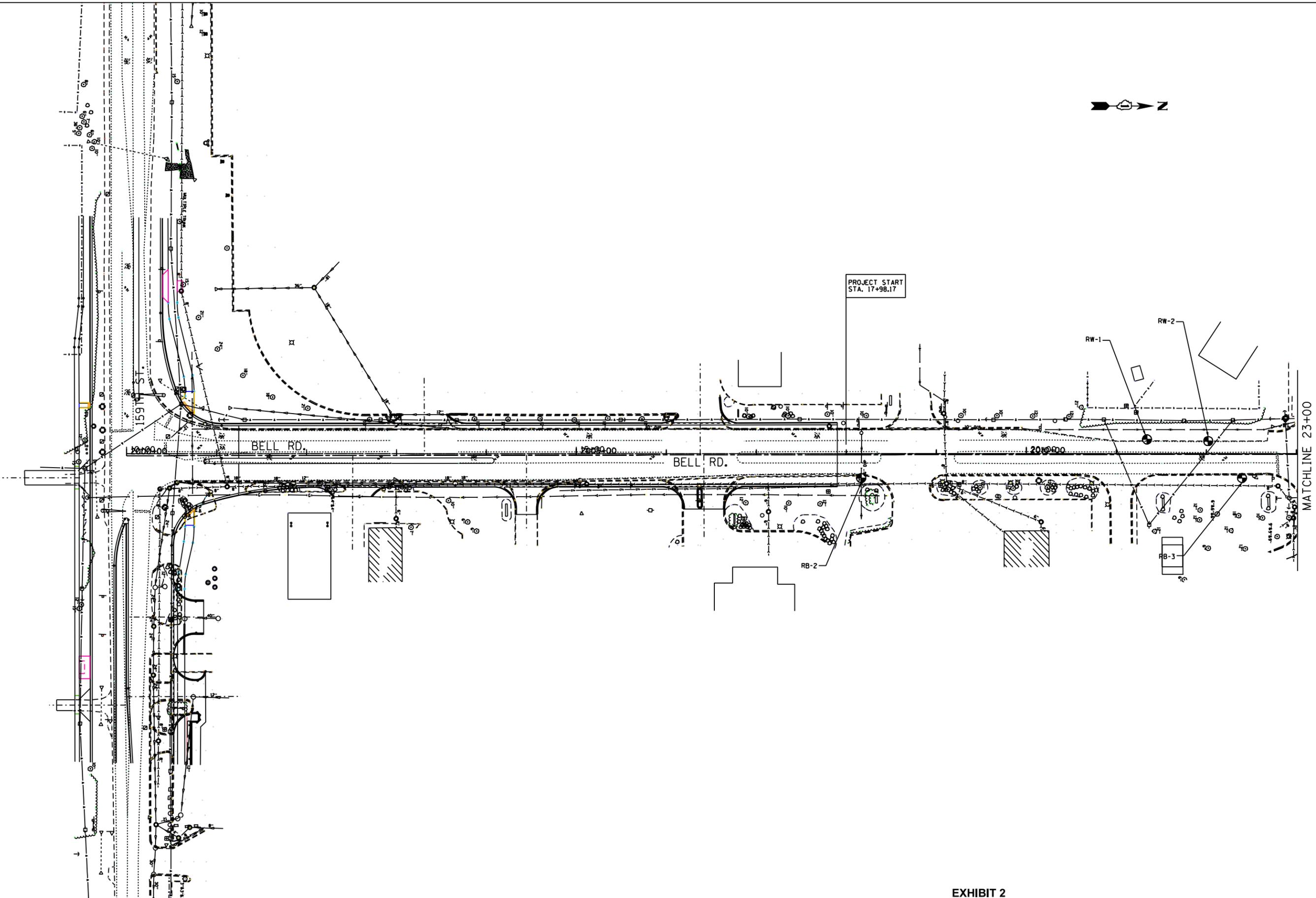


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**PARSONS  
BRINCKERHOFF**

USER NAME = lowebj	DESIGNED -	REVISED -
PLOT SCALE = #SCALE#	DRAWN -	REVISED -
PLOT DATE = 4/16/2014	CHECKED -	REVISED -
	DATE -	REVISED -

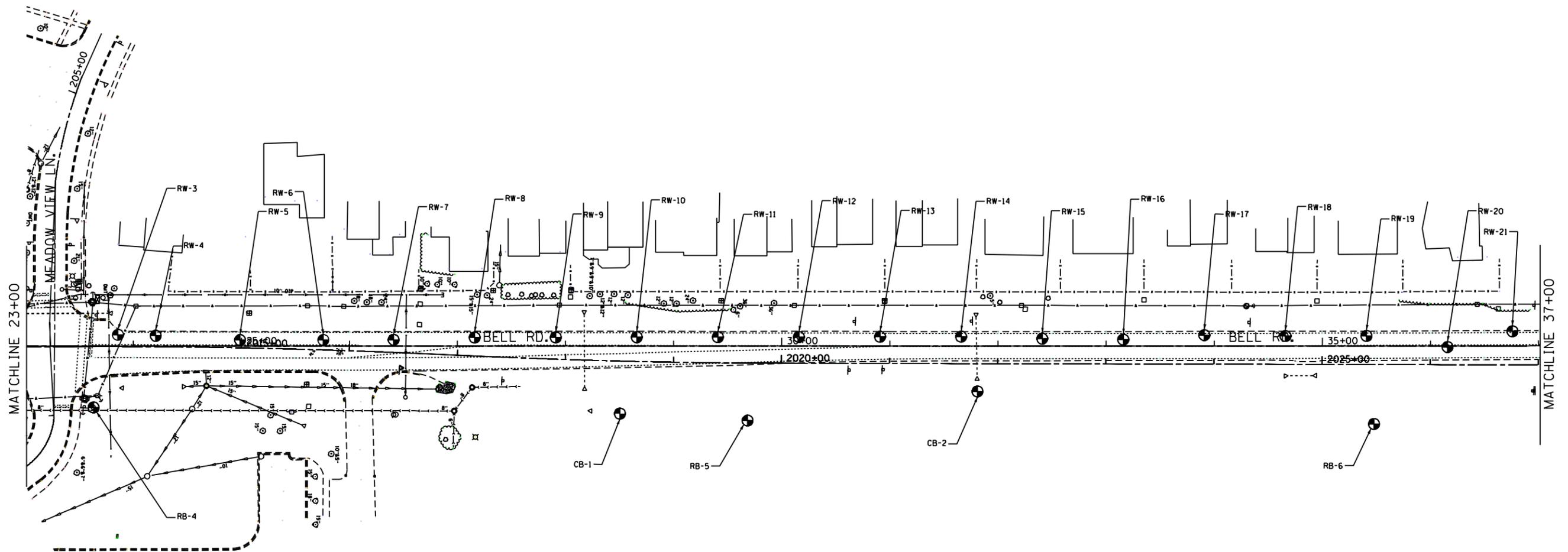
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXHIBIT 2

BELL ROAD  
GEOTECHNICAL BORING LOCATION PLAN

SHEET NO.	OF	SHEETS	STA.	TO	STA.
-----------	----	--------	------	----	------

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			4	1
CONTRACT NO.			ILLINOIS FED. AID PROJECT	



FILE NAME = T:\69126 Bell Road\Civil\Plans\Soil Boring\01 5982-Soil Boring.ahx.dgn

**PARSONS  
BRINCKERHOFF**

USER NAME = lowebj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = *SCALE*	CHECKED -	REVISED -
PLOT DATE = 4/16/2014	DATE -	REVISED -

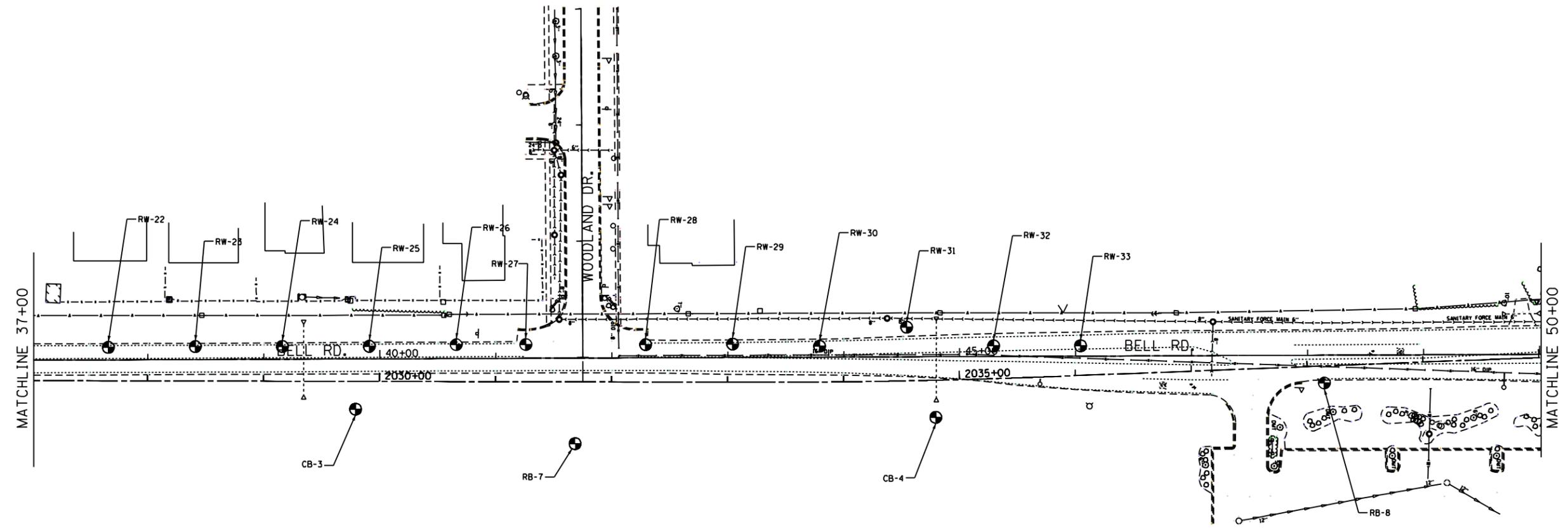
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BELL ROAD  
GEOTECHNICAL BORING LOCATION PLAN

SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			4	2
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

EXHIBIT 2



**PARSONS  
BRINCKERHOFF**

USER NAME = lowbj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = *SCALE*	CHECKED -	REVISED -
PLOT DATE = 4/16/2014	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BELL ROAD  
GEOTECHNICAL BORING LOCATION PLAN

SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			4	3
CONTRACT NO.			ILLINOIS FED. AID PROJECT	

EXHIBIT 2

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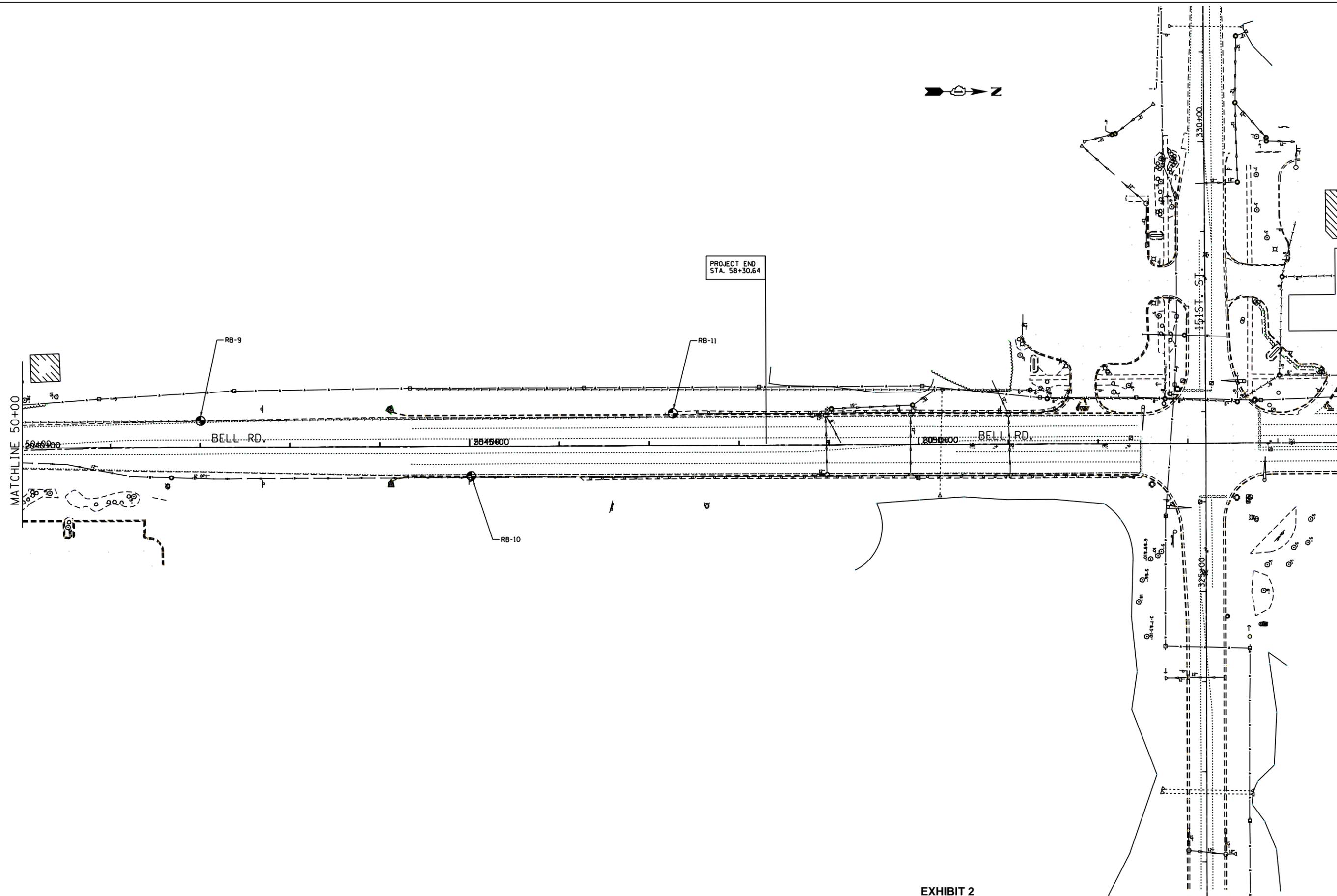


EXHIBIT 2

**PARSONS  
BRINCKERHOFF**

USER NAME = lowebj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = *SCALE*	CHECKED -	REVISED -
PLOT DATE = 4/16/2014	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BELL ROAD  
GEOTECHNICAL BORING LOCATION PLAN

SHEET NO.	OF	SHEETS	STA.	TO	STA.
-----------	----	--------	------	----	------

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			4	4
CONTRACT NO.			ILLINOIS FED. AID PROJECT	

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-1</b>		DES. NO.														
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.														
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2011+34.13</b> OFFSET <b>-16.7 ft</b>														
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>														
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>														
SURFACE ELEVATION <b>769.2 ft (234.45 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE	RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )	0 1 2 3 4 5 6										
								0 10 20 30 40 50 60										
STRATA DEPTH (FEET)								● WATER CONTENT, %										
								0 10 20 30 40 50 60										
								△ BLOW COUNTS										
								0 10 20 30 40 50 60										
1.0	○	Gravel																
3.0	⊗	Hard, dark brown, moist, Silty Clay Loam with crushed stone FILL LL = 47, PI = 27	2.5			1		9,11,10										
1	⊗	Hard, brown to brownish gray, moist, SILTY CLAY LOAM	5.0			2		6,9,10										
2	⊗		7.5			3		3,6,9										
3	⊗	Very stiff to hard, brownish gray to grayish brown, moist, SILTY CLAY LOAM	10.0			4		3,6,8										
4	⊗		12.5			5		3,6,10										
5	⊗	Very stiff, gray, moist, SILTY CLAY LOAM	15.0			6		19,11,8										
6	⊗		17.5			7		5,4,6										
7	⊗	Stiff, gray, moist, SANDY LOAM	22.5			8												
25.0		End of Boring at 25 feet	25.0															

WATER LEVEL WHILE DRILLING None

SPLIT SPOON   
  SHELBY TUBE   
  AUGER   
  ROCK CORE

+ PL - PLASTIC LIMIT   
 + LL - LIQUID LIMIT   
 γ<sub>d</sub> - UNIT DRY WEIGHT

REMARKS  
**N 1798216.6 E 1094498.3**


**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14



CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-3</b>		DES. NO.		
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.		
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2013+85.90</b> OFFSET <b>-10.9 ft</b>		
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>		
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Jawed Ansari</b>			● WATER CONTENT, % △ BLOW COUNTS		
SURFACE ELEVATION <b>766.8 ft (233.72 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	SAMPLE		0 1 2 3 4 5 6 0 10 20 30 40 50 60 0 10 20 30 40 50 60
				TYPE	RECOVERY	
0.8		Asphalt 10 inches				
1.3		Crushed stone 5 inches				
1		Hard, dark brown, very moist to moist, Silty Clay Loam with crushed stone FILL	2.5		1	8,10,10
5.5			5.0		2	4,8,8
2		Very stiff, brown to brownish gray, moist, SILTY CLAY LOAM	7.5		3	3,4,6
3			10.0		4	4,7,8
4		Hard, brownish gray to grayish brown, moist, SILTY CLAY LOAM	12.5		5	4,7,10
5			15.0		6	4,9,11
6		Very stiff, gray, moist, SILTY LOAM	17.5		7	36,8
7			20.0		8	7,13,17
25.0		End of Boring at 25 feet	25.0			

