	16	13				
20 - 21 - 22 -	\lens of silty sand (SP-SM) SAND, a little gravel, med brown, waterbearing, medi fine grained silty sand (SP)	ium to fine um dense,	grained, lenses of		•		19	W		SS	12					
23 -					• • • •		25	W	Ķ	SS	10					
24 - 25 - 26 -	SILTY SAND, a little grav dense (SM) (A-2-4)				TILL		30	W	X	SS	12					
23 - 26 - 27 - 28 - 29 - 30 - 31 - 29 - 31 - 31 - 31 - 31 - 31 - 31 - 31 - 3	hard, laminations of sand f	ravel, brov rom 29½' t	vnish gray, o 33' (SC)				46	M	X	SS	16	10				
30 - 31 -							34	M	X	SS	14	10		•		
DE	PTH: DRILLING METHOD			WAT	ER LEV	/EL MEA	SURI	EMEN	TS			•		NOTE	REF	ER TO
		DATE	TIME	SAMPI DEP	LED (IH	CASING DEPTH	CAV	VE-IN PTH	FI	DRILLI JUID LI	NG EVEL	WAT LEV	ER	THE A	ATTA(CHED
	-9½' 3.25" HSA 59½' RDF w/DM	8/28/13	9:30	11.		9.5	1	.5				9.3		SHEE	TS FO	R AN
9 ¹ /2-: BORI COM		8/28/13	9:40	11.		9.5	+	.5				9.2		EXPLA	NATI	ON OF
BORI	NG PLETED: 8/28/13	8/28/13	9:50	11.		9.5	+).5	+			9.2	2	FERMI	NOLO	GY ON
- n	GH LG: TK Rig: 1C						1							TH	HIS LO)G
DR: 0		L	L	L			<u> </u>			·······					01-I	DHR-(

03/2011



ROJEC	T: Southwest Light Rail Transit Pro Hennepin Co. 0	 		52372				51782	9			
PTH					54	MPIE	REC	FIELI) & LAI	BORAT	'ORY '	TEST
IN EET	MATERIAL DESCRIPTION	GEOLOGY	N .	MC	Ť	MPLE YPE	IN,	WC	DEN	LL	. PL	%- #
			41	M	M	SS	14	10				
33 -	SAND WITH SILT, fine grained, brown to	COARSE	,		Ĥ			-				
34	brown and gray, waterbearing, dense, a lens of silt at 33 ¹ /2' (SP-SM) (A-3)				H							
35 -			55	W	М	SS	12					
36 -	SAND, a little gravel, fine to medium grained,				2							
37 -	brown, waterbearing, very dense, a lens of fine		76	W	М	SS.	12					
38 -	grained silty sand (\overline{SP}) (A-3)				H							
39 -	SAND WITH SILT, a little gravel, medium				H							
40 -	grained, dark brownish gray, waterbearing, very dense (SP-SM) (A-1-b)		64	W	М	SS	10					
41					2							
42 -					$\left \right\rangle$				2			
43 -	SAND WITH SILT, fine to medium grained,				$\left \right\rangle$							
44 -	grayish brown to brownish gray, waterbearing, very dense (SP-SM) (A-3)	•			\mathbb{H}	~~	10					
45		•	65	W	Д	SS	12					
46 — 47 —					\mathbb{Z}							
47	· · · · · · · · · · · · · · · · · · ·				\mathbb{Z}							
40 —	SAND, fine grained, grayish brown, waterbearing, very dense (SP) (A-3)				$\left \right\rangle$							
5 0 -	water bearing, very dense (51) (11)		69	w	$\overline{\mathbb{M}}$	SS	14					
51 -			09	vv	Д	20	14					
52 —					K			、 、				
53	х. 				K		-					
54 —					$\left \right\rangle$							
55			61	w	\square	SS	14					
56 —					Ą							
57 —					$\langle \langle$							
58 -	SAND, fine to medium grained, grayish brown,				$\langle \langle$							
59 —	waterbearing, very dense (SP) (A-3)				$\langle \langle$							
60 -			70	W	\mathbb{N}	SS	10					
61 –	END OF BORING									-		-
	END OF BORING											
												1.



AET JO	OB NO: 01-05697						LO	GOF	BO	RING N	О.	1148	ST	(p. 1	lof	2)
PROJEC	CT: Southwest Ligh	t Rail Tr	ansit Pro	oject,	PEC	East;]	Hop	kins	to	Minn	eapo	lis		•		
SURFA	CE ELEVATION: 864.6	H	Iennepin C	o. Cooi	rdinate	es: <u>N</u>	<u>, 1</u> (63206	5		E :	51807				
DEPTH	MATERIAL D	FSCRIPTIO	N		GEO	DLOGY	Ν	MC		MPLE	REC	FIELI		BORA	FORY '	TEST
IN FEET	MATERIAL D							WIC		YPE	IN.	WC	DEN	LL	PL	∲ ⁄₀-#2
1 — 2 —	FILL, mostly silty sand wir sapric peat and ashes/cinde trace roots, dark brown and \(A-2-4)	ers, pieces o l brown, a	of glass, little black		FILL		10	M M	M	SS SS	15 7					
3 - 4 5	FILL, mixture of silty sand a little gravel, dark brown, brownish gray (A-2-4)	a little ligh	nt	, 				-								
6 -	FILL, mostly sand, a little light grayish brown (A-3)	-	•		COA	DOF	13	М	Å FJ	SS	8			•		
7 — 8 — 9 —	SAND WITH SILT AND cobbles, fine to medium gr brown, medium dense (SP	ained, ligh -SM) (A-1-	t grayish -b)			KSE UVIUM	27	М	A R	SS `	8					
10 — 11 —	GRAVELLY SAND WIT medium grained, light bro (SP-SM) (A-1-b)	wn, mediur	n dense		•		30	М	H H H	SS	2					
12 — 13 — 14 —	SAND, a little gravel, mec grayish brown, moist, med (A-1-b)	lium dense	(SP)				25	М	H H H	SS	5					
14 15 — 16 —	CLAYEY SAND, a little g very stiff (SC) (A-6)	· ·		, ///	TILL		18	М	X X X X X	SS	17	15			-	
17 — 18 — 19 —	CLAYEY SAND, a little g stiff (SC) (A-6) CLAYEY SAND WITH C cobbles, brown, hard (SC)	BRAVEL, I					17	⊻	A A K	SS	16	14				
20 21	ø		-				50/.2	М	AXAXX	SS.	8	12				
22 - 23 - 24 -	CLAYEY SAND, a little g cobbles, brown, very stiff, (SM/SC) (A-2-6)	a lens of s	ilty sand				17	м/w		SS	10	12				
24 25 - 26 -	CLAYEY SAND, a little g stiff (SC) (A-6)		•			÷.	19	M/Ŵ	R R	SS	17	10				
27 28 29	SAND WITH SILT, medi waterbearing, medium der	nse (SP-SM	I) (A-1-b)			ARSE UVIUM	12	w	R R	SS	18		`			
3031	SAND, possible cobbles, 1 brown, waterbearing, med clayey sand (SP) (A-1-b)	nedium gra ium dense,	ained, a lens of				25	w		SS	10					
וזת	PTH: DRILLING METHOD		<u></u>	WAT	ER LF	EVEL MEA	SURF	EMEN	<u> </u>	L	1	_J	<u> </u>	NOTE:	ייםםק וממק	 ЕР Т
		DATE	TIME	SAMP		CASING DEPTH		/E-IN PTH	· [· · · ·	DRILLI JUID LI	NG	WAT LEVI		THE A		
-0	-29' 3.25" HSA	DATE							FL	JUID LI	SVEL			SHEE		
29-3	39½' RDF w/DM	10/1/13	8:57	28.		27.0		6.7				21.		EXPLA		
DODD		10/1/13	9:07	28.	.5	27.0	2	4.2				18.	0	ERMI		
COMP	NG PLETED: 10/1/13															
DR: S	G LG: SB Rig: 91C									•					IIS LC 01-I	

03/2011



AET JOI	B NO:	01-(05697								LO	GÖF	BOI	RING N	Ю	1148	ST	(p. 2	2 OT	<u>2)</u>
PROJEC	CT:	Sout	hwest	Ligh	t Rail	Tran	sit P	roject	, PEC	East;	Нор	kins	to	Minn	eapo	olis				
						Henr	nepin (Co. Co	ordinates	: N	1	63206	6]	E É	51807	2			
EPTH							· ·		1				1			FIELI) & ĽA	BORAT	TORY	TEST
EPTH IN ÆET			MATER	RIAL D	ESCRIP	FION		•	GEOI	LOGY	N	MC	T T	MPLE YPE	IN.	wc	DEN	ĻL	PL	∲₀-#2
33 -	dense	D, mediu , lenses <i>inued)</i>	um grai of sand	ned, b l with	rown, v silt (SP)	vaterbe (A-1-	earing ·b)	,	COAR ALLU (contin	VIUM	39	W	Å	SS	14					
34	SAN	D WITH Im grain M) (A-1	ned, bro	a little wn, w	e gravel vaterbea	, fine t ring, d	o ense				40	·W	X	SS	10					
37 – 38 –	SAN cobbl water	O WITH es, fine bearing,	I SILT to medi , dense	AND ium gr (SP-S.	GRAVI ained, b M) (A-1	EL, pos prown, l-b)	ssible		· · · · · · · · · · · · · · · · · · ·		50	W	X	SS	6					
39 — 40 —	medi	O WITH 1m grain , a lens	ned, gra	y, wat	erbeari	ng, me	dium			·	30	w	Å	SS	11		-			
41 -		OF BO								• .		·								
		•														1				
	•																			
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AET JO	·	١							RING N			ST	(p. 1	lof	2)
PROJEC		t Rail Tr	ansit Pro	ject,]	PEC East				Minn						
SURFAC	CE ELEVATION: 867.4	H	lennepin Co.	Coordin	nates:	<u>N 1</u>	62761	l 		E	51789				
DEPTH IN FEET	MATERIAL D	ESCRIPTIO	N	•	GEOLOGY	N	MC	SA T	MPLE YPE	REĊ IN.	FIELI WC	D & LA	BORAT	1	TESTS %-#20
1 -	FILL, mostly silty sand, a li sand, trace roots, dark brow	ittle gravel /n, a little b	and clayey		FILL	20	M	M	SS	18				:	101120
2 3	(A-2-4) FILL, mostly silty sand wit cobbles, pieces of concrete	h gravel, po , a little ash	ossible es/cinders,			51	М		SS	4					
4 - 5 - 6 -	brown (Á-2-4) SILTY SAND, a little grav brown, moist, medium dens				COARSE ALLUVIUN OR FILL	1 25	M		SS	13					
7	SAND WITH SILT AND or grained, light brown, a little moist, medium dense (SP-S	e light brov	vnish gray,			19	М		SS	12					
9 - 10 - 11 -	fill) SAND WITH SILT, fine g moist, medium dense, a lan (SP-SM) (A-3)	rained, ligh nination of	t brown, lean clay		COARSE ALLUVIUN	ſ 17	M	L L	SS	14					
12	SAND, medium to fine gra moist, medium dense (SP-S	SM) (A-1-b)		· ·	14	M		SS	15					
14		n dense, a l	ens of sand			22	M		SS	14		-			
17 — 18 —	CLAYEY SAND, brown, laminations of waterbearin	g sand (SC) (A-6)		TILL	27		A N	SS	17	15				
19 20 21	CLAYEY SAND, a little g brown, stiff, laminations of (SC) (A-6)	f waterbear	ing sand		MIXED ALLUVIUN	⁴ 14	M/W	X X X X X	SS	. 17	13				
22 23 24	SAND WITH SILT, a little fine grained, brown, water dense (SP-SM) (A-1-b)	e gravel, me bearing, me	edium to edium		COARSE	A 16	w	R K	SS	15					
			-			15	w	X	SS	18	•				
27 – 28 – 28 – 29 –	GRAVELLY SAND WIT fine grained, brownish gra medium dense (SP-SM) (A	y, waterbea A-1-b)	ring,		· · ·	30	w	Ķ	SS	2					•
25 - 25 - 26 - 26 - 27 - 26 - 27 - 27 - 28 - 29 - 28 - 29 - 29 - 29 - 29 - 29	SILTY SAND, a little grav grained, brownish gray, we (SM) (A-1-b)					20	W		SS	13					
je DEI	PTH: DRILLING METHOD	·		WAT	ER LEVEL M	EASUR	EMEN	ITS	· · · · · · · · ·				NOTE:	REF	ER TO
	<u> </u>	DATE	TIME	SAMP DEP	LED CASIN IH DEPT	G CA	VE-IN EPTH	FI	DRILLI JUID LI	NG EVEL	WAT LEVI	ER	THE A		
	<u>5½' 3.25" HSA</u>	10/1/13	11:46	26.	·		3.2	+			21.		SHEE	TS FC	R AN
25 ¹ /2-4	9 ¹ / ₂ ' RDF w/DM	10/1/13	12:00	26.			2.2	+			18.		EXPLA	NAŢI	ON OF
0-2 25 ¹ /2-4 BORIN COMP	VG DLETED: 10/1/13	10/1/10						-					ERMI	NOLC	GY OI
								+					Tŀ	-IIS LC	G ·
DR: S	G LG: SB Rig: 91C	L												01-1	OHR-(

