

January 25, 2012

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF TRANSPORTATION
RHODE ISLAND CONTRACT NO.2011-CT-080
FEDERAL-AID PROJECT NO. FAP Nos: NHSG-4444(080)

2012-2013 Statewide Pavement Striping – Limited Access

Barrington, Cranston, Cumberland, East Greenwich, East Providence, Exeter, Hopkinton, Jamestown, Johnston, Lincoln, Newport, North Kingstown, North Providence, North Smithfield, Pawtucket, Portsmouth, Providence, Richmond, Smithfield, Tiverton, Warwick, West Greenwich, West Warwick, Westerly

CITY/TOWN OF Statewide

COUNTY OF STATEWIDE

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 7 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. Contract Dates

1. Bid-Opening Date

The bid opening has been changed from “January 27, 2012” to “February 03, 2012”.

B. General Provisions – Contract Specific

1. Page CS-9(R-3)

Delete Page CS-9(R-2) in its entirety and replace with Page CS-9(R-3) attached to this Addendum No. 7. The column containing “Route 6 & 195 Shield (each)” quantities has been deleted.

2. Page CS-10(R-3)

Delete Page CS-10(R-2) in its entirety and replace with Page CS-10(R-3) attached to this Addendum No. 7. The column containing “Route 6 & 195 Shield (each)” quantities has been deleted.

3. Page CS-11(R-2)

Delete Page CS-11(R-1) in its entirety and replace with Page CS-11(R-2) attached to this Addendum No. 7. The “Recessed Pavement Markings and Reflectors” paragraph has been revised.

C. Specifications – Job Specific

1. Page JS-i(R-3)
Delete Page JS-i(R-2) in its entirety and replace with Page JS-i(R-3) attached to this Addendum No. 7. Item code T20.9935 has been deleted. The item code for “Reflectorized Pavement Marker (Slotted in pavement) White” has been changed to T20.9925. The title for Item Codes T20.9928 and T20.9933 has been revised.
2. Page JS-6(R-3)
Delete Page JS-6(R-2) in its entirety and replace with Page JS-6(R-3) attached to this Addendum No. 7. Item code T20.9935 has been deleted. The date on this page has been revised.
3. Page JS-8(R-4)
Delete Page JS-8(R-3) in its entirety and replace with Page JS-8(R-4) attached to this Addendum No. 7. The date on this page has been revised.
4. Page JS-9(R-3)
Delete Page JS-9(R-2) in its entirety and replace with Page JS-9(R-3) attached to this Addendum No. 7. The date on this page has been revised.
5. Page JS-12(R-4)
Delete Page JS-12(R-3) in its entirety and replace with Page JS-12(R-4) attached to this Addendum No. 7. The date on this page has been revised.
6. Page JS-13(R-2)
Delete Page JS-12(R-1) in its entirety and replace with Page JS-12(R-2) attached to this Addendum No. 7. The date on this page has been revised.
7. Page JS-14(R-1)
Delete Page JS-14 in its entirety and replace with Page JS-14(R-1) attached to this Addendum No. 7. The item code on this page has been revised.
8. Page JS-24(R-2)
Delete Page JS-24(R-1) in its entirety and replace with Page JS-24(R-2) attached to this Addendum No. 7. The “Methods of Measurement” and “Basics of Payment” paragraphs have been revised.

D. Distribution of Quantities

1. DOQ Index: 1
Delete DOQ Index: 1(R-1) in its entirety and replace with DOQ Index: 1(R-2) attached to this Addendum No. 7. Item Code T20.9935 has been deleted.
2. DOQ Page 2(R-2)
Delete Page 2(R-1) in its entirety and replace with Page 2(R-2) attached to this Addendum No. 7. Quantities for Items Code T20.2020, T20.9904 and T20.9905 have been revised.

3. DOQ Page 3(R-1)

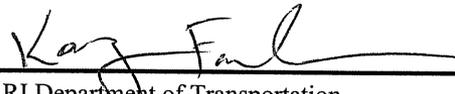
Delete Page 3 in its entirety and replace with Page 3(R-1) attached to this Addendum No. 7. Quantities for Items Code T20.9908 has been revised.

4. DOQ Page 4(R-2)

Delete Page 4(R-1) in its entirety and replace with Page 4(R-2) attached to this Addendum No. 7. Quantities for Item Code T20.9913 has been reduced.

5. DOQ Page 6(R-2)

Delete Page 6(R-1) in its entirety and replace with Page 6(R-2) attached to this Addendum No. 7. Item Code T20.9935 has been deleted. The unit of measurement (UM) for Item Code T20.9936 has been corrected to "EACH".



