June 18, 2024

To: Plan Holders for Improvements to the
Washington County Airport
Mineral Point, Missouri
MoDOT Project No. 24-060A-1 & 24-060A-2

Transmitted herewith is **Addendum No. 3** to the Issued for Bid Contract Documents, Specifications and Plans dated May 28, 2024, for Improvements to the Washington County Airport.

Schedule I: Runway 2/20 Reconstruction
Schedule II: Runway 2/20 Widening and Taxiway Reconstruction
Schedule III: Apron Reconstruction
Schedule IV: Runway Lighting Rehabilitation
Schedule V: Runway Guidance Signs
Bid Alternate No. 1: Full Depth Reclamation

Sincerely,

Woolpert, Inc.

Laura Koonce, P.E.
Project Manager

Woolpert, Inc.
931 Wildwood Drive, Suite 101
Jefferson City, MO 65109
+1 303.524.3030

ADDENDUM NO. 3
TO
CONTRACT DOCUMENTS, SPECIFICATIONS AND PLANS
FOR IMPROVEMENTS TO THE
WASHINGTON COUNTY AIRPORT
MINERAL POINT, MISSOURI
MODOT PROJECT NO. 24-060A-1 & 24-060A-2

To All Bidders: You are requested to make all changes and/or additions contained in this addendum to the Bidding Documents. Failure to acknowledge this Addendum in Proposal shall result in rejection of bid. Bidders are informed that the above referenced Contract Documents, Specifications and Plans are modified as follows as of June 18, 2024:

1. PLANS

G002A - (2 of 150) Index of Drawings
Revision: The Index of Drawings table has been updated
Justification: Sheets G027 through G031 have been added to the index of drawings.

G025 - (15 of 150) Geotechnical Investigation, Bore Logs
Revision: The geotechnical investigation bore logs have been added.
Justification: The geotechnical investigation bore logs have been included in the plan sheets.

G026 - (16 of 150) Geotechnical Investigation, Bore Logs
Revision: The geotechnical investigation bore logs have been added.
Justification: The geotechnical investigation bore logs have been included in the plan sheets.

G027 - (17 of 150) Geotechnical Investigation, Bore Logs
Revision: The geotechnical investigation bore logs have been added and this sheet has been added.
Justification: The geotechnical investigation bore logs have been included in the plan sheets.

G028 - (18 of 150) Geotechnical Investigation, Bore Logs
Revision: The geotechnical investigation bore logs have been added and this sheet has been added.
Justification: The geotechnical investigation bore logs have been included in the plan sheets.

G029 - (19 of 150) Geotechnical Investigation, Bore Logs
Revision: The geotechnical investigation bore logs have been added and this sheet has been added.
Justification: The geotechnical investigation bore logs have been included in the plan sheets.

G030 - (20 of 150) Geotechnical Investigation, Bore Logs
Revision: The geotechnical investigation bore logs have been added and this sheet has been added.
Justification: The geotechnical investigation bore logs have been included in the plan sheets.

Woolpert, Inc.
931 Wildwood Drive
Jefferson City, MO 65109-5719
573.636.3200

G031 - (21 of 150) Geotechnical Investigation, Bore Logs
Revision: The geotechnical investigation bore logs have been added and this sheet has been added.
Justification: The geotechnical investigation bore logs have been included in the plan sheets.

The final questions will be accepted until 4:00 p.m. (CT) Thursday, June 20, 2024.

**** END OF ADDENDUM NO. 3 ***

Woolpert, Inc.
931 Wildwood Drive
Jefferson City, MO 65109-5719
573.636.3200

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ISSUED FOR BID

THESE DRAWINGS ARE FOR PURPOSES ONLY. THEY WERE PREPARED BY OR UNDER THE SUPERVISION OF:

LAURA K. KOONCE	2022012014	05/28/24
NAME	REG. NO.	DATE

FOR AND ON BEHALF OF WOOLPERT

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.
DR: V.S.B.
CH: C.L.G.
APP: L.K.K.

