June 17, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7550656

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2016-CT-031

FEDERAL-AID PROJECT NO. FAP Nos: STPG-HSIP(026)

Bridge End Treatment Project - Contract 1 (HSIP Systemic Improvements)

Isolated locations at bridges throughout Rhode Island, as indicated on the plans.

CITY/TOWN OF Bristol, Burrillville, Central Falls, Charlestown, Coventry, Cumberland, Exeter, Foster, Glocester, Hopkinton, Lincoln, North Kingstown, Scituate, South Kingstown, Tiverton, West Greenwich, Woonsocket, North Smithfield, Richmond, Smithfield, Westerly, Statewide

COUNTY OF BRISTOL, PROVIDENCE, WASHINGTON, KENT, NEWPORT, STATEWIDE

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 2 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 Documents

1. Job Specific Plan Symbols, Legend & Notes 1

   Replace the "Job Specific Plan Symbols, Legend & Notes 1" plan sheet 5 of 87 with the "Job Specific Plan Symbols, Legend & Notes 1"(R-1) attached to this Addendum No. 2. Traffic Control Note No. 6 has been added.

B. Distribution of Quantities

1. Index

   Replace Index: 1 and Index: 2 with Pages Index: 1(R-1) and Index: 2(R-1) attached to this Addendum No. 2. Item Code 928.9901 has been added.

2. Page 25 of 25

   Replace Page 25 of 25 with Pages 25 of 26(R-1) and 26 of 26, attached to this Addendum No. 2. The quantity for Item Code 928.9901 has been added.

C. Specifications - Job Specific

1. Index

   Replace Page JS-ii with Page JS-ii(R-1) attached to this Addendum No. 2. Section 928 has been added.

2. Section 928

Add Page 22-1 to 22-3 of 26, attached to this Addendum No. 2. Job Specific Section 928 has been added.

for RI Department of Transportation
Chief Engineer

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	RI	STP-HSIP-005	2016	5	87

GENERAL LEGEND

34.1.2rp	GUARDRAIL WITH BASEPLATE ATTACHED TO BRIDGE DECK
34.2.0g	GUARDRAIL STEEL BEAM SINGLE FACE EARTH AND ASPHALT
34.2.0c	GUARDRAIL STEEL BEAM SINGLE FACE CONCRETE
34.3.7	GUARDRAIL CONNECTION TO BARRIER APPROACH END SECTION
34.3.8	GUARDRAIL CONNECTION TO BARRIER TRAILING END SECTION
34.4.0rp	STEEL BACKED TIMBER GUARDRAIL – MODIFIED
34.4.1rp	STEEL BACKED TIMBER GUARDRAIL TERMINAL SECTION – MODIFIED
34.5.3	STEEL THRIE BEAM GUARDRAIL SINGLE FACE
40.1.0rp	DOUBLE-FACED PRECAST MEDIAN BARRIER – MODIFIED (SEE DETAIL ON SHEET 10)
CFS	COMPOST FILTER SOCK
CRW	CUT AND REMOVE WALL
DNC	DOUBLE NESTED GUARDRAIL (SEE GENERAL GUARDRAIL NOTE #1 ON SHEET 6)
ETEA	END TERMINAL ENERGY ABSORBING
ETNA	END TERMINAL NON-ENERGY ABSORBING
G	REMOVE 12" EARTH EXCAVATION INSTALL RESIDENTIAL SEED (TYPE 2) LOAM BORROW 4 INCHES DEEP 8" GRAVEL BORROW BASE COURSE
G-1	REMOVE 12" EARTH EXCAVATION INSTALL 12" GRAVEL BORROW BASE COURSE
GBS	GUARDRAIL BRIDGE SPAN
GP2PW	GUARDRAIL POSTS TO PARAPET WALL
IA-1	TL-3 IMPACT ATTENUATOR (MINIMUM LENGTH OF 26')
LOW	LIMITS OF WORK
LP	9 FOOT LONG GUARDRAIL POSTS
M	PLACEMENT OF MILLINGS BENEATH GUARDRAIL
P	REMOVE 2" REMOVAL OF BITUMINOUS PAVEMENT BY MICROMILLING INSTALL 2" CLASS 12.5 HMA SURFACE COURSE ASPHALT EMULSION TACK COAT
P-1	REMOVE 3" REMOVE AND DISPOSE FLEXIBLE PAVEMENT 1" EARTH EXCAVATION INSTALL 1.5" CLASS 12.5 HMA SURFACE COURSE ASPHALT EMULSION TACK COAT 2.5" CLASS 19.0 HMA BASE COURSE TRIMMING AND FINE GRADING
PATCH	CLASS 12.5 HMA FOR PATCHING
PG	POWDER COATED GUARDRAIL
RRBP	REMOVE AND RESET BRIDGE PLAQUE
RSG	REMOVE AND STACK GUARDRAIL
SBAE-1	GUARDRAIL CONNECTION TO EXISTING END POST APPROACH END SECTION STANDARD 34.3.5
SBTE-1	GUARDRAIL CONNECTION TO EXISTING END POST TRAILING END SECTION STANDARD 34.3.6
SBTE-L	GUARDRAIL CONNECTION TO EXISTING END POST TRAILING END SECTION – WITH BASEPLATE ATTACHED TO RETAINING WALL
SBTEm	GUARDRAIL CONNECTION TO EXISTING END POST TRAILING END SECTION – MODIFIED
S	CUTTING AND MATCHING ASPHALT
S-1	FULL-DEPTH SAWCUT OF BITUMINOUS PAVEMENT
S-2	FULL DEPTH SAWCUT OF PORTLAND CEMENT CONCRETE SIDEWALK/DRIVEWAY
WBBR	W BEAM BRIDGE RAIL ACROSS BRIDGE SPAN
WR	WALL RECONSTRUCTION
12.5	12'-6" LONG SPAN GUARDRAIL SYSTEM
18.75	18'-9" LONG SPAN GUARDRAIL SYSTEM
34.1.2rp X	= X NUMBER OF POST INSTALLATIONS IN LEDGE
123 124 125	TOP OF RIVERBANK (TOB)

