

SEPTEMBER 27, 2018
REHABILITATION OF BRIDGE NO. 00255
I-395 OVER ROUTE 85
FEDERAL AID PROJECT NO. 0395(011)
STATE PROJECT NO. 152-158
TOWN OF WATERFORD

ADDENDUM NO. 1

SPECIAL PROVISIONS
NEW SPECIAL PROVISIONS

The following Special Provisions are hereby added to the Contract:

- NOTICE TO CONTRACTOR – USE OF COMMUTER PARKING LOT
- NOTICE TO CONTRACTOR – VERIFICATION OF PLAN DIMENSIONS AND FIELD MEASUREMENTS
- NOTICE TO CONTRACTOR – ALL-INCLUSIVE DRAINAGE
- NOTICE TO CONTRACTOR – ELECTRONIC ENGINEERING DATA (EED)
- SECTION 2.86 – DRAINAGE TRENCH EXCAVATION, ROCK IN DRAINAGE TRENCH EXCAVATION
- ITEM NO. 0603081A – STRUCTURAL STEEL REPAIRS (SITE NO. 1)

REVISED SPECIAL PROVISION

The following Special Provision is hereby deleted in its entirety and replaced with the attached like-named Special Provision:

- ITEM NO. 0521003A - BEARING REPLACEMENT WITH ELASTOMERIC BEARING PADS

DELETED SPECIAL PROVISION

The following Special Provision is hereby deleted in its entirety:

- ITEM NO. 0603768A - STRUCTURAL STEEL

CONTRACT ITEMS
NEW CONTRACT ITEM

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
0603081A	STRUCTURAL STEEL REPAIRS (SITE NO. 1)	CWT	3

REVISED CONTRACT ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ORIGINAL QUANTITY</u>	<u>REVISED QUANTITY</u>
0202000	EARTH EXCAVATION	225 CY	273 CY
0209001	FORMATION OF SUBGRADE	210 SY	268 SY
0212000	SUBBASE	75 CY	97 CY
0213100	GRANULAR FILL	12 CY	20 CY
0305001	PROCESSED AGGREGATE	105 CY	119 CY
0406159	PMA S0.5	1,790 TON	1,810 TON
0406172	HMA S0.375	3,426 TON	225 TON
0406173	HMA S0.25	226 TON	113 TON
0406236	MATERIAL FOR TACK COAT	3,025 GAL	3,031 GAL
0406600	MATERIAL TRANSFER VEHICLE	3,580 TON	1,600 TON
0508050	SHEAR CONNECTORS	7,300 EA	6,600 EA
0601070A	CLASS "S" CONCRETE	2 CY	6 CY
0601107A	HIGH EARLY STRENGTH CONCRETE	83 CY	110 CY
0601201	CLASS "F" CONCRETE	152 CY	160 CY
0602006	DEFORMED STEEL BARS – EPOXY COATED	134,000 LBS	54,600 LBS
0603222A	DISPOSAL OF LEAD DEBRIS FROM ABRASIVE BLAST CLEANING	5 TON	10 TON
0603255A	LOCALIZED PAINT REMOVAL	137 SF	100 SF
0703012	MODIFIED RIPRAP	18 CY	29 CY

0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	1,800 LF	2,000 LF
0944000	FURNISHING AND PLACING TOPSOIL	3,130 SY	3,150 SY
0974000	REMOVAL OF EXISTING MASONRY	780 CF	795 CF
0976002	BARRICADE WARNING LIGHTS – HIGH INTENSITY	14,600 DAYS	7,220 DAYS
1209114	HOT-APPLIED PAINTED PAVEMENT MARKINGS 4” YELLOW	14,869 LF	15,520 LF
1209131	HOT-APPLIED PAINTED LEGEND, ARROWS AND MARKINGS	1,950 SF	2,100 SF
1220027	CONSTRUCTION SIGNS	1,480 SF	1,300 SF
1807101	RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE A	1 EA	4 EA

DELETED CONTRACT ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ORIGINAL QUANTITY</u>	<u>REVISED QUANTITY</u>
0602000	DEFORMED STEEL BARS	500 LBS	0
0603768A	STRUCTURAL STEEL	250 LBS	0
0910407	CONVERT METAL BEAM RAIL (MD-I) TO (R-I SYSTEM 2)	500 LF	0