RI Department of Transportation
Chief Engineer

19. LIMIT OF WORK & ESTIMATED QUANTITIES

2012 ROADWAYS TO BE STRIPED (PHASE 1 and PHASE 2)

ROADWAY	LIMITS	MUNICIPALITY	REMOVAL REQUIRED?	6" White LF	6" Yellow LF	12" White LF	12" Yellow LF	RI Std. 20.1.0 Arrows EACH	RI Std. 20.1.0 "ONLY" EACH	Bi-Direction Arrow EACH	Yield Line EACH	Lane Reduction Arrow EACH	"30 MPH"/"40 MPH" EACH	"STOP AHEAD" EACH	"BUMP" EACH	"YIELD" EACH	Bike Lane Detail EACH	"BIKE X-ING" EACH	"EXIT ONLY" EACH	"TO" EACH	"CURVE AHEAD" EACH	
Airport Connector & Ramps	Interstate 95 to T.F. Green Airport	Warwick	YES	25,000	22,000	5,000	0	6	6	0	3	0	0	0	0	0	0	0	0	0	0	0
Interstate 295 & Ramps	Interstate 95 to Massachusetts State Line	Warwick, West Warwick, Cranston, Johnston, Smithfield, Lincoln, Cumberland	YES*	450,218	376,000	80,000	0	40	18	29	24	0	0	0	1	0	0	0	0	0	0	0
Interstate 95 & Ramps	Connecticut State Line to 890 ft. south of bridge 321 58601 and 910 ft. south of bridge 58621, Northbound and Southbound respectively.	East Greenwich, Warwick, West Warwick	YES	310,543	270,480	60,000	0	22	12	28	26	4	0	0	0	0	0	0	0	0	0	0
Interstate 95 Recessed Pavement Markers and Recessed ReflectORIZED Markers	From 890 ft. south of bridge 58601 and 910 ft. south of bridge 58621, Northbound and Southbound respectively to Interstate 295	Hopkinton, Richmond, Exeter, West Greenwich	YES	184,457	179,520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Route 24 & Ramps	Route 114 to Massachusetts State Line	Tiverton, Portsmouth	YES	127,000	112,000	22,000	0	15	8	16	9	0	0	0	0	0	0	0	0	0	0	0
Route 37 & Ramps	U.S. Route 1 to Natick Ave.	Warwick, Cranston	YES	86,000	77,000	20,000	0	10	8	12	9	3	4	2	0	0	0	0	0	0	0	0
Route 6/70 Connector & Ramps	U.S. Route 6 to Interstate 95 Ramps	Providence	YES	40,000	33,000	10,000	0	10	9	2	4	0	0	0	0	0	0	0	0	0	0	0
Route 99 & Ramps	Route 146 to Route 122 (Mendon Rd.)	Lincoln, Cumberland	YES	60,000	50,000	8,000	0	6	4	1	1	0	0	0	0	0	0	0	0	0	0	0
U.S. Route 6 & Ramps	Interstate 295 to Route 10	Johnston, Providence	YES*	100,000	75,000	23,000	834	8	4	2	6	0	0	0	0	0	0	0	0	0	0	0
PHASE 1 TOTAL:				1,383,218	1,195,000	228,000	834	117	69	90	82	7	4	2	1	0	0	0	0	0	0	0

* The Contractor shall coordinate with the Engineer regarding limits of existing-to-remain in-laid tape markings prior to beginning removal operations.

2013 ROADWAYS TO BE STRIPED (PHASE 3 and SUBSTANTIAL COMPLETION)

ROADWAY	LIMITS	MUNICIPALITY	REMOVAL REQUIRED?	6" White LF	6" Yellow LF	12" White LF	12" Yellow LF	RI Std. 20.1.0 Arrows EACH	RI Std. 20.1.0 "ONLY" EACH	Bi-Direction Arrow EACH	Yield Line EACH	Lane Reduction Arrow EACH	"30 MPH"/"40 MPH" EACH	"STOP AHEAD" EACH	"BUMP" EACH	"YIELD" EACH	Bike Lane Detail EACH	"BIKE X-ING" EACH	"EXIT ONLY" EACH	"TO" EACH	"CURVE AHEAD" EACH
Henderson Bridge & Ramps	Waterman Street / Angell Street to North Broadway (in East Providence)	Providence, East Providence	YES	24,470	20,000	5,000	0	0	0	0	2	0	0	0	0	3	16	2	2	0	0
Interstate 195 & Ramps	Interstate 95 to Massachusetts State Line	Providence, East Providence	YES	92,500	60,100	25,000	0	23	14	10	10	0	0	0	0	0	0	0	4	0	0
Interstate 95 & Ramps	Interstate 295 to Massachusetts State Line	Warwick, Cranston, Providence, Pawtucket	YES	400,000	300,000	92,000	0	50	25	30	20	3	0	0	0	1	0	0	6	4	20
Relocated Route 403 & Ramps	Route 4 to Commerce Park Road	East Greenwich, North Kingstown	YES	85,000	66,000	13,000	0	4	0	8	5	0	0	0	0	0	0	0	0	0	0
Route 10 & Ramps	Park Ave. to U.S. Route 6	Cranston, Providence	YES	85,000	75,000	18,000	0	10	6	5	6	0	0	0	0	1	0	0	0	0	0
Route 114 & Ramps (East Shore Expressway)	Interstate 195 to Route 103 (County Rd.)	East Providence, Barrington	YES	82,000	71,000	14,572	0	10	6	3	8	0	0	4	0	0	0	0	0	0	0
Route 138 & Ramps	U.S. Route 1 to Newport (Pell) Bridge	North Kingstown, Jamestown	YES	131,000	115,000	12,000	0	4	4	5	6	0	0	0	0	0	0	0	0	0	0
Route 138 & Ramps	Newport (Pell) Bridge to Admiral Kalbfus Rd.	Newport	YES	15,000	13,000	3,000	328	2	2	2	5	0	0	0	0	0	0	0	0	0	0
Route 146 & Ramps	Interstate 95 to Massachusetts State Line	Providence, North Providence, Lincoln, North Smithfield	YES	382,000	225,000	50,200	0	40	20	17	16	3	0	0	0	0	0	0	0	0	0
Route 4 & Ramps	U.S. Route 1 to Interstate 95	East Greenwich, North Kingstown	YES	167,365	128,100	27,000	0	53	30	6	10	3	0	0	0	0	0	0	0	0	0
Route 78 & Ramps	Connecticut State Line to U.S. Route 1	Westerly	YES	64,000	64,000	12,000	420	15	10	4	10	0	0	0	0	0	0	0	0	0	0
PHASE 2 TOTAL:				1,528,335	1,137,200	271,772	748	211	117	90	98	9	0	4	0	5	16	2	12	4	20

