



Integrated Testing and Engineering Company of San Antonio, L.P.
Geotechnical & Environmental Engineering • Construction Services • Geologic Assessment

E.A. Palaniappan, Ph.D., P.E.
Murali Subramaniam, Ph.D., P.E.
Kausi Subramaniam, B.S.

November 9, 2023

Boerne Medical Center, LTD
C/o:
Barry Sanditen
500 N. Cap. of Tex. Hwy. Bldg. 7
Austin, TX 78746
Barry@sanditen.com
Britt@sanditen.com.

Re: Construction Materials Testing
New Street Construction
Boerne Professional Center
Frontage Rd. IH 10 West to Switchback Trail Boerne
Kendall County, Texas 78006

InTEC Project #: S232861-2

Gentlemen:

The Laboratory Compaction and Field Density Tests results at the above referenced project site are presented for your review.

We appreciate and wish to thank you for the opportunity to be of service to you on this project. If we can be of additional assistance, or if you have any questions, please call us.

Respectfully Submitted,
InTEC of San Antonio, L.P.

Murali Subramaniam, Ph.D., P.E.

Copies Submitted: Above (1



11/09/2023



Moisture Density Relationship

InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Client:
V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:
S232861
Boerne Professional Center
29.8139704,-98.7532319
Boerne, TX

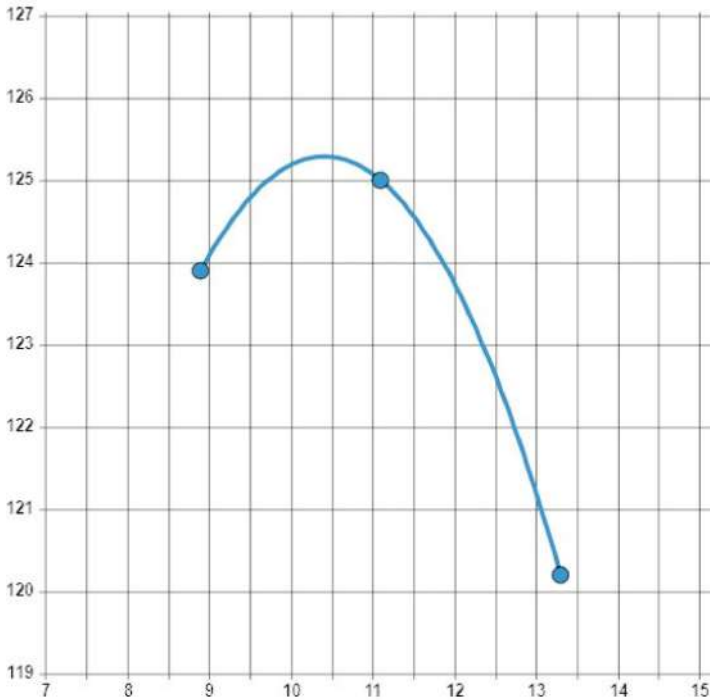
SAMPLE DATA

Sample Number: 22719
Sample Date: 05/25/2023
Technician: Olson, James
Material Use: Utility Backfill
Sample Location: On site backfill
Material Description: Tan to Brown Gravelly Clay

LAB DATA

Test Method: ASTM D1557 - Method C

Proctor Curve:



Maximum Dry Density (pcf): 125.3
Optimum Moisture (%): 10.4
Soil Classification: GC Gravelly Clay

