

April 15, 2019

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7598714

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2019-CH-023

FEDERAL-AID PROJECT NO. FAP Nos: STP-RESF(398), STP-RESFG(399)

Central Pk & Battey Meetinghouse Rd

Chopmist Hill Road (Rte. 102) to Danielson Pike

CITY/TOWN OF Scituate

COUNTY OF PROVIDENCE

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. JS Pages

1. JS-ii

Delete page JS-ii in its entirety and replace it with revised page JS-ii(R-1) attached to this Addendum No. 1. Code 413.9901 has been added to the index.

2. JS-36

Delete page JS-36 in its entirety and replace it with revised page JS-36(R-1) attached to this Addendum No. 1. Section 938.1000(a) has been added revised.

3. JS-41 thru JS-45

Insert new pages JS-41 thru JS-45 attached to this Addendum No. 1. Code 413.9901 has been added to the contract.



RI Department of Transportation

Administrator, Division of Project Management

ADDENDUM NO. 1

ATTACHMENTS

**INDEX
SPECIFICATIONS – JOB SPECIFIC**

(R-1)

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| T15.9901 | Reflective Sign Post Panels | JS-40 |
| 413.9901 | Rideability – Surface Course | JS-41 |

**CODE 938.1000
PRICE ADJUSTMENTS**

DESCRIPTION:

a. Liquid Asphalt Cement.* The Base Price of Liquid Asphalt Cement as required to implement **Subsection 938.03.1** of the Standard Specifications is \$ 537.50 per ton.

* In the case of modified asphalt binder, this price adjustment provision shall only apply to the neat liquid asphalt component. This provision shall not apply to the modifier component, manufacture, storage, transportation or other associated costs.

b. Diesel Fuel. The Base Price of Diesel Fuel as required to implement **Subsection 938.03.2** of the Standard Specifications is \$ 2.2339 per gallon.

Current price adjustments can be found at the following web address:

<http://www.dot.ri.gov/business/contractorsandconsultants.php>

**CODE 413.9901
 RIDEABILITY – SURFACE COURSE**

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 |
|---------------|--|
| N/A | Central Pike/Batthey Meetinghouse Road (Scituate) |

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 (\bar{X}) of each lot will be determined using each subplot within the lot, calculated using the following equation:

$$\bar{X} = \frac{\sum x}{n}$$

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:

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

Where: $\Sigma(x^2)$ = summation of the squares of subplot values
 $(\sum x)^2$ = 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:

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

Where: USL = the upper spec limit from Table 1
 \bar{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:

Addendum No. 1

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

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 = 3 | n = 4 | n = 5 | n = 6 | n = 7 | n = 8 | n = 9 | n = 10 | n = 12 | n = 15 | n = 19 | n = 26 | n = 38 | n = 70 | n = 201 |
| | | | | | | | | to | to | to | to | to | to | to | to |
| | | | | | | | | n = 11 | n = 14 | n = 18 | n = 25 | n = 37 | n = 69 | n = 200 | 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.