



SAMPLE INTELLIGENT COMPACTION HOT MIX ASPHALT COMPACTION QUALITY CONTROL REPORT



*Office of Construction Engineering
Caltrans
November 2015*

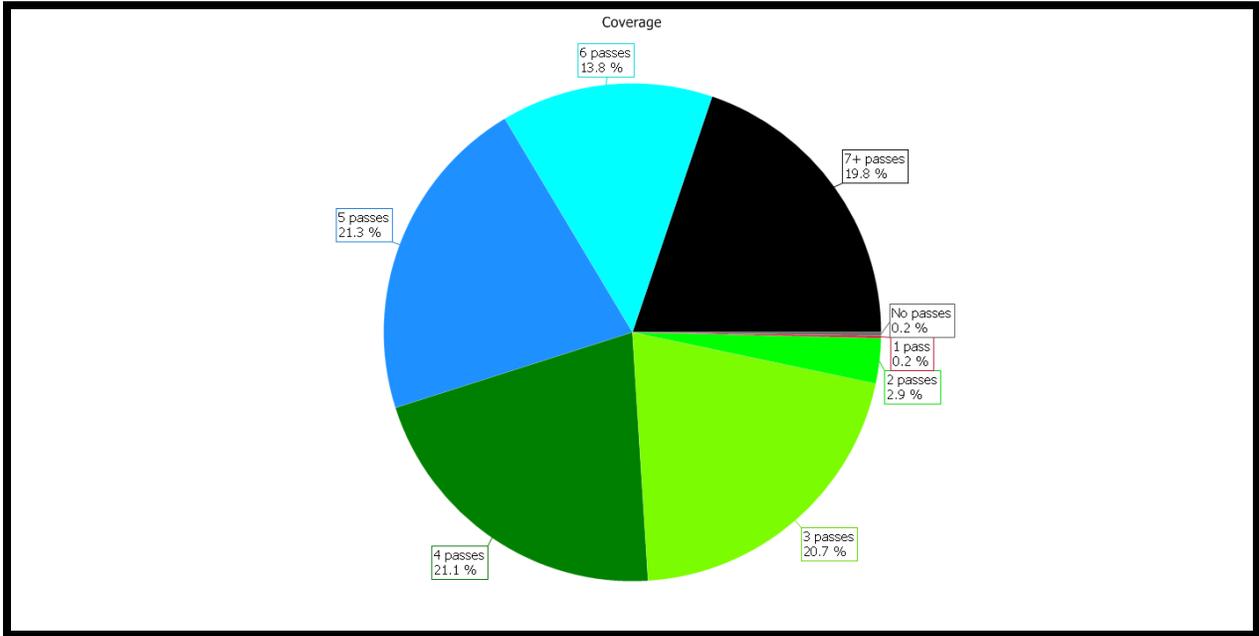
Method Compaction

For each day of production, prepare a HMA compaction quality control report that includes:

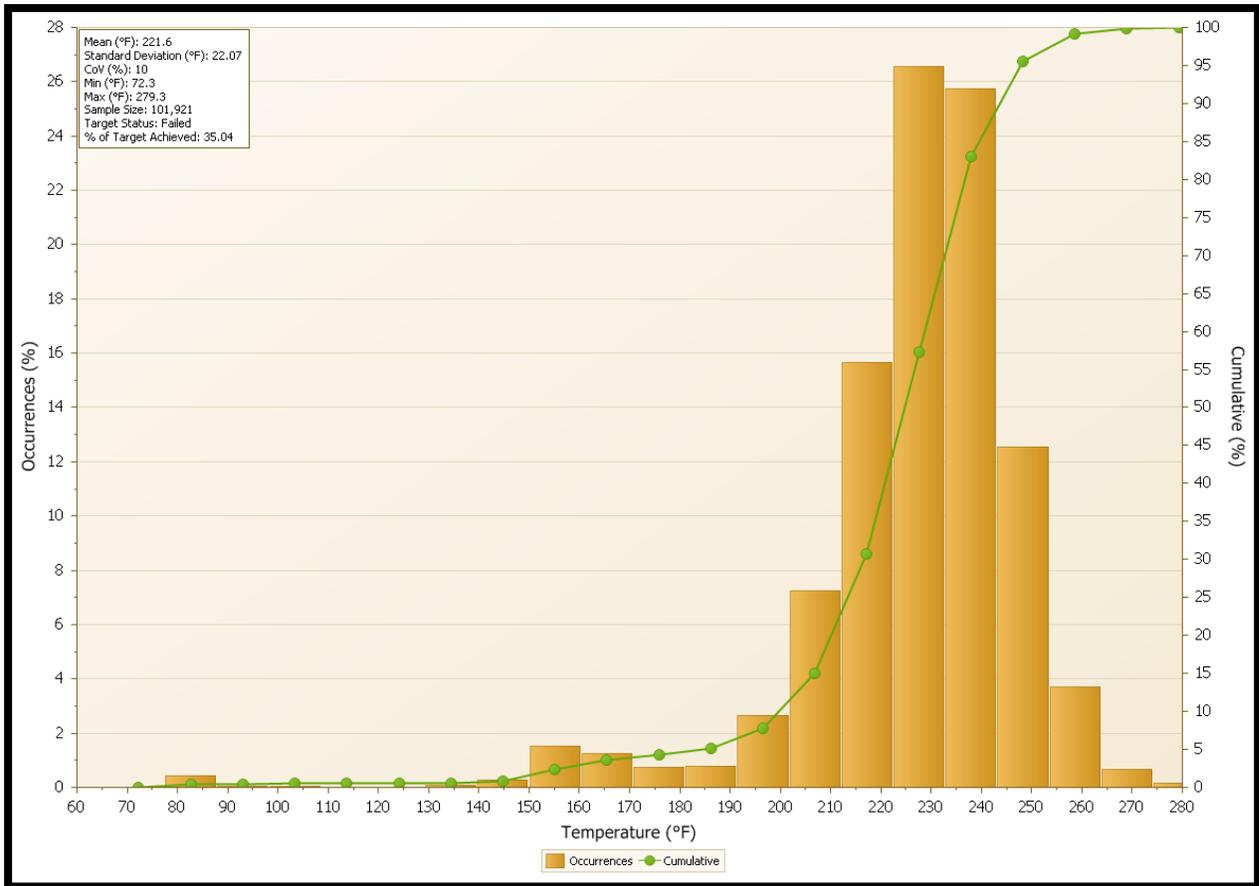
1. Summary of HMA compaction quality control results on *Intelligent Compaction Quality Control Report Summary for Hot Mix Asphalt With Method Compaction* form or *Intelligent Compaction Quality Control Report Summary for Hot Mix Asphalt with Density Requirement* form.
2. Veta analysis report results for:
 - 2.1. Percent compliance with target roller passes
 - 2.2. Percent compliance with target HMA temperature for first coverage of breakdown compaction
 - 2.3. Percent compliance with target HMA temperature for final coverage of intermediate compaction
3. Final coverage histogram of number of passes for each roller
4. Final coverage histogram of number of passes for each roller for a fixed interval.
5. All passes histogram for each roller
6. Color layout plots of:
 - 6.1. Roller passes for each roller
 - 6.2. HMA temperature for first coverage of breakdown compaction.
 - 6.3. HMA temperature for final coverage of intermediate compaction.
8. Hot mix asphalt mat temperature readings with corresponding GPS coordinates.

**INTELLIGENT COMPACTION QUALITY CONTROL REPORT SUMMARY
FOR HOT MIX ASPHALT WITH METHOD COMPACTION
CEM-IC15 (NEW 06/24/2015)**