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/24	ISSUED FOR BID
2	L.K.K.	06/11/2024	ADDENDUM NO. 1
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION & WIDENING AND APRON RECONSTRUCTION

INDEX OF DRAWINGS

SHEET NAME: G002A

SHEET NO.: 2 of 150

MoDOT PROJ. NO. 24-060A-1 & 24-060A-2

WOOLPERT PROJ. NO. 1015274

LOG OF BORING NO. B-01

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.0")										
				FILL: Light and dark gray, gravel (GP)										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	61		2 5 5	>4.5			37			
		SS-2			81		3 4 4	4.00			36	125	30	95
5		SS-3			61		10 9 15				32			
		SS-4			56		10 13 11				33			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/6/24
Date Boring Completed: 5/6/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-02

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (2.5")										
				FILL: Tan and dark gray, gravelly CLAY (CL), with sand										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	89		5 9 8	>4.5			17			
		SS-2			56		2 3 4	2.75			20			
5		SS-3			100		2 3 5	2.50			36			
		SS-4			100		2 3 3	2.25			43			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/6/24
Date Boring Completed: 5/6/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-03

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.0")										
				FILL: Dark gray, gravelly CLAY (CL), with sand										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel - reddish brown and gray from 1.2 to 5.0 ft.	56		2 1 4	0.25			20			
		SS-2			33		1 1 4	0.25			20			
5		SS-3			17		5 5 6				28			
		SS-4			83		3 6 6	>4.5			37			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/6/24
Date Boring Completed: 5/6/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-04

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (4.0")										
				Aggregate Base (4.0")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, trace chert gravel	6		50/1"				14			
		ST-2		- brown and gray, trace wood fragments at 3.0 ft	48			4.25			17	52	16	36
5		SS-3		Reddish brown, fat CLAY (CH), trace sand, trace chert gravel	100		7 8 6				41			
		SS-4			100		2 3 4	2.75			34			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/7/24
Date Boring Completed: 5/7/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling. Offset 10.0 ft East of proposed location.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-05

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.5")										
				Aggregate Base (4.0")										
		SS-1		Reddish brown, lean CLAY (CL), trace gravel and sand	89		19 22 19				15	30	16	14
		SS-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	89		5 10 8				12			
5		SS-3			94		4 7 9				29			
		SS-4			89		6 5 6	2.50			22			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/7/24
Date Boring Completed: 5/7/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-06

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.25")										
				FILL: Brown, lean CLAY (CL), with gravel, trace sand										
		SS-1		Gray and brown, lean CLAY (CL), trace sand and gravel	61		1 2 3	1.00			29			
		SS-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	94		1 2 2	1.25			28	63	17	46
5		ST-3			73			4.50	0.79	106	19			
		SS-4			81		4 6 8	3.75			40			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/7/24
Date Boring Completed: 5/7/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-07

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (2.75")										
				Aggregate Base (4.0")										
		SS-1		Reddish brown, fat CLAY (CH), with chert gravel, trace sand	89		1 1 3	0.75			23			
		SS-2			86		1 1 2	0.25			29			
5		SS-3			33		1 N N				26			
		SS-4		- gray and brown below 8.5 ft. - trace wood fragments from 8.5 to 10.0 ft.	100		1 1 3	2.00			27			
10		SS-5			17		WH WH WH							
15				Boring terminated at 12.0 ft.										
20														
25														

Completion Depth: 12.0
Date Boring Started: 5/7/24
Date Boring Completed: 5/7/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

NOTE: ENTIRE SHEET HAS BEEN REVISED 4

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.	
DR: V.S.B.	
CH: C.L.G.	
APP: L.K.K.	

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/2024	ISSUED FOR BID
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION & WIDENING AND APRON RECONSTRUCTION

GEOTECHNICAL INVESTIGATION
BORE LOGS

SHEET NAME
G025

SHEET NO.
15 of 150

MoDOT PROJ. NO.
24-060A-1 & 24-060A-2

WOOLPERT PROJ. NO.
1015274

LOG OF BORING NO. B-08

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.25")										
		SS-1		Brown and gray, lean CLAY (CL),trace sand, with gravel	56		2 4 12	4.00			13			
5		SS-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	72		6 10 7	3.50			19			
		SS-3			92		2 3 4	1.75			37			
		SS-4			94		2 4 6	2.00			43			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/8/24
Date Boring Completed: 5/8/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-09

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				FILL: Brown and reddish brown, fat CLAY (CH), trace sand and gravel										
		SS-1			44		2 3 3	3.00			10			
5		SS-2		Reddish brown and gray, fat CLAY (CH), with chert gravel, trace sand	33		2 2 3	3.00			31	157	34	123
		ST-3												
		SS-4			67		2 4 5	2.00			20			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: EV/SLY
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-10

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (4.0")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	78		4 6 8	3.00			25			
5		SS-2			83		2 4 6	2.75			34			
		SS-3		- no chert gravel from 6.0 to 7.5	100		2 3 3	2.00			53			
		SS-4		- 6" reddish brown and tan, sand lense at 9.5 ft.	100		3 4 5	1.00			39			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/8/24
Date Boring Completed: 5/8/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-11