TRAFFIC SIGNAL SYMBOLS

EXISTING TRAFFIC SIGNAL PEDESTAL OR SPAN POLE

JOB SPECIFIC GENERAL NOTES

1. WORK SHOWN ON THESE PLANS SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF AND MODIFICATIONS TO THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE SPECIFICATIONS ACCOMPANYING THESE PLANS. IN CASE OF CONFLICT, THE SPECIAL PROVISIONS OF THE SPECIFICATIONS ACCOMPANYING THESE PLANS SHALL GOVERN.
2. AERIAL IMAGES ARE FROM 2011 RHODE ISLAND GEOGRAPHIC INFORMATION SYSTEM (RIGIS).
3. AN APPROXIMATE BASELINE HAS BEEN PROVIDED AT EACH LOCATION TO ASSIST IN LAYING OUT THE PROPOSED IMPROVEMENTS. THIS BASELINE IS LOCATED IN THE APPROXIMATE CENTER OF THE ROADWAY BASED ON AERIAL IMAGES AND FIELD MEASUREMENTS. THE BASELINE SHOWN ON THE PLANS IS FOR DISTRIBUTION OF QUANTITY REFERENCE ONLY. THE BASELINE IS NOT INTENDED TO BE USED FOR CONSTRUCTION LAYOUT. SITE SPECIFIC INSTALLATION DETAILS ARE PROVIDED FOR EACH LOCATION.
4. EXISTING SIDEWALK GRAVEL SUBBASE THAT IS CONSIDERED TO BE SUITABLE BY THE RESIDENT ENGINEER SHALL REMAIN IN PLACE AND BE USED AS SIDEWALK SUBBASE.
5. EXISTING WHEELCHAIR RAMPS DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED WITH NEW ADA COMPLIANT WHEELCHAIR RAMPS AT NO ADDITIONAL COSTS TO THE STATE.
6. EXISTING PROPERTY THAT WAS NOT PROPOSED TO BE MODIFIED THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.
7. ITEMS NOT REFERENCED FOR MODIFICATION WILL BE "EXISTING TO REMAIN" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. SIDEWALKS SHALL BE MATCHED IN KIND AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE CONSTRUCTION METHODS, MATERIALS, MEASUREMENT, AND PAYMENT SHALL BE THE SAME AS SIDEWALK RECONSTRUCTION IN ACCORDANCE WITH THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2013 EDITION.
9. CLEARING AND GRUBBING SHALL BE PERFORMED WHERE INDICATED ON THE PLANS. THE LIMITS OF THE CLEARING AND GRUBBING SHALL NOT EXTEND FURTHER THAN TWO FEET BEHIND OR IN FRONT OF THE PROPOSED GUARDRAIL.
10. NO REMOVAL OF WOODY VEGETATION IS ALLOWED. ALL EARTHWORK IS LIMITED TO TRIM AND FINE GRADING. THE LIMITS OF THE TRIM AND FINE GRADING SHALL NOT EXTEND FURTHER THAN TWO FEET BEHIND OR IN FRONT OF THE PROPOSED GUARDRAIL.
