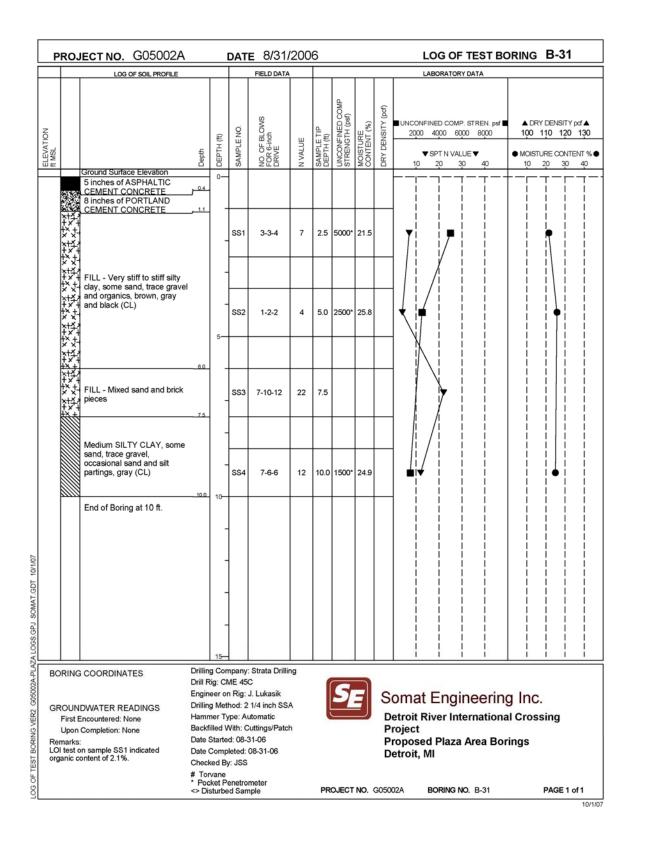
## APPENDIX F GEOTECHNICAL

		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA			
		LUG OF BUIL FROMILE													
ft MSL		Ground Surface Elevation	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 MOISTURE CONTENT % 10 20 30 40		
		6 inches of ASPHALTIC		0-	1							+			
	x+x x+x x x+x x+ x + x x+ x+x	CEMENT CONCRETE 8 inches of PORTLAND CEMENT CONCRETE FILL - Mixed medium dense	1.2	-	SS1	6-5-4	9	2.5							
	× + × × + × × + × × + × × + × × + × × + × × + × × + × + × + × + × + × + × + × + × + × × × + × × × + × × × + × × × + × × × + ×	silty fine sand, clayey fine sand and sandy clay, trace gravel, asphalt pieces and glass pieces, brown/gray/black, moist (SM)(SC)(CL)			SS2	7-5-8	13	5.0							
	+*×	Medium dense SANDY SILT trace gravel, brown, wet (ML		-	SS3	4-6-7	13	7.5							
		Very stiff SILTY CLAY, som sand, trace gravel, gray (CL)	e	-	SS4	4-2-3	5	10.0	4500*	25.9					
		End of Boring at 10 ft.	10.0	- 10											
				-											
				15-											
GR	OUN	COORDINATES	Drill F Engin Drillin Hamr	Rig: Cl leer of g Met ner Ty	ME 55 n Rig: hod: 2 /pe: Ma		A		S		Somat Engineering Inc. Detroit River International Crossing				
	Upon marks:	Completion: None :	Backfilled With: Cuttings/Patch Date Started: 08-21-06 Date Completed: 08-21-06 Checked By: JSS # Torvane								P	vroject vroposed Plaza Area Borir betroit, Ml	gs		

	KO.	IECT NO. G05002A			DAT	E 8/16/	200	6	
		LOG OF SOIL PROFILE				FIELD DATA			_
ELEVATION ft MSL		Creved Purchase Elaustice	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP
	it ک	Ground Surface Elevation 4 inches of ASPHALTIC CEMENT CONCRETE 4 inches of aggregate FILL 8 inches of PORTLAND		-0					
		CEMENT CONCRETE	3	1 -	SS1	2-2-2	4	2.5	
		FILL - Very loose to loose fine sand, trace to some silt, trace gravel, light brown, moist (SP/SM)		-					
	****	Indist (SF7SM)		5-	SS2	2-2-5	7	5.0	
	+*+		55	-					
		Stiff to medium SILTY CLA	٢,	-	SS3	3-2-3	5	7.5	200
		some sand, trace gravel, gray (CL)		-	SS4	2-2-2	4	10.0	150
		End of Boring at 10 ft.	10.0	10-	-				
				-					
			Drillir	15-	hpany	: Strata Drillir			
BORING COORDINATES GROUNDWATER READINGS First Encountered: None			Drill F Engir Drillir	Rig: Cl neer o ng Met	ME 55 n Rig:	J. Lukasik 1/4 inch SS/			5
Re	Upon marks	Completion: None :	Date Date Chec	Starte Comp ked B	d: 08-	08-16-06	h		
			* Po	rvane cket P isturbe	enetro ed San	meter nple		PR	OJE

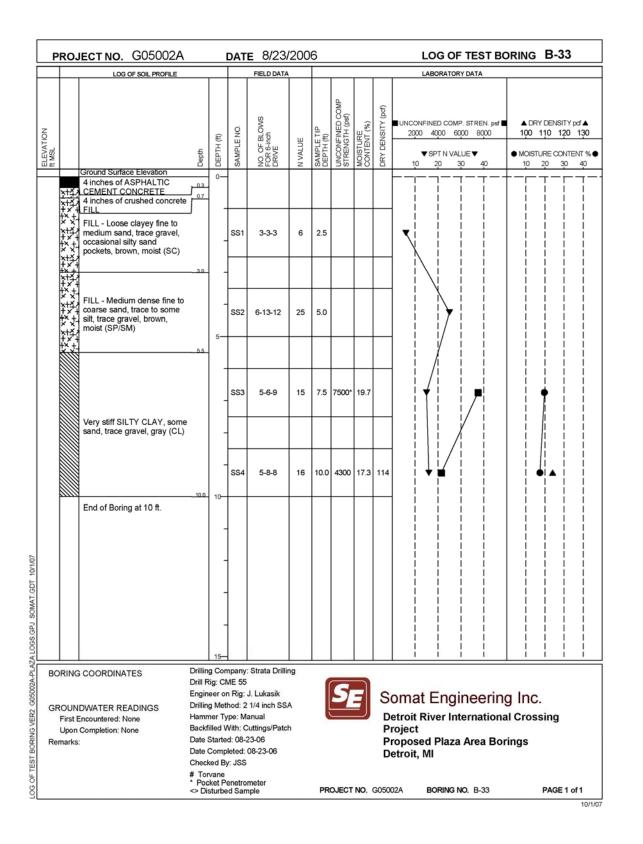
## Detroit River International Crossing Conceptual Engineering Report

		LOG OF TEST BO	DRING B-29
_	1	LABORATORY DATA	
MOISTURE	CONTENT (%) DRY DENSITY (pd)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
		<b>†</b>	
23.	3	<b>+•</b>	•
• 30.	8		
E	D P P	omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	I Crossing
r No	. G050	D2A BORING NO. B-29	PAGE 1 of 1



Р	ROJ	IECT NO. G05002A			DAT	e 8/31/	200	6		
		LOG OF SOIL PROFILE				FIELD DATA				
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (net)	
	×+X )	Ground Surface Elevation 9 inches of ASPHALTIC CEMENT CONCRETE 2 inches of PORTLAND	- 0.8	0						
	+** ***	CEMENT CONCRETE FILL - Loose silty fine sand, trace gravel, gray, moist (SM)		-	SS1	3-3-4	7	2.5		
	× × × × × × × × × × × × × ×		30	-						
		FILL - Medium silty clay, some sand, trace gravel and roots, gray (CL)		5-	SS2	2-1-1	2	5.0	1500	
			6.0	-						
				-	SS3	2-3-3	6	7.5	280	
		Stiff SILTY CLAY, some sand, trace gravel, brown (CL)		-	SS4	2-3-3	6	10.0	250	
		End of Boring at 10 ft.	10.0	10-		2.000			200	
		, i i i i i i i i i i i i i i i i i i i		-						
				-						
				-						
				15-						
GF	ROUN First E	© COORDINATES DWATER READINGS Encountered: None Completion: None	Drill F Engin Drillin Hamr Backf Date	Rig: CN eer or g Met ner Ty illed V Starte	ME 450 hod: 2 /pe: Au Vith: C d: 08-3	J. Lukasik 1/4 inch SS/ utomatic cuttings/Patcl 31-06	Ą		5	
			Check # Tor * Poo	ked By vane ket P	leted: y: JSS enetro			PROJEC		

		LOG OF TEST BO	DRING B-32
		LABORATORY DATA	
MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
22.4			• • • • • • • • • • • • • • • • • • •
24.2	110		▲
29.0	100	<b>+-</b>	
	Di Pi Pi	omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	I Crossing
r No. (	G050(	D2A BORING NO. B-32	PAGE 1 of 1



PRU	JECT NO. G05002A			DAI	e 8/24	1200	0	
	LOG OF SOIL PROFILE				FIELD DATA	<u>`</u>	-	
ELEVATION ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)
	Ground Surface Elevation 6 inches of ASPHALTIC		0-					
**** ****	CEMENT CONCRETE	05_	-					
++++++++++++++++++++++++++++++++++++++	medium sand, trace gravel and clay, greenish gray/brown, moist (SM)	30	-	SS1	5-3-3	6	2.5	
	Medium SILTY CLAY, trace sand and gravel, brown (CL)		-	SS2	3-2-2	4	5.0	1000#
		. 55	5					
			-	SS3	4-5-6	11	7.5	3000;
	Stiff SILTY CLAY, some sand, trace gravel, gray (CL)		-					
	End of Boring at 10 ft.	. 10.0	10	SS4	4-4-6	10	10.0	2500;
	Lind of Bolling at 10 it.		-					
			-					
			-					
BORING	COORDINATES	Drill F	Rig: Cl	ME 55	Strata Drilli	ing	1	C
First	IDWATER READINGS Encountered: None Completion: None	Drillin Hamr Backt	g Met ner Ty filled V	hod: 2 /pe: M Vith: C	uttings/Patc		Į	
Remarks Foreign	;; odor detected in sample SS1.	Date Check # Tor	Comp ked B vane	d: 08-3 leted: y: JSS enetro	08-24-06			

		LOG OF TEST BO	DRING B-35
		LABORATORY DATA	
STRENGTH (psf) MOISTURE CONTENT (%)	DRY DENSITY (pdf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
		Ţ	
0# 24.3			•
00# 23.2			
00# 22.3			
E	Di Pi Pi	Omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	g Inc. al Crossing
CTNO.	G0500	D2A BORING NO. B-35	PAGE 1 of 1
			10/1/07

	LOG OF SOIL PROFILE				FIELD DATA	<u> </u>					LABORATORY DATA	
ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 VSPT N VALUE V 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % 10 20 30 40
x+xx x+x x+x x+x x+x	Ground Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE FILL - Mixed sity fine to medium sand and sity clay, trace gravel, brown and gray (SM)(CL)	04	- 0	SS1	2-3-3	6	2.5					
22 22	Stiff SILTY CLAY, some sand, trace gravel, brown (CL)	30		SS2	2-3-3	6	5.0	2500*	25.1		-   ♥   <b>₽</b>	•
	Stiff SILTY CLAY, some sand, trace gravel, occasional silt partings, gray (CL)	60	-	SS3	3-3-4	7	7.5	2200		105		
	End of Boring at 10 ft.	10.0	- 10	SS4	3-4-5	9	10.0	3000*	28.9			
			-									
GROUN First Upor	BORING COORDINATES BORING COORDINATES GROUNDWATER READINGS First Encountered: None Upon Completion: None Remarks:			15 Drilling Company: Strata Drilling Drill Rig: CME 55 Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SSA Hammer Type: Manual Backfilled With: Cuttings/Patch Date Started: 08-25-06 Date Completed: 08-25-06 Checked By: JSS						D P P	Omat Engineerin etroit River Internation roject roposed Plaza Area Bo etroit, MI	al Crossing

Р	ROJ	ест NO. G05002A			DAT	e 8/23/	200	6	
	_	LOG OF SOIL PROFILE				FIELD DATA			
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)
	xt Xt子	Ground Surface Elevation 4 inches of ASPHALTIC CEMENT CONCRETE 4 inches of PORTLAND CEMENT CONCRETE	0.7	0-					
	***** *****	FILL - Loose clayey fine to medium sand, trace silt and gravel, brown, moist (SC)		-	SS1	3-4-4	8	2.5	
		FILL - Dense silty fine to	30	-					
	浅 な な な な な な な な な な な な な な な な な な な	medium sand, tráce silt and gravel, brown, moist (SM)	50	5-	SS2	11-14-16	30	5.0	
				-					
		Very stiff SILTY CLAY, some sand, trace gravel,		-	SS3	5-7-8	15	7.5	6500
		occasional silt partings, gray (CL)		-					
			10.0	10-	SS4	4-6-8	14	10.0	•
		End of Boring at 10 ft.		-					
				-					
				-					
				15-					
GR	OUN First E	COORDINATES	Drill F Engin Drillin Hamr	Rig: Cl leer of g Met ner Ty	ME 45 n Rig: hod: 2 ype: A	: Strata Drilli C J. Lukasik 1/4 inch SS utomatic cuttings/Patc	A		S
	Upon narks:	Completion: None	Date Date Check # Tor	Starte Comp ked By vane	d: 08-3	23-06 08-23-06			OJEC.