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.75")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel - reddish brown and gray from 1.0 to 2.5 ft.	83		2 4 12	2.00			23			
5		SS-2			89		5 6 6	4.00			33			
		SS-3		(99% passing No. 200 sieve)	89		38 17 6	2.50			14			
		SS-4			100		2 3 4	1.25			53			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/8/24
Date Boring Completed: 5/8/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-12

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.25")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel - no gravel from 1.0 to 2.5 ft.			1 2 3	2.00			51			
5		SS-2					1 3 3	2.00			46			
		SS-3					1 3 4	2.00			49			
		SS-4					1 9 4	1.50			50			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/8/24
Date Boring Completed: 5/8/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-13

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.75")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, trace chert gravel - no chert gravel from 1.0 to 2.5 ft.	89		2 2 2	1.25			46			
5		SS-2			100		1 2 3	1.50			57			
		ST-3			79			3.75		69	50	150	37	113
		SS-4		- 7.0" tan, coarse sand lense at 8.8 ft.	94		19 9 4	1.75			39			
15		SS-5			81		2 3 6	2.00			49			
		SS-6		Tan and white, coarse grained SAND (SP), trace chert gravel	78		11 10 9				7			
20				Boring terminated at 20.0 ft.										
25														

Completion Depth: 20.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-14

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		SS-1		Reddish brown, fat CLAY (CH), with chert gravel, trace sand	78		4 5 5	2.50			39			
5		SS-2			61		2 2 3	4.25			35			
		SS-3		Brown and reddish brown, clayey SAND (SC), trace chert gravel (36% passing No. 200 sieve)	100		5 13 50/3"				21			
		SS-4			0		50/1"				3			
10				Boring terminated at 8.6 ft.										
15														
20														
25														

Completion Depth: 8.6
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: EV/SLY
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

NOTE: ENTIRE SHEET HAS BEEN REVISED 4

Plotted: June 18, 2024 @ 10:55 AM by: Bansal, Violett
I:\18WC\24-060a-1 apron reconstruct\CAD\PLANS\900-BWC-23-060A-1-G020-BORE.dwg

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.	
DR: V.S.B.	
CH: C.L.G.	
APP: L.K.K.	

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/2024	ISSUED FOR BID
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION
& WIDENING AND APRON
RECONSTRUCTION

GEOTECHNICAL INVESTIGATION
BORE LOGS

SHEET NAME
G026

SHEET NO.
16 of 150

MoDOT PROJ. NO.
24-060A-1 & 24-060A-2

WOOLPERT PROJ. NO.
1015274

LOG OF BORING NO. B-15

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.0")										
		SS-1		FILL: Reddish brown and brown, fat CLAY (CH), trace sand, with chert gravel - trace chert gravel from 3.0 to 5.0 ft.	81		1 2 4	2.75			46			
		ST-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	58			4.00	0.63	74	49	115	34	81
5		SS-3		Tan and white, clayey GRAVEL (GC), with sand (33% passing No. 200 sieve)	67		8 11 7				16			
		SS-4			89		8 9 24				7			
		SS-5		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	100		20 26 50/1"				3			
10		SS-6			100		9 8 15				6			
		RUN-1		core loss due to washout	0	0								
15														
				Boring terminated at 17.8 ft.										
20														
25														

Completion Depth: 20.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-16

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.0")										
		SS-1		Brown, lean CLAY (CL), trace sand and gravel	6		4 7 8				18			
		SS-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	81		1 2 3	2.00			49			
5		SS-3			100		1 3 3	2.00			47			
		SS-4			94		2 4 8	3.00			44			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-17

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (2.75")										
		SS-1		Gray and brown, lean CLAY (CL), trace sand - trace fine roots from 1.0 to 2.5 ft.	89		1 2 3	1.75			23			
		SS-2		- trace gravel from 3.5 to 5.0 ft.	89		1 3 3	1.25			24			
5		SS-3		Brown, fat CLAY (CH), trace sand, with chert gravel	100		1 3 4	2.00			23			
		SS-4			100		2 6 12	3.00			23			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-18

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.25")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel - reddish brown and gray, from 1.0 to 5.0 ft. - trace fine roots from 1.0 to 2.5 ft.	89		2 2 2	1.25			31			
		ST-2			67			2.75	0.55	98	25	59	17	42
5		SS-3			89		2 3 9	3.00			19			
		SS-4			67		3 6 9	3.25			38			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-19