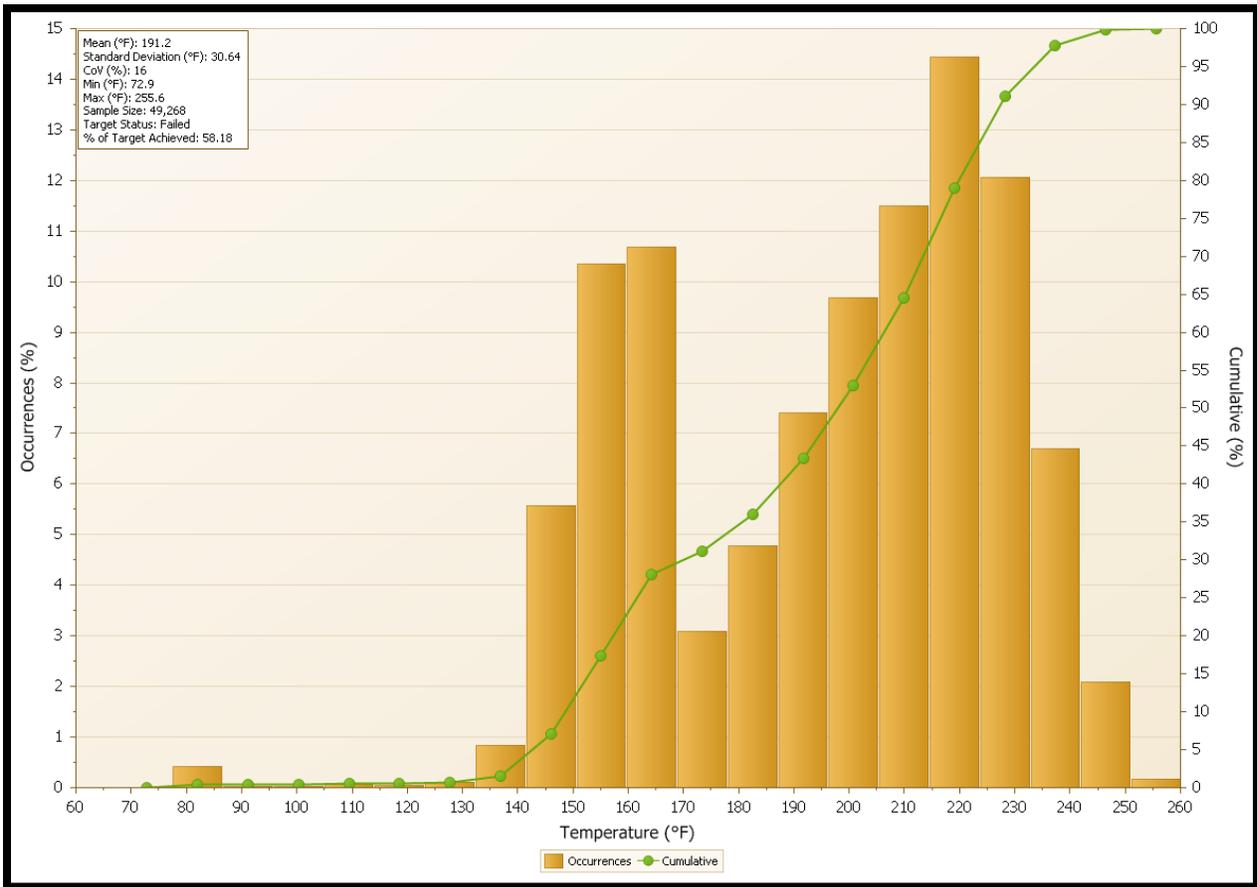
PROJECT INFORMATION NAME		CONTRACT NUMBER	CORTE/PM
		PROJECT IDENTIFIER NUMBER	
		CONTRACTOR NAME	
<p>Instruction: This form to be used by the contractor to summarize the daily hot mix asphalt method compaction intelligent compaction quality control report information. For questions about this form send an email to: IC@dot.ca.gov</p>			
HOT MIX ASPHALT (HMA) PLACEMENT INFORMATION			
HMA Placement Location		HMA Placement Date	
Beginning Station	Ending Station	HMA Type	
IC Quality Control Technician (ICQCT)		ICQCT Phone Number	
HMA Method Compaction Requirements			
Determine the following requirements for HMA compaction based on the specifications for the type of HMA being placed.			
IC Requirements	HMA Target Values	IC Requirements	OGFC Target Values
Breakdown Compaction Minimum Number of Passes		Minimum Number of Passes	
Breakdown Compaction Minimum Temperature °F 1 st PASS		Breakdown Compaction Minimum Temperature °F 1 st PASS	
Intermediate Compaction Minimum Number of Passes		Complete Compaction Minimum Temperature °F	
Intermediate Compaction Minimum Temperature °F			
DAILY COMPACTION QUALITY CONTROL REPORT SUMMARY			
HMA/RHMA Compaction Veta Analysis Report Results			
Does the number of passes for breakdown compaction roller results show that at least 90 percent coverage of the HMA placement construction area met or exceed the minimum number of roller passes specified for breakdown compaction? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If no, corrective action taken:			
Does the 1 st PASS breakdown compaction temperature results show that temperature meet or exceed the minimum temperature specified based on the HMA type for at least 95% of the daily HMA placement area? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If no, corrective action taken:			
Does the number of passes for intermediate compaction roller results show that at least 90 percent coverage of the HMA placement construction area met or exceed the minimum number of roller passes specified for intermediate compaction? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If no, corrective action taken:			



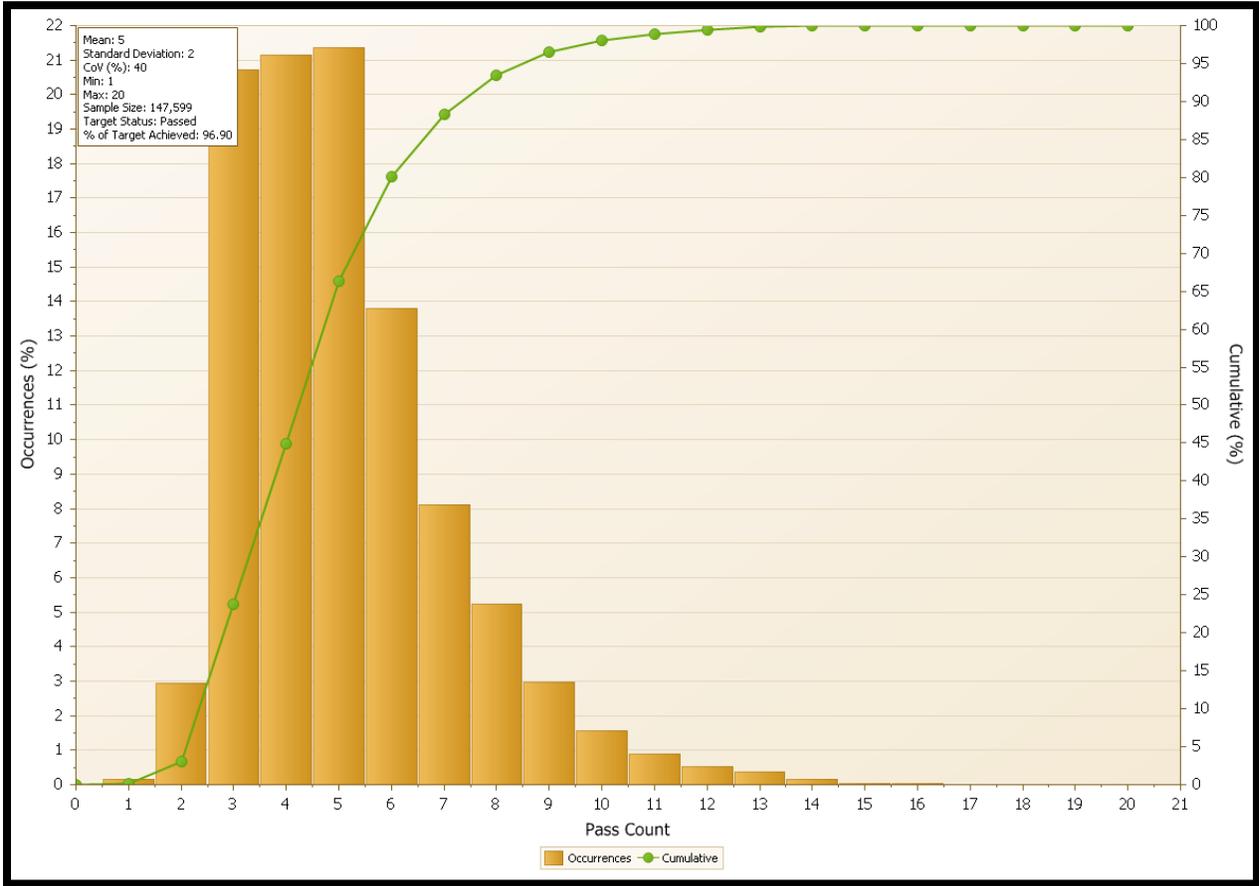
Percent compliance with target roller passes



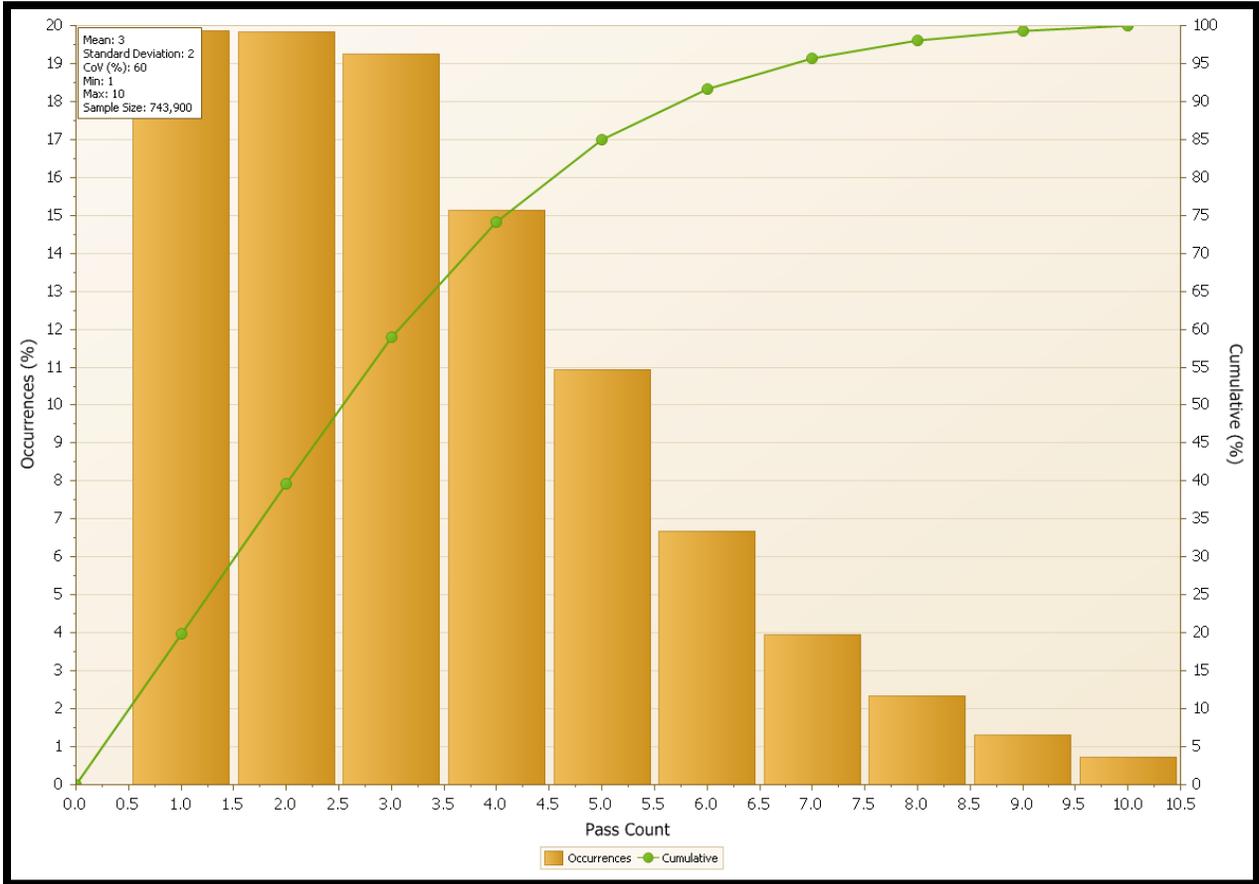
Percent compliance with target HMA temperature for first coverage of breakdown compaction