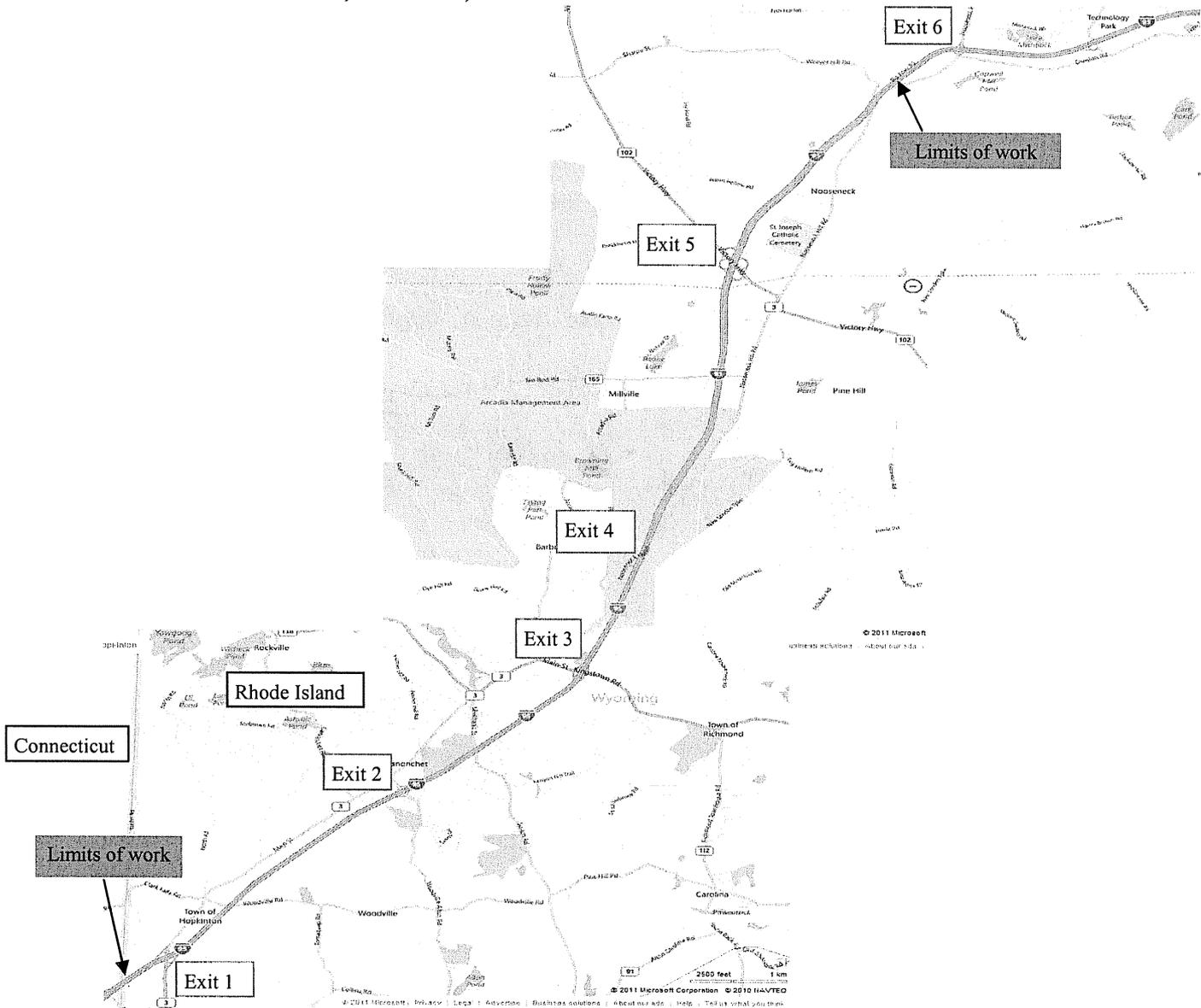
CONTRACT TOTAL:		2,911,553	2,332,200	499,772	1,582	328	186	180	180	16	4	6	4	5	1	5	16	2	12	4	20
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20. SUBCONTRACTING

