COLD IN PLACE RECYCLING INTELLIGENT COMPACTION COMPACTION QUALITY REPORT SAMPLE

Office of Construction Engineering
Caltrans
November 2015

Compaction quality control report must include:

1. Summary of CIR compaction quality control results on *Intelligent Compaction Cold-In-Place Recycling Compaction Quality Control Report Summary* form.
2. Final coverage histogram of number of passes for each roller and when steel drum roller with vibratory on is used, include histogram of intelligent compaction measurement value
3. Final coverage histogram of number of passes for each roller for a 100 feet fixed interval, and when steel drum roller with vibratory on is used, include histogram of intelligent compaction measurement value for a fixed interval.
4. All passes Compaction Curve
5. Final Coverage Correlation density vs. pass count
5. Color layout plots of final coverage:
   5.1. Roller passes for each roller
   5.2. Intelligent compaction measurement value for steel drum roller with vibratory on
   5.3 Table of quality control density testing locations and results.

INTELLIGENT COMPACTION COLD-IN-PLACE RECYCLING COMPACTION QUALITY CONTROL REPORT SUMMARY

CEM-IC25 (NEW 06/21/2015)

PROJECT INFORMATION/NAME	CONTRACT NUMBER	CO/RTE/PM
FOR CONSTRUCTION ON STATE HIGHWAY IN IN SAN BERNARDINO COUNTY ON ROUTE 127 FROM 3.0 MILES NORTH OF ROUTE 15/127 SEPARATION TO 2.3 MILES NORTH OF SILVER LAKE ROAD AND 8.0 MILES NORTH OF SARATOGA SPRINGS ROAD TO SAN BERNARDINO/INYO COUNTY LINE In District 08 On Route 127	08-1E2204	08-SBd-127-3.0/10.5 37.7/41.47
	PROJECT IDENTIFIER NUMBER 0813000190	
	CONTRACTOR NAME Sully-Miller Contracting Co.	

Instruction: This form to be used by the contractor to summarize the daily cold-in-place recycling intelligent compaction quality control report information. For questions about this form send an email to: IC@dot.ca.gov

COLD-IN-PLACE RECYCLING (CIR) PLACEMENT INFORMATION

CIR Placement Location		CIR Placement Date
Route 127 between Baker and Shoshone, CA		9/10/15
Beginning Station PM 10.5	Ending Station PM 8.7	☒ Initial Compaction ☐ Supplemental Compaction
IC Quality Control Technician (ICQCT) Ryan Zenahlik, RDO Product Specialist		ICQCT Phone Number 714-319-9059

DAILY COMPACTION QUALITY CONTROL REPORT SUMMARY

Note: Intelligent compaction target values are determined from test stripe.

Intelligent Compaction Vibratory Steel Drum Roller Number of Passes

4 Target number of roller passes | 82.43 Percent work area covered by minimum number of roller passes

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 CIR placement area met or exceed the minimum number of roller passes based on target value established at the test stripe?

☐ Yes ☒ No

If no, corrective action taken:

The steel drum roller was stopped several times because the computer stopped mapping, but continued after the first few hours with no issues. Our nuclear gauge tester assured us we were getting our required density.

Intelligent Compaction Measurement Value

10 Target intelligent compaction measurement value | 6.29 Daily average intelligent compaction measurement value

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?

☐ Yes ☒ No

If the answer is no, corrective action is not required because intelligent compaction measurement value is report only.