		LOG OF TEST BO	DRING B-38									
(%	TY (pd)	LABORATORY DATA	▲ DRY DENSITY pdf ▲									
MOISTURE CONTENT (%)	DRY DENSITY (pd)	2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	100         110         120         130           ● MOISTURE CONTENT % ●         10         20         30         40									
24.1			<b>•</b>									
17.4												
NO.		etroit, MI 02A BORING NO. B-38	PAGE 1 of 1									
			10/1/07									

		LOG OF SOIL PROFILE				E 8/24						LOG OF TEST BORING B-40
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pcf ▲ 2000 4000 6000 8000 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40
ŧ.		Ground Surface Elevation 4 inches of ASPHALTIC CEMENT CONCRETE 4 inch BRICK layer		0-		200	2		00	20		
		Loose CLAYEY SILT, trace sand, brown, moist (Possible Fill)(ML)	25	-	SS1	2-2-3	5	2.5		26.5		
				5	SS2	1-1-1	2	5.0	800#	27.2		
		Soft SILTY CLAY, trace san and gravel, occasional silt partings, gray (CL)	d	-	SS3	1-1-1	2	7.5	800#	32.7		
		End of Boring at 10 ft.	10.0	- 10	SS4	1-0-1	1	10.0	500	38.2	88	
				-								
				-								
во	RING	COORDINATES	Drill F	Rig: Cl	ME 45		ng					
	ROUNDWATER READINGS First Encountered: None Upon Completion: None temarks:			ig Met mer Ty filled V Starte Comp ked By	hod: 2 /pe: Au Vith: C d: 08-2	08-24-06		Į	S		D P P	omat Engineering Inc. etroit River International Crossing roject roposed Plaza Area Borings etroit, MI
				cket P	enetro ed San			pp	OJECT	NO	6050	02A BORING NO. B-40 PAGE 1 of 1

P	ROJ	<b>ЕСТ NO</b> . G05002A			DAT	e 8/24	200	6			
		LOG OF SOIL PROFILE				FIELD DATA	<u> </u>				
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP		
	×tý:	Ground Surface Elevation 2 inches of ASPHALTIC CEMENT CONCRETE 4 inch BRICK layer	0.2	0—							
	** *** *** ** *** ***	FILL - Very loose clayey fine sand, trace gravel, dark brown and light brown, moist (SC)		-	SS1	2-2-2	4	2.5			
	+× + × +× + × +× +		30	-							
	× *** **** ***	FILL - Very loose silty fine to medium sand, trace gravel, brown, moist (SM)		5-	SS2	2-2-2	4	5.0			
	+× +										
		Stiff SILTY CLAY, trace sand	ł	-	SS3	3-4-6	10	7.5	35		
		and gravel, frequent silt partings and seams, gray (CL)		-							
			10.0	10-	SS4	4-4-5	9	10.0	25		
		End of Boring at 10 ft.		-							
				-							
				- 15-							
	ROUN First E	© COORDINATES DWATER READINGS Encountered: None Completion: None	Drill F Engin Drillin Hamr	rilling Company: Strata Drilling rill Rig: CME 45C ngineer on Rig: J. Lukasik rilling Method: 2 1/4 inch SSA jammer Type: Automatic ackfilled With: Cuttings/Patch							
Re	marks		Date Check # Tor * Poo	Comp ked B vane cket P	d: 08-3 leted: y: JSS enetro	08-24-06 meter		PR	0.16		

			LOG OF TEST BO	DRING B-41
Γ			LABORATORY DATA	
MOISTURE	CONTENT (%)	DRY DENSITY (pdf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
	_			
			Ţ	
21	.9		<b>₩</b>	•
26	5.8			
-		Di Pi Pi	omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	g Inc. I Crossing
NC	<b>)</b> . (	G0500	D2A BORING NO. B-41	PAGE 1 of 1

		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	■ UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pdf ▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40
	ξ.	Ground Surface Elevation 6 inches of PORTLAND CEMENT CONCRETE Field engineer reported mixed gravel and topsoil FILI Stiff SILTY CLAY, trace san and gravel, occasional clayer silt seams, brownish gray (CL)	d	- 0	SS1	4-4-3	7	2.5				
				- 5—	SS2	1-1-2	3	5.0	•	26.1		
		SILTY CLAY, trace sand and gravel, gray (CL)	d	-	SS3	1-1-2	3	7.5	•	34.5		
		End of Boring at 10 ft.	10.0	- 10	SS4	1-1-1	2	10.0	•	38.7		
				-								
GRO Fii	UNE rst E pon (	COORDINATES DWATER READINGS ncountered: None Completion: None	Drill F Engin Drillin Hamr Backt Date Date	g Cor Rig: Cl eer or g Met ner Ty illed V Starte Comp	ME 55 h Rig: hod: 2 /pe: Ma Vith: C d: 08-2	J. Lukasik 1/4 inch SS. anual Cuttings/Patc 23-06 08-23-06	A		S		D P P	Comat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI

	JECT NO. G05002A		_		E 8/23/		T						ATORY		 	GE	_
	LOG OF SOIL PROFILE				FIELD DATA	Ì	$\uparrow$					LABUR		JATA			
ELEVATION ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	<u> </u>	4000	COMP. 8 6000 1 VALUE 30	8000	10	DRY DI 0 110 XISTURE 0 20	0 12 E 001
	Ground Surface Elevation 6 inches of ASPHALTIC CEMENT CONCRETE	0.5	0—											- <del>-</del> -	 	- 7	_
±+x x+x	9 inches of PORTLAND CEMENT CONCRETE	1.3	-	SS1	10-5-4	9	2.5										
× *** × **			-														
×*************************************	FILL - Loose silty fine to medium sand, trace gravel, brown, moist (SM)		-	SS2	5-4-5	9	5.0										
*+* ×*+*	<u> </u>		5—														
x ¥+x		7.0	-	SS3	6-11-3	14	7.5	3000*									
	Stiff SILTY CLAY, some sand, trace gravel, brown (CL)	9.0	-														
	Stiff SILTY CLAY, some sand, trace gravel, occasional silt partings, gray (CL)	J 100	10	SS4	3-4-4	8	10.0	2500*	30.6								
	End of Boring at 10 ft.		-														
			-														
			-														
BORIN	G COORDINATES	-			: Strata Drilli	ng							i		i		_
	NDWATER READINGS	Drilling	er or Meti	n Rig: hod: 2	C J. Lukasik 1/4 inch SS utomatic	A		S			omat etroit F				 12.		200
	Encountered: None n Completion: None s:	Backfill Date S Date C	led V tarte omp	Vith: C d: 08- leted:	Cuttings/Patc 23-06 08-23-06	h				P P	roject ropose etroit,	d Pl					9
		# Torv * Pock <> Dist	ane et Pe	enetro	meter		DD	OJECT		0050		DOD	NG NO	D (0			AGE

_	LOG OF SOIL PROFILE				FIELD DATA	<u> </u>					LABORATORY DATA
ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	UNCONFINED COMP. STREN. psf ▲ DRY DENSITY pd ▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40
X	Ground Surface Elevation 3 inches of ASPHALTIC CEMENT CONCRETE 9 inches of PORTLAND CEMENT CONCRETE		- 0								
-+	FILL - Medium dense silty fine to medium sand, trace gravel, brown and dark brown, moist (SM)	30	-	SS1	5-6-6	12	2.5		19.5		
			-	SS2	3-3-5	8	5.0		23.9		
	Loose CLAYEY SILT, trace sand and gravel, gray (ML)		-	SS3	2-3-3	6	7.5		24.8		
	Medium SILTY CLAY, some sand, trace gravel, gray (CL)	8.0		SS4	2-2-3	5	10.0	1900	25.5	100	$\left  \begin{array}{cccccccccccccccccccccccccccccccccccc$
	End of Boring at 10 ft.		-								
			-								
BORING	GCOORDINATES		-	npany: ME 55	Strata Drilli	ng					
First I	IDWATER READINGS Encountered: None Completion: None :	Engin Drillin Hamn Backf Date	ieer of g Met mer Ty filled V Starte Comp ked B	h Rig: . hod: 2 vpe: Ma Vith: C d: 08-2	uttings/Patc		Į	S		D P P	omat Engineering Inc. etroit River International Crossing roject roposed Plaza Area Borings etroit, MI

Р	ROJ	ест NO. G05002A			DAT	e 8/25/	200	6	
		LOG OF SOIL PROFILE				FIELD DATA			
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (pst)
_		Ground Surface Elevation 8 inches of ASPHALTIC		0-					
	x+*x x+*x	CEMENT CONCRETE	0.7	-	SS1	6-5-3	8	2.5	
	<u>}</u>	FILL - Loose silty fine to coarse sand, trace gravel and organics, frequent sand clay pockets, brown/black/gray (SM)	V	- 5—	SS2	3-5-1	6	5.0	
		Medium dense CLAYEY SILT, trace sand and gravel, brown (ML)	60	-	SS3	4-3-8	11	7.5	
		Loose CLAYEY SILT, trace sand and gravel, gray (ML)	8.0		SS4	2-3-3	6	10.0	
		End of Boring at 10 ft.		-					
GR Rer LOI	OUN First E Upon narks: tests cated	COORDINATES	Drill F Engin Drillin Hamr Backt Date Date Check # Too * Poo	Rig: Cl leer of g Met mer Ty filled V Starte Comp ked B tvane cket P	ME 55 n Rig: hod: 2 /pe: M Vith: C d: 08-2	J. Lukasik 1/4 inch SS/ anual 2uttings/Patcl 25-06 08-25-06 meter	Ą	PR	S

			LOG OF TEST BO	DRING B-45
	Т		LABORATORY DATA	
MOISTURE	CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
12	.3		<b>Y</b>	•
19	.1		$\underbrace{+}$	
25	.0		<b>Y</b>	
24	.7		↓	
E	)	De Pr Pr	Dmat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	al Crossing
r No	). G	0500	BORING NO. B-45	PAGE 1 of 1

		LOG OF SOIL PROFILE		_		FIELD DATA	\					LABORATORY DATA
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (pst)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pdf▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40
	tt t	Ground Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE 11 inches of PORTLAND CEMENT CONCRETE	04	- 0								
	+*×	FILL - Stiff silty clay, some		-	SS1	3-3-4	7	2.5	3500*	23.5		
	** **** ***** ** ****	sand, trace gravel, occasional silt seams, gray (CL)		- 5—	SS2	2-3-3	6	5.0	3000*	23.7		
	× ++ ×+ ×+ ×+ ×+ ×+ ×+ ×+ ×+ ×+ ×+ ×+ ×+	FILL - Very loose to medium dense silty fine sand, trace clay and gravel, trace clay	6.0	-	SS2	2-1-1	2	7.5				
	**** *********************************	počkets, brown and gray, moist (SM) FILL - Silty clay and brick	9.5	-	SS4	1-6-12	18	10.0				
		pieces, trace sand and gravel, brown and gray (CL) End of Boring at 10 ft.		- 10								
				-								
BC	RING	COORDINATES	Drillin	15-	npany	Strata Drilli	ng					
GR	OUN	DWATER READINGS	Engin Drillin	eer o g Met	hod: 2	C J. Lukasik 1/4 inch SS. Itomatic	A		S			Somat Engineering Inc. Detroit River International Crossing
	Upon marks:	Completion: 7 feet	Date Date Chec	Starte Comp ked B	d: 08-2	uttings/Patc 28-06 08-28-06	h				Ρ	Project Proposed Plaza Area Borings Detroit, MI
			# Tor * Poo		enetro					NO.		002A BORING NO. B-46 PAGE 1 of 1