03/2011



AET JOF	B NO: 01-05697		LO	GOF	BORING N	0	1149	ST	<u>(p. 2</u>	of 2)
ROJEC	$\frac{1}{2} = \frac{1}{2} = \frac{1}$	EC East; H	lopł	cins 1	to Minn	eapol	lis				
	Hennepin Co. Coordinat			6276			517891	<u></u>		k	-
EPTH	· · · · · · · · · · · · · · · · · · ·				SAMPLE	REC	FIELD	& LAE	BORAT	ORY T	'ES
EPTH IN EET		GEOLOGY	N	MC	TYPE	IN.	WC	DEN	LL	PL P	⁄o-#
33 -	fine grained gray waterbearing dense (SP-SM)	COARSE ALLUVIUM (continued)	39	W	ss	13				-	
34 — 35 — 36 —	SAND WITH SILT, fine grained, brown, waterbearing, dense to medium dense (SP-SM) (A-3)		33	w	ss	.10					
37 — 38 —			40 [.]	w	ss	12					
39 — 40 —			29	w	∑ X ss	16					•
41 — 42 —			30	W	S ss	12					
43 — 44 —	GRAVELLY SAND WITH SILT, fine grained,		۰.			12					
45 - 46 - 47 -	brown, waterbearing, dense (SP-SM) (A-3) SAND, fine to medium grained, brown,		47	W	X ss	1					
47 48 49	waterbearing, medium dense, a lens of sand with silt at 48' (SP) (A-3)		19	W	ss s	10					
50 -			13	W	ss	1/2					
51 —	END OF BORING				<u> </u>						
			•								
×											
		·		~							
,				•							
										01-D	

03/2011



AET JOI	B NO: 01-05697	<u> </u>			· · ·	LO	GOF	BOR	ING N	D	1150) ST	(p. 1	l of 2	2)
PROJEC	T: Southwest Light	t Rail Tra	ansit Pro	ject,]	PEC East; I	Iopl	cins (to N	/linn	eapol	lis				
SURFAC	CE ELEVATION: 864.8	He	ennepin Co.	Coordin	ates: <u>N</u>	1	61728	3		E	51780	<u>`</u>			
DEPTH	MATERIAL D	FSCRIPTION	J		GEOLOGY	N	MC	SAI	MPLE	REC	FIELI) & LA	BORAT	FORY '	TEST
IN FEET	WATERIAL D		•			19	IVIC	T	YPE ·	IN.	WC	DEN	LL	PL	%-#2
1	FILL, mostly silty sand with little gravel and ashes/cinde (A-2-4)	rs, trace roo	ots, black		FILL	9	M	M	SS	20					
3 -	FILL, mostly sand with silt, silty sand, trace roots, brow (A-2-4, A-1-b)	n, a little bl	ack		COADSE	15	[·] M	X FI	SS	10		-			
5 6	SAND WITH SILT AND C medium grained, brown, mc (SP-SM) (A-1-b)	GRAVEL, f bist, mediur	ine to n dense		COARSE ALLUVIUM	11	M	H H	SS .	6					
7 8	SAND, a little gravel, medi brown, a little brown, moist waterbearing, loose, lenses	to about 9!	1/2' then			5	M .		SS	16					
9 10 11	(A-1-b)					5	M/W		SS	12					
12 — 13 —	SAND WITH SILT, a little grayish brown, a little dark medium dense, lenses of sil	brownish g	ray, wet;		· .	16	W/M		SS	10					
14	fines (SP-SM) (A-2-4) SAND WITH SILT AND (medium grained, grayish br waterbearing (SP-SM) (A-1	own, wet to				13	w		SS	10		n			
17 — 18 —	SAND WITH GRAVEL, n a little dark brownish gray, to very loose, lenses of fine with organic fines (SP) (A-	waterbearing grained sil	ng, loose			5	w		SS	10					
19 — 20 — 21 —	with organic times (31) (X-					4	W		SS .	18					
22 — 23 —	SAPRIC PEAT, black (PT)) (A-8)			SWAMP DEPOSIT	9	w	X	SS	18	188				
24 — 25 —	ORGANIC CLAY, trace sl brownish gray, soft to very	nells, gray t soft (OH) (0 (A-8)				M/W		SS	16	57				
26 — 27 — 28 —	-			<u>****</u> ****		WR	M/W		SS	· 20	87				
29 — 30 —	SAND WITH GRAVEL, r a little dark brownish gray,	nedium grai waterbeari	ined, gray ng, loose	1.8.4	COARSE ALLUVIUM	9	Ŵ	A A A A	SŞ	16					•••
31 -	(SP) (A-1-b)							A							
DEF	PTH: DRILLING METHOD			WAT	ER LEVEL MEA	ASUR	EMEN	ITS					NOTE	REF	ER D
		DATE	TIME	SAMP	LED CASING TH DEPTH	CA	VE-IN PTH	ן דו	DRILLI UID LI	NG	WAT LEV	ER		ATTA(
	9½' 3.25" HSA		11:15	11.			9.8	rL	רדי די	بلند ۷ د	<u>9.5</u>			TS FO	
291/2-4	9½' RDF w/DM	9/26/13).5		•		<u> </u>		EXPLA		
BORIN	IG	9/26/13	11:25	11. 18.	· · · · · · · · · · · · · · · · · · ·		6.9	+			15.		TERMI		
	NG LETED: 9/26/13	9/26/13	11:40	· · · · · · · · · · · · · · · · · · ·								1		HIS LC	
DR: S	S LG: GH Rig: 41C	9/26/13	11:45	18.	5 17.0	1	6.8				14.	7		01-I	

03/2011



	BNO: 01-05697	D. •				BORING			ST	<u>(</u>	
PROJEC									<u> </u>		
	Hennepu	n Co. Coo	rdinates: <u>1</u>		61728	<u>s</u>	E	51780			
DEPTH IN FEET	MATERIAL DESCRIPTION		GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	WC) & LA DEN	LL	 1ES1; •⁄6-#2
33 —	SAND, a little gravel, medium grained, gray waterbearing, medium dense (SP) (A-1-b)	,	•	12	w	ss	12				
34 —			•			Б.					Ì
35 - 36 -	GRAVELLY SAND, medium to fine grained gray, waterbearing, medium dense to loose ((A-1-b)	1, SP)		11	W	ss s	. 4				
37 —	(A-1-0)					<u>ل</u>					
38 -				8	W	X ss	3		-		,
39 -			· 			51					
40 -	SAND, a little gravel, medium to fine graine gray, waterbearing, loose (SP) (A-1-b)	d, .	•	.8	W	ss	8				
41 -						61					
42 - 43 -	SAND, fine to medium grained, brownish gr waterbearing, medium dense, lenses of fine	ay,		12	W	X ss	14		·		
43	grained sand with silt (SP) (Á-1-b)					\sum					
45 -	A			19	W	ss s	16				
46 -			•			\sum					
47 — 48 —				18	W	ss s	8				
49 — 50 —	SAND WITH SILT, fine grained, brownish gray, waterbearing, medium dense (SP) (A-3	5)	· - - - - - - - - -	23	w	S ss	16			r	
51 -	END OF BORING	[·:!·]				<u>/ </u>					
	· · · · · ·										
									-		
			-								
-							•.				
				-							
		,									
		-						•			