Automated Machine Guidance Roller

4 Target number of roller passes | 96.71 Percent work area covered by minimum number of roller passes

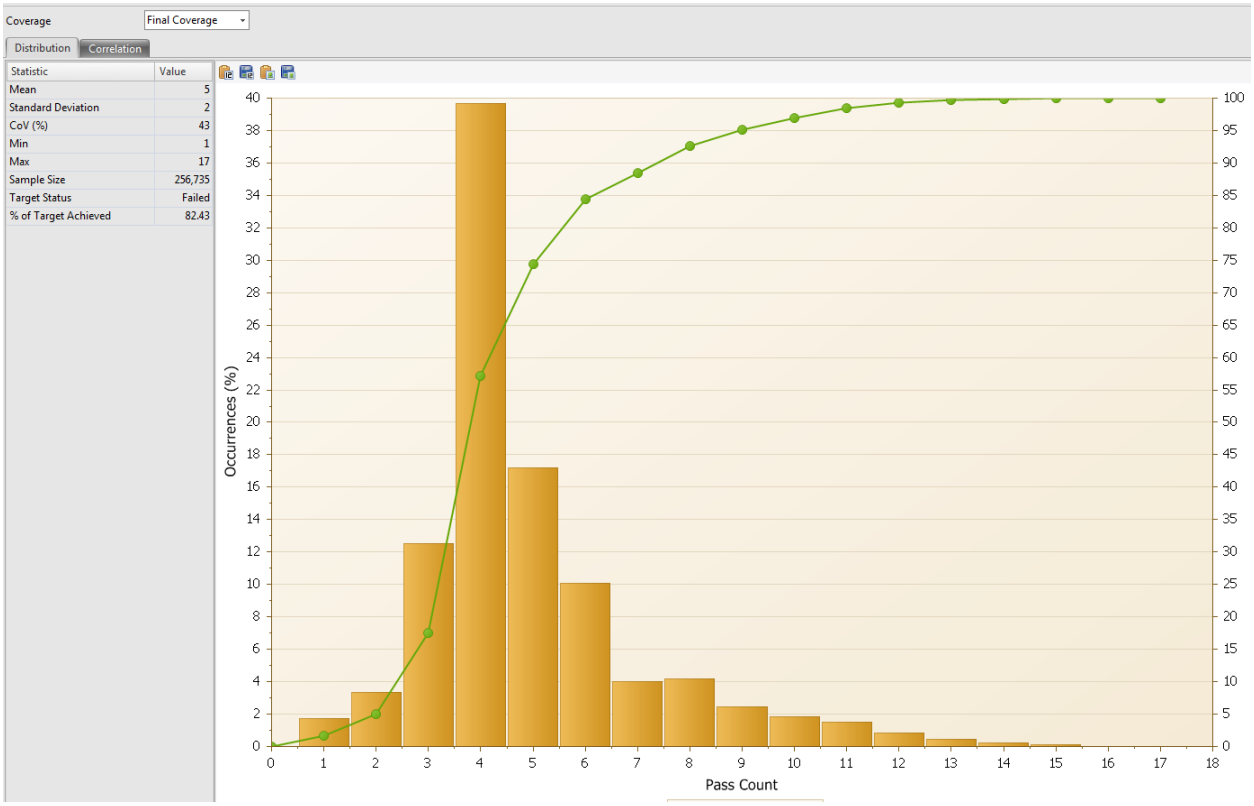
Does the number of passes for automated machine guidance roller shown on final coverage histogram of number of passes show that at least 90 percent coverage of the CIR placement area met or exceed the minimum number of roller passes based on target value established at the test stripe?

☒ Yes ☐ No

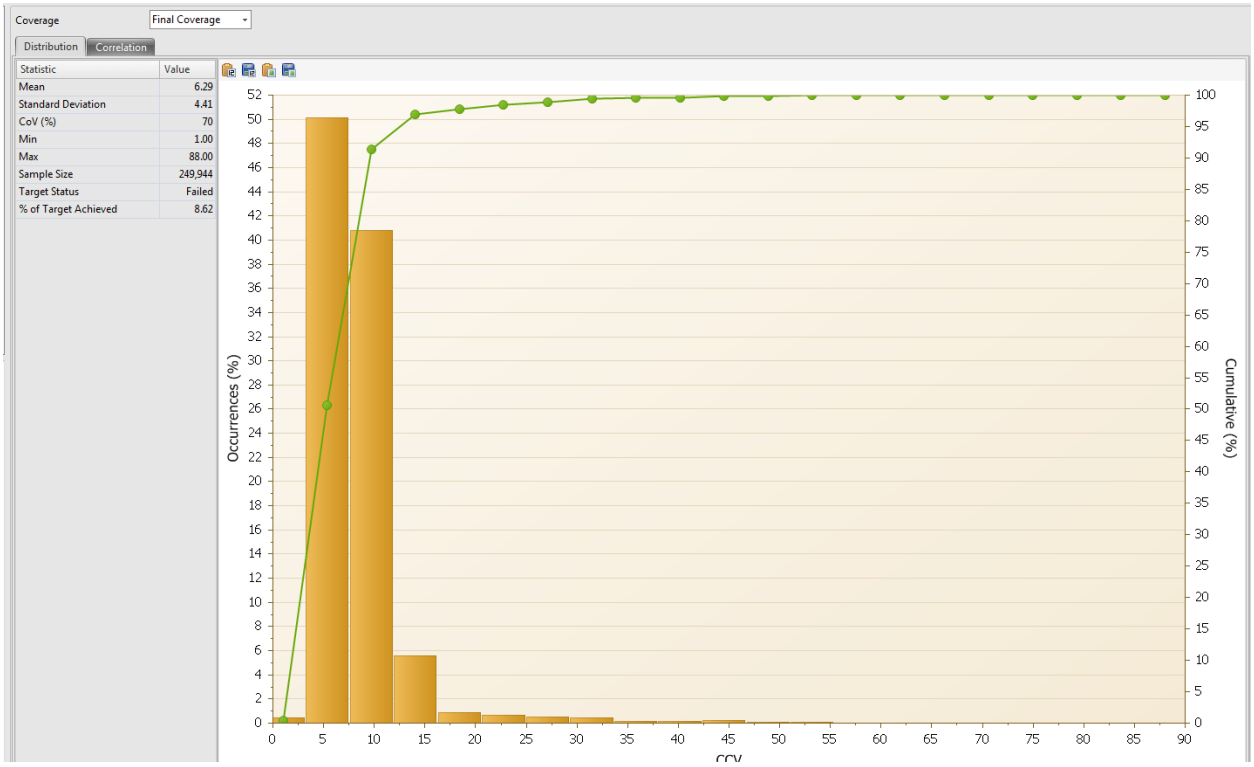
If no, corrective action taken:

Note: Results from intelligent compaction are for contractor quality control purposes and not to be used as Caltrans acceptance of CIR. When density is verified by contractor nuclear gage quality control test results, then corrective action for number of passes is not required.

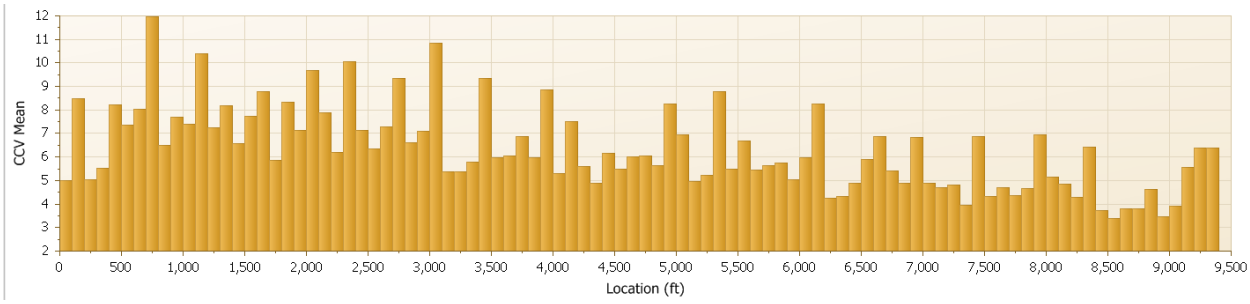
Updated 2015-06-21



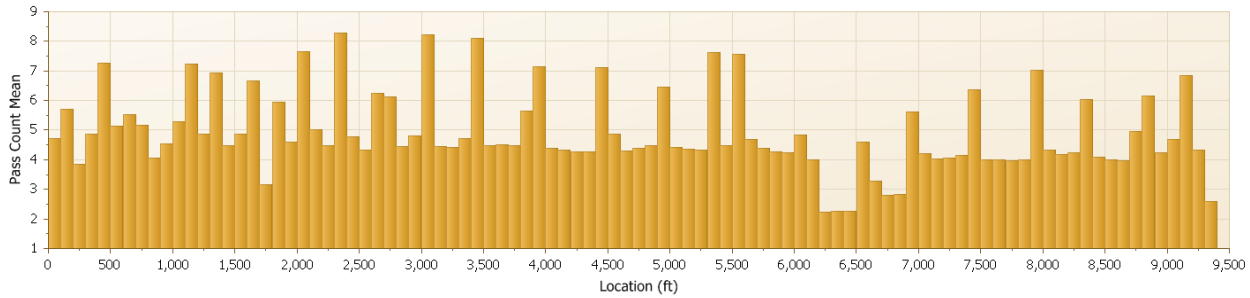
Histogram final Coverage Number of passes