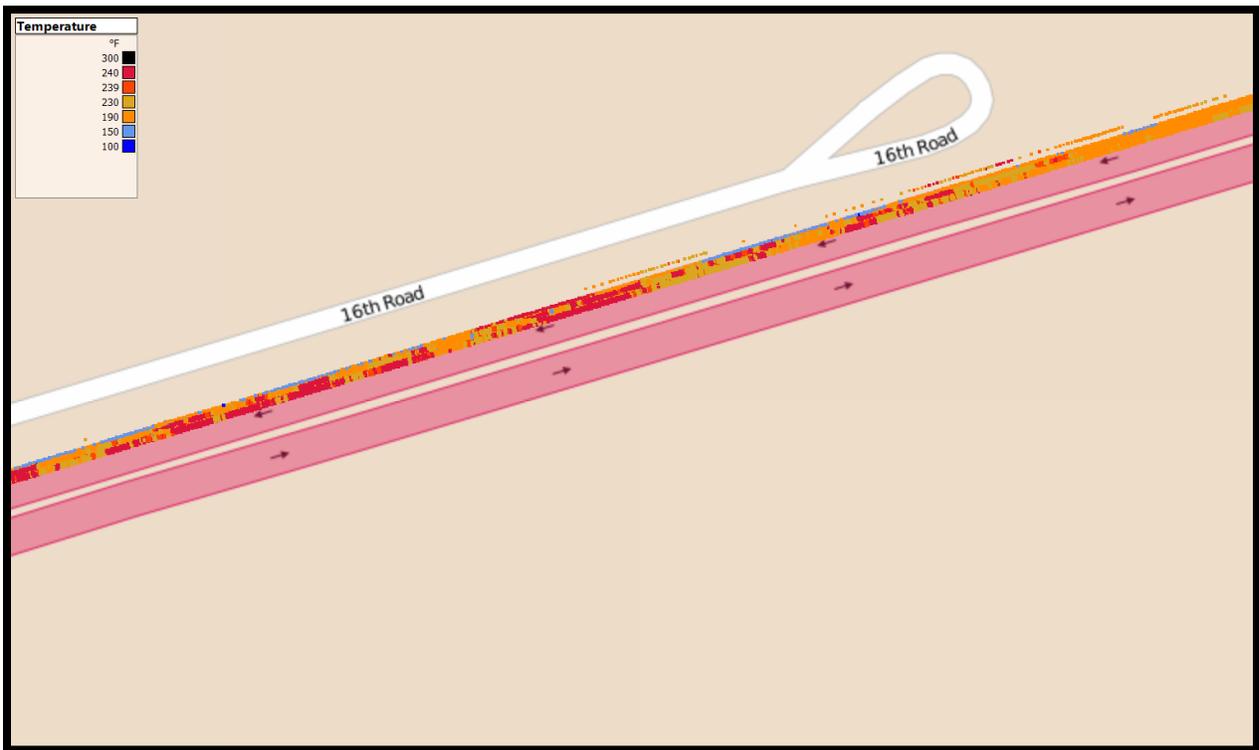
Percent compliance with target HMA temperature for final coverage of intermediate compaction



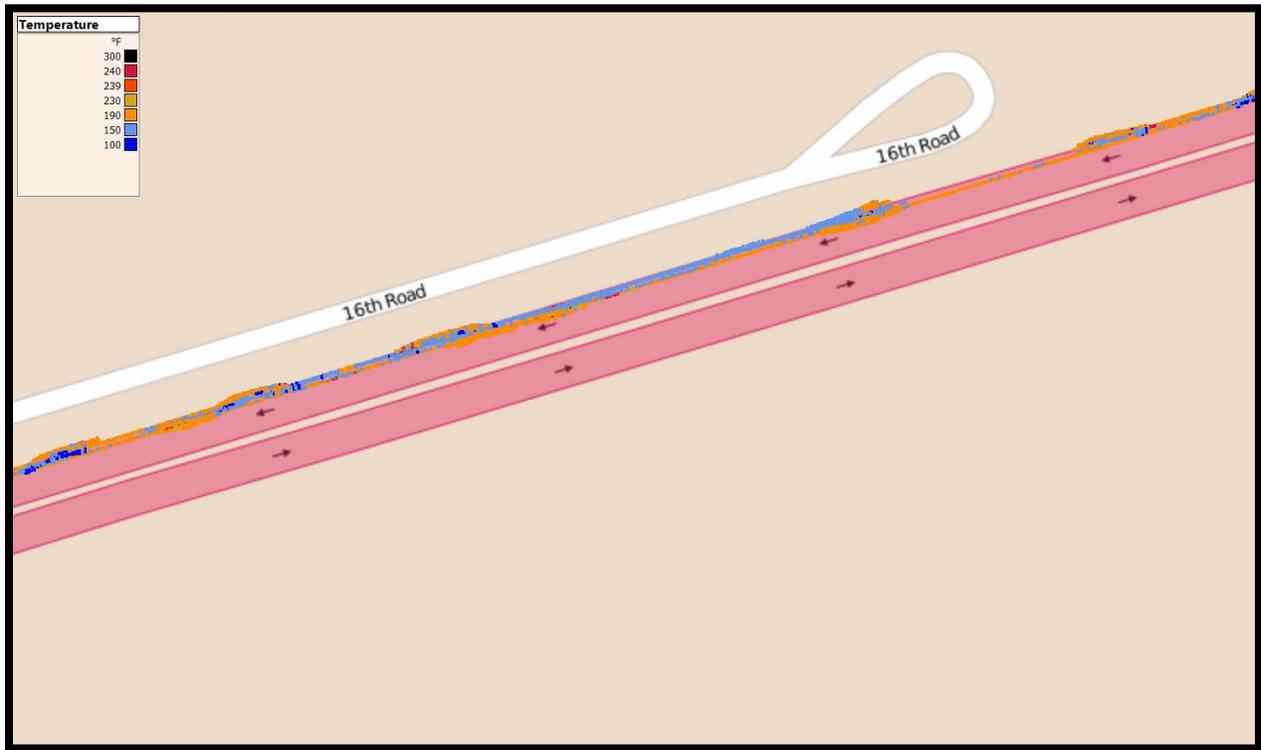
Final coverage histogram of number of passes for each roller