11. NO BLASTING SHALL BE ALLOWED ON THIS PROJECT.
12. NO CONTRACTOR ACCESS, OR USE OF AREAS WITHIN THE ROW, IS ALLOWED OUTSIDE OF THE LIMITS OF DISTURBANCE (LOD) SHOWN IN THE APPENDIX TO THE CS PAGES. ALL ACCESS TO COMPLETE THE WORK MUST BE FROM THE EXISTING PAVEMENT/ROADWAY, AND NO SOIL DISTURBANCE IS PERMITTED BEYOND WHAT IS INDICATED ON THE PLANS.
13. CONTRACTOR SHALL NOT STORE EQUIPMENT OR MATERIALS WITHIN THE ROW OUTSIDE OF WORKING HOURS.
14. THERE SHALL BE NO PARKING OR STORAGE OF CONSTRUCTION EQUIPMENT UNDER THE DRIPLINE OF ANY TREES.
15. TREE TRIMMING WORK SHALL BE PROVIDED THROUGH THE STATEWIDE TREE TRIMMING CONTRACT. PLEASE COORDINATE WITH THE RESIDENT ENGINEER FOR THIS BRIDGE END TREATMENT CONTRACT DURING CONSTRUCTION. NO TREE TRIMMING SHALL TAKE PLACE DURING THE MONTHS OF APRIL THROUGH OCTOBER.
16. STOCKPILED COMPOST FILTER SOCK (CFS) SHALL BE PROPERLY STORED UNTIL NEEDED.
17. GRASS AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REESTABLISHED WITH LOAM BORROW AND RESIDENTIAL SEED (TYPE 2). IF AREAS ARE BEYOND THE WORK LIMIT LINES, THEN THE COST SHALL BE BORNE BY THE CONTRACTOR.
18. WORK WITHIN THE STATE RIGHT-OF-WAY (ROW) SHALL CONFORM TO THE RHODE ISLAND STANDARD SPECIFICATIONS, DETAILS, AND ALL ADDENDA.
19. ALL TEST PIT LOCATIONS MUST BE APPROVED BY THE ENGINEER.

TRAFFIC CONTROL

1. TRAFFIC CONTROL SETUPS SHALL BE COORDINATED WITH CONCURRENT CONSTRUCTION CONTRACTS TO DETERMINE IF SIGNS AND SETUPS SPECIFIED ARE APPROPRIATE.
2. TEMPORARY SIGNS SHALL HAVE BLACK LEGEND ON ORANGE BACKGROUND AND SHALL BE INSTALLED ACCORDING TO THE RHODE ISLAND STANDARDS 24.3.0 AND 29.1.0.
3. EXISTING OR TEMPORARY SIGNS WHICH ARE IN CONFLICT WITH THE DAILY TRAFFIC MANAGEMENT SETUPS SHALL BE COVERED. IMMEDIATELY PRIOR TO COMPLETION, CONTRACTOR SHALL UNCOVER SIGNS.
4. WORKERS SHALL WEAR VESTS OF REFLECTIVE ORANGE, YELLOW, YELLOW-GREEN, OR FLUORESCENT VERSIONS OF THESE COLORS.
5. CONSTRUCTION SIGNS THAT ARE PLACED BEHIND CHANNELIZING DEVICES MUST BE MOUNTED AT A HEIGHT THAT WILL MAKE THEM VISIBLE TO MOTORISTS.
6. TRUCK MOUNTED ATTENUATORS SHOULD BE ADDED TO THE TEMPORARY TRAFFIC SETUPS AT LOCATIONS WITH POSTED SPEED GREATER THAN 35 MPH AND AS APPROVED BY THE ENGINEER. (1)