	_	LOG OF SOIL PROFILE				FIELD DATA	<u>\</u>						LABOR/	TORY D	ATA			
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)		▼ SPT N	6000		10	DRY DE 0 110 ISTURE 1 20	12
		Ground Surface Elevation 6 inches of ASPHALTIC		0-		200	-	0,0		20		<u> </u>				<u>+-</u> ŗ	- <u>-</u> -	
10.00		CEMENT CONCRETE 10 inches of PORTLAND CEMENT CONCRETE	05_	-									ļ	ļ			ļ	
<u>1 x+7 x</u>	¥ 文			.	SS1	5-7-4	11	2.5				7	ļ	i	i	ļį	İ	
x x±+x	¥ ¥ ¥ ¥	FILL - Mixed silty clay and silty fine sand, trace gravel and brick pieces, brown and gray (CL)(SM)	ł	-	-													
+X   X+	X X X X X X		4.0	-	SS2	1-3-2	5	5.0										
+× ×±-	ξł ζł	FILL - Stiff silty clay, some		5—									ļ				ļ	
÷× ×+:	۲. ۲	sand, trace gravel, gray (CL	.)	-													I	ļ
<del>x±+x</del> k:	く 、 、 、 、 、 、 、 、 、 、 、 、 、		65	-	SS3	1-2-2	4	7.5	3000*	30.7								
x <del>x1+x</del>		FILL - Loose to medium dense silty fine to coarse sand, trace gravel, brown,		-	$\left  \right $												i	
HX X++		moist to wet (SM)	9.5	-	SS4	2-5-6	11	10.0						i			i	
		SILTY CLAY, some sand, trace gravel, gray (CL)	10.0	10-				-					i	i	i		i	
		End of Boring at 10 ft.																
																	ļ	
				-	1								ł	ł			i	
				.										-	ł		-	
													ł	ł				
				-	1								i	i	i		i	
				15-									- E	ł				3
BOR	ING	COORDINATES		-	mpany ME 55	: Strata Drilli	ng				0							
			Engin	eer o	n Rig:	J. Lukasik 1/4 inch SS	۵		5	Ξ	S	oma	t Er	ngin	eerin	ig In	C.	
		DWATER READINGS incountered: None	Hamr	ner T	ype: M	anual		ł		=J	D	etroit	River		nation			g
U Rema		Completion: None	Date	Starte	d: 08-		'n				Ρ		ed Pla	aza A	rea Bo	rings		
			Chec	ked B	y: JSS	08-25-06					D	etroit,	МІ					
			# Tor * Poo		enetro	meter												

	LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA
ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pcf ▲ 2000 4000 6000 8000 100 110 120 134 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT 1 10 20 30 40 10 20 30 40
×++××+××	Ground Surface Elevation 6 inches of ASPHALTIC CEMENT CONCRETE 5 inches of PORTLAND CEMENT CONCRETE FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist to dry (SM)	<u>05</u>	- 0	SS1	6-6-8	14	2.5				
	Field engineer reported clayey fine sand FILL Very stiff SILTY CLAY, some sand, trace gravel, gray (CL)		5-	SS2	3-5-6	11	5.0	6000*	23.7		
	Loose CLAYEY SILT, trace sand and gravel, gray (ML)	<u>    60    </u>	-	SS3	1-3-4	7	7.5		21.3		
	Stiff SILTY CLAY, trace sand and gravel, frequent silt partings, gray (CL) End of Boring at 10 ft.	<b>j</b> 10.0	-	SS4	2-3-5	8	10.0	2500*	24.6		
			-								
BORING	COORDINATES	Drill F	Rig: Cl	ME 55	Strata Drilli	ng					
First E	DWATER READINGS Encountered: None Completion: None :	Drillin Hamr Backt Date Date	g Met ner Ty filled V Starte Comp ked B	hod: 2 /pe: Ma Vith: C d: 08-2	uttings/Patc		Į	9		D P P	Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI

		IECT NO. G05002A				E 8/22		<del></del>	
		LOG OF SOIL PROFILE				FIELD DATA	Ì		
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP
		Ground Surface Elevation		0-	-				
		9 inches of ASPHALTIC CEMENT CONCRETE	0.8						
	珱	5 inches of crushed concrete FILL		- 1	<u> </u>		<u> </u>		-
				-	SS1	6-7-9	16	2.5	
	+ X + X X + X X + X X + X X + X X + X X + X X + X X + X X + X	FILL - Medium dense silty		-					
	× *** **	fine sand, trace gravel, orangish brown, moist (SM)		-	SS2	5-5-5	10	5.0	
			6.0	5-					
	x+*x x+* **** x+*	FILL - Medium dense silty fine to coarse sand, trace gravel, brown, moist (SM)		-	SS3	3-10-15	25	7.5	
	XX		8.0						
		FILL - Medium dense silty medium to coarse sand, trace gravel, brown, moist to wet (SM)		-	SS4	4-7-4	11	10.0	
		SILTY CLAY, some sand, trace gravel, gray (SL)	9.5	10-					
		End of Boring at 10 ft.							
				-					
				-					
				-					
				_					
BC			Drillin	g Cor	1 npanv	: Strata Drilli	ng		<u> </u>
			Engin	ieer oi		J. Lukasik 1/4 inch SS			5
GF		DWATER READINGS Encountered: None		-	/pe: M		A	ł	
		Completion: None	Back	illed V	Vith: C	uttings/Patc	h		
Re	marks	:			d: 08-:	22-06 08-22-06			
				-	y: JSS				
			# Tor * Poo <> Di	ket P	enetro			PR	OJE

		LOG OF TEST BO	DRING B-49
	(pcf)	LABORATORY DATA	
MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ●
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		7	
		┥┽╎╎	
		omat Engineering	The second se
	Pi Pi	roject roposed Plaza Area Bor etroit, MI	
NO.	G0500	D2A BORING NO. B-49	PAGE 1 of 1

	LOG OF SOIL PROFILE				FIELD DATA	\					LABORATORY DATA
ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	■ UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pdf▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40
	Ground Surface Elevation 4 inches of ASPHALTIC CEMENT CONCRETE 4 inches of PORTLAND CEMENT CONCRETE 4 inches of ASPHALTIC 2 CEMENT CONCRETE 4 inches of PORTLAND CEMENT CONCRETE 5 inches of PORTLAND CEMENT CONCRETE 5 FILL - Loose silty fine sand, 5 moist (SM)		0	SS1	3-3-4	7	2.5				Image: state
**** **** ****	A moist (SM)		- 5—	SS2	2-3-4	7	5.0				
<u> </u>	Medium dense CLAYEY	80	-	SS3	5-8-11	19	7.5				
	SILT, trace sand and gravel, brown (ML) End of Boring at 10 ft.	10.0	- 10	SS4	2-5-5	10	10.0		26.7		
			-								
	NG COORDINATES	Drill F Engin	Rig: Cl	ME 450 n Rig:	J. Lukasik			S		S	omat Engineering Inc.
Fin	UNDWATER READINGS st Encountered: None xon Completion: None rks:	Hamr Back Date Date	ner Ty illed V Starte Comp ked B	/pe: Au Vith: C d: 08-3	1/4 inch SS utomatic uttings/Patc 31-06 08-31-06		ł			D P P	Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI

Р	ROJ	ECT NO. G05002A	۹		DAT	e 8/23/		6		
		LOG OF SOIL PROFILE				FIELD DATA	Ì			Г
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE
_		Ground Surface Elevation 5 inches of ASPHALTIC	. 0.4	0—						Γ
	<u>+</u> + <u>+</u> × <del>+</del> + <u>+</u> + <u></u>	CEMENT CONCRETE 8 inches of crushed concre FILL FILL - Silty sandy clay, tracc gravel, dark brown and	te 1.1	-	SS1	7-9-14	23	2.5	•	
		brown (CL)	3.5	-						
	++++++++++++++++++++++++++++++++++++++	FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM)		-	SS2	10-9-12	21	5.0		
	X X X		55							
		Hard to very stiff SILTY		-	SS3	7-6-7	13	7.5	8000*	1
		CLAY, some sand, trace gravel, occasional silt partings, gray (CL)		-						
			10.0	- 10	SS4	5-9-7	16	10.0	5500*	2
		End of Boring at 10 ft.		-						
				-						
				-						
				-						
во	RING	COORDINATES		-	npany ME 55	Strata Drilli	ng			
	First E	DWATER READINGS incountered: None Completion: None	Engin Drillin Hamr Backl Date	eer or g Met ner Ty illed V Starte	h Rig: hod: 2 vpe: Ma Vith: C d: 08-2	J. Lukasik 1/4 inch SS, anual cuttings/Patc		Į	S	
			# Tor * Poo	vane ket P	/: JSS enetro			PR	OJECT	N

	LOG OF TEST BO	DRING B-56
	LABORATORY DATA	
STRENGTH (psf) MOISTURE CONTENT (%) DRY DENSITY (pcf)	▼ SPT N VALUE ▼	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
>		
00* 18.7	I I <i>T</i>	
Detroit Projec	sed Plaza Area Bor	I Crossing
CT NO. G05002A	BORING NO. B-56	PAGE 1 of 1

		LOG OF SOIL PROFILE		_		FIELD DATA						LABORATORY DATA
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	■ UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pcf ▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT 9 10 20 30 40 10 20 30 40
		Ground Surface Elevation 6 inches of PORTLAND CEMENT CONCRETE FILL - Mixed sand and topsoil	_ 05	- 0								
		FILL - Medium dense fine sand, trace silt and gravel, orangish brown, moist (SP)	1.5	-	SS1	3-5-7	12	2.5				
	\$ *+*** ***** *****	FILL - Medium dense fine sand, trace silt and gravel, light brown, moist (SP)	30		SS2	5-6-6	12	5.0				
	×*** ×*** ×***	FILL - Medium dense silty fine to coarse sand, trace gravel, brown, moist (SM)	60	-	SS3	4-5-5	10	7.5				
	**** *********************************	End of Boring at 10 ft.	10.0	- 10	SS4	3-5-7	12	10.0				$\left \begin{array}{cccccccccccccccccccccccccccccccccccc$
				-								
			0-11	15								
		COORDINATES	Drill F Engin Drillin	Rig: Cl leer o g Met	ME 450 n Rig: hod: 2	J. Lukasik 1/4 inch SS.			S			Somat Engineering Inc.
	First E	Encountered: None Completion: None	Back Date Date	filled V Starte Comp	Vith: C d: 08-2	utomatic uttings/Patc 24-06 08-24-06	h				P P	Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI
			# To	vane	enetro	meter			OJECT			002A BORING NO. B-58 PAGE 1 of 1

PRO	JECTNO. G	05002A			DAT	e 8/25/	200	6	
	LOG OF S	OIL PROFILE				FIELD DATA		-	
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)
	Ground Surface E 5 inches of ASP CEMENT CONO 7 inches of POR CEMENT CONO	HALTIC CRETE RTLAND	<u>0.4</u>	0-					
**** **				-	SS1	7-10-13	23	2.5	
** <del>**</del> **	FILL - Medium of FILL -	ome silt, ingish brown		-					
\$77x \$72	to brown, moist	(SP/SM)		-	SS2	8-6-6	12	5.0	
£x \$\$\$			55_	5-					
x	FILL - Dense fin sand, trace silt a brown, moist (S	and gravel,		-	SS3	15-19-12	31	7.5	
*****	+ +	dense silty	8.0	-					
<pre></pre>	}, fine to coarse sa ↓ gravel, brown, n ↓ (SM) ↓		10.0	- 10-	SS4	7-8-8	16	10.0	
	End of Boring a	t 10 ft.		-					
				-					
				-					
				-					
BORII	IG COORDINATES	\$	Drill F	tig: CN	AE 55		ng	1	
Firs	NDWATER READ t Encountered: None n Completion: None		Drillin Hamn Backf	g Meti ner Ty illed V	hod: 2 pe: Ma	uttings/Patch		Į	2
Remar	(5:		Date Check # Tor * Poo	Comp (ed By vane (ket Pe		08-25-06 meter			OJECT

			LOG OF TEST BC	DRING B-59
			LABORATORY DATA	
STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pdf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
		Di Pi Pi	Omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	I Crossing
ст	NO. (	G050(	D2A BORING NO. B-59	PAGE 1 of 1