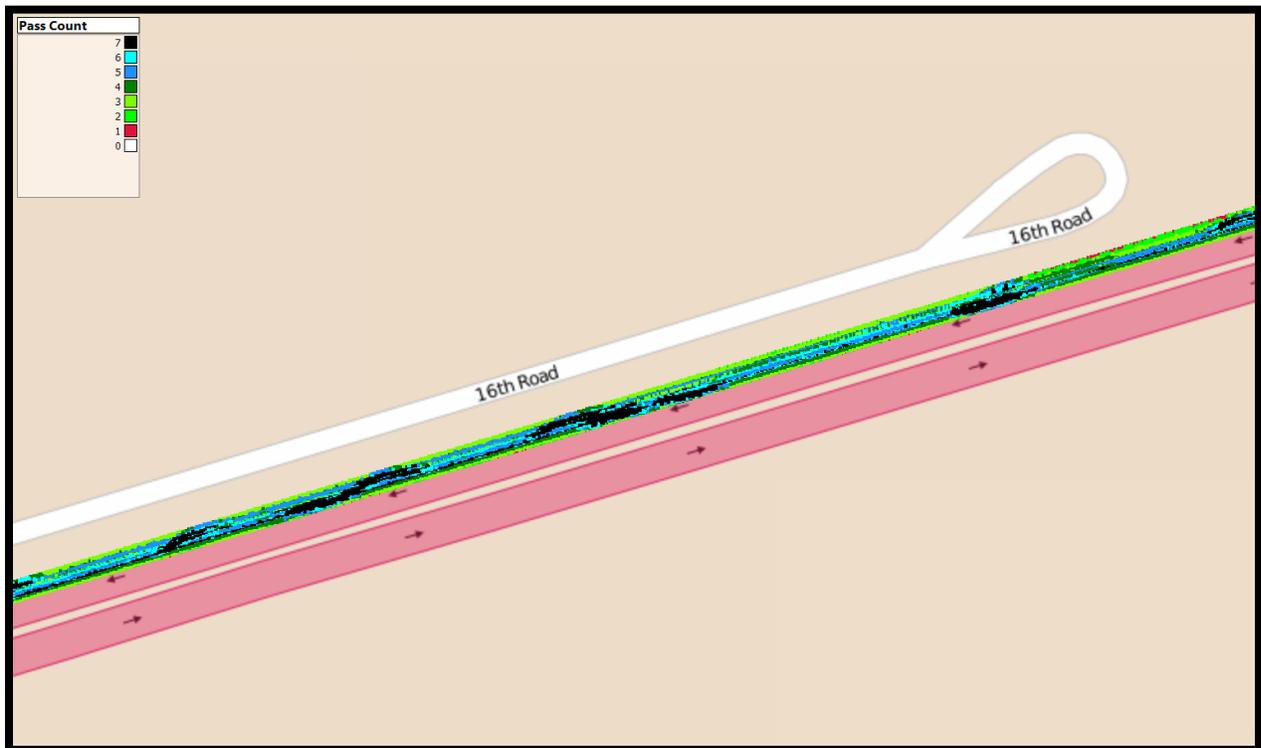
All passes histogram for each roller



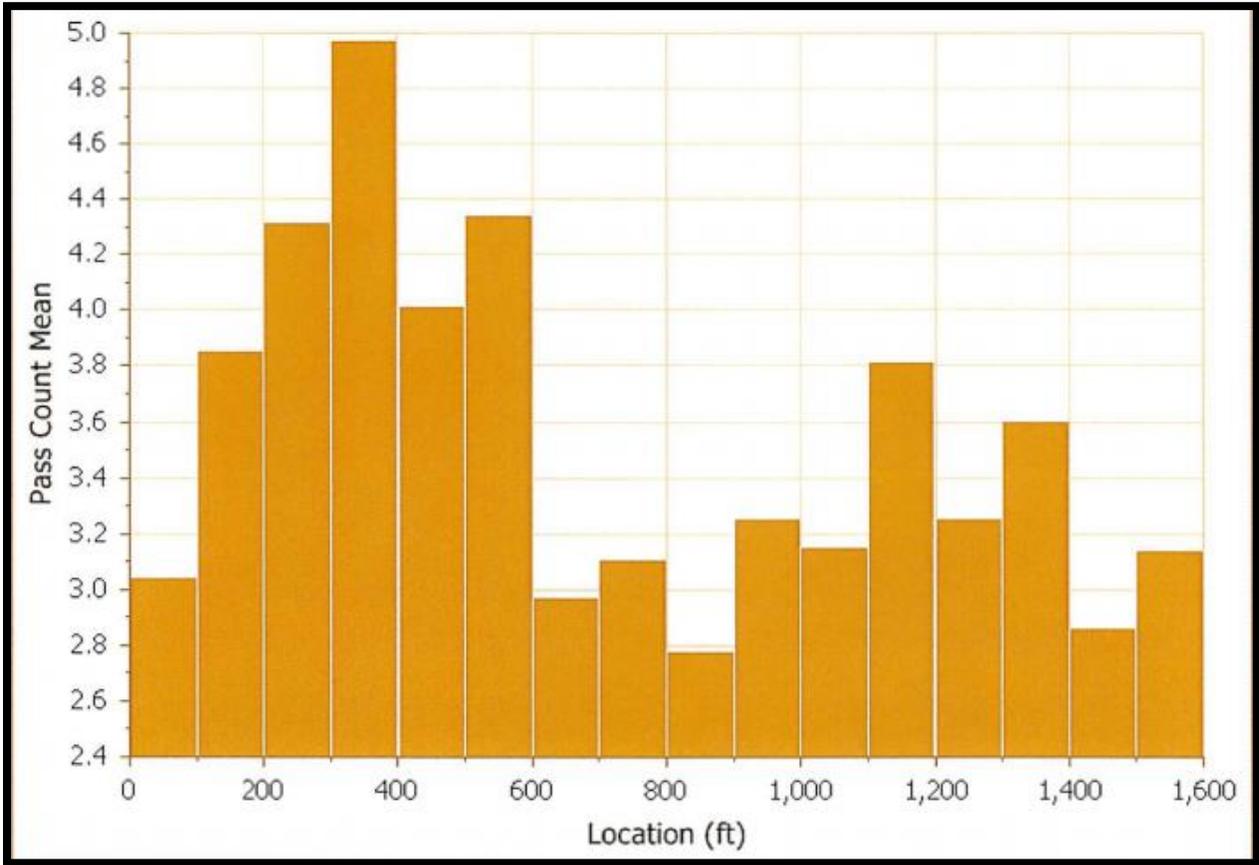
HMA temperature for first coverage of breakdown compaction.



HMA temperature for final coverage of intermediate compaction.



Roller passes for each roller



Final coverage histogram of number of passes for each roller for a fixed interval.

Break Down Compaction Roller Temperatures

ID	Date	Easting (ft)	Northing (ft)	Test Type	Value
1	09/12/15	6707143.447	2422187.275	Layer Moduli	237.1
2	09/12/15	6706573.992	2422092.686	Layer Moduli	235.5
3	09/12/15	6706561.677	2422098.211	Layer Moduli	249.8

Intermediate Compaction Roller Temperatures

ID	Date	Easting (ft)	Northing (ft)	Test Type	Value
4	09/12/15	6707143.447	2422187.275	Layer Moduli	225.9
5	09/12/15	6706573.992	2422092.686	Layer Moduli	212.2
6	09/12/15	6706561.677	2422098.211	Layer Moduli	221

Finish Compaction Roller Temperatures

ID	Date	Easting (ft)	Northing (ft)	Test Type	Value
7	09/12/15	6707143.447	2422187.275	Layer Moduli	167.5
8	09/12/15	6706573.992	2422092.686	Layer Moduli	158.5
9	09/12/15	6706561.677	2422098.211	Layer Moduli	164.4

Hot mix asphalt mat temperature readings with corresponding GPS coordinates

Density Requirement Compaction

For each day of production, prepare a HMA compaction quality control report that includes:

1. Summary of HMA compaction quality control results on *Intelligent Compaction Quality Control Report Summary for Intelligent Compaction Quality Control Report Summary for Hot Mix Asphalt with Density Requirement* form.
2. Veta analysis report results for:
 - 2.1 Percent compliance with target roller passes
 - 2.2 Percent compliance with target HMA temperature for first coverage of breakdown compaction
 - 2.3 Percent compliance with target HMA temperature for final coverage of intermediate compaction
 - 2.4 Percent compliance with target intelligent compaction measurement value
3. Final coverage histogram of number of passes for each roller and histogram of intelligent compaction measurement value of steel drum roller with vibratory on.
4. Final coverage histogram of number of passes for each roller and histogram of intelligent compaction measurement value of steel drum roller with vibratory on for a fixed interval.
5. All passes histogram for each roller
6. Color layout plots of:
 - 6.1. Roller passes for each roller
 - 6.2. HMA temperature for first coverage of breakdown compaction.
 - 6.3. HMA temperature for final coverage of intermediate compaction.
 - 6.4. Intelligent compaction measurement value for final coverage of intermediate compaction when required.
7. Quality control density measurements and corresponding GPS coordinate.
8. Hot mix asphalt mat temperature readings with corresponding GPS coordinates.

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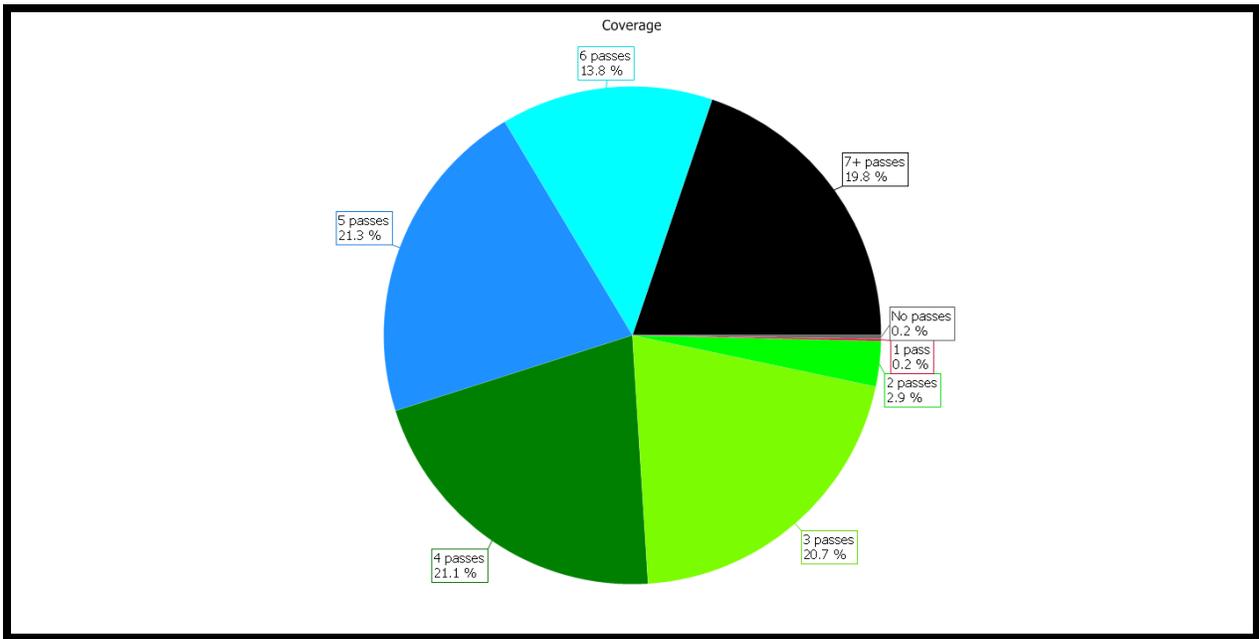
Plots must include quality control density testing locations and results.