UTILITY NOTES:

1. ONLY NON-MECHANICAL MEANS OF EXCAVATION SHALL BE USED IN AREAS ADJACENT TO UNDERGROUND UTILITIES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. AN AUTOMATIC TRENCHING MACHINE MAY NOT BE USED.
3. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES IN WRITING AND CALL DIG SAFE (1-888-344-7233) A MINIMUM OF 48 HOURS AND NOT MORE THAN 30 DAYS IN ADVANCE OF ANY WORK.
4. WORK SHALL CONFORM TO THE LATEST REVISION OF THE NATIONAL ELECTRIC CODE, THE REQUIREMENTS OF THE STATE OF RHODE ISLAND, AND NATIONAL GRID.
5. UTILITY SERVICE CONNECTIONS SHALL BE MAINTAINED TO EXISTING FACILITIES AT ALL TIMES.
6. ANY ADJUSTMENTS TO VERIZON OWNED UNDERGROUND EQUIPMENT (MANHOLES, FRAME AND COVERS, CONDUITS, ETC.) MUST BE PERFORMED BY APPROVED CONTRACTOR. ADDITIONALLY, ALL ADJUSTMENTS MUST BE INSPECTED BY VERIZON'S CONTRACT WORK INSPECTOR (C.W.I.). PLEASE CONTACT VERIZON'S C.W.I 24 HOURS IN ADVANCE BEFORE COMMENCING WORK (JOE PATERSON 401-486-0337).
7. THE LOCATION, SIZE AND MATERIAL OF EXISTING PIPES, DUCTS, CONDUIT AND OTHER UNDERGROUND STRUCTURES SHOWN ON THESE PLANS ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL SUCH FEATURES ARE SHOWN. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR OBTAINING ALL LOCATIONS OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES BEFORE BEGINNING CONSTRUCTION.
8. NOT ALL EXISTING UTILITIES ARE SHOWN ON THE PLANS.
9. INFORMATION RECEIVED REGARDING THE PRESENCE AND/OR LOCATION OF EXISTING UTILITIES IS INCLUDED IN THE CS PAGES.

SIGNS

1. NEW DIRECTIONAL, REGULATORY, WARNING, GUIDE SIGNS AND PARKING SIGNS SHALL HAVE SIGN SUPPORTS. UNLESS OTHERWISE INDICATED, SIGN MOUNTINGS SHALL BE R.I. STD. 24.2.0.
2. PRIOR TO INSTALLATION, ALL SIGNS, MOUNTINGS AND LOCATIONS SHALL BE APPROVED OR MODIFIED BY THE ENGINEER.
3. SIGN DIMENSIONS SHALL BE AS SPECIFIED IN THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED, AND THE CONTRACT DRAWINGS.
4. ALL SIGNS, EXCEPT OBJECT MARKERS, SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 7' OVER SIDEWALK.

TYPICAL SIGN DESIGNATION SYMBOL

SIGN NUMBER
MUTCD SIGN DESIGNATION
SIGN SIZE
SIGN MOUNTING

POLE = EXISTING LIGHT OR TRAFFIC SIGNAL POLE (SEE RI STD. 24.6.1)

EX POST = EXISTING SIGN POST

ARM = PROPOSED MAST ARM

ADDENDUM NO. 2

REVISIONS		
NO.	DATE	BY
1	6/15/16	MRP

CDM Smith
260 West Exchange Street
Providence, RI 02903
Tel: (401) 751-5360

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

STATEWIDE BRIDGE END TREATMENT PROJECT
CONTRACT 1 (HSIP SYSTEMIC IMPROVEMENTS)

STATEWIDE, RHODE ISLAND

JOB SPECIFIC PLAN SYMBOLS, LEGEND & NOTES 1

CHECKED BY _____ DATE MAY 2016 SCALE _____

0153P_V1_005_JSNOTSYM01(R-1)

Table of Contents - Distribution of Quantities

Project Name - Bridge End Treatment Project - Contract 1 (HSIP Systemic Improvements)
Estimate Name - Addendum No. 2
R.I. Contract No. - 2016-CT-031
FAP Nos: STPG-HSIP(026)