	AET JO	B NO: 01-05697					LC	G OF	BOF	RING N	0	1151	ST	(p. 1	of	2)
	PROJEC	CT: Southwest Ligh	t Rail Tr	ansit Proj	ject,	PEC East	Hop	kins 1	to I	Minne	eapol	is				
	SURFAC	CE ELEVATION: 865.3	H	Iennepin Co. (Coordin	nates:	N 1	61335	5	. <u>.</u>]	E :	517782	2			
	DEPTH			NT		GEOLOGY		мс	SA	MPLE	REC	FIELD) & LA	BORAT	ORY	FESTS
	IN FEET	MATERIAL D					N	MC	Î	YPE	ĪN.	WC	DEN	LL	PL	% - #200
	1 -	FILL, mostly silty sand with little gravel, trace roots, dar				FILL	19	M	M	SS	18					
	2 — 3 —	FILL, mostly sand with silt (A-1-b)	and gravel	, brown		N	20	M	X	SS	18		-			
	4 — 5 — 6 —	CLAYEY SAND, a little gr very stiff, laminations of m and sandy silt (SC)				MIXED ALLUVIUM	[16	М		SS	18	13				
•	7 — 8 —	SAND WITH SILT, a little brown, moist, medium dens clay with sand (SP-SM) (A	se, laminati			COARSE ALLUVIUM	[¹] 12	M		ŚS	18					
	9 10	SAND WITH SILT, fine to brown, moist, loose, a lens (SP-SM) (A-1-b, A-6)	o medium g of clayey s	rained, and		2 • •	9	M/W		SS	18	•				
	12 — 13 — 14 —	SAND WITH SILT, a little fine grained, gray, a little b very loose, lenses of sapric clayey sand (SP-SM) (A-1-	lack, water peat with	bearing,			3	V Ŵ		SS	18					
	15 — 16 —	· .				· · · · · · · · · · · · · · · · · · ·	3	Ŵ		SS	18					•
	10 17 — 18 —	HEMIC PEAT, dark brown black, a lens of sapric peat					Ś	w		SS	18	290				
•	19 20 21			• • • • 1			10	W		SS	16	292				
	22 - 23 -	SAND WITH SILT AND fine grained, brownish gray	y, waterbea	medium to ring,		COARSE ALLUVIUN	24	w		SS	12					••
SDT 10/15/13	24 25 26	medium dense (SP-SM) (A SAND WITH SILT AND medium grained, dark brow light gray, waterbearing, m a lamination of lean clay at	GRAVEL, vnish gray, edium den	a little se to loose,			14	w		ŚS	10					
CPT+WELL.0	27 - 28 - 29 -	- (A-1-b)		· .			7	W		SS	5					•
01-05697.GPJ AET+CPT+WELL.GDT 10/15/13	30 - 31 -	GRAVEL WITH SAND, g medium dense to loose (GI		bearing,			. 19	w		' SS	1					
1-056	DEI	PTH: DRILLING METHOD			WAT	ER LEVEL M	EASUR	EMEN	ITS	1			·	NOTE:	REF	ER TO
		· · ·	DATE	TIME	SAMP DEP		G CA	VE-IN EPTH		DRÌLLI JUID LI	NG	WAT LEVI	ER	THE A		
RDINA	0-2	4 ¹ / ₂ ' 3.25" HSA	9/27/13	9:36	13.			2.5			<u>تل</u> نت	12.		SHEE	TS FO	R AN
COOF	241/2-4	19 ¹ /2' RDF w/DM						2.3				11.		EXPLA	NATI	ON OF
CORP W-COORDINATES	BORIN	NG	9/27/13	9:45 10:05	<u>13.</u> 23.			2.4				11.	<u> </u>	TERMI		
	1	NG LETED: 9/27/13	9/27/13 9/27/13	· · · · · · · · · · · · · · · · · · ·	23.			21.5				17.			IIS LC	
AFT	DR: S	S LG: GH Rig: 41C	9/2//13	10:10	23.	5 44.0		.1.3				, , ,	<u> </u>		01 - T	OHR-0

03/2011



AET JO	B NO:	01-05697						LO	G OF	BOF	RING N	Ю	1151	ST	(p. 2	2 01 2	2)
PROJEC	CT:	Southwest I	Light Rai	l Transi	t Proj	ject,	PEC East;	Нор	kins	to :	Minn	eapo	olis				
			-				dinates: N		6133:				51778	2			
DEPTH										1	MPI Ê	REC	FIELI)&LA	BORAT	ORY '	TES
DEPTH IN FEET	· .	MATERI	AL DESCRII	PTION			GEOLOGY	N	MC	T	MPLÊ YPE	REC IN.	WC	DEN	LL	PL	% -#
	GRA	VEL WITH SAN	D, gray, w	aterbearir	ng;					М	áa	1/					
33 —	mediu (conti	m dense to loos nued)	e (GP) (A-1	l-b)		1 4 4 4		12	W	Ŵ	ŚŚ	1/2					
34 —						1				Д							
35 -						11 U II		14	W	IXI.	SS	6					
- 36		-				1 1				\square							
37 -								19	w	M	SS	2					
38 — 39 —								19	• • • •	\square	20						
39 - 40 -				· .						H	•						
40 - 41 -		· · · ·						8	W	X	SS	4					
41 - 42 -						₩ #				Ы							
42 43 —	•							17	w	M	SS	4 [.]					
44 —				•						Д						ļ	
45 -	,							18	w	М	SS	6					
46 -	•						,	10	, vv	А							1
47										4							
48								18	W	M	SS	8					
49										\sum					•		
50 -			* •					45	w	\square	SS	2					
51 -	END	OF BORING				<u> </u>				<u> </u>							-
.•											•	1					
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AET JO	DB NO: 01-05697]	LOG OI	F BO	RING N	O	1152	ST	(p. 1	l of	2)
PROJE		ht Rail Tra	ansit Pro	ject, l	PEC Eas	t; Ho	pkins	to	Minn	eapo	lis		•		
SURFA	CE ELEVATION:867.9	Н	ennepin Co.	Coordin	ates:	N	16022	23	-	E;	51750				
DEPTH IN FEET	MATERIAL	DESCRIPTION	N		GEOLOG	YY	1 MC	SA	AMPLE ГҮРЕ	REC IN.		D & LA	BORAT	1	TESTS %-#20
· 1 -	FILL, mixture of clayey sa and silty sand, a little grav brown (A-2-4)				FILL	. 1	6 M	•	SS	12	19				
2	FILL, mostly sand with sil silty sand, grayish brown, (A-1-b)	t and gravel, a little dark	, a little brown			3	3 M	K	SS	12					
4 5 6	FILL, mostly gravelly sand clayey sand, brown and br dark brown (A-1-b)	d with silt, a ownish gray	little , a little			2	2 -		SS	0					
7 - 8 -				-		. 1	8 M		SŞ	4		•			
9 - 10 -						1	9 M		SS	16				4.	
11 - 12 - 13 -						4	8 M		SS	6					
14	SAND WITH SILT, fine medium dense (SP-SM) (A		wn, moist,		COARSE ALLUVIU	M 2	20 M		SS	12					
16 17 18	SAND WITH GRAVEL, brown, waterbearing, med (A-1-b)	medium gra lium dense (S	ined, SP-SM)			.]]	.3 W		SS	12					
19 - 20 -	SAND, a little gravel, med waterbearing (SP) (A-1-b	dium grainec)	l, brown,]	.3 W	, X	SS	. 10					
21 - 22 - 23 -	SAND WITH SILT, fine waterbearing, medium der	grained, bro nse (SP-SM)	wn, (A-3)			2	21 W	, X	SS	12	-				
24 - 25 -	SAND, a little gravel, me brown, waterbearing, loos	dium grainec se (SP) (A-1	l, grayish -b)]	0 W	, X	SS	6					
26 - 27 - 28 -	SAND WITH GRAVEL, brownish gray, waterbear (SP) (A-1-b)	medium gra ing, medium	ined, dense				11 M	, þ	ss	6				-	
25 - 26 - 27 - 28 - 29 - 30 - 31 - DE 0 17-4 BORI COM	SAND, a little gravel, me brown, waterbearing, med (A-1-b)	dium grained lium dense (l, grayish SP)				18 W	, h	SS	10	-				
		\		<u> </u>	ER LEVEL		עבוקו מענוקו		1		· ·				
	PTH: DRILLING METHOD		TTD (D)							NG	WAT LEV	ER	NOTE: THE A		
)-17' 3.25" HSA	DATE	TIME	SAMPI DEPT			CAVE-D DEPTH		DRILLI LUID LI	EVEL			SHEE		
17-4	49½' RDF w/DM	10/7/13	11:36	18.			17.2		• •		<u> </u>		EXPLA		
E BORI	NG	10/7/13	12:09	18.	5 17.	U	17.1				10.	-	TERMI		
	PLETED: 10/7/13	-										.		HIS LO	
$\frac{1}{2} - DR; $	SG LG: SHS Rig: 91C			<u> </u>										01-I	OHR-0



ROJEC	T: Southwest Light Rail Transit Proje	ect,]	PEC East; H	Iopk	tins 1	to Minn	eapol	lis				
KOJEC	Hennepin Co. Co				60223			517502	7			
TH						CANDIE	REC	FIELD	& LAE	ORAT	ORY T	TES7
EPTH IN EET	MATERIAL DESCRIPTION		GEOLOGY	N	МС	SAMPLE TYPE	IN.	WC	DEN	LL	PL	%- #2
33 — 34 —	SAND WITH SILT, a little gravel, fine to medium grained, brown, waterbearing, medium \dense (SP-SM) (A-3)		COARSE ALLUVIUM (continued)	38	W.	X ss	12					
35 - 36 -	SAND, a little gravel, medium grained, brownish gray, waterbearing, medium dense (SP) (A-1-b)			14	W	ss S	10		-			
37 38	SAND WITH SILT, fine grained, grayish brown, waterbearing, medium dense (SP-SM) (A-3)			26	W	ss	2					
39 — 40 — 41 —	SAND WITH GRAVEL, medium grained, grayish brown, waterbearing, medium dense (SP) (A-1-b)			21	w	ss	12					
42 - 43 - 44 -				24	w	ss	10					
45 - 46 -	SAND WITH GRAVEL, medium grained, gray, waterbearing, medium dense (SP) (A-1-b)			17	W	ss	10					
47 — 48 —			· · · · · · · · · · · · · · · · · · ·	13	W	ss	10				-	
49 — 50 —	SAND, fine grained, brownish gray, waterbearing, medium dense (SP) (A-3)			24	w	ss	12				•	
51 —	END OF BORING											
					-							
						-	-	•				
				•								
• •)											



Γ	AET JC	OB NO:	01-05	697						LO	G OF	BOI	RING N	10	1166	5 ST	(p. 1	lof	1)
	PROJE	CT:	Southw	est Ligh	t Rail Tr	ansit Pro	oject,	PEC	CEast; I	Iopl	cins	to I	Minn	eapo	lis				
	SURFA	CE ELE	VATION:	884.3	H	Hennepin C	o. Cooi	dinat	es: <u>N</u>	1	55893	3		E :	51202				
J	DEPTH IN FEET		M	ATERIAL D	ESCRIPTIO	Ň		GE	OLOGY	Ņ	мс	SA I	MPLE YPE	REC IN.	FIELI WC	D&LA	BORA		TESTS %-#20
	1 -		, mostly silt /cinders, tra					FILI		6	M	M	SS	18					
	2 — . 3 —		, mostly sar y sand, brov							4	М		SS	16					
	4 5	brick	, mostly silt , wood and	ty sand, a l metal, gray	ittle gravel y, black an	, pieces of d brown	•			10	M	ł	SS	6					
	6 — 7 —	(A-2-	·4 <i>)</i>							4	м	Ł	SS	14					
	8 9	SAPI	RIC PEAT,	pieces of y	wood, blac	k, a little	1.5.5	SWA	AMP	4	M		22	14					
	10 — 11 —	gray,	laminations	s of sand (l	PT) (A-8)	,		DEP	POSIT	3	М	X R	SS	16	84				
	12 13	medi	D WITH SI um to fine g (SP-SM) (.	grained, gra	e gravel, fir ay, waterbe	ne to earing,			ARSE LUVIUM	6			SS	10					
	14 15	SAN	D, a little gi waterbearin	ravel, med	ium to fine SP) (A-1-b	grained,		*		6	w		SS	18					
	16 17	water	D WITH G	ose to med	ium dense,	nined, gray , a lens of	,	*		6	W	ł	SS	18					
	18 19 20	sand	with silt at	18' (SP) (A	A-1-D)			•		13	w	E	SS	18					
	21 -	END	OF BORI	NG				:		15		Μ	66	10					
T 6/12/14																			
L+WELL.GD																·			
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/12/14																			
05697.G															1	<u> </u>			
-10 S	DEI	PTH:	DRILLING N	METHOD			· · · · · · · · · · · · · · · · · · ·		EVEL MEA			-		NC	1 17 A 777		NOTE:		
DINATE	0-1	191/2'	3.25" HSA	•	DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	DE	VE-IN PTH	FL	DRILLI JUID LI	EVEL	WAT LEVI	EK EL	THE A		
OORE					6/4/14	12:35	16.	0	14.5	1	3.8				12.8	,	SHEE'		
No.					6/4/14	12:50	16.	0	14.5	1	3.8	1			12.'		EXPLA		
	BORIN COMP	NG PLETED:	6/4/14													1	TERMIN		
AET	DR: I	DS LC	G: GH Rig	;: 41C						1							TH	IIS LO	'G