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.0")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel - reddish brown and gray, from 1.0 to 5.0 ft.	83		2 2 1	<0.25			34			
		SS-2			67		WH 1 3	1.50			34			
5		SS-3		- trace chert gravel, and fine roots from 6.0 to 7.5 ft.	89		1 3 3	2.50			20			
		SS-4			100		1 3 4	1.50			16			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-20

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (2.75")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel - reddish brown and gray, from 1.0 to 5.0 ft.	56		1 3 2	2.50			24			
		SS-2			81		2 2 2	2.00			39			
5		SS-3			11		3 3 3	1.00			22			
		SS-4			78		1 1 2	<0.25			22			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/10/24
Date Boring Completed: 5/10/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

LOG OF BORING NO. B-21

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (2.5")										
		SS-1		Reddish brown and gray, fat CLAY (CH), trace sand, with chert gravel	72		1 1 2	<0.25			35			
		SS-2			56		1 2 3	1.75			38			
5		SS-3			89		1 5 6	4.25			26			
		SS-4			61		2 3 3	2.50			22			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/10/24
Date Boring Completed: 5/10/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

NOTE: ENTIRE SHEET HAS BEEN REVISED 4

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.
DR: V.S.B.
CH: C.L.G.
APP: L.K.K.

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/2024	ISSUED FOR BID
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION & WIDENING AND APRON RECONSTRUCTION

GEOTECHNICAL INVESTIGATION
BORE LOGS

MoDOT PROJ. NO. 24-060A-1 & 24-060A-2

WOOLPERT PROJ. NO. 1015274

SHEET NAME G027

SHEET NO. 17 of 150

Plotted: June 18, 2024 @ 10:55 AM by: Bansal, Violett
I:\8WC024-060a-1 apron reconstruct\CAD\PLANS\000-8WC-23-060A-1-G020-BORE.dwg

LOG OF BORING NO. B-22

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.0")										
				Reddish brown and gray, fat CLAY (CH), trace sand, with chert gravel										
		SS-1			72		2 2 2	1.25			36			
		SS-2			56		2 4 4	1.25			42			
5		ST-3			67				0.30					
		SS-4		- white to gray, trace chert gravel and limestone gravel below 8.5 ft.	78		1 4 5	3.50			23			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/10/24
Date Boring Completed: 5/10/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-23

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.25")										
				Reddish brown, fat CLAY (CH), trace sand, with chert gravel										
		SS-1			44		2 2 2	1.75			25			
		SS-2		- reddish brown and gray, below 3.5 ft.	78		1 3 3	1.50			23	133	29	104
5		SS-3			61		2 5 7	2.00			30			
		SS-4			89		1 3 3	2.50			24			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/10/24
Date Boring Completed: 5/10/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-24

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (2.5")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	39		2 2 2	1.50			17			
		SS-2		- reddish brown and gray, below 3.5 ft.	89		1 3 3	1.25			32			
5		SS-3			72		1 3 3	2.50			25			
		SS-4			72		1 2 4	0.50			38			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/10/24
Date Boring Completed: 5/10/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-25

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				FILL: Brown, reddish brown, and gray, fat CLAY (CH), with sand and gravel										
		SS-1			50		2 3 3	2.75			20			
		ST-2		Reddish brown, brown, and gray, fat CLAY (CH), trace sand and chert gravel - no sand from 4.2 to 5.0 ft.	63			0.75	0.57	91	36	64	18	46
5		SS-3			72		1 2 2	1.50			29			
		SS-4		- reddish brown, with sand and chert gravel below 8.5 ft.	78		2 3 3	1.50			36			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: EV/SLY
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-26

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Reddish brown, fat CLAY (CH), trace sand, with chert gravel - trace fine roots from 1.0 to 5.0 ft.										
		SS-1			67		1 2 2	0.50			26			
		SS-2			50		WH 1 2	0.25			46	116	29	87
5		SS-3			39		WH 1 1	<0.25			28			
		SS-4			83		1 3 5	1.00			24			
10														
		SS-5		- gray, from 13.9 to 15.0 ft.	100		2 2 4	0.75			24			
15														
		SS-6			100		3 4 6	3.50			30			
20				Boring terminated at 10.0 ft.										
25														

Completion Depth: 10.0
Date Boring Started: 5/10/24
Date Boring Completed: 5/10/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-27

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Red and brown, fat CLAY (CH), with sand and gravel										
		SS-1			39		1 3 8	2.50			13			
		SS-2		-gravelly from 3.5 to 5.0 ft.	44		4 4 5	2.50			22	57	24	33
5		SS-3		-trace sand below 6.0 ft.	61		2 5 6	3.00			53			
		SS-4			80		3 4 7	2.00			40			
10				Gray, highly weathered LIMESTONE										
				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: EV/SLY
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-28

