

February 5, 2019

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7598581

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2018-CR-102

FEDERAL-AID PROJECT NO. FAP Nos: STP-RESF(387)

2019 Paver Placed Elastomeric Surface Treatment C1

Statewide

CITY/TOWN OF Cumberland, Coventry, Cranston

COUNTY OF PROVIDENCE, KENT

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 1 Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

A. Other Item Changes

1. 401.9901 - PAY ADJUSTMENTS

Only Acceptable Bid Price Updated To "\$1.00".Quantity Updated To "23000.00".

2. Table of Contents - DoQ

Remove page Index: 1 and replace with revised page Index: 1 (R-1) attached to this Addendum 1.

B. Contract Documents

1. Special Provisions/Construction Specific

- a. General Provisions - Contract Specific

Delete the first page of Preliminary Rideability in the Appendix and replace with the attached first page (R-1) of Preliminary Rideability attached to this Addendum 1. The municipality was changed from Scituate to Cranston for Pippin Orchard Road.

- b. Specifications - Job Specific

Delete pages JS-7 through JS-10 in their entirety and replace with revised pages JS-7 (R-1) through JS-10 (R-1) attached to this Addendum 1. The specification has been revised.



RI Department of Transportation

Administrator, Division of Project Management

ADDENDUM NO. 1

ATTACHMENTS

Table of Contents - Distribution of Quantities

Project Name - 2019 Paver Placed Elastomeric Surface Treatment C1
 Estimate Name - Addm to 19 PPEST C1
 R.I. Contract No. - 2018-CR-102
 FAP Nos: STP-RESF(387)

ItemCode	Description	Page
401.3100	MODIFIED CLASS 9.5 HMA	1
401.4005	CLASS 4.75 HMA FOR MISCELLANEOUS WORK	1
401.9901	PAY ADJUSTMENTS	1
403.0300	ASPHALT EMULSION TACK COAT	1
411.9901	PAVER PLACED ELASTOMERIC SURFACE TREATMENT	1
707.0900	ADJUST MANHOLES TO GRADE	1
707.0950	ADJUST TELEPHONE MANHOLE TO GRADE	1
707.1000	ADJUST SANITARY MANHOLE	2
707.1100	ADJUST CATCH BASINS	2
712.0200	GAS GATE BOX	2
713.8269	ADJUST WATER GATE BOXES TO GRADE	2
713.8300	ADJUST GAS GATE BOXES TO GRADE	2
906.9910	CURBING AND SIDEWALKS	2
914.5010	FLAGPERSONS	3
914.5020	FLAGPERSONS - OVERTIME	3
929.0110	FIELD OFFICE	3
932.0100	CUTTING AND MATCHING ASPHALT	3
935.0400	REMOVING BITUMINOUS PAVEMENT BY MICRO MILLING	3
T13.1000	TRAFFIC DETECTORS-LOOP, STANDARD 19.6.0	3
T20.1104	4 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS WHITE	3
T20.1106	6 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS WHITE	4
T20.1112	12 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS WHITE	4
T20.1204	4 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS YELLOW	4
T20.1208	8 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS YELLOW	4
T20.1212	12 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS YELLOW	4
T20.1310	TEMPORARY WATERBORNE PAINT PAVEMENT ARROW - STRAIGHT, LEFT, RIGHT OR COMBINED STANDARD 20.1.0	5
T20.1314	TEMPORARY WATERBORNE PAINT PAVEMENT MARKING - YIELD LINE SYMBOL	5

Distribution of Quantities

Project Name - 2019 Paver Placed Elastomeric Surface Treatment C1
 Estimate Name - Addm to 19 PPEST C1
 R.I. Contract No. - 2018-CR-102
 FAP Nos: STP-RESF(387)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
001	401.3100	MODIFIED CLASS 9.5 HMA CUMBERLAND / COVENTRY RT 114 / RT 3	TON	8,700.00	0006	01
Item 401.3100 Total:				8,700.00		
002	401.4005	CLASS 4.75 HMA FOR MISCELLANEOUS WORK PROJECTWIDE VARIOUS ROADS	TON	300.00	0006	01
Item 401.4005 Total:				300.00		
003	401.9901	PAY ADJUSTMENTS PROJECTWIDE ALL ROADS	EACH	23,000.00	0006	01
Item 401.9901 Total:				23,000.00		
004	403.0300	ASPHALT EMULSION TACK COAT PROJECTWIDE ALL ROADS	SY	119,179.00	0006	01
Item 403.0300 Total:				119,179.00		
005	411.9901	PAVER PLACED ELASTOMERIC SURFACE TREATMENT CRANSTON PIPPIN ORCHARD RD	TON	2,400.00	0006	01
Item 411.9901 Total:				2,400.00		
006	707.0900	ADJUST MANHOLES TO GRADE PROJECTWIDE VARIOUS ROADS	EACH	3.00	0006	01
Item 707.0900 Total:				3.00		
007	707.0950	ADJUST TELEPHONE MANHOLE TO GRADE	EACH			

