STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 35

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

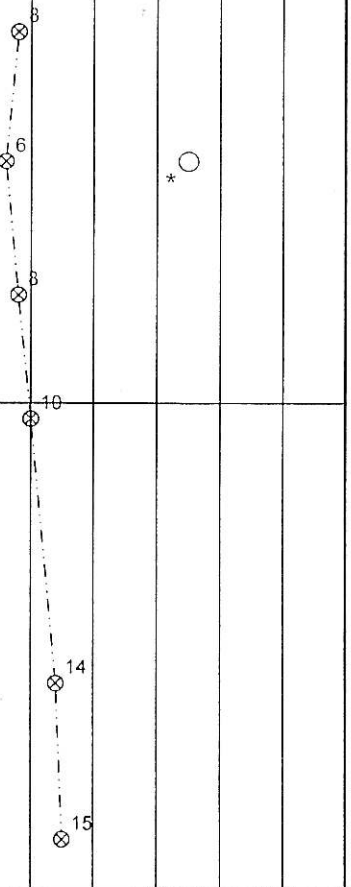
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.³
					SURFACE ELEVATION +973.3 NGVD	
	1	AS			FILL: Organic sandy clay, trace roots - black - (CL-OL)	
					1.1	
					FILL: Sandy clay, trace roots, wood, organics - dark brown - firm - (CL)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
					10.6	
	5	SS			Fine to medium sand - brown to gray - moist - medium dense - (SP)	
12.5		HS				
15.0						
	6	SS				
17.5		HS				
	7	SS				
20.0					20.0	
					End of boring at 20.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/8/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/8/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

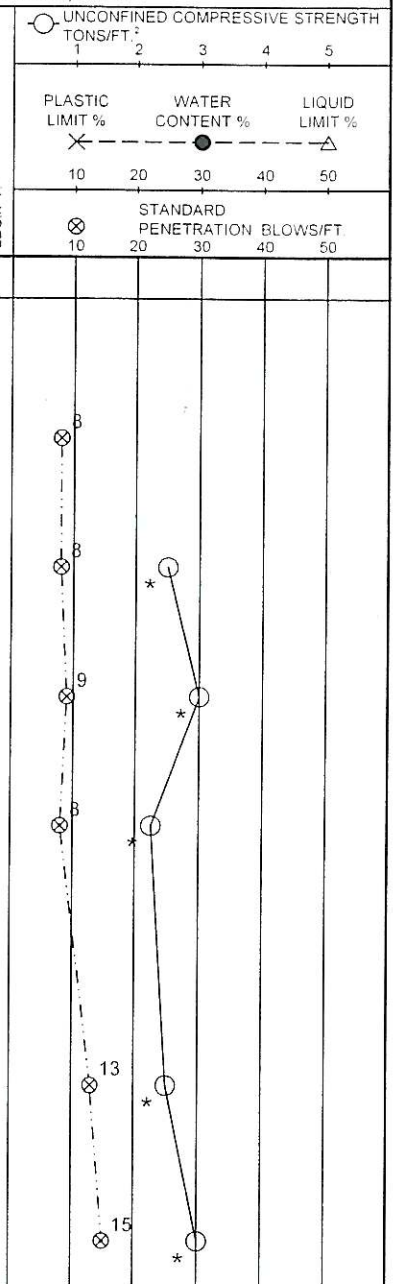
LOG OF BORING NUMBER: 36

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³
					SURFACE ELEVATION +986.0 NGVD	
					Organic sandy clay, trace roots - gray-brown - (CL-OL)	
0.8						
	1	AS			Sandy clay, trace gravel - brown to gray-brown, rust leaching - firm to stiff - (CL)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
15.0						
	6	SS				
17.5		HS				
	7	SS				
20.0					20.0	
					End of boring at 20.0 ft. Boring backfilled with cuttings.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/8/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/8/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 37

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

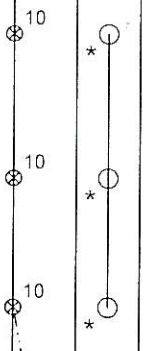
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³
						SURFACE ELEVATION +955.6 NGVD	
						0.4 Sandy silt with roots - dark brown - damp - (ML-OL)	
		1	AS			Sandy clay, trace gravel - brown, rust leaching - stiff - (CL)	
2.5			HS				
		2	SS				
5.0			HS				
		3	SS				
7.5			HS				
		4	SS				
10.0			HS			10.0	
		5	SS			Silty fine to coarse sand, some gravel - dark brown - saturated - medium dense - (SM)	
12.5			HS			14.0	
15.0						Silty fine sand - brown - saturated - medium dense - (SM)	
		6	SS			16.6	
17.5			HS			Sandy clay, trace gravel - brown - stiff - (CL)	
		7	SS				
20.0						20.0	
						End of boring at 20.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 7.5 ft. BCR	BORING STARTED 8/8/07	STS OFFICE Minneapolis Area - 06	
WL 4.8 ft. ACR	BORING COMPLETED 8/8/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

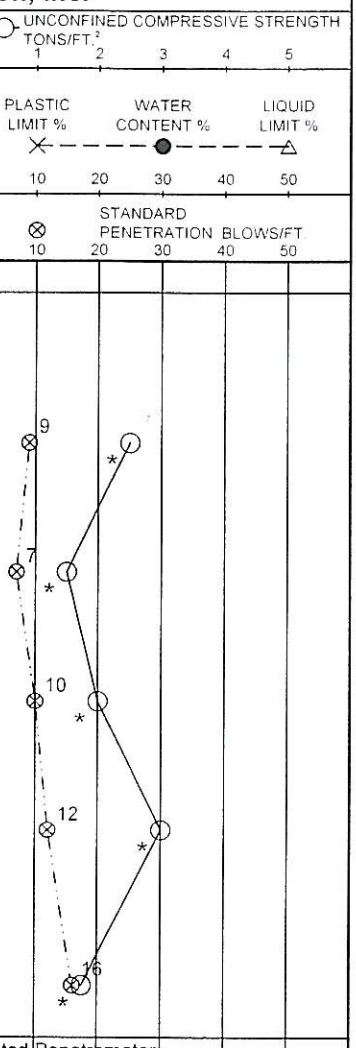
LOG OF BORING NUMBER: 38

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS /FT.³
					SURFACE ELEVATION +926.9 NGVD	
				0.6	Silty fine sand, trace roots - gray-brown - damp - (SM-OL)	
	1	AS			Sandy clay, trace gravel - gray-brown to gray - firm to stiff - (CL)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
	6	SS				
15.0				15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 39
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