ItemCode	Description	Page
201.0321	CLEARING AND GRUBBING	1
201.0401	REMOVE AND DISPOSE GRANITE CURB	1
201.0403	REMOVE AND DISPOSE SIDEWALKS	1
201.0409	REMOVE AND DISPOSE FLEXIBLE PAVEMENT	2
201.0415	REMOVE AND DISPOSE GUARDRAIL AND POST ALL TYPES	2
201.0610	REMOVE AND DISPOSE DIRECTIONAL, WARNING, REGULATORY, SERVICE, AND STREET SIGNS	2
201.9901	REMOVE AND STACK GUARDRAIL	3
202.0100	EARTH EXCAVATION	3
204.0100	TRIMMING AND FINE GRADING	3
206.0301	COMPOST FILTER SOCK	4
212.2000	CLEANING AND MAINTENANCE OF EROSION CONTROLS	4
213.0100	PLACEMENT OF MILLINGS BENEATH GUARDRAIL	5
301.0200	GRAVEL BORROW BASE COURSE	5
401.1000	CLASS 19.0 HMA	6
401.2000	CLASS 12.5 HMA	6
401.3003	CLASS 9.5 HMA FOR PATCHING	6
403.0300	ASPHALT EMULSION TACK COAT	6
601.0200	CLASS XX PORTLAND CEMENT CONCRETE	7
707.1900	ADJUST FRAME & COVER TO GRADE	7
808.9901	WALL RECONSTRUCTION	7
808.9902	REMOVE AND RESET BRIDGE PLAQUE	7
813.0300	COLD APPLIED LIQUID MEMBRANE	7
813.0400	RUBBERIZED ASPHALT LIQUID MEMBRANE (WATERPROOFING MEMBRANE)	8
817.2110	REPAIRS TO STRUCTURAL CONCRETE MASONRY (PATCHING MORTAR)	8
901.0101	GUARDRAIL STEEL BEAM SINGLE FACE EARTH AND ASPHALT	8
901.0103	GUARDRAIL STEEL BEAM SINGLE FACE CONCRETE	9
901.0151	TERMINAL END SECTION SINGLE FACE STANDARD 34.3.2	9
901.0165	STEEL BEAM GUARDRAIL SECTION (12.5 FT. BY 12.0 INCHES)	9
901.0175	STEEL THRIE BEAM GUARDRAIL SINGLE FACE STANDARD 34.5.3	9
901.0177	STEEL THRIE BEAM GUARDRAIL TRANSITION	9
901.0190	GUARDRAIL STEEL BEAM ANCHORAGE APPROACH SECTION STANDARDS 34.3.1 AND 34.3.3	10
901.0191	GUARDRAIL STEEL BEAM ANCHORAGE TRAILING END SECTION STANDARD 34.3.4	10
901.0196	GUARDRAIL CONNECTION TO EXISTING ENDPOST TRAILING END SECTION, STANDARD 34.3.6	10
901.0197	GUARDRAIL CONNECTION TO EXISTING ENDPOST APPROACH END SECTION, STANDARD 34.3.5	11
901.0198	GUARDRAIL END TREATMENT, NON-ENERGY ABSORBING TERMINAL	11
901.0199	GUARDRAIL END TREATMENT, ENERGY ABSORBING TERMINAL	11
901.9901	POWDER COATED GUARDRAIL	12
901.9902	IMPACT ATTENUATOR 1	12
901.9903	GUARDRAIL BRIDGE SPAN	12
901.9904	GUARDRAIL WITH BASEPLATE ATTACHED TO BRIDGE DECK	13
901.9905	W BEAM BRIDGE RAIL ACROSS BRIDGE SPAN	13
901.9906	8-FOOT LONG GUARDRAIL POSTS	13
901.9907	GUARDRAIL CONNECTION TO EXISTING END POST TRAILING END SECTION - WITH BASEPLATE ATTACHED TO RETAINING WALL	13
901.9908	GUARDRAIL CONNECTION TO EXISTING END POST TRAILING END SECTION - MODIFIED	13
902.9901	STEEL BACKED TIMBER GUARDRAIL - MODIFIED	14
902.9902	STEEL BACKED TIMBER GUARDRAIL TERMINAL SECTION - MODIFIED	14
905.0110	PORTLAND CEMENT SIDEWALK MONOLITHIC STANDARD 43.1.0	14
906.0110	GRANITE CURB, QUARRY SPLIT STRAIGHT, STANDARD 7.3.0	14