INTELLIGENT COMPACTION QUALITY CONTROL REPORT SUMMARY**FOR HOT MIX ASPHALT WITH DENSITY REQUIREMENT**

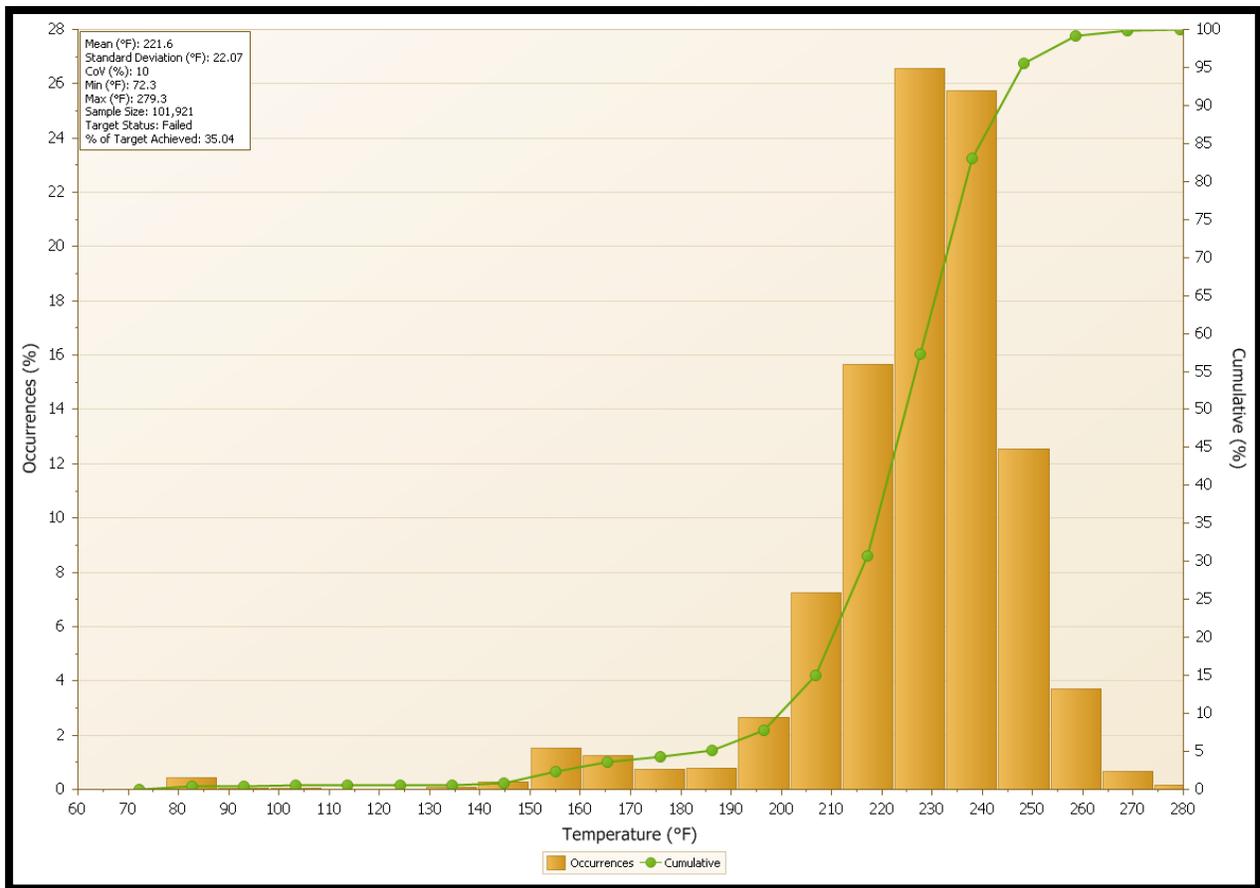
CEM-IC16 (NEW 08/08/2015)

PROJECT INFORMATION NAME		CONTRACT NUMBER	CORTE/PM
		PROJECT IDENTIFIER NUMBER	
		CONTRACTOR NAME	
<p>Instruction: This form to be used by the contractor to summarize the daily hot mix asphalt intelligent compaction quality control report information. For questions about this form send an email to: IC@dot.ca.gov.</p>			
HOT MIX ASPHALT (HMA) PLACEMENT INFORMATION			
HMA Placement Location		HMA Placement Date	
Beginning Station	Ending Station		
IC Quality Control Technician (ICQCT)		ICQCT Phone Number	
DAILY COMPACTION QUALITY CONTROL REPORT SUMMARY			
<p>Note: Intelligent compaction target values are determined from hot mix asphalt test stripe.</p>			
Breakdown Compaction Vibratory Steel Drum Roller Number of Passes			
____ Target number of roller passes		____ Percent work area covered by minimum number of roller passes	
<p>Does the number of passes for IC vibratory steel drum roller compaction shown on final coverage histogram of number of passes show that at least 90 percent coverage of the HMA placement area met or exceed the minimum number of roller passes based on target value established at the test stripe?</p>			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
<p>If no, corrective action taken:</p>			
Breakdown Compaction Intelligent Compaction Measurement Value			
____ Target intelligent compaction measurement value		____ Daily average intelligent compaction measurement value	
<p>Does the daily average intelligent compaction measurement value for final coverage of IC vibratory steel drum roller meet or exceed the target intelligent compaction measurement value established at the test stripe?</p>			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
<p>If the answer is no, is the daily average intelligent compaction value at least 81 percent of the target measurement value?</p>			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
<p>If the answer is no, reestablish the intelligent compaction measurement value.</p>			
Intermediate Compaction Roller Number of Passes			
____ Target number of roller passes		____ Percent work area covered by minimum number of roller passes	
<p>Does the number of passes for intermediate compaction roller shown on final coverage histogram of number of passes show that at least 90 percent coverage of the HMA placement area met or exceed the minimum number of roller passes based on target established at the test stripe?</p>			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
<p>If no, corrective action taken:</p>			
<p>Notes: 1) Results from intelligent compaction are for contractor quality control purposes and not to be used as Caltrans acceptance of HMA. 2) When the daily average intelligent compaction measurement meets or exceeds the target value and density is verified by contractor nuclear gage quality control test results, then corrective action for number of passes is not required.</p>			