Preliminary Rideability - 2019 PPEST C-1

NOOSENECK HILL ROAD (Route 3 - Coventry)					Data collected January 25, 2019				
Northbound - from Harkney Hill Road to Reservoir Road									
Left Lane					Right Lane				
Start Distance (ft)	Stop Distance (ft)	Length (ft)	Left Wheel Path IRI (in/mi)	Right Wheel Path IRI (in/mi)	Start Distance (ft)	Stop Distance (ft)	Length (ft)	Left Wheel Path IRI (in/mi)	Right Wheel Path IRI (in/mi)
0.00	528.00	528.00	162	204	0.00	528.00	528.00	215	294
528.00	1056.00	528.00	137	135	528.00	1056.00	528.00	179	180
1056.00	1584.00	528.00	116	119	1056.00	1584.00	528.00	206	185
1584.00	2112.00	528.00	108	122	1584.00	2112.00	528.00	178	272
2112.00	2640.00	528.00	107	115	2112.00	2640.00	528.00	167	190
2640.00	3168.00	528.00	91	80	2640.00	3168.00	528.00	191	192
3168.00	3696.00	528.00	105	89	3168.00	3696.00	528.00	140	173
3696.00	4224.00	528.00	127	108	3696.00	4224.00	528.00	194	297
4224.00	4794.83	570.00	181	186	4224.00	4833.67	608.83	227	234
Overall IRI:			127	129	Overall IRI:			189	224
Southbound - from Reservoir Road to Harkney Hill Road									
Left Lane					Right Lane				
Start Distance (ft)	Stop Distance (ft)	Length (ft)	Left Wheel Path IRI (in/mi)	Right Wheel Path IRI (in/mi)	Start Distance (ft)	Stop Distance (ft)	Length (ft)	Left Wheel Path IRI (in/mi)	Right Wheel Path IRI (in/mi)
0.00	528.00	528.00	237	235	0.00	528.00	528.00	325	246
528.00	1056.00	528.00	153	151	528.00	1056.00	528.00	265	249
1056.00	1584.00	528.00	181	107	1056.00	1584.00	528.00	113	127
1584.00	2112.00	528.00	107	107	1584.00	2112.00	528.00	232	214
2112.00	2640.00	528.00	127	122	2112.00	2640.00	528.00	249	174
2640.00	3168.00	528.00	117	110	2640.00	3168.00	528.00	193	177
3168.00	3696.00	528.00	129	96	3168.00	3696.00	528.00	197	202
3696.00	4224.00	528.00	119	112	3696.00	4224.00	528.00	225	189
4224.00	4844.58	619.75	190	195	4224.00	4838.17	613.33	359	295
Overall IRI:			152	138	Overall IRI:			242	210