	LOG OF SOIL PROFILE			<u> </u>	FIELD DATA	<u> </u>	<u> </u>				LABORATORY DATA
ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ▲ DRY DENSITY pcf 2000 4000 6000 8000 100 110 120 13 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT 10 20 30 40 10 20 30 40
xt2	Ground Surface Elevation 8 inches of ASPHALTIC CEMENT CONCRETE 6 inches of PORTLAND CEMENT CONCRETE	0.7	- 0	-							
tx x+x+x +x x+	FILL - Loose silty fine sand, trace gravel and organics, black, moist (SM)	25	-	SS1	2-2-3	5	2.5		17.7		
**************************************			5—	SS2	9-9-10	19	5.0				
×++× ×++× ×++× ×	FILL - Medium dense to loose silty fine to coarse sand, trace gravel, brown, moist to wet (SM)		-	SS3	2-5-11	16	7.5				
******	End of Boring at 10 ft.	10.0	- 10-	SS4	3-2-5	7	10.0				
			-								
	G COORDINATES				: Strata Drilli	ng					
First I Upon Remarks OI test o	IDWATER READINGS Encountered: None I Completion: None 5: on sample SS1 indicated an content of 3.9%.	Engin Drillin Hamr Backt Date Date	g Met ner Ty filled \ Starte Comp	hod: 2 /pe: Ma With: C ed: 08-2	J. Lukasik 1/4 inch SS. anual Cuttings/Patc 22-06 08-22-06			S		D P P	omat Engineering Inc. Petroit River International Crossing Project Proposed Plaza Area Borings Petroit, MI

_		IECT NO. G05002A				E 8/21		T										g E	_
		LOG OF SOIL PROFILE				FIELD DATA	Ì	$\vdash$					ABOR	ATORY [	JATA				
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	<u> </u>	4000		8000		10	DRY DE 0 110 IISTURE 0 20	0 12 E 001
		Ground Surface Elevation 3 inches of ASPHALTIC CEMENT CONCRETE 10 inches of PORTLAND	0.3	0—											- <del>-</del> -		r	- +	_
	*** *****	CEMENT CONCRETE	,1.1	-	SS1	2-3-4	7	2.5											
	** *** ** ** *** **	FILL - Loose silty fine sand trace gravel, gray, moist (SM)		-	-														
				5—	SS2	2-2-3	5	5.0											
	+X++X +X++X+		6.0	-	SS3	2-1-2	3	7.5				-   ↓     ↓							
		FILL - Very loose to loose sitly fine to coarse sand, trace gravel and asphalt pieces, black, moist to wet (SM)		-															
		End of Boring at 10 ft.	10.0	10	SS4	2-3-3	6	10.0											
				-															
				-	-														
				-															
BO	RING	COORDINATES	Drill F	ig Cor Rig: Cl	ME 45	: Strata Drilli C J. Lukasik	ng	ſ	5		0	ome	E			dina			
	First E Upon	DWATER READINGS Encountered: None Completion: None	Drillin Hamr Backt	g Met ner Ty filled \	hod: 2 ype: A	1/4 inch SS utomatic Cuttings/Patc		Į			D P	omat etroit F roject	River	Inte	rnati	ona	al Cro	ossir	ıg
For	narks: eign o SS4.	dor detected in samples SS3	Date Check # Tot	Comp ked B rvane	eleted: y: JSS	08-21-06 meter						ropose etroit, l		aza F	area	bor	ngs		

	LOG OF SOIL PROFILE				FIELD DATA	<b>`</b>					LABORATORY DATA
ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	■UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pcf ▲ 2000 4000 6000 8000 100 110 120 130 ▼SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40
	Ground Surface Elevation 2.5 inches of ASPHALTIC CEMENT CONCRETE 8.5 inches of PORTLAND CEMENT CONCRETE	02	0-	SS1	4-4-4	8	2.5		20		
**** *********************************	FILL - Loose fine sand, trace to some silt, trace gravel, brown, moist (SP/SM)	e	-		4-4-4	°	2.5				
**************************************		55	5	SS2	2-3-3	6	5.0				
*x *** *** *x *** *** ** ***	FILL - Loose silty medium to coarse sand, trace gravel, brown, wet (SM)	)	-	SS3	5-4-5	9	7.5				
	Medium SILTY CLAY, some sand, trace gravel, brownish gray (CL) End of Boring at 10 ft.			SS4	2-2-2	4	10.0	1500*	25.0		
			-								
BORING	GCOORDINATES	Drill F	Rig: Cl	ME 45		ng					
First I Upon Remarks	IDWATER READINGS Encountered: None Completion: None : dor detected in SS3	Drillin Hami Backi Date Date	g Met ner Ty filled V Starte Comp	hod: 2 /pe: Au Vith: C d: 08-3	08-31-06		Į	S		D P P	Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI

Р	ROJ	ECT NO. G05002A			DAT	e 8/23/	/200	6	
		LOG OF SOIL PROFILE				FIELD DATA	Ì		1
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (pst)
		Ground Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE 10 inches of PORTLAND	4	0-					
	x+***	CEMENT CONCRETE	1.3		SS1	9-6-6	12	2.5	
	+++++++++++++++++++++++++++++++++++++++	FILL - Medium dense silty fine to medium sand, trace		-					
	***** *****	gravel, brown, moist (SM)		-	SS2	6-7-10	17	5.0	
	+×++		55_	5					
				-	SS3	7-9-12	21	7.5	1120
		Hard to very stiff SILTY CLAY, some sand, trace gravel, gray (CL)		-					
			10.0	- 10-	SS4	6-7-10	17	10.0	5000
		End of Boring at 10 ft.		-					
				-					
				-					
				15-					
		COORDINATES	Drill F Engin	Rig: Cl	ME 55 n Rig:	: Strata Drilli J. Lukasik 1/4 inch SS/		ſ	5
	First E	Encountered: None Completion: None	Hamn Backf Date	ner Ty filled V Starte	/pe: Ma Vith: C d: 08-2	anual cuttings/Patc		e	
			Checl # Tor * Poo	ked B vane ket P	enetro	meter		PR	OJEC

	LOG OF TEST BO	RING B-65
	LABORATORY DATA	
ONTENT (9 ONTENT (9 3Y DENSIT	DNFINED COMP. STREN. psf 00 4000 6000 8000 ▼SPT N VALUE ▼ 0 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
21.3 107 26.0		10 20 30 40
Projec	t sed Plaza Area Bori	
NO. G05002A	BORING NO. B-65	PAGE 1 of 1

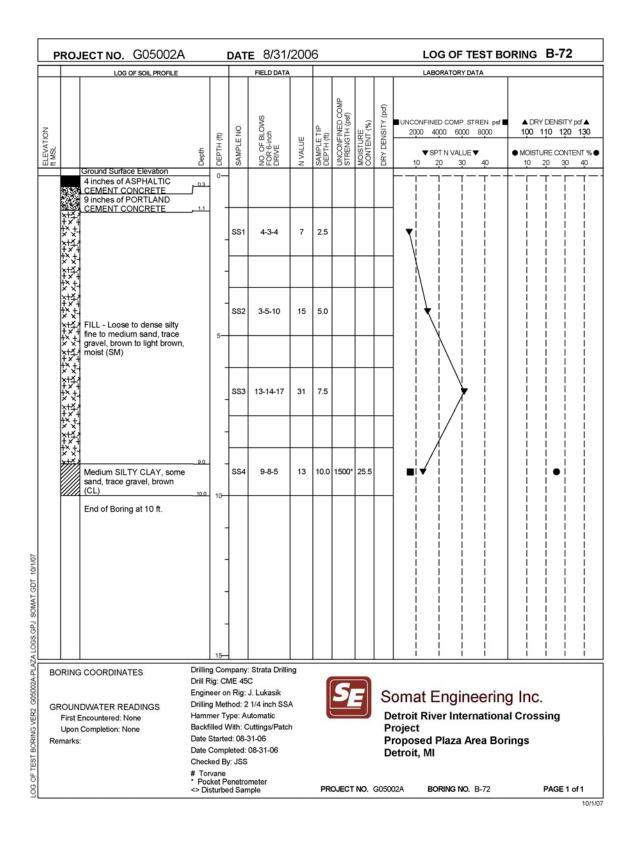
		LOG OF SOIL PROFILE				FIELD DATA	\					LABORATORY DATA	
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	2000 4000 6000 8000 1 ▼SPT N VALUE▼ ● M	DRY DENSITY pd ▲ 00 110 120 130 OISTURE CONTENT % 10 20 30 40
	x+x x+x x+x +	Ground Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE 8 inches of PORTLAND CEMENT CONCRETE	04	0									
	x x+*x x+*x x x+*x x+*x			-	SS1	9-7-7	14	2.5					
	x+xx x+x x+x x+xx x+x x+x x+x	FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM)		5—	SS2	7-10-7	17	5.0					
	** **** ** ** *** **		75	-	SS3	9-8-7	15	7.5					
		Very stiff SILTY CLAY, some sand, trace gravel, brown (CL) Very stiff SILTY CLAY, some sand, trace gravel, gray (CL)	9.5	-	SS4	8-5-6	11	10.0	4000*	21.1			
		End of Boring at 10 ft.		-									
				-									
BC	RING	COORDINATES	Drill F	Rig: Cl	ME 55		ng						
	First E	DWATER READINGS incountered: None Completion: None	Drillin Hamn Backf Date Date Check	g Met ner Ty illed V Starte Comp ked B	hod: 2 /pe: Ma Vith: C d: 08-2	Cuttings/Patc 23-06 08-23-06		Į	5		D P P	omat Engineering li petroit River International Cr project proposed Plaza Area Boring petroit, MI	rossing
			# Tor	vane	enetro					NO.			