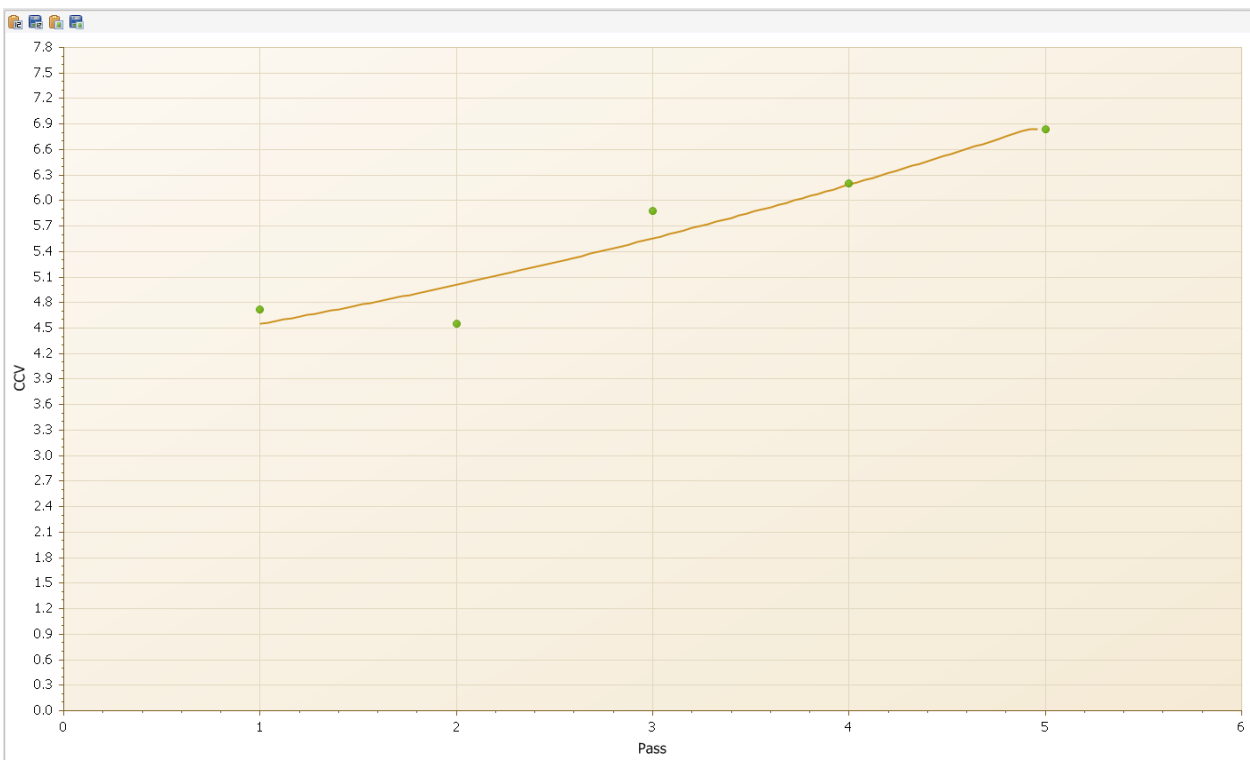
Histogram Final Coverage intelligent Compaction measurement Value