For work performed by a subcontractor, the subcontractor shall be subject to the reporting requirements as set forth for the prime contractor under the provisions of Section 12 of the RI DOA Procurement Regulations. The Contractor shall accept as full payment therefore, an amount equal to the actual cost to the Contractor of such work performed by the subcontractor as determined by the Engineer, plus 10 percent of said cost.

21. RECESSED PAVEMENT MARKINGS AND REFLECTORS

The Contractor is required to install recessed pavement markings and reflectorized pavement markers at two test locations in the field. The two test locations are as follows: -1 - A 17 mile segment of I-95 North beginning at the Connecticut State Line ending 890 ft. south of Rhode Island Bridge 58601 joint in West Greenwich. -2- A 17 mile segment of I-95 South beginning at the Connecticut State Line and ending 910 ft. south of Rhode Island Bridge 58621 joint in West Greenwich. Refer to the map below for location and limits of the two test sites. The work to be done under these items is outlined in the Job Specific pages under codes T20.9925, T20.9928, and T20.9933.



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SPECIFICATIONS – JOB SPECIFIC

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931.9901	Cleaning and Sweeping Pavement for Statewide Striping	JS-5
T20.2020, T20.2022 T20.9903, T20.9904, T20.9905, T20.9906, T20.9907, T20.9908, T20.9909, T20.9910, T20.9911, T20.9912, T20.9913, T20.9914, T20.9915, T20.9916, T20.9917, T20.9918, T20.9919, T20.9934, T20.9936	Epoxy Resin Pavement Markings	JS-6
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937.1000	Maintenance and Movement of Traffic Protective Devices	JS-17
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929.0100	Special Requirements for Field Office	JS-25

JOB SPECIFIC

CODES T20.2020, T20.2022, T20.9903, T20.9904, T20.9905, T20.9906, T20.9907, T20.9908, T20.9909, T20.9910, T20.9911, T20.9912, T20.9913, T20.9914, T20.9915, T20.9916, T20.9917, T20.9918, T20.9919, T20.9934, T20.9936

EPOXY RESIN PAVEMENT MARKINGS

DESCRIPTION: This work consists of furnishing and applying reflectorized, two-component, hot-spray applied epoxy resin pavement marking material on asphaltic and Portland cement concrete pavement surfaces. Upon curing, it produces an adherent reflectorized stripe of specified thickness and width capable of resisting wear from traffic. This work also includes the removal of existing epoxy resin pavement markings by grinding prior to the installation of new epoxy resin material. This work also includes certified testing reports for all pavement markings placed on all roadways. All work shall be performed in accordance with these Specifications, Section T.20 of the Rhode Island Standard Specifications for Road and Bridge Construction, 2004 Edition with latest revisions, and the Contract Documents.

MATERIALS: Materials shall conform to Section M.17 – Pavement Markings of the Rhode Island Standard Specifications for Road and Bridge Construction, 2004 Edition with latest revisions, with the following exceptions:

CONSTRUCTION METHODS: Construction Methods shall conform to Section T.20 – Pavement Markings of the Rhode Island Standard Specifications for Road and Bridge Construction, 2004 Edition with latest revisions, with the following exceptions:

Delete **Subsection T.20.03.6 d. 1. Grinding** on page T-45 and T-46 of the Rhode Island Standard Specifications for Road and Bridge Construction, 2004 Edition in its entirety and replace it with the following:

T.20.03.06 d. 1. Grinding. All existing pavement marking material (including binder and beads) situated above the level plane of the top substrate surface shall be removed by grinding. Existing marking material embedded in pavement cavities below the level plane of the top surface course pavement binder shall not be removed by the grinding operation unless otherwise directed by the Engineer. The method shall not damage the surface and have no more than a moderate color and/or texture change. The grinding truck shall be equipped with a vacuum and dust collector that is 99.99 percent efficient in removing particles no bigger than 0.5 microns. All pavement markings removed must be replaced within 3 calendar days and/or before the end of the working week. No roads are to be left without striping over a weekend. Removal is at no extra cost. A sweeper with the capacity to pick up grindings simultaneously with the removal operation is required.

Establishment of Measurement Lots

The contractor shall perform QC testing as follows on all materials characteristics listed in the Master Schedule for Project Testing. For the purposes of certifying that pavement markings are installed in accordance with contract requirements, each of the roadways and facilities upon which pavement markings are installed shall be divided into distinct

The Contractor shall furnish and implement appropriate temporary traffic controls during all inspection and certification work described in this specification. All temporary traffic control shall be in accordance with the provisions of the Transportation Management Plan for the project.