Original     Ground Surface Elevation     O     SS1     4-4-5     9     2.5     Image: Constraint of the stand, trace gravel, brown, moist (SM)     SS1     4-4-5     9     2.5     Image: Constraint of the stand, trace gravel, brown, moist (SM)     SS1     5-5     5.0     Image: Constraint of the stand, trace gravel, brown, moist (SM)     SS1     5-5     5.0     Image: Constraint of the stand, trace gravel, brown, moist (SM)     SS1     5-5     5.0     Image: Constraint of the stand, trace gravel, brown, moist (SM)     SS1     5-5     5.0     Image: Constraint of the stand, trace gravel, brown, moist (SM)     SS3     5-5.7     12     7.5     Image: Constraint of the stand, trace gravel, brown, moist (SM)	Ground Surface Elevation         Given the surface series in the surface serie	NOTICITIE         Cound Sufface Elevation         O         S         S         AL4-5         9         2.5         Image: Cound Sufface Elevation         MORSTURE C           Cround Sufface Elevation         0			LOG OF SOIL PROFILE				FIELD DATA						I	ABORA	TORY	ATA			=
Ground Surface Elevation 6 inches of ASPHALTIC CEMENT CONCRETE 10 inches of PORTLAND CEMENT CONCRETE 10 inches of PORTLAND CEMENT CONCRETE 13 FILL - Mixed silty fine to motion and and silty clay, trace gravel, brown and gray KT FILL - Loose silty fine sand, trace gravel, orangish brown, moist (SM) FILL - Medium dense silty trace gravel, brown, moist (SM) SS3 5-5-7 12 7.5 SS3 5-5-7 12 7.5	Ground Surface Elevation Grinches of ASPHALTIC CEMENT CONCRETE 10 inches of PORTLAND CEMENT CONCRETE 10 inches of PORTLAND CEMENT CONCRETE 13 FILL - Mixed silty fine to medium sand and silty clay, trace gravel, brown and gray SS1 4-4-5 9 2.5 SS1 4-4-5 9 2.5 SS2 2-2-3 5 5.0 SS2 2-2-3 5 5.0 SS3 5-5-7 12 7.5 SS3 5-5-7 12 7.5 SS3 5-5-7 12 7.5 SS3 5-5-7 12 7.5 SS4 7-9-9 18 10.0	Ground Surface Elevation       0         Sinches of ASPHALTC       0         Tinches of ASPHALTC       10         Sinches of ASPHALTC       10         Fill       Middle Silv fare         Fill       Sinches of ASPHALTC         Sinches of ASPHALTC       10         Fill       Sinches of ASPHALTC         Sinches of ASPHALTC	ELEVATION t MSL			Jepth	DEPTH (ft)	SAMPLE NO.	VO. OF BLOWS FOR 6-Inch DRIVE	I VALUE	SAMPLE TIP DEPTH (ft)	JNCONFINED COMP STRENGTH (psf)	MOISTURE SONTENT (%)	DRY DENSITY (pd)	2000	4000	6000 I VALUE	8000	100 • MOIS	110 STURE	1
10 inches of PORTLAND CEMENT CONCRETE 13 FILL - Mixed silty fine to medium sand and silty clay, trace gravel, brown and gray (SM)(CL) 30 FILL - Loose silty fine sand, trace gravel, orangish brown, moist (SM) FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM) FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM) FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM) FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM) FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM) FILL - Medium dense silty	10 inches of PORTLAND CEMENT CONCRETE 13 FILL - Mixed silty fine to medium sand and silty clay, trace gravel, brown and gray (SM)(CL) 5 FILL - Loose silty fine sand, trace gravel, orangish brown, moist (SM) FILL - Medium dense silty fine to medium sand, trace gravel, brown, moist (SM) 10 10 10 10 10 10 10 10 10 10	10 Inches of PORTLAND         FILL - Mixed silly fine to medium and and silly clay, the trace gravel, norm and gray (SM)(CL)         FILL - Loose silly fine sand, trace gravel, rorangish brown, moist (SM)         FILL - Medium dense silly fine sand, trace gravel, norm and gray (SM)(CL)         FILL - Medium dense silly fine sand, trace gravel, norm and gray (SM)         FILL - Medium dense silly fine sand, trace gravel, norm and gray (SM)         Set 4: 445         Set 2: 2-2-3         Set 4: 445         Set 2: 2-2-3         Set 4: 445         Set 3: 55-7         Set 4: 445         Set 7: 9-9         Set 7: 9	ΠŒ		6 inches of ASPHALTIC		-		240	~			20					- <u>-</u>	<u>+-</u> ,		_
<pre>statustic statustic s</pre>	x x     x x <td>And Andrew Strate Dilling Company: Strate Dilling Method: 2: 1/d inch SSA Hammer Type: Automatic         GROUNDWATER READINGS First Encountered: Nome         GROUNDWATER READINGS First Encountered: Nome</td> <td></td> <td>+× ×≠+× ×+××+×</td> <td>10 inches of PORTLAND CEMENT CONCRETE FILL - Mixed silty fine to medium sand and silty clay, trace gravel. brown and gray</td> <td>, 13</td> <td>-</td> <td>SS1</td> <td>4-4-5</td> <td>9</td> <td>2.5</td> <td></td>	And Andrew Strate Dilling Company: Strate Dilling Method: 2: 1/d inch SSA Hammer Type: Automatic         GROUNDWATER READINGS First Encountered: Nome         GROUNDWATER READINGS First Encountered: Nome		+× ×≠+× ×+××+×	10 inches of PORTLAND CEMENT CONCRETE FILL - Mixed silty fine to medium sand and silty clay, trace gravel. brown and gray	, 13	-	SS1	4-4-5	9	2.5										
SS3 5-5-7 12 7.5	FILL - Medium dense silty file to medium sand, trace gravel, brown, moist (SM) trace 100 10 10 10 10 10 10 10 10 10 10 10 10	a0       a0       a       a       a       a       b		***** *******************************	FILL - Loose silty fine sand, trace gravel, orangish brown			SS2	2-2-3	5	5.0										
1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1     1     1     1       1     1     1 </td <td>f x<sup>2+1</sup>/string fine to medium sand, trace     -       t x<sup>2+1</sup>/string ravel, brown, moist (SM)     -       x + 2+1     -       t x +     -       x + 2+1     -       10     10</td> <td>BORING COORDINATES       Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik Drill Rig: CME 45C</td> <td></td> <td>*** **********************************</td> <td></td> <td>60</td> <td>-</td> <td>553</td> <td>5-5-7</td> <td>12</td> <td>7.5</td> <td></td>	f x <sup>2+1</sup> /string fine to medium sand, trace     -       t x <sup>2+1</sup> /string ravel, brown, moist (SM)     -       x + 2+1     -       t x +     -       x + 2+1     -       10     10	BORING COORDINATES       Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik Drill Rig: CME 45C		*** **********************************		60	-	553	5-5-7	12	7.5										
		End of Boring at 10 ft.       Image: Company: Strate Drilling Company: Strate Drilling Company: Strate Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cuttings/Patch         GROUNDWATER READINGS First Encountered: None Upon Completion: None       Drilling Company: Strate Drilling Company: Strate Drilling Drilling Company: Strate Drilling Company: Strate Drilling Company: Strate Drilling Company: Strate Drilling Drilling Company: Strate Drilling Drilling Company: Strate Drilling Company: Strate Drilling Company: Strate Drilling Drilling Company: Strate Drilling C		**************************************	fine to medium sand, trace	10.0	-	SS4	7-9-9	18	10.0										

## Detroit River International Crossing Conceptual Engineering Report

Р	ROJ	ECT NO. G05002A			DAT	e 8/25/	200	6				LOG OF TEST BORING B-70				
		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA				
ELEVATION ft MSL		Ground Surface Elevation	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	■ UNCONFINED COMP. STREN. psf         ▲ DRY DENSITY pdf ▲           2000         4000         6000         8000         100         110         120         130           ▼ SPT N VALUE ▼         10         20         30         40         10         20         30         40				
	x+x x+x	5 inches of ASPHALTIC CEMENT CONCRETE 9 inches of PORTLAND CEMENT CONCRETE	<u>0.4</u>	0	SS1	14-13-10	23	2.5								
	\$\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	FILL - Medium dense to loose silty fine to medium sand, trace clay and gravel, brown, moist (SM)		- - 5—	SS2	4-3-4	7	5.0								
		6 inch BRICK layer	6.0	-												
		VOID - Drilling rods dropped from 6.5 to about 10 feet		-												
		End of Boring at 10 ft.	10.0	- 10 -												
			-	-												
GF	ROUN First E	COORDINATES	15- Drilling Company: Strata Drill Rig: CME 55 Engineer on Rig: J. Lukas Drilling Method: 2 1/4 inch Hammer Type: Manual Backfilled With: Cuttings/ Date Started: 08-25-06 Date Completed: 08-25-06 Checked By: JSS # Torvane				A	(	S		Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI					
					enetro d San			PR	OJECT	NO. (	G050	002A BORING NO. B-70 PAGE 1 of 1				

		LOG OF SOIL PROFILE	` <u> </u>			E 8/21		<u> </u>						TORYD	EST B			_
ELEVATION ft MSL			pth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCON 2000	FINED C		TREN. psf 8000	10	DRY DI 10 110	0 12
U L		Ground Surface Elevation	Depth	e e	SA	NGR	ź	RA DES	STUN	¥8	Я	10	20	30	40	10	20	3
	لېل کې	3 inches of ASPHALTIC CEMENT CONCRETE 10 inches of PORTLAND CEMENT CONCRETE		-														
	**** *****			-	SS1	4-4-4	8	2.5										
		FILL - Loose fine sand, trac silt and gravel, light brown, moist (SP)	æ	-														
	+x + +x + x+x + +x +	- - -	. 5.0	5-	SS2	2-2-3	5	5.0				•						
		End of Boring at 5 ft. Boring was terminated on a apparent obstruction	n	-														
				-	-													
				-														
				10-														
				-														
				-														
				-														
				15														
			Drill R Engin	tig: Cl	ME 55 n Rig:	: Strata Drilli J. Lukasik 1/4 inch SS		ſ	S	Somat Engineering Inc.								
	First E	DWATER READINGS Encountered: None Completion: None	Hamn Backf Date \$	ner Ty illed V Starte	vpe: M Vith: C d: 08-3	anual Cuttings/Patc					D P P	etroit F roject ropose etroit, l	River d Pla	Inter	nation	al Cr	ossir	ng
			Check # Tor	ked B vane ket P	y: JSS enetro	meter		PR	OJECT	NO				NG NO.	B-71		P	AGE



P	ROJ	ECT NO. G05002A			DAT	e 8/31/		6		_
		LOG OF SOIL PROFILE				FIELD DATA	Ì	-		Г
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	
	X X X X X X X X X X X X X X X X X X X	Ground Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE 4 inches of crushed concrete	 •	0—						
	++*× ++*>	FILL - Very loose silty fine		-	SS1	2-1-2	3	2.5		
		sand, trace clay and gravel, orangish brown, moist (SM)		-						
			4.0	5-	SS2	2-3-2	5	5.0		
				-						
	× +++× ×	FILL - Loose to dense fine to medium sand, trace silt and gravel, occasional silty clay pockets, brown, moist (SP)	)	-	SS3	12-17-20	37	7.5		
				-						
	× *** ****		10.0	10-	SS4	17-18-16	34	10.0		
		End of Boring at 10 ft.		-						
				-						
				-						
				15						
GR	OUN	COORDINATES	Drill F Engin Drillin	Rig: CN leer or g Met	ME 45 h Rig: hod: 2	: Strata Drilli C J. Lukasik 1/4 inch SS utomatic			S	
	Upon marks	Completion: None	Date Date	Starte Comp ked By	d: 08-3	08-31-06	h			
			* Poc	ket P	enetro d San	meter 1ple		PR	OJECT	1

		LOG OF TEST BO	DRING B-73
		LABORATORY DATA	
MOISTURE CONTENT (%)	DRY DENSITY (pd)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
	D Pi Pi D	omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	Il Crossing rings
NO.	G0500	D2A BORING NO. B-73	PAGE 1 of 1

Stound Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE 8 inches of PORTLAND CEMENT CONCRETE FILL - Medium dense fine sand, trace silt and gravel, light brown, moist (SP) FILL - Mixed medium dense sity fine to medium sand and clayey fine to medium sand, trace gravel, brown and dark brown, moist (SM)(SC)		5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	Sample No.	SMOTRI JO NU JO NU 6-6-7 5-9-12	алуги 13 21	dil January 2.5	UNCONFINED COMP STRENGTH (pst)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	UNCONFINED COMP. STREN. paf 2000 4000 6000 8000 ▼SPT N VALUE 10 20 30 40 MOISTURE CONTENT % 10 20 30 40 10 10 120 130 MOISTURE CONTENT % 10 20 30 40 10 10 10 120 130 10 10 10 120 130 10 20 30 40 10 10 10 120 130 10 10 10 10 120 130 10 10 10 10 120 130 10 10 10 10 120 10 10 10 10 120 10 10 10 10 120 10 10 10 10 120 10 20 30 40 10 10 10 10 10 10 10 10 1					
5 inches of ASPHALTIC CEMENT CONCRETE 8 inches of PORTLAND CEMENT CONCRETE FILL - Medium dense fine sand, trace silt and gravel, light brown, moist (SP) FILL - Mixed medium dense silty fine to medium sand ank clayey fine to medium sand ark	<u>11</u>	-		6-6-7	13	2.5									
sand, trace silt and gravel, light brown, moist (SP) FILL - Mixed medium dense silty fine to medium sand ank clayey fine to medium sand, trace gravel, brown and dark		- - 5													
silty fine to medium sand and clayey fine to medium sand, trace gravel, brown and dark		5		5-9-12	21	5.0									
silty fine to medium sand and clayey fine to medium sand, trace gravel, brown and dark		-													
			SS3	8-14-17	31	7.5									
End of Boring at 10 ft.	10.0	- - 10	SS4	3-7-4	11	10.0									
		-	-												
		-	-												
COORDINATES	Drill R	Rig: Cl	ME 45	с	ng		2								
DWATER READINGS ncountered: None Completion: None	Engineer on Rig: J. Luk READINGS Drilling Method: 2 1/4 ir d: None Hammer Type: Automa n: None Backfilled With: Cutting Date Started: 08-31-06					Į	S		Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI						
	WATER READINGS	Drill F Engir WATER READINGS Drillin wountered: None Ham bompletion: None Backt Date Date Check # To	COORDINATES Drilling Cor Drill Rig: C Engineer o WATER READINGS Drilling Mel countered: None Backfilled N Date Starte Date Comp Checked B # Torvane * Pocket P	COORDINATES Drilling Company Drill Rig: CME 45 Engineer on Rig: WATER READINGS Drilling Method: 2 countered: None Backfilled With: C Date Started: 08- Date Completed: Checked By: JSS # Torvane * Pocket Penetro	COORDINATES Drilling Company: Strata Drilli Drilling: CME 45C Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SS toountered: None tompletion: None Drilling Method: 2 1/4 inch SS Hammer Type: Automatic Date Started: 08-31-06 Date Completed: 08-31-06 Checked By: JSS	COORDINATES Drilling Company: Strata Drilling Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik WATER READINGS Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cuttings/Patch Date Started: 08-31-06 Date Completed: 08-31-06 Checked By: JSS # Torvane * Pocket Penetrometer	COORDINATES Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik WATER READINGS Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cuttings/Patch Date Started: 08-31-06 Date Completed: 08-31-06 Checked By: JSS # Torvane * Pocket Penetrometer	COORDINATES Drilling Company: Strata Drilling Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cuttings/Patch Date Started: 08-31-06 Date Completed: 08-31-06 Checked By: JSS # Torvane * Pocket Penetrometer	COORDINATES Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik WATER READINGS Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cuttings/Patch Date Started: 08-31-06 Date Completed: 08-31-06 Checked By: JSS # Torvane * Pocket Penetrometer	COORDINATES Drilling Company: Strata Drilling Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik WATER READINGS Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cuttings/Patch Date Started: 08-31-06 Date Completed: 08-31-06					