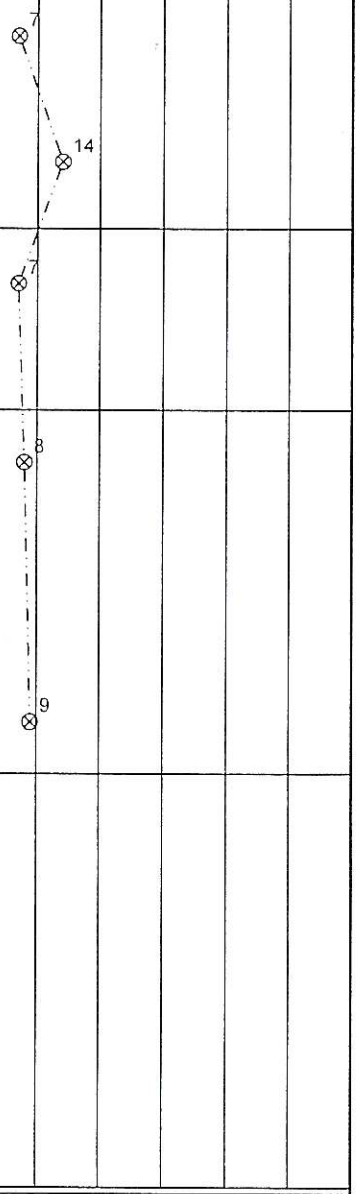
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³
					SURFACE ELEVATION +915.0 NGVD	
	1	AS			Possible FILL: Organic sandy and clayey silt with roots - brown-black - humid to moist - firm to stiff - (OL)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
					6.5	
					Silty sand and gravel - brown - moist to saturated - loose - (SM-GM)	
7.5		HS				
	4	SS				
10.0		HS			10.0	
	5	SS			Fine to coarse sand, little gravel, trace silt - brown - saturated - loose - (SP)	
12.5		HS				
15.0						
	6	SS				
17					17.0	
					End of boring at 17.0 ft. Boring backfilled with cuttings.	



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 10 ft. WS	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL 7.5 ft. BCR	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 40

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

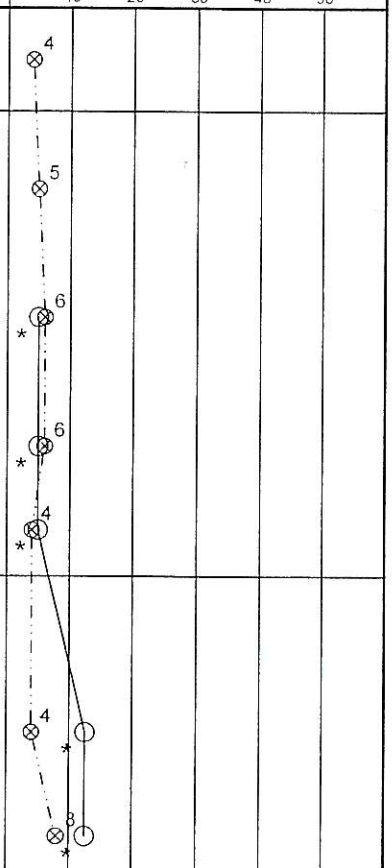
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +910.1 NGVD	
	1	SS			2" root mat - sapric peat - brown-black - soft - (Pt)	
2.0						
2.5		HS			Silty clay/clayey silt - gray - firm - (CL-ML)	
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
11.0						
12.5		HS			Sandy clay, trace gravel - gray - soft to firm - (CL)	
	6	SS				
15.0						
	7	SS				
17						
17.0						
					End of boring at 17.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

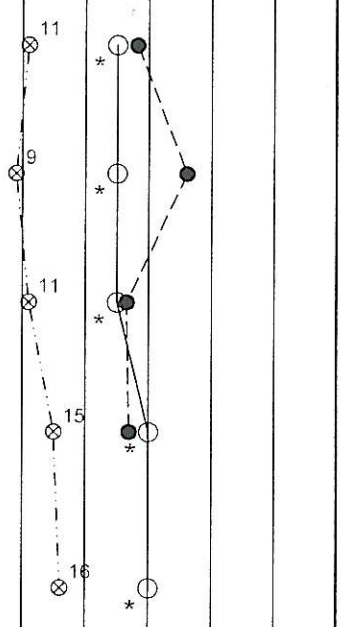
LOG OF BORING NUMBER: 41

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +921.0 NGVD	
				0.9	Silty fine sand/sandy silt, little roots - dark brown - humid - (SM-ML-OL)	
	1	AS			Sandy clay, trace gravel - gray-brown, rust leaching, to gray - stiff - (CL)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
	6	SS				
15.0				15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 42
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

