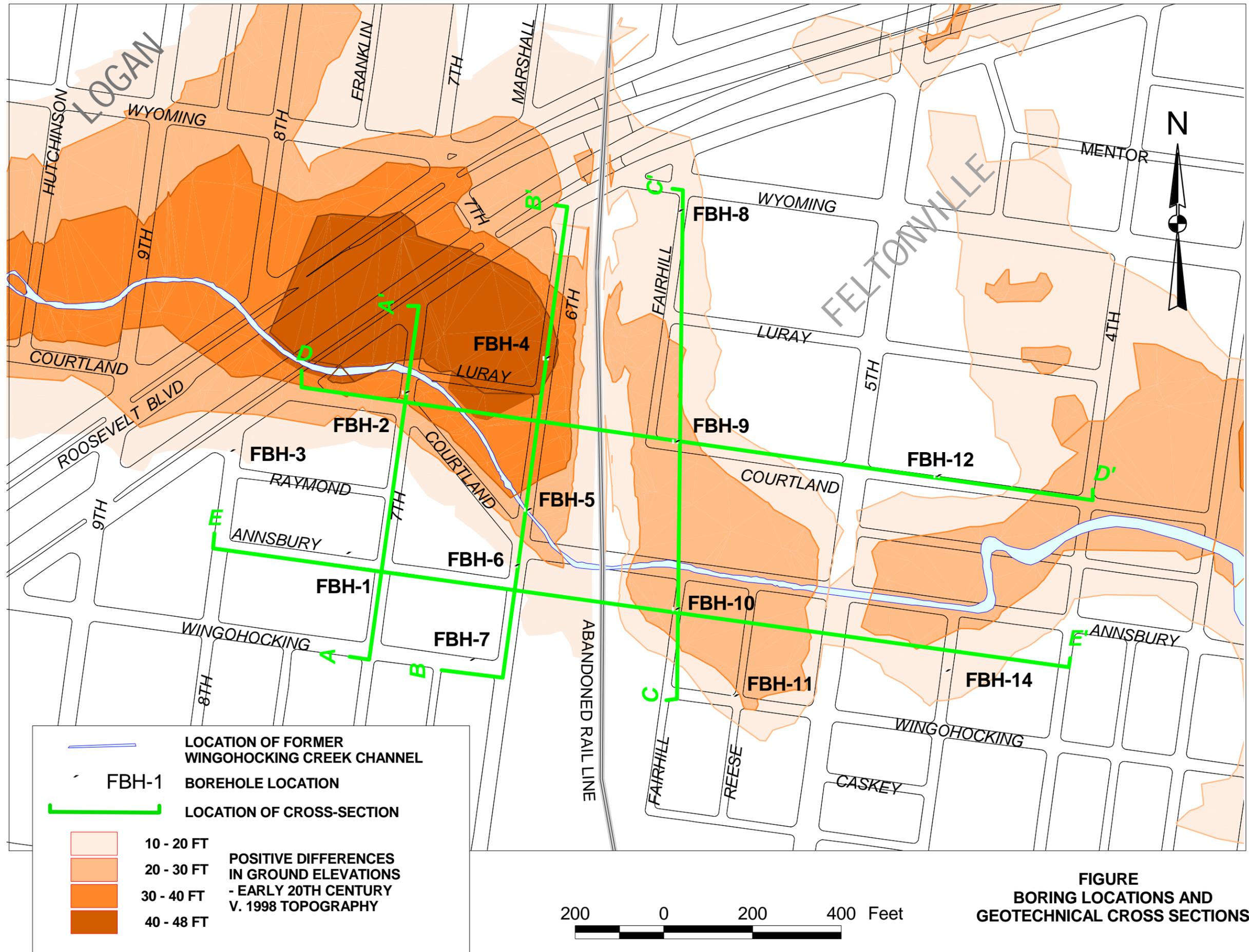


# Appendix B

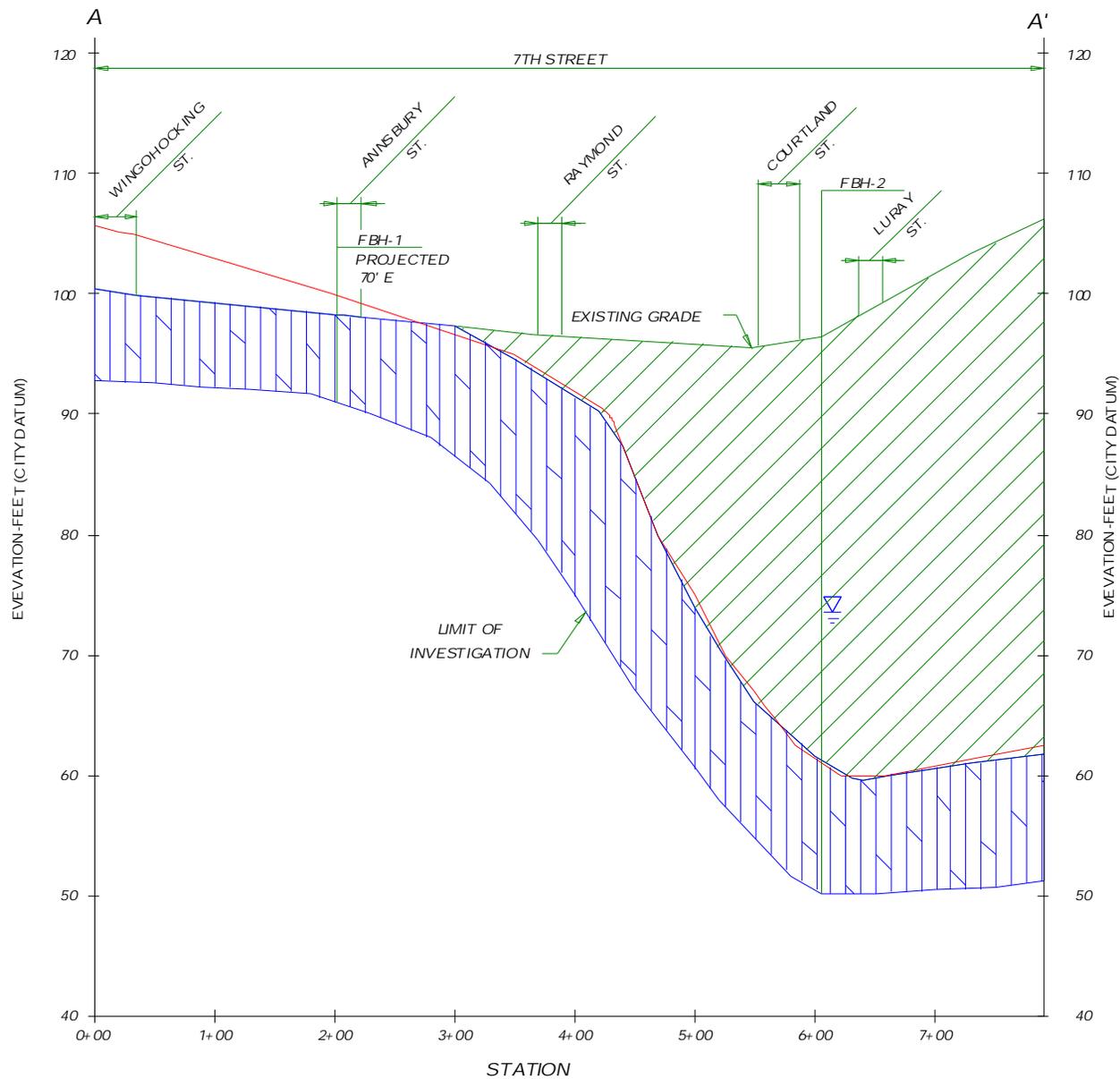
## Geophysical Investigation



## SCHEDULE OF DRILLING AND SAMPLING

<b>Bore Hole Number</b>	<b>Location</b>	<b>Depth</b>
FBH-1	Annsbury Street between 7 <sup>th</sup> Street and 8 <sup>th</sup> Street	7 feet
FBH-2	7 <sup>th</sup> Street between Roosevelt Blvd. and Luray Street	47 feet
FBH-3	7 <sup>th</sup> Street between Roosevelt Blvd. and Raymond Street	17 feet
FBH-4	6 <sup>th</sup> Street between Roosevelt Blvd. and Luray Street	50 feet
FBH-5	6 <sup>th</sup> Street between Luray Street and the intersection of Annsbury and Courtland Streets	46 feet
FBH-6	6 <sup>th</sup> Street between Annsbury Street and the intersection of Annsbury and Courtland Streets	25 feet
FBH-7	Wingohocking Street between 6 <sup>th</sup> Street and Marshall Street	11 feet
FBH-8	Fairhill Street between Wyoming Avenue and Luray Street	36 feet
FBH-9	Courtland Street between Fairhill Street and 5 <sup>th</sup> Street	33 feet
FBH-10	Fairhill Street between Annsbury Street and Wingohocking Street	40 feet
FBH-11	Intersection of Wingohocking Street and Reese Street (southeast corner)	30 feet
FBH-12	Courtland Street between 5 <sup>th</sup> Street and 4 <sup>th</sup> Street	20 feet
FBH-13	Raymond Street between 5 <sup>th</sup> Street and 4 <sup>th</sup> Street	Not Drilled*
FBH-14	Lawrence Street between Annsbury Street and Wingohocking Street	30 feet

\* FBH-13 was not drilled because the drill rig could not set up on the location due to the narrow street with parked vehicles on one side and overhead electrical wires on the other side.



