

Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-01		
					LOCATION: STA 624+11, RT.9		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223608	EASTING: 22289235	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/09/25	
SURFACE ELEVATION: 1192.6 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Concrete		WEATHER: Sunny

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
1192.0 0.6		APPARENT AGGREGATE BASE FILL: CLAYEY SAND (SC), fine-grained, brown and gray, moist		2-3-4 (7) 2"			
				1-2-1 (3) 6"		24	
			5				
				TW 18"	1	17	LL=63, PL=22, PI=41 Gravel = 4% Sand = 60% Silt & Clay = 36%
1182.6 10.0		LEAN CLAY (CL), grayish brown to brownish gray, moist, very soft to medium (ALLUVIUM)	10	2-3-3 (6) 10"			
				TW 18"	1	26	DD=97 pcf q _u =0.37 tsf
			15				
				TW 18"	0		
			20				
				0-0-1 (1) 8"		35	LL=40, PL=23, PI=17 Gravel = 0% Sand = 2% Silt = 65% Clay = 33%
			25				
				3-3-3 (6) 8"			
			30				

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					LOCATION: STA 624+11, RT.9		
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					NORTHING: 6223608	EASTING: 22289235	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/09/25	
SURFACE ELEVATION: 1192.6 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Concrete		WEATHER: Sunny
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		LEAN CLAY (CL), grayish brown to brownish gray, moist, very soft to medium (ALLUVIUM)	35	2-3-3 (6) 7"			LL=36, PL=14, PI=22 Gravel = 3% Sand = 44% Silt & Clay = 53%
			40	3-3-5 (8) 10"			
			45	3-3-4 (7) 8"			
			50	4-3-4 (7) 9"		21	
			55	3-4-4 (8) 7"			
1137.6		SANDY LEAN CLAY (CL), trace Gravel, gray, moist to wet, medium to very stiff (GLACIAL TILL)		3-4-6 (10) 10"			
55.0			60	4-4-5			

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					LOCATION: STA 624+11, RT.9		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223608	EASTING: 22289235	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/09/25	
SURFACE ELEVATION: 1192.6 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Concrete		WEATHER: Sunny

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), trace Gravel, gray, moist to wet, medium to very stiff (GLACIAL TILL)	65	(9) 10"		25	LL=28, PL=11, PI=17
			70	4-5-6 (11) 12"			
			75	5-7-8 (15) 10"			
			80	5-7-8 (15) 8"			
			85	5-5-7 (12) 10"			
			90	5-6-8 (14) 10"			
			95	4-5-7 (12) 12"			

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Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-01		
					LOCATION: STA 624+11, RT.9		
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					NORTHING: 6223608	EASTING: 22289235	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/09/25	
SURFACE ELEVATION: 1192.6 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Concrete		WEATHER: Sunny

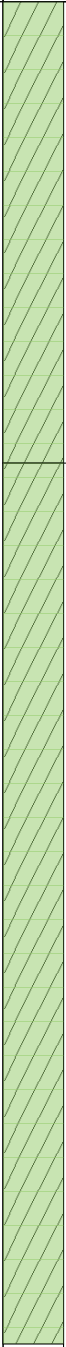
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), trace Gravel, gray, moist to wet, medium to very stiff (GLACIAL TILL)					
			100	4-5-7 (12) 11"			
			105	6-6-7 (13) 12"		24	LL=32, PL=11, PI=21 Gravel = 0% Sand = 31% Silt & Clay = 69%
			110	6-7-9 (16) 10"			
			115	6-7-10 (17) 6"			
1072.6 120.0			120	6-8-9 (17)			
		END OF BORING					Water not observed while drilling.
		Boring then backfilled with auger cuttings					
			125				

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-02		
					LOCATION: STA 624+34 LT.9		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223616	EASTING: 22289259	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/08/25	
SURFACE ELEVATION: 1192.8 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Bridge Deck		WEATHER: Sunny & 80

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
1192.5		BITUMINOUS					
0.3		CONCRETE					
1191.9		FILL: CLAYEY SAND (SC), trace organic, trace Gravel, dark brown to dark gray, moist		3-3-3 (6) 5"		23	
0.9				TW 6"	1		LL=44, PL=23, PI=21 Gravel = 33% Sand = 30% Silt & Clay = 37%
			5	2-2-3 (5) 8"		28	
1184.8		SANDY LEAN CLAY (CL), trace Gravel, dark gray to gray, moist to wet, very soft to medium (ALLUVIUM)		TW 18"	1.5	24	DD=97 pcf
8.0			10				
				2-3-3 (6) 9"			
			15				
				TW 24"	0	26	LL=27, PL=15, PI=12 DD=95 pcf q _u =0.23 tsf Gravel = 0% Sand = 34% Silt = 37% Clay = 29%
			20				
				1-1-2 (3) 6"			
			25				
				2-3-5 (8) 8"			
			30				