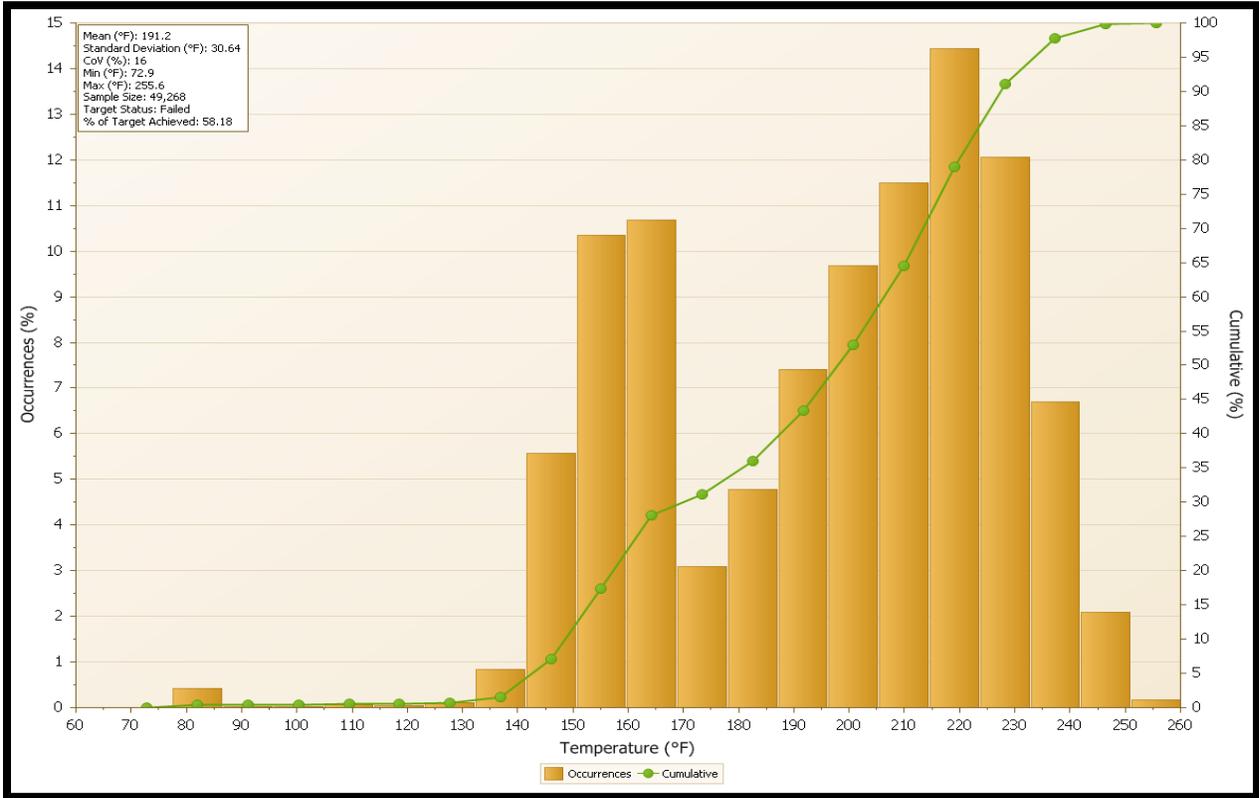
Updated 2015-08-08



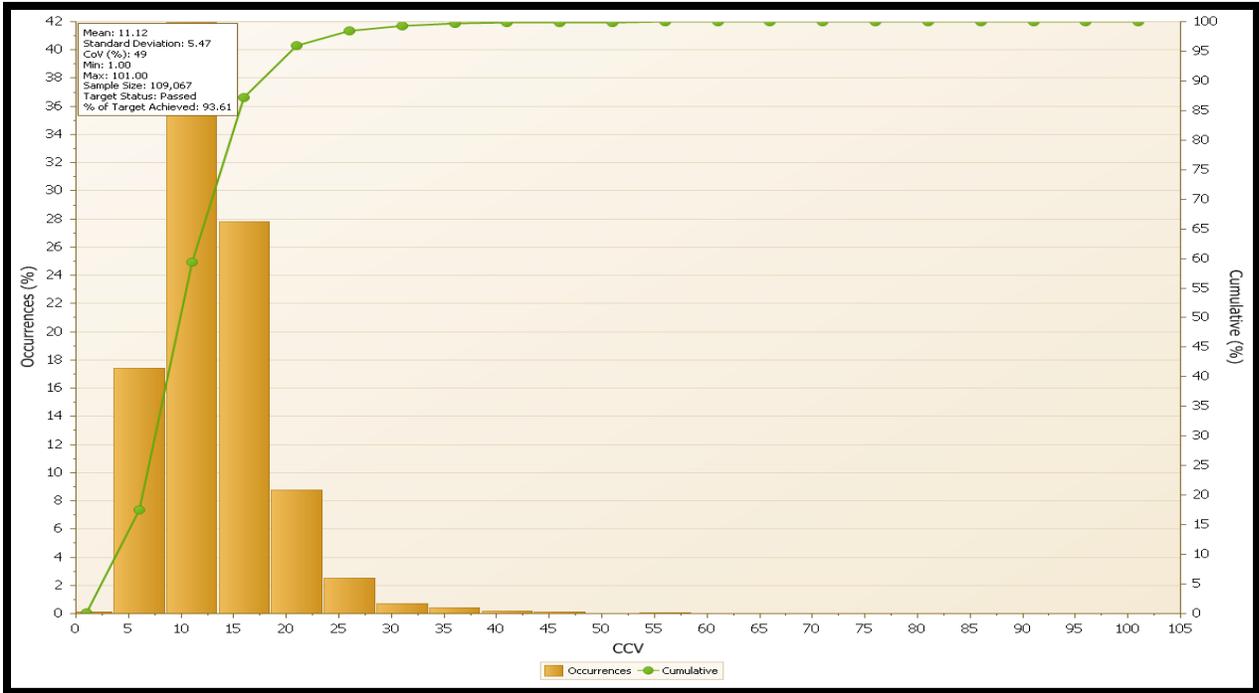
Percent compliance with target roller passes



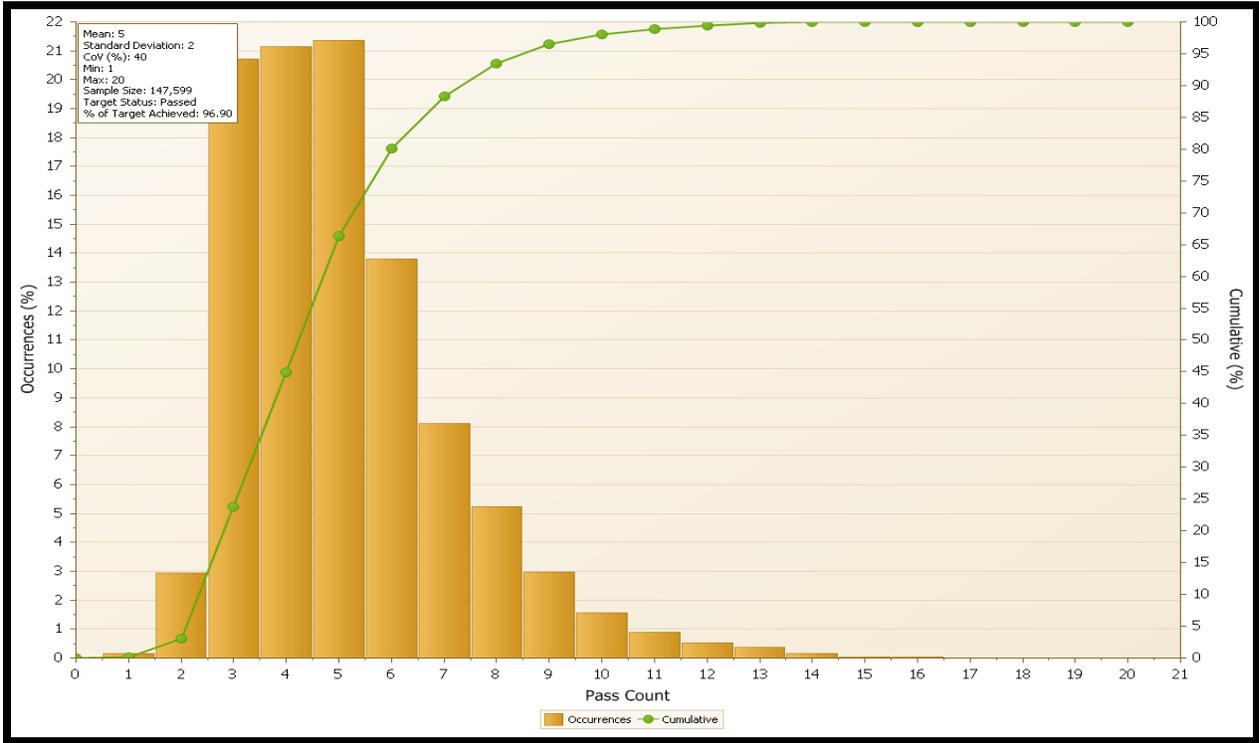
Percent compliance with target HMA temperature for first coverage of breakdown compaction



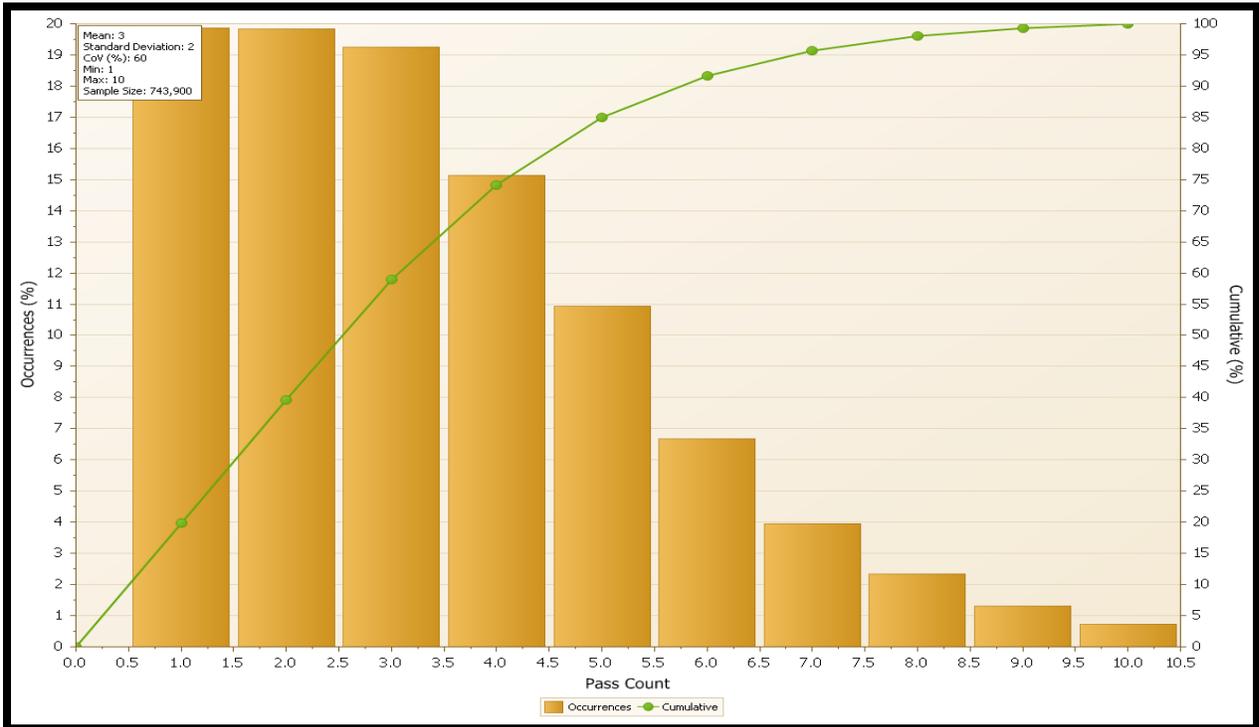
Percent compliance with target HMA temperature for final coverage of intermediate compaction