PIPPIN ORCHARD ROAD (Cranston)					Data collected January 25, 2019				
Northbound - from Route 12 to Route 14					Southbound - from Route 14 to Route 12				
Start Distance (ft)	Stop Distance (ft)	Length (ft)	Left Wheel Path IRI (in/mi)	Right Wheel Path IRI (in/mi)	Start Distance (ft)	Stop Distance (ft)	Length (ft)	Left Wheel Path IRI (in/mi)	Right Wheel Path IRI (in/mi)
0.00	528.00	528.00	279	257	0.00	528.00	528.00	147	165
528.00	1056.00	528.00	148	133	528.00	1056.00	528.00	198	196
1056.00	1584.00	528.00	264	191	1056.00	1584.00	528.00	235	170
1584.00	2112.00	528.00	315	229	1584.00	2112.00	528.00	109	111
2112.00	2640.00	528.00	137	171	2112.00	2640.00	528.00	186	143
2640.00	3168.00	528.00	171	150	2640.00	3168.00	528.00	169	150
3168.00	3696.00	528.00	167	199	3168.00	3696.00	528.00	219	230
3696.00	4224.00	528.00	194	152	3696.00	4224.00	528.00	97	142
4224.00	4752.00	528.00	105	145	4224.00	4752.00	528.00	123	109
4752.00	5280.00	528.00	171	164	4752.00	5280.00	528.00	225	168
5280.00	5808.00	528.00	167	144	5280.00	5808.00	528.00	234	243
5808.00	6336.00	528.00	231	185	5808.00	6336.00	528.00	170	187
6336.00	6864.00	528.00	126	143	6336.00	6864.00	528.00	217	202
6864.00	7392.00	528.00	246	201	6864.00	7392.00	528.00	297	201
7392.00	7920.00	528.00	183	273	7392.00	7920.00	528.00	218	226
7920.00	8424.33	504.33	312	483	7920.00	8394.08	474.08	235	241
Overall IRI:			201	201	Overall IRI:			192	180

**CODE 413.9901
RIDEABILITY – SURFACE COURSE
2019 PPEST C-1**

413.01 Description. This specification covers pavement rideability as determined by the Engineer in accordance with the rating scale, based upon post paving rideability determination.

413.02 Materials. N/A

413.03 General. Pavement rideability, or ride quality, will be determined by the Engineer using a profiler on all travel lanes. A travel lane is defined as the primary traveled portion of the roadway excluding ramps, turn lanes, auxiliary lanes, and non-normally traveled pavement surfaces. The profiler will meet all of the equipment requirements of AASHTO M 328.

The surface course ride quality acceptance will be based on the average International Roughness Index (IRI) of three tests using a profiler, for each wheel path for each 0.1-mile section, conducted by the Engineer and reported for each travel lane.

An IRI number in inches per mile will be established using ProVAL software for each 0.1-mile long section for each wheel path in each travel lane. A 300 foot long-wavelength filter will be applied during testing for roads with posted speed limits greater than 30 mph. For roads with posted speed limits less than or equal to 30 mph a 150 foot long-wavelength filter will be applied. A 250mm short-wavelength filter will be applied during analysis using ProVAL.

The profile for each wheelpath of each 0.1 mile section in each travel lane will be considered a subplot. A standard lot is defined as 20 consecutive sublots of a single wheelpath of a single travel lane. If a road segment has less than 20 but more than 6 consecutive sublots for each wheelpath, a lot will be comprised of all of the sublots from one wheelpath. If a road segment has 6 or less consecutive sublots for each wheelpath, a lot will be comprised of all the sublots from the road segment. If the final lots include 10 or more sublots for each wheelpath, they will be considered their own lots. If the final lots are less than 10 sublots, they will be added to the preceding lots.

Areas that are excluded from testing (“leave-out” sections) include the area 15 feet before and after pavement segments with manholes, catch basins or other structures in the travel lane and the area 25 feet before and after bridge joints and project paving limits, all as determined by the Engineer. Areas excluded from testing by the profiler may, at the Engineer’s discretion, be tested using a 10-foot maximum straightedge. The variation of the surface between any two contacts along the straightedge shall be not more than 1/4 inch. Humps and depressions exceeding the specified tolerance shall be subject to correction as directed by the Engineer, at no additional cost to the State.

Sections before “leave-out” sections and the section at the end of the paving limit will be added to the previous subplot if they are less than 0.05 miles or will be considered a full subplot if they are greater than or equal to 0.05 miles.

The roads for this project are classified below:

Class A Roads	Class B Roads
Nooseneck Hill Road (Coventry)	Diamond Hill Road (Cumberland)
Pippin Orchard Road (Cranston)	

413.04 Method of Measurement

Calculating the percentage of work that is within specification limits (PWL) for each lot will be performed as follows:

1) The mean (X) of each lot will be determined using each subplot within the lot, calculated using the following equation:

$$X = \frac{\Sigma x}{n}$$

Where: x = the subplot IRI value
 n = the number of sublots in the lot
 Σ = the summation of