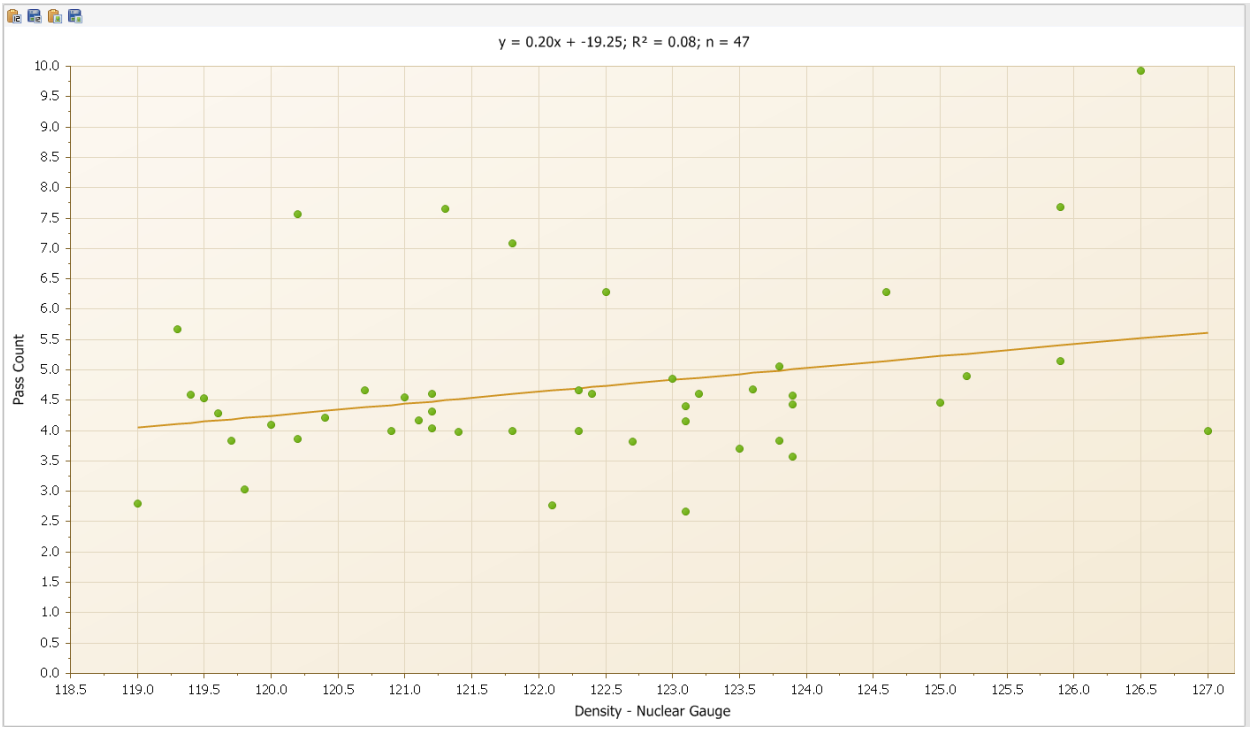
Histogram of intelligent compaction measurement value for a fixed 100’ interval.



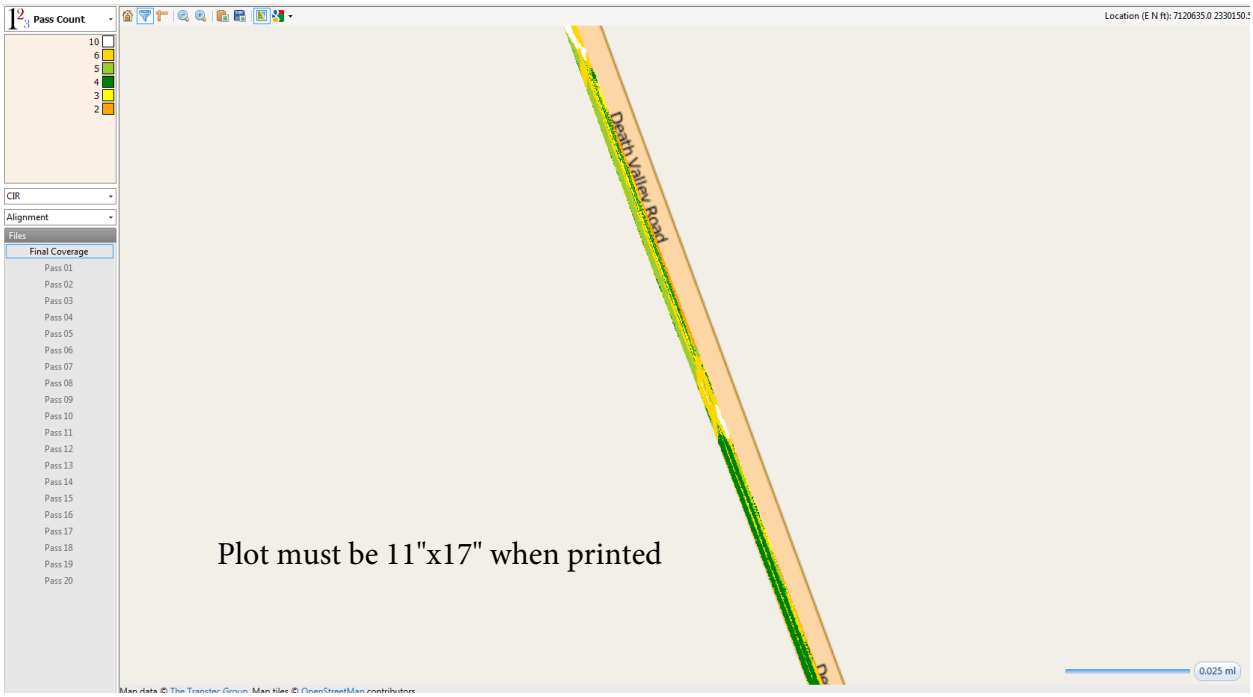
Histogram of Number pf passes for a fixed 5’ interval



