

ODOT PROFILOGRAPH MACHINE CERTIFICATION

Date: October 22, 2019

Company or Residency: APAC

Operator Name: William Porta

Operator Email: William.Porta@apac.com
(For future notifications)

Supervisor Name: Jian Liu

Supervisor Email: Jian.Liu@apac.com
(For future notifications)

Machine Manufacturer and Type SSI

Machine Serial Number 01.201628

RESULT

Trace No. 1 (East Bound) 45.80

Trace No. 2 (West Bound) 74.76

Signature William Porta

Machine Ordinal _____

SSI Profiler 3.4.4.86
Licensed to APAC Central - Tulsa, OK

Data File: 2023 certification.rsd

Stations: Run 1 - 0+00.0 to 5+28.2
Start GPS: N:4009579.57531775 E:244905.995974874 Z:15S
End GPS: N:4009584.88625754 E:244745.093896633 Z:15S
Run 2 - 0+00.0 to -5+28.1
Start GPS: N:4009580.9215743 E:244580.737586259 Z:15S
End GPS: N:4009575.56293666 E:244741.772126178 Z:15S
Run 3 - 0+00.0 to 5+28.0
Start GPS: N:4009579.76423287 E:244906.065019873 Z:15S
End GPS: N:4009584.6946569 E:244745.316156753 Z:15S
Run 4 - 0+00.0 to -5+28.0
Start GPS: N:4009579.7073805 E:244580.695170556 Z:15S
End GPS: N:4009574.81242876 E:244741.467251425 Z:15S
Run 5 - 0+00.0 to 5+28.1
Start GPS: N:4009579.43265123 E:244906.084723522 Z:15S
End GPS: N:4009584.50976233 E:244745.309429054 Z:15S
Run 6 - 0+00.0 to -5+28.0
Start GPS: N:4009579.8959537 E:244580.576373147 Z:15S
End GPS: N:4009574.81045836 E:244741.534532744 Z:15S

Run Speed (Avg, Max, Min):
Run 1 - 43, 44.1, 41.9 mph
Run 2 - 42.7, 45.2, 39.2 mph
Run 3 - 45.2, 46.4, 43.6 mph
Run 4 - 45.3, 46.8, 42.6 mph
Run 5 - 45.9, 46.4, 44.9 mph
Run 6 - 46.8, 48.6, 43.8 mph

Total Distance:
Run 1 - 528.1 ft
Run 2 - 528.0 ft
Run 3 - 527.9 ft
Run 4 - 527.9 ft
Run 5 - 528.0 ft
Run 6 - 527.9 ft
Total - 3167.8 ft

Date [Paved/Corrected]:
Run 1 - 7/5/2023 1:05:02 PM
Run 2 - 7/5/2023 1:09:59 PM
Run 3 - 7/5/2023 1:11:56 PM
Run 4 - 7/5/2023 1:14:05 PM
Run 5 - 7/5/2023 1:15:57 PM
Run 6 - 7/5/2023 1:17:45 PM

Date Tested:
Run 1 - 7/6/2023 1:05:02 PM
Run 2 - 7/6/2023 1:09:59 PM
Run 3 - 7/6/2023 1:11:56 PM
Run 4 - 7/6/2023 1:14:05 PM
Run 5 - 7/6/2023 1:15:57 PM
Run 6 - 7/6/2023 1:17:45 PM

File Modifications:
Run 1 - No Modifications Found
Run 2 - No Modifications Found
Run 3 - No Modifications Found
Run 4 - No Modifications Found
Run 5 - No Modifications Found
Run 6 - No Modifications Found

Project Parameters
State: Oklahoma
County: TULSA
Contractor: APAC
Pavement Type: Asphalt
Traffic Direction: EB
Highway: RIVERSIDE AIRPORT
Direction of Paving: N/S
Operator: william porta

Calibration Settings
Distance: 325528 encoder counts in 528.0 ft
Track 1:
Height Sensor Type: RoLine 1145, Gocator 2342/1150/1350