PLANS
REVISED PLANS

The following Plan Sheets are hereby deleted and replaced with the like-numbered Plan Sheets:

- DRAWING NO. REV-1 (SHEET NO. 02.01.A1)
- DRAWING NO. S-12 (SHEET NO. 04.12. A1)
- DRAWING NO. S-13 (SHEET NO. 04.13. A1)
- DRAWING NO. S-14 (SHEET NO. 04.14. A1)
- DRAWING NO. S-15 (SHEET NO. 04.15. A1)
- DRAWING NO. S-16 (SHEET NO. 04.16. A1)
- DRAWING NO. S-21 (SHEET NO. 04.21. A1)
- DRAWING NO. S-25 (SHEET NO. 04.25. A1)

The Bid Proposal Form has been revised to reflect these changes.

The Detailed Estimate Sheets do not reflect these changes.

There will be no change in the number of calendar days due to this Addendum.

The foregoing is hereby made a part of the contract.

NOTICE TO CONTRACTOR – USE OF COMMUTER PARKING LOT

The State-owned commuter parking lot on Route 85 (Hartford Turnpike) at I-395 Interchange 2 will be available for the Contractor's use for the duration of the Project construction. The Contractor must comply with the following requirements in order to use the commuter lot for purposes such as a laydown area, staging area, stockpile area or location for the construction field office.

The Contractor shall place temporary signs at the commuter lot driveway, two weeks prior to the date approved by the Engineer, notifying the public that the lot will be closed. The sign message shall include the approved parking lot closure date. The Contractor may not occupy the lot prior to the approved date and prior to the signs being in place for the required duration.

The Contractor must leave the parking lot in the same or better condition than it was prior to occupying it, following the completion of its use. The Contractor is responsible for performing a condition survey of all parking lot elements other than the pavement and pavement markings (i.e. bituminous curbing, light standards, signs, chain link fence) prior to the commuter lot closure. Any parking lot elements that are damaged during the Project construction shall be replaced in-kind by the Contractor at no additional cost to the State.

The Contractor shall mill and repave the entire paved area of the parking lot in accordance with the details shown in the plans. The Contractor shall restripe the parking lot to match the parking space configuration and striping that exists at the start of the Project construction.

Paving, striping and other parking lot repair work must be completed and accepted by the Engineer before the parking lot can be reopened to the public. The parking lot must be reopened to the public and all temporary appurtenances (i.e. equipment, materials, temporary signs), placed in the parking lot by the Contractor during construction, must be removed before the end of the calendar days for the Project.

NOTICE TO CONTRACTOR – VERIFICATION OF PLAN DIMENSIONS AND FIELD MEASUREMENTS

The Contractor is responsible for verifying all dimensions before any work is begun. Dimensions of the existing structures shown on the plans are for general reference only; they are not guaranteed. The Contractor shall take all field measurements necessary to assure proper fit of the finished work and shall assume full responsibility for their accuracy. When shop drawings and/or working drawings based on field measurements are submitted for approval and/or review, the field measurements shall also be submitted for reference by the reviewer.

In the field, the Contractor shall examine and verify all existing and given conditions and dimensions with those shown on the plans. If field conditions and dimensions differ from those shown on the plans, the Contractor shall use the field conditions and dimensions and make the appropriate changes to those shown on the plans as approved by the Engineer. All field conditions and dimensions shall be so noted on the drawings submitted for approval.

There shall be no claim made against the Department by the Contractor for work pertaining to modifications required by any difference between actual field conditions and those shown by the details and dimensions on the contract plans. The Contractor will be paid at the unit price bid for the actual quantities of materials used or for the work performed, as indicated by the various items in the contract.

NOTICE TO CONTRACTOR - ALL-INCLUSIVE DRAINAGE

ADDED SECTIONS:

2.86 – DRAINAGE TRENCH EXCAVATION

ROCK IN DRAINAGE TRENCH EXCAVATION

5.86 – CATCH BASINS, MANHOLES AND DROP INLETS

6.86 – DRAINAGE PIPES

DRAINAGE PIPE ENDS

This Contract contains the above-noted Special Provisions for all-inclusive drainage, developed to replace the following Sections in their entireties:

- Section 5.07 – *Catch Basins, Manholes and Drop Inlets*
- Section 6.51 – *Culverts*
- Section 6.52 – *Culvert Ends*

The Section 5.86 and 6.86 items include excavation and bedding material in the drainage structure, pipe and pipe end unit prices.