%%ULEGEND

- FORMER GROUND SURFACE
- GROUNDWATER ELEV. (approx.)
- FILL
- STREAM DEPOSIT
- RESIDUAL SOIL
- DECOMPOSED ROCK
- WEATHERED ROCK
- BORING DESIGNATION



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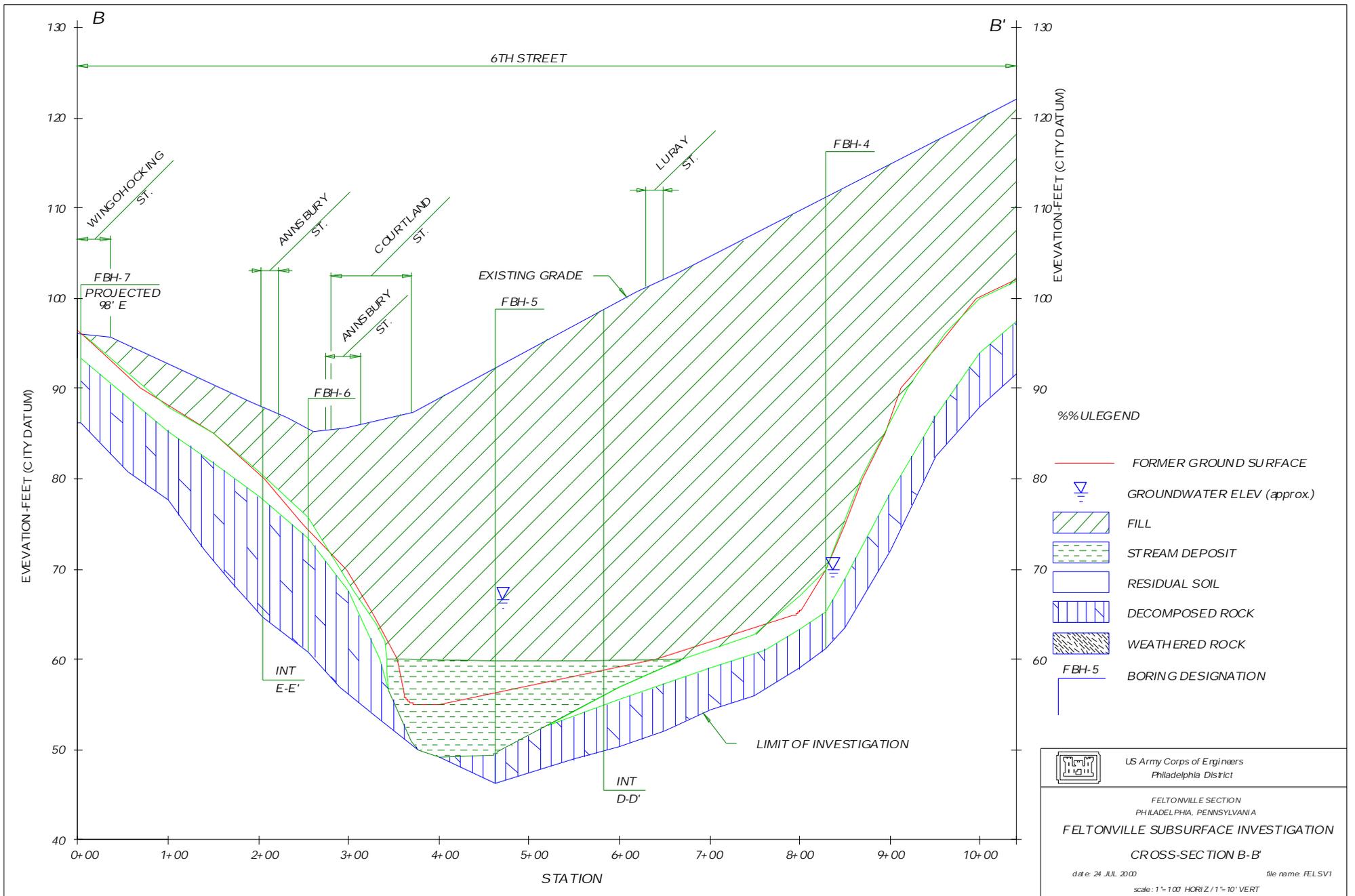
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PHILADELPHIA, PENNSYLVANIA  
FELTONVILLE SUBSURFACE INVESTIGATION

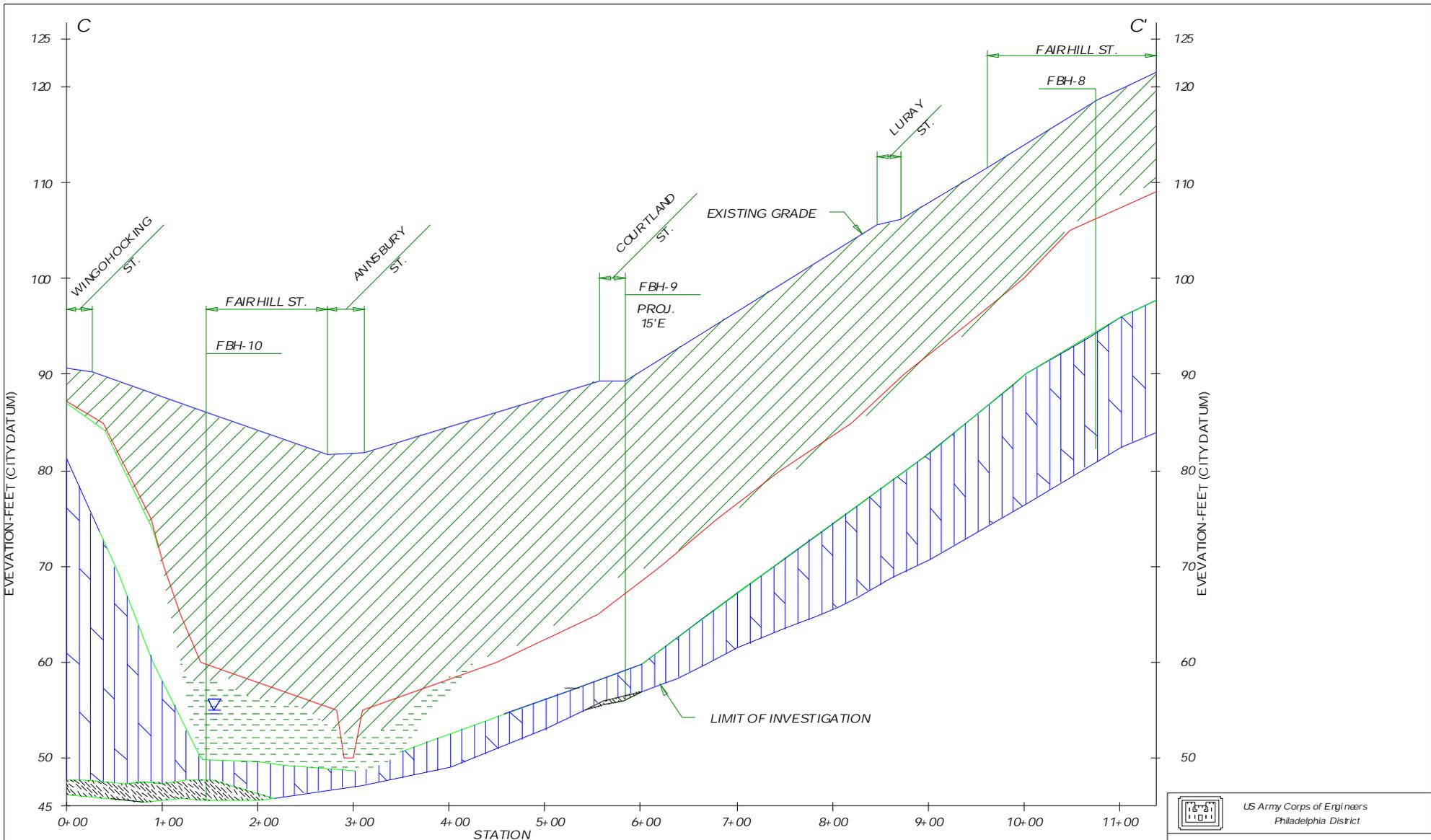
CROSS-SECTION A-A'