BORING LOG 10649.GPJ 4-16-14

∇ WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1798468.4 E 1094497**

⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



**K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>			LOG OF BORING NUMBER <b>RW-4</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>					PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>			STRUCTURE NUMBER		STATION <b>2014+20.80</b> OFFSET <b>-10.2 ft</b>	
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup> ● WATER CONTENT, % △ BLOW COUNTS		
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>				
(METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>766.7 ft (233.69 m)</b>		DEPTH (FEET)	SAMPLE		
	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL		TYPE	RECOVERY	NUMBER
0.8	Asphalt 9 inches					
1.3	Crushed stone 7 inches					
1	Hard, dark brown, moist, Silty Clay Loam with crushed stone FILL		2.5	1		14,17,5
2	Very stiff, dark brownish gray, moist, SILTY CLAY LOAM		5.0	2		5,11,8
3	Very stiff to hard, brown, moist, SILTY CLAY LOAM		7.5	3		4,7,8
4	Hard, grayish brown, moist, SILTY CLAY LOAM LL = 29, PI = 14 at appx. 14 ft.		10.0	4		3,4,5
5	Hard, gray, moist, SILTY LOAM		12.5	5		3,5,7
6			15.0	6		6,6,12
7			17.5	7		4,6,8
8			20.0	8		4,7,12
25.0	End of Boring at 25 feet		25.0			

BORING LOG 10649.GPJ 4-16-14

∇ WATER LEVEL WHILE DRILLING None

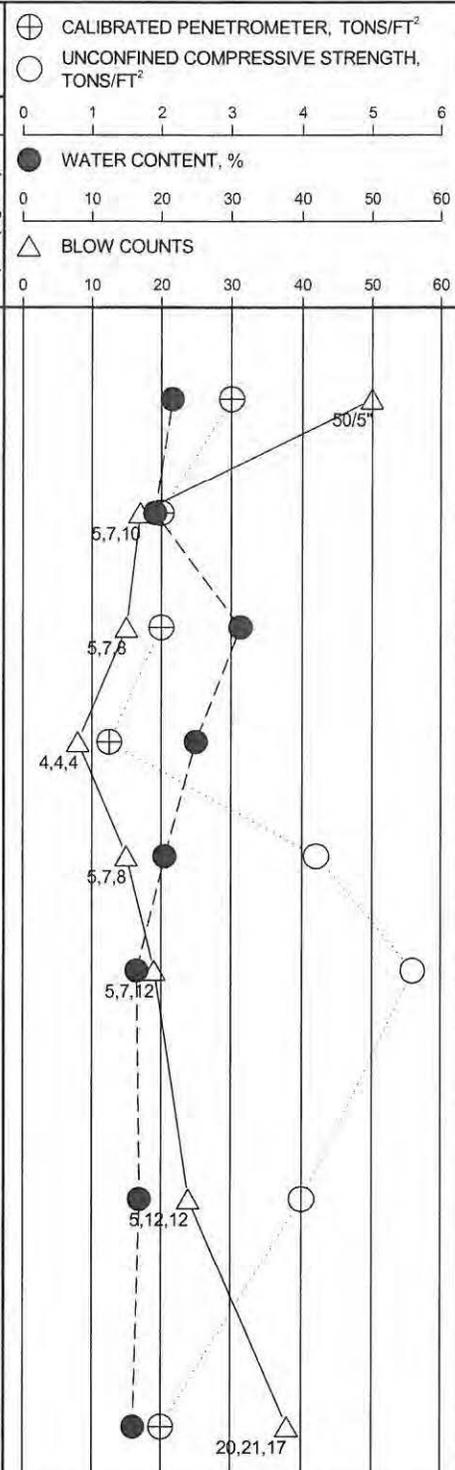
REMARKS  
N 1798503.4 E 1094497

⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



K & S ENGINEERS, INC.

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>		<b>RW-5</b>		PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2014+98.76</b> OFFSET <b>-7.2 ft</b>	
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>	
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>	
STRATA DEPTH (METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>766.4 ft (233.60 m)</b>		SAMPLE		0 1 2 3 4 5 6
	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )
1.0	Asphalt 11.5 inches				
3.0	Very stiff, dark brown, moist, Silty Clay Loam with crushed stone FILL		1		
1	Stiff, dark brown and gray, moist, SILTY CLAY LOAM		2		
2			3		
3			4		
4	Hard, brown, moist, SILTY CLAY LOAM		5		
5			6		
6	Very stiff, gray, moist, SILTY LOAM		7		
7			8		
25.0	<b>End of Boring at 25 feet</b>				



BORING LOG 10649.GPJ 4-4-14

WATER LEVEL WHILE DRILLING None

SPLIT SPOON   
 SHELBY TUBE   
 AUGER   
 ROCK CORE  
 PL - PLASTIC LIMIT   
 LL - LIQUID LIMIT   
  $\gamma_d$  - UNIT DRY WEIGHT

REMARKS  
**N 1798581.5 E 1094498.9**

 **K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER		DES. NO.						
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>		<b>RW-6</b>		PROJECT NO.						
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2015+75.64</b> OFFSET <b>-9.2 ft</b>						
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>						
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>						
STRATA DEPTH (METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>765.9 ft (233.45 m)</b>		SAMPLE		0 1 2 3 4 5 6					
	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE	RECOVERY	NUMBER	DRY UNIT WEIGHT, pcf (kg/m <sup>3</sup> )	● WATER CONTENT, %	0 10 20 30 40 50 60	△ BLOW COUNTS
1.0		Asphalt 12 inches								
3.0		Hard, dark brown and black, moist, Silty Clay Loam FILL	2.5			1				
1		Stiff, dark brown and gray, moist, SILTY CLAY LOAM LL = 41, PI = 22 at appx. 4 ft.	5.0			2			5,7,9	
2			7.5			3			5,7,10	
3		Stiff, brownish gray, moist, SILTY CLAY LOAM	10.0			4			3,5,5	
4			12.5			5			4,7,8	
5		Hard to very stiff, brown, moist, SILTY CLAY LOAM	15.0			6			5,7,10	
6			17.5			7			4,8,11	
7		Hard to very stiff, gray, moist, SILTY LOAM	20.0			8			5,7,15	
8			22.5							
25.0		End of Boring at 25 feet	25.0							

BORING LOG 10649.GPJ 4-4-14

☒ WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1798658.4 E 1094496.7**

☒ SPLIT SPOON    ■ SHELBY TUBE    ☐ AUGER    ▨ ROCK CORE  
+ PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    %<sub>d</sub> - UNIT DRY WEIGHT



**K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-7</b>		DES. NO.					
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.					
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2016+40.49</b> OFFSET <b>-11.7 ft</b>					
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>					
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>					
SURFACE ELEVATION <b>765.5 ft (233.32 m)</b>		SAMPLE		0 1 2 3 4 5 6					
STRATA DEPTH (METERS) TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE	RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )	● WATER CONTENT, %		
							0 10 20 30 40 50 60		
								△ BLOW COUNTS	
								0 10 20 30 40 50 60	
0.9	Asphalt 11 inches								
0.9 - 6.0	Hard to very stiff, dark brown and gray, moist, Silty Clay Loam with crushed stone FILL	2.5			1				25, 34, 19
6.0 - 13.0	Very stiff, dark brown and gray to brownish gray, moist, SILTY CLAY LOAM	5.0			2				5, 7, 9
		7.5			3				5, 7, 8
		10.0			4				4, 4, 7
		12.5			5				5, 7, 9
		15.0			6				5, 10, 10
		17.5							
		20.0			7				12, 17, 19
		22.5							
		25.0			8				12, 15, 7
End of Boring at 25 feet		25.0							

▽ WATER LEVEL WHILE DRILLING None ▽ WATER LEVEL None just after completion	REMARKS <b>N 1798723.4 E 1094494.8</b>
▢ SPLIT SPOON    ■ SHELBY TUBE    ▲ AUGER    ▨ ROCK CORE + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ <sub>d</sub> - UNIT DRY WEIGHT	 <b>K &amp; S ENGINEERS, INC.</b>

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-8</b>		DES. NO.											
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.											
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2016+90.47</b> OFFSET <b>-49.5 ft</b>											
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>											
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Rudolf Das</b>			● WATER CONTENT, % △ BLOW COUNTS											
SURFACE ELEVATION <b>758.1 ft (231.07 m)</b>		SAMPLE		0 1 2 3 4 5 6											
STRATA DEPTH (FEET)	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )	0 10 20 30 40 50 60								
							0 10 20 30 40 50 60								
0.8		Asphalt 10 inches													
		Hard to medium stiff, dark brown gray and black, moist, Silty Clay Loam FILL	2.5		1										
			5.0		2										
		LL = 45, PI = 22 at appx. 7 ft.	7.5		3										
8.0		Very stiff to hard, brown and gray, very moist to moist, SILTY CLAY LOAM	10.0		4										
			12.5		5										
			15.0		6										
		Stiff, gray, moist, SANDY LOAM	17.5		7										
			20.0		8										
		Very stiff, gray, moist, SILTY LOAM	22.5												
			25.0												
		<b>End of Boring at 25 feet</b>													

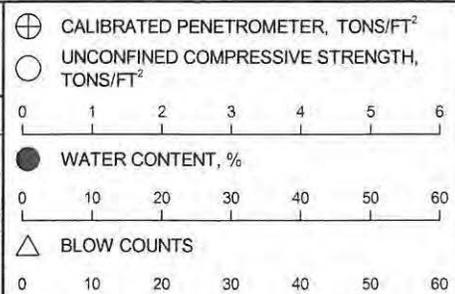
∇ WATER LEVEL WHILE DRILLING None  
 REMARKS **N 1798774.1 E 1094457.8**

⊠ SPLIT SPOON    ■ SHELBY TUBE    △ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT


**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-9</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2017+90.40</b> OFFSET <b>-20.1 ft</b>	
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>	
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>	
STRATA DEPTH (FEET)	SURFACE ELEVATION <b>765.1 ft (233.20 m)</b>		SAMPLE		0 1 2 3 4 5 6
	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )
0.9	Asphalt 11 inches				
1.0	Hard to stiff, dark brown gray and black, moist, Silty Clay Loam FILL		1		
2.5			2		
5.0			3		
7.5			4		
8.0	Stiff, black, moist, Silty Clay Loam FILL / ORIGINAL TOPSOIL		5		
10.0			6		
11.0	Very stiff to hard, brown and gray, moist to very moist, SILTY CLAY LOAM		7		
12.5			8		
15.0					
17.0	Hard, brown and gray, moist, SILTY LOAM				
17.5					
20.0					
22.0	Medium dense, gray, moist, SANDY LOAM				
22.5					
25.0	End of Boring at 25 feet				



WATER LEVEL WHILE DRILLING None  
 SPLIT SPOON     SHELBY TUBE     AUGER     ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT     $\gamma_d$  - UNIT DRY WEIGHT

REMARKS  
**N 1798873.3 E 1094488.5**  
 **K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>			LOG OF BORING NUMBER <b>RW-10</b>		DES. NO.													
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>					PROJECT NO.													
SITE LOCATION <b>Homer Glen, Illinois</b>			STRUCTURE NUMBER		STATION <b>2018+65.62</b> OFFSET <b>-22.4 ft</b>													
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>														
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>														
(METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>765.1 ft (233.20 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE	RECOVERY	NUMBER	DRY UNIT WEIGHT, pcf (kg/m <sup>3</sup> )	● WATER CONTENT, %	△ BLOW COUNTS	0	1	2	3	4	5	6	
	0										10	20	30	40	50	60	0	10
0.9		Asphalt 10.5 inches					1											
3.0		Hard, dark brown, moist, Silty Clay Loam with crushed stone FILL		2.5			2				3.5, 6							43, 25, 20
6.0		Very stiff, dark brown, moist, Silty Clay Loam FILL		5.0			3				5.6, 7							
8.0		Very stiff, dark gray black, very moist, Silty Clay Loam FILL / ORIGINAL TOPSOIL		7.5			4				56.8							
17.0		Very stiff to hard, brown and gray, moist, SILTY CLAY LOAM		10.0			5				6.9, 10							
25.0		Very stiff, gray, moist, SILTY LOAM		12.5			6											50, 8
				15.0			7				15, 15, 17							
				20.0			8				5.7, 10							
				22.5														
				25.0														
			<b>End of Boring at 25 feet</b>															

BORING LOG 10649.GPJ 4-4-14

∇ WATER LEVEL WHILE DRILLING None

⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ⊠ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT

REMARKS  
**N 1798948.3 E 1094486.4**

 **K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>			LOG OF BORING NUMBER <b>RW-11</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>					PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>			STRUCTURE NUMBER		STATION <b>2019+40.87</b> OFFSET <b>-23.8 ft</b>	
BORING STARTED	<b>3-6-14</b>	RIG	<b>Diedrich D-50</b>		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup> ● WATER CONTENT, % △ BLOW COUNTS	
BORING COMPLETED	<b>3-6-14</b>	FOREMAN	<b>Rudolf Das</b>			
SURFACE ELEVATION <b>765.2 ft (233.23 m)</b>			FILE NUMBER <b>10649</b>		0 1 2 3 4 5 6 0 10 20 30 40 50 60 0 10 20 30 40 50 60	
STRATA DEPTH (FEET)	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	SAMPLE		
				TYPE	RECOVERY	NUMBER
1.0		Asphalt 11.5 inches				
3.0		Hard, dark brown, moist, Silty Clay Loam with crushed stone FILL	2.5		1	
1		Very stiff, brown and gray, very moist to moist, SILTY CLAY LOAM	5.0		2	
8.0		Hard, brown, moist, SILTY CLAY LOAM	7.5		3	
3			10.0		4	
4			12.5		5	
5			15.0		6	
17.0		Hard, gray, moist, SILTY LOAM	17.5		7	
6			20.0			
22.0		Stiff, gray, moist, SANDY LOAM	22.5		8	
7			25.0			
25.0		<b>End of Boring at 25 feet</b>				

∇ WATER LEVEL WHILE DRILLING None	REMARKS <b>N 1799023.2 E 1094484.2</b>
⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ▨ ROCK CORE + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ <sub>d</sub> - UNIT DRY WEIGHT	<b>K &amp; S ENGINEERS, INC.</b>

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-12</b>		DES. NO.												
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.												
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2020+16.07</b> OFFSET <b>-24.3 ft</b>												
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>												
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>												
SURFACE ELEVATION <b>765.2 ft (233.23 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	SAMPLE NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )	0 1 2 3 4 5 6									
							● WATER CONTENT, % 0 10 20 30 40 50 60									
							△ BLOW COUNTS 0 10 20 30 40 50 60									
0.8		Asphalt 9 inches														
1.2		Crushed stone 5 inches														
1		Hard to very stiff, dark brown, moist, Silty Clay Loam FILL	2.5		1											
4.5		Stiff, brownish gray, moist, SILTY CLAY LOAM	5.0		2											
7.0		Soft, brownish gray, moist, SILTY CLAY LOAM LL = 32, PI = 16	7.5		3											
10.0		Very stiff, brownish gray, moist, SILTY CLAY LOAM	10.0		4											
13.0		Very stiff to hard, gray, moist, SILTY CLAY LOAM	12.5		5											
22.0		Hard, gray, moist, SILTY LOAM	15.0		6											
25.0		End of Boring at 25 feet	25.0		8											

BORING LOG 10649.GPJ 4-11-14

- ☒ WATER LEVEL WHILE DRILLING None
- ☒ WATER LEVEL None just after completion

REMARKS  
**N 1799098.2 E 1094482.1**

- ☐ SPLIT SPOON    ■ SHELBY TUBE    ☐ AUGER    ▨ ROCK CORE
- + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



**K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-13</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2020+91.07</b> OFFSET <b>-24.6 ft</b>	
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>			
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Jawed Ansari</b>				
SURFACE ELEVATION <b>765.3 ft (233.26 m)</b>		SAMPLE			
(METERS) STRATA DEPTH (FEET)	TEXTURAL CLASSIFICATION	DEPTH (FEET)	TYPE RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m³)
0.8	Asphalt 10 inches				
1.3	Crushed stone 5 inches				
1	Hard to very stiff, dark brown and black, very moist, Silty Clay Loam FILL	2.5		1	
2		5.0		2	
3	Hard to very stiff, brown and gray, moist, SILTY CLAY LOAM	7.5		3	
4		10.0		4	
5		12.5		5	
6		15.0		6	
7	Very stiff, gray, moist, SILTY LOAM	17.5		7	
22.0		20.0		8	
25.0	End of Boring at 25 feet	25.0			

BORING LOG 10649.GPJ 4-4-14

WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1799173.2 E 1094480**

SPLIT SPOON   
  SHELBY TUBE   
  AUGER   
  ROCK CORE  
 + PL - PLASTIC LIMIT   
 + LL - LIQUID LIMIT   
  $\gamma_d$  - UNIT DRY WEIGHT



**K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-14</b>		DES. NO.															
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.															
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2021+66.07</b> OFFSET <b>-24.9 ft</b>															
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>															
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>															
SURFACE ELEVATION <b>765.5 ft (233.32 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE	RECOVERY	NUMBER	DRY UNIT WEIGHT, pcf (kg/m <sup>3</sup> )	0 1 2 3 4 5 6											
								● WATER CONTENT, %						0 10 20 30 40 50 60					
								△ BLOW COUNTS											
								0 10 20 30 40 50 60											
1.0		Asphalt 11.5 inches																	
		Stiff, dark brown and black, moist, Silty Loam FILL	2.5			1													
		Stiff, black, very moist, Silty Loam FILL / ORIGINAL TOPSOIL	7.5			3			46.8										
		Stiff, brown, moist, SILTY CLAY LOAM LL = 44, PI = 25	10.0			4			3,4,4										
		Stiff, brown, moist, SILT	12.5			5			3,4,6										
		Very stiff, grayish brown, moist, SILTY CLAY LOAM	15.0			6			6,9,12										
		Hard, gray, moist, SILTY CLAY LOAM	17.5			7			5,9,10										
		Very stiff, gray, moist, SILTY LOAM	22.5			8			6,7,10										
		<b>End of Boring at 25 feet</b>	25.0																

WATER LEVEL WHILE DRILLING None

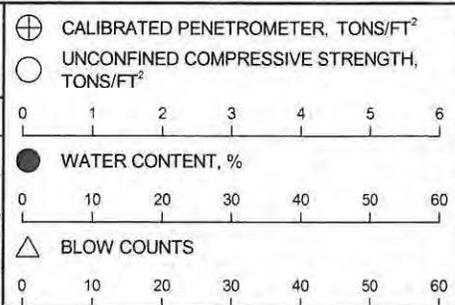
REMARKS  
**N 1799248.2 E 1094477.8**

⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ⊠ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT


**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-15</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2022+41.08</b> OFFSET <b>-23.2 ft</b>	
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>	
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>	
STRATA DEPTH (METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>765.7 ft (233.39 m)</b>	DEPTH (FEET)	SAMPLE	0	6
	TEXTURAL CLASSIFICATION			TYPE	RECOVERY
	DESCRIPTION OF MATERIAL				
0.8	Asphalt 10 inches				
1.3	Crushed stone 5 inches				
1	Hard, dark brown and black, moist, Silty Loam FILL	2.5	1		6,15,14
2	Stiff, black, very moist, Silty Loam FILL / ORIGINAL TOPSOIL	5.0	2	2,5,8	
3	Very stiff to hard, brown and gray, SILTY CLAY LOAM	7.5	3	2,4,5	
4		10.0	4	2,3,4	112 pcf (1800 kg/m <sup>3</sup> )
5		12.5	5	3,5,9	
6		15.0	6	4,7,15	6.4
7	Stiff to very stiff, gray, moist, SILTY LOAM	17.5	7	4,6,7	
8		20.0	8	4,5,7	
25.0	End of Boring at 25 feet	25.0			



∇ WATER LEVEL WHILE DRILLING None

REMARKS  
N 1799323.2 E 1094477.7

⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



K & S ENGINEERS, INC.