Section 2.05 *Trench Excavation* may be included for miscellaneous trenching, where necessary, but will not be used with all-inclusive drainage items.

Other Standard Specifications, Supplemental Specifications or Special Provisions may contain references to Articles or Subarticles from previous versions of Sections 5.07, 6.51 and 6.52 which are no longer valid.

The following Standard Specifications Sections or Supplements contain references to Articles or Subarticles from Section 2.05 which shall remain in effect:

- Section 2.06 – *Ditch Excavation*
- Section 5.06 – *Retaining Walls, Endwalls and Steps*
- Section 7.51 – *Underdrains and Outlets*
- Section 10.01 – *Trenching and Backfilling*

‘Rock in Drainage Trench Excavation’ is now defined in Section 2.86. ‘Rock in Trench Excavation’ will remain in Section 2.05 and may be used with trenching not associated with all-inclusive drainage items.

Any references to Articles beginning with “5.07,” “6.51,” or “6.52” shall refer to the pertinent topic or materials in the new Special Provisions contained herein.

NOTICE TO CONTRACTOR - ELECTRONIC ENGINEERING DATA (EED)

The EED is an assembly of engineering data files that were used to produce the Contract plans.

Electronic Engineering Data (EED) is provided for information purposes only. In case of conflict between the EED and the Contract plans and specifications, the contract plans and specifications shall govern. The EED has been reviewed by the Department for quality control purposes, but it is the Contractor's responsibility to build the Project per the contract plans and specifications.

The EED is being provided to the Engineer for GPS/RTS inspection. The Contractor may use the EED to assist in bidding, layout and Automated Machine Control/Guidance.

The EED includes geospatially-correct 2D CAD files and may include horizontal and vertical alignment data files, 3D surface model files (break-line features and triangles) and a preference file. The data is being provided in two formats:

- Native Format
 - Bentley MicroStation CAD files (dgn)
 - Bentley SS2 InRoads Alignment Files (alg)
 - Bentley SS2 InRoads Digital Terrain Models (dtm)
 - Bentley SS2 InRoads Preference File (xin)
- Converted Format (for use in GPS/RTS Site equipment)
 - AutoCAD CAD files (dxf)
 - Alignment files (xml)
 - Surface Models (xml)

For a complete list of EED files, see the EED file manifest (PDF) located in the EED_XXXX-XXXX.zip file (XXXX-XXXX is the project number) which is posted with the contract PS&E's on the State Contracting portal.

SECTION 2.86 - DRAINAGE TRENCH EXCAVATION, ROCK IN DRAINAGE TRENCH EXCAVATION

2.86.01—Description

2.86.03—Construction Methods

2.86.04—Method of Measurement

2.86.05—Basis of Payment

2.86.01—Description: Drainage trench excavation consists of the excavation necessary for the proper installation of drainage structures, pipes, pipe ends and any other incidental drainage items.

It shall include earth and rock excavation, removal of existing pipes, dewatering, backfill, and disposal of materials; to the trench limits described herein, to the dimensions shown on the plans, or as directed by the Engineer.

Classifications:

- (1) **Drainage Trench Excavation** will include only the excavation necessary for the construction of the drainage items and the removals specified above.
- (2) **Rock in Drainage Trench Excavation**, insofar as it applies to drainage trench excavation, shall be defined as **1/2 cubic yard or more** in volume of the following obstructions removed from the limits of the drainage trench:
 - (a) rock in definite ledge formation
 - (b) boulders, or portions of boulders
 - (c) cement masonry structures
 - (d) concrete or reinforced concrete structures
 - (e) reinforced concrete pipe
 - (f) subsurface concrete pavement or concrete base

The removal shall be as indicated or directed from within the limits defined in 2.86.03 for drainage trench excavation.

2.86.03—Construction Methods:

(1) Drainage Trench Excavation Limits:

Horizontal Limits: Trench widths for pipes, pipe ends, pipe-arches, and drainage structures shall be as follows:

- (a) 2 feet greater than the nominal inside diameter of circular pipe or nominal inside span of elliptical pipe or pipe-arch for such diameters or spans of less than 30 inches
- (b) 3 feet greater than the nominal inside diameter of circular pipe or the nominal inside span of elliptical pipe or pipe-arch for such diameters or spans that are 30 inches or greater
- (c) 4 feet greater than the nominal inside diameter or nominal horizontal inside span for pipe-arches fabricated from structural plates
- (d) 2 feet beyond the neat lines of all exterior or foundation walls of drainage structures

Vertical Limits: Trench depths shall extend vertically as follows:

- (a) From the bottom of the trench to the bottom of the roadway excavation, or in areas away from roadway excavation, to the top of existing ground surface.