Height Sensor Level Reading: 5.95 in.
 Accelerometer Constant: 8562.3405

Filter Settings

Filter Type: Butterworth
 Filter Width: 2.000 ft
 Filter Gain: 1.00

Scallop Parameters

Minimum Height: 0.030 in (Inclusive)
 Minimum Length: 2.000 ft
 Resolution: 0.010 in
 Blanking Band: 0.000 in

Localized Roughness Settings

Simulated Profilograph Data Used for Defects Analysis
 Excluding Defects Less than: 2.0 ft
 Bump Height: 0.40 in
 Bump Width: 25.00 ft

Summary - Run 1 - west lane - Lane 1				
Track 1				
Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	6	7.14	71.39
	5+28.1			
	0+00.0	6	7.14	71.39
	5+28.1			

Summary - Run 2 - Lane 1				
Track 2				
Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	0	4.48	44.80
	-5+28.0			
	0+00.0	0	4.48	44.80
	-5+28.0			

Summary - Run 3 - west run 2 - Lane 1				
Track 1				
Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	7	7.65	76.51
	5+28.0			
	0+00.0	7	7.65	76.51
	5+28.0			

Summary - Run 4 - east 2nd run - Lane 1				
Track 2				
Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	0	4.09	40.91
	-5+28.0			
	0+00.0	0	4.09	40.91
	-5+28.0			

Summary - Run 5 - west 3rd run - Lane 1				
Track 1				
Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	6	7.64	76.40
	5+28.0			
	0+00.0	6	7.64	76.40
	5+28.0			

Summary - Run 6 - east 3rd run - Lane 1				
Track 2				
Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0 -5+28.0	1	5.17	51.71
	0+00.0 -5+28.0	1	5.17	51.71

Defect Locations - Run 1 - By Station									
Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS	
1	Bump	1	1	0+63.3	0+77.9	14.7	0.71	0+70.0	N:4009580.24567335 E:244884.630526059 Z:15S
2	Bump	1	1	0+97.9	1+05.6	7.7	0.45	1+03.6	N:4009580.54464027 E:244874.416507648 Z:15S
3	Bump	1	1	1+27.3	1+31.6	4.3	0.47	1+28.5	N:4009580.766305 E:244866.843734887 Z:15S
4	Bump	1	1	1+43.6	1+54.1	10.5	0.63	1+51.1	N:4009580.96703075 E:244859.98649867 Z:15S
5	Bump	1	1	1+81.9	1+86.2	4.3	0.54	1+84.2	N:4009581.26114636 E:244849.939191079 Z:15S
6	Bump	1	1	3+96.8	4+00.5	3.8	0.56	3+99.0	N:4009583.53953534 E:244784.511863431 Z:15S

Track 1 defects: 6
Total defects: 6

No defects found for Run 2

Defect Locations - Run 3 - By Station									
Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS	
1	Bump	1	1	0+66.0	0+80.8	14.8	0.72	0+75.3	N:4009580.22727216 E:244883.449509334 Z:15S
2	Bump	1	1	1+01.6	1+08.7	7.2	0.47	1+06.6	N:4009580.3954501 E:244874.033111197 Z:15S
3	Bump	1	1	1+28.6	1+34.8	6.3	0.48	1+31.3	N:4009580.62502264 E:244866.508928565 Z:15S
4	Bump	1	1	1+46.3	1+56.7	10.4	0.63	1+53.8	N:4009580.94906837 E:244859.5161747 Z:15S
5	Bump	1	1	1+85.8	1+98.7	12.9	0.44	1+87.6	N:4009581.36706048 E:244849.040930031 Z:15S
6	Bump	1	1	2+38.1	2+42.8	4.8	0.43	2+40.9	N:4009581.85483869 E:244832.770215506 Z:15S
7	Bump	1	1	3+99.0	4+03.5	4.5	0.61	4+02.0	N:4009583.3504464 E:244783.768334674 Z:15S