AET JO	B NO: 01-05697					LO	GOF	BORIN	IG NO)	1167	' ST	(p. 1	lof	1)
PROJEC	CT: Southwest Ligh	t Rail Tra	ansit Pro	ject,	PEC East; 1	Hopl	cins	to M	inne	apol	lis				
SURFAC	CE ELEVATION: 886.4	Н	ennepin Co.	Coordir	nates: <u>N</u>	1	55888	8	I	3	51169	7			
DEPTH	MATERIAL D	ESCRIPTION	NI		GEOLOGY	N	мс	SAM	PLE	REC	FIELI) & LA	BORA	ORY '	FEST
IN FEET	MATERIAL D	LSCKII HOI	. •				IVIC	TY	PE	IN.	WC	DEN	LL	PL	%-#2
1 -	FILL, mostly silty sand, a li sand, dark brown and brow		and clayey	-	FILL	6	М		SS	12					
2 — 3 —	FILL, mostly sand with gra brown, a little dark brown (vel, a little A-1-b)	silty sand,			8	M		ss	10	-				
4	FILL, mostly sand with gra sand and silty sand (A-1-b)	vel, a little	clayey		• •	7	M		SS.	10					
6 - 7 - 8 -	FILL, mostly sand, a little g (A-1-b)	gravel, light	t brown			33	M		SS	8		-			
9 10 11	SILTY SAND, a little grav grained, dark brown, moist, (A-2-4)	el, fine to n , dense (SP	nedium -SM)		COARSE ALLUVIUM	38	M		ss	12					
11 12 13	SAND WITH SILT, a little fine grained, brown, moist medium dense (SP-SM) (A	to waterbea	edium to aring,			23	M/W		SS	14				- -	
14 — 15 — 16 —	SAND, a little gravel, medi brown, waterbearing, loose silt (SP-SM) (A-1-b)					8	w		SS	10		-			
17 — 18 —	SAND, a little gravel, med brown, a little grayish brow medium dense, a lens of sa (A-1-b)	n, waterbe	aring,			11	W	L L	SS	6					
19 20 21	SAND WITH GRAVEL, n brown, a little brown, wate medium dense (SP) (A-1-b	rbearing, lo	ined, light bose to			8	w	Å	SS	18		· -			
22 23						12	w	Å	SS	16					
24 25 26					• • • •	11	w	Å	SS	16					
25	SAND, a little gravel, med grayish brown, waterbearir loose (SP) (A-1-b)	ium graineo 19, medium	d, light dense to			. 14	w	Å	SS	10					
29 30					• • •	9	w	X	SS	18					
31 -	END OF BORING														
DEI	PTH; DRILLING METHOD			WAT	ER LEVEL ME	ASUR	EMEN	ITS					NOTE	REFI	ER TO
0.1	01/1 3 2511 UGA	DATE	TIME	SAMP DEP	LED CASING TH DEPTH	CA	VE-IN EPTH	DF FLU	RILLIN ID LE	NG VEL	WAT LEVI	ER EL	THE A	ATTAC	CHED
0-1 19-2 BORIN COMP	9½' 3.25" HSA 9½' RDF w/DM	4/29/14	12:15	16.			4.3			_	13.		SHEE	TS FO	R AN
19-4	7/2 KUF W/DIYI	4/29/14	12:25	16.			4.0	-			12.		EXPLA	NATI	ON O
BORIN	NG LETED: 4/29/14	.,				+		- - -					FERMI	NOLO	GY C
													TI	IIS LO	G
DR: T	A LG: SHS Rig: 69C			L	I					l				01-T	NT TD



AET J	OB NO:	01-05	697					•	LC	G OF	BOI	RING N	10	1168	ST	(p. 1	lof	1)
PROJE	ECT:	Southv	vest Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East; I										
		VATION:	890.9	H	Hennepin C	o. Coo	rdina	tes: <u>N</u>	1	55389)		<u>E </u> :	51072				
DEPTH IN FEET		М	ATERIAL D	ESCRIPTIO	N		GE	EOLOGY	N	мс	SA T	MPLE YPE	REC IN.	FIELI WC	D&LA	BORA		TESTS %-#20
1 -	FILL ashes (A-2-	cinders, tr	ty sand, a l ace roots, p	ittle gravel pieces of gl	and ass, black		FIL	L	18	М	M	SS	8					
2 - 3 -	FILL trace	, mostly sa roots at 12	nd with gra , light brov	wel, a little wn, a little l	silty sand black	,			17	М		SS	12				-	
4 - 5 -	(A-1-	-b)							43	M	Ĭ	SS	6					
6 - 7 -	_										E	<i>a</i> -				-		
8 - 9 -								· ·	17	M	X FI	SS	12					
10 - 11 -									17	M	N R	SS	10					
12 - 13 -									12	M	Ř	SS	6					
14 - 15 - 16 -	clay,	, mostly sa brown and n (A-1-b)	nd, a little g light brow	gravel and nish gray,	sandy lear a little darl	n k	-		10	M		SS	8		- -			
17 · 18 ·	LEA	of silty san	gray and brodd, laminatic				FIN AL	IE LUVIUM	6	 M/W		SS	6	20				
19 · 20 ·	fine g	grained, bro rbearing, vo	ILT, a little own, a little ery loose, a	e light brow	nish gray,			ARSE LUVIUM	3	w		SS	6					
21 -		SM) (A-1-t O OF BOR				_/												
14																		
L.GDT 6/13																		
+CPT+WEI																		
AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/12/14 MOO MUOG MUOG MUOG																		
5 DI	 EPTH:	DRILLING	METHOD			WA1	ER L	EVEL MEA	L ASUR	L EMEN	TS		1	1		NOTE:	REE	
0-0-	191/2'	3.25" HSA		DATE	TIME	SAMP DEP		CASING DEPTH	CA DE	VE-IN PTH	1	ORILLI UID LI	NG EVEL	WAT LEVI		THE A	TTAC	HED
OOR				6/3/14	12:41	18.	5	17.0	1	7.9		_ <u>.</u>		17.		SHEE		
				6/3/14	12:46	21.		19.5		9.6				17.	<u> </u>	EXPLA		
BOR COM	ING PLETED	: 6/5/14		6/3/14	12:56	21.	0	19.5	1	9.4				16.'	7 ¹	ERMI		
DR:	JM LC	G: SHS Ri	g: 68C													TE	IIS LO	<u>ч</u>



AET JO	B NO: 01-05697					LC	G OF	BOR	ING N	0	1169	ST	(p. 1	lof	<u>l)</u>
PROJEC	CT: Southwest Ligh	t Rail Tr	ansit Pro	ject,	PEC East; l	Iopl	kins	to N	linn	eapol	lis				
SURFAC	CE ELEVATION: 896.6	ŀ	Iennepin Co	o. Cooi	rdinates: <u>N</u>	1	55064	4]	E Ś	51019	9			
DEPTH	MATERIAL D	ESCRIPTIO	N		GEOLOGY	N	MC	SAN	MPLE	REC	FIELD)&LA	BORA	FORY T	TEST
IN FEET	WIA I EKIAL D	ESUMI IIU	τı			1N			YPE	IN.	WC	DEN		PL	%- #2
1	FILL, mostly silty sand wit little gravel and sand, trace brown (A-2-4, A-1-b)	roots, blac	k and light	1.	FILL	11	M	\square	SS	18					
3 -	SAND, a little gravel, med light brown, moist, mediun	ium to coar 1 dense (SF	rse grained, P) (A-1-b)		COARSE ALLUVIUM	13	M	X	SS	10					
4 5 6	SAND WITH GRAVEL, n grayish brown, moist, med (A-1-b)	nedium gra ium dense	ined, light (SP)			13	M		SS	12					
7 - 8 - 9 -	SAND, a little gravel, med grayish brown, moist, loose clay at 10' (SP) (A-1-b)					10	M		SS	8					
10 — 11 —						10	M	LA F	SS	10					
12 — 13 — 14 —	SAND, a little gravel, trace grained, brown, moist, loos	e roots at 18 se, a lens of	8', medium f sandy		• • •	15	-	R	SS	0					
15 — 16 —	lean clay at 18' (SP) (A-1-b))				9	M		SS	8					
17 — 18 — 19 —					· · ·	7	M	R	SS	10					
20 - 21 -	LEAN CLAY, gray and br laminations of waterbearin (CL) (A-4)	own mottle g sand and	ed, soft, silty sand		FINE ALLUVIUM	4	M/W		SS	12	24				
	END OF BORING														
			·											-	
											1	<u> </u>			
DEF	PTH: DRILLING METHOD				ER LEVEL MEA	1			RILLI		WAT		NOTE:		
0-1	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASING IH DEPTH	DE	VE-IN EPTH		ЛD LE		LEVE	EL	THE A		
		6/3/14	10:30	21.	0 19.5	2	1.0				Non			TS FOI	
		6/3/14	10:40	21.	0 19.5	2	1.0				Non	e ¹	EXPLA	NATIO)N (
BORIN	NG PLETED: 6/3/14					-						1	FERMI	NOLO	GY (
			L											IIS LO	



AET JO	B NO: 01-05697						LO	G OF	BO	RING N	10.	1170	ST	(p. 1	lof	1)
PROJEC	Southwest Light	t Rail Tr	ansit Pro	ject,	PEC	C East; I	Iopl	cins	to 1	Minn	eapo	lis				
SURFAC	CE ELEVATION:900.9	ŀ	Iennepin Co	o, Cooi	rdinat	tes: <u>N</u>	1	54815	5	۔ <u>ب</u>	E :	50965	7			
DEPTH	MATERIAL D	FSCRIPTIO	N		GF	OLOGY	N	MC	SA	MPLE YPE	REC IN.)&L/	ABORAT	FORY '	TEST
IN FEET								MC		YPE	IN.	WC	DEN		PL	%- #2
. 1 –	FILL, mostly silty sand, a lashes/cinders, black and dat	ittle gravel rk brown (, sand and A-2-4)		FILI		7	М	М	SS	16					
2 — 3 —				-			1	M	X	SS	12					
4 — 5 —							8	М		SS	2					
6 - 7 -	FILL, mostly sand with silt	and grave	l, light						Ŧ							
8 - 9 -	brown (A-1-b)		41				24	M	X FJ	SS	8					
10 11	FILL, mostly sand, a little g (A-1-b)	gravel, lign	it brown				21	М		SS	10					
12 — 13 —	FILL, mostly gravelly sand (A-1-b)	with silt, l	brown				23	M	¥	SS	6					
14 — 15 — 16 —	GRAVELLY SAND WITH grained, brown, moist, med (A-1-b) (possible fill)	H SILT, me lium dense	edium (SP-SM)		ALI	ARSE LUVIUM FILL	17	М		SS	8					
17 — 18 —	SAND WITH GRAVEL, n brown, moist, medium den	nedium gra se (SP) (A-	uined, -1-b)			ARSE LUVIUM	16	м	F F	SS	10					
19 — 20 —							18	М	R	SS	8					
21 —	END OF BORING															
			K	-												
DEF																
	TH: DRILLING METHOD			WAT	ER L	EVEL MEA	SURI	EMEN	TS					NOTE:	REFI	ER T
A 4		DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CAV	VE-IN PTH	FI	DRILLI UID LI	NG VEL	WAT LEVI	ER	THE A	ATTAC	THEI
0-1	9½' 3.25" HSA	6/3/14	9:13	21.		<u>19.5</u>		0.9	+			Non		SHEE	TS FO	R Aì
		6/3/14	9:23	21.		19.5		0.9	+			Non		EXPLA	NATI	ON (
0-1 BORIN COMP	IG (2/14	0.0/17	7.40	<u> </u>		1715	—					1101		TERMI	NOLO	GY (
	LETED: 6/3/14					•			+					TH	IIS LO	G
DR: J	M LG: SHS Rig: 68C						<u> </u>								01-E	