date: 24 JUL 2000

file name: FELSV1

scale: 1"=100' HORIZ / 1"=10' VERT



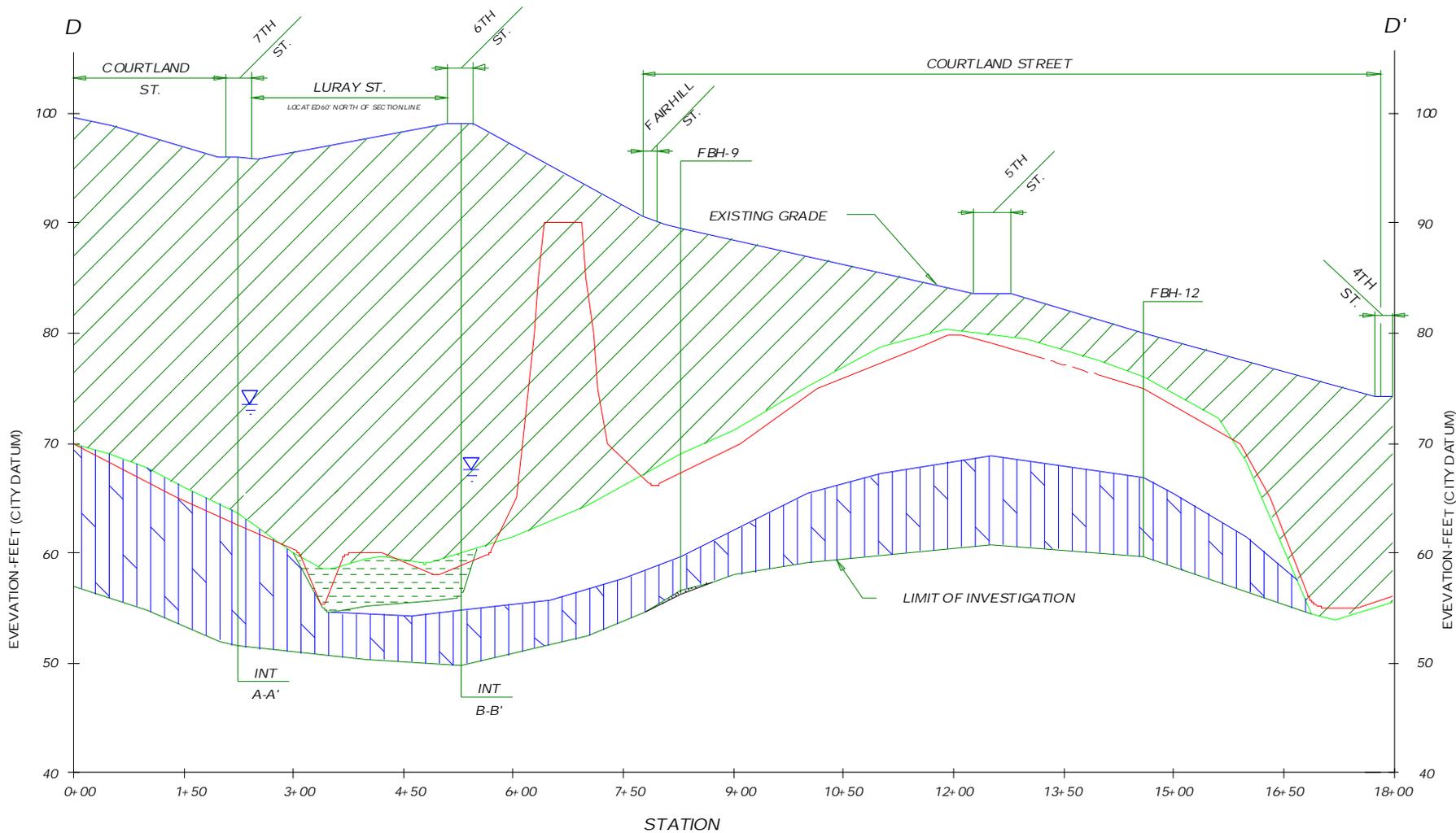


%%ULEGEND

- |  |                            |  |                |  |                 |  |                    |
|--|----------------------------|--|----------------|--|-----------------|--|--------------------|
|  | GROUNDWATER ELEV (approx.) |  | FILL           |  | RESIDUAL SOIL   |  | WEATHERED ROCK     |
|  | FORMER GROUND SURFACE      |  | STREAM DEPOSIT |  | DECOMPOSED ROCK |  | BORING DESIGNATION |

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FELTONVILLE SECTION  
PHILADELPHIA, PENNSYLVANIA  
FELTONVILLE SUBSURFACE  
INVESTIGATION  
CROSS-SECTION C-C'  
date: 24 JUL 2000 file name: FELSV1  
scale: 1"=100' HORIZ / 1"=10' VERT



%%ULEGEND

- |  |                           |  |                |  |                 |  |                    |
|--|---------------------------|--|----------------|--|-----------------|--|--------------------|
|  | GROUNDWATER ELEV (approx) |  | FILL           |  | RESIDUAL SOIL   |  | WEATHERED ROCK     |
|  | FORMER GROUND SURFACE     |  | STREAM DEPOSIT |  | DECOMPOSED ROCK |  | BORING DESIGNATION |

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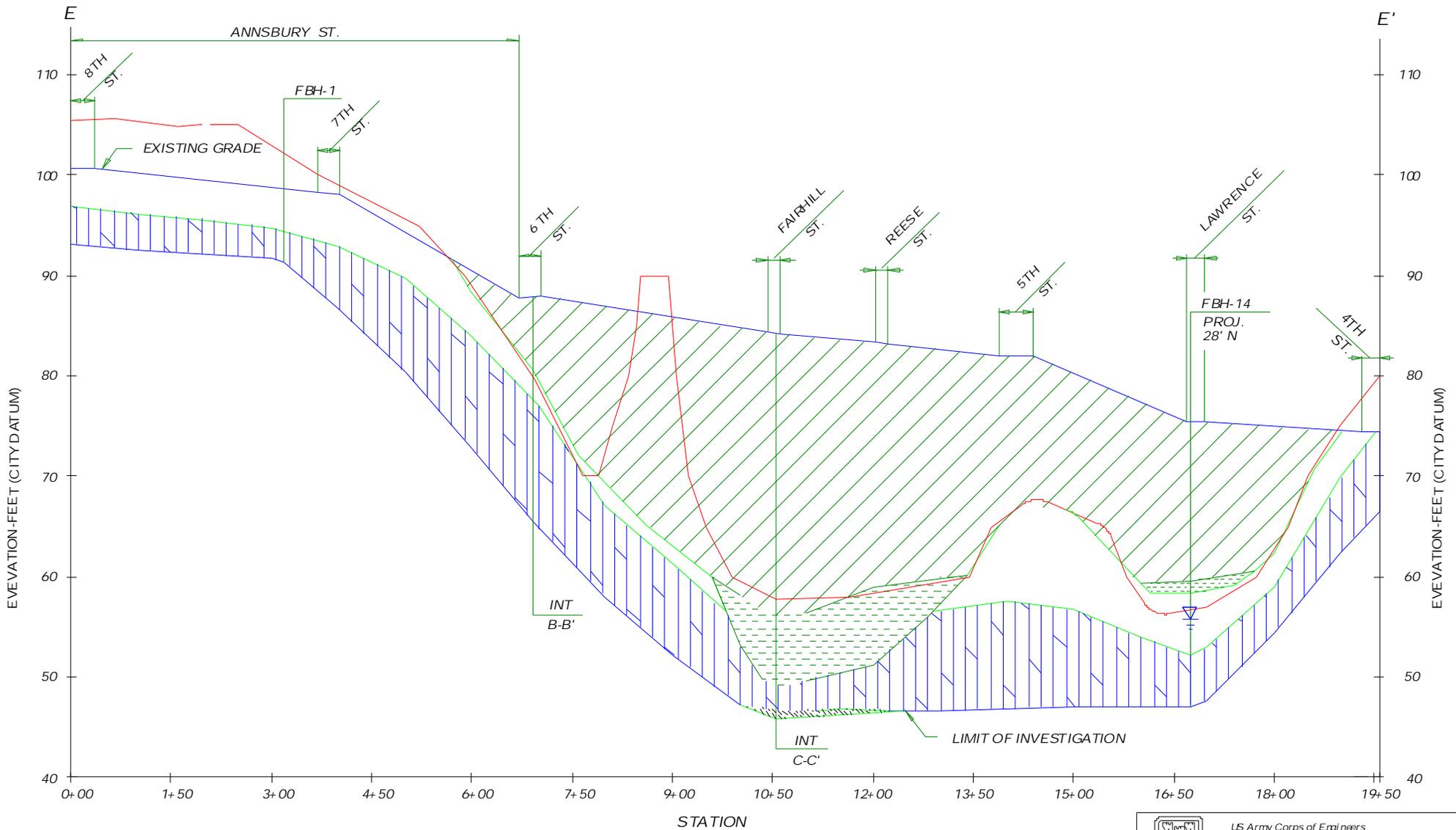
FELTONVILLE SECTION  
PHILADELPHIA, PENNSYLVANIA