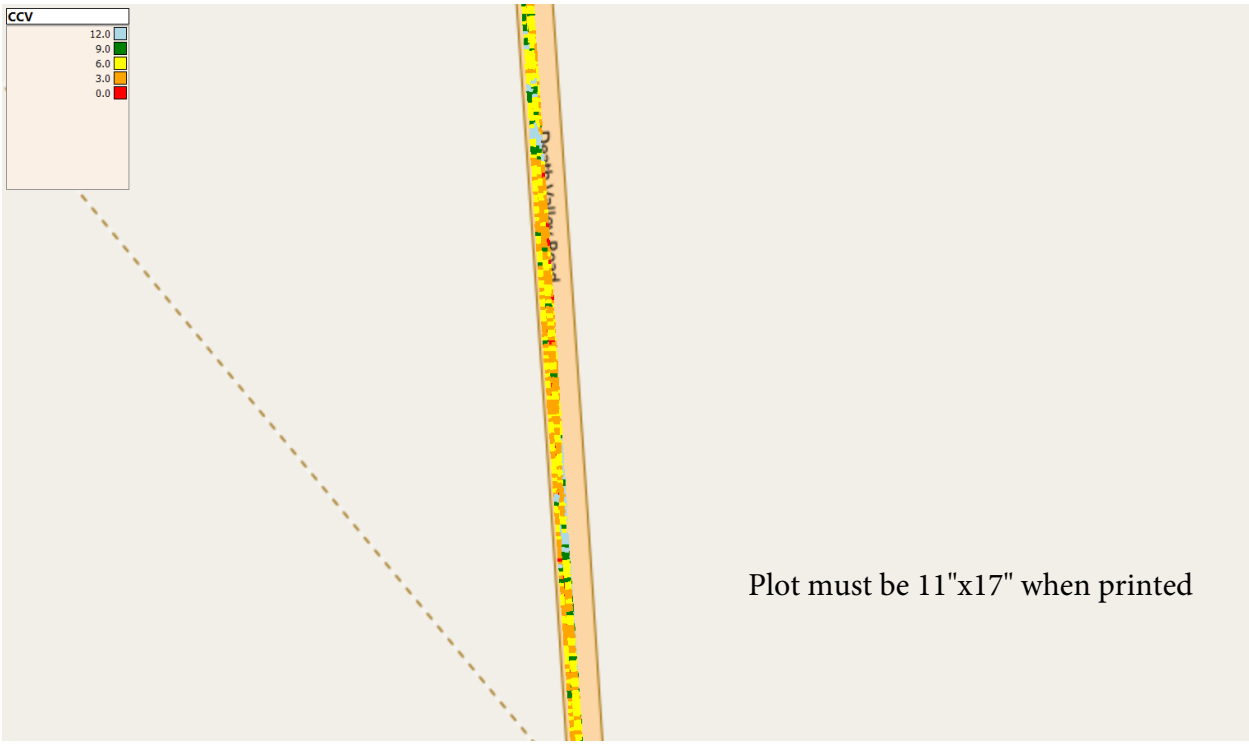
All passes compaction curve

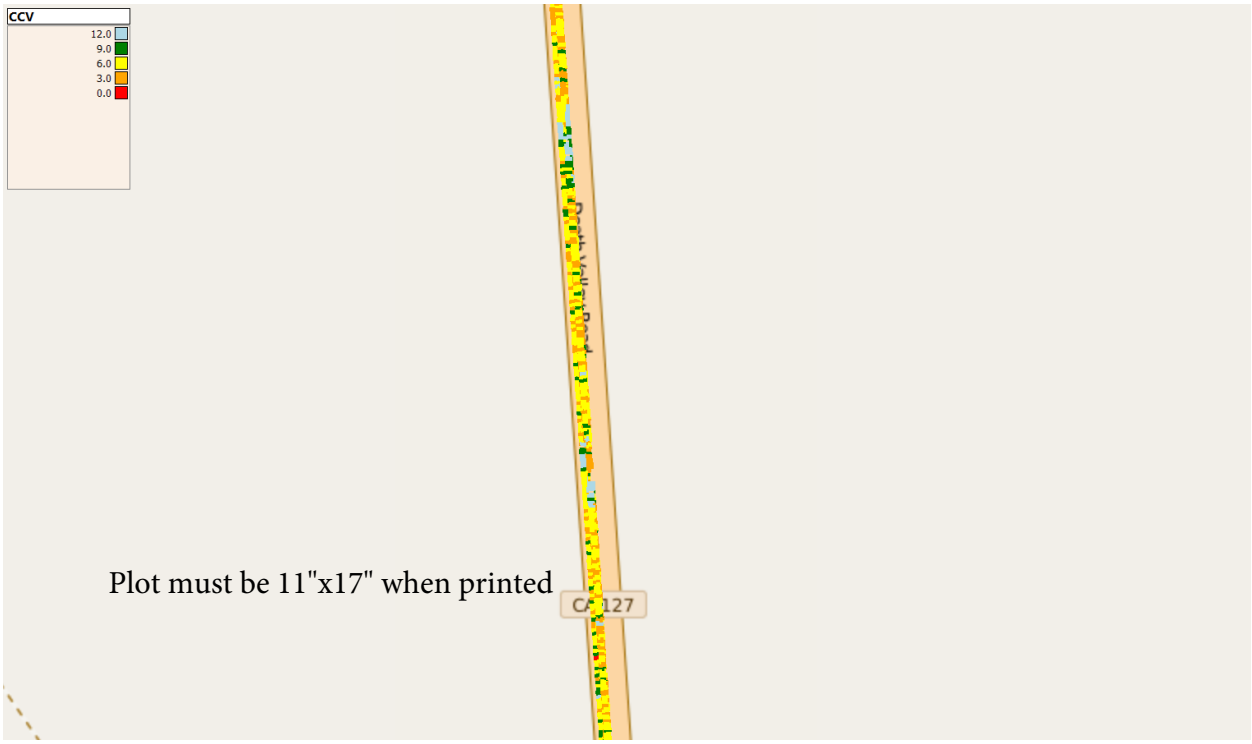


Final Coverage correlation density vs. pass count



Plot of final coverage roller pass





Plot of final coverage ICMV value

Density Tests								
Steel	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value	Pass	Avg.
Vibe	1	9/22/2015	7057559.081	2475656.782	Density - Nuclear Gauge	106.1	1	
	2	9/22/2015	7057550.741	2475665.927	Density - Nuclear Gauge	103.9	1	105.2
	3	9/22/2015	7057537.783	2475679.664	Density - Nuclear Gauge	105.5	1	
Steel	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
Static	1	9/22/2015	7057519.931	2475699.226	Density - Nuclear Gauge	108.9	2	
	2	9/22/2015	7057506.173	2475713.825	Density - Nuclear Gauge	105.4	2	107.6
	3	9/22/2015	7057491.452	2475729.326	Density - Nuclear Gauge	108.6	2	
Steel	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
Vibe	1	9/22/2015	7057474.271	2475747.915	Density - Nuclear Gauge	111.2	3	
	2	9/22/2015	7057456.261	2475767.772	Density - Nuclear Gauge	108.1	3	110.4
	3	9/22/2015	7057440.028	2475785.231	Density - Nuclear Gauge	112.0	3	
Steel	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
Static	1	9/22/2015	7057425.178	2475801.24	Density - Nuclear Gauge	112.2	4	
	2	9/22/2015	7057409.318	2475818.077	Density - Nuclear Gauge	110.1	4	111.8
	3	9/22/2015	7057403.709	2475814.451	Density - Nuclear Gauge	113.1	4	
Steel	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
Static	1	9/22/2015	7057401.658	2475811.116	Density - Nuclear Gauge	114.2	5	
	2	9/22/2015	7057413.91	2475797.88	Density - Nuclear Gauge	112.1	5	114.2
	3	9/22/2015	7057418.658	2475800.954	Density - Nuclear Gauge	116.2	5	
Steel	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