Table of Contents - Distribution of Quantities

Project Name - Bridge End Treatment Project - Contract 1 (HSIP Systemic Improvements)
Estimate Name - Addendum No. 2
R.I. Contract No. - 2016-CT-031
FAP Nos: STPG-HSIP(026)

ItemCode	Description	Page
906.0111	GRANITE CURB, QUARRY SPLIT CIRCULAR, STANDARD 7.3.0	15
907.0100	WATER FOR DUST CONTROL	15
907.0200	CALCIUM CHLORIDE FOR DUST CONTROL (PROJECT WIDE)	15
914.5010	FLAGPERSONS	15
914.5020	FLAGPERSONS - OVERTIME	15
917.0105	REMOVE AND REPLACE RURAL MAILBOX POST WITH STANDARD 15.1.0	15
918.0100	RURAL MAILBOXES	16
919.0101	TEST PITS	16
922.0100	TEMPORARY CONSTRUCTION SIGNS STANDARD 29.1.0 AND 27.1.1	16
923.0105	DRUM BARRICADE STANDARD 26.2.0	16
923.0200	FLUORESCENT TRAFFIC CONES STANDARD 26.1.0	16
924.0113	ADVANCE WARNING ARROW PANEL	16
925.0112	PORTABLE CHANGEABLE MESSAGE SIGN	17
929.0110	FIELD OFFICE	17
931.0110	CLEANING AND SWEEPING PAVEMENT	17
932.0100	CUTTING AND MATCHING ASPHALT	17
932.0200	FULL-DEPTH SAWCUT OF BITUMINOUS PAVEMENT	17
932.0230	FULL DEPTH SAWCUT OF PORTLAND CEMENT CONCRETE SIDEWALK/DRIVEWAY	18
935.0400	REMOVING BITUMINOUS PAVEMENT BY MICRO MILLING	18
936.0110	MOBILIZATION	18
937.0200	MAINTENANCE AND MOVEMENT TRAFFIC PROTECTION	18
943.0200	TRAINEE MAN-HOURS	18
L01.0102	LOAM BORROW 4 INCHES DEEP	19
L02.0102	RESIDENTIAL SEEDING (TYPE 2)	19
T15.0100	DIRECTIONAL REGULATORY AND WARNING SIGNS	19
T15.0200	REMOVE AND RELOCATE DIRECTIONAL REGULATORY AND WARNING SIGN	20
T18.0336	36 INCH HAZARD MARKER	20
T18.9901	REFLECTORIZED DELINEATORS	22
T20.1000	REMOVE EXISTING PAVEMENT MARKINGS	22
T20.1106	6 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS WHITE	23
T20.1204	4 INCH TEMPORARY WATERBORNE PAINT PAVEMENT MARKINGS YELLOW	23
T20.2006	6 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	23
T20.2012	12 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	24
T20.2014	4 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW	24
T20.2016	6 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW	25
928.9901	**TRUCK MOUNTED ATTENUATOR (TMA) WITH TRUCK MOUNTED FLASHING ARROW BOARD (TMFAB)**	**25**

Distribution of Quantities

Project Name - Bridge End Treatment Project - Contract 1 (HSIP Systemic Improvements)
Estimate Name - Addendum No. 2
R.I. Contract No. - 2016-CT-031
FAP Nos: STPG-HSIP(026)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
082	T20.2014 Cont.	005801 & 00590		1,090.00	0021	01
		007201		700.00	0021	01
		009301		1,000.00	0021	01
		010601		460.00	0021	01
		019501		720.00	0021	01
		027401		800.00	0021	01
		028501		560.00	0021	01
		031501		530.00	0021	01
		039301		600.00	0021	01
		044801		1,000.00	0021	01
		045801		710.00	0021	01
		087901		700.00	0021	01
		094801		390.00	0021	01
		095301		340.00	0021	01
		116401		600.00	0021	01
		117001		290.00	0021	01
		119001		500.00	0021	01
		999992		960.00	0021	01
		999995		600.00	0021	01
		CONTINGENCY		500.00	0021	01
		Item T20.2014 Total:		**14,090.00**		
083	T20.2016	**6 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW**	**LF**			
		BRIDGE BLUNT END PROTECTION				
		028501		215.00	0021	01
		037101		250.00	0021	01
		122301		115.00	0021	01
		CONTINGENCY		50.00	0021	01
		Item T20.2016 Total:		**630.00**		
084	928.9901	**TRUCK MOUNTED ATTENUATOR (TMA) WITH TRUCK MOUNTED FLASHING ARROW**	**HRS**			