(b) Where drainage pipe is to be laid in a fill area, the embankment shall be placed and compacted to a minimum elevation 12 inches above the top of the proposed pipe, whereupon the drainage trench excavation shall be performed and the pipe installed.

- (2) **Drainage Trench Excavation:** Drainage trench excavation shall be made in conformity with the requirements of the plans, or as directed by the Engineer. The Contractor shall furnish and employ such shores, braces, pumps, or ancillary equipment as needed for the proper protection of property, proper completion of the work, as well as safety of the public and employees of both the Contractor and the Department. All bracing and shoring shall be removed when no longer required for the construction or safety of the work. When required, the Contractor shall provide or have on the Site at all times any OSHA certification for equipment to be used, per 1.07.07. For support of trenches greater than 10 feet in depth, working drawings shall be submitted, in accordance with 1.05.02. The Contractor shall control erosion and sedimentation at trench locations and ensure that pumped water from the drainage excavation is discharged in accordance with the requirements of 1.10.

Where a firm foundation is not encountered at the grades established due to unsuitable material, such as soft, spongy, or unstable soil, the unsuitable material shall be removed and replaced with approved backfill, thoroughly compacted in lifts not to exceed 6 inches, for the full trench width. The Engineer shall be notified prior to removal of the unsuitable material in order to determine the depth of removal necessary.

After the excavation is complete, the Contractor shall notify the Engineer and no drainage structure or material shall be placed in the excavated area until the Engineer has approved the depth of excavation and the character of the foundation material.

- (3) **Rock in Drainage Trench Excavation:**

(a) Rock in Drainage Trench Excavation - Ledge: When rock in definite ledge form is encountered, the Contractor shall excavate a minimum of 12 inches below the bottom of the proposed pipe or drainage structure; and this depth shall be filled with bedding material (as specified in M.08.03-1) below the proposed pipe; or granular fill (as specified in M.02.01) below the proposed drainage structure, which shall be thoroughly compacted in lifts not to exceed 6 inches.

(b) Rock in Drainage Trench Excavation - Boulders: When boulders are encountered, the Contractor shall remove them from the trench and if backfill is required, the void shall be filled with bedding material, surplus excavated material (as specified in 2.02.03-8) or granular fill which shall be thoroughly compacted in lifts not to exceed 6 inches.

(c) Rock in Drainage Trench Excavation –Structures: When cement masonry, concrete or reinforced concrete structures are encountered within the drainage trench limits, the Contractor shall remove the structure in its entirety or as directed by the Engineer, and if backfill is required, the void shall be filled with bedding material, surplus excavated material or granular fill which shall be thoroughly compacted in lifts not to exceed 6 inches.

- (4) **Backfill:** Suitable material excavated from the drainage trench shall be used as backfill material prior to consideration of using any other source of backfill. Backfill material used shall be of a quality satisfactory to the Engineer and shall be free from large or frozen lumps, wood and other extraneous material. Rock fill or stones larger than 5 inches shall not be placed within 1 foot of the drainage structure or pipe. The grading shall be

completed to the lines shown on the plans, or as ordered, by refilling to the required elevation with approved material, placed in layers not to exceed 6 inches in depth after compaction, which shall be thoroughly compacted with equipment approved by the Engineer.

All surplus or unsuitable material shall be removed and disposed of as directed. Should additional material be required for backfilling, it may be obtained from the Project surplus excavation in accordance with 2.02.03-8 or from borrow pits, gravel pits, or elsewhere as directed by the Engineer.

2.86.04—Method of Measurement:

Drainage Trench Excavation: Drainage trench excavation will not be measured for payment.

If granular fill or borrow is required to replace unsuitable material it will be measured for payment as directed by the Engineer.

Rock in Drainage Trench Excavation: If any material meeting the definition of Rock in Drainage Trench Excavation is encountered, the Contractor shall strip it of sufficient overlying material to allow for proper measurement and shall then notify the Engineer that the rock surface is ready for measurement. If the Contractor fails to give such notice, the Engineer will presume that the measurements taken at the time the Engineer first saw the material in question will give the true quantity of excavation.