,



AET	JOB 1	NO: 01-05697						LO	G OF	BOI	RING N	Ю.	1171	ST	(p. 1	lof	l)
	JECT:		ght Rail Tr	ansit Pro	oject, I	PEC	East; H	Iopł	cins 1	to I	Minn	eapo	lis				
SURI	FACE	ELEVATION: 909.0) F	Iennepin C	o. Coor	dinate	es: <u>N</u>	1	54307	7		E :	50855	2			
DEPT	н	MATERIA	L DESCRIPTIO	N		GEO	DLOGY	N	мс	SĄ	MPLE YPE	REC IN.	<u> </u>	r	BORAT		Г
IN FEET						FILL						11N,	WC	DEN	LL	PL	%-#200
1	(FILL, mostly silty sand A-1-b)	-			FILL		9	М	XI	SS	16					
2		FILL, mostly lean clay, A-6)	dark brown ar	nd brown				16		\mathbb{H}	00	0	24				
3	ΪΪ	FILL, mostly silty sand	and gravel, br	own				16	M	Å	SS	8					
4		A-1-b) SAND, a little gravel, m	redium to fine	grained.	<u></u>	COA	RSE UVIUM			F							
	,1	ight brown, moist, med	ium dense (SF	P) (A-1-b)		ALL		14	M	Д	SS	14					
	h.,	SAND, fine to medium noist, medium dense (S		brown,						뙵							
8		SAND, a little gravel, fi ight brown, moist, med	ne to medium	grained, (A-3)	-			21	М	Х	SS	14					
	, 1	ight brown, moist, med) (A-3)						Ł							
10) –							18	M	\square	SS	12					
11						•				रि							
12	- ł	SAND WITH GRAVE	, medium gra lense (SP) (A.	ined, light -1-b)		•		17	М	\square	SS	12					
13						•	,			मि							
15								19	M	K	SS	10					
16				·				19	IVI		33						
17	7 -									논							
18	8 -							19	M	Д	SS	12					
19	9 -									I							
20								21	M	Х	SS	10					
21		END OF BORING															
0/14																	
DT 6/1																	
			· · ·														
PT+M																	
AET+C																	
GPJ																	
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14																	
I B	DEPTI	H: DRILLING METHO					CASING	<u> </u>		T	ייזאס	NG	WAT		NOTE:		
DINAT	0-19½	2' 3.25'' HSA	DATE	TIME	SAMP DEP		CASING DEPTH		VE-IN PTH	FÍ	DRILLI JUID LI	ÉVEL	WAT LEVI		THE A		
C00R			5/23/14	2:08	21.	0	19.5	2	0.7				Nor		SHEE EXPLA		K AN ON OF
≱ BO	RING	CTED: 5/23/14										· .	<u> </u>				GY ON
. 1	MPLE : SG	TED: 5/23/14 LG: CD Rig: 91C													TH	IIS LO	G



AET JO	·····								RING N			2 ST	(p.]	l of	1)
PROJEC	CT: Southwest Light	nt Rail Tra	ansit Pro	ject,	PEC East;	Hopl	kins	to I	Minn	eapo	lis				
SURFA	CE ELEVATION: 911.5	H	Iennepin Co	. Cooi	dinates:]	<u>N 1</u>	5404	l		<u>E </u>	50799	7			
DEPTH IN FEET	MATERIAL I	DESCRIPTIO	N		GEOLOGY	N	MC	SA T	MPLE YPE	REC IN.	FIELI WC	D & LA	BORA'	T	TEST
1 -	FILL, mixture of silty sand gravel, dark brown and brown	1 and clayey own (A-1-b)	y sand, with	L .	FILL	12	M	М	SS	12	16				
2 — 3 —	SAND WITH SILT AND medium grained, brown, n (SP-SM) (A-1-b) (possible	noist, mediu	fine to m dense		COARSE ALLUVIUM OR FILL	27	M	Å	SS	8	- -				
4 — 5 —	SAND WITH GRAVEL, 1 grained, light brown, mois	medium to f	fine ?) (A-1-b)		COARSE ALLUVIUM	31	M		SS	12					
6 7 8						20	M	ł	SS	12		-			-
9 — 10 —						22.	м	Ł	SS	10					
11 — 12 —					•	20	M	ł	SS	14					
13 — 14 — 15 —	SAND, medium grained, 1 medium dense (SP) (A-1-1	ight brown,	moist,		· • •			AFT F							
16 — 17 —	SAND WITH GRAVEL,	medium to f	fine		•	13	M		SS	10					
18 — 19 —	grained, light brown to bro dense (SP) (A-1-b)	own, moist,	medium		•	19	M	X	SS	12					
20 - 21 -					· · ·	20	M	М	SS	10					
21	END OF BORING														
-		•													
														-	
DEF	TH: DRILLING METHOD			WAT	ER LEVEL MI	EASUR	EMEN	TS					NOTE:	REF	ER T
0-1	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASING TH DEPTH	G CA DE	VE-IN PTH	FL	DRILLI JUID LI	NG EVEL	WAT LEVI	ER EL	THE A		
		5/23/14	1:25	21.	0 19.5	2	0.5				Nor		SHEE		
					-								EXPLA		
BORIN COMP	NG LETED: 5/23/14												FERMI	NOLC	GY
DR: S													Tŀ	IIS LO)G



AET	IOB NO:	01-05	697			,			LO	G OF	BOI	RING N	íO	1173	ST	(p.)	l of I	l)
PROJ	ECT:	Southw	est Ligh	t Rail Tr	ansit Pro	ject,	PEC	East; I	Iopl	kins	to I	Minn	eapo	lis	-	•		
SURF	ACE ELE	ATION:	916.6	ŀ	lennepin C	o. Cooi	rdinate	s: <u>N</u>	1:	53523	3		E :	50691				
DEPTH IN FEET	I	M	ATERIAL D	ESCRIPTIO	N		GEO	OLOGY	N	MC	SA T	MPLE YPE	REC IN.	FIELI WC) & LA DEN	BORA		FESTS %-#20(
1	- FILL	, mostly silt prown (A-1	-b)	-		1		OIL OR	7	М	M	SS	16	26				
2	_ LEAN grayis	N CLAY W sh brown, f	ITH SAN irm (A-6)	D, trace roo	ots, dark		FINE ALLU	JVIUM	5	M	\square	SS	12	20				
4		VELLY SA			grained,		COAI				E						•	
5	- brown	n, moist, de	nse (SP) (A	A-1-b)				JVIUM	44	М	X	SS	6					
7 8 9	graine (A-1-	O WITH G ed, light bro b)	RAVEL, n own, moist	nedium to f , medium c	fine lense (SP)		•		30	M	H K K	SS	12	-				
10	_								21	М	Å	SS	12					
12	_								15	M	Ĭ	SS	12					
14	_								01	M	Ł	SS	10					
16	-	D WITH G	RAVEL 1	nedium gra	vined light				21	M	\bigwedge	22	12					
17 18	brow	n, moist, m							27	М	A	SS	12					
19 20	– SAN – light	D, a little g brown, moi	ravel, fine st, mediun	to medium n dense (SI	grained, P) (A-1-b)				16	М		SS .	12					
21	END	OF BORI	NG															
10/14																		
GDT 6																		
MELL																		
-t-t-																		
AET													,					
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14																		
D 01-056	EPTH:	DRILLING	METHOD			WAT	 TER LE	VEL MEA	L SURI	l EMEN			I	<u> </u>	L	NOTE:	BEEE	
ATES				DATE	TIME	SAMP DEP		CASING DEPTH	1	/E-IN PTH		DRILLI UID LE	NG	WAT		THE A		
	-19½'	<u>3.25" HSA</u>	L	5/22/14	2:05	21.		19.5		0.3			SVEL	Non		SHEE		
N-CO											-					EXPLA	NATIO	ON OF
BOR CON	ING IPLETED:	5/22/14						-								FERMI	10LO	GY ON
DR:		: TM Rig	: 91C										54 7			TH	IS LO	G



AET JOI	B NO: 01-05697					LO	G OF	BOI	RINĢ N	0.	1174	ST	(p. 1	l of]	<u>l)</u>
PROJEC	CT: Southwest Ligh	t Rail Tr	ansit Pro	ject,	PEC East; I	Topl	kins 1	to I	Minne	eapo	lis				
SURFAC	CE ELEVATION: 915.0	F	Iennepin Co	. Coo	dinates: <u>N</u>	1	5326()		E :	50640	2			
EPTH			NT.		CEOLOCY			SA	MPLE	REC	FIELI) & LA	BORAT	ORY -	TES'
IN EET	MATERIAL D	DESCRIPTIO	N		GEOLOGY	N	MC		YPE	IN.	wc	DEN	LL	PL	%- #
1 - 2 -	FILL, mostly clayey sand v little gravel, trace roots, bla (A-6)	with organi tick and dar	c fines, a k brown		FILL	4	М	M	SS	12	15				
3 —	FILL, mostly clayey sand, and black	a little grav	el, brown			4	М	И	SS	10	19				
4	FILL, mostly sand with silt clayey sand, possible cobb black (A-1-b, A-6)	and grave les, brown,	l, a little a little			21	М		SS	16	•				
, 8 9	SAND, fine to medium gra moist, medium dense to loo				COARSE ALLUVIUM	23	М	X F	SS	0					
10 11	(SP) (A-3)					9	М		SS	14					
12 13	SAND, a little gravel, med brown, moist, medium den (SP) (A-1-b)	ium graine se, laminat	d, light ions of silt			16	М	H H H	SS	16					
14 — 15 — 16 —	SAND, a little gravel, fine light brown, moist, medium (A-3)	to medium n dense (SI	grained, P-SM)			17	М		SS	15					
17 - 18 -	SAND, a little gravel, fine light grayish brown, moist, (A-3)	to medium medium d	grained, ense (SP)		4 • • •	19	M	Ц Д	SS	12					
19 20 21	SAND, fine grained, light dense, laminations of silt (wn, moist,		· · ·	41	М		SS	18					
21	END OF BORING														
														ì	
		1										 			
DEP	TH: DRILLING METHOD				ER LEVEL MEA	1				T			NOTE:	REFF	ER I
0-1	9½' 3.25" HSA	DATE	TIME	SAMP DEP	LED CASING TH DEPTH	CAV DE	/E-IN PTH	I FL	DRILLI JUID LE	NG EVEL	WATI LEVI	ER EL	THE A	TTAC	HE
<u></u>		5/30/14	2:44	21.			1.0			†	Non		SHEET	ΓS FOI	R A
								+					EXPLA	NATIO	ON (
		1			1	1						1			
BORIN	IG LETED: 5/30/14					1						T	ERMIN	10LO	GY