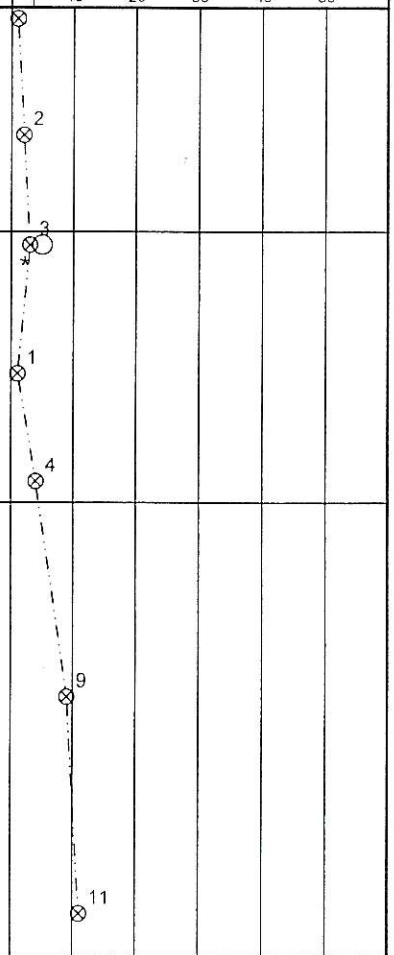
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³
						SURFACE ELEVATION +908.5 NGVD	
		1	SS			Sapric peat, trace roots - brown-black - moist - very soft - (Pt)	
			HS				
		2	SS				
5.0			HS		5.2		
		3	SS			Silty clay - gray - very soft to soft - (CL-CH)	
			HS				
		4	SS				
10.0			HS				
		5	SS		11.5		
			HS			Sandy clay, trace gravel - gray - firm to stiff - (CL)	
15.0							
		6	SS				
			HS				
20.0							
		7	SS				
22					22.0		
						End of boring at 22.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (1 10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 7.6 ft. WS	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL Dry ACR	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 43

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)
					SURFACE ELEVATION +910.1 NGVD		
	1	SS			0.2 Peaty organic silt with roots - brown-black - moist - (OH) Sapric peat - brown-black - wet to saturated - very soft - (Pt)		2
		HS					
	2	SS					2
5.0		HS			5.0		
	3	SS			Silty fine to medium sand - gray-brown - wet - loose - (SM) 6.9		4
		HS			Silty clay - gray - very soft to soft - (CL-CH)		
	4	SS					3 *
10.0		HS					
	5	SS					3 *
		HS					
15.0							
	6	SS					4 *
					18.0		
		HS			Sandy clay, trace gravel - gray - firm - (CL)		
20.0							
	7	SS					6 *
		HS					
	8	SS					7 *
25.0					25.0		
					End of boring at 25.0 ft. Boring backfilled with cuttings.		* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 4 ft. BCR	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL 4.2 ft. ACR	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/29/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 44

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

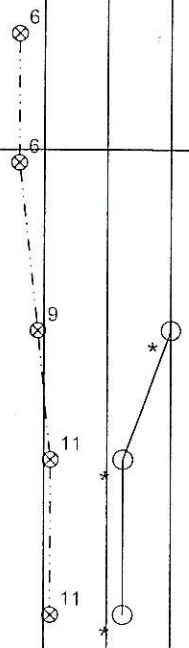
SURFACE ELEVATION +935.8 NGVD

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						0.6 Organic sandy clay with roots - dark brown - (CL-OL)	
		1	AS			Sapric peat to organic clayey silt - brown-black - firm - (Pt-OH)	
2.5			HS				
		2	SS				
5.0			HS			5.0	
		3	SS			Sandy clay, trace gravel - gray-brown to gray - firm to stiff - (CL)	
7.5			HS				
		4	SS				
10.0			HS				
		5	SS				
12.5			HS				
		6	SS				
15.0						15.0	
						End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 45

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS/FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)
					SURFACE ELEVATION +908.5 NGVD		
	1	AS			Sapric peat, trace roots - black to brown-black - moist - very soft to soft - (Pt)		
2.5		HS					
	2	SS					3
5.0		HS			4.9		
	3	SS			Silty clay - gray - soft - (CL-CH)		4 *
7.5		HS					
					7.9		
	4	SS			Silty clay/clayey silt - gray - firm to stiff - (CL-ML)		5 *
10.0		HS					
	5	SS					7 *
12.5		HS					
	6	SS					11 *
15.0					15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.		* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL: Dry ACR	BORING STARTED: 8/6/07	STS OFFICE: Minneapolis Area - 06	
WL	BORING COMPLETED: 8/6/07	ENTERED BY: DN	SHEET NO.: 1 OF: 1
WL	RIG/FOREMAN: CME-750/SD	APP'D BY: MM	STS JOB NO.: 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 46

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

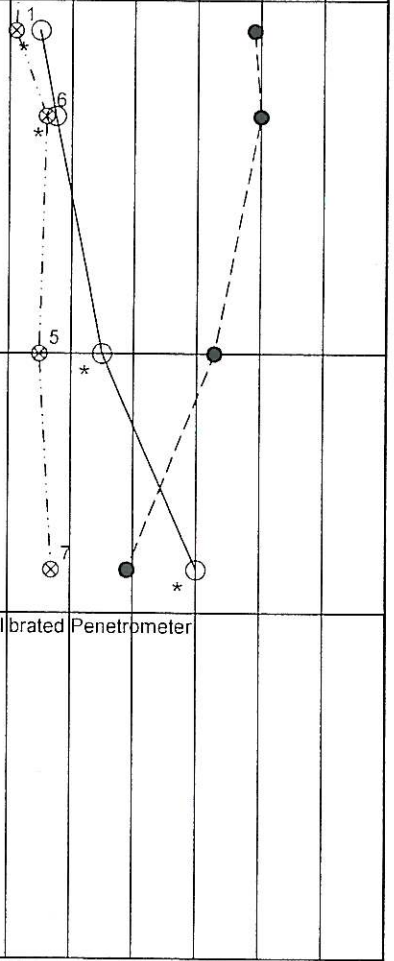
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS /FT³
					SURFACE ELEVATION +909.2 NGVD	
				0.4	Sandy peat with roots - brown-black - moist - (Pt)	
	1	AS			Organic clayey silt - black - wet - very soft - (OH)	
		HS				
	2	SS				
5.0		HS				
	3	SS		6.9		
		HS		7.8	Peaty organic silt - black - wet - very soft - (OL-Pt)	
	4	SS			Silty clay - gray - very soft to firm - (CL-CH)	
10.0		HS				
	5	SS				
		HS				
15.0						
	6	SS		16.0		
					Sandy clay, trace gravel - gray - firm - (CL)	
		HS				
20.0						
	7	SS				
22				22.0		
					End of boring at 22.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 11.9 ft. WS	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL Dry ACR	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 47
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