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Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-02		
					LOCATION: STA 624+34 LT.9		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223616	EASTING: 22289259	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/08/25	
SURFACE ELEVATION: 1192.8 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Bridge Deck		WEATHER: Sunny & 80
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
1149.8 43.0		SANDY LEAN CLAY (CL), trace Gravel, dark gray to gray, moist to wet, very soft to medium (ALLUVIUM)	35	1-1-2 (3) 8"		36	LL=41, PL=21, PI=20
			40	1-2-2 (4) 10"			
		SANDY LEAN CLAY (CL), trace Gravel, gray, moist, stiff to very stiff (GLACIAL TILL)	45	5-6-8 (14) 6"			
			50	4-5-5 (10) 7"			
			55	3-6-7 (13) 0"			
			60	3-4-5 (9) 10"		20	LL=36, PL=14, PI=22 Gravel = 2% Sand = 33% Silt = 34% Clay = 31%
				4-5-7			

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Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-02		
					LOCATION: STA 624+34 LT.9		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223616	EASTING: 22289259	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/08/25	
SURFACE ELEVATION: 1192.8 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Bridge Deck		WEATHER: Sunny & 80
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), trace Gravel, gray, moist, stiff to very stiff (GLACIAL TILL)	65	(12) 8"			
			70	4-4-5 (9) 9"			
			75	5-6-7 (13) 8"			
			80	5-6-6 (12) 8"		21	
			85	4-6-6 (12) 10"			
			90	5-6-8 (14) 10"			
			95	6-5-7 (12) 12"			

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Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-02		
					LOCATION: STA 624+34 LT.9		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223616	EASTING: 22289259	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/08/25		END DATE: 07/08/25	
SURFACE ELEVATION: 1192.8 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Bridge Deck		WEATHER: Sunny & 80

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), trace Gravel, gray, moist, stiff to very stiff (GLACIAL TILL)					
			100	6-7-7 (14) 10"		15	LL=37, PL=13, PI=24 Gravel = 2% Sand = 35% Silt & Clay = 63%
			105	8-9-9 (18) 10"			
			110	9-8-8 (16) 8"			
			115	7-7-8 (15) 9"			
1072.8 120.0			120	8-9-9 (18) 8"			Water not observed while drilling.
		END OF BORING					
		Boring then backfilled with auger cuttings					
			125				

Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-03		
					LOCATION: STA 624+89, RT.11		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223605	EASTING: 22289313	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/10/25		END DATE: 07/10/25	
SURFACE ELEVATION: 1193.0 ft		RIG: 8504		METHOD: 3 1/4" HSA		SURFACING: Aggregate WEATHER: Sunny & 80	

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
1192.7		BITUMINOUS CONCRETE					
0.3							
1192.4		FILL: SANDY LEAN CLAY (CL), brown and gray, moist		2-3-2 (5) 4"			
0.6				TW	2.5	17	DD=112 pcf
			5				
				1-2-2 (4) 4"			
				TW	2.5		
			10				
1180.0		LEAN CLAY (CL), dark gray, moist to wet, very soft to medium (ALLUVIUM)		2-2-2 (4) 8"			
13.0			15				
				2-2-3 (5) 0"			
			20				
				0-0-0 10"		33	LL=43, PL=21, PI=22 Gravel = 0% Sand = 1% Silt = 67% Clay = 32%
			25				
				0-1-1 (2) 8"			
			30				

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					LOCATION: STA 624+89, RT.11		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223605	EASTING: 22289313	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/10/25		END DATE: 07/10/25	
SURFACE ELEVATION: 1193.0 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Aggregate		WEATHER: Sunny & 80

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
1150.0 43.0		LEAN CLAY (CL), dark gray, moist to wet, very soft to medium (ALLUVIUM)	35	0-2-2 (4) 6"			LL=34, PL=15, PI=19 Gravel = 4% Sand = 32% Silt = 32% Clay = 32%
			40	1-2-2 (4) 6"			
			45	5-6-8 (14) 8"		19	
			50	3-4-5 (9) 8"			
			55	4-5-6 (11) 9"			
			60	5-5-6 (11) 8"			
				4-5-5			

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Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-03		
					LOCATION: STA 624+89, RT.11		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223605	EASTING: 22289313	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/10/25		END DATE: 07/10/25	
SURFACE ELEVATION: 1193.0 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Aggregate		WEATHER: Sunny & 80

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), gray, moist to wet, stiff (GLACIAL TILL)	65	(10) 10"			LL=35, PL=14, PI=21 Gravel = 1% Sand = 36% Silt & Clay = 63%
			70	5-5-6 (11) 12"		20	
			75	4-5-6 (11) 8"			
			80	5-6-7 (13) 10"			
			85	4-4-6 (10) 10"			
			90	4-5-7 (12) 10"			
			95	4-5-6 (11) 6"			