RIDOT will perform random and/or periodic spot checks of the pavement marking LOTS. The Contractor shall provide temporary traffic control for RIDOT retroreflectivity acceptance testing operations. The Transportation Management Plan for this project shall be adhered to by the Contractor for the evaluation of retroreflectivity acceptance testing operations. RIDOT estimates approximately 50 working days of retroreflectivity acceptance testing operations. The Engineer will notify the Contractor a minimum of twenty-four (24) hours prior to the commencement of such expected operations.

In the event RIDOT and QC retroreflectivity readings vary using the 30 meter retroreflectivity instrument in accordance with ASTM E 1710 "Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer" and certified personnel, RIDOT results shall govern.

Inspection Schedule and Frequency

The Contractor shall be responsible for developing and managing an overall inspection program to ensure that all pavement markings are inspected and installed in accordance with the stipulations of this section.

Initial Inspection and Certification of Newly Installed Markings:

The Contractor shall conduct an inspection of all newly installed pavement markings at least 14 but not more than 60 calendar days after the installation of the markings.

Also at the time of placement of said striping the contractor shall use a 4 inch by 8 inch aluminum tab taken in the field at the time of striping for each line applied and forwarded to the striping Resident Engineer for his inspection. These tabs will be well cured and labeled from their locations.

Exceptions to the Standard Inspection and Certification Schedule:

RIDOT may request that the Contractor conduct additional or more frequent inspections of retroreflectivity than described in these specifications in one or more specific LOTS if it is determined that the retroreflectivity of the markings within the LOT are determined to be deficient, as defined in the *Pavement Marking Performance Requirements – Retroreflectivity* section of these specifications.

Inspection Methods and Procedures

Dimensions:

For each type of longitudinal line marking, the Contractor shall measure the width and height (depth) of the marking at one set of each applied marking per lane mile within each Lot. The dimensions (both width and height) of each type of longitudinal marking to be reported for each overall LOT shall be greater than 28 mils (difference between top of adjacent pavement and top of marking).

Also the contractor shall provide the engineer with field sample tabs of each longitudinal line striped for centerline and edge line on each roadway. These tabs will be well cured and labeled from their locations.

Retroreflectivity:

The photometric quality of markings to be evaluated by the Contractor is the coefficient of retroreflected luminance (R_L) and shall be expressed as millicandelas per square meter per lux ($\text{mcd}/\text{m}^2/\text{lx}$). For each type of longitudinal line marking, the Contractor shall evaluate the retroreflectivity with a RIDOT approved hand held portable retroreflectometer unit with 30 meter CEN geometry similar to LTL unit by Delta Light or equal in accordance with ASTM E1710 and the frequencies and evaluation per ASTM D 6359.

Pavement Marking Performance Requirements

Dimensions

The reported width of each type of longitudinal line marking within each LOT shall differ no more than

- 4 inch \pm 1/4 inch
- 6 inch \pm 1/4 inch
- 10 inches and above \pm 1/2 inch

- Lateral deviation shall not exceed one inch in 100 feet.
- Length of ten-foot skip markings shall not deviate more than 3 inches.

The reported height (thickness) of all pavement markings within each LOT shall test a minimum 28 mil composite dry applied thickness as determined to be the difference between the surface of the pavement and top of pavement marking using calipers or micrometer and ultra sonic meter at 3 random locations per lane mile.

Each type of longitudinal marking in a LOT with a recorded width that differs more than 1/4-inch, and any pavement marking type in a LOT with a recorded height of less than 28 mils, shall be deemed deficient, and the Contractor shall replace the markings with new acceptable markings at no additional cost to RIDOT.

Retroreflectivity

The reported retro reflectivity of each type of pavement marking in each LOT shall be greater than or equal to the minimum requirements as specified in Table 4 below for the type of roadway facility, monitoring event, and color of marking indicated and will be paid for in accordance with the schedule shown.

Submission of Certifications

Following the installation and inspection of markings within each LOT, a certification signed by the Contractor shall be submitted to the Engineer stating that all such markings within each LOT have been installed in accordance with the contract performance requirements. The Contractor will not be paid for any pavement marking installation work until a signed certification is received and approved by the Engineer.

Each certification submitted to the Engineer shall indicate the following:

- LOT number and limits
- Roadway/Facility name
- Route number or numbers (if applicable)
- Travel direction (if applicable)
- Pavement marking material and glass bead testing
- Substrate (pavement) surface type
- Date, time, and weather conditions present during which each lot was installed
- Date, time, and weather conditions present during which each inspection was completed
- Complete set of retroreflectivity, dimensional, mil thickness, color, and other measurements that were collected
- Depth of recesses (if applicable)

The inspection and certification results for each LOT with new pavement markings installed shall be submitted within 30 calendar days to RIDOT, in both print and electronic data formats as prescribed. The notarized certificate of compliance from the material manufacturer shall be provided to RIDOT at the same time as the results of the testing and certification.

Payments to the contractor will be based on receipt of Test certifications.