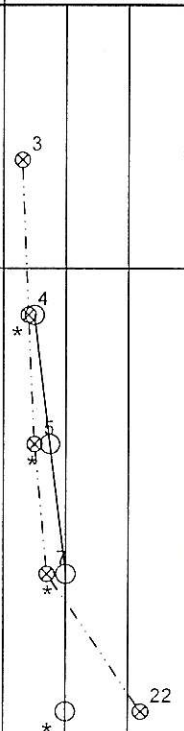
SURFACE ELEVATION +908.4 NGVD

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
		1	AS			Peaty organic silt, trace roots - black to brown-black - moist - very soft - (OH)	
2.5			HS				
		2	SS				
5.0			HS			5.1	
		3	SS			Sandy clay, trace gravel - gray - soft to very stiff - (CL)	
7.5			HS				
		4	SS				
10.0			HS				
		5	SS				
12.5			HS				
		6	SS				
15.0						15.0	
						End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL: Dry ACR	BORING STARTED: 8/6/07	STS OFFICE: Minneapolis Area - 06	
WL	BORING COMPLETED: 8/6/07	ENTERED BY: DN	SHEET NO.: 1 OF 1
WL	RIG/FOREMAN: CME-750/SD	APP'D BY: MM	STS JOB NO.: 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 48

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³
					SURFACE ELEVATION +908.6 NGVD	
	1	SS			2" root mat, sapric peat - brown-black to black - moist - very soft - (Pt)	
		HS				
	2	SS				
5.0		HS			4.9	
	3	SS			Silty clay - gray - soft to firm - (CL-CH)	
		HS				
	4	SS				
10.0		HS				
	5	SS			11.0	
		HS			Sandy clay, trace gravel - gray - firm to stiff - (CL)	
15.0						
	6	SS				
		HS				
20.0						
	7	SS				
22					22.0	
					End of boring at 22.0 ft. Boring backfilled with cuttings.	

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926 GPJ STS GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 49

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)
				SURFACE ELEVATION +908.2 NGVD		
	1	AS		Sapric peat - black - moist - very soft to soft - (Pt)		
		HS				
	2	SS				3
5.0		HS		5.2		
	3	SS		Silty clay/clayey silt - gray - firm to stiff - (CL-ML)		5
		HS				
	4	SS				7 *
10.0		HS				
	5	SS				9 *
		HS				
15.0						
	6	SS		16.0		11 *
				Sandy clay, trace gravel, random seams or lenses of fine to medium sand - gray - stiff - sand seams: water-bearing - (CL, lenses SP)		
		HS				
20.0						
	7	SS				14 *
22				22.0		
				End of boring at 22.0 ft. Boring backfilled with cuttings.		

* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 21.6 ft. WS	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 50

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)
				SURFACE ELEVATION +924.7 NGVD		
				0.4 Silty fine sand/sandy silt, little roots - brown - damp - (SM-ML)		
	1	SS		Clayey silt - brown to gray-brown, rust leaching - stiff - (ML-CL)		9
2.5		HS				
	2	SS				14
5.0		HS				
	3	SS				15
7.5		HS				
	4	SS				15
10.0		HS				
	5	SS		11.0		15
				Sandy clay, trace gravel, 6" lens fine to medium sand at 14.2-14.7 ft. depth - (CL, lens SP)		
12.5		HS				
	6	SS				15
15.0				15.0		
				End of boring at 15.0 ft.		
				Boring backfilled with cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 51

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

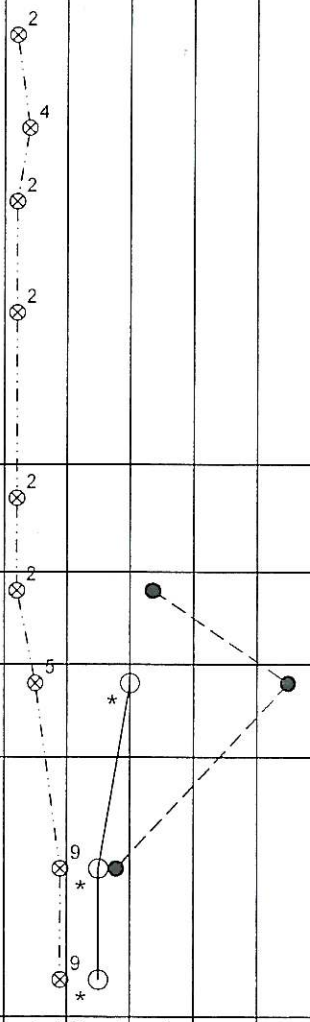
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT³
				SURFACE ELEVATION +907.4 NGVD	
	1	AS		Organic sandy silt with roots - brown-black - damp - (OL)	
				1.4	
		HS		Sapric peat - black - wet - very soft to soft - (Pt)	
	2	SS			
5.0		HS			
	3	SS			
		HS			
	4	SS			
10.0		HS			
	5	SS			
		HS			
15.0				15.1	
	6	SS		Organic silt - gray - saturated - very soft - (OH)	
		HS		18.0	
	7	SS		Clayey and sandy silt - gray - very soft - (ML-CL)	
20.0		HS		20.5	
	8	SS		Silty clay - gray - firm - (CL-CH)	
				23.0	
		HS		Sandy clay, trace gravel - gray - stiff - (CL)	
25.0					
	9	SS			
		HS			
	10	SS			
30.0				30.0	
				End of boring at 30.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 6 ft. WS	BORING STARTED 8/8/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/8/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/27/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 52