Р	ROJ	<b>ЕСТ NO</b> . G05002A			DAT	e 8/24/	200	6		
		LOG OF SOIL PROFILE				FIELD DATA	1			
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP	
		Ground Surface Elevation 3 inches of ASPHALTIC CEMENT CONCRETE 9 inches of PORTLAND CEMENT CONCRETE	1.0	0-						
	x+x x+x x+x x+x	FILL - Very dense silty fine to medium sand, trace gravel and organics, dark brown		-	SS1	12-20-30	50	2.5		
		and black, moist (SM)	30	-						
	*****	FILL - Dense fine to medium sand, trace to some silt, trace gravel, brown, moist		- 5-	SS2	10-18-15	33	5.0		
	+×+ +×+ ×+×+ ×+×+	(SP/SM)		-						
	××		65	-	SS3	3-3-3	6	7.5	450	
		Very stiff to stiff SILTY CLAY, some sand, trace gravel, gray (CL)		-						
			10.0	10-	SS4	3-5-5	10	10.0	34(	
		End of Boring at 10 ft.		-						
				-						
				-						
				15						
	ROUN	COORDINATES	Drill F Engin Drillin	Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic						
LO	Upon marks: I test o	Completion: None	Back Date Date	filled V Starte Comp	Vith: C	uttings/Patc	h			
				ket P	•					

		LOG OF TEST BO	DRING B-75
		LABORATORY DATA	
MOISTURE CONTENT (%)	DRY DENSITY (pd)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
19.5	111		
	De Pi Pi	omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, MI	I Crossing
<b>NO</b> . (	G0500	D2A BORING NO. B-75	PAGE 1 of 1
			10/1/07

		LOG OF SOIL PROFILE				FIELD DATA	\					LABORATORY DATA					
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	■UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pcf ▲ 2000 4000 6000 8000 100 110 120 130 ▼SPT N VALUE ▼ ● MOISTURE CONTENT 9 10 20 30 40 10 20 30 40					
-	x+x x+x x+x	Ground Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE 8 inches of PORTLAND CEMENT CONCRETE	0.4	0-													
	tx x+4x x+4x tx x+4x x+4x	FILL - Mixed loose silty fine		-	SS1	2-5-4	9	2.5									
	×+×××+×××+× ×+×××+××+× ×+××+××+××++	sand and fine to medium sand, trace gravel, brown and dark brown, moist (SM)(SP)		5—	SS2	3-3-4	7	5.0									
	× + + + + + + + + + + + + + + + + + + +		7.0	-	SS3	4-3-2	5	7.5	1500*	29.6							
		Medium SILTY CLAY, some sand, trace gravel, gray (CL) End of Boring at 10 ft.		- 10	SS4	2-2-2	4	10.0	1500*	26.8							
				-													
				-													
BC	RING	COORDINATES	Drill F	Rig: Cl	ME 450	Strata Drilli C J. Lukasik	ng	ſ	5		0						
	ROUNDWATER READINGS First Encountered: 5 feet Upon Completion: None emarks:			g Met ner Ty filled V Starte Comp ked B	hod: 2 /pe: Au Vith: C d: 08-3	1/4 inch SS tomatic uttings/Patc		Į			Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI						
				ket P	enetro d Sarr			PP	OJECT	NO	6050	002A BORING NO. B-78 PAGE 1 of 1					

	LOG OF SOIL PROFIL	E			FIELD DATA						LABORATORY DATA
ELEVATION ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ■ ▲ DRY DENS 2000 4000 6000 8000 100 110 1 ▼SPT N VALUE ▼ ● MOISTURE CC 10 20 30 40 10 20 5
	Ground Surface Elevation 5 inches of ASPHALTIC CEMENT CONCRETE 9 inches of PORTLAND		0—								
244×	CEMENT CONCRETE	1.2	-	SS1	3-3-4	7	2.5				] <b>-</b>
<u> </u>	+ + FILL - Loose to medium + dense fine to medium sai + trace to some silt, trace + gravel, brown, moist (SP/		-								
<u>x                                    </u>			5—	SS2	5-5-6	11	5.0				
		60	-	SS3	1-1-1	2	7.5	800#	42.0		
	Soft SILTY CLAY, some sand, trace gravel, gray (	CL)	-	SS4	2-1-2	3	10.0	800#	24.1		
	End of Boring at 10 ft.	10.0	10—	554	2-1-2		10.0	000#	54.1		
			-								
			-	-							
			15-								
	NG COORDINATES	Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik					۱	S		S	omat Engineering Inc.
First Encountered: None Ham Upon Completion: None Back Remarks: Date Date				ype: A With: C ed: 08- oleted: y: JSS	08-31-06		ł		J	D P P	Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI
		# Ton * Poc <> Dis	ket P	enetro	meter		PR	OJECT	NO	C050	002A BORING NO. B-79 PAGE

		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA				
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	■ UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pdf ▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40				
<pre>c+x x+x +x</pre>	*******	Ground Surface Elevation 7 inches of ASPHALTIC CEMENT CONCRETE 6 inches of crushed concrete FILL FILL - Very loose sitty fine to medium sand, trace gravel, brown, moist (SM)	1.1	- 0	SS1	5-2-1	3	2.5								
<u>&lt; x++x x++x x++x x</u>	tx x+ xtx x+ xtx x+ xtx x	FILL - Loose clayey fine to medium sand, trace gravel, gray (CL)	30		SS2	2-2-4	6	5.0								
+x x++x x++x x++	×tx ×* ×* × × × × × × × × × × × × × × × ×	FILL - Medium dense to loose fine to medium sand, trace to some silt, trace gravel, brown, moist to wet (SP/SM)	. 60	-	SS3	5-5-5	10	7.5								
1×1	***	SILTY CLAY, some sand, trace gravel. gray (CL) End of Boring at 10 ft.	<u>95</u> 10.0	- 10	SS4	5-4-2	6	10.0	•	27.7		$\left \begin{array}{cccccccccccccccccccccccccccccccccccc$				
				-												
GRO Fii	)UNI irst E	COORDINATES	Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cuttings/Patch Date Started: 08-31-06						S		Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings					
			Chec # To * Poo	ked B wane sket P	leted: y: JSS enetro				OJECT		D	Detroit, MI				

		LOG OF SOIL PROFILE				FIELD DATA							LABOR	ATORY D	DATA			
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)		▼ SPT I			1 • N	▲ DRY D 100 11 10ISTUR 10 20	0 12 E 001
шĘ		Ground Surface Elevation 6 inches of ASPHALTIC CEMENT CONCRETE		0-	0,	240	2	0.0	50	20					- <u>-</u>	+-		
	x++x x++x	8 inches of PORTLAND CEMENT CONCRETE FILL - Very loose silty fine	1.2	-	SS1	1-1-2	3	2.5				Ţ						
	X+X X+X	sand, trace gravel, dark brown, moist (SM)	30	-														
	x x+x x+x x+z	FILL - Very loose clayey fin to medium sand, trace gravel, brown, moist (SC)	e	5-	SS2	3-3-1	4	5.0										
			60		SS3	5-7-7	14	7.5					¥					
	++x ++x ++x ++x	FILL - Medium dense to loose fine to medium sand, trace to some silt, trace gravel, brown, moist to wet		-														
	X+X X+X X+X X+X	(SP/SM)	10.0	- 10	SS4	4-5-3	8	10.0				4						
		End of Boring at 10 ft.		-														
				-														
				-	-													
BC	RING	COORDINATES	Drill F	Rig: Cl	ME 45	: Strata Drilli C J. Lukasik	ng		6			i	+	i naire	 			
	First E	DWATER READINGS Encountered: None Completion: None	Drillir Hami Back Date Date	ng Met mer Ty filled \ Starte Comp	hod: 2 ype: A With: C ed: 08-3	1/4 inch SS, utomatic Cuttings/Patcl 31-06 08-31-06		ł			D P P	oma etroit roject ropose etroit,	River ed Pl	Inte	rnatio	nal C	rossi	ng
			# To	rvane cket P	y: JSS enetro	meter			OJECT					Ng No.				AGE

F	ROJ	<b>ЕСТ NO.</b> G05002A		1	DAT	E 8/22/	200	6				LOG OF TEST BORING B-82						
		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA						
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	UNCONFINED COMP. STREN. psf ▲ DRY DENSITY pdf▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % ● 10 20 30 40 10 20 30 40						
		Ground Surface Elevation 6 inches of ASPHALTIC CEMENT CONCRETE 6 inches PORTLAND CEMENT CONCRETE		0-														
	+***	FILL - Loose silty fine sand, trace gravel, trace brick pieces below 4 feet,		-	SS1	4-3-3	6	2.5										
	****	brown/gray, moist (SM)	4.0	-														
		6 inch BRICK layer End of Boring at 4.5 ft. Boring was terminated on an apparent obstruction	4.5	5—	SS2	3-3-4	7	5.0										
				-														
/0																		
LOGS.GPJ SOMAT.GDT 10/1/0/				-														
DIG VERZ G05002A	ROUN First E Upon	COORDINATES DWATER READINGS Encountered: None Completion: None	Drill R Engin Drilling Hamn Backfi	Rig: CN eer or g Meti ner Ty illed V	ME 55 h Rig: hod: 2 vpe: M Vith: C	uttings/Patcl	A	(	S		D P	omat Engineering Inc.						
Re Rot	Remarks: Date Started: 08-2 Date Completed: Checked By: JSS # Torvane * Pocket Penetroi <> Disturbed Sam					08-22-06 meter		PR	OJECT	NO. (	Proposed Plaza Area Borings Detroit, MI D. G05002A BORING NO. B-82 PAGE 1 of 1							

		IECT NO. G050024	·			E 8/24		<u> </u>								ST B		_	_
		LOG OF SOIL PROFILE				FIELD DATA	Ì	$\vdash$					LABO	RATOR	AY DA'	IA			
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	20	00 400	00 60 FN VAL	000		10	DRY DE 0 110 IISTURE 0 20	) 12 E 00
		Ground Surface Elevation 4 inches of ASPHALTIC	, 03	0-								<u>– –</u>			<u></u>	Ţ	+-		_
	x++x	CEMENT CONCRETE 9 inches of PORTLAND CEMENT CONCRETE			SS1	2-2-2	4	2.5				•							
	¥+*× ¥+*			-															
	x x+x x x+ x x+x x+x x+				SS2	1-2-2	4	5.0											
	***** *****	FILL - Very loose to mediur dense silty fine sand, trace gravel, brown, moist to wet 8 feet (SM)		5—															
	+*× +*×+*×			-	SS3	3-3-4	7	7.5											
	X+*x X+*x X+		10.0	- 10-	SS4	4-6-6	12	10.0					t						
		End of Boring at 10 ft.		-	-														
				-   .	-														
				.															
BC	RING	COORDINATES	Drilling Company: Strata Drilling Drill Rig: CME 45C					1				<u> </u>		<u> </u>	1	1	1 1	1	
	First E Upon	Drill Rig Engined IDWATER READINGS Drilling Encountered: 8 feet Hamme Completion: None Backfill			thod: 2 ype: A	J. Lukasik 1/4 inch SS. utomatic Cuttings/Patc			5		D P	etroit rojec	: Rive t	er Int	tern	erin	al Cro	ossir	ıg
Re	marks	:	Date Check # Tot	Comp ked B rvane	oleted: y: JSS	08-24-06						ropos etroit		laza	a Ar	ea Bo	rings		

## Detroit River International Crossing Conceptual Engineering Report

		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	■ UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pdf ▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40
		Ground Surface Elevation 6 inches of ASPHALTIC CEMENT CONCRETE 6 inches of PORTLAND CEMENT CONCRETE	05	0								
	x x + x x + x x + x x x + x x x + x + x x + x + x x + x + x x + x + x x +			-	SS1	3-4-5	9	2.5				
	++x x++x x++ ++ +x x++x x++	FILL - Loose to medium dense silty fine sand, trace gravel, brown, moist to wet (SM)		5—	SS2	5-8-8	16	5.0				
	** *** *******************************			-	SS3	5-7-8	15	7.5				
	**** *****	Field engineer reported SILTY CLAY, gray (CL)	9.5	- 10-	SS4	7-6-9	15	10.0				
		End of Boring at 10 ft.		-								
				-								
BC	RING	Drilling Company: Strata Drilling										
	ROUNDWATER READINGS First Encountered: None Upon Completion: None marks:			Drill Rig: CME 55 Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SSA Hammer Type: Manual Backfilled With: Cuttings/Patch Date Started: 08-25-06 Date Completed: 08-25-06 Checked By: JSS					S		D P P	Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI
			# To	vane	enetro							