FELTONVILLE SUBSURFACE INVESTIGATION

CROSS-SECTION D-D'

date: 24 JUL 2000 file name: FELSV1

scale: 1"=150' HORIZ / 1"=10' VERT



%%ULEGEND

	GROUNDWATER ELEV (approx.)		FILL		RESIDUAL SOIL		WEATHERED ROCK
	FORMER GROUND SURFACE		STREAM DEPOSIT		DECOMPOSED ROCK		BORING DESIGNATION


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 Philadelphia District

FELTONVILLE SECTION  
 PHILADELPHIA, PENNSYLVANIA  
**FELTONVILLE SUBSURFACE INVESTIGATION**  
 CROSS-SECTION E-E'

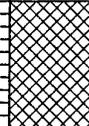
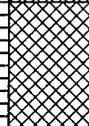
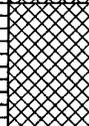
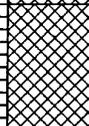
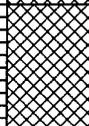
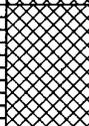
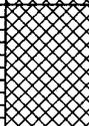
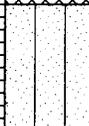
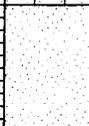
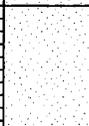
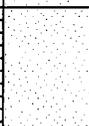
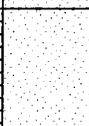
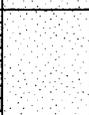
date: 24 JUL 2000 file name: FELSV1  
 scale: 1"=150' HORIZ / 1"=10' VERT

<b>DRILLING LOG</b>		DIVISION <b>NORTH ATLANTIC</b>	INSTALLATION <b>PHILADELPHIA</b>	SHEET <b>1</b> OF <b>1</b> SHEETS
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>			10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>	
2. LOCATION (Coordinates or Station) <b>Annsbury St.</b>			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>	
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>			12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>	
4. HOLE NO. (As shown on drawing title and file number) <b>FBH-1</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED <b>4</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>			14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. DEPTH TO GROUND WATER <b>N/A</b>	
7. THICKNESS OF OVERBURDEN			16. DATE HOLE STARTED <b>07 JUNE 00</b> COMPLETED <b>07 JUNE 00</b>	
8. DEPTH DRILLED INTO ROCK			17. ELEVATION TOP OF HOLE <b>98.6</b>	
9. TOTAL DEPTH OF HOLE <b>7.3</b>			18. TOTAL CORE RECOVERY FOR BORING _____ %	
			19. SIGNATURE OF INSPECTOR <b>M. Carnivale</b>	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5' PER 0.5'
98.3	0.3		Black Asphalt				
98.1	0.6		Brown, silty F-M SAND.				27
97.6	1.0		Gray, gravelly F-C SAND (subbase)			S-1 from 0.5-2.0 feet.	17
96.6	2.0		Brown, silty SAND w/mica.	1.0	S-1		9
			Brown, silty F-M SAND, w/mica.				6
				1.1	S-2		4
94.6	4.0						3
							4
			White (with orange tint), gravelly F-C SAND, some silt, mica. Dry and dense.				9
				0.6	S-3		6
							7
92.6	6.0		Same, very dense.				32
							62
91.3	7.3			1.1	S-4		88
							100/3"

DRILLING LOG		DIVISION NORTH ATLANTIC		INSTALLATION PHILADELPHIA			SHEET 1 OF 3 SHEETS	
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>				
2. LOCATION (Coordinates or Station) <b>7th St. (between Courtland St. and Roosevelt Blvd.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>				
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>				
4. HOLE NO. (As shown on drawing title and file number)		<b>FBH-2</b>			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>20</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES				
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED    _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>23.0</b>				
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED <b>13 JUNE 00</b>	COMPLETED <b>13 JUNE 00</b>	
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE <b>96.5</b>				
9. TOTAL DEPTH OF HOLE <b>46.3</b>				18. TOTAL CORE RECOVERY FOR BORING _____ %				
				19. SIGNATURE OF INSPECTOR <b>M. Carnivale</b>				
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'	
96.3	0.2		Black asphalt					
95.6	0.9		Greenish-gray SAND and GRAVEL				18	
			Brown/Black/White ASH and CINDER		1.3	S-1	S-1 from 0.5-2.0 ft.	7
94.5	2.0		Same					5
								13
					1.1	S-2		13
								7
92.5	4.0							5
				No Recovery				2
					0	N.S.		1
								2
90.5	6.0			ASH and CINDER, little f-m sand, coal remnants, loose				2
					0.8	S-3		2
								1
88.5	8.0			Same				2
					0.9	S-4		4
								5
86.5	10.0			Same				2
					0	N.S.		1
								3
							4	
84.5	12.0		Layers of orange "decomposed" BRICK, ASH, and CINDER.				2	
				0.8	S-5		2	
							2	
82.5	14.0		Same				1	
				1.2	S-6		1	
							2	
80.5	16.0		Same w/brown silty f-m sand				2	
				1.3	S-7		3	
							2	
78.5	18.0		ASH and CINDER w/3" layer of dark brown silty sand, wet				1	
				1.2	S-8		2	
							1	
76.5	20.0						1	
							2	

1. PROJECT  
**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
74.5	22.0		ASH and CINDER, some sand and silt, pieces of ceramic tile, wet	0.9	S-9		3
							2
							3
							2
72.5	24.0		Black/brown ASH and CINDER, pieces of wood, brick, some sand and silt, wet	1.4	S-10		2
							2
							2
							2
70.5	26.0		Mottled green-gray/light brown clayey SILT, trace mica and f. sand, piece of wood	1.2	S-11		3
							2
							3
							5
68.5	28.0		No Recovery	0	N.S.		4
							4
							4
							4
66.5	30.0		Light brown silty CLAY w/layer of green-gray silty sand	1.3	S-12		3
							4
							3
							4
64.5	32.0		Light brown silty F. SAND to silty CLAY	2.0	S-13		4
							2
							2
							3
62.5	34.0		Reddish brown rock fragments (brick?)	0.2	S-14		4
							7
							3
							61
60.5	36.0		Gray-green F. SAND, SILT and CLAY, w/ gravel sized mica schist fragments, moist	1.0	S-15		10
							3
							8
							14
58.5	38.0		Gray-green F-M SAND, little silt, mica, piece of gravel sized schist	1.0	S-16		14
							8
							10
							6
56.5	40.0		Same, saturated	0.7	S-17		12
							48
							27
							11
54.5	42.0		Same, more pieces of schist intermixed	1.7	S-18		20
							27
							35
							39
52.5	44.0		Same, w/brown f-m sand, silt, pieces of gravel, moist, dense	1.4	S-19		28
							29
							36
							34
52.5	44.0		Dense, black/gray F. SAND, some silt	1.3	S-20		61
							58
							100/2"



DRILLING LOG		DIVISION NORTH ATLANTIC		INSTALLATION PHILADELPHIA		SHEET 1 OF 1 SHEETS	
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>			
2. LOCATION (Coordinates or Station) <b>8th St. (between Annsbury St. and Roosevelt Blvd.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>			
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>			
4. HOLE NO. (As shown on drawing title and file number)		<b>FBH-3</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>8</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>N/A</b>			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED <b>13 JUNE 00</b>	COMPLETED <b>13 JUNE 00</b>
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE <b>98.8</b>			
9. TOTAL DEPTH OF HOLE <b>16.9</b>				18. TOTAL CORE RECOVERY FOR BORING _____ %			
				19. SIGNATURE OF INSPECTOR <b>M. Carnivale</b>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
98.4	0.4		Black asphalt				
97.9	0.9		Concrete			Cleaned out to 2 ft.	
			No Sample				
96.8	2.0		Medium dense, light brown silty F. SAND, damp	0.8	S-1		6 4 4 3
94.8	4.0		Same, slightly siltier	0.6	S-2		3 3 3 4
92.8	6.0		Same				3
91.9	6.9		Tan-brown clayey SILT, trace mica, damp	1.4	S-3		2 3 3
90.8	8.0		Brown silty F-M SAND, trace mica, med. dense	1.4	S-4		13 10 14 14
88.8	10.0		Brown-rust, silty F-M SAND, micaceous (highly decomposed rock)	1.6	S-5		7 10 12 25
86.8	12.0		Same, light to dark brown, with some gray highly decomposed rock (f-m silty sand), micaceous, dry, dense	1.3	S-6		20 33 31 35
84.8	14.0		Same, siltier	1.5	S-7		18 18 21 53
82.8	16.0		Same				43
81.9	16.9			0.9	S-8		100/5"