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

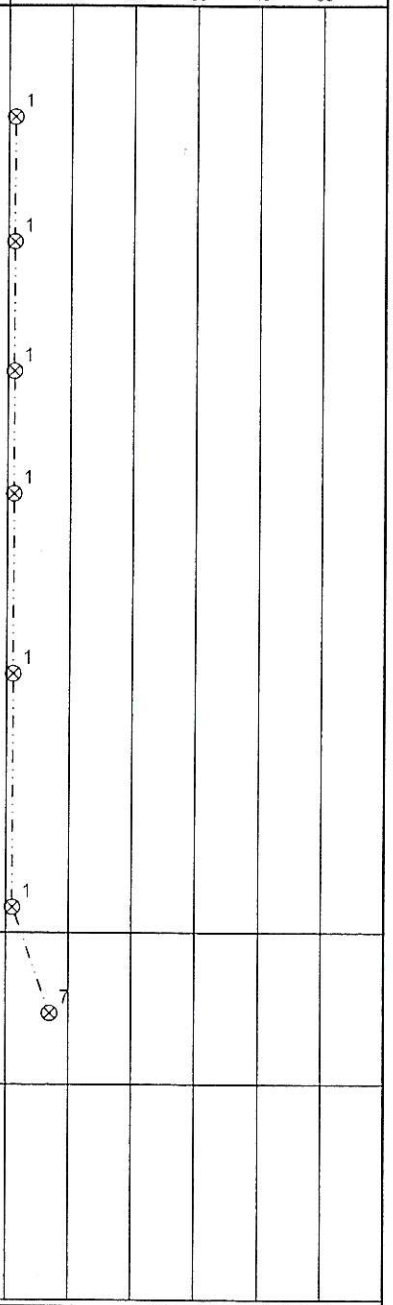
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³
					SURFACE ELEVATION +907.1 NGVD	
	1	AS			Sapric peat - black to brown-black - wet to saturated - very soft - (Pt)	
		HS				
	2	SS				
5.0		HS				
	3	SS				
		HS				
	4	SS				
10.0		HS				
	5	SS				
		HS				
15.0						
	6	SS				
		HS				
20.0						
	7	SS			21.5	
		HS			Silty fine to coarse sand and gravel - gray - saturated - loose - (SM-GM)	
	8	SS				
25.0					25.0	
					End of boring at 25.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 3 ft. WS	BORING STARTED 8/3/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/GD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 52
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +907.1 NGVD	
	1	AS			Sapric peat - black to brown-black - wet to saturated - very soft - (Pt)	
		HS				
	2	SS				
5.0		HS				
	3	SS				
		HS				
	4	SS				
10.0		HS				
	5	SS				
		HS				
15.0						
	6	SS				
		HS				
20.0						
	7	SS			21.5	
		HS			Silty fine to coarse sand and gravel - gray - saturated - loose - (SM-GM)	
	8	SS				
25.0					25.0	
					End of boring at 25.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 3 ft. WS	BORING STARTED 8/3/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/GD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 53

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)
					SURFACE ELEVATION +907.3 NGVD		
	1	AS			Sapric peat - brown-black - moist to wet - very soft - (Pt)		1
2.5		HS					
	2	SS					1
5.0		HS					
	3	SS					1
7.5		HS					
	4	SS					1
10.0		HS					
	5	SS			11.0		3
					Peat and clayey sand - black and gray - saturated - very loose - (Pt-SC)		
12.5		HS			12.5		
	6	SS			Fine to medium sand - gray - saturated - loose - (SP)		4
15.0					15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 5 ft. WD	BORING STARTED 8/3/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/GD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 53

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.^{3}	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)
					SURFACE ELEVATION +907.3 NGVD		
	1	AS			Sapric peat - brown-black - moist to wet - very soft - (Pt)		1
2.5		HS					
	2	SS					1
5.0		HS					
	3	SS					1
7.5		HS					
	4	SS					1
10.0		HS					
	5	SS			11.0		3
					Peat and clayey sand - black and gray - saturated - very loose - (Pt-SC)		
12.5		HS			12.5		
					Fine to medium sand - gray - saturated - loose - (SP)		
	6	SS					4
15.0					15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 5 ft. WD	BORING STARTED 8/3/07	STS OFFICE	Minneapolis Area - 06
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/GD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 54
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)
					SURFACE ELEVATION +907.6 NGVD		
	1	AS			1" root mat, sapric peat - brown-black - moist - (Pt)		
2.5		HS					
					3.0		
	2	SS			Sandy clay, trace gravel - gray - soft - (CL)		4
					4.0		
5.0		HS			Silt and clayey silt - gray - saturated - loose to firm - (ML)		
	3	SS					6
7.5		HS					
	4	SS					8
10.0		HS					
	5	SS					6
12.5		HS					
	6	SS					8
15.0					15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL: 4 ft. WS	BORING STARTED: 8/3/07	STS OFFICE: Minneapolis Area - 06	
WL	BORING COMPLETED: 8/3/07	ENTERED BY: DN	SHEET NO.: 1 OF: 1
WL	RIG/FOREMAN: CME-750/GD	APP'D BY: MM	STS JOB NO.: 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