		LOG OF SOIL PROFILE				FIELD DATA								ATORY D	ATA			_
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	2000	4000		3TREN. psf 8000 ₩ 40	10	DRY DE 00 110 DISTURE 0 20	) 12 E 001
		Ground Surface Elevation 4 inches of ASPHALTIC CEMENT CONCRETE 8 inches of PORTLAND CEMENT CONCRETE	) <sup>03</sup>	0-													- <del>-</del> +   	_
	+++× +++×	FILL - Medium dense silty fine sand, trace gravel, occasional silty clay pockets,	_	-	SS1	9-6-6	12	2.5										
	x+xxxx+x	brown, moist (SM)	3.5	-	SS2	2-1-2	3	5.0		23.0								_
		FILL - Silty clay, some sand, trace gravel, gray (CL)		5—	332	2-1-2	3	5.0		23.0								•
	¥¥ 	6 inch BRICK layer	6.0		-													
		VOID - Drilling rods dropped from 6.5 to about 10 feet		-	-													
		End of Boring at 10 ft.	10.0	10	-													
				-														
				-	-													
				15										ļ				
		COORDINATES	15- Drilling Company: Strata Drilling Drill Rig: CME 55 Engineer on Rig: J. Lukasik					۱	S		S	omat	Er	ngin	eerin	g Ir	IC.	
	GROUNDWATER READINGS First Encountered: None Upon Completion: None Remarks:			ner Ty filled V Starte Comp	/pe: M With: C ed: 08-	Cuttings/Patc 25-06 08-25-06		ł			D P P	etroit F roject	River d Pla	Inter	rnation area Bo	al Cro	ossir	ıg
						meter		DD	OJECT	NO	C050	024	POP	Ng No.	D 97		B	AGE

F	ROJ	ECT NO. G05002A			DAT	E 8/22/	200	6				LOG OF TEST BORING B-88
		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA
ELEVATION ft MSL		Ground Surface Elevation	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ▲ DRY DENSITY pdf ▲ 2000 4000 6000 8000 100 110 120 130 ▼SPT N VALUE ▼ ● MOISTURE CONTENT % ● 10 20 30 40 10 20 30 40
		5 inches of ASPHALTIC CEMENT CONCRETE 10 inches of PORTLAND CEMENT CONCRETE	<u></u>	-	SS1	8-7-8	15	2.5				- - -
	<pre>x x x x x x x x x x x x x x x x x x x</pre>	FILL - Medium dense sitty fine sand, trace gravel, trace asphalt pieces below 4.5 feet, brownish gray, moist (SM)		-	SS2	5-4-8	12	5.0				
	**	End of Boring at 5 ft. Boring was terminated on an apparent obstruction	50	5								
BC GI	ROUN First E	COORDINATES	Drill R Engin Drillin Hamn Backf Date 0 Check # Tor * Poo	Rig: Cl eer or g Met ner Ty illed V Starte Comp ked By vane sket P	ME 45 hod: 2 /pe: Ar Vith: C d: 08-2	J. Lukasik 1/4 inch SS, utomatic cuttings/Patcl 22-06 08-22-06 meter	Ą	PR	S		D P D	Comat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI 2024 BORING NO. B-88 PAGE 1 of 1 10/107

	LOG OF SOIL PROFILE				FIELD DATA		<u> </u>				LOG OF TEST	
	Les c. obernonite											
ELEVATION ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	UNCONFINED COMP. STREN. p 2000 4000 6000 8000 V SPT N VALUE V 10 20 30 40	■ DRY DENSIT 100 110 12 ■ MOISTURE CON 10 20 30
	Ground Surface Elevation 4 inches of ASPHALTIC CEMENT CONCRETE	1.03	0-									-+
×+××××	SINCHES OF PORTLAND CEMENT CONCRETE FILL - Loose sitty fine sand, trace gravel, brown and light brown, moist (SM)		-	SS1	2-2-4	6	2.5					
[[ 전 전	sand, trace silt and gravel,	30_	- 5	SS2	4-8-11	19	5.0					
	FILL - Medium dense fine sand, trace silt and gravel, light brown, moist (SP) Medium dense to loose CLAYEY SILT, trace sand and gravel, brown (ML) End of Boring at 10 ft.	60_	-	SS3	4-5-5	10	7.5		24.8			
		10.0	-	SS4	2-2-3	5	10.0		25.6			
	End of Boring at 10 ft.		- 10 - -	-								
		Drillin	- 15-		· Strata Drilli							
GROUND First Er	Drill R Engin INDWATER READINGS Drillin It Encountered: None Hamn on Completion: None Backfi ks: Date s			ME 45 n Rig: hod: 2 ype: A With: C d: 08- oleted:	J. Lukasik 2 1/4 inch SS, utomatic Cuttings/Patcl 31-06 08-31-06	A		S		D P P	omat Engineeri etroit River Internatio roject roposed Plaza Area B etroit, MI	nal Crossing
			ket P		meter		DD	OJECT		0050	02A BORING NO. B-90	PAGE 1

P	ROJ	ECT NO. G05002A			DAT	E 8/31/	200	6				LOG OF TEST BORING B-94
	<b>—</b>	LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA
ELEVATION ft MSL		Ground Surface Elevation	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf         ▲ DRY DENSITY pdf ▲           2000         4000         6000         8000           ▼SPT N VALUE ▼         ● MOISTURE CONTENT % ●           10         20         30         40
		4.5 inches of ASPHALTIC CEMENT CONCRETE 11 inches of PORTLAND CEMENT CONCRETE		0								
	x++x x+		1.3	-	SS1	2-1-1	2	2.5				
	*** *** *** **************************	FILL - Very loose to loose fine sand, trace to some silt, trace gravel, brown, moist (SP/SM)		-	SS2	1-2-1	3	5.0				$\left  \begin{array}{cccccccccccccccccccccccccccccccccccc$
	x x+x x+x x+x x+x x x+x x+x x+x x+x		80	-	SS3	3-3-3	6	7.5				-     -
		Soft SILTY CLAY, some sand, trace gravel, gray (CL) End of Boring at 10 ft.	. 10.0	- 10-	SS4	5-3-1	4	10.0	800#			
				-								
			-	15-								
GF	CROUNDWATER READINGS Drilling N First Encountered: None Hammer Upon Completion: None Date Sta Remarks: Date Co				Drilling Company: Strata Drilling Drill Rig: CME 45C Engineer on Rig: J. Lukasik Drilling Method: 2 1/4 inch SSA Hammer Type: Automatic Backfilled With: Cutings/Patch Date Started: 08-31-06 Date Completed: 08-31-06 Checked By: JSS						D P P	Comat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, MI
		# Torvane * Pocket Penetrometer <> Disturbed Sample							OJECT	NO. (	G050	002A BORING NO. B-94 PAGE 1 of 1

PF	roj	ест NO. C05002A			DAT	e 5/17/	200	7	
$\rightarrow$		LOG OF SOIL PROFILE				FIELD DATA	Ì		
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP
		Ground Surface Elevation		0-					
		Driller reported 26 inches of sandy TOPSOIL	_ 22	-	SS1	1-2-2	4	2.5	
0++0 0++		FILL - Loose silty fine sand,		-					
2 2++2 2+		trace roots, brown & gray, moist (SM)		- 5—	SS2	2-2-3	5	5.0	
+1.0	×t		5.5						
	° 0 ° 0 ° 0	Dense FINE TO COARSE SAND AND FINE GRAVEL, trace silt, brown, wet (SP)(GP)		-	SS3	10-14-17	31	7.5	
	0			-					
		Loose CLAYEY SILT, trace sand, frequent silty sand partings, gray, moist (ML)		-	SS4	3-3-4	7	10.0	
	~	End of Boring at 10 ft.	10.0	10-					
				-					
				-					
				15-					
		COORDINATES	Drill F Engin	Rig: Cl	ME 45 n Rig:		27.0	ſ	5
F L Rem	irst E Jpon arks:	DWATER READINGS incountered: 6 feet Completion: 7 feet	Hamr Backf Date	ner Ty illed V Starte	/pe: au Vith: C d: 05-1		A	ł	
Detr	ng ari oit, M	lled at parcel 5887 Harvey in I.	Check # Tor * Poo	ked B vane ket P	leted: /: CRS enetro ed San	meter		PR	oji

LOG OF TEST BOP	RING B-101
LABORATORY DATA	
(b) ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
25.2	
Somat Engineering Detroit River International Project Proposed Plaza Area Borir Detroit, Michigan	Crossing
NO. C05002A BORING NO. B-101	PAGE 1 of 1

		LOG OF SOIL PROFILE																	LABORATORY DATA
ft MSL		Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pd)	UNCONFINED COMP. STREN. psf ▲ DRY DENSITY pdf ▲ 2000 4000 6000 8000 100 110 120 130 ▼SPT N VALUE ▼ ● MOISTURE CONTENT % 10 20 30 40 10 20 30 40								
	Ground Surface Elevation Driller reported 2.5 inches of ASPHALTIC CEMENT CONCRETE Driller reported broken PORTLAND CEMENT	02	0																
	Loose to very loose FINE TO MEDIUM SAND, trace gravel, brown, moist to wet at	]	-	SS1	4-3-3	6	2.5												
	4 to 5 ft. (Possible Fill)		5	SS2	2-2-2	4	5.0												
	Stiff SILTY CLAY, some sand, trace gravel, frequent silt partings, gray (CL)	80	-	SS3	2-2-4	6	7.5	3000*	26.1										
	Loose CLAYEY SILT, trace sand, gray, wet (ML)	10.0		SS4	2-3-4	7	10.0		27.2										
	End of Boring at 10 ft.		-																
			-																
BOR		Drilling Company: Strata Drilling Drill Rig: CME 45						C											
Fii Uş Rema Boring	OUNDWATER READINGS First Encountered: 4.5 feet Upon Completion: 3.5 feet narks: ng drilled at parcel 307 Dragoon in out Mi	Drill Rig: CME 45 Engineer on Rig: N/A Drilling Method: 2 1/4 inch SSA Hammer Type: automatic Backfilled With: Cuttings/Patch Date Started: 05-17-07 Date Completed: 05-17-07 Checked By: CRS					Į	9		D P P	omat Engineering Inc. etroit River International Crossing roject roposed Plaza Area Borings etroit, Michigan								