	ET JO	B NO:	01-05	5697						LO	G OF	BOI	RING N	0.	1175	ST	(p. 1	of	1)
PI	ROJEC	CT:	South	west Ligh	t Rail Tr	ansit Pro	ject,	PEC	East; H	Iopl	cins 1	to I	Minn						
su	IRFA	CE ELEV	ATION:	912.3	F	Iennepin Co	. Cooi	dinates	s: <u>N</u>	1:	53022	2		E ;	50591				
	PTH N ET		Ν	IATERIAL D	ESCRIPTIO	N		GEO	LOGY	N	мс	SA T	MPLE YPE	REC IN.	FIELD) & LA DEN	BORAT		FESTS %-#200
	1 -		mostly gr (A-1-b)	ravel with si	lt and sand	l, dark		FILL		5	М	M	SS	3					
	2 — 3 —	FILL, (A-1-ł		avelly sand	with silt, t	orown				4	М	X	SS	3					
	4 5 6	gravel	, trace roo	D, with org ots, dark bro (possible fil	wn, firm, a	a little a lens of		MIXE ALLU OR FI	JVIUM	6	М		SS	8	20				
	7 8 9	brown	, moist, n	GRAVEL, m nedium dens	se (SP) (A-	1-b)		COAF ALLU	RSE JVIUM	18	М	L X R	SS	10					
	9 – 10 – 11 –	moist, (A-3)	medium	ined, light b dense, lami	nations of s	silt (SP)		· • • • •		11	М		SS	12			-		1
	12 — 13 — 14 —	SANE brown), a little g 1, moist, n	gravel, medi nedium den	ium graineo se (SP) (A-	d, light ·1-b)		• • • • • • • • • • • • • • • • • • • •	ж. Т	14	M		SS	12					
	15 — 16 — 17 —	moist,	D, fine to medium	medium gra dense, lami	ined, light nations of	brown, silt (SP)		• • •		35	-		SS	0					
	18 — 19 —	(A-3)								20	M		SS	14					
	20 -			GRAVEL, n nedium den						25	М	X	SS	14					
LET CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/12/14	21 -	END	OF BOR	ING															
597.GPJ AET+CP1																			
	DEI	PTH: 1	DRILLING	METHOD			WAT	J ER LEV	VEL MEA	SURI	EMEN	TS	L	1	1	-	NOTE:	REF	ER TO
AATES	A 1	9½' (3.25" HS	٨	DATE	TIME	SAMP DEP	LED (TH	CASING DEPTH	CAV	VE-IN PTH	FI	DRILLI JUID LI	NG EVEL	WAT LEVI		THE A		
	V-1	. 772 0	J.MJ 110	<u>_ </u>	5/30/14	1:12	21.		19.5		1.0	1			Nor		SHEE	IS FO	R AN
2-C					5/30/14	1:22	21.	0	19.5	2	1.0				Nor	ie ¹	EXPLA	NATI	ON OF
CORP	30RI COMP	NG PLETED:	5/30/14													1	ERMI		
ц ц			: SHS R	ig: 68C										Ι			TH	IIS LO	G



.

	AET JO	B NO:	01-05	697						LO	G OF	BOI	RING N	10	1176	ST	(p. 1	lof	1)
	PROJEC	CT:	Southw	vest Ligh	t Rail Tr	ansit Pro	oject,	PEC	C East;]	Iopl	kins	to I	Minn	eapo	lis				
	SURFA	CE ELE	VATION:	904.9	H	Hennepin C	o. Coo	rdina	tes: <u>N</u>	1	51990	6		<u>E :</u>	50362				
I	DEPTH IN		M	ATERIAL D	ESCRIPTIO	N		GE	EOLÓGY	N	MC	SĄ	MPLE YPE	REC IN.		I	BORAT		T
	IN FEET							FIL	т				IIL	119.	WC	DEN	LL	PL	%- #20(
1	1 -	claye	, mostly sar y sand, trac	e roots, bro	, a little gra own (A-3)	avel and		FIL.	L	13	M	M	SS	14					
	2 –											H							
	3 —									26	-	Д	SS	0					
	4 —	FILL	, mostly silt	ty sand wit	h gravel, a	little						国							
	5 —	claye	y sand, trac	e roots, da	rk brown (.	A-1-b)				16	M	X	SS	8					
	6 -					-						E							
	7 –	ĺ								7	М	\square	SS	6					
	8 — 9 —											मि							
-	10 -									6	М	M	SS	8					
	11 —									0		A	33	0					
	12 -		, mostly sil		ittle gravel	, trace						뵍							
	13 —	roots	, dark brow	II (A-2-4)						14	M	Д	SS	12					
	14 —	FILL	, mostly sil	ty sand wit	th gravel, a	little						国							
	15 —	ashes	cinders, da	irk brown ((A-1-b)					7	M	Х	SS	6					
	16 -											ł							
	17 — 18 —									7	M	γM	SS	4					
	10 19 —				an trans				(D C D		<u> </u>	रि							
	20 -	fine s	D WITH SI grained, bro	wn, waterl) 		ARSE LUVIUM	8	w	\square	SS	8					
	21 -	(SP-3	SM) (A-1-b)	-							मि	55	Ŭ					
	22 —	SAN	D, a little g sh brown, v	ravel, med	ium to fine	grained,				_		LF A							
	23 —						<u> </u>			7	W	Й		8				•	
4		END	OF BORI	NG					а 1							-			
6/10/1																			
GDT																			
-WELL																			
+CPT																			
J AEI																			
97.GP										-									
01-05(DEI	I PTH:	DRILLING !	METHOD.			WAT	ER L	EVEL MEA	SURI	EMEN	ITS			1	1	NOTE:	REFI	ER TO
ATES	0-22' 3.25" HSA				DATE	TIME	SAMP	LED TH	CASING DEPTH	CAT	VE-IN PTH	FI	ORILLI UID LI	NG	WAT LEVI	ER	THE A		
ORDIN	0-22' 3.25" HSA				5/23/14	2:00	21.		19.5		9.7			- ,	18.8		SHEE	rs fo	R AN
N-CO					5/23/14	2:10	21.		19.5		9.4	-			18.3	, "	EXPLA	NATI	ON OF
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14	BORIN COMP	NG 'LETED	5/23/14		5/23/14	2:15	21.	0	19.5	1	9.4				18.	3 T			GY ON
AET			G: SHS Rig	: 68C	5/23/14	2:23	23.	5	22.0	2	2.0				18.'	7	TH	IIS LO	G

03/2011



AET JO	B NO: 01-05697		L				LO	G OF	BO	RING N	0.	1177	' ST	(p. 1	lof	l)
PROJEC	CT: Southwest Ligh	t Rail Tr	ansit Pro	ject,	PEC	East; I	lopl	kins	to]	Minn						
SURFA	CE ELEVATION: 905.9	H	lennepin Co	o. Cooi	rdinate	es: <u>N</u>	1	51779)		<u>E </u>	50317				
DEPTH	MATERIAL D	ESCRIPTIO	N		GEO	OLOGY	N	мс	SĄ	MPLE	REC)& ĹA	BORAT	FORY '	FESTS
IN FEET										ГҮРЕ	IN.	WC	DEN	LL	PL	%-#2 0
1 — 2 —	FILL, mostly silty sand wit little gravel, trace roots, dar	th organic f rk brown (A	ines, a A-1-b)		FILL		8	М	М	SS	6			-		
3 —							4	M	X R	SS	6					
4 5 6	FILL, mostly gravelly silty sand, trace roots, dark brow		le clayey				6	М	H H H	SS	3.		-			
7 — 8 —	FILL, mostly clayey sand, roots, dark brown and brow		el, trace				6	М		SS	6	17				
9 — 10 — 11 —	CLAYEY SAND, a little g light brown, firm, laminatio (A-6) (possible fill)				TILI FILL		7	M		SS	12	14				
12 — 13 —	SANDY LEAN CLAY, a l mottled, firm (CL) (A-6) (p						5	M		SS	14	19				
14 15 16	SILTY SAND, a little grav (SM) (A-1-b) (possible fill		own, loose		4 · · · ·		7	M		SS	6					
17 — 18 —	SANDY LEAN CLAY, a l brown and brown, firm (Cl	little gravel L) (A-6) (po	, dark ossible fill)				8	М		SS	14	16		:		
19 - 20 - 21 -	SAND WITH SILT AND fine grained, light brown to dense to medium dense (SI	brown, wa	aterbearing)		RSE UVIUM	38	M	₹ A X	SS	. 8					
22 - 23 -							20	w	X	SS	12					
DEI	END OF BORING	·														
													- T-			
	PTH: DRILLING METHOD					EVEL MEA	T		T		·			NOTE:	REFE	ER TO
<u>л</u>	-22' 3.25" HSA	DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CAV DE	VE-IN PTH	FL	DRILLI JUID LE	NG EVEL	WAT LEVI		THE A	TTAC	HED
BORIN	<u>-44 J.43 NJA</u>	5/23/14	9:51	23.		22.0		1.7	+			20.		SHEE	IS FOI	R AN
		5/23/14	10:01	23.		22.0		1.7	1		-	20.		EXPLA	NATIO	ON OF
BORIN	NG LETED. 5/33/14	5/23/14	10:01	23.		22.0		1.7				20.		ſERMIÌ	VOLO	GY O
	ETED: 5/23/14		20100						-					TE	IIS LO	G
DR: 6	GH LG: SHS Rig: 68C													. 11.	01-E	