Distribution of Quantities

Project Name - Bridge End Treatment Project - Contract 1 (HSIP Systemic Improvements)
Estimate Name - Addendum No. 2
R.I. Contract No. - 2016-CT-031
FAP Nos: STPG-HSIP(026)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
084	928.9901 Cont.	**BOARD (TMFAB)**				
		BRIDGE BLUNT END PROTECTION				
		PROJECTWIDE		150.00	0021	01
		Item 928.9901 Total:		**150.00**		

902.9902	Steel Backed Timber Guardrail Terminal Section – Modified	JS-22
Section 928	Truck Mounted Attenuator (TMA) With Truck Mounted Arrow Board (TMFAB)	JS-22-1
937.0200	Maintenance and Movement of Traffic Protection Devices	JS-23
938.1000	Price Adjustments	JS-24
T18.9901	Reflectorized Delineators	JS-25
L02.1000	Seeding	JS-26

Remove **Section 928; Truck Mounted Attenuator (TMA) with Truck Mounted Flashing Arrow Board (TMFAB)**, pages 9-50 to 9-52 of the RI Standard Specifications for Road and Bridge Construction (Amended 2013) in its entirety and replace it with the following.

SECTION 928

TRUCK MOUNTED ATTENUATOR (TMA) WITH TRUCK MOUNTED FLASHING ARROW BOARD (TMFAB)

928.01 DESCRIPTION. This work consists of providing, operating, and maintaining truck mounted energy absorbing impact attenuators, replacement attenuator cartridges, and truck mounted flashing arrow boards, as directed by the Engineer, all in accordance with these Specifications and applicable state statutes.

928.02 MATERIALS.

928.02.1 Truck Mounted Attenuator (TMA). The TMA is a lightweight attenuation system designed for installation at the back of traffic control trucks. It consists of three basic component sections - a crushable module, a lightweight steel backup, and a support frame for attaching the backup to the truck.

The complete TMA shall be designed to make attachment or detachment from the truck simple and fast and shall be installed in accordance with the manufacturer's recommendations.

a. Module Materials. Light fixtures shall consist of combination run, turn, brake, and side clearance lights with ICC identification lights on the rear of the TMA. All light fixtures shall have rubber grommet seals. A standard SAE/AT/TTMA interchangeable 7-way trailer light wire connector shall be installed and wired to SAE standards.

All standard modules shall have a chevron pattern painted on the rear of the module. The standard chevron pattern shall have 4-inch wide stripes, alternating black and yellow, slanted at 45 degrees in an inverted "V" form with the "V" located at the center of the module.

All standard modules assembly shall be covered for debris containment during an impact and for environmental protection.

b. Crushable Frame. The crushable frame which supports the TMA assembly shall be fabricated from standard steel shapes. The module shall be fastened to the internal frame.

c. Steel Backup. The steel backup shall be special lightweight assembly which shall support the TMA cartridge during normal use and shall resist the loads applied to it during impacts. This backup shall be capable of tilting upward toward the truck 90 degrees for travel or storage. Positions will be either 90 degrees or horizontal.

d. Attachment to the Truck. The TMA shall be designed to interface with a truck as specified herein. Engineers from the TMA manufacturers shall be supplied with a dimensional layout sheet of the

truck to which the TMA will be attached. The interface structure between the TMA and the truck will then be custom fabricated by TMA manufacturers.

e. Metal Work-Fasteners. All metal work shall be fabricated from ASTM A36 or M1020 merchant quality steel. After fabrication, all metal work shall be coated with metal primer and painted black. All welding shall be done by, or under the direction of, a certified welder. All bolts, nuts, and washers shall be corrosion resistant American National Standard.

f. Wire Rope. All wire ropes shall be 3/8-inch diameter galvanized, 7 x 19 aircraft cable manufactured to Military Specifications.

g. Weight. The TMA with 90-degree tilt shall weigh approximately 1200 pounds.