METHOD OF MEASUREMENT: "Epoxy Resin Pavement Markings" will be measured by one of the following units, each as actually placed in accordance with the Plans and/or as directed by the Engineer:

- a.) Hundred Linear Feet (HLF): For each of the following types and widths of markings:
 - 6" – Yellow
 - 6" – White
 - 12" – White
 - 12" – Yellow

b.) "Each": For each of the following types of marking items:

- Railroad Crossing Symbol
- Pedestrian Symbol
- Disabled Person Symbol
- "X-ING" word
- "YIELD" word
- Yield Line (inclusive of multiple yield line triangles placed side by side at one location)
- Bike Symbol
- Arrow - Straight, Left, Right, or Combined
- "Speed Humps Ahead" word
- "SLOW" word
- "PED X-ING ADHEAD" word

BASIS OF PAYMENT: "Epoxy Resin Pavement Markings" will be paid for at their respective contract unit prices per Lump Sum (LS) or for each (EACH) for each type or types, as listed in the proposal complete in place and accepted, with consideration of the minimum retroreflection compensation criteria provided below. Such price shall constitute full compensation for movement of the Contractor's personnel and work equipment to and from the work sites, removal of existing markings, cleaning of pavement, furnishing, layout, and application of the marking material, partitioning the roadways and facilities upon which pavement markings are installed into LOTS, performing inspections of markings in said LOTS to check for compliance with the performance-based requirements of the contract, submitting certifications of such compliance to RIDOT, repairing and/or installing new pavement markings to replace all markings within said lots that are determined to be non-compliant with the performance requirements, and for all labor, equipment, tools, materials, and incidentals necessary to complete the work to the satisfaction of the Engineer.

With the exception of RIDOT traffic control items explicitly listed in the proposal, all costs associated with pavement marking installation certifications and inspections will not be paid for separately, but shall be considered an incidental obligation of the Contractor and distributed among the contract unit prices for pavement markings items. Traffic control items for RIDOT pavement marking inspections will be measured separately and paid under the applicable item in the Proposal.

Retroreflection Values:

Minimum 350 / 225 (white / yellow)	-----	100 % contract unit price
Minimum 330 / 205 (white / yellow)	-----	90 % contract unit price
Minimum 310 / 185 (white / yellow)	-----	80 % contract unit price
Minimum 300 / 175 (white / yellow)	-----	75 % contract unit price
Below 300 / 175 (white / yellow)	-----	0 % contract unit price

JOB SPECIFIC**CODE T20.9914****AS NEEDED STRIPING INSTALLATION AND REMOVAL WORK – FORCE ACCOUNT**

DESCRIPTION: This work consists of the removal and installation of pavement markings at locations determined by the Department after contract award, all in accordance with these Specifications.

MATERIALS: Materials shall conform to Section M.17 – Pavement Markings of the Rhode Island Standard Specifications for Road and Bridge Construction, 2004 Edition with latest revisions, with the following exceptions:

Delete **Section M.17.01 Glass Beads – Dual Gradation** on pages M-89 and M-90 of the Rhode Island Standard Specifications for Road and Bridge Construction, 2004 Edition in its entirety and replace with the following;

M.17.01 GLASS BEADS – DUAL GRADATION.

M.17.01.1 Scope. This Specification covers the requirements for glass beads which are to be dropped onto white and yellow pavement marking material to produce a highly weather and-wear resistant reflectorized traffic marking.

M.17.01.2 Detailed Requirements.

a. Reflective Glass Spheres. The glass spheres shall be transparent, clean, smooth and spherically shaped, free of milkiness, pits, or excessive air bubbles, manufactured with virgin or recycled glass cullet, meet AASHTO M247, and conform to the following specific requirements:

1. Coatings. The spheres shall be coated to enhance their embedment characteristics to the binder. They shall show no tendency to absorb moisture in storage and shall remain free of clusters and hard lumps.

2. Quality Assurance. The spheres shall be segregated into maximum lots of 2,500 pounds and lot numbers shall be stamped onto each. Each lot shall be tested for gradation, rounds and coating and a Certificate of Compliance stating such will accompany each lot.

3. Gradation. The glass spheres shall meet the following gradation requirements when tested in accordance with ASTM D1214:

T.20.03.06 d. 1. Grinding. Contractor shall install a groove in the existing pavement at a depth of 80-100 mils in thickness as shown on the Plans. The grooving shall be 1 inch wider than the proposed stripe (1/2" on each side) and of sufficient length (maximum 12" each end) when addressing skips or broken lines. All ramps or gore areas shall be excluded. All existing pavement marking material (including binder and beads) shall be removed as part of this grinding operation. The grinding truck shall be equipped with a vacuum and dust collector that is 99.99 percent efficient in removing particles no bigger than 0.5 microns. All pavement markings removed must be replaced in 3 working calendar days or before the end of the work week. A sweeper with the capacity to pick up grindings simultaneously with the removal operation is required.

The beads shall be applied in the following order and rates: The first drop shall be the microcrystalline ceramic elements (7 pounds per gallon) followed by Type II (large beads)(7 pounds per gallon) and lastly Type I (small beads)(10 pounds per gallon) at a rate of ten (10) lbs per gallon.