Static	1	9/22/2015	7057435.314	2475782.544	Density - Nuclear Gauge	114.0	6	
	2	9/22/2015	7057430.945	2475778.824	Density - Nuclear Gauge	112.0	6	114.0
	3	9/22/2015	7057447.657	2475761.739	Density - Nuclear Gauge	115.9	6	
Pnuematic	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
	1	9/22/2015	7057452.035	2475765.434	Density - Nuclear Gauge	115.2	1	
	2	9/22/2015	7057471.127	2475743.314	Density - Nuclear Gauge	110.4	1	112.0
	3	9/22/2015	7057466.847	2475739.28	Density - Nuclear Gauge	110.5	1	
Pnuematic	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
	1	9/22/2015	7057485.305	2475720.946	Density - Nuclear Gauge	114.0	2	
	2	9/22/2015	7057489.617	2475724.036	Density - Nuclear Gauge	112.7	2	114.3
	3	9/22/2015	7057509.27	2475702.428	Density - Nuclear Gauge	116.3	2	
Pnuematic	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
	1	9/22/2015	7057505.07	2475697.847	Density - Nuclear Gauge	116.9	3	
	2	9/22/2015	7057535.002	2475667.065	Density - Nuclear Gauge	112.3	3	114.9
	3	9/22/2015	7057539.521	2475670.331	Density - Nuclear Gauge	115.5	3	
Pnuematic	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
	1	9/22/2015	7057561.178	2475646.714	Density - Nuclear Gauge	118.5	4	
	2	9/22/2015	7057557.158	2475641.513	Density - Nuclear Gauge	112.2	4	116.1
	3	9/22/2015	7057576.65	2475622.036	Density - Nuclear Gauge	117.7	4	
Pnuematic	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
	1	9/22/2015	7057581.142	2475625.339	Density - Nuclear Gauge	117.5	5	
	2	9/22/2015	7057611.351	2475591.361	Density - Nuclear Gauge	117.0	5	117.2
	3	9/22/2015	7057606.864	2475587.245	Density - Nuclear Gauge	117.2	5	
Steel	ID	Date	Easting (ft)	Northing (ft)	Test Type	Value		