Ground Surface Elevation Driller reported 2 inches of ASPHALTIC CEMENT CONCRETE TX + CONCRETE TX + material) TX + materi	NOLLTYGETE     Ground Surface Elevation     0     ground Surface Elevation     ground Surface Elevation     0     ground Surface Elevation     0     ground Surface Elevation     ground Surface Elevation     0     ground Surface Elevation     0     ground Surface Elevation     ground Surface Elevation	NOLLYNGU Hugung Ground Surface Elevation Driller reported 2 inches of ASPHALTIC CEMENT CONCRETE ASPHALTIC CEMENT CONCRETE ASPHALTIC CEMENT CONCRETE ASPHALTIC CEMENT CONCRETE ASPHALTIC CEMENT CONCRETE SS1 1-1-2 3 2.5 SS2 2-3-3 6 5.0 SS2 2-3-3 6 5.0 SS3 3-4-5 9 7.5 4500 Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 00 10 10 10 10 10 10 10 10 10	NOLUMING SUFface Elevation Ground Surface Elevation Driller reported 2 inches of ASPHALTIC CEMENT CONCRETE ASPHALTIC CEMENT CONCRETE TABLE - Very lose clayey State and gravel FILL (Base material) SS1 1-1-2 3 2.5 SS1 1-1-2 3 2.5 SS2 2-3-3 6 5.0 SS2 2-3-3 6 5.0 SS3 3-4-5 9 7.5 4500 Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 00 10 00 10 10 10 10 10 10 10	PF	ROJ	<u>ест NO.</u> C05002A			DAT	<b>E</b> 5/17/	200	7	
Ground Surface Elevation Driller reported 2 inches of 02 ASPHALTIC CEMENT CONCRETE Driller reported coarse sand 12 and gravel FILL (Base material) TX + material) TX +	Ground Surface Elevation       0         Driller reported 2 inches of       02         ASPHALTIC CEMENT       0         ***       ASPHALTIC CEMENT         ***       Driller reported coarse sand         ***       material)         ***       material)         ***       FILL - Very loose clayey         ***       greenish gray and black,         ***       moist (SC)         ***       35         Loose CLAYEY SILT, trace         sand, frequent silt and sand         partings, brown & gray, miost         ML)         00         00         01         9         7.5         450         5         5         100         100         100	Ground Surface Elevation Driller reported 2 inches of 02 ASPHALTIC CEMENT CONCRETE TX + CONCRETE TX + CONCRETE SS1 1-1-2 3 2.5 SS1 1-1-2 3 2.5 SS1 1-1-2 3 2.5 SS2 2-3-3 6 5.0 SS2 2-3-3 6 5.0 SS2 2-3-3 6 5.0 SS3 3-4-5 9 7.5 4500 Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 00 10 10 10 10 10 10 10 10 10 10 10 10 1	Ground Surface Elevation       0 </th <th></th> <th></th> <th>LOG OF SOIL PROFILE</th> <th></th> <th></th> <th></th> <th>FIELD DATA</th> <th></th> <th></th> <th></th>			LOG OF SOIL PROFILE				FIELD DATA			
Number Network       Driller reported 2 inches of ASPHALTIC CEMENT CONCRETE       0         Note ASPHALTIC CEMENT CONCRETE       12         Driller reported coarse sand and gravel FILL (Base material)       12         Note Asphalt Tic Comment of the sand, trace to some silt, trace to some some some some some some some som	x+X       ASPHALTIC CEMENT         x+X       ASPHALTIC CEMENT         x+X       Driller reported coarse sand         x+X       material)         x+X       material)         x+X       material)         x+X       material)         x+X       material)         x+X       greenish gray and black, moist (SC)         x+X       moist (SC)         x+X       35         Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML)       5         Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)       5         x=       SS3       3-4-5       9         x=       SS4       2-4-5       9       10.0	ASPHALTIC CEMENT CONCRETE Driller reported coarse sand and gravel FILL (Base material)       12       551       1-1-2       3       2.5         Y + Y + material)       FILL - Very loose clayey sand, trace to some silt, try + moist (SC)       -	Driller reported 2 inches of ASPHALTIC CEMENT       0       0       0       0         ASPHALTIC CEMENT       Driller reported coarse sand and gravel FILL (Base material)       12       551       1.1-2       3       2.5         FILL - Very loose clayey sand, trace to some sit, greenish gray and black, moist (SC)       551       1.1-2       3       2.5         Loose CLAYEY SILT, trace sand, frequent sit and sand partings, brown & gray, miost (ML)       5       5       5       5       5         Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)       60       5       5       5       10         End of Boring at 10 ft.       10       10       10       10       10       10       10         BORING COORDINATES       Drilling Company: Strata Drilling Drill Rig: CME 45 Engineer on Rig: N/A Drilling Method: 2 1/4 inch SSA       0       10       10       10       10	ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (pst)
x+X       and gravel FILL (Base materia)         x + FILL - Very loose clayey         sead, frequent silt and sand         partings, brown & gray, miost         (ML)         0	x+X       and gravel FILL (Base material)         x+X       material         x+X       sand, trace to some silt, greenish gray and black, moist (SC)         x+X       greenish gray and black, moist (SC)         Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML)         0	x+X material       and gravel FILL (Base material)         x+FILL - Very loose clayey x+X sand, trace to some silt, greenish gray and black, moist (SC)       SS1       1-1-2       3       2.5         Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML)       SS2       2-3-3       6       5.0         Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)       60       SS3       3-4-5       9       7.5       4500	Here       and gravel FILL (Base       sS1       1-1-2       3       2.5         Material)       ssd, frace to some silt, greenish gray and black, moist (SC)       sS1       1-1-2       3       2.5         Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML)       sS2       2-3-3       6       5.0         Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)       sS3       3-4-5       9       7.5       4500         BORING COORDINATES       Driling Company: Strata Drilling Ompany: Strata Drilling Company: Strata Drilling Comp	1	x+t4) + x + + x +	Driller reported 2 inches of ASPHALTIC CEMENT CONCRETE		0-					
Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML) Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 100 10	Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML) Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 100 100	Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML) Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 100 10	Loose CLAYEY SILT, trace sand, frequent silt and sand partings, brown & gray, miost (ML)       SS2       2-3-3       6       5.0         Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)       -       SS3       3-4-5       9       7.5       4500         End of Boring at 10 ft.       -       -       SS4       2-4-5       9       10.0       2000         BORING COORDINATES       Drilling Company: Strata Drilling Drill Rig: CME 45 Engineer on Rig: NA       Drilling Company: Strata Drilling Drill Rig: CME 45 Engineer on Rig: NA       Drilling Method: 2 1/4 inch SSA			and gravel FILL (Base material) FILL - Very loose clayey sand, trace to some silt, greenish gray and black,	1.2	-	SS1	1-1-2	3	2.5	
.60         .53         3-4-5         9         7.5         4500           Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)         .554         2-4-5         9         10.0         2000	.60         .53         3-4-5         9         7.5         4500           Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)         .554         2-4-5         9         10.0         2000	BO         SS3         3-4-5         9         7.5         4500           Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)         -	00       -       SS3       3-4-5       9       7.5       4500         Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)       -       <			sand, frequent silt and sand partings, brown & gray, mios		- 5-	ss2	2-3-3	6	5.0	
Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 	Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 	Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL) 	Very stiff to stiff SILTY CLAY, some sand, trace gravel, brown (CL)       -			(ML)	60	-					
-100 10-	-100 10-	100 10	BORING COORDINATES BORING COORDINATES GROUNDWATER READINGS Drilling Company: Strata Drilling Drill Rig: CME 45 Engineer on Rig: N/A Drilling Method: 2 1/4 inch SSA			CLÁY, some sand, trace		-	SS3	3-4-5	9	7.5	4500
			BORING COORDINATES Drilling Company: Strata Drilling Drill Rig: CME 45 Engineer on Rig: N/A GROUNDWATER READINGS Drilling Method: 2 1/4 inch SSA			End of Boring at 10 ft.	10.0	- 10	SS4	2-4-5	9	10.0	2000

		LOG OF TEST BO	DRING B-103
		LABORATORY DATA	
MOISTURE CONTENT (%)	DRY DENSITY (pdf)	UNCONFINED COMP. STREN. psf 2000 4000 6000 8000 ▼SPT N VALUE ▼ 10 20 30 40	▲ DRY DENSITY pd ▲ 100 110 120 130 ● MOISTURE CONTENT % ● 10 20 30 40
		$\vdash \neg	
25.9			•
23.9			
24.8			
	Di Pi Pi	omat Engineering etroit River Internationa roject roposed Plaza Area Bor etroit, Michigan	I Crossing
NO.	C0500	D2A BORING NO. B-103	PAGE 1 of 1
			10/1/07

		LOG OF SOIL PROFILE				FIELD DATA						LABORATORY DATA
ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ■ ▲ DRY DENSITY pd ▲ 2000 4000 6000 8000 100 110 120 130 ▼ SPT N VALUE ▼ ● MOISTURE CONTENT 9 10 20 30 40 10 20 30 40
	x+X +X +X +X +X X X X X X X X X X X X X	Ground Surface Elevation		0—								
	++++++++++++++++++++++++++++++++++++++	FILL - Mixed clayey sand and	ł	-	SS1	2-3-4	7	2.5		14.3		
	x+xx x+x x+ x+x x+x x+	silty clay, trace roots, gravel, brick, and concrete pieces, dark brown and brown, mois (SC)(CL)		-	SS2	2-3-4	7	5.0				
	x+x x++ x x+ x+x x+ x+x x+ + x+x x+ x++		60	5								
		FILL - Broken concrete pieces	8.0	-	SS3	18-17-24	41	7.5				
	00° 00°	Medium dense FINE TO COARSE SAND AND FINE GRAVEL, trace silt, brown, moist (SP)(GP)	10.0	- 10	SS4	8-10-11	21	10.0				
		End of Boring at 10 ft.		-								
				-								
				-								
		COORDINATES	Drill F Engin	Rig: Cl	ME 45 n Rig:	Strata Drilli N/A 1/4 inch SS		ſ	S		S	omat Engineering Inc.
Re Bo	ROUNDWATER READINGS First Encountered: none Upon Completion: none smarks: oring drilled at parcel 6501 South in stroit, MI.			ner Ty illed V Starte Comp ked By	/pe: au Vith: C d: 05-1	utomatic Cuttings 17-07 05-17-07		ł			D P P	etroit River International Crossing Project Proposed Plaza Area Borings Petroit, Michigan
				ket P	enetro d San			DP	OJECT	NO	C050	02A BORING NO. B-104 PAGE 1 of 1

		LOG OF SOIL PROFILE				FIELD DATA							G OF T				=
									OMP (		(pcf)						
ELEVATION ft MSL			Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	≥	UNCONFINE 2000 400		8000	100	RY DEN 110 STURE C	1
цт.	- 0	Ground Surface Elevation	å	8	AS.	20E	ź	8 8 8	STC	ĕö	Ľ	10 20	30	40	10	20	-
X+X	뙀													ļ	T		
×	× tÝ			-	<u> </u>		<u> </u>	<u> </u>						1			
¥.	X	FILL - Mixed topsoil and sand, trace gravel, driller			SS1	4-7-8	15	2.5						ł			
¥ +		reported occasional clay layers, black, moist		-		+/-0		2.0						ł			
×	Ϋ́Υ											1 1/1		i.		ł	
i x t	× + ×		3.5									/ .	i	i		i	
		Medium dense FINE SAND, trace to some silt, trace		-	SS2	4-5-6	11	5.0					i	i I		i	
		gravel, brown, moist to wet a 5 ft. (SP/SM) (Possible Fill)	t		552	4-5-6	1"	5.0								ł	
			5.0	5-				$\vdash$						ļ			
				.										-			
														ł			
		Medium dense FINE TO		-	SS3	4-5-5	10	7.5						ł		į.	
		COARSE SAND, trace silt and gravel, brown, moist			-			$\vdash$						i		i	
		(SP)		-									i	i		i	
				.									Ì	Î		ł	
					SS4	3-4-5	9	10.0				•					
Ë	~	End of Boring at 10 ft.	10.0	10-			-	$\vdash$						1			
		End of Borning at To It.												ł			
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BOR	ING	COORDINATES		-	npany ME 45	: Strata Drilli	ng	(									
000			1000		n Rig: hod: 2	N/A 1/4 inch SS	A		5	Ξ	S	omat E	ngin	eerin	ig Ind	С.	
Fi	rst En	WATER READINGS acountered: 5 feet	Hamr	ner T	/pe: a	utomatic		ł		رل=		etroit Rive	r Inter	nation	al Cro	ssing	J
Upon Completion: none Remarks:				Starte	d: 05-				Project Proposed Plaza Area Borings								
	g drill it, MI.	ed at parcel 672 Waterman in			leted: y: CRS	05-17-07 S						etroit, Mic			-		
			# To														

		LOG OF SOIL PROFILE				E 5/17		i T				LOG OF TEST BORING B-106				
						THEO DATA										
ft MSL		Ground Surface Elevation	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-Inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMP. STREN. psf ADRY DENSITY pc 2000 4000 6000 8000 100 110 120 130				
	<b>***</b>	Driller reported TOPSOIL		0-												
		Loose CLAYEY SAND, trace to some gravel, trace silt and roots, brown, moist (SC) (Possible Fill)		-	SS1	2-3-3	6	2.5		9.3						
		Medium dense FINE TO MEDIUM SAND, trace to some silt, trace gravel, brown, moist (SP/SM) (Possible Fill)		- 5—	SS2	3-4-6	10	5.0								
			75	-	SS3	3-5-5	10	7.5				$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				
		Medium dense FINE SAND, trace silt, light brown, moist (SP) (Possible Fill) End of Boring at 10 ft.	_ 10.0	- 10	SS4	3-6-7	13	10.0								
				-												
			Dat	15-		Charles D										
BORING COORDINATES GROUNDWATER READINGS First Encountered: none Upon Completion: none Remarks: Boring drilled at parcel 590 Schroeder in Detroit, ML.			Drilling Company: Strata Drilling Drill Rig: CME 45 Engineer on Rig: N/A Drilling Method: 2 1/4 inch SSA Hammer Type: automatic Backfilled With: Cuttings Date Started: 05-17-07 Date Completed: 05-17-07 Checked By: CRS						Somat Engineering Inc. Detroit River International Crossing Project Proposed Plaza Area Borings Detroit, Michigan							
			# Tor * Poo	vane ket P	enetro	meter		PR	OJECT	NO.	C050	002A BORING NO. B-106 PAGE 1 of 1				