Test Completed Date: 05/30/2023

Test Completed By: Efediya, Eugene



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SAMPLE DATA

Sample Number: 24032

Sample Date: 08/23/2023

Technician: Cisneros, Ramiro

Material Use: Street Base

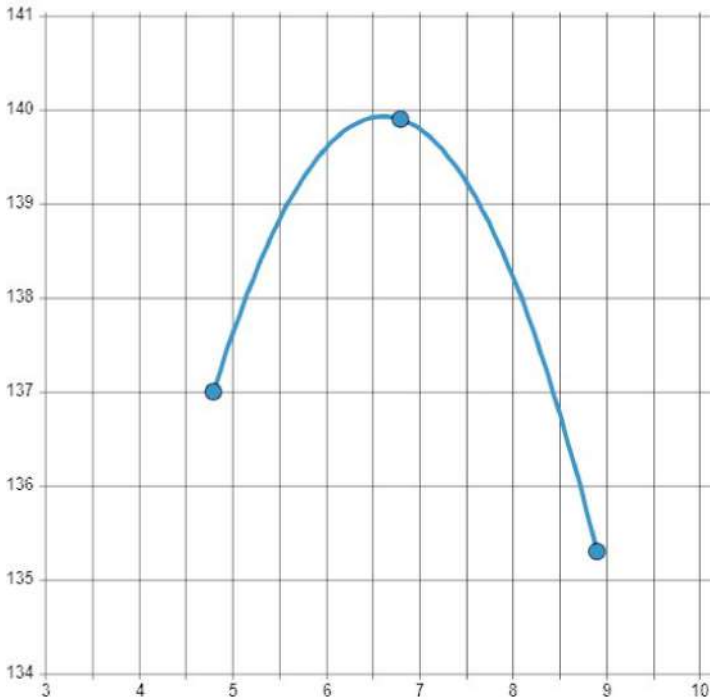
Sample Location: Stockpile

Material Description: Base

LAB DATA

Test Method: ASTM D1557 - Method C

Proctor Curve:



Maximum Dry Density (pcf): 139.9

Optimum Moisture (%): 6.6

Soil Classification: GC-A2 Crushed Limestone

Test Completed Date: 08/29/2023

Test Completed By: Efediya, Eugene

REPORT OF ASPHALT LABORATORY TESTS



Project Number	S232861			Date Sampled	9/28/2023		
Project Name	Boerne Professional Center						
Tested For	V.K. Knowlton Construction and Utilities, Inc.			Vendor	Texas Materials		
Material Description	Type D Hot Mix Asphalt			Soil ID	7		

Tex-227-F MAXIMUM SPECIFIC GRAVITY

Rice Specific Gravity	2.460
Maximum Density, PCF	153.5

Tex-236-F ASPHALT CONTENT

Asphalt Content	5.2
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Tex-207-F BULK SPECIFIC GRAVITY

SPECIMEN #	1	2	3
BULK SPECIFIC GRAVITY	2.361	2.361	2.361
DENSITY %	96.0	96.0	96.0
AVG. BULK DENSITY	96.0		

Tex-200-F SIEVE ANALYSIS

Size	% Passing	TxDOT Spec.
		Item 341
3"		
2 1/2"		
1 3/4"		
1"		
3/4"		
1/2"	99.5	98-100
3/8"	97.4	85-100
No. 4	69.4	50-70
No. 8	41.4	35-46
No. 16		-
No. 30	25.1	15-29
No. 50	15.0	7-20
No. 80		-
No. 100		-
No. 200	4.5	2-7

Notes:

Respectfully submitted.
InTEC of San Antonio, L.P.

for *murali* E. A. "Paul" Palaniappan Ph.D., P.E.

Integrated Engineering and Testing Company of San Antonio, L.P.

12028 Radium, San Antonio, Texas 78216

Phone: (210) 525-9033

Fax: (210) 525-9032



InTEC of San Antonio
12028 Radium
San Antonio, TX 78216
Phone: 210-525-9033

Compaction Evaluation

Report Date: 09/08/2023
Test Method: ASTM D6938, Tex 115E

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
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Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
95		08/22/23	22719		GC	10.4	125.3	9.3	122.8	134.2	4	98	95	C
96		08/22/23	22719		GC	10.4	125.3	10.1	123.6	136.1	4	99	95	C
97		08/22/23	22719		GC	10.4	125.3	9.8	123.6	135.7	4	99	95	C
98		08/22/23	22719		GC	10.4	125.3	9.4	125.5	137.3	4	100	95	C
99		08/22/23	22719		GC	10.4	125.3	9.3	126.1	137.8	4	101	95	C
100		08/22/23	22719		GC	10.4	125.3	10.2	123.1	135.7	4	98	95	C
101		08/22/23	22719		GC	10.4	125.3	9.3	124.6	136.2	4	99	95	C
102		08/22/23	22719		GC	10.4	125.3	9.4	123.9	135.5	4	99	95	C
Test Information														
Test #	Test Location						Elevation	Reference	Gauge Make / Model / SN / Calibrated			Field Technician		
95	Streets - Subgrade: Switchback Trail STA 14+00, CL							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
96	Streets - Subgrade: Switchback Trail STA 15+00, 5' off RHS							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
97	Streets - Subgrade: Switchback Trail STA 15+00, 5' off LHS							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
98	Streets - Subgrade: Switchback Trail STA 16+00, 5' off RHS							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
99	Streets - Subgrade: Switchback Trail STA 16+00, 5' off LHS							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
100	Streets - Subgrade: Switchback Trail STA 17+00, CL							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
101	Streets - Subgrade: Switchback Trail STA 18+00, 5' off RHS							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
102	Streets - Subgrade: Switchback Trail STA 18+65, CL							Subgrade	Troxler / 3430 / 62183 / 08/29/2022			Cisneros, Ramiro		
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
Testing directed by the City Inspector when present.
Test results apply only to the specific locations and materials noted and may not represent any other locations or elevations.