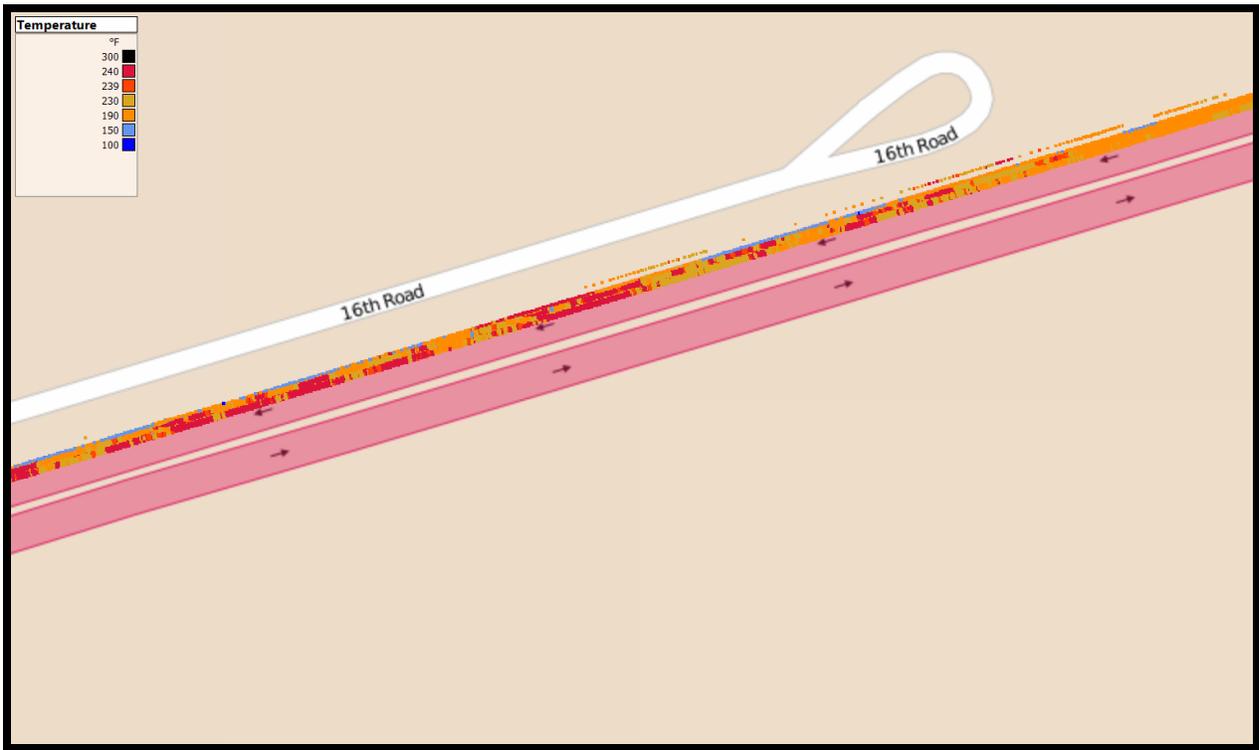
Percent compliance with target intelligent compaction measurement value



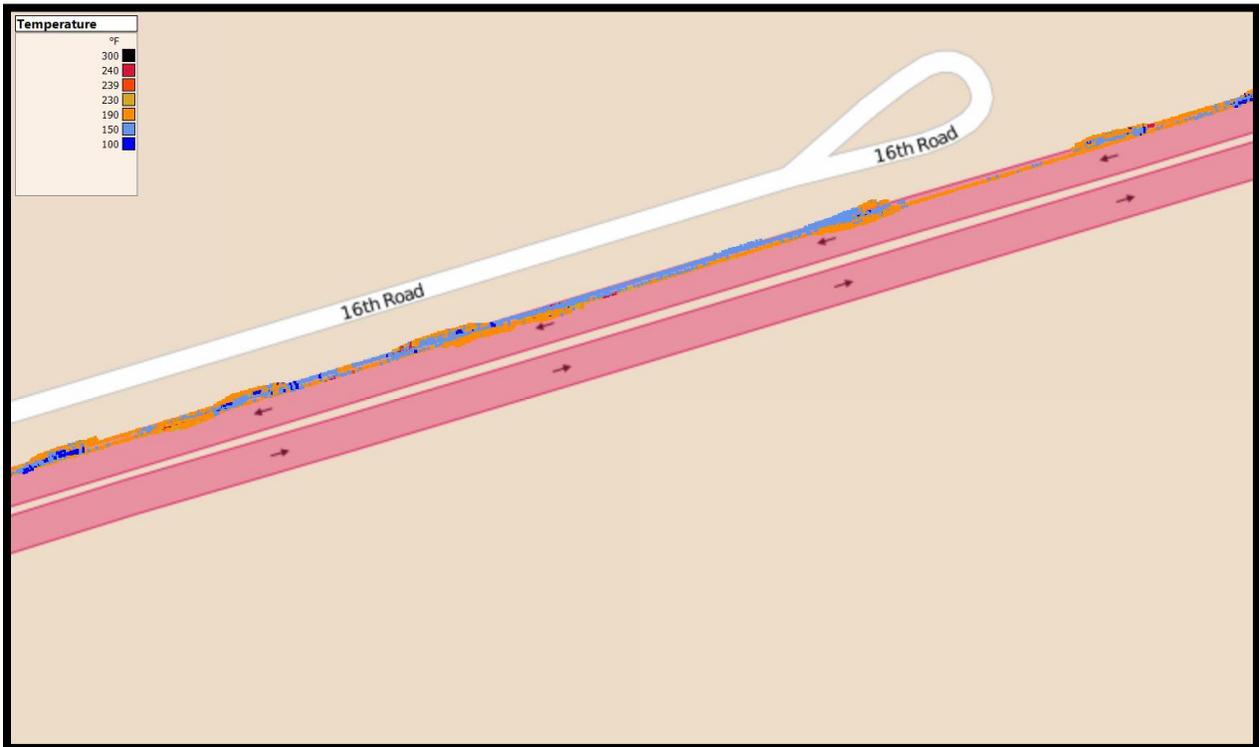
Final coverage histogram of number of passes for each roller