03/2011



AET JO	· · · · · · · · · · · · · · · · · · ·								RING N			8 ST	(p. 1	lof	1)
PROJEC	· · · · · · · · · · · · · · · · · · ·								Minn	^					
	CE ELEVATION:907.1	ŀ	Hennepin Co	o. Coor	dinates: <u>N</u>		51478	8		E :	50266				
DEPTH IN FEET	MATERIAL D	DESCRIPTIO	N		GEOLOGY	N	MC	SA	MPLE YPE	REC IN.			BORAT		1
FEET			41.4							11N.	WC	DEN	LL	PL	%-# .
1 2	FILL, mostly clayey sand v silty sand, pieces of bitumi brown and brown (A-6)	with gravel, nous, trace	, a little roots, light		FILL	4	M M	X	SS SS	8	8				
3 -							141	Д	60	0	10				
4	SAND, a little gravel, med light brown, moist, medium	ium to fine n dense (SF	grained, P) (A-1-b)		COARSE ALLUVIUM	20	M		SS	10					
7 - 8 - 9 -	SAND, a little gravel, fine light brown, moist, mediur of silt (SP)	to medium n dense, lar	grained, ninations			21	M		SS	16					
10 - 11 -						20	M	R	SS	12					
12 13 14	GRAVELLY SAND, med brown, moist, medium den	se (SP) (A-	-1-b)			19	M	THE REPORT	SS	10					
14 15 — 16 —	SAND WITH GRAVEL, f grained, light brown, moist (A-1-b)	ium dense (SP)			24	М	R R	SS	12						
17 – 18 –	SAND, a little gravel, fine brown, moist to waterbeari (SP) (A-3)				A	25	M/W		SS	14					
19	CLAYEY SAND, brown, (A-2-4)	very stiff (S	SC/SM)		TILL	27	M		SS	16	12				
	END OF BORING														
				-											
													7		
															-
														-	1
DEP	TH: DRILLING METHOD			WAT	ER LEVEL ME	ASUR	EMEN		l	1	1	L			
DEP								-	ORILLI	NG	WAT	DD D	NOTE:		
0-1	9½' 3.25" HSA	DATE	TIME	SAMPI DEP1			VE-IN PTH	FĹ	UID LI	EVEL	LEVI	EL	THE A		
		5/29/14	12:09	21.			0.9	_			We	,	SHEET		
DOPP	0	5/29/14	12:19	21.	0 19.5	2	0.9				We	L	EXPLA		
BORIN COMPI	G LETED: 5/29/14											T	ERMIN		
DR: JI	M LG: SHS Rig: 68C												ŢH	IS LO	G



AET JC	OB NO:	01-05	697		. ,		£ 0	•••••••••••••••••••••••••••••••••••••••	LO	G OF	BOI	RING N	0	1179	ST	(p.]	lof	1)
PROJE	CT:	Southw	vest Ligh	t Rail Tr	ansit Pr	oject,	PEC	C East; I	Iopl	cins	to I	Minn	eapo	lis				·
SURFA	CE ELE	VATION:	910.0	F	Iennepin C	Co. Coo	rdina	tes: <u>N</u>	1	5118	1		E :	50204	·····			
DEPTH IN FEET		M	ATERIAL D	DESCRIPTIO	N		GI	EOLOGY	N	MC	SA	MPLE YPE	REC IN.	FIELI WC) & LA DEN	BORAT		TESTS 6⁄6-#200
	FILL	, mostly silt	ty sand, a l	ittle gravel	, trace		FIL	L			М			we	DEIN			70-#200
		dark brow		· · · · · · · · · · · · · · · · · · ·					5	M	Д	SS	10					
. 3 -		, mostly sar light brow		t, a little gr	avel, trace				6	М	M	SS	12					
4 -		, mostly sar			avel and		-				Į							
5		lean clay,	brown (A-	·3)					14	M	Å	SS	12					
7	SANI mediu	D WITH SI	LT, a little brown, m	e gravel, fir oist, mediu	ne to 1m dense		ALI	ARSE LUVIUM	15	M	₽ }	SS	10					
8-9-	(SP-S	SM) (A-3) (possible fi	11)			:	FILL	15	IVI	শ	33	10					
10 -	little	YEY SANI dark brown) WITH G , lens of si	RAVEL, b lty sand (S	orown, a C) (A-6)		TIL FIL	L OR L	16	M	X	SS	10	8				
11 -	1	ible fill) D WITH SI	IT a little	aravel fir	ne to			ARSE			Ð							
12 — 13 —	mediu	um grained SM) (A-3)	, brown, m	oist, mediu	im dense			LUVIUM	45	M	M	SS	12					
14		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									I							
15 -	-								20	M	М	SS	14					
16 17											团							
18 -									19	M	Х	SS	14					
19 -	SAN	D WITH SI	LT, fine g	rained, ligh	nt brown,						Ł			-				
20 -	moist	, medium d	lense (SP-	SM) (Á-3)					22	М	X	SS	12					
21 -	END	OF BORI	NG	,														
4																		
101/0																		
ELL.GU																		
AE I +																		
CORP. AEL+CP1 +WELL.GD1 6/10/14 HADD CORP. COOKDINALES 01-05897.GPJ 4EL+CP1 +WELL.GD1 6/10/14																1		
S DEI	PTH:	DRILLING N	METHOD			WAT	ER L	EVEL MEA	SURF	' EMEN	TS		ı	1	I	NOTE:	REFE	R TO
0-1	91/2'	3.25" HSA		DATE	TIME	SAMP DEP	LED TH	CASING DEPTH	CAV DE	/E-IN PTH	I FL	DRILLI UID LE	NG VEL	WATI LEVE		THE A		
JUN CONF				5/23/14	12:37	21.	0	19.5	20	0.9				Non	<u> </u>	SHEET		
	NG			5/23/14	12:47	21.	0	19.5	20	0.9				Non	c	XPLA FRMIN		
	NG PLETED:										-						IS LO	GY ON
DR: G	H LG	: SHS Rig	: 68C															<u> </u>



AET JC	DB NO: 01-056	97						LO	G OF	BOI	RING N	10	1180	ST	(p. 1	lof	<u>l)</u>
PROJE	CT: Southw	est Light	Rail Tr	ansit Pro	oject,	PEC	East; I	Iopl	kins	to I	Minn	eapo	lis				
SURFA	CE ELEVATION:	910.7	E	Iennepin C	o. Cooi	rdinate	es: <u>N</u>	1:	50719)		<u>E :</u>	50100'				
DEPTH IN FEET	МА	TERIAL DI	ESCRIPTIO	N		GEO	OLOGY	N	MC	SA 1	MPLE YPE	REC IN.	FIELD WC	D & LA DEN	BORAT		TESTS %-#20(
1	FILL, mostly silty bituminous, dark	y sand with brown (A-	n gravel, p ·1-b)	ieces of		FILL		12	М	M	SS	14					
2	FILL, mostly san (A-1-b)	d with silt	and grave	l, brown		-		27	M	Ø	SS	12					
4	FILL, mostly silty brown (A-1-b)	y sand, a li	ttle gravel	, dark		· ·		31	M	ł	SS	2					
6								51	IVI	A L	مد	2	-				
8 -								16	М	X H	SS	12					
9	SANDY LEAN C roots, black, stiff	CLAY, slig (CL) (A-6	ghtly organ)	nic, trace		TOP	SOIL	15	M	K	SS	12	26				
11 -	SAND WITH SII fine grained, brow	vn, moist,	edium to ense		COA ALL	RSE UVIUM	14	M	ł	SS	. 12						
13 -	(SP-ŠM) (A-1-b) SAND WITH SI	LT AND C	GRAVEL,	fine to						ł							
15 16	medium grained, (SP-SM) (A-1-b)		-					14	M T	X FI	SS	6					
17 - 18 -	SILTY SAND W grained, brown, v	vet, loose ((SM) (A-1	-b)				6	W		SS	6					
19 - 20 -	GRAVEL WITH medium dense (C			erbearing,		-	·	11	w	11 X	SS	1					
21 -	END OF BORI	NG															
r 6/10/14															-		
WELL.GD																	
AET+CPT-																	-
CORP W-COORDINATES 01-06697.GPJ AET+CPT+WELL GDT 6/10/14 TO a construction of the con																	
δ DE	PTH: DRILLING M	1ETHOD				1	EVEL MEA	1							NOTE:	REFI	ER TO
0-1	19½' 3.25" HSA		DATE	TIME	SAMP DEP		CASING DEPTH	+	VE-IN PTH	FL	DRILLI LUID LI	NG SVEL	WATI LEVI	EL	THE A		
COORI			5/22/14	1:01	21.		19.5		9.1				17.		SHEE EXPLA		
¥ ₽ BORT	NG		5/22/14	1:10	21.	.0	19.5	1	9.2				16.	0			GY ON
	NG PLETED: 5/22/14	(90														IS LO	
DR: C	GH LG: SHS Rig:	08C															



Ī	AET JO	B NO: 01-05	697						LO	G OF	BO	RING N	Ю.	1181	ST	(p. 1	of	l)
	PROJEC	CT: Southy	vest Light	t Rail Tr	ansit Pro	oject,	PEC	East; H	Iopł	cins	to]	Minn	eapol	lis				
	SURFAG	CE ELEVATION:	913.0	F	Iennepin C	o. Cooi	rdinate	es: <u>N</u>	1:	50383	3	·	E ť	50039	6			
	DEPTH IN FEET	М	ATERIAL D	ESCRIPTIO	N		GE	OLOGY	N	мс	SA 1	MPLE	REC IN.	FIELI WC) & LA DEN	BORAT		FESTS %-#200
-	1 -	FILL, mostly sil brown (A-1-b)	ty sand with	h gravel, tr	race roots,		FILL	,	11	М	M	SS	12					
	2	FILL, mostly sa sandy lean clay,	nd with silt, brown and	, a little gra dark brow	avel and (A-3)				9	М	\square	SS	12					
	4 —	LEAN CLAY W	VITH SANI				TOP	SOIL			Ŧ							
	5 — 6 —	brown, stiff (CL		1.0				DCD	9	M	X R	SS	6	23				
	7 8	SILTY SAND, a grained, brown,	moist, loos	el, fine to r e (SM) (A-	-1-b)		COA ALL	UVIUM	10	М		SS	6					
	9 — 10 — 11 —	SAND WITH G brown, moist, de	RAVEL, m ense (SP) (A	nedium gra A-1-b)	iined, light		•		40	М		SS	12					
	12 —						•		39	М	1 X	SS	12					
	13 — 14 —										सि							
	15 -								24	MŴ	,M	SS	12					
	16 —								24		A	55	12					
	17 — 18 —	SAND WITH S fine grained, bro dense (SP-SM)	own, waterb						20	w	Ľ ₽	SS	4		-			
	19 — 20 —								15	W		SS	6					
	21 -	END OF BOR	ING	A														
/10/14																		
AET_CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14														۰.				
AET+CPT+\				•														
397.GPJ .																		
01-056	DEI	TH: DRILLING	METHOD			WAT	ER LE	EVEL MEA	SURI	EMEN	TS	1	1		J	NOTE:	REFF	R TO
DINATES	0-1	9½' 3.25" HS	A	DATE	TIME	SAMP DEP		CASING DEPTH		VE-IN PTH	FL	DRILLI UID LI	NG EVEL	WAT LEVI	ER EL	THE A	TTAC	THED
COORL				5/22/14	10:37	21.		19.5		8.0				16.	— I.	SHEE		
SP W-C	BORIN	JG		5/22/14	10:48	21.	0	19.5	1	7.8	_			15.		EXPLA		JN OF GY ON
COR	COMP	LETED: 5/22/14		-											1		IS LO	
Ē	DR: G	GH LG: SHS Rig	g: 68C													11		9