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>		<b>RW-16</b>		PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2023+16.08</b> OFFSET <b>-22.5 ft</b>	
BORING STARTED	<b>3-6-14</b>	RIG	<b>Diedrich D-50</b>	⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup> ● WATER CONTENT, % △ BLOW COUNTS	
BORING COMPLETED	<b>3-6-14</b>	FOREMAN	<b>Jawed Ansari</b>		
SURFACE ELEVATION <b>765.9 ft (233.45 m)</b>		FILE NUMBER		0 1 2 3 4 5 6	
STRATA DEPTH (FEET)	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL		SAMPLE	
				DEPTH (FEET)	TYPE RECOVERY
0.7		Asphalt 8 inches			
1.1		Crushed stone 5 inches			
		Hard, dark brown and black, moist, Silty Loam FILL		1	21, 17, 14
				2	3, 7, 8
6.0		Very stiff to hard, brown and gray, moist, SILTY CLAY LOAM		3	3, 4, 6
				4	3, 5, 7
				5	4, 7, 12
		LL = 32, PI = 15 at appx. 14 ft.		6	4, 9, 8
17.0		Very stiff to stiff, gray, moist, SILTY LOAM		7	3, 5, 8
				8	3, 4, 7
25.0		End of Boring at 25 feet			

BORING LOG 10649.GPJ 4-16-14

∇ WATER LEVEL WHILE DRILLING None

⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT

REMARKS  
**N 1799398.2 E 1094476.5**


**K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-17</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2023+91.07</b> OFFSET <b>-26.8 ft</b>	
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>			
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Jawed Ansari</b>				
SURFACE ELEVATION <b>766.0 ft (233.48 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	SAMPLE	
				TYPE RECOVERY	NUMBER DRY UNIT WEIGHT pcf (kg/m³)
0.7		Asphalt 8 inches			
1.0		Crushed stone 4 inches			
1.0		Hard to very stiff, dark brown and black, very moist to moist, Silty Loam FILL	1		14, 10, 16
6.0		Hard to very stiff, brown and gray, moist, SILTY CLAY LOAM	2		4, 5, 6
6.0			3		36, 8
10.0			4		3, 6, 7
12.5		Hard, gray, moist, SILTY CLAY LOAM	5		9, 11, 15
15.0			6		4, 8, 11
17.0		Very stiff, gray, moist, SILTY LOAM	7		4, 5, 8
25.0		End of Boring at 25 feet	8		5, 5, 6

WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1799473 E 1094470.4**

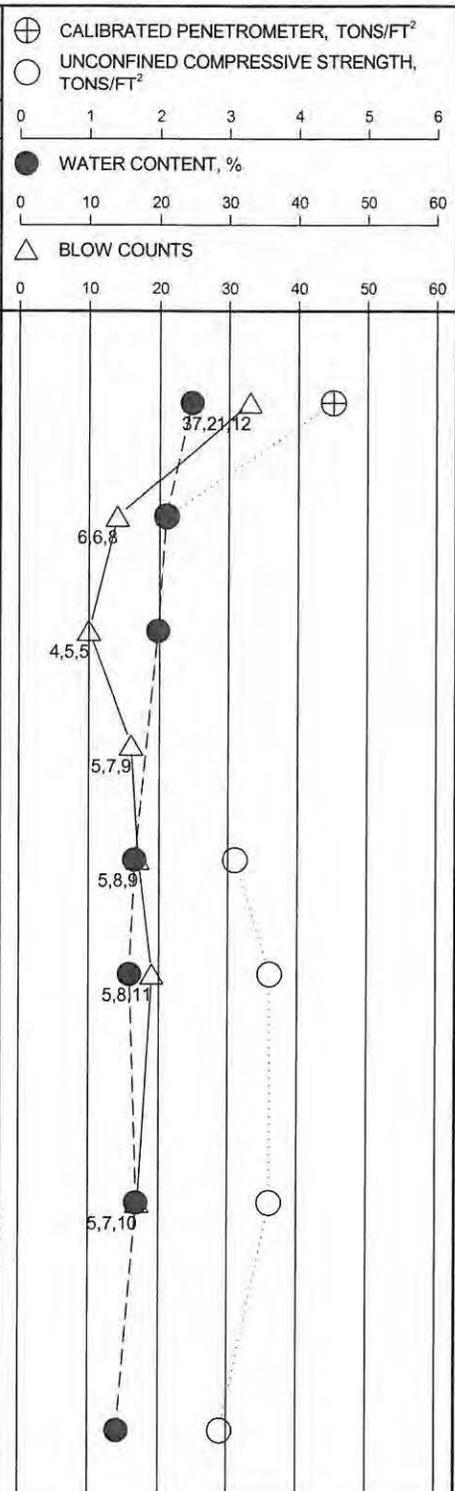
SPLIT SPOON   
 SHELBY TUBE   
 AUGER   
 ROCK CORE  
 + PL - PLASTIC LIMIT   
 + LL - LIQUID LIMIT   
 γ<sub>d</sub> - UNIT DRY WEIGHT



K & S ENGINEERS, INC.

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-18</b>		DES. NO.		
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.		
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2024+66.07</b> OFFSET <b>-26.1 ft</b>		
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>		
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Rudolf Das</b>			● WATER CONTENT, % △ BLOW COUNTS		
(METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>766.3 ft (233.57 m)</b>		SAMPLE			
	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )
1.0		Asphalt 11.5 inches				
1.5		Crushed stone				
3.0		Hard, dark brown, moist, Silty Loam with crushed stone FILL	2.5		1	
3.0		Very stiff, grayish brown, moist, SILTY CLAY LOAM LL = 38, PI = 20	5.0		2	
6.0		Medium dense, brown, moist, SANDY LOAM	7.5		3	
8.0		NO RECOVERY	10.0		4	
11.0		Very stiff, gray, moist, SILTY CLAY LOAM	12.5		5	
15.0			15.0		6	
20.0			20.0		7	
22.0		Very stiff, gray, moist, SILTY LOAM	22.5		8	
25.0		End of Boring at 25 feet	25.0			



∇ WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1799548.0 E 1094469.2**

□ SPLIT SPOON    ■ SHELBY TUBE    △ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



K & S ENGINEERS, INC.

BORING LOG 10649.GPJ 4-5-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-19</b>		DES. NO.													
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.													
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2025+41.07</b> OFFSET <b>-26.4 ft</b>													
BORING STARTED <b>3-6-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>													
BORING COMPLETED <b>3-6-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>													
SURFACE ELEVATION <b>766.4 ft (233.60 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	SAMPLE NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )	0 1 2 3 4 5 6										
							● WATER CONTENT, %										
(METERS)	(FEET)						0 10 20 30 40 50 60										
							△ BLOW COUNTS										
							0 10 20 30 40 50 60										
0.8		Asphalt 10 inches															
1.0		Crushed stone															
3.0		Hard, dark brown black, moist, Silty Loam FILL	2.5		1												
11.0		Very stiff, grayish brown, moist, SILTY CLAY LOAM	5.0		2												
16.0		Medium dense, gray, moist to wet, SAND	7.5		3												
22.0		Hard, gray, moist, SILTY CLAY LOAM	10.0		4												
25.0		Very stiff, gray, slightly moist, SILTY LOAM	12.5		5												
			15.0		6												
			17.5		7												
			20.0		8												
			22.5														
			25.0														
		<b>End of Boring at 25 feet</b>															

∇ WATER LEVEL WHILE DRILLING 16 feet  
 REMARKS  
**N 1799623.0 E 1094467.1**

⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ⊠ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT


**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-20</b>		DES. NO.		
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.		
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2026+16.09</b> OFFSET <b>-16.3 ft</b>		
BORING STARTED <b>2-28-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>				
BORING COMPLETED <b>2-28-14</b>	FOREMAN <b>Nayeem Khaja</b>			0 1 2 3 4 5 6 0 10 20 30 40 50 60 0 10 20 30 40 50 60		
SURFACE ELEVATION <b>766.7 ft (233.69 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	SAMPLE		
				TYPE RECOVERY	NUMBER DRY UNIT WEIGHT pcf (kg/m³)	
0.6		Asphalt 7 inches				
1.2		Crushed stone 7 inches				
1.2 - 6.0		Hard, brown and gray, moist, SILTY CLAY LOAM	1			40, 18, 17
6.0 - 17.0		Very stiff, brown and gray, moist, SILTY CLAY LOAM	2			3, 5, 7
17.0 - 22.0		LL = 31, PI = 16 at appx. 14 ft.	3			3, 3, 5
22.0 - 25.0		Very stiff, gray, moist, SILTY CLAY LOAM	4			3, 3, 5
		Very stiff, gray, moist, SILTY CLAY LOAM	5			3, 4, 5
		Very stiff, gray, moist, SILTY LOAM	6			2, 4, 5
		Very stiff, gray, moist, SILTY LOAM	7			3, 5, 7
		Very stiff, gray, moist, SILTY LOAM	8			4, 6, 19
		<b>End of Boring at 25 feet</b>				

☒ WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1799698.2 E 1094475.4**



K & S ENGINEERS, INC.