2) The standard deviation (s) of each lot will be determined using each subplot within the lot, calculated using the following equation:

$$s = \sqrt{\frac{n\Sigma(x^2) - (\Sigma x)^2}{n(n-1)}}$$

Where: $\Sigma(x^2)$ = summation of the squares of subplot values
 $(\Sigma x)^2$ = summation of subplot values squared
 n = the number of sublots in the lot

3) The upper quality index (Q_u) of each lot will be determined using the mean and standard deviation of each lot, and will be calculated using the following equation:

$$Q_u = \frac{USL - X}{s}$$

Where: USL = the upper spec limit from Table 1
 X = the lot mean
 s = the lot standard deviation

4) The percentage of the lot that falls below the USL (P_u) will be determined using Table 2, and the Q_u value determined above. The P_u value is determined from the table by entering the column corresponding to the number of sublots (n) in the lot, and locating the row that corresponds with the Q_u value. If Q_u is a negative value, the absolute value of Q_u will be used to determine the table value for P_u and PWL will be equal to 100 minus the table value for P_u . If Q_u is positive the percent within limits (PWL) will be equal to P_u .

5) The pay equation for determining the pay factor for each lot will be determined as follows:

$$Pay\ Factor = \frac{55 + 0.50(PWL)}{100}$$

If the PWL is greater than 90, the bonus (portion of pay factor in excess of 1.00) will be multiplied by 0.6.

6) The pay factor for each lot will be applied to the theoretical tonnage of each respective lot. The theoretical lot tonnage will be obtained by taking the measured length, multiplied by half of the design width of the travel lane, multiplied by the design thickness of the surface course, multiplied by the unit weight derived from 94% of the averages of the theoretical maximum densities for dense graded mixes or 96% of the Marshall or Gyrotory densities for friction course obtained at the plant.

Table 1

Road Classification	Upper Spec Limit for IRI	Maximum IRI for Sublots
Class A	80 in/mile	150 in/mile
Class B	95 in/mile	180 in/mile

Sublots that exceed the maximum IRI value in Table 1 will be subject to corrective action. In order to produce a uniform cross section, the Engineer may require corrections to the adjoining lanes and shoulders. Corrections shall be at no cost to the State. The method of correction shall be limited to diamond grinding or another approved method.

Where corrections are made after the official Department test, the pavement will be retested by the Engineer to verify that corrections have produced an acceptable ride surface. The PWL will be recalculated after corrective action.

This rideability specification does not relieve the Contractor from responsibility concerning workmanship in accordance with the Specifications and other contract requirements.

413.05 Basis of Payment

An adjusted unit price for each lot of the surface course will be calculated by multiplying the pay factor by the unit price. The adjusted unit price will be applied to the theoretical lot tonnage to determine payment for the lot. Previous payment for respective lot tonnage at bid unit price will be deducted to determine the net pay adjustment (incentive or disincentive) for the lot.

Incentives will be addressed using Item Code 401.9901. Disincentives will be addressed using a Report of Change.