Track 1 defects: 7
Total defects: 7

No defects found for Run 4

Defect Locations - Run 5 - By Station									
Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS	
1	Bump	1	1	0+66.8	0+81.8	14.9	0.74	0+76.2	N:4009580.11076513 E:244882.916022088 Z:15S
2	Bump	1	1	1+01.2	1+09.5	8.3	0.47	1+07.3	N:4009580.3892792 E:244873.400812923 Z:15S
3	Bump	1	1	1+29.4	1+35.8	6.3	0.48	1+32.1	N:4009580.60835112 E:244865.916647062 Z:15S
4	Bump	1	1	1+47.0	1+57.6	10.6	0.63	1+54.6	N:4009580.80940374 E:244859.048268786 Z:15S
5	Bump	1	1	1+86.1	1+89.2	3.1	0.46	1+87.5	N:4009581.10219599 E:244849.046203905 Z:15S
6	Bump	1	1	3+99.7	4+04.3	4.7	0.62	4+02.8	N:4009583.20763021 E:244783.455180774 Z:15S

Track 1 defects: 6
 Total defects: 6

Defect Locations - Run 6 - By Station									
Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS	
1	Bump	2	1	-2+37.3	-2+47.1	9.8	0.46	-2+40.9	N:4009577.74471173 E:244653.996861847 Z:15S

Track 2 defects: 1
 Total defects: 1

Ruts - Run 1		
Rut #	Station	Avg Depth (in)

Ruts - Run 2		
Rut #	Station	Avg Depth (in)

Ruts - Run 3		
Rut #	Station	Avg Depth (in)

Ruts - Run 4		
Rut #	Station	Avg Depth (in)

Ruts - Run 5		
Rut #	Station	Avg Depth (in)

Ruts - Run 6		
Rut #	Station	Avg Depth (in)

No user events found for Run 1

No user events found for Run 2

No user events found for Run 3

No user events found for Run 4

No user events found for Run 5

No user events found for Run 6

PRI:

Track 1
71.389 in/mi

0+00.0

1-2>
Seg 1
0+00.0
5+28.1
528 ft
PRI 71.389

3>
4>

0.230

5>

0.780

0.440

6>

0.060

0.200

1+00.0

7>

0.570

8>

0.490

9>

0.430

10>

0.310

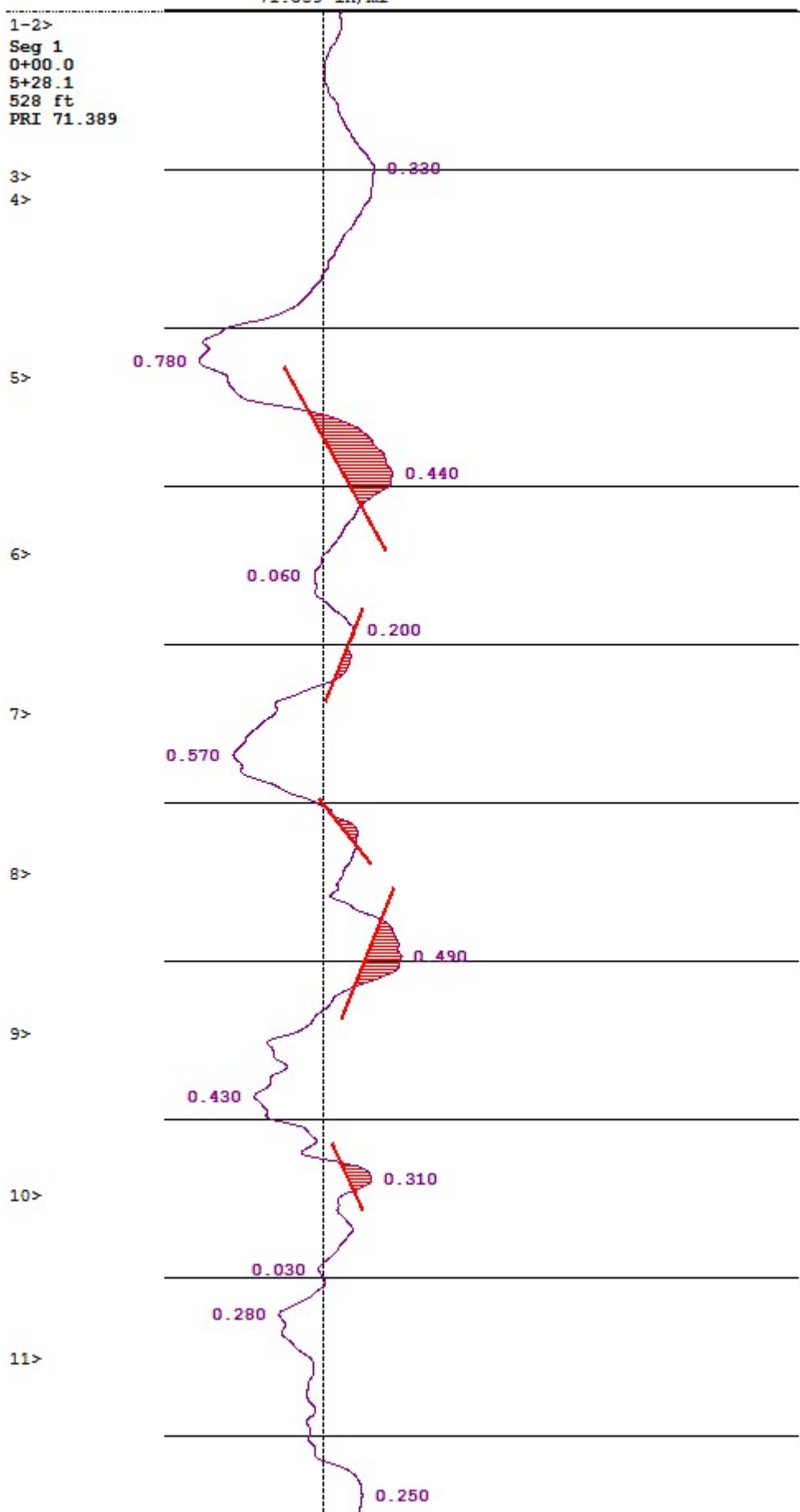
0.030

2+00.0

0.280

11>

0.250



12>

0.140

13>

0.160

14>

0.170

0.230

3+00.0

15>

0.190

0.170

16>

0.360

17>

0.050

0.120

18>

0.140

0.330

4+00.0

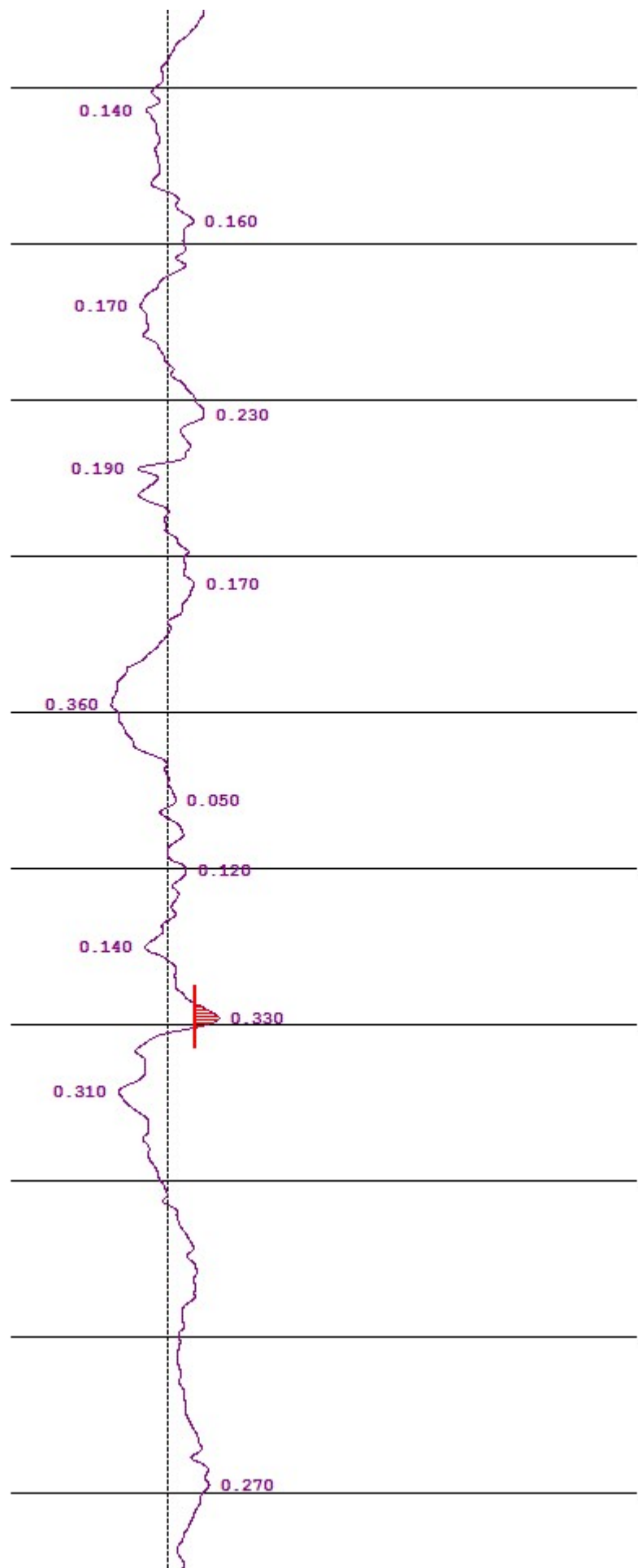
19>

0.310

20>

21>

0.270



22>

5+00.0

0.330

23-24>

Notes - Track 1

1. Start Collection @ 0+00.0

2. N:4009579.66338864 E:244904.525095229 Z:15S

3. Speed @ 0+25.8 ft = 41.9 mph

4. N:4009579.91345111 E:244895.981171708 Z:15S

5. N:4009580.1591347 E:244887.587141373 Z:15S

6. N:4009580.41360124 E:244878.893324025 Z:15S

7. N:4009580.63736348 E:244871.24876031 Z:15S

8. N:4009580.86113244 E:244863.604196423 Z:15S

9. N:4009581.08490812 E:244855.959632368 Z:15S

10. N:4009581.31307848 E:244848.165174723 Z:15S

11. N:4009581.54125582 E:244840.3707169 Z:15S

12. N:4009581.77382838 E:244832.426365473 Z:15S

13. N:4009582.00201983 E:244824.631907291 Z:15S

14. N:4009582.41515121 E:244816.8428633 Z:15S

15. N:4009582.64335664 E:244809.048404929 Z:15S

16. N:4009582.87156904 E:244801.25394638 Z:15S