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					LOCATION: STA 624+89, RT.11		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223605	EASTING: 22289313	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/10/25		END DATE: 07/10/25	
SURFACE ELEVATION: 1193.0 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Aggregate		WEATHER: Sunny & 80

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), gray, moist to wet, stiff (GLACIAL TILL)					
			100	5-7-7 (14) 12"		19	LL=37, PL=14, PI=23 Gravel = 2% Sand = 28% Silt & Clay = 70%
			105	5-5-5 (10) 12"			
			110	5-5-7 (12) 14"			
			115	9-10-12 (22) 8"			
1074.0				12-14-16 (30)		19	P200=39% Water not observed while drilling.
119.0		CLAYEY SAND (SC), gray, wet, medium dense (GLACIAL TILL)	120				
1073.0		END OF BORING					
120.0		Boring then backfilled with auger cuttings					
			125				

Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-04		
					LOCATION: STA 625+21, LT.11		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223626	EASTING: 22289346	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/07/25		END DATE: 07/07/25	
SURFACE ELEVATION: 1193.0 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Pavement		WEATHER: Sunny & 80

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
1192.4 0.6		APPARENT AGGREGATE BASE FILL: SANDY LEAN CLAY (CL), brown, dry		2-3-4 (7) 4"			
			5	2-3-3 (6) 6"		18	
				TW 2"	1	35	LL=45, PL=20, PI=25 DD=84 pcf
1183.0 10.0		LEAN CLAY (CL), little Sand, gray and brown, moist to wet, medium to stiff (ALLUVIUM)	10	3-3-4 (7) 10"			
			15	TW 2"	0.25	28	LL=49, PL=21, PI=28 DD=94 pcf Gravel = 0% Sand = 3% Silt = 60% Clay = 37%
			20	2-3-4 (7) 24"			
			25	TW 2"	1	19	DD=111 pcf q _u =0.57 tsf
			30	2-3-4 (7) 16"			

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Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa					BORING: BR-04		
					LOCATION: STA 625+21, LT.11		
					DATUM: NAD83(2011) / IaRCS zone 12		
					NORTHING: 6223626	EASTING: 22289346	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/07/25		END DATE: 07/07/25	
SURFACE ELEVATION: 1193.0 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Pavement		WEATHER: Sunny & 80

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks		
1148.0 45.0		LEAN CLAY (CL), little Sand, gray and brown, moist to wet, medium to stiff (ALLUVIUM)	35	2-3-4 (7) 17"		28	P200=62%		
			40	3-4-7 (11) 13"		20			
			45	4-5-6 (11) 9"					
				LEAN CLAY (CL), with Sand, dark gray, moist to wet, stiff to very stiff (GLACIAL TILL)	50	4-6-7 (13) 7"		22	LL=38, PL=15, PI=23 P200=87%
			55	4-5-6 (11) 9"					
			60	4-5-6 (11) 8"					
					65	5-4-7			

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Project Number B2504923 Geotechnical Evaluation US-34 Bridge over Metz Creek Adams County, Iowa						BORING: BR-04	
						LOCATION: STA 625+21, LT.11	
						DATUM: NAD83(2011) / IaRCS zone 12	
						NORTHING: 6223626	EASTING: 22289346
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/07/25	END DATE: 07/07/25		
SURFACE ELEVATION: 1193.0 ft	RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Pavement	WEATHER: Sunny & 80		
Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		LEAN CLAY (CL), with Sand, dark gray, moist to wet, stiff to very stiff (GLACIAL TILL)	65	(11) 10"		18	LL=37, PL=13, PI=24 P200=65%
1123.0			70	3-5-7 (12) 12"			
70.0		SANDY LEAN CLAY (CL), dark gray, moist to wet, stiff to very stiff (GLACIAL TILL)		4-5-7 (12) 10"		21	
			75	4-6-7 (13) 12"			
			80	5-5-7 (12) 9"		21	
			85	6-7-8 (15) 10"			
			90	7-8-8 (16) 11"		19	
			95				
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					LOCATION: STA 625+21, LT.11		
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					NORTHING: 6223626	EASTING: 22289346	
DRILLER: DM/HS		LOGGED BY: N. Techau		START DATE: 07/07/25		END DATE: 07/07/25	
SURFACE ELEVATION: 1193.0 ft		RIG: 8504	METHOD: 3 1/4" HSA		SURFACING: Pavement		WEATHER: Sunny & 80

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q _p tsf	MC %	Tests or Remarks
		SANDY LEAN CLAY (CL), dark gray, moist to wet, stiff to very stiff (GLACIAL TILL)					
			100	8-9-9 (18) 10"			
			105	7-8-9 (17) 8"		24	LL=36, PL=13, PI=23 P200=62%
			110	7-9-9 (18) 10"			
			115	6-8-8 (16) 11"		25	
1073.0 120.0		END OF BORING	120	7-8-9 (17) 12"			Water not observed while drilling.
		Boring then backfilled with auger cuttings					
			125				