<b>DRILLING LOG</b>		DIVISION <b>NORTH ATLANTIC</b>	INSTALLATION <b>PHILADELPHIA</b>	SHEET <b>1</b> OF <b>3</b> SHEETS
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>		10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>		
2. LOCATION (Coordinates or Station) <b>6th St. (between Luray St. and Roosevelt Blvd.)</b>		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>		
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>		12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>		
4. HOLE NO. (As shown on drawing title and file number)	<b>FBH-4</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED <b>24</b>
5. NAME OF DRILLER <b>J. Coggiano</b>		14. TOTAL NUMBER CORE BOXES <b>0</b>		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. DEPTH TO GROUND WATER <b>41.5</b>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED <b>12 JUNE 00</b> COMPLETED <b>12 JUNE 00</b>		
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE <b>111.2</b>		
9. TOTAL DEPTH OF HOLE <b>50.0</b>		18. TOTAL CORE RECOVERY FOR BORING _____ %		
		19. SIGNATURE OF INSPECTOR <b>M. Carnivale</b>		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
110.9	0.3		Black asphalt				
110.7	0.5		Concrete				
			No Sample				
109.2	2.0		ASH with some sand and silt, small piece of coal	1.5	S-1		3 4
107.2	4.0		Brown/black/white ASH w/ sand and silt, some pieces of coal, dry	0.4	S-2		4 3 1
105.2	6.0		Same with 2" layer of silty ash, little clay	2.0	S-3		2 3 5
103.2	8.0		Same, w/coal remnants, damp	1.1	S-4		4 3 4 5
101.2	10.0		Same, some rust colored ash, small brick fragments	1.5	S-5		2 2 3 3
99.2	12.0		Brown silty F-M SAND w/brick, some white silt (talc-like)	1.0	S-6		4 14 7 4
97.2	14.0		Brown/black/white ASH with sand and silt	1.0	S-7		3 6 3 4
95.2	16.0		Same with brick	0.9	S-8		3 6 5 4
93.2	18.0		Same	1.2	S-9		3 4 3 2
91.2	20.0						

# DRILLING LOG

DIVISION  
**NORTH ATLANTIC**

INSTALLATION  
**PHILADELPHIA**

SHEET **2**  
OF 3 SHEETS

1. PROJECT  
**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
89.2	22.0		Brown/black/white ASH and CINDER, little brick with sand and silt	1.6	S-10		3
							4
							4
							3
87.2	24.0		Same	1.3	S-11		2
							3
							2
							1
85.2	26.0		Same	1.2	S-12		2
							3
							1
							2
83.2	28.0		Brown clayey SILT grading to black coal ash	0.8	S-13		4
							6
							7
							5
81.2	30.0		Black COAL ASH and CINDERS with pieces of brick mixed with gravel, sand, and silt	1.0	S-14		6
							9
							16
							9
79.2	32.0		Same, more sand, denser, moist	1.3	S-15		15
							20
							17
							18
77.2	34.0		ASH and F-M SAND, pieces of gravel	1.0	S-16		15
							15
							8
							9
75.2	36.0		Same, dense	1.3	S-17		9
							10
							10
							12
73.2	38.0		Orange-brown F-M SAND with cinders, pieces of gravel	0.9	S-18		9
							10
							8
							7
71.2	40.0		Same, no gravel, small pieces of coal, brick	0.7	S-19		8
							12
							6
							7
70.4	40.8		Same	0.5	S-20		2
							2
69.2	42.0		Brown clayey SILT	0.5	S-20		3
							2
67.2	44.0		Same	0.7	S-21		2
							1
							1
							3
66.3	44.9		Gray silty F-M SAND	1.1	S-22		8
							12
			Brown silty CLAY				11

1. PROJECT  
**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
65.2	46.0	▨	Dense gray/black F-C SAND, some silt, with layers of rusty orange silty sand	1.0	S-23		5
		●					20
		●	Same	1.5	S-24		20
63.2	48.0	●					36
		●					22
		●					11
61.2	50.0	●					47
		●					50

<b>DRILLING LOG</b>		DIVISION <b>NORTH ATLANTIC</b>		INSTALLATION <b>PHILADELPHIA</b>		SHEET <b>1</b> OF 3 SHEETS	
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>			
2. LOCATION (Coordinates or Station) <b>6th St. (between Luray St. and Courtland St.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>			
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>			
4. HOLE NO. (As shown on drawing title and file number)		<b>FBH-5</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>19</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>26.0</b>			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED <b>07 JUNE 00</b>	COMPLETED <b>07 JUNE 00</b>
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE <b>92.3</b>			
9. TOTAL DEPTH OF HOLE <b>45.8</b>				18. TOTAL CORE RECOVERY FOR BORING _____ %			
				19. SIGNATURE OF INSPECTOR <b>M. Carnivale</b>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
92.0	0.3		Black asphalt			Drilled through the road and possibly a former concrete road. Begin sampling at 2 ft.	
91.0	1.3		Concrete				
90.3	2.0		No sample				
89.3	3.0		Gray gravelly F-C SAND, some silt, dense				15
88.3	4.0		White/black/tan ASH with sand and silt	0.6	S-1		12
86.3	6.0		Brown silty F-M SAND, some ash with a layer of yellowish ash, little brick turning to dark gray f-c sand	1.6	S-2		8
84.3	8.0		No Recovery	0	N.S		4
82.3	10.0		ASH and CINDER with some clay, silt, and sand, piece of coal, moist, loose	1.1	S-3		25
80.3	12.0		Same, moist, small piece of brick	1.1	S-4		14
78.3	14.0		Same, wet, piece of glass (brown silty clay @ shoe)	1.3	S-5		8
76.3	16.0		No Recovery	0	N.S.		10
74.3	18.0		Brown silty CLAY, moist	0.3	S-6		7
72.3	20.0		Miscellaneous FILL consisting of black sandy silt and brown silty clay with lenses of ash, moist	1.0	S-7		7

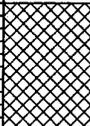
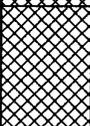
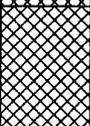
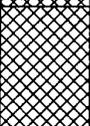
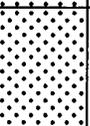
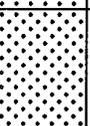
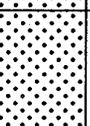
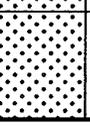
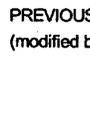
# DRILLING LOG

DIVISION  
**NORTH ATLANTIC**

INSTALLATION  
**PHILADELPHIA**

SHEET **2**  
OF **3** SHEETS

1. PROJECT  
**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
70.3	22.0		Layers of soil FILL consisting of brown and black clayey silt and ash (coal), piece of soft wood @ bottom	1.5	S-8		4
							4
							5
							6
68.3	24.0		Same	1.4	S-9		4
							4
							5
							3
66.3	26.0		Same, 1" piece of coal	0.7	S-10		2
							3
							5
							6
64.3	28.0		ASH with sand and silt, saturated	0.7	S-11		2
							3
							3
							3
62.3	30.0		Same, some gravel and coal, saturated	1.1	S-12		2
							2
							3
							3
60.3	32.0		Same	1.4	S-13		1
							2
							2
							2
59.9	32.4		Same	2.0	S-14		2
							2
							2
							2
58.3	34.0		Gray-black SILT, some clay, mica, saturated, soft	2.0	S-15		3
							4
							6
							7
56.3	36.0		Same, piece of wood	1.0	S-16		1
							2
							3
							4
54.9	37.4		Same	1.7	S-17		4
							8
							15
							25
54.3	38.0		Gray F-C SAND, little to no fines, saturated	0.2	S-18		15
							23
							27
							8
52.3	40.0		Same (mostly coarse), some mica	0	N.S.		11
							11
							27
							42
50.3	42.0		No Recovery	1.2	S-19		27
							70
							95
							95
48.3	44.0		Medium brown to yellow decomposed schist				27
							70
							95
							95