17. N:4009583.09978844 E:244793.459487649 Z:15S

18. N:4009583.50855875 E:244785.820337214 Z:15S

19. N:4009583.73240282 E:244778.175771745 Z:15S

20. N:4009583.98258943 E:244769.631845427 Z:15S

21. N:4009584.41771743 E:244761.093334446 Z:15S

22. N:4009584.66353123 E:244752.699301335 Z:15S

23. N:4009584.90935313 E:244744.305268015 Z:15S

24. End Collection @ 5+28.1

Data File: 2023 certification.rsrd

Stations: Run 1 - 0+00.0 to 5+28.2

Start GPS: N:4009579.57531775 E:244905.995974874 Z:15S

End GPS: N:4009584.88625754 E:244745.093896633 Z:15S

Run 2 - 0+00.0 to -5+28.1

Start GPS: N:4009580.9215743 E:244580.737586259 Z:15S

End GPS: N:4009575.56293666 E:244741.772126178 Z:15S

Run 3 - 0+00.0 to 5+28.0

Start GPS: N:4009579.76423287 E:244906.065019873 Z:15S

End GPS: N:4009584.6946569 E:244745.316156753 Z:15S

Run 4 - 0+00.0 to -5+28.0

Start GPS: N:4009579.7073805 E:244580.695170556 Z:15S

End GPS: N:4009574.81242876 E:244741.467251425 Z:15S

Run 5 - 0+00.0 to 5+28.1

Start GPS: N:4009579.43265123 E:244906.084723522 Z:15S

End GPS: N:4009584.50976233 E:244745.309429054 Z:15S

Run 6 - 0+00.0 to -5+28.0

Start GPS: N:4009579.8959537 E:244580.576373147 Z:15S

End GPS: N:4009574.81045836 E:244741.534532744 Z:15S

Run Speed (Avg, Max, Min):