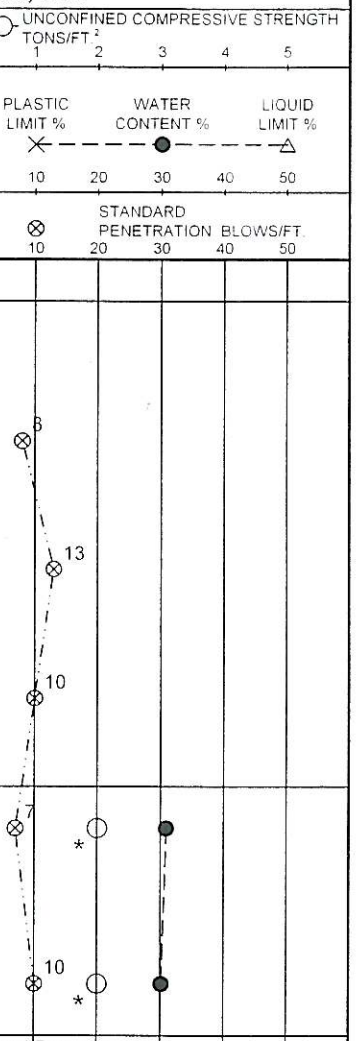
LOG OF BORING NUMBER: 55

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +930.6 NGVD	
				0.8	Silty fine sand with roots - dark brown - damp - (SM-OL)	
	1	AS			Silty and clayey fine sand - brown - moist - loose to medium dense - (SM-SC)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS		10.2		
	5	SS			Clayey silt - brown, rust leaching - firm to stiff - (ML-CL)	
12.5		HS				
	6	SS				
15.0				15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

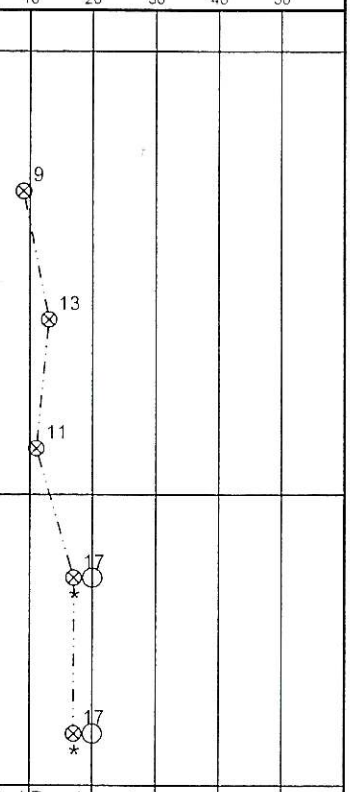
LOG OF BORING NUMBER: 56

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS /FT.³
					SURFACE ELEVATION +915.0 NGVD	
				0.8	Silty fine sand, trace roots - dark brown - damp - (SM)	
	1	AS			Silty fine to medium sand - gray-brown - loose to medium dense - (SM)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
				9.4		
10.0		HS			Sandy clay, trace gravel - gray - stiff - (CL)	
	5	SS				
12.5		HS				
	6	SS				
15.0				15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 57
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

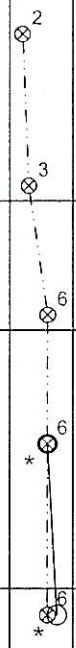
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.^{3}
					SURFACE ELEVATION +907.4 NGVD	
	1	AS			Sapric peat, trace roots - brown-black - very soft - (Pt)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS		6.0		
					Silty fine to medium sand - gray - saturated - loose - (SM)	
7.5		HS				
	4	SS		8.5		
					Silty clay/clayey silt - gray - firm - (CL-ML)	
10.0		HS				
	5	SS				
12.5		HS				
				13.5		
	6	SS			Sandy clay, trace gravel - gray - firm - (CL)	
15.0				15.0		
					End of boring at 15.0 ft.	
					Boring backfilled with cuttings.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 6 ft. WS	BORING STARTED 8/3/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/GD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 58

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

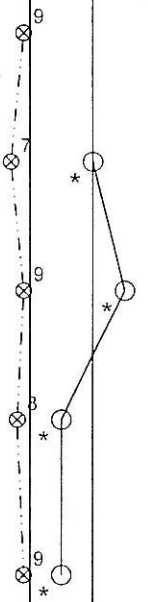
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.³
					SURFACE ELEVATION +916.3 NGVD	
					Silty fine sand - dark brown - moist - (SM)	
0.8						
	1	AS			Sandy and clayey silt - gray-brown, rust leaching - firm to stiff - (ML-CL)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
	6	SS				
15.0					15.0	
					End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/7/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/7/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 59

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

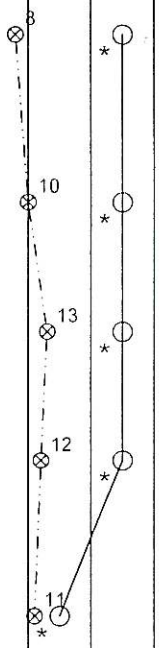
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³
					SURFACE ELEVATION +912.7 NGVD	
	1	AS			Silty fine sand, trace roots - dark brown - humid - (SM)	
					1.3	
2.5		HS			Sandy clay, trace gravel - gray-brown to gray, rust leaching to 13 ft. depth - firm to stiff - (CL)	
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
	6	SS				
15.0					15.0	
					End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 60

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

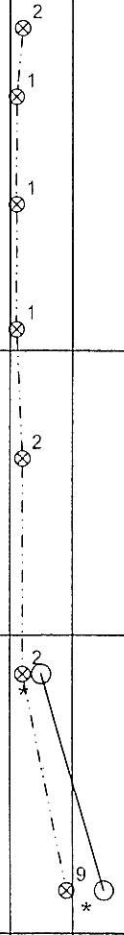
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +907.3 NGVD	
	1	SS			2" root mat, sapric peat - brown-black - moist to wet - very soft - (Pt)	
		HS				
	2	SS				
5.0		HS				
	3	SS				
		HS				
	4	SS		8.5		
					Peaty organic silt - gray-black - wet - very soft - (OH-Pt)	
10.0		HS				
	5	SS				
		HS				
15.0				15.1		
	6	SS			Sandy clay, trace gravel - gray - very soft to stiff - (CL)	
		HS				
20.0						
	7	SS				
22				22.0		
					End of boring at 22.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/6/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/6/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 61