Rock in Drainage Trench Excavation will be measured according to the classification provided in 2.86.01 and within the drainage trench excavation limits provided in 2.86.03.

For the removal of underground obstructions, as classified in 2.86.01-2, the measurement shall be the actual volume of rock removed (1/2 cubic yard or more) as approved by the Engineer.

Rock in Drainage Trench Excavation will not be measured for payment in fills.

Bedding Material or other suitable fill, as specified in 2.86.03(3), used to fill voids after rock is excavated will not be measured for payment.

2.86.05—Basis of Payment:

Drainage Trench Excavation: There will be no direct payment for drainage trench excavation required for the installation of drainage pipes, pipe ends, catch basins, drop inlets, manholes, and other drainage structures, or any other incidental drainage work including materials, tools, equipment and labor necessary to complete the drainage trench excavation in conformity with the plans or as directed by the Engineer.

There will be no direct payment for backfill or disposal of surplus material necessary for the satisfactory completion of this work.

There will be no direct payment made for shoring, bracing, dewatering, or for material or equipment necessary for the satisfactory completion of the work.

Where called for on the plans to install temporary earth retaining systems for the support of existing facilities, pavement, utilities, or for other constraints, payment will be made in accordance with such items in the Contract.

If granular fill or borrow is used to replace unsuitable material, payment will be made at the respective Contract unit prices, or in the absence of such items in the Contract, as Extra Work in accordance with 1.04.05.

Rock in Drainage Trench Excavation: When rock, conforming to the description in 2.86.01 is encountered within the limits of drainage trench excavation, its removal will be classified and

paid for at the Contract unit price per cubic yard for "Rock in Drainage Trench Excavation 0' – 10' Deep," or "Rock in Drainage Trench Excavation 0' – 20' Deep," as the case may be.

Those portions of drainage trench excavation classified and paid for as "Rock in Drainage Trench Excavation" of the various depths will be the actual volumes of rock excavated within the limits for drainage trench excavation, at the applicable bottom depth price.

Where no item or items for "Rock in Drainage Trench Excavation" at the applicable depth appear in the proposal and rock is encountered in drainage trench excavation, its removal will be paid for as Extra Work in accordance with 1.04.05.

When excavation is necessary in fill, no such excavation will be paid for as "Rock in Drainage Trench Excavation."

When excavation is necessary for any purpose other than drainage-related items, no such excavation will be paid under this item.

Bedding material or any other suitable material used to fill voids vacated by excavated rock will not be paid for but shall be included in the unit price per cubic yard for "Rock in Drainage Trench Excavation."

Pay Item	Pay Unit
Rock in Drainage Trench Excavation 0' - 10' Deep	c.y.
Rock in Drainage Trench Excavation 0' - 20' Deep	c.y.

ITEM #0521003A – BEARING REPLACEMENT WITH ELASTOMERIC BEARING PADS

Description: Work under this item shall consist of the removal and disposal of all existing bearing assemblies, cutting existing anchor bolts below the surface of the concrete and fill the area with non-shrink grout, cover existing anchor bolt in the bottom flange of the girder with steel plate, furnishing and installing new elastomeric bearing pads, obtaining field measurements of the existing bearings and existing concrete bearing pads furnishing and installing new beveled sole plates and load plates as shown on the plans, in accordance with these specifications, and as directed by the Engineer.

Materials:

1. Elastomer: The elastomeric compound, used in the construction of the bearings, shall contain only virgin polychloroprene (Neoprene) and shall be low- temperature Grade 3 and shall have a shore A Durometer hardness of 50 +/-5 points and meet the requirements of AASHTO Division II Section 18.

Each steel-laminated elastomeric bearing shall have marked on it, with indelible ink, the following: The Manufacturer's identification code or symbol, the month and year of manufacture, the orientation, order number, lot number, bearing identification number, and elastomer type and grade (Neoprene, Grade 3). The markings shall be placed on a side of the bearing that is visible after installation.

The Contractor shall furnish test bearings in addition to the bearings shown on the plans for each type (size and thickness) of bearings for destructive testing. The furnished test bearings shall not include sole plates or load plates.

The Contractor shall furnish a Certified Test Report, confirming that the elastomeric bearings satisfy the requirements of these specifications, in conformance with the requirements set forth in Article 1.06.07.