Run 1 - 43, 44.1, 41.9 mph

Run 2 - 42.7, 45.2, 39.2 mph

Run 3 - 45.2, 46.4, 43.6 mph

Run 4 - 45.3, 46.8, 42.6 mph

Run 5 - 45.9, 46.4, 44.9 mph

Run 6 - 46.8, 48.6, 43.8 mph

Total Distance:

Run 1 - 528.1 ft
 Run 2 - 528.0 ft
 Run 3 - 527.9 ft
 Run 4 - 527.9 ft
 Run 5 - 528.0 ft
 Run 6 - 527.9 ft
 Total - 3167.8 ft

Date [Paved/Corrected]:

Run 1 - 7/5/2023 1:05:02 PM
 Run 2 - 7/5/2023 1:09:59 PM
 Run 3 - 7/5/2023 1:11:56 PM
 Run 4 - 7/5/2023 1:14:05 PM
 Run 5 - 7/5/2023 1:15:57 PM
 Run 6 - 7/5/2023 1:17:45 PM

Date Tested:

Run 1 - 7/6/2023 1:05:02 PM
 Run 2 - 7/6/2023 1:09:59 PM
 Run 3 - 7/6/2023 1:11:56 PM
 Run 4 - 7/6/2023 1:14:05 PM
 Run 5 - 7/6/2023 1:15:57 PM
 Run 6 - 7/6/2023 1:17:45 PM

File Modifications:

Run 1 - No Modifications Found
 Run 2 - No Modifications Found
 Run 3 - No Modifications Found
 Run 4 - No Modifications Found
 Run 5 - No Modifications Found
 Run 6 - No Modifications Found

Project Parameters

State: Oklahoma
 County: TULSA
 Contractor: APAC
 Pavement Type: Asphalt
 Traffic Direction: EB
 Highway: RIVERSIDE AIRPORT
 Direction of Paving: N/S
 Operator: william porta

Calibration Settings

Distance: 325528 encoder counts in 528.0 ft
 Track 1:
 Height Sensor Type: RoLine 1145, Gocator 2342/1150/1350
 Height Sensor Level Reading: 5.95 in.
 Accelerometer Constant: 8562.3405

Filter Settings

Filter Type: Butterworth
 Filter Width: 2.000 ft
 Filter Gain: 1.00

Scallop Parameters

Minimum Height: 0.030 in (Inclusive)
 Minimum Length: 2.000 ft
 Resolution: 0.010 in
 Blanking Band: 0.000 in

Localized Roughness Settings

Simulated Profilograph Data Used for Defects Analysis
 Excluding Defects Less than: 2.0 ft
 Bump Height: 0.40 in
 Bump Width: 25.00 ft

Summary - Run 1 - west lane - Lane 1				
Track 1				
Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0 5+28.1	6	7.14	71.39
	0+00.0 5+28.1	6	7.14	71.39

Summary - Run 2 - Lane 1

Track 2

Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	0	4.48	44.80
	-5+28.0			
	0+00.0	0	4.48	44.80
	-5+28.0			

Summary - Run 3 - west run 2 - Lane 1

Track 1

Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	7	7.65	76.51
	5+28.0			
	0+00.0	7	7.65	76.51
	5+28.0			

Summary - Run 4 - east 2nd run - Lane 1

Track 2

Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	0	4.09	40.91
	-5+28.0			
	0+00.0	0	4.09	40.91
	-5+28.0			

Summary - Run 5 - west 3rd run - Lane 1

Track 1

Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	6	7.64	76.40
	5+28.0			
	0+00.0	6	7.64	76.40
	5+28.0			

Summary - Run 6 - east 3rd run - Lane 1

Track 2

Segment	Station (ft)	Defects	Rough (in)	PRI (in/mi)
<u>1</u>	0+00.0	1	5.17	51.71
	-5+28.0			
	0+00.0	1	5.17	51.71
	-5+28.0			