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AET JC	OB NO:	01-05	697						LO	G OF	BO	RING N	10	1182	ST	(p. 1	lof	1)
PROJE	CT:	Southv	vest Ligh	t Rail Tr	ansit Pro	ject,	PEC F	East; I	Iopl	cins	to I	Minn	eapo	lis		,		
SURFA	CE ELE	VATION:	916.1	ŀ	Iennepin Co	o, Cooi	dinates:	<u>N</u>	1	<u>5013'</u>	7	- 	E ·	49988				
DEPTH IN FEET		M	ATERIAL D	ESCRIPTIO	N		GEOL	.OGY	N	MC	SA 1	MPLE YPE	REC IN.	FIELI WC	D&LA	BORA	1	TESTS %-#200
1 -	FILL roots	, mostly sil , dark brow	ty sand, a l n (A-2-4)	ittle gravel	, trace		FILL		16	М	M	SS	6					
2 - 3 -	FILL	, mostly sar um grained	nd with silt	and grave	l, fine to				10	M	$\left \right\rangle$	SS	12	33				
4 -	SAN \roots	DY LEAN , dark brow	CLAY, slip n, stiff (CL	ghtly organ (A-6)			TOPSC				E							
5 6		DY LEAN	-				ALLU		6	M	X स	SS	6	19				
7	SAN grain (A-1-	D WITH G ed, light bro b)	RAVEL, fi own, moist	ne to medi , medium c	um lense (SP)		COAR ALLU		27	М	R R	SS	12					
9 10 11									30	M	K	SS	12					
12	SAN brow	D, a little g n, moist, m	ravel, medi edium dens	um graine se (SP) (A-	d, light ·1-b)		• • •		22	М		SS	12					
14 15 16	SAN grain (A-1-	D WITH G ed, light bro b)	RAVEL, n own, moist	nedium to , medium c	fine lense (SP)				25	м		SS	12					
17 - 18 -	SAN brow (A-1-	D WITH G n, waterbea -b)	RAVEL, n rring, medi	nedium gra um dense (iined, SP)		· • • •		19	M		SS	12					
19 - 20 - 21 -	grain	D WITH S ed, brown, SM) (A-1-b	waterbeari)	GRAVEL, ng, mediur	medium n dense		•		21	W	¥ X	SS	6					
0/14	END	OF BORI	NG															
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/10/14												-						
137.GPJ AE1+(-					
DE	 PTH:	DRILLING	METHOD			WAT	ER LEV	EL MEA	L SURI	EMEN	TS	L	1			NOTE:	REF	ER TO
0-1	191/2'	3.25" HSA		DATE	TIME	SAMP DEP	LED C. TH D	ASING EPTH	CAV DE	/E-IN PTH	I FL	ORILLI UID LE	NG EVEL	WAT LEVI		THE A	ATTAC	HED
OORD				5/22/14	9:24	21.	0	19.5	1	9.0				18.2		SHEE'		
Ū ∧				5/22/14	9:35	21.	0	19.5	1	8.9				18.	, 	EXPLA		
BORI COMF	NG PLETED:	5/22/14										_						GY ON
DR: S	SG LC	: TM Rig	: 91C													TH	IIS LO	G



AET JO	DB NO: 01-05697						LO	G OF	BO	RING N	10.	1183	SS	(p. 1	. of 1	l)	
PROJECT: Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis																	
SURFACE ELEVATION: 919.5 Hennepin Co. Coordinates: N 149878 E 499343																	
DEPTH IN FEET	MATERIAL	GE	EOLOGY	N M	MC	SA	MPLE YPE	REC	-		BORAT	ORY	TESTS				
FËÈT							1,			YPE	IN.	WC	DEN	LL	PL 9	%-#200	
1	FILL, mostly silty sand w roots, dark brown (A-2-4)	ith organic	tines, trace		FIL	L	6	M	M	SS	1				ĺ		
2	FILL, mostly silty sand, a		trace						H								
3 -	roots, brown (A-4)	nule glaver	, uace				10	M	М	SS	6						
4 -	FILL, mostly silty sand, a	little gravel	and lean		-				3								
5 —	clay, brown (A-2-4)	8					9	Μ	М	SS	6						
6 -									सि								
7							11	M	\square	SS	12						
8 -	· · ·								\mathcal{A}	00	12						
9-									뵍								
10 -							5	M	Д	SS	12						
12 -	FILL, mostly silty sand w	ith gravel, d	lark brown		-				I								
13 -	(A-1-b)	-					8	M	Х	SS	12						
14 -	-								रि								
15 -	4						23	-	M	SS	0						
16 -	-								मि								
17 -	SAND WITH GRAVEL, brown, moist, very dense	medium gra	ained, light			ARSE LUVIUM			R								
18 -		to delise (Si			:		57	M	Å	SS	12						
19 -					•				I								
20 -					•		37	Μ	Х	SS	12						
21 -	END OF BORING								ÍÌ								
4																	
6/10/																	
L.GDT																	
+WEL																	
397.GF																	
AET. CORP. W-COORDINATES 01-05697.0PJ AET+CPT+WELL.GDT 6/10/14 AET-CORP.W-COORDINATES 01-05697.0PJ AET+CPT+WELL.GDT 6/10/14 AET-CORP. AET-CPT+WELL.GDT 6/10/14	PTH: DRILLING METHOD		WATER LEVEL MEA				SURI	EMEN	TS		1	.l		NOTE: REFER TO			
		DATE	DATE TIME SAMP DEP		LED	CASING DEPTH	CAVE-IN DEPTH		DRILLING FLUID LEVEL			WATER LEVEL		THE ATTACHED			
	0-19½' 3.25" HSA		8:38			19.5	20.9					Non		SHEETS FOR AN			
×-co		5/22/14			-				-		·			EXPLA	NATIC)N OF	
BORIN	NG PLETED: 5/22/14					······································							T	ERMIN	10LOC	3Y ON	
\mathbf{DR}														TH	IS LO	G	



AET JC	OB NO:	01-05697						LO	G OF	BOI	RING N	10	1184	ST	(p. 1	lof	l)		
PROJECT: Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis																			
SURFA	CE ELEVA	ATION: 922.4	Hennepin Co. Coordinates: <u>N</u>						4962 1	<u>l</u>		E 498798							
DEPTH IN FEET		MATERIAL DESCRIPTION					DLOGY	N	мс	SA T	MPLE YPE	REC IN,	FIELI WC	D & LA	BORAT	1	FESTS %-#20		
1 -	FILL, r roots, b	nostly silty sand, a rown and dark brow		FILL		13	М	М	SS	3									
2 -						11	М	\mathbb{H}	SS	6				•					
3 - 4 -	FILL, r	nostly silty sand wi	ith gravel, d	lark brown						ł									
5 - 6 -	(A-1-b)							12	М	Д	SS	6		-					
7 - 8 -								9	М		SS	1							
9	-							_		I					· .				
11 -				1 1⁴ 1 .			DOL	9	M	X R	SS	6				×			
12	- SAND brown, (A-1-b)	WITH GRAVEL, 1 moist, dense to me)	medium gra dium dense	ained, light e (SP)		COA ALL	IRSE UVIUM	33	М		SS	10							
14 15	-							23	M	X	SS	6							
16 17										E									
18 -	-							25	M	X H	SS	6							
19 - 20 -	SAND, brown, (A-1-b)	SAND, a little gravel, fine to medium grained, brown, waterbearing, medium dense (SP)						17	W	X	SS	10							
21 -		DF BORING																	
5/10/14																	: ₩		
ELL.GDT									-										
+CPT+WE																			
CORP WCOORDINATES 01-05697.6PJ AET+CPT+WELLGDT 6/10/14																			
6 DEPTH: DRILLING METHOD				WATER LEVEL MEA					L ÉMEN	TS			<u> </u>	<u> </u>	NOTE: REFER TO				
0-1	0-19½' 3.25" HSA		DATE	SAM		LED TH	CASING DEPTH			DRILLING FLUID LEVE		NG EVEL	L WATER LEVEL		THE ATTACHED				
OOR				1:05	21.	0	19.5		0.1				20.0		SHEE				
			5/22/14	1:16	21.	0	19.5	2	0.1				20.0	,	EXPLA				
BORING COMPLETED: 5/22/14													T 	ERMI					
DR: JM LG: CD Rig: 68C						·	,							TH	IIS LO	G			



AET JC	DB NO: 01-05697				<u> </u>	LC	OG OF	BO	RING N	IO.	1185	5 ST	(p. 1	lof	1)	
PROJECT: Southwest Light Rail Transit Project, PEC East; Hopkins to Minneapolis																
SURFA	CE ELEVATION: 925.5	o. Coo	rdinates: <u>N</u>	1	4937	2,		2								
DEPTH IN FEET	MATERIAL I	DESCRIPTIO		GEOLOGY	N	N MC SA			REC IN.	FIELI WC) & LA DEN	BORAT	1	FESTS %-#200		
FEEI	FILL, mostly silty sand, a	ittle gravel	, dark		FILL						wc	DEN			70-#200	
1 -	brown (A-1-b)	5				12	M	X	SS	6						
2 -	GRAVELLY SAND, med	ium to coar	se grained,	,	COARSE ALLUVIUM	8	M	\square	SS	8						
3 - 4 -	brown, moist, loose (SP) (A	, u			OR FILL			सि								
5	SAND, fine grained, light dense (SP) (A-3)	1	COARSE	11	M	M	SS	12								
6 -								A	00	12						
7 -						10		R	60	10						
8 -					•	10	M	Å	SS	12						
9 -	SAND, fine to medium gra		brown,		•											
10 -	moist, medium dense (SP)		•	10	M	Å	SS	14								
12 -	SAND, fine grained, light	n	<u>-</u> •			Ĭ										
13 -	dense to dense, lenses and laminations of silt (SP) (A-3)					24	M	X	SS	10						
14 -						ß										
15 -			FINE	31	M	Х	SS	12								
16 -	SILT WITH SAND, brown (A-4)		ALLUVIUM			Ł										
17 -	SAND, fine to medium gra moist, dense (SP) (A-3)	ained, light	brown,		COARSE ALLUVIUM	44	M	Ņ	SS	14						
19 -			mainad					Ł								
20 -	SAND WITH SILT, fine the light brown, moist, dense,	lenses and	lamination	s		31	M	\square	SS	14						
21 -	of silty sand (SP-SM) (A-3 END OF BORING	5)		<u></u>	<u>.</u>		-			1						
4								,								
T 6/2/1								,								
LLL.GD																
T+WE																
ET+CP																
GPJ A																
CORP W-COORDINATES 01-05697.GPJ AET+CPT+WELL.GDT 6/2/14								T				<u> </u>				
ក្ DEl	PTH: DRILLING METHOD	WATER LEVEL MEA				- 1			<u>, , , , , , , , , , , , , , , , , , , </u>	NC	117 A 777		NOTE: REFER TO			
₩ 0-19½' 3.25" HSA		DATE	TIME	SAMP DEP	LED CASING TH DEPTH		CAVE-IN DEPTH		DRILLI UID LI	EVEL	L UATER LEVEL		THE ATTACHED			
SOORI		5/22/14	8:18	21.			20.8				Non	— I ,	SHEETS FOR AN EXPLANATION OF			
불 문 BORI	NG	5/22/14	8:58	21.	0 19.5		2.7				Non	C				
	PLETED: 5/22/14					-		-				TERMINOLOGY O THIS LOG				
AL DK: 1	M LG: CD Rig: 68C							1								

1