<b>DRILLING LOG</b>		DIVISION <b>NORTH ATLANTIC</b>		INSTALLATION <b>PHILADELPHIA</b>		SHEET <b>1</b> OF <b>2</b> SHEETS	
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>			
2. LOCATION (Coordinates or Station) <b>6th St. (approx. 52' south of Courtland St.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>			
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>			
4. HOLE NO. (As shown on drawing title and file number)		<b>FBH-6</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>10</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>N/A</b>			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED <b>07 JUNE 00</b>	COMPLETED <b>08 JUNE 00</b>
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE <b>85.6</b>			
9. TOTAL DEPTH OF HOLE <b>24.7</b>				18. TOTAL CORE RECOVERY FOR BORING %			
				19. SIGNATURE OF INSPECTOR <b>S. Nevshehrlan</b>			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
85.3	0.3		Black asphalt				
85.1	0.5		Red BRICK and other f. sand and silt fill				7
			Light brown f. sand, some silt, trace f. gravel				2
83.6	2.0		FILL.	0.6	S-1	S-1 from 0.5 ft. to 2.0 ft.	3
82.9	2.7		Soft gray clayey SILT				3
82.6	3.0		Light brown, uniform F. SAND	1.0	S-2		4
			Miscellaneous FILL comprised of tan and light				2
81.6	4.0		gray f-m sand and some black and white				4
			ash-like material				8
			No Recovery	0	N.S.		8
79.6	6.0		No Recovery (small piece of gray clayey silt in tip of spoon - possibly from above)	0	N.S.	Auger return is mostly lt. brown F. SAND:	5
							4
77.6	8.0		No Recovery				3
							4
				0	N.S.	Auger sample (exact interval unknown) is lt. brown F.SAND, little silt, tr. mica	4
75.6	10.0						3
75.4	10.2		ASH and miscellaneous FILL				5
			Light brown CLAY to silty CLAY	1.2	S-3		2
							1
73.6	12.0						3
			Medium brown F-M SAND, some silt, trace mica (1" piece of gravel in tip of spoon)	0.3	S-4		7
							15
							16
71.6	14.0		Light gray to white F-M SAND, trace gravel sized pieces of weathered rock, dry	1.1	S-5		16
							17
							63
69.6	16.0		Red c. gravel sized rock fragments				74
							100/4"
68.6	17.0		Light gray to white F-M SAND, some silt, trace mica	0.6	S-6		46
							51/3"
67.6	18.0		Same as above				
				0.6	S-7		40
							51/1"
65.6	20.0						

# DRILLING LOG

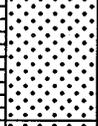
DIVISION  
**NORTH ATLANTIC**

INSTALLATION  
**PHILADELPHIA**

SHEET **2**  
OF **2** SHEETS

1. PROJECT

**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
63.6	22.0		1.3 inch piece of red rock in tip of spoon	0.1	S-8		43
							51/5"
						End drilling 07 June 2000.	
61.6	24.0		Light to medium gray very highly decomposed schist, with some large pieces of mica	1.2	S-9	Resume drilling 08 June 2000.	24
							78
							100/3"
60.9	24.7		Same as above.	.5	S-10		42
							100/2"

<b>DRILLING LOG</b>		DIVISION <b>NORTH ATLANTIC</b>	INSTALLATION <b>PHILADELPHIA</b>	SHEET <b>1</b> OF <b>1</b> SHEETS
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>		10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>		
2. LOCATION (Coordinates or Station) <b>Wingohocking St. (between Marshall St. and 6th St.)</b>		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>		
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>		12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>		
4. HOLE NO. (As shown on drawing title and file number) <b>FBH-7</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED <b>6</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. DEPTH TO GROUND WATER <b>N/A</b>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE	STARTED <b>08 JUNE 00</b>	COMPLETED <b>08 JUNE 00</b>
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE <b>97.3</b>		
9. TOTAL DEPTH OF HOLE <b>11.1</b>		18. TOTAL CORE RECOVERY FOR BORING _____ %		
		19. SIGNATURE OF INSPECTOR <b>S. Nevshahirlian</b>		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
97.0	0.3		Black asphalt				
96.8	0.5		GRAVEL subbase				25
			Light brown F-M SAND, little f. gravel	0.6	S-1		8
95.3	2.0		Light to orange-brown F-M SAND, very micaceous.	1.1	S-2		3
							6
							11
							16
93.3	4.0		Same as above, some c. gravel	0.1	S-3	Piece of gravel stuck in tip of spoon.	19
							32
							37
91.3	6.0		Same as above, more mica				100/5"
							100/2"
89.3	8.0		Light green highly decomposed rock, some c. gravel sized rock fragments	0.4	S-5		100/5"
87.3	10.0		Light to orange-brown highly decomposed rock, some larger sized quartz and mica fragments, dry	1.1	S-6		34
86.2	11.1						95
							100/1"

DRILLING LOG		DIVISION NORTH ATLANTIC		INSTALLATION PHILADELPHIA			SHEET 1 OF 2 SHEETS		
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>					
2. LOCATION (Coordinates or Station) <b>Fairhill St. (between Wyoming Ave. and Luray St.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>					
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>					
4. HOLE NO. (As shown on drawing title and file number) <b>FBH-8</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>16</b>		UNDISTURBED <b>0</b>			
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES					
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>30.0</b>		16. DATE HOLE		STARTED <b>08 JUNE 00</b>	COMPLETED <b>09 JUNE 00</b>
7. THICKNESS OF OVERBURDEN				17. ELEVATION TOP OF HOLE <b>118.6</b>					
8. DEPTH DRILLED INTO ROCK				18. TOTAL CORE RECOVERY FOR BORING _____ %					
9. TOTAL DEPTH OF HOLE <b>36.0</b>				19. SIGNATURE OF INSPECTOR <b>S. Nevshahirian</b>					
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'		
118.4	0.3		Black asphalt						
117.9	0.7		Concrete						
			Light brown F. SAND, little silt	N/A	A.S.	Auger sample			
116.6	2.0		Light brown F. SAND and clayey SILT				7		
115.6	3.0		Dark gray to black f-m sand sized pieces of	0.6	S-1		8		
114.6	4.0		ASH, trace glass				7		
			Medium brown to brownish gray silty CLAY, little f. sand and c. gravel (FILL)	0.3	S-2		6		
							5		
112.6	6.0		Miscellaneous FILL consisting of light gray silty clay, little f. sand, black ash, and brick	0.3	S-3		4		
							5		
							1		
							2		
							2		
110.6	8.0		Medium brown to brownish gray silty CLAY, little f. sand and c. gravel (FILL)	0.3	S-4		2		
							5		
							5		
108.6	10.0		Same as above				5		
							3		
107.6	11.0		Light brown CLAY to silty CLAY, trace c. gravel, f. sand, and mica	1.2	S-5		2		
							1		
106.6	12.0		No Recovery				3		
				0	N.S.		4		
							3		
							4		
104.6	14.0		Light to orange-brown F-M SAND, very micaceous, dry	1.8	S-6	Drilling slightly slower	5		
							3		
							3		
102.6	16.0		Same as above, slightly coarser	1.3	S-7		4		
							7		
							5		
							7		
100.6	18.0		Same as above				10		
							10		
							6		
99.6	19.0		Orange-brown silty F. SAND, trace mica, dry,	1.5	S-8		6		
							6		
98.6	20.0						6		
							7		

# DRILLING LOG

DIVISION  
**NORTH ATLANTIC**

INSTALLATION  
**PHILADELPHIA**

SHEET **2**  
OF **2** SHEETS

1. PROJECT

**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
			with some black silt stringers				4
			Same as above, with some intervals of slightly coarser sand (medium)	1.8	S-9		6
96.6	22.0						9
96.1	22.5		Same as above				11
			Orange-brown, reddish brown, and white highly decomposed rock, very micaceous, dry	1.8	S-10		7
94.6	24.0						17
			Same, slightly damp				23
				2.0	S-11		27
92.6	26.0						10
92.3	26.3		Same as above				18
			Light brown, micaceous F. SAND, little silt, with occasional very thin white clay lenses or stringers, damp	2.0	S-12		20
90.6	28.0						21
			Same, no clay lenses/stringers, damp				11
				2.0	S-13		12
88.6	30.0						12
			Light to orange-brown F-M SAND (slightly coarser towards bottom of interval), trace f. gravel, little-some clay towards top of interval	2.0	S-14		14
86.6	32.0					Stop drilling 08 June 00	10
			Orange-brown, reddish brown, and white f-m sand sized highly weathered rock fragments, very micaceous, damp	1.8	S-15	Resume drilling 09 June 00	14
84.6	34.0					Slow drilling	18
			Same, slightly coarser				23
				2.0	S-16	Approx. water level @ 30' based on water mark on drilling rods	17
82.6	36.0						40
							53
							70