Defect Locations - Run 1 - By Station

Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS
1	Bump	1	0+63.3	0+77.9	14.7	0.71	0+70.0	N:4009580.24567335 E:244884.630526059 Z:15S
2	Bump	1	0+97.9	1+05.6	7.7	0.45	1+03.6	N:4009580.54464027 E:244874.416507648 Z:15S
3	Bump	1	1+27.3	1+31.6	4.3	0.47	1+28.5	N:4009580.766305 E:244866.843734887 Z:15S
4	Bump	1	1+43.6	1+54.1	10.5	0.63	1+51.1	N:4009580.96703075 E:244859.98649867 Z:15S
5	Bump	1	1+81.9	1+86.2	4.3	0.54	1+84.2	N:4009581.26114636 E:244849.939191079 Z:15S
6	Bump	1	3+96.8	4+00.5	3.8	0.56	3+99.0	N:4009583.53953534 E:244784.511863431 Z:15S

Track 1 defects: 6

Total defects: 6

No defects found for Run 2

Defect Locations - Run 3 - By Station									
Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS	
1	Bump	1	1	0+66.0	0+80.8	14.8	0.72	0+75.3	N:4009580.22727216 E:244883.449509334 Z:15S
2	Bump	1	1	1+01.6	1+08.7	7.2	0.47	1+06.6	N:4009580.3954501 E:244874.033111197 Z:15S
3	Bump	1	1	1+28.6	1+34.8	6.3	0.48	1+31.3	N:4009580.62502264 E:244866.508928565 Z:15S
4	Bump	1	1	1+46.3	1+56.7	10.4	0.63	1+53.8	N:4009580.94906837 E:244859.5161747 Z:15S
5	Bump	1	1	1+85.8	1+98.7	12.9	0.44	1+87.6	N:4009581.36706048 E:244849.040930031 Z:15S
6	Bump	1	1	2+38.1	2+42.8	4.8	0.43	2+40.9	N:4009581.85483869 E:244832.770215506 Z:15S
7	Bump	1	1	3+99.0	4+03.5	4.5	0.61	4+02.0	N:4009583.3504464 E:244783.768334674 Z:15S

Track 1 defects: 7

Total defects: 7

No defects found for Run 4

Defect Locations - Run 5 - By Station									
Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS	
1	Bump	1	1	0+66.8	0+81.8	14.9	0.74	0+76.2	N:4009580.11076513 E:244882.916022088 Z:15S
2	Bump	1	1	1+01.2	1+09.5	8.3	0.47	1+07.3	N:4009580.3892792 E:244873.400812923 Z:15S
3	Bump	1	1	1+29.4	1+35.8	6.3	0.48	1+32.1	N:4009580.60835112 E:244865.916647062 Z:15S
4	Bump	1	1	1+47.0	1+57.6	10.6	0.63	1+54.6	N:4009580.80940374 E:244859.048268786 Z:15S
5	Bump	1	1	1+86.1	1+89.2	3.1	0.46	1+87.5	N:4009581.10219599 E:244849.046203905 Z:15S
6	Bump	1	1	3+99.7	4+04.3	4.7	0.62	4+02.8	N:4009583.20763021 E:244783.455180774 Z:15S

Track 1 defects: 6

Total defects: 6

Defect Locations - Run 6 - By Station									
Defect Type	Track	Segment	Start (ft)	End (ft)	Length (ft)	Peak Height (in)	Peak Station (ft)	Closest GPS	
1	Bump	2	1	-2+37.3	-2+47.1	9.8	0.46	-2+40.9	N:4009577.74471173 E:244653.996861847 Z:15S

Track 2 defects: 1

Total defects: 1

Ruts - Run 1		
Rut #	Station	Avg Depth (in)

Ruts - Run 2		
Rut #	Station	Avg Depth (in)

Ruts - Run 3		
Rut #	Station	Avg Depth (in)

Ruts - Run 4		
Rut #	Station	Avg Depth (in)

Ruts - Run 5		
Rut #	Station	Avg Depth (in)

Ruts - Run 6

Rut #	Station	Avg Depth (in)
-------	---------	----------------

No user events found for Run 1

No user events found for Run 2

No user events found for Run 3

No user events found for Run 4

No user events found for Run 5

No user events found for Run 6

Certified by: _____

Title: _____

Organization: _____