Vibe	1	9/22/2015	7057608.014	2475591.412	Density - Nuclear Gauge	114.9	7	
(Final	2	9/22/2015	7057604.088	2475602.313	Density - Nuclear Gauge	113.4	7	
Coverage)	3	9/22/2015	7057551.034	2475652.084	Density - Nuclear Gauge	114.1	7	
	4	9/22/2015	7057511.69	2475705.703	Density - Nuclear Gauge	114.5	7	
	5	9/22/2015	7057482.8	2475724.514	Density - Nuclear Gauge	113.9	7	
	6	9/22/2015	7057463.632	2475748.811	Density - Nuclear Gauge	113.8	7	
	7	9/22/2015	7057423.216	2475798.915	Density - Nuclear Gauge	115.0	7	
	8	9/22/2015	7057380.781	2475834.922	Density - Nuclear Gauge	113.3	7	
	9	9/22/2015	7057368.739	2475855.595	Density - Nuclear Gauge	114.5	7	
	10	9/22/2015	7057333.379	2475887.94	Density - Nuclear Gauge	114.1	7	

Profile Points				
ID	Date	Easting (ft)	Northing (ft)	Description
1	9/22/2015	7057629.5	2475563	CL
2	9/22/2015	7057603.5	2475591.25	CL
3	9/22/2015	7057577	2475619.25	CL
4	9/22/2015	7057551	2475646.75	CL
5	9/22/2015	7057524	2475677.5	CL
6	9/22/2015	7057490.5	2475712.75	CL
7	9/22/2015	7057468	2475737	CL
8	9/22/2015	7057427	2475781.25	CL
9	9/22/2015	7057384.5	2475826.75	CL
10	9/22/2015	7057364	2475849.25	CL
11	9/22/2015	7057337.5	2475877.25	CL
12	9/22/2015	7057306.5	2475913.5	CL
13	9/22/2015	7057287	2475935.5	CL
13	9/22/2015	7057295	2475942.25	EP
12	9/22/2015	7057315	2475923.25	EP
11	9/22/2015	7057347	2475887.75	EP
10	9/22/2015	7057372	2475860.25	EP
9	9/22/2015	7057394.5	2475836.25	EP
8	9/22/2015	7057438	2475790.25	EP
7	9/22/2015	7057478	2475746	EP
6	9/22/2015	7057501	2475721.75	EP
5	9/22/2015	7057534	2475686	EP
4	9/22/2015	7057562.5	2475656	EP
3	9/22/2015	7057588.5	2475627.75	EP
2	9/22/2015	7057611.5	2475601.75	EP
1	9/22/2015	7057639.5	2475571.25	EP

Density Gauge Readings with GPS Coordinates