EQUIPMENT: The grinding equipment shall consist of a free-flow cutting or grinding head to provide a consistent groove depth over irregular pavement surfaces. The grinder or cutter head shall be equipped with diamond saw blades, steel star cutters and/or carbide tipped star cutter. Diamond saw blades shall be used wherever friction course is present. The final pavement surface shall be free of ridges.

METHOD OF MEASUREMENT: "Recessed Pavement Markings" will be measured by the following units, each as actually placed in accordance with the Plans and/or as directed by the Engineer:

"Hundred Linear Feet" (HLF): For each of the following types and widths of markings:

- 6" – White
- 6" – Yellow

BASIS OF PAYMENT: "Recessed Pavement Markings" will be paid for at their respective contract unit prices per Hundred Linear Feet (HLF) for each type or types, as listed in the proposal complete in place and accepted, with consideration of the minimum retroreflection compensation criteria provided below. Price shall constitute full compensation for movement of the Contractor's personnel and work equipment to and from the work sites, installation of grooves in pavement, cleaning of pavement, furnishing, layout, and application of the marking material in the grooves, copying and completion of striping quantity verification forms, performing inspections of such markings to check for compliance with the performance-based requirements of the contract, submitting certifications of such compliance to RIDOT, repairing and/or installing new pavement markings to replace all markings within said lots that are determined to be non-compliant with the performance requirements, and for all labor, equipment, tools, materials, and incidentals necessary to complete the work to the satisfaction of the Engineer.

Table of Contents - Distribution of Quantities

Project Name - 2012-2013 Statewide Pavement Striping - Limited Access

Estimate Name - Addendum No. 7

R.I. Contract No. - 2011-CT-080

FAP Nos: NHSG-4444(080)

<u>ItemCode</u>	<u>Description</u>	<u>Page</u>
914.5010	FLAGPERSONS	1
914.5020	FLAGPERSONS - OVERTIME	1
	TEMPORARY CONSTRUCTION SIGNS STANDARD 29.1.0 AND 27.1.1	
	FLUORESCENT TRAFFIC CONES STANDARD 26.1.0	
	TRAFFIC CONTROL TRUCK WITH TRUCK MOUNTED ATTENUATOR AND	
	CHANGEABLE MESSAGE SIGN	
931.9901	CLEANING AND SWEEPING PAVEMENT FOR STATEWIDE STRIPING	1
T20.2020	EPOXY RESIN PAVEMENT ARROW - STRAIGHT, LEFT, RIGHT, OR	2
	COMBINED STANDARD 20.1.0	
T20.2022	EPOXY RESIN PAVEMENT MARKING WORD "ONLY" STANDARD 20.1.0	2
T20.9903	6 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	2
T20.9904	6 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW	2
T20.9905	12 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	2
T20.9906	12 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW	3
T20.9907	EPOXY RESIN STRIPING FOR BI-DIRECTIONAL CONTROL ARROW	3
T20.9908	EPOXY RESIN PAVEMENT MARKING YIELD LINE	3
T20.9909	EPOXY RESIN PAVEMENT MARKING LANE-REDUCTION ARROW	3
T20.9910	EPOXY RESIN PAVEMENT MARKING WORD SET "30 MPH" OR "40 MPH"	3
T20.9911	EPOXY RESIN PAVEMENT MARKING WORD SET "STOP AHEAD"	3
T20.9912	EPOXY RESIN PAVEMENT MARKING WORD "BUMP"	4
T20.9913	REMOVE EXISTING INLAID TAPE SKIP LINE PAVEMENT MARKINGS	4
T20.9914	AS NEEDED STRIPING INSTALLATION AND REMOVAL WORK - FORCE	4
	ACCOUNT	
T20.9915	EPOXY RESIN PAVEMENT MARKING WORD "YIELD"	4
T20.9917	EPOXY RESIN PAVEMENT MARKING WORD SET "BIKE X-ING"	5
T20.9918	EPOXY RESIN PAVEMENT MARKING WORD SET "EXIT ONLY"	5
T20.9919	EPOXY RESIN STRIPING FOR BIKE LANE DETAIL	5
929.0100	FIELD OFFICES 240 SQUARE FOOT MINIMUM	5
T20.9925	REFLECTORIZED PAVEMENT MARKERS-WHITE	5
T20.9928	RECESSED PAVEMENT MARKINGS - 6" YELLOW	5
T20.9933	RECESSED PAVEMENT MARKINGS - 6" WHITE	6
T20.9934	EPOXY RESIN PAVEMENT MARKINGS - "CURVE AHEAD"	6
T20.9935	** ITEM DELETED **	6
T20.9936	EPOXY RESIN PAVEMENT MARKING WORD "TO"	6