Table 2 – Values for Estimating Percentage of Lot Within Specification Limits

Pu (PWL)	Upper Quality Index (Qu)															
									n = 10	n = 12	n = 15	n = 19	n = 26	n = 38	n = 70	n = 201
	n = 3	n = 4	n = 5	n = 6	n = 7	n = 8	n = 9	to n = 11	to n = 14	to n = 18	to n = 25	to n = 37	to n = 69	to n = 200	to n = ∞	
100	1.16	1.50	1.79	2.03	2.23	2.39	2.53	2.65	2.83	3.03	3.20	3.38	3.54	3.70	3.83	
99		1.47	1.67	1.80	1.89	1.95	2.00	2.04	2.09	2.14	2.18	2.22	2.26	2.29	2.31	
98	1.15	1.44	1.60	1.70	1.76	1.81	1.84	1.86	1.91	1.93	1.96	1.99	2.01	2.03	2.05	
97		1.41	1.54	1.62	1.67	1.70	1.72	1.74	1.77	1.79	1.81	1.83	1.85	1.86	1.87	
96	1.14	1.38	1.49	1.55	1.59	1.61	1.63	1.65	1.67	1.68	1.70	1.71	1.73	1.74	1.75	
95		1.35	1.44	1.49	1.52	1.54	1.55	1.56	1.58	1.59	1.61	1.62	1.63	1.63	1.64	
94	1.13	1.32	1.39	1.43	1.46	1.47	1.48	1.49	1.50	1.51	1.52	1.53	1.54	1.55	1.55	
93		1.29	1.35	1.38	1.40	1.41	1.42	1.43	1.44	1.44	1.45	1.46	1.46	1.47	1.47	
92	1.12	1.26	1.31	1.33	1.35	1.36	1.36	1.37	1.37	1.38	1.39	1.39	1.40	1.40	1.40	
91	1.11	1.23	1.27	1.29	1.30	1.30	1.31	1.31	1.32	1.32	1.33	1.33	1.33	1.34	1.34	
90	1.10	1.20	1.23	1.24	1.25	1.25	1.26	1.26	1.26	1.27	1.27	1.27	1.28	1.28	1.28	
89	1.09	1.17	1.19	1.20	1.20	1.21	1.21	1.21	1.21	1.22	1.22	1.22	1.22	1.22	1.23	
88	1.07	1.14	1.15	1.16	1.16	1.16	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	
87	1.06	1.11	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.13	1.13	
86	1.04	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	
85	1.03	1.05	1.05	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	
84	1.01	1.02	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	
83	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95	
82	0.97	0.96	0.95	0.94	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
81	0.96	0.93	0.91	0.90	0.90	0.89	0.89	0.89	0.89	0.88	0.88	0.88	0.88	0.88	0.88	
80	0.93	0.90	0.88	0.87	0.86	0.86	0.86	0.85	0.85	0.85	0.85	0.84	0.84	0.84	0.84	
79	0.91	0.87	0.85	0.84	0.83	0.82	0.82	0.82	0.82	0.81	0.81	0.81	0.81	0.81	0.81	
78	0.89	0.84	0.82	0.80	0.80	0.79	0.79	0.79	0.78	0.78	0.78	0.78	0.77	0.77	0.77	
77	0.87	0.81	0.78	0.77	0.76	0.76	0.76	0.75	0.75	0.75	0.75	0.74	0.74	0.74	0.74	
76	0.84	0.78	0.75	0.74	0.73	0.73	0.72	0.72	0.72	0.71	0.71	0.71	0.71	0.71	0.71	
75	0.82	0.75	0.72	0.71	0.70	0.70	0.69	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.67	
74	0.79	0.72	0.69	0.68	0.67	0.66	0.66	0.66	0.66	0.65	0.65	0.65	0.65	0.64	0.64	
73	0.76	0.69	0.66	0.65	0.64	0.63	0.63	0.63	0.62	0.62	0.62	0.62	0.62	0.61	0.61	
72	0.74	0.66	0.63	0.62	0.61	0.60	0.60	0.60	0.59	0.59	0.59	0.59	0.59	0.58	0.58	
71	0.71	0.63	0.60	0.59	0.58	0.57	0.57	0.57	0.57	0.56	0.56	0.56	0.56	0.55	0.55	
70	0.68	0.60	0.57	0.56	0.55	0.55	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.53	0.52	
69	0.65	0.57	0.54	0.53	0.52	0.52	0.51	0.51	0.51	0.50	0.50	0.50	0.50	0.50	0.50	
68	0.62	0.54	0.51	0.50	0.49	0.49	0.48	0.48	0.48	0.48	0.47	0.47	0.47	0.47	0.47	
67	0.59	0.51	0.47	0.47	0.46	0.46	0.46	0.45	0.45	0.45	0.45	0.44	0.44	0.44	0.44	
66	0.56	0.48	0.45	0.44	0.44	0.43	0.43	0.43	0.42	0.42	0.42	0.42	0.41	0.41	0.41	
65	0.52	0.45	0.43	0.41	0.41	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.39	0.39	0.39	
64	0.49	0.42	0.40	0.39	0.38	0.38	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36	
63	0.46	0.39	0.37	0.36	0.35	0.35	0.35	0.34	0.34	0.34	0.34	0.34	0.33	0.33	0.33	
62	0.43	0.36	0.34	0.33	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31	
61	0.39	0.33	0.31	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.28	
60	0.36	0.30	0.28	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.25	0.25	
59	0.32	0.27	0.25	0.25	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.23	0.23	0.23	
58	0.29	0.24	0.23	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20	
57	0.25	0.21	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
56	0.22	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	
55	0.18	0.15	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
54	0.14	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
53	0.11	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	
52	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
51	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: If the calculated value of Q_u does not correspond exactly to a value in the table, the next lower value will be used.