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Test Results														
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117		08/28/23	24032		GC-A2	6.6	139.9	5.9	140.6	148.9	4	101	100	C
118		08/28/23	24032		GC-A2	6.6	139.9	6.2	141.8	150.6	4	101	100	C
119		08/28/23	24032		GC-A2	6.6	139.9	5.7	142.2	150.3	4	102	100	C
120		08/28/23	24032		GC-A2	6.6	139.9	6.0	141.1	149.6	4	101	100	C
121		08/28/23	24032		GC-A2	6.6	139.9	6.6	142.8	152.2	4	102	100	C
130		09/01/23	24032		GC-A2	6.6	139.9	5.8	140.7	148.9	4	101	100	C
131		09/01/23	24032		GC-A2	6.6	139.9	6.2	139.7	148.4	4	100	100	C
132		09/01/23	24032		GC-A2	6.6	139.9	6.1	141.7	150.3	4	101	100	C
Test Information														
Test #	Test Location						Elevation	Reference	Gauge Make / Model / SN / Calibrated			Field Technician		
117	Streets - Base: Switchback trail, STA 14+00 @ 5'from RHS							1st Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
118	Streets - Base: Switchback trail, STA 15+50 @ inbound center							1st Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
119	Streets - Base: Switchback trail, STA 15+50 @ outbound center							1st Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
120	Streets - Base: Switchback trail, STA 17+00 @ 5'from LHS							1st Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
121	Streets - Base: Switchback trail, STA 18+50 @ center (cal-de-sac)							1st Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
130	Streets - Base: Switchback trail, STA 14+00 @ 5'from RHS							2nd Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
131	Streets - Base: Switchback trail, STA 15+50 @ center of inbound lane (Island)							2nd Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
132	Streets - Base: Switchback trail, STA 15+50 @ center of outbound lane (Island)							2nd Lift	Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald		
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
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Compaction Evaluation

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Test Results														
Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	In Place Wet Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
133		09/01/23	24032		GC-A2	6.6	139.9	7.0	142.4	152.4	4	102	100	C
134		09/01/23	24032		GC-A2	6.6	139.9	5.9	140.3	148.6	4	100	100	C
Test Information														
Test #	Test Location						Elevation	Reference		Gauge Make / Model / SN / Calibrated			Field Technician	
133	Streets - Base: Switchback trail, STA 17+00 @5 from LHS							2nd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
134	Streets - Base: Switchback trail, STA18+45 @ center of cal-de-sac							2nd Lift		Troxler / 3430 / 38292 / 07/26/2023			Pereida, Gerald	
Remarks				Comments										
C: Compliant				Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.										

Testing performed when called in.
InTEC did not observe the installation of the material.
Testing directed by the City Inspector when present.
Test results apply only to the specific locations and materials noted and may not represent any other locations or elevations.



InTEC of San Antonio
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San Antonio, TX 78216
Phone: 210-525-9033

Asphalt Compaction Evaluation

Report Date: 11/08/2023

Test Method:

Client:

V.K. Knowlton Construction and Utilities, Inc.
18225 FM 2252
San Antonio, TX 78266

Project:

S232861
Boerne Professional Center
29.8139704, -98.7532319
Boerne, TX

Test Results															
Test #	Retest Of	Test Date	Test Location	Material	Mix Design	Thickness (in)	Max Density (pcf)	Max Density Source	In Place Density (pcf)	Probe Depth (in)	Percent Comp.	Min/Max Comp. (%)	Remark	Gauge SN	Technician
1		09/28/23	Streets - Asphalt: Switchback trail STA 7+00,5'OFF LHS	Type D			153.5	7 / Rice - TxDOT Tex 227F	144.4	Backscatter	94.1	92 / 97	C	30173	Villarreal Sr., Robert
2		09/28/23	Streets - Asphalt: Switchback trail STA 5" off drain	Type D			153.5	7 / Rice - TxDOT Tex 227F	145.1	Backscatter	94.5	92 / 97	C	30173	Villarreal Sr., Robert
3		09/28/23	Streets - Asphalt: Switchback trail center on sac	Type D			153.5	7 / Rice - TxDOT Tex 227F	144.7	Backscatter	94.3	92 / 97	C	30173	Villarreal Sr., Robert
Remarks								Comments							
C: Compliant								Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter"							
Gauge Information															
Gauge SN	Make	Model	Density Count	Moisture Count	Standard Count Date			Last Calibration Date			Last Calibrated By				
30173	Troxler	3430	1620	550	09/28/23			07/26/23			Qal-Tek				

Testing performed when called in by contractor.

InTEC did not observe the installation of the material. Test results apply only to the specific locations and materials noted and may not represent any other locations or elevations.