BORING LOG 10649.GPJ 4-4-14



CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-22</b>		DES. NO.														
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.														
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2027+66.07</b> OFFSET <b>-28.8 ft</b>														
BORING STARTED <b>2-14-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>														
BORING COMPLETED <b>2-14-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>														
SURFACE ELEVATION <b>766.6 ft (233.66 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE	RECOVERY	NUMBER	DRY UNIT WEIGHT, pcf (kg/m <sup>3</sup> )	0 1 2 3 4 5 6										
								● WATER CONTENT, %						0 10 20 30 40 50 60				
(METERS)	(FEET)							△ BLOW COUNTS										
								0 10 20 30 40 50 60										
0.8		Asphalt 9.5 inches																
1.1		Crushed stone 4 inches																
3.0		Hard, dark brown and gray, moist, SILTY LOAM	2.5			1												
1		Very stiff to hard, brown and gray, moist, SILTY CLAY LOAM LL = 29, PI = 12 at appx. 4 ft.	5.0			2												
2			7.5			3												
3			10.0			4												
11.0		Hard to very stiff, gray, moist, SILTY CLAY LOAM	12.5			5												
4			15.0			6												
5			17.5															
6			20.0			7												
7			22.5															
25.0		End of Boring at 25 feet	25.0			8												

WATER LEVEL WHILE DRILLING None

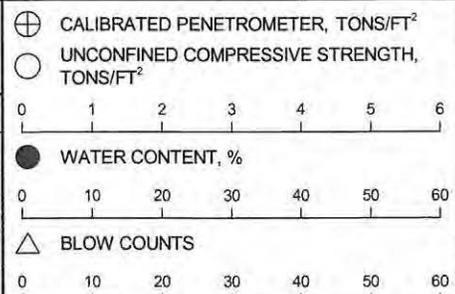
REMARKS  
**N 1799847.9 E 1094459.2**

SPLIT SPOON   
  SHELBY TUBE   
  AUGER   
  ROCK CORE  
 + PL - PLASTIC LIMIT   
 + LL - LIQUID LIMIT   
 γ<sub>d</sub> - UNIT DRY WEIGHT


**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-23</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2028+41.06</b> OFFSET <b>-29.6 ft</b>	
BORING STARTED <b>2-14-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>	
BORING COMPLETED <b>2-14-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>	
STRATA DEPTH (METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>766.8 ft (233.72 m)</b>		SAMPLE		0 1 2 3 4 5 6
	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )
0.8		Asphalt 10 inches			
1.2		Crushed stone 4 inches			
3.0		Hard, dark brown, very moist, Silty Loam FILL	2.5	1	
4.0		Stiff, black, moist, Silty Loam, FILL / ORIGINAL TOPSOIL		2	
		Very stiff, brown and gray, moist, SILTY CLAY LOAM	5.0		
			7.5	3	
			10.0	4	119 pcf (1901 kg/m <sup>3</sup> )
			12.5	5	
		Low Recovery Sample S-6	15.0	6	
			17.5		
18.5		Medium stiff, gray, moist, SILTY LOAM LL = 23, PI = 7	20.0	7	
22.0		Very stiff, gray, moist, SILTY LOAM	22.5		
25.0		End of Boring at 25 feet	25.0	8	



WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1799922.8 E 1094456.5**

[Symbol] SPLIT SPOON    [Symbol] SHELBY TUBE    [Symbol] AUGER    [Symbol] ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT     $\gamma_d$  - UNIT DRY WEIGHT



**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-11-14

CLIENT <b>Parsons Brinckerhoff</b>			LOG OF BORING NUMBER <b>RW-24</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>					PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>			STRUCTURE NUMBER		STATION <b>2029+16.06</b> OFFSET <b>-29.9 ft</b>	
BORING STARTED <b>2-14-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>		
BORING COMPLETED <b>2-14-14</b>	FOREMAN <b>Jawed Ansari</b>			● WATER CONTENT, % △ BLOW COUNTS		
SURFACE ELEVATION <b>766.9 ft (233.75 m)</b>			0 1 2 3 4 5 6 0 10 20 30 40 50 60 0 10 20 30 40 50 60			
(METERS) STRATA DEPTH (FEET)	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	SAMPLE NUMBER	DRY UNIT WEIGHT, pcf (kg/m <sup>3</sup> )
0.8		Asphalt 10 inches				
1.3		Crushed stone 6 inches				
1		Hard to very stiff, dark brown and black, moist, Silty Clay Loam FILL	2.5		1	
6.0		Very stiff to hard, brown and gray, moist, SILTY CLAY LOAM	5.0		2	
2		LL = 32, PI = 14 at appx. 9 ft.	7.5		3	
3			10.0		4	
4			12.5		5	
5			15.0		6	
17.0		Very stiff, gray, moist, SILTY LOAM	17.5		7	
6			20.0		8	
7			22.5			
25.0		End of Boring at 25 feet	25.0			

BORING LOG 10649.GPJ 4-16-14

∇ WATER LEVEL WHILE DRILLING None

REMARKS  
**N 1799997.8 E 1094454.4**

□ SPLIT SPOON    ■ SHELBY TUBE    △ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



K & S ENGINEERS, INC.

CLIENT <b>Parsons Brinckerhoff</b>			LOG OF BORING NUMBER <b>RW-25</b>		DES. NO.		
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>					PROJECT NO.		
SITE LOCATION <b>Homer Glen, Illinois</b>			STRUCTURE NUMBER		STATION <b>2029+91.06</b> OFFSET <b>-30.2 ft</b>		
BORING STARTED <b>2-14-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>			
BORING COMPLETED <b>2-14-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>			
SURFACE ELEVATION <b>767.0 ft (233.78 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	SAMPLE NUMBER	DRY UNIT WEIGHT, pcf (kg/m <sup>3</sup> )	0 1 2 3 4 5 6
							0 10 20 30 40 50 60
STRATA DEPTH (METERS)	STRATA DEPTH (FEET)						● WATER CONTENT, %
							0 10 20 30 40 50 60
0.8	1.0	Asphalt 10 inches Crushed stone 4 inches Hard, dark brown and black, moist, Silty Clay Loam FILL	2.5		1		△ BLOW COUNTS
							0 10 20 30 40 50 60
1	6.0	Hard to stiff, brown and gray, moist, SILTY CLAY LOAM	7.5		3	46.8	14,21,21
							0 10 20 30 40 50 60
2	13.0	Very stiff, gray, moist, SILTY CLAY LOAM	10.0		4	56.8	3,4,6
							0 10 20 30 40 50 60
3					5	35.5	3,4,6
							0 10 20 30 40 50 60
4					6	56.9	3,4,6
							0 10 20 30 40 50 60
5					7	44.6	3,4,6
							0 10 20 30 40 50 60
6					8	47.9	3,4,6
							0 10 20 30 40 50 60
7							
							0 10 20 30 40 50 60
8							
							0 10 20 30 40 50 60
25.0		End of Boring at 25 feet	25.0				
							0 10 20 30 40 50 60