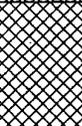
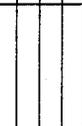
DRILLING LOG		DIVISION NORTH ATLANTIC		INSTALLATION PHILADELPHIA		SHEET 1 OF 2 SHEETS	
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>			
2. LOCATION (Coordinates or Station) <b>Courtland St. (between Fairhill St. and 5th St.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>			
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>			
4. HOLE NO. (As shown on drawing title and file number)		<b>FBH-9</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>17</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>N/A</b>			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED <b>08 JUNE 00</b>	COMPLETED <b>08 JUNE 00</b>
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE <b>89.6</b>			
9. TOTAL DEPTH OF HOLE <b>33.3</b>				18. TOTAL CORE RECOVERY FOR BORING %			
				19. SIGNATURE OF INSPECTOR <b>S. Nevshehrlian</b>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
89.3	0.3		Black asphalt				
88.6	1.0		Concrete			No sample collected	
			Light brown clayey SILT, trace f. sand, mica	NA	N.S.		4
87.6	2.0		Same	0.8	S-1	S-1 from 1.0 to 2.0 ft.	6
				1.0	S-2		5
							7
							4
85.6	4.0		Light brown clayey SILT, some f. sand, trace mica				4
				1.0	S-3		7
							3
83.6	6.0		Same, little f. sand				3
				1.0	S-4		6
							4
							3
81.6	8.0		Same				50/3"
							10
80.6	9.0		Black ASH, little c. gravel	0.4	S-5		8
							7
79.6	10.0		Black and white ASH				5
				0.8	S-6		13
							8
							10
77.6	12.0		Light brown clayey SILT, little f. sand and f. gravel				9
				0.3	S-7		9
							5
75.6	14.0		Black and white ASH				4
				0.8	S-8		4
							2
							3
73.6	16.0		Light to medium gray F-M SAND, SILT, and CLAY, trace wood				2
				0.1	S-9		7
							6
							4
71.6	18.0		Same, some gravel				5
				0.6	S-10		8
							7
							2
							5
69.6	20.0						

DRILLING LOG		DIVISION NORTH ATLANTIC	INSTALLATION PHILADELPHIA	SHEET OF 2 SHEETS			
1. PROJECT FELTONVILLE - Philadelphia, PA							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
69.0	20.6		Same as above, small piece of metal in sample				6
68.3	21.3		Light brown clayey SILT	1.0	S-11		4
67.6	22.0		Dark gray SILT to silty CLAY				3
			No Recovery				4
				0	N.S.		4
65.6	24.0		Brownish gray silty CLAY, trace to little f. sand				6
				1.1	S-12		3
							3
63.6	26.0		Brownish gray SILT to SILTY CLAY, little f. sand, damp to wet				6
				1.5	S-13		4
							4
61.6	28.0		Light brown to brownish gray SILT to silty CLAY, little f. sand, damp				3
				1.5	S-14		3
							3
59.6	30.0		No representative sample was retrieved				3
				0	S-15	30.5 to 32 ft. drilled slow	27
							83
57.6	32.0		Light brown to brownish gray weathered rock fragments, little silt and clay	0.4	S-16	Very slow drilling, occ. rig chatter	100/5"
56.6	33.0		Gray to blueish gray rock fragments	0.2	S-17	Poss. top of rock	
56.3	33.3						100/3"

<b>DRILLING LOG</b>		DIVISION <b>NORTH ATLANTIC</b>	INSTALLATION <b>PHILADELPHIA</b>	SHEET <b>1</b> OF 2 SHEETS
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>		10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>		
2. LOCATION (Coordinates or Station) <b>Fairhill St. (between Annsbury St. and Wingohocking St.)</b>		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>		
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>		12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>		
4. HOLE NO. (As shown on drawing title and file number) <b>FBH-10</b>	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>17</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. DEPTH TO GROUND WATER <b>31.0</b>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE		STARTED <b>14 JUNE 00</b>
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE <b>86.0</b>		COMPLETED <b>14 JUNE 00</b>
9. TOTAL DEPTH OF HOLE <b>40.3</b>		18. TOTAL CORE RECOVERY FOR BORING _____ %		
		19. SIGNATURE OF INSPECTOR <b>S. Nevshehirlian</b>		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5' h	
85.8	0.2		Black asphalt			S-1 from 0.5 ft. to 2.0 ft.		
85.0	1.0		Light brown F. SAND, little silt, gravel				8	
			Light brownish gray and black ASH	1.3	S-1		10	
84.0	2.0		No recovery	0	N.S.	Piece of gravel stuck in tip of spoon	6	
							9	
							6	
82.0	4.0		Light brownish gray and black ASH, little light brown silt and sand intermixed	1.5	S-2		4	
							7	
			Same, slightly more soil intermixed, trace glass	1.4	S-3		6	
80.0	6.0						10	
							12	
			Same, trace f. gravel, moist	1.8	S-4		10	
78.0	8.0						8	
							11	
			No recovery (piece of brick in tip of spoon)	0	N.S.	Piece of brick in tip of spoon	7	
76.0	10.0							10
								5
			No recovery	0	N.S.		6	
74.0	12.0						5	
							10	
			Light brownish gray and black ASH, some light brown silt and sand intermixed, trace gravel and newspaper	1.6	S-5		16	
72.0	14.0						9	
							12	
			Same, trace glass	1.5	S-6		8	
70.0	16.0						7	
							6	
			Same, trace wood, moist to wet	1.6	S-7		5	
68.0	18.0						6	
							5	
							4	
							4	
							4	
66.0	20.0						3	
							4	
							4	

1. PROJECT  
**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
64.0	22.0		Same	1.7	S-8		3
							4
							5
							4
62.0	24.0		Same, wet	1.7	S-9		4
							5
							3
							4
60.5	25.5		Same, saturated	1.5	S-10		5
							8
60.3	25.8		Light brown F-M SAND, little silt, trace mica				6
60.0	26.0		Brownish gray F. SAND, some silt, trace mica				16
58.5	27.5		Light brown clayey SILT, little f. sand, trace f. gravel	1.0	S-11		8
							11
							8
58.0	28.0		Pale yellowish brown M. SAND				16
							9
56.0	30.0		Medium brown to brownish gray clayey SILT, trace organic matter (wood, roots), damp	1.8	S-12		4
							5
							6
							6
54.0	32.0		Brownish gray clayey SILT, trace to little organic matter (wood, roots), wet to saturated	2.0	S-13	Water level approximately 31 ft. b.g.s.	2
							2
							1
							2
53.0	33.0		Very soft light greenish gray, CLAY to silty CLAY				WOH
							WOH
52.0	34.0		Brownish gray F-M SAND, little silt and clay, trace f. gravel and organic matter, wet to saturated	2.0	S-14		8
							13
51.0	35.0		Same as above, little to some gravel, saturated	1.3	S-15		8
							11
50.0	36.0		Same as above, little to some gravel, saturated				15
							23
49.5	36.5		Brownish gray F-C SAND and GRAVEL, trace to little silt and clay and mica, saturated	1.4	S-16		68
							33
48.0	38.0		Same as above				38
							31
46.0	40.0		Light gray v. highly decomposed schist (f-m sand sized particles, very micaceous)	0	N.S.	Hard material. Rig chatters from 39.5-40 ft. b.g.s. Poss. top of rock	100/3"
45.7	40.3		No recovery (c. gravel sized piece of medium brown rock in tip of spoon)				
			Same as above				100/4"
				0.2	S-17		

DRILLING LOG		DIVISION NORTH ATLANTIC		INSTALLATION PHILADELPHIA		SHEET 1 OF 2 SHEETS	
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>			
2. LOCATION (Coordinates or Station) <b>Wingohocking St. (at Reese St.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>			
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>			
4. HOLE NO. (As shown on drawing title and file number) <b>FBH-11</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>14</b>		UNDISTURBED <b>0</b>	
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>N/A</b>			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED <b>14 JUNE 00</b>	
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE <b>89.3</b>		COMPLETED <b>14 JUNE 00</b>	
9. TOTAL DEPTH OF HOLE <b>29.7</b>				18. TOTAL CORE RECOVERY FOR BORING _____ %			
				19. SIGNATURE OF INSPECTOR <b>S. Nevshehrlian</b>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5' h
89.1	0.3		Black asphalt				
88.8	0.5		Gravel subbase				68
			Dark brown F. SAND and GRAVEL, little silt	0.8	S-1	S-1 from 0.5 ft. to 2.0 ft.	43
87.3	2.0		Brick and f. gravel FILL				35
86.8	2.5		Light to orange brown silty CLAY, trace f. sand, f. gravel, mica	0.9	S-2		8
			Same, moist				6
85.3	4.0			0.5	S-3		6
							4
							3
83.3	6.0		Same				5
82.9	6.4		Light gray, partially cemented, micaceous, F. SAND	1.0	S-4		4
							10
							9
81.3	8.0		C. gravel sized pieces of light gray, cemented, micaceous, F. SAND, some quartz and large pieces of mica	1.0	S-5		6
80.8	8.5						17
							8
							5
79.3	10.0		Light brown, micaceous F. SAND, little silt, trace gravel, grading down to medium brown SILT, trace f. sand, moist	1.3	S-6		6
							18
							6
							5
77.3	12.0		Light brownish gray and black ASH with some clayey silt intermixed				6
			Same, with 5 inch layer of dark brownish gray SILT, little f. sand and organic matter @ 13 ft.	1.7	S-7		23
							16
							5
75.3	14.0		b.g.s.				8
			No recovery				100/5"
				0	N.S.		
73.3	16.0		Light brownish gray and black ASH				
							15
72.3	17.0		Medium gray F. SAND, very micaceous	1.3	S-8		13
			grading to medium gray silt.				16
71.6	17.7						18
71.3	18.0		Reddish brown BRICK				
71.1	18.2		Same	1.6	S-9		17
70.9	18.4						10
			Brownish gray clayey SILT				9
							8
69.3	20.0						