2. Steel Laminae: The internal steel laminae shall conform to the requirements of ASTM A 1011 Grade 36. The internal steel laminae edges shall be ground smooth or otherwise rounded before molding the bearing.

3. External Steel Plates: Steel sole and load plates shall be AASHTO M270, Grade 36 and shall conform to the requirements of Article M.06.02.

All surfaces of the load plates shall be abrasive blast cleaned before being hot bonded to the bearing during vulcanization. The load plates shall receive a shop primer coat. The load plates shall be covered during the abrasive blast cleaning of the structure to protect the shop primer coat and later painted with the rest of the structure after abrasive blast cleaning of the remaining structure is complete.

The new sole plates shall be field painted according to item specification for Abrasive Blast Cleaning and Field Painting of Structure.

Adhesive bonding of the elastomer portion of the bearings to external steel plates or concrete is not permitted.

4. Elastomeric Shims: The elastomer for shims shall conform to the same requirements as the bearing elastomer and be 1/16 inches and 1/8 inches thick, if directed by the Engineer.

5. Adhesive: The adhesive for bonding the shims shall consist of a long lasting, high strength, cold applied, air cured, water and heat resistant material specifically formulated for bonding neoprene and shall meet the following requirements:

Property	Requirement	ASTM Test Procedure
Adhesion	30#/in.	D 429, Method B
Hardness	50 \pm 5 Shore A points	D 2240
Tensile Strength, min	1800 psi	D 412
Elongation before breaking, min.	750 %	D 412

6. Bolts, Nuts and Washers: High strength bolts shall conform to ASTM F3125 Grade A325 Type 1. All hexagonal nuts shall conform to ASTM A563 Heavy Hex Type C/ All circular hardened washers shall conform to ASTM F436 Type 1.

7. Non-Shrink Grout: Non-shrink grout shall conform to Article M.03.05.

Construction Methods:

The Contractor shall obtain field measurements of the existing bearings and concrete bearing pads before submitting shop drawings in order to verify compatibility with the elastomeric bearings as detailed. The Contractor shall record the grade of each beam to accurately produce a new beveled sole plate. The Contractor shall submit field measurements with the shop drawings. See “Appendix – A: Bearing Assembly Field Measurements” of this special provision for a sample of the information to be submitted.

The Contractor shall measure the gap between the bottom of the existing girder flange and the top of the concrete surface at all bearing locations and obtain field measurements A, B and C (as illustrated in the sketch in this specification). Based on the field measurements and the proposed height of the bearing including the load plate, the Contractor shall calculate the actual thicknesses of the sole plates and submit the calculated sole plate thicknesses along with field measurements to the Engineer for review. The Contractor shall obtain the field measurements A, B & C at Girder G7 after lowering the Girder and determine the proposed

thicknesses of the sole plates. The calculated sole plate thicknesses shall be compared with the minimum sole plate thicknesses shown in the contract plans. The Contractor shall notify the Engineer prior to submitting shop drawings if after taking field measurements of the existing bearing assembly height, it is determined that the proposed sole plate thickness at the center line of bearing is less than 1.625 inches

The Contractor shall submit shop drawings to the Engineer, for review and approval, in accordance with Sub article 1.05.02. These drawings shall include, but not be limited to, the following information: Manufacturer's name, complete details of the bearings, material designations, nominal hardness of the elastomer, the quantity of bearings required, including test bearings, and the location of the bearing identification.

A minimum of thirty (30) days prior to the installation of the elastomeric bearings, the Contractor shall deliver to the job site a total of 56 bearings for installation plus one test bearing. The Contractor shall pack the bearings in containers holding no more than ten (10) bearings.

Bearings in one container shall contain the same type and size of bearing required for one structure only. The Contractor shall mark the container with the project number, the bridge number, the number of bearings, the intended location on the structure, the name of the Manufacturer and the lot number.

The Contractor shall remove the existing bearing assemblies using methods that do not damage them or the existing beam. Existing welds shall be removed by machining, grinding, chipping, or air carbon-arc gouging and in such a manner that the remaining base metal is not wicked or undercut. A minimum of $\frac{1}{8}$ " of weld metal shall be left in place if arc gouging is the selected removal method and the remaining weld metal shall be removed by grinding. Welders who perform arc gouging shall be SMAW certified. Use of flame cutting equipment to cut the anchor