h. Hydraulics. The TMA with 90-degree tilt shall have a 12 volt D.C. hydraulic pump and cylinder which will be used to tilt the Hex-Foam module 90 degrees up from horizontal position. The hydraulic pump shall be supplied with a remote activation switch.

i. Wheel Jacks. The TMA with 90-degree tilt shall be capable of accepting two hand crank swivel jacks and two swing jacks at the rear to assist in the removal of the module and backup from the truck. These jacks shall have wheels to provide portability of the TMA once it is removed from the truck.

j. Testing Criteria. The TMA until shall have been tested to the criteria as listed in the National Cooperative Highway Research Program No. 350, dated 1993. A copy of the results of such testing must be available upon request and have been written by a Registered Professional Engineer. The TMA shall be capable of passing the following tests:

1. Vibration. Eight hours of constant vibration with a frequency of 5 HZ and a minimum amplitude of .5-inch, input at the base of the backup. The intent of this test is to simulate worst case road vibrations.

2. Moisture. Twenty-four hours of simulated rain on the top of the unit at the rate of 10 inches per hour. Twenty-four hours of simulated rain on the bottom of the unit at 10 inches per hour. The test should result in no water accumulation or moisture absorption by the module material.

3. Corrosion. When subjected to 50 hours of salt spray (fog), in accordance with ASTM B117, the energy absorbing material shall show no signs of corrosion or decrease in the energy absorbing capacity of the material.

928.02.2 Replacement Cartridges. The Contractor shall have a replacement cartridge available at all times. In the event that the original TMA is damaged due to a crash of an oncoming vehicle during construction the replacement cartridge will be used. The replacement cartridge shall include the module, internal support system, and hydraulic jacks. If the original TMA is damaged, the replacement cartridge will be used and a third cartridge will be ordered and paid for on a Force Account basis as set forth in **Subsection 109.04, Para. a.4** of these Specifications.

928.02.3 Truck Mounted Flashing Arrow Board (TMFAB). Attached to the traffic control truck, as described herein, shall be an illuminated truck mounted flashing arrow board. The TMFAB shall be a 4 foot by 8 foot board mounted at the rear of the truck. The TMFAB shall contain at least 12 #4412A (or

equivalent) amber lights each of which shall have approximately 6,000 initial maximum candle power with a flash rate of approximately 30 per minute and which shall indicate an arrow to the left, an arrow to the right or an arrow to both sides simultaneously to warn approaching traffic. The center of the arrow shall be mounted a minimum of 9 feet above the roadway. For nighttime use the unit shall be equipped for lamp intensity reduction to eliminate glare.

The TMFAB shall be powered by a diesel-fueled generator equipped with backup batteries.

928.02.4 Traffic Control Truck. The Contractor shall provide a truck weighing between 10,000 pounds to 24,000 pounds or one specified by the manufacturer and approved by the Engineer. The truck shall be adaptable to mounting the TMA and TMFAB to the rear of the truck.

928.03 CONSTRUCTION METHODS. The TMA and TMFAB shall be available for use throughout the duration of the Contract. It shall be positioned and repositioned at the direction of the Engineer.

The Contractor shall supply three (3) copies of the certification of the truck driver. No attenuator truck shall be left unattended while work is being actively performed. The Contractor shall have an employee(s) remain on site with the attenuator truck(s) at all times; the attendant(s) shall not work as laborers or laborer foreman or perform other contractual work while attenuator trucks are on an active work site.

The Contractor shall properly maintain the TMA and TMFAB throughout the Contract period.

928.04 METHOD OF MEASUREMENT. "Truck Mounted Attenuator with Truck Mounted Flashing Arrow Board" will be measured by the number of hours each such assembly is actually employed in the work or as directed by the Engineer.

928.05 BASIS OF PAYMENT.

The accepted quantity of "Truck Mounted Attenuator with Truck Mounted Flashing Arrow Board" will be paid at the contract unit price per hour listed in the Proposal. The price so-stated constitutes full and complete compensation for all labor, materials, and equipment, including TMA module, steel backup, TMA support frame, hydraulic pumps, wheel jacks, the continuous repositioning thereof, the first replacement TMA cartridge, TMAFAB, TMAFAB support frame for attachment to the truck, generator, and all incidentals required to finish the work, complete and accepted by the Engineer.

No additional payment will be made for provision of the TMA.