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		AUGER		Reddish brown, fat CLAY (CH), trace gravel - trace fine roots from 0 to 1.5 ft.										
		GB-1		Boring terminated at 3.5 ft.										
5														
10														
15														
20														
25														

Completion Depth: 3.0
Date Boring Started: 5/17/24
Date Boring Completed: 5/17/24
Engineer/Geologist: J. Eifert
Project No.: 20241060.00

Remarks: Boring drilled with powered Hand Auger, using FA. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

NOTE: ENTIRE SHEET HAS BEEN REVISED 4

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.
DR: V.S.B.
CH: C.L.G.
APP: L.K.K.

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/2024	ISSUED FOR BID
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION & WIDENING AND APRON RECONSTRUCTION

GEOTECHNICAL INVESTIGATION
BORE LOGS

SHEET NAME
G028

SHEET NO.
18 of 150

MoDOT PROJ. NO.
24-060A-1 & 24-060A-2

WOOLPERT PROJ. NO.
1015274

LOG OF BORING NO. B-29

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		AUGER		Reddish brown, fat CLAY (CH), trace gravel - trace fine roots from 0 to 1.5 ft.										
		GB-1										48	20	28
				Boring terminated at 3.5 ft.										

Completion Depth: 3.0
Date Boring Started: 5/17/24
Date Boring Completed: 5/17/24
Engineer/Geologist: J. Efert
Project No.: 20241060.00

Remarks: Boring drilled with powered Hand Auger, using FA.
Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-30

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (5.0")										
		SS-1		Tan, lean CLAY (CL), trace sand and gravel - trace fine roots from 1.0 to 2.5 ft.	67		2 3 3	0.50			22			
		ST-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	44			1.00			12	84	26	58
5		SS-3			94		11 4 4	3.50			25			
		SS-4			100		3 3 6	3.50			51			
10				Boring terminated at 10.0 ft.										

Completion Depth: 10.0
Date Boring Started: 5/13/24
Date Boring Completed: 5/13/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT.
Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-31

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.75")										
		SS-1		Gray, lean CLAY (CL), trace sand and gravel - trace fine roots from 1.0 to 5.0 ft.	67		1 2 2	0.50			23	66	19	47
		SS-2			44		1 1 2	1.00			25			
5		SS-3		- sandy below 6.0 ft.	94		4 7 7	3.50			25			
		SS-4		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	100		14 4 7 8	3.50			28			
10				Boring terminated at 10.0 ft.										

Completion Depth: 10.0
Date Boring Started: 5/13/24
Date Boring Completed: 5/13/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT.
Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-32

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.5")										
		SS-1		Brown and gray, lean CLAY (CL), trace sand and gravel - trace fine roots from 1.0 to 5.0 ft.	100		2 5 8	2.50			19			
		SS-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	83		11 17 15	2.50			15			
5		SS-3			100		4 5 6	4.50			35			
		SS-4			100		2 4 6	3.00			42			
10				Boring terminated at 10.0 ft.										

Completion Depth: 10.0
Date Boring Started: 5/13/24
Date Boring Completed: 5/13/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT.
Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-33

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (4.75")										
		SS-1		Brown and gray, lean CLAY (CL), trace sand and gravel	100		9 16 21	2.00			19			
		SS-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	89		10 9 9				27			
5		SS-3			100		2 3 4	1.75			52			
		SS-4			100		2 4 5	2.50			50			
10				Boring terminated at 10.0 ft.										

Completion Depth: 10.0
Date Boring Started: 5/13/24
Date Boring Completed: 5/13/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT.
Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-34

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.5")										
		SS-1		Gray, lean CLAY (CL), trace sand and gravel - trace fine roots from 1.0 to 2.5 ft.	89		1 1 2	0.50			29			
		SS-2		- tan and gray below 3.5 ft.	94		3 8 20	1.00			18	28	15	13
5		SS-3		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	89		3 4 6	2.00			35			
		SS-4			100		2 3 4	3.00			49			
10				Boring terminated at 10.0 ft.										

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT.
Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-35

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Portland cement concrete (4.25")										
		SS-1		FILL: Gray, lean CLAY (CL), trace sand and gravel - trace fine roots from 1.0 to 2.5 ft.	6		5 4 2				12			
		SS-2		FILL: Brown, poorly graded clayey GRAVEL (GC) (18% passing No. 200 sieve)	22		1 2 1				14			
5		SS-3		Reddish brown, fat CLAY (CH), trace sand, with chert gravel - gravelly from 6.0 to 7.5 ft.	89		4 14 12	3.50			21			
		SS-4			83		3 7 8	2.50			24			
10				Boring terminated at 10.0 ft.										