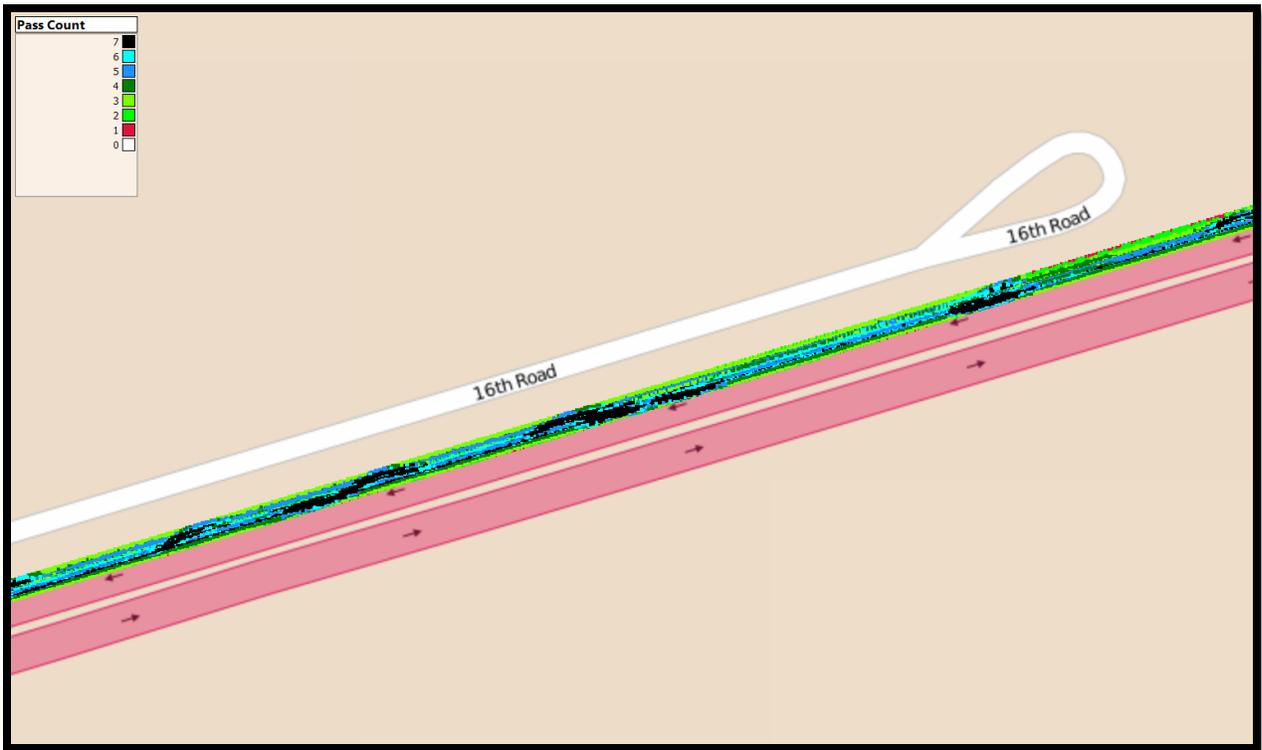
All passes histogram for each roller



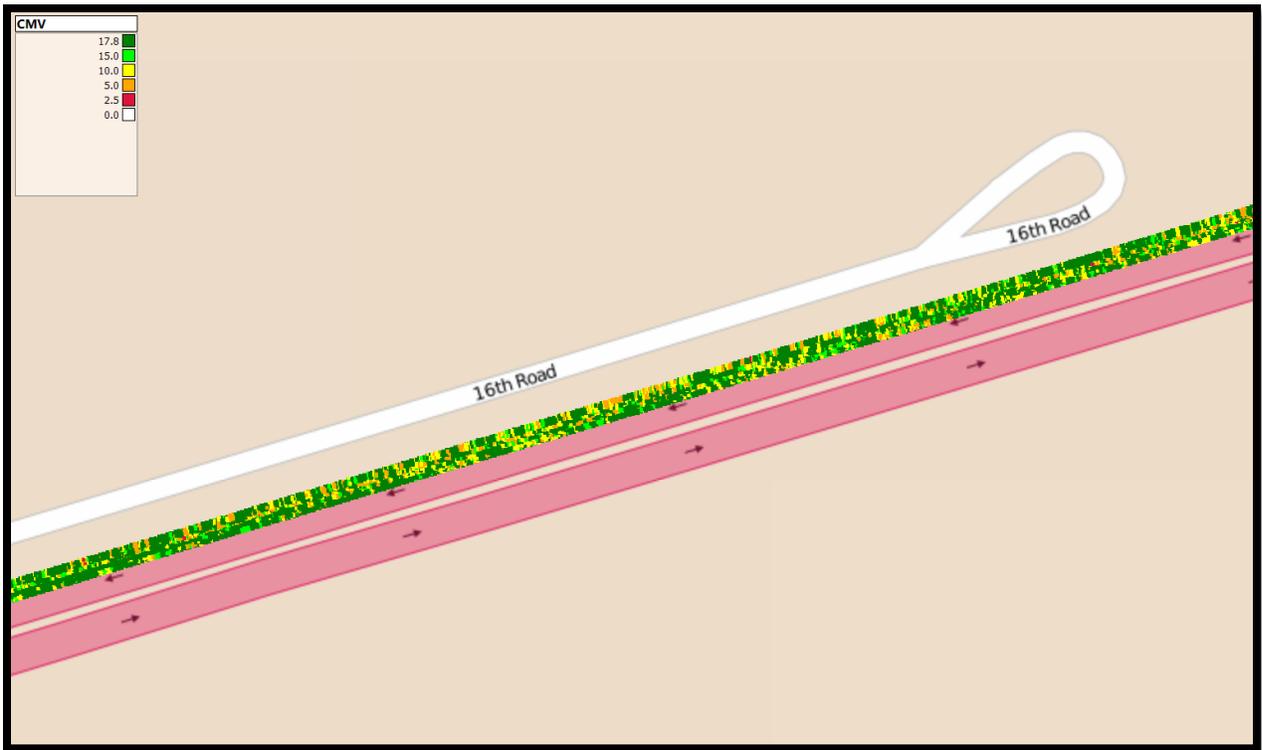
HMA temperature for first coverage of breakdown compaction.



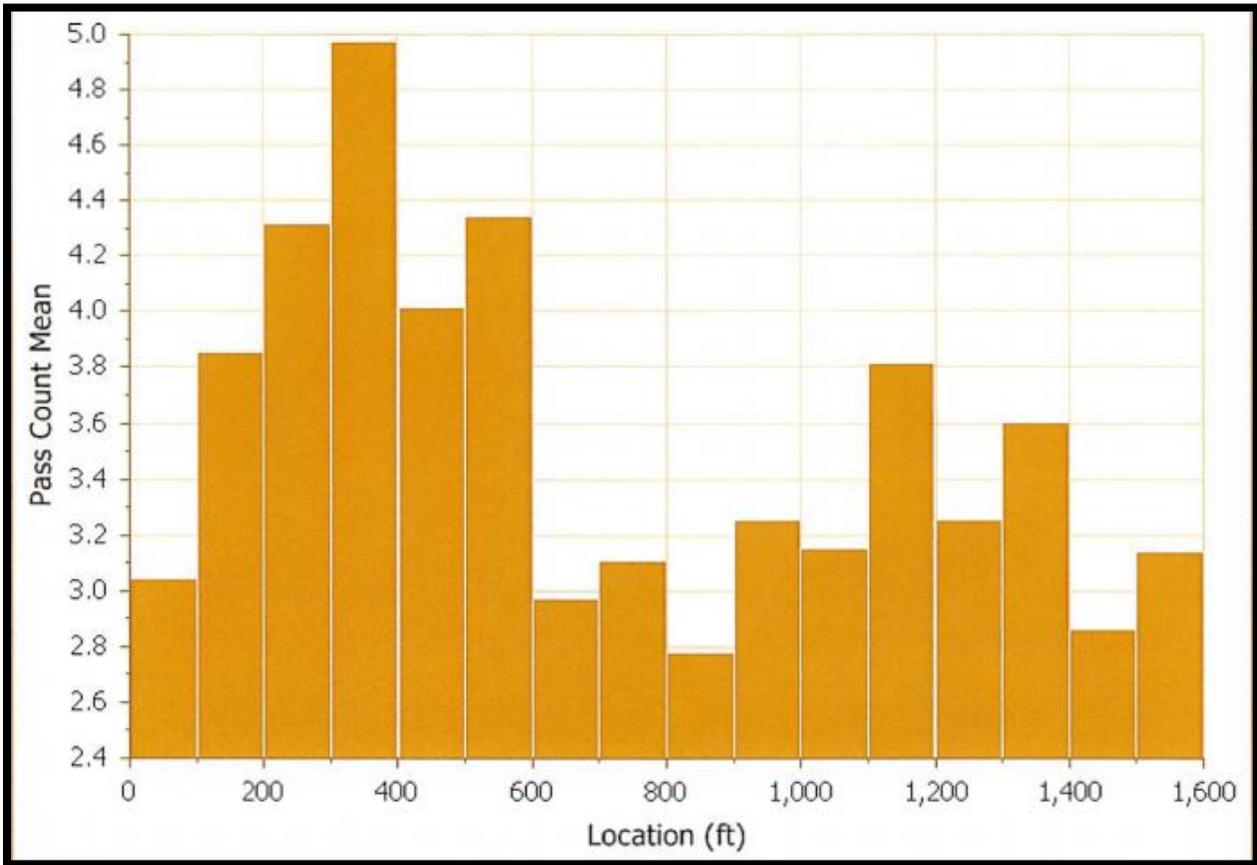
HMA temperature for final coverage of intermediate compaction.



Roller passes for each roller



Intelligent compaction measurement value of steel drum roller



Final coverage histogram of number of passes for each roller for a fixed interval.

Test Data Summary

ID	Date	Easting (ft)	Northing (ft)	Test Type	Value
1	09/12/15	6707864.854	2422263.488	Density - Nuclear Gauge	141.9
4	09/12/15	6707829.023	2422273.927	Density - Nuclear Gauge	138.1
5	09/12/15	6707395.953	2422213.652	Density - Nuclear Gauge	139
6	09/12/15	6707354.604	2422202.304	Density - Nuclear Gauge	137.6
2	09/12/15	6706957.282	2422145.005	Density - Nuclear Gauge	141
7	09/12/15	6706728.461	2422116.992	Density - Nuclear Gauge	141.8
8	09/12/15	6706705.126	2422111.303	Density - Nuclear Gauge	141.8
9	09/12/15	6706614.889	2422085.952	Density - Nuclear Gauge	140
3	09/12/15	6706559.636	2422090.126	Density - Nuclear Gauge	138.7
10	09/12/15	6706551.178	2422090.141	Density - Nuclear Gauge	143.7

Quality control density measurements and corresponding GPS coordinate.

Break Down Compaction Roller Temperatures					
ID	Date	Easting (ft)	Northing (ft)	Test Type	Value
1	09/12/15	6707143.447	2422187.275	Layer Moduli	237.1
2	09/12/15	6706573.992	2422092.686	Layer Moduli	235.5
3	09/12/15	6706561.677	2422098.211	Layer Moduli	249.8

Intermediate Compaction Roller Temperatures					
ID	Date	Easting (ft)	Northing (ft)	Test Type	Value
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5	09/12/15	6706573.992	2422092.686	Layer Moduli	212.2
6	09/12/15	6706561.677	2422098.211	Layer Moduli	221

Finish Compaction Roller Temperatures					
ID	Date	Easting (ft)	Northing (ft)	Test Type	Value
7	09/12/15	6707143.447	2422187.275	Layer Moduli	167.5
8	09/12/15	6706573.992	2422092.686	Layer Moduli	158.5
9	09/12/15	6706561.677	2422098.211	Layer Moduli	164.4

Hot mix asphalt mat temperature readings with corresponding GPS coordinates