WATER LEVEL WHILE DRILLING None

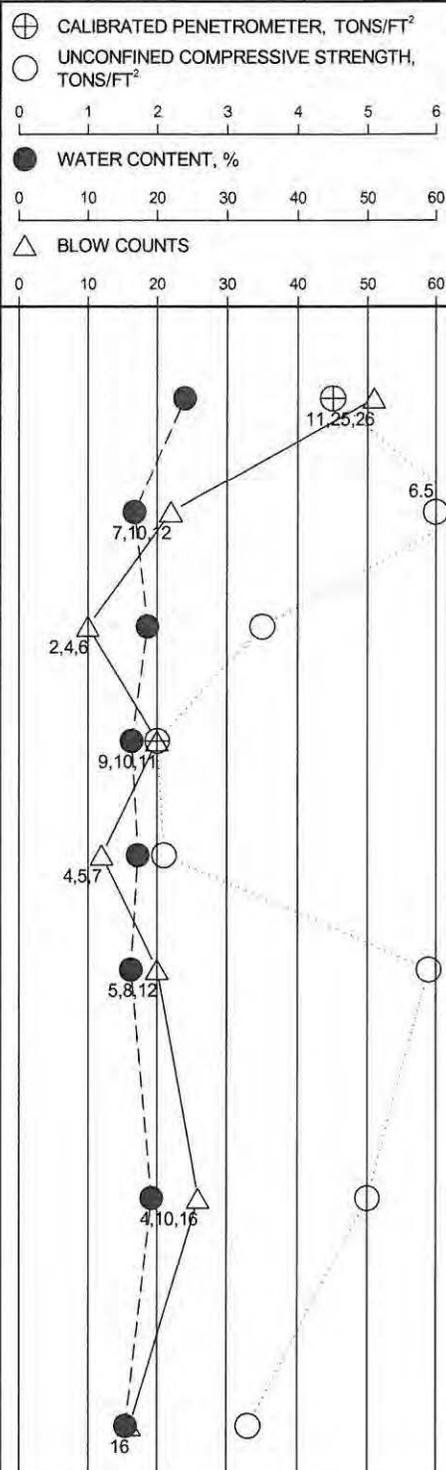
REMARKS  
**N 1800072.8 E 1094452.2**

▣ SPLIT SPOON    ■ SHELBY TUBE    △ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT


**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-26</b>		DES. NO.									
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.									
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2030+66.05</b> OFFSET <b>-31.7 ft</b>									
BORING STARTED <b>2-13-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>									
BORING COMPLETED <b>2-13-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>									
SURFACE ELEVATION <b>767.0 ft (233.78 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )	0 1 2 3 4 5 6						
							● WATER CONTENT, %						
STRATA DEPTH (METERS) (FEET)							0 10 20 30 40 50 60						
							△ BLOW COUNTS						
0.8		Asphalt 10 inches											
1.0		Crushed stone 2 inches											
3.0		Hard, dark brown, moist, Silty Clay Loam FILL	2.5		1								
1		Hard to very stiff, brown and gray, moist, SILTY CLAY LOAM	5.0		2								
2			7.5		3								
3		Stiff, brown, moist, SILTY CLAY LOAM	10.0		4								
4			12.5		5								
5		Very stiff to hard, gray, moist, SILTY LOAM	15.0		6								
6		LL = 28, PI = 13 at appx. 14 ft.	17.5		7								
7			20.0		8								
8			22.5										
25.0		End of Boring at 25 feet	25.0										



▽ WATER LEVEL WHILE DRILLING 24 feet

REMARKS  
**N 1800147.7 E 1094448.9**

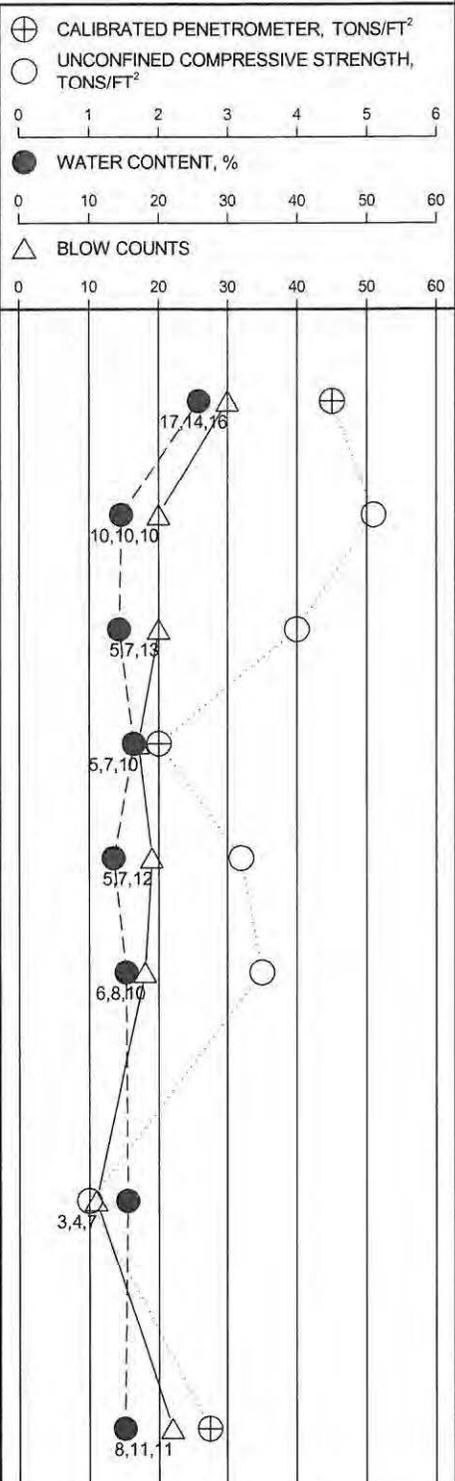
▢ SPLIT SPOON    ■ SHELBY TUBE    △ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



**K & S ENGINEERS, INC.**

BORING LOG 10649.GPJ 4-4-14

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-27</b>		DES. NO.		
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.		
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2031+26.05</b> OFFSET <b>-32.0</b>		
BORING STARTED <b>3-7-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>		
BORING COMPLETED <b>3-7-14</b>	FOREMAN <b>Rudolf Das</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>		
STRATA DEPTH (METERS) SURFACE ELEVATION <b>767.0 ft (233.78 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	SAMPLE		0 1 2 3 4 5 6
				TYPE RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )
0.8		Asphalt 9.5 inches				
		Hard, dark brown and gray, moist, Silty Clay Loam with crushed stone FILL				
3.0		Hard, brown, moist, SILTY CLAY LOAM				
		Stiff, brown, moist, SANDY LOAM				
8.0		Very stiff, gray, moist, SILTY LOAM				
		Stiff to very stiff, gray, moist, SILTY LOAM				
11.0						
18.5						
25.0		End of Boring at 25 feet				



▽ WATER LEVEL WHILE DRILLING None  
 ▽ WATER LEVEL None just after completion

REMARKS  
**N 1800207.7 E 1094447.1**

□ SPLIT SPOON    ■ SHELBY TUBE    ▲ AUGER    ▨ ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ<sub>d</sub> - UNIT DRY WEIGHT



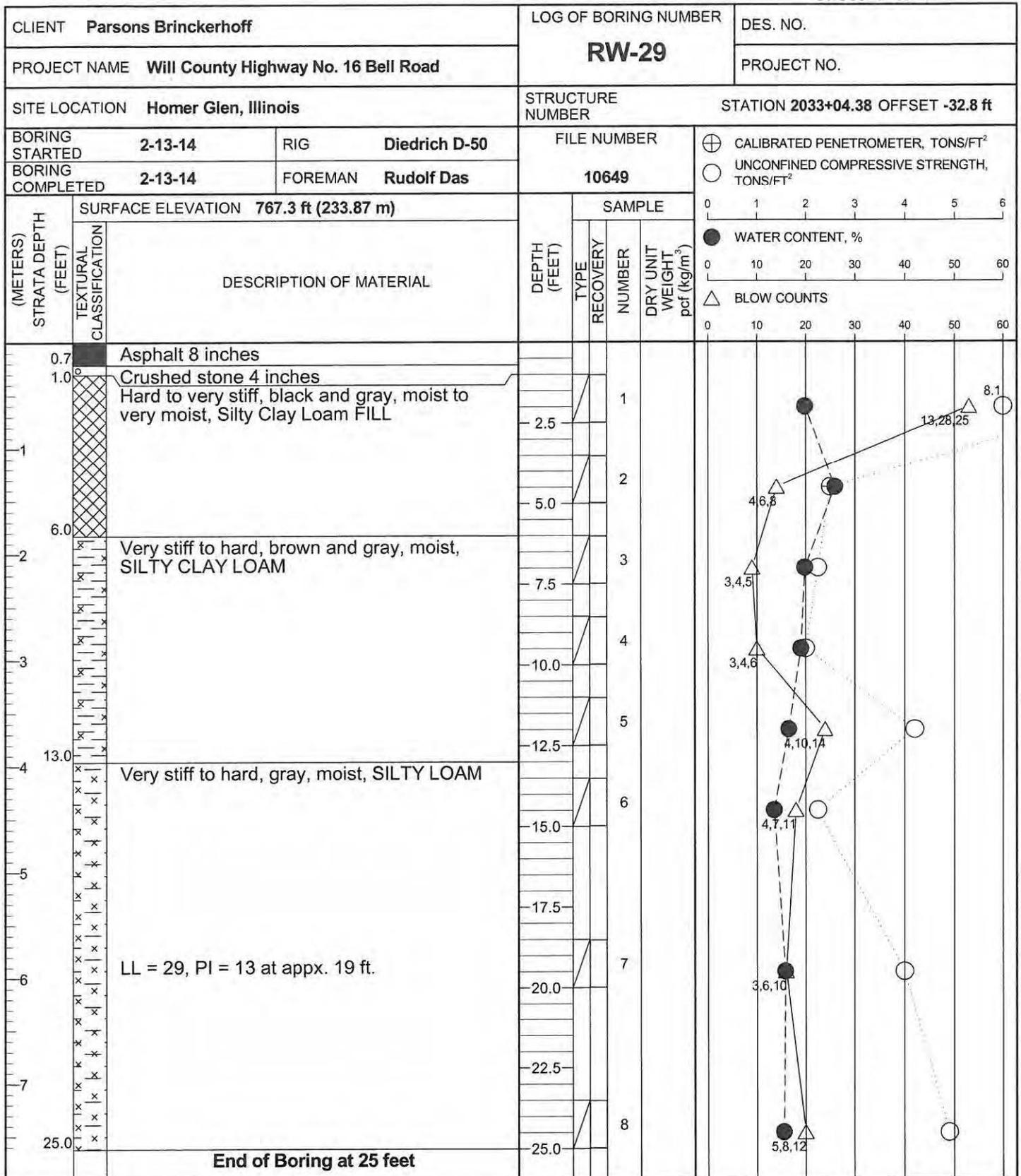
K & S ENGINEERS, INC.