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT.
Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

NOTE: ENTIRE SHEET HAS BEEN REVISED 4

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.
DR: V.S.B.
CH: C.L.G.
APP: L.K.K.

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/2024	ISSUED FOR BID
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION
& WIDENING AND APRON
RECONSTRUCTION

GEOTECHNICAL INVESTIGATION
BORE LOGS

MoDOT PROJ. NO.
24-060A-1 & 24-060A-2

WOOLPERT PROJ. NO.
1015274

SHEET NAME
G029

SHEET NO.
19 of 150

LOG OF BORING NO. B-36

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (4.0")										
		SS-1		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	89		3 4 6	1.50			23			
5		SS-2			61		2 3 2	0.50			25			
		ST-3		- reddish brown and gray below 3.0 ft.	83			2.00	0.14	97	27			
10		SS-4			78		1 4 2	1.00			19			
				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/13/24
Date Boring Completed: 5/13/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-37

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.75")										
		SS-1		FILL: Reddish brown and brown, fat CLAY (CH), trace sand and asphalt chunks, with gravel	50		3 3 2	2.50			27			
		ST-2		Reddish brown, fat CLAY (CH), trace sand, with chert gravel	79			2.25	0.78	104	25			
5		SS-3		- reddish brown and gray from 6.0 to 7.5 ft.	94		2 3 3	1.00			40			
		SS-4		- gray from 8.5 to 10.0 ft.	78		2 3 2	0.50			29			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-38

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.75")										
		SS-1		FILL: Reddish brown, lean CLAY (CL), with sand and chert gravel	11		2 2 N				27			
		SS-2			6		2 2 3				24			
5		SS-3		Reddish brown, sandy fat CLAY (CH), with chert gravel	100		6 12 16	>4.50			12			
		SS-4			83		5 20 23	>4.50			22			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-39

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.25")										
		SS-1		Reddish brown, fat CLAY (CH), trace chert gravel and sand	31		1 1 2	0.75			45	120	32	88
		SS-2			39		WR 1 3	0.25			51			
5		SS-3			33		1 3 2	1.00			39			
		SS-4			33		2 4 9	0.25			32			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-40

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.75")										
		SS-1		FILL: Reddish brown, fat CLAY (CH), trace sand and chert gravel	67		1 2 2	0.50			29	65	19	46
		SS-2		- gray, reddish brown, and brown below 3.5 ft.	89		1 3 3	2.00			22			
5		SS-3		FILL: Brown and gray, lean CLAY (CL), with sand and gravel	72		1 4 9	1.50			17			
		SS-4		FILL: Reddish brown, fat CLAY (CH), trace sand and chert gravel	100		2 5 8	3.50			21			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-41

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.75")										
		SS-1		Reddish brown and gray, fat CLAY (CH), trace sand and chert gravel	83		1 1 2	1.00			39	104	27	77
		SS-2			78		1 1 2	0.50			39			
5		SS-3		- with sand and chert gravel from 6.0 to 7.5 ft.	50		1 2 6	0.25			38			
		ST-4			83			0.50	0.60					
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/14/24
Date Boring Completed: 5/14/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

LOG OF BORING NO. B-42

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.:**TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Unconfined Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0				Asphaltic concrete (3.25")										
		SS-1		FILL: Reddish brown, fat CLAY (CH), with sand and chert gravel	50		1 1 2	0.50			49			
		SS-2		FILL: Brown and gray, lean CLAY (CL), with sand and gravel	67		1 5 4	1.00			21	39	18	21
5		SS-3		- reddish brown, brown, and gray below 6.0 ft.	100		5 43 21	2.50			15			
		SS-4		Reddish brown, fat CLAY (CH), with sand and chert gravel	100		7 10 9	3.50			15			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/15/24
Date Boring Completed: 5/15/24
Engineer/Geologist: E. Violett
Project No.: 20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

NOTE: ENTIRE SHEET HAS BEEN REVISED 4

Plotted: June 18, 2024 @ 10:55 AM by Bernal, Violett
I:\WO\24-060a-1 apron reconstruct\CAD\PLANS\000-BWC-23-060A-1-G020-BORE.dwg

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.
DR: V.S.B.
CH: C.L.G.
APP: L.K.K.