Distribution of Quantities

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
006	931.9901	Cont.				
				Item 931.9901 Total:	40.00	
007	T20.2020	EPOXY RESIN PAVEMENT ARROW - STRAIGHT, LEFT, RIGHT, OR COMBINED STANDARD 20.1.0 PROJECT WIDE PROJECT WIDE	EACH			
				Item T20.2020 Total:	328.00	0021 01
008	T20.2022	EPOXY RESIN PAVEMENT MARKING WORD "ONLY" STANDARD 20.1.0 PROJECT WIDE PROJECT WIDE	EACH			
				Item T20.2022 Total:	186.00	0021 01
009	T20.9903	6 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE PROJECT WIDE PROJECT WIDE	HLF			
				Item T20.9903 Total:	29,115.53	0021 01
010	T20.9904	6 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW PROJECT WIDE PROJECT WIDE	HLF			
				Item T20.9904 Total:	23,322.00	0021 01
011	T20.9905	12 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE PROJECT WIDE PROJECT WIDE	HLF			
				Item T20.9905 Total:	4,997.72	0021 01

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<u>Item No.</u>	<u>Item Code</u>	<u>Description</u>	<u>UM</u>	<u>Qty.</u>	<u>Pay Code</u>	<u>Seq. No.</u>
012	T20.9906	12 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW PROJECT WIDE PROJECT WIDE	HLF	15.82	0021	01
Item T20.9906 Total:				15.82		
013	T20.9907	EPOXY RESIN STRIPING FOR BI-DIRECTIONAL CONTROL ARROW PROJECT WIDE PROJECT WIDE	EACH	178.00	0021	01
Item T20.9907 Total:				178.00		
014	T20.9908	EPOXY RESIN PAVEMENT MARKING YIELD LINE PROJECT WIDE PROJECT WIDE	EACH	180.00	0021	01
Item T20.9908 Total:				180.00		
015	T20.9909	EPOXY RESIN PAVEMENT MARKING LANE-REDUCTION ARROW PROJECT WIDE PROJECT WIDE	EACH	16.00	0021	01
Item T20.9909 Total:				16.00		
016	T20.9910	EPOXY RESIN PAVEMENT MARKING WORD SET "30 MPH" OR "40 MPH" ROUTE 37 WESTBOUND	EACH	4.00	0021	01
Item T20.9910 Total:				4.00		
017	T20.9911	EPOXY RESIN PAVEMENT MARKING WORD SET "STOP AHEAD" ROUTE 114	EACH			

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
017	T20.9911 Cont.	ROUTE 114		2.00	0021	01
		RT 114		2.00	0021	01
		ROUTE 37				
		WESTBOUND		2.00	0021	01
Item T20.9911 Total:				6.00		
018	T20.9912	EPOXY RESIN PAVEMENT MARKING WORD	EACH			
		"BUMP"				
		I-295 NORTHBOUND				
		REST AREA		1.00	0021	01
Item T20.9912 Total:				1.00		
019	T20.9913	REMOVE EXISTING INLAID TAPE SKIP	HLF			
		LINE PAVEMENT MARKINGS				
		PROJECT WIDE				
		INTERSTATE 195		120.00	0021	01
Item T20.9913 Total:				120.00		
020	T20.9914	AS NEEDED STRIPING INSTALLATION	EACH			
		AND REMOVAL WORK - FORCE ACCOUNT				
		STATEWIDE				
		STATEWIDE		65,000.00	0021	01
Item T20.9914 Total:				65,000.00		
021	T20.9915	EPOXY RESIN PAVEMENT MARKING WORD	EACH			
		"YIELD"				
		HENDERSON BRIDGE				
		HENDERSON BRG		2.00	0021	01
		HENDERSON BRIDGE		1.00	0021	01
		ROUTE 10				
		ROUTE 10		1.00	0021	01

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<u>Item No.</u>	<u>Item Code</u>	<u>Description</u>	<u>UM</u>	<u>Qty.</u>	<u>Pay Code</u>	<u>Seq. No.</u>
021	T20.9915 Cont.	ROUTE 114				
		ROUTE 114		1.00	0021	01
Item T20.9915 Total:				5.00		

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<u>Item No.</u>	<u>Item Code</u>	<u>Description</u>	<u>UM</u>	<u>Qty.</u>	<u>Pay Code</u>	<u>Seq. No.</u>
027	T20.9928 Cont.	STATEWIDE		1,795.20	0021	01
Item T20.9928 Total:				1,795.20		
028	T20.9933	RECESSED PAVEMENT MARKINGS - 6" WHITE STATEWIDE STATEWIDE	HLF	1,844.57	0021	01
Item T20.9933 Total:				1,844.57		
029	T20.9934	EPOXY RESIN PAVEMENT MARKINGS - "CURVE AHEAD" I-95 PAWTUCKET AND PROVIDENCE S-CURVES, SMITHFIELD AVE CURVE AND THURBERS AVE CURVE	EACH	20.00	0021	01
Item T20.9934 Total:				20.00		
031	T20.9936	EPOXY RESIN PAVEMENT MARKING WORD "TO" I-95 TO RT. 6 I-95 TO RT. 6	EACH	4.00	0021	01
Item T20.9936 Total:				4.00		