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-28</b>		DES. NO.					
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.					
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2032+29.37</b> OFFSET <b>-32.1 ft</b>					
BORING STARTED <b>2-13-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER <b>10649</b>		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>					
BORING COMPLETED <b>2-13-14</b>	FOREMAN <b>Rudolf Das</b>			● WATER CONTENT, % △ BLOW COUNTS					
SURFACE ELEVATION <b>767.1 ft (233.81 m)</b>		SAMPLE		0 1 2 3 4 5 6					
(METERS) STRATA DEPTH (FEET)	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE	RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )	0 10 20 30 40 50 60	
								0 10 20 30 40 50 60	
0.5		Asphalt 6 inches Crushed stone 2.5 feet	2.5			1			
3.0		Hard to very stiff, brown and gray, moist, SILTY CLAY LOAM	5.0			2		58.9	
			7.5			3		36.9	
			10.0			4		49.12	
			12.5			5		36.8	
13.0		Very stiff, gray, moist, SILTY LOAM	15.0			6		36.8	
			17.5						
			20.0			7		36.9	
			22.5						
25.0		End of Boring at 25 feet	25.0			8		48.8	
∇ WATER LEVEL WHILE DRILLING None		REMARKS <b>N 1800310.9 E 1094444.5</b>							
▨ SPLIT SPOON    ■ SHELBY TUBE    ▢ AUGER    ▨ ROCK CORE + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ <sub>d</sub> - UNIT DRY WEIGHT									

BORING LOG 10649.GPJ 4-16-14



K & S ENGINEERS, INC.



SURFACE ELEVATION **767.3 ft (233.87 m)**

TEXTURAL CLASSIFICATION

DESCRIPTION OF MATERIAL

Asphalt 8 inches

Crushed stone 4 inches

Hard to very stiff, black and gray, moist to very moist, Silty Clay Loam FILL

Very stiff to hard, brown and gray, moist, SILTY CLAY LOAM

Very stiff to hard, gray, moist, SILTY LOAM

LL = 29, PI = 13 at appx. 19 ft.

**End of Boring at 25 feet**

WATER LEVEL WHILE DRILLING None	REMARKS <b>N 1800385.9 E 1094441.9</b>
⊠ SPLIT SPOON    ■ SHELBY TUBE    ⊠ AUGER    ▨ ROCK CORE + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ <sub>d</sub> - UNIT DRY WEIGHT	 <b>K &amp; S ENGINEERS, INC.</b>

BORING LOG 10649.GPJ 4-4-14



CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-31</b>		DES. NO.		
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.		
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2034+55.36</b> OFFSET <b>-46.1 ft</b>		
BORING STARTED <b>2-28-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>		
BORING COMPLETED <b>2-28-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>		
SURFACE ELEVATION <b>765.9 ft (233.45 m)</b>	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	SAMPLE		0 1 2 3 4 5 6
				TYPE	RECOVERY	NUMBER
(METERS) STRATA DEPTH (FEET)						● WATER CONTENT, %
						△ BLOW COUNTS
1.0	○	Gravel				
3.0	⊗	Hard, brown, moist, Silty Clay Loam FILL		1		7.9, 11
8.0	⊗	Very stiff, black and brown, very moist, Silty Clay Loam FILL LL = 47, PI = 23		2		2.4, 5
11.0	⊗	Stiff, brown and gray, very moist, SILTY CLAY LOAM		3		2.4, 4
22.0	⊗	Hard to very stiff, brown and gray, moist, SILTY CLAY LOAM		4		2.3, 4
25.0	⊗	Stiff, gray, moist, SILTY LOAM		5		26.8
		<b>End of Boring at 25 feet</b>		6		4.6, 9
				7		4.6, 1
				8		3.5, 5

BORING LOG 10649.GPJ 4-4-14

WATER LEVEL WHILE DRILLING None  
 SPLIT SPOON     SHELBY TUBE     AUGER     ROCK CORE  
 + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT     $\gamma_d$  - UNIT DRY WEIGHT

REMARKS  
**N 1800535.5 E 1094423.5**  
 **K & S ENGINEERS, INC.**

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER		DES. NO.		
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>		<b>RW-32</b>		PROJECT NO.		
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2035+30.36</b> OFFSET <b>-28.1 ft</b>		
BORING STARTED <b>2-28-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup>		
BORING COMPLETED <b>2-28-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>		
STRATA DEPTH (METERS) STRATA DEPTH (FEET)	SURFACE ELEVATION <b>767.9 ft (234.06 m)</b>		SAMPLE		0 1 2 3 4 5 6	
	TEXTURAL CLASSIFICATION	DESCRIPTION OF MATERIAL	DEPTH (FEET)	TYPE RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )
0.6		Asphalt 7 inches				
1.2		Crushed stone 7 inches				
3.0		Hard, brown, moist, Silty Clay Loam FILL	2.5	1		0, 18, 14
6.0		Medium stiff, black dark gray, moist, Silty Clay Loam FILL / ORIGINAL TOPSOIL	5.0	2		2, 2, 4
8.0		Medium stiff, brown and gray, very moist, SILTY CLAY LOAM	7.5	3		2, 2, 5
		Hard to very stiff, brown and gray, moist, SILTY CLAY LOAM	10.0	4		3, 4, 6
			12.5	5		4, 5, 8
			15.0	6		3, 4, 6
			17.5			
			20.0	7		3, 6, 5
			22.5			
			25.0	8		4, 5, 5
		<b>End of Boring at 25 feet</b>				

BORING LOG 10649.GPJ 4-16-14

∇ WATER LEVEL WHILE DRILLING None
□ SPLIT SPOON    ■ SHELBY TUBE    ▲ AUGER    ▨ ROCK CORE + PL - PLASTIC LIMIT    + LL - LIQUID LIMIT    γ <sub>d</sub> - UNIT DRY WEIGHT

REMARKS <b>N 1800610.9 E 1094437.5</b>
 <b>K &amp; S ENGINEERS, INC.</b>

CLIENT <b>Parsons Brinckerhoff</b>		LOG OF BORING NUMBER <b>RW-33</b>		DES. NO.	
PROJECT NAME <b>Will County Highway No. 16 Bell Road</b>				PROJECT NO.	
SITE LOCATION <b>Homer Glen, Illinois</b>		STRUCTURE NUMBER		STATION <b>2036+05.52</b> OFFSET <b>-25.5 ft</b>	
BORING STARTED <b>2-28-14</b>	RIG <b>Diedrich D-50</b>	FILE NUMBER		⊕ CALIBRATED PENETROMETER, TONS/FT <sup>2</sup> ○ UNCONFINED COMPRESSIVE STRENGTH, TONS/FT <sup>2</sup>	
BORING COMPLETED <b>2-28-14</b>	FOREMAN <b>Jawed Ansari</b>	<b>10649</b>		● WATER CONTENT, % △ BLOW COUNTS	
SURFACE ELEVATION <b>768.0 ft (234.09 m)</b>		SAMPLE		0 1 2 3 4 5 6	
(METERS) STRATA DEPTH (FEET)	TEXTURAL CLASSIFICATION	DEPTH (FEET)	TYPE RECOVERY	NUMBER	DRY UNIT WEIGHT pcf (kg/m <sup>3</sup> )
	DESCRIPTION OF MATERIAL				
0.6	Asphalt 7 inches				
1.2	Crushed stone 7 inches				
3.0	Hard, dark brown, moist, Silty Clay Loam FILL	2.5		1	12, 10, 7
6.0	Very stiff, dark brown and black, very moist, Silty Clay Loam FILL	5.0		2	2, 3, 5
	Stiff to hard, brown and gray, moist, SILTY CLAY LOAM	7.5		3	3, 3, 5
	LL = 29, PI = 10 at appx. 9 ft.	10.0		4	3, 5, 8
		12.5		5	5, 7, 9
		15.0		6	4, 7, 10
		17.5			
		20.0		7	2, 4, 4
		22.5			
		25.0		8	2, 6, 9
End of Boring at 25 feet					

BORING LOG 10649.GPJ 4-4-14

WATER LEVEL WHILE DRILLING None  
 SPLIT SPOON   
  SHELBY TUBE   
  AUGER   
  ROCK CORE  
 + PL - PLASTIC LIMIT   
 + LL - LIQUID LIMIT   
 γ<sub>d</sub> - UNIT DRY WEIGHT

REMARKS  
**N 1800685.8 E 1094435.3**  

**K & S ENGINEERS, INC.**