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)
					SURFACE ELEVATION +908.1 NGVD		
					Sapric peat - black to brown-black - moist to wet - very soft - (Pt)		
2.5		HS					
5.0							3
	1	SS			6.0		
					Silty fine to medium sand - gray - saturated - loose - (SM)		
7.5		HS			7.5		
					Fine to medium sand - gray - wet to saturated - loose - (SP)		6
	2	SS					
10.0		HS					7
	3	SS			12.0		
12.5		HS			Sandy clay, trace gravel - gray - firm - (CL)		
	4	SS					6 * *
15.0					15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.		* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 6 ft. WS	BORING STARTED 8/3/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 62

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)
					SURFACE ELEVATION +906.6 NGVD		
		HS			Sapric peat - black to brown-black - moist to saturated - very soft - (Pt)		1
	1	SS					
5.0		HS					1
	2	SS					
		HS					1
	3	SS					
10.0		HS					1
	4	SS					
15.0		HS					
20.0	5	SS					1
		HS					
25.0	6	SS			26.5		1
					27.5 Clayey fine to medium sand - gray - saturated - very loose - (SC)		
		HS			Sandy clay, trace gravel - gray - firm - (CL)		
30.0	7	SS					6
32					32.0		
					End of boring at 32.0 ft. Boring backfilled with cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 3 ft. WS	BORING STARTED 8/3/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO 1 OF 1
WL	RIG/FOREMAN CME-750/GD	APP'D BY MM	STS JOB NO 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 63
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)
					SURFACE ELEVATION +906.8 NGVD		
	1	AS			Organic sandy silt with roots - damp - (OL-OH)		
					1.0		
					Sapric peat - brown-black - moist to saturated - very soft - (Pt)		
2.5		HS					
	2	SS					1
5.0		HS					
	3	SS					1
					6.7		
					Organic clayey silt and peaty silt - gray to gray-black - saturated - very soft - (OH-Pt)		
7.5		HS					
	4	SS					1
10.0		HS					
	5	SS					1
12.5							
		HS					
					14.5		
15.0					Sandy and clayey silt - gray - saturated - loose - (ML)		
	6	SS					4
17					17.0		
					End of boring at 17.0 ft. Boring backfilled with cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL: 5 ft. WS	BORING STARTED: 8/3/07	STS OFFICE: Minneapolis Area - 06	
WL	BORING COMPLETED: 8/3/07	ENTERED BY: DN	SHEET NO.: 1 OF: 1
WL	RIG/FOREMAN: CME-750/GD	APP'D BY: MM	STS JOB NO.: 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 64

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}	STANDARD PENETRATION BLOWS/FT
					SURFACE ELEVATION +906.9 NGVD		
		HS			Sapric peat - brown-black - moist - very soft - (Pt)		
2.5	1	SS					1
5.0		HS					
	2	SS					1
7.5		HS					
					8.0		
	3	SS			Clayey sand - gray - saturated - loose - (SC)		3
					9.5		
10.0		HS			Silty clay/clayey silt - gray - very soft - (CL-ML)		
	4	SS					2
12.5		HS					
	5	SS					2
15.0					15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 8 ft. WS	BORING STARTED 8/3/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/3/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/GD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 65

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

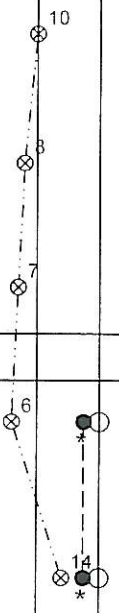
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +910.4 NGVD	
	1	AS			Organic sandy silt with roots - brown-black - moist - (OL)	
					1.8	
2.5		HS			Silty fine sand - brown-black - damp to moist - loose - (SM)	
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
					9.3	
10.0		HS			Silty fine to coarse sand, trace gravel - brown - wet - loose - (SM)	
					10.2	
	5	SS			Sandy clay, trace gravel - gray - firm to stiff - (CL)	
12.5		HS				
	6	SS				
15.0					15.0	
					End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/8/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/8/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 66

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

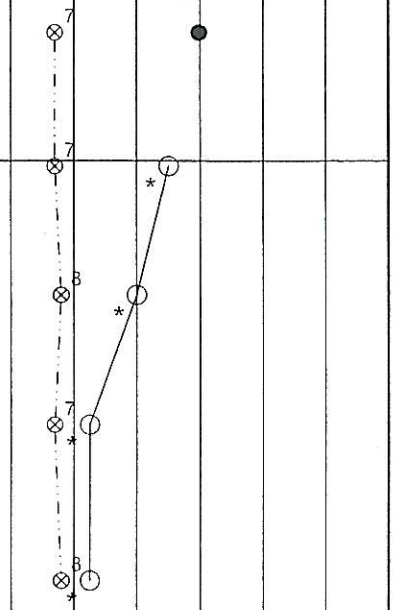
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.³
					SURFACE ELEVATION +919.9 NGVD	
				0.9	Silty fine sand, little roots - brown - damp - (SM-OL)	
	1	AS			Clayey silt - gray-brown - firm - (ML-CL)	
2.5		HS				
	2	SS				
5.0		HS				
				5.9		
	3	SS			Sandy clay, trace gravel - gray-brown, rust leaching - firm to stiff - (CL)	
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
	6	SS				
15.0				15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.	