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/2024	ISSUED FOR BID
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION & WIDENING AND APRON RECONSTRUCTION

GEOTECHNICAL INVESTIGATION
BORE LOGS

MoDOT PROJ. NO. 24-060A-1 & 24-060A-2

WOOLPERT PROJ. NO. 1015274

SHEET NAME G030

SHEET NO. 20 of 150

LOG OF BORING NO. B-43

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.: **TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows per 6 inches	Hand Penetrometer, Qu TSF	Unstrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
				Asphaltic concrete (3.25")										
		SS-1		FILL: Reddish brown and gray, lean CLAY (CL), with gravel	100		50/2"				11			
5		SS-2		- sandy below 3.5 ft. ▽	67		11 9 12				18			
		SS-3		Reddish brown, fat CLAY (CH), trace sand and chert gravel	72		3 4 7				42			
10		SS-4		-with chert gravel below 8.5 ft.	100		2 5 7	4.00			40			
				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth:	10.0
Date Boring Started:	5/15/24
Date Boring Completed:	5/15/24
Engineer/Geologist:	E. Violett
Project No.:	20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater encountered at 4.5 ft. during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

J:\DOT\TULAB_WASHINGTON COUNTY AIRPORT 2024\060.gpj, 6/17/24

LOG OF BORING NO. B-44

Project Description: **Washington County Airport**
Washington County, Missouri

TSI Geotechnical Inc.
1340 North Price Road
St. Louis, Missouri 63132
(314) 373-4000 (314) 227-6622 FAX

Surface El.: **TBD**
Location: **See Site and Boring Location Plan**

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery, %	RQD	Penetration Blows per 6 inches	Hand Penetrometer, Qu TSF	Unstrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
				Asphaltic concrete (3.75")										
		SS-1		FILL: Brown and gray, lean CLAY (CL), trace sand -trace chert and quartz fragments from 1.0 to 2.5 ft.	33		2 2 2	2.50			20			
5		ST-2			58			>4.50			31	33	19	14
		SS-3		Red and brown, lean CLAY (CL), with quartz gravel, trce sand	94		3 5 10	>4.50			29			
10		SS-4		-trace organics below 8.5 ft.	94		3 5 5	2.50			25			
				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth:	10.0
Date Boring Started:	5/15/24
Date Boring Completed:	5/15/24
Engineer/Geologist:	E. Violett
Project No.:	20241060.00

Remarks: Boring drilled with CME-45, using HSA and auto SPT. Groundwater not encountered during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

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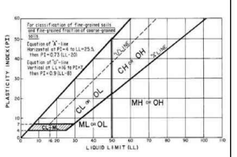
UNIFIED SOIL CLASSIFICATION SYSTEM, (ASTM D-2487)

Major Divisions		*Group Symbols*	*Typical Names*	*Laboratory Classification Criteria*
Coarse-grained soils (More than half of materials is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size) — Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW
	Gravels with fines (Appreciable amount of fines)	GM[a] d / u	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or P.I. less than 4 / Above "A" line with P.I. between 4 and 7 are *borderline* cases requiring use of dual symbols
		GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits below "A" line with P.I. greater than 7
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size) — Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
		SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW
	Sands with fines (Appreciable amount of fines)	SM[a] d / u	Silty sands, sand-mix mixtures	Atterberg limits about "A" line or P.I. less than 4 / Limits plotting in hatched zone with P.I. between 4 and 7 are *borderline* cases requiring use of dual symbols
		SC	Clayey sands, sand-clay mixtures	Atterberg limits about "A" line with P.I. greater than 7
Fine-grained soils (More than half of materials is smaller than No. 200 sieve size)	Silts and clays (Liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity	
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
		OL	Organic silts and organic silty clays of low plasticity	
	Silts and clays (Liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		CH	Inorganic clays of medium to high plasticity, organic silts	
		OH	Organic clays of medium to high plasticity, organic silts	
	Highly organic soils	Pt	Peat and other highly organic soils	

Determining percentage of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-Grained soils are classified as follows: Less than 5 per cent — GW, GP, SW, SP. More than 12 per cent — GM, GC, SM, SC. Borderline cases requiring dual symbols[b]



[a]Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when L.L. is 26 or less and the P.I. is 6 or less; the suffix u used when L.L. is greater than 28.
[b]Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well-graded gravel-sand mixture with clay binder.
T:\Geotechnical Group\Notes for Geotech Reports\Unified Soil Classifications System2.doc

GENERAL NOTES

The number of borings is based on: topographic and geologic factors; the magnitude of structure loading; the size, shape, and value of the structure; consequences of failure; and other factors. The type and sequence of sampling are selected to reduce the possibility of undiscovered anomalies and maintain drilling efficiency. Attempts are made to detect and/or identify occurrences during drilling and sampling such as the presence of water, boulders, gas, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation in resistance to driving split-spoon samplers, unusual odors, etc. However, lack of notation regarding these occurrences does not preclude their presence.