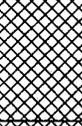
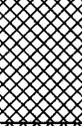
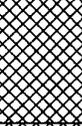
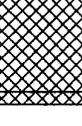
# DRILLING LOG

DIVISION  
**NORTH ATLANTIC**

INSTALLATION  
**PHILADELPHIA**

SHEET **2**  
OF 2 SHEETS

1. PROJECT  
**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5' h
67.3	22.0		Light brownish gray and black ASH, trace wood, moist	1.0	S-10		8
			Same, moist				6
							5
66.3	23.0		Same, wet to saturated, some paper intermixed	1.3	S-11		5
							4
65.3	24.0		Light brownish gray clayey SILT, moist	2.0	S-12		3
							3
63.3	26.0		Light brownish gray SILT, trace organic matter and wood	1.3	S-13		3
							3
							4
61.3	28.0		Greenish gray micaceous F-M SAND, moist to wet.	0	N.S.	V. hard drilling and rig chatter	20
							19
							14
							12
59.8 59.6	29.5 29.7		No sample	0.1	S-14	Boring terminated @ 29.7 ft. b.g.s. due to auger/spoon refusal.	100/1"
			Concrete				100/2"

<b>DRILLING LOG</b>		DIVISION <b>NORTH ATLANTIC</b>	INSTALLATION <b>PHILADELPHIA</b>	SHEET <b>1</b> OF <b>2</b> SHEETS
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>		10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>		
2. LOCATION (Coordinates or Station) <b>Courtland St. (between 4th St. and 5th St.)</b>		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>		
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>		12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>		
4. HOLE NO. (As shown on drawing title and file number) <b>FBH-12</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED <b>8</b>	UNDISTURBED <b>0</b>
5. NAME OF DRILLER <b>B. Jordan</b>		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED    _____ DEG. FROM VERT.		15. DEPTH TO GROUND WATER <b>N/A</b>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE	STARTED <b>09 JUNE 00</b>	COMPLETED <b>09 JUNE 00</b>
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE <b>80.1</b>		
9. TOTAL DEPTH OF HOLE <b>20.4</b>		18. TOTAL CORE RECOVERY FOR BORING %		
		19. SIGNATURE OF INSPECTOR <b>S. Nevshahirlian</b>		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5' h
79.9	0.2		Black asphalt				
79.5	0.6		Reddish brown BRICK			Auger Sample	
			Light brown F. SAND, little to some silt		A.S.		
78.1	2.0		Medium brown F. SAND, SILT, and CLAY, trace brick	0.3	S-1	Piece of brick in tip of spoon.	20
							5
							5
76.1	4.0		Light to medium brown CLAY to silty CLAY				4
				2.0	S-2		1
							1
74.1	6.0		No recovery				4
				0	N.S.		3
							4
							5
72.1	8.0		Light brown clayey SILT to f. sandy SILT, trace gravel				6
				1.8	S-3		4
							5
70.1	10.0		Light brown silty CLAY				3
							5
69.1	11.0		Light brown F. SAND, little to some silt, trace gravel	1.4	S-4		12
							13
68.1	12.0		Same with some mica, no gravel				13
							14
66.9	13.2		Light to orange brown, very micaceous F. SAND	1.9	S-5		10
							8
66.1	14.0		Light brown to light gray, micaceous F-M SAND, trace f. gravel, silt			15 ft. - drilling slows a little, tighter material	8
				1.1	S-6		19
64.1	16.0		No sample				22
				N/A	N.S.	No Sample	28
62.1	18.0		Same as S-6. Bottom 3 inches is damp				
				1.2	S-7	Drilling slow	15
							30
60.1	20.0						100/3"

**DRILLING LOG**DIVISION  
**NORTH ATLANTIC**INSTALLATION  
**PHILADELPHIA**SHEET **2**  
OF **2** SHEETS

1. PROJECT

**FELTONVILLE - Philadelphia, PA**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
59.7	20.4		Light brown and light gray rock fragments and powdered rock	0.3	S-8	Poss. top of rock.	100/5"

DRILLING LOG		DIVISION NORTH ATLANTIC		INSTALLATION PHILADELPHIA		SHEET 1 OF 2 SHEETS	
1. PROJECT <b>FELTONVILLE - Philadelphia, PA</b>				10. SIZE AND TYPE OF BIT <b>4 1/4" ID HSA w/2" std Split Spoon</b>			
2. LOCATION (Coordinates or Station) <b>Lawrence St. (bet. Annsbury St. and Wingohocking St.)</b>				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>City of Philadelphia Datum</b>			
3. DRILLING AGENCY <b>Chesapeake Geosystems, Inc.</b>				12. MANUFACTURER'S DESIGNATION OF DRILL <b>Mobile B-61</b>			
4. HOLE NO. (As shown on drawing title and file number) <b>FBH-14</b>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <b>14</b>		UNDISTURBED <b>0</b>	
5. NAME OF DRILLER <b>B. Jordan</b>				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. DEPTH TO GROUND WATER <b>21.0</b>		16. DATE HOLE	
7. THICKNESS OF OVERBURDEN				STARTED <b>09 JUNE 00</b>		COMPLETED <b>09 JUNE 00</b>	
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE <b>76.7</b>			
9. TOTAL DEPTH OF HOLE <b>29.6</b>				18. TOTAL CORE RECOVERY FOR BORING _____ %			
				19. SIGNATURE OF INSPECTOR <b>S. Nevshahirian</b>			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
76.4	0.3		Black asphalt				
75.7	1.0		Concrete			Auger sample	
			Medium brown clayey SILT	N/A	A.S.		
74.7	2.0		Medium brown clayey SILT, little f. sand, trace f. gravel and mica	1.8	S-1		3
			Same. Some dark gray-black F-M SAND/SILT material @ top of spoon (slough?)	1.0	S-2		3
72.7	4.0		Same as above, some dark gray-black material @ top of spoon (slough?)	1.3	S-3		2
			Light to orange brown, very micaceous F-M SAND	1.3	S-4		2
70.7	6.0		Orange brown silty F. SAND, trace f. gravel. Top 4" is dark gray-black f-m sand/silt-like material. Difficult to tell if slough from above or actual interval sample	1.6	S-5		3
69.7	7.0		Orange brown SILTY CLAY, trace f. sand and mica	2.0	S-6		3
68.7	8.0		Same, mica and c. gravel sized quartz at 13 ft.	0.6	S-7		3
			Same as S-5, little f-m sand				3
66.7	10.0		Same as above				3
			Medium gray clayey SILT to silty CLAY, trace mica and organic matter	1.3	S-8		3
64.7	12.0		Light brown to brownish gray clayey SILT, little f. sand, trace mica, moist	1.4	S-9		2
62.7	14.0						3
60.7	16.0						9
59.7	17.0						6
58.7	18.0						4
56.7	20.0						5

DRILLING LOG		DIVISION NORTH ATLANTIC		INSTALLATION PHILADELPHIA		SHEET OF 2 SHEETS	
1. PROJECT FELTONVILLE - Philadelphia, PA							
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	CORE RECOVERY (FT) e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g	BLOW COUNT PER 0.5'
54.7	22.0		Light gray schist fragments intermixed with light brown clayey silt, little f. sand, damp	1.7	S-10	Water level @ approximately 21 ft. b.g.s. (based on water mark on rods)	6 12 9 7
52.7	24.0		Light gray and orange brown micaceous F. SAND, SILT, and CLAY, damp to wet	1.7	S-11		6 9 12 14
52.2	24.5		Same as above				15
50.7	26.0		Light gray to light blueish gray rock fragments, some clay intermixed, wet	0.7	S-12	25 ft. rig chatters, drilling hard	100/3"
48.7	28.0		Very light green highly decomposed rock (schist)	1.2	S-13		20 20 17 15
47.1	29.6		No Recovery	0	N.S.	Spoon/hammer bouncing on bottom of hole.	11 16 23 100/1"