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/8/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/8/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/SD	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 67
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

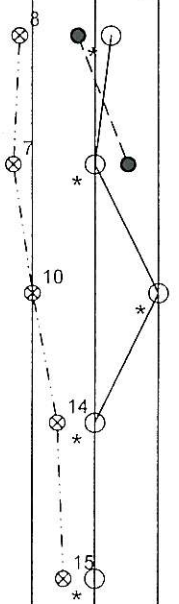
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT LBS./FT.³
					SURFACE ELEVATION +923.8 NGVD	
				0.8	Silty fine sand, trace roots - brown - humid - (SM-OL)	
	1	AS			Sandy clay, trace gravel - gray-brown, rust leaching - firm to stiff - (CL)	
2.5		HS				
	2	SS				
5.0		HS				
	3	SS				
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
	6	SS				
15.0				15.0		
					End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL: Dry ACR	BORING STARTED: 8/8/07	STS OFFICE: Minneapolis Area - 06	
WL	BORING COMPLETED: 8/8/07	ENTERED BY: DN	SHEET NO.: 1 OF: 1
WL	RIG/FOREMAN: CME-750/SD	APP'D BY: MM	STS JOB NO.: 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC	LOG OF BORING NUMBER: 68
PROJECT NAME: Stones Throw Housing Development	ARCHITECT-ENGINEER: Schoell & Madson, Inc.

SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

SURFACE ELEVATION +921.4 NGVD

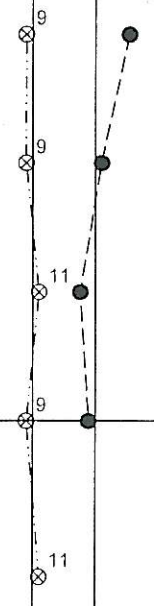
DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
						Silty fine sand, trace roots - dark brown - humid - (SM-OL)
						0.8
		1	AS			Clayey silt - gray-brown, rust leaching - stiff - (ML-CL)
2.5			HS			
		2	SS			
5.0			HS			
		3	SS			
7.5			HS			
		4	SS			
10.0			HS			
		5	SS			
						11.0
						Sandy clay, trace gravel - gray-brown, rust leaching - stiff - (CL)
12.5			HS			
		6	SS			
15.0						15.0
						End of boring at 15.0 ft.
						Boring backfilled with cuttings.

UNIT DRY WT LBS./FT.³

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT. (10 20 30 40 50)



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL: Dry ACR	BORING STARTED: 8/8/07	STS OFFICE: Minneapolis Area - 06	
WL	BORING COMPLETED: 8/8/07	ENTERED BY: DN	SHEET NO.: 1 OF 1
WL	RIG/FOREMAN: CME-750/SD	APP'D BY: MM	STS JOB NO.: 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 69

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

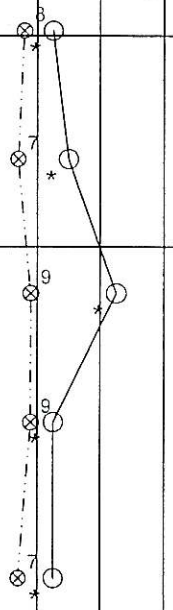
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT)	ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
						SURFACE ELEVATION +921.3 NGVD	
		1	AS			FILL: Silty fine to medium sand, trace gravel - dark brown - humid to damp - (SM)	
2.5			HS				
		2	SS				
						3.5	
						FILL: Sandy clay, trace gravel, organic inclusions - dark brown, some black - firm - (CL, trace OL)	
5.0			HS				
		3	SS				
7.5			HS				
						7.6	
		4	SS			Silty clay/clayey silt - gray-brown, rust leaching - stiff to firm - (CL-ML)	
10.0			HS				
		5	SS				
12.5			HS				
		6	SS				
15.0						15.0	
						End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (1 2 3 4 5)

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT % (10 20 30 40 50)

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50)



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/13/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/13/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/DZ	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07

STS Consultants Ltd.

OWNER: Hassan Mainstreet, LLC

LOG OF BORING NUMBER: 70

PROJECT NAME: Stones Throw Housing Development

ARCHITECT-ENGINEER: Schoell & Madson, Inc.

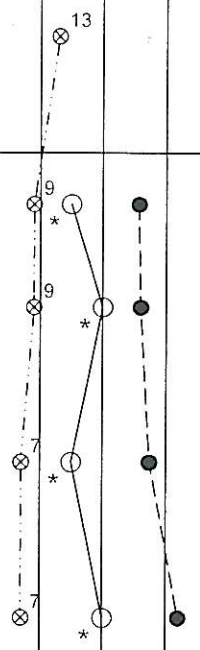
SITE LOCATION: Fletcher La. & Territorial Rd., Hassan Twp., MN

DEPTH(FT) / ELEVATION(FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.^{3}
					SURFACE ELEVATION +912.1 NGVD	
	1	AS			Organic sandy clay, trace roots - black - (CL-OL)	
					1.3	
2.5		HS			Clayey silt - gray, rust leaching - stiff - (ML-CL)	
	2	SS				
5.0		HS			5.0	
	3	SS			Silty clay/clayey silt - gray-brown to gray - stiff to firm - (CL-ML)	
7.5		HS				
	4	SS				
10.0		HS				
	5	SS				
12.5		HS				
	6	SS				
15.0					15.0	
					End of boring at 15.0 ft. Boring backfilled with cuttings.	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2}: 1 2 3 4 5

PLASTIC LIMIT % — WATER CONTENT % — LIQUID LIMIT %: 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT.: 10 20 30 40 50



* Calibrated Penetrometer

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL Dry ACR	BORING STARTED 8/13/07	STS OFFICE Minneapolis Area - 06	
WL	BORING COMPLETED 8/13/07	ENTERED BY DN	SHEET NO. 1 OF 1
WL	RIG/FOREMAN CME-750/DZ	APP'D BY MM	STS JOB NO. 200703926

BORING_LOG 200703926.GPJ STS.GDT 8/15/07