Although attempts are made to obtain stabilized groundwater levels, the levels shown on the Logs of Boring may not have stabilized, particularly in more impermeable cohesive soils. Consequently, the indicated groundwater levels may not represent present or future levels. Groundwater levels may vary significantly over time due to the effects of precipitation, infiltration, or other factors not evident at the time indicated.

Unless otherwise noted, soil classifications indicated on the Logs of Boring are based on visual observations and are not the result of classification tests. Although visual classifications are performed by experienced technicians or engineers, classifications so made may not be conclusive.

Generally, variations in texture less than one foot in thickness are described as layers within a stratum, while thicker zones are logged as individual strata. However, minor anomalies and changes of questionable lateral extent may appear only in the verbal description. The lines indicating changes in strata on the Logs of Boring are approximate boundaries only, as the actual material change may be between samples or may be a gradual transition.

Samples chosen for laboratory testing are selected in such a manner as to measure selected physical characteristics of each material encountered. However, as samples are recovered only intermittently and not all samples undergo a complete series of tests, the results of such tests may not conclusively represent the characteristics of all subsurface materials present.

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NOTATION USED ON BORING LOGS

APPROXIMATE PROPORTIONS

TRACE	<15%
WITH	15-30%
MODIFIER	>30%

Clay or clayey may be used as major material or modifier, regardless of relative proportions, if the clay content is sufficient to dominate the soil properties.

PARTICLE SIZE

BOULDERS		>12 Inches
COBBLES		12 Inches – 3 Inches
GRAVEL		
	Coarse	3 Inches – ¾ Inch
	Fine	¾ Inch – No. 4 Sieve (4.750 mm)
SAND		
	Coarse	No. 4 – No. 10 Sieve (2.000 mm)
	Medium	No. 10 – No. 40 Sieve (0.420 mm)
	Fine	No. 40 – No. 200 Sieve (0.074 mm)
SILT		No. 200 Sieve - 0.002 mm
CLAY		< 0.002 mm

PENETRATION – BLOWS

Number of impacts of a 140-pound hammer falling a distance of 30 inches to cause a standard split-barrel sampler, 1 3/8 inches I.D., to penetrate a distance of 6 inches. The number of impacts for the first 6 inches of penetration is known as the seating drive. The sum of the impacts for the last 12 inches of penetration is the Standard Penetration Test Resistance or "N" value, blows per foot. For example, if blows = 6-8-9, "N" = 8+9 or 17.

OTHER NOTATIONS

Recovery % – length of recovered soil divided by length of sample attempted.

50/2"	Impacts of hammer to cause sampler to penetrate the indicated number of inches
WR	Sampler penetrated under the static loading of the weight of the drill rods
WH	Sampler penetrated under the static loading the weight of the hammer and drill rods
HSA	Hollow stem auger drilling method
FA	Flight auger drilling method
RW	Rotary wash drilling methods with drilling mud
AH	Automatic hammer used for Standard Penetration Test sample
SH	Safety hammer with rope and cathead used for Standard Penetration Test sample

GRAPHIC SYMBOLS

- ▽ Depth at which groundwater was encountered during drilling
- ▼ Depth at which groundwater was measured after drilling
- Standard Penetration Test Sample, ASTM D1586
- 3-inch diameter Shelby Tube Sample, ASTM D1587
- G Sample grabbed from auger
- NX Size rock core sample

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NOTE: ENTIRE SHEET HAS BEEN REVISED 4

WOOLPERT

WASHINGTON COUNTY AIRPORT

DES: N.B.B.
DR: V.S.B.
CH: C.L.G.
APP: L.K.K.

ISSUE RECORD

NO.	BY	DATE	DESCRIPTION
1	L.K.K.	05/28/2024	ISSUED FOR BID
4	L.K.K.	06/18/2024	ADDENDUM NO. 3

RUNWAY 2/20 RECONSTRUCTION & WIDENING AND APRON RECONSTRUCTION

GEOTECHNICAL INVESTIGATION
BORE LOGS

MoDOT PROJ. NO. 24-060A-1 & 24-060A-2
WOOLPERT PROJ. NO. 1015274

SHEET NAME G031

SHEET NO. 21 of 150

Plotted: June 18, 2024 @ 10:55 AM by Barnal, Violet
I:\8WC024-060a-1 apron reconstruct\CAD\PLANS\000-8WC-23-060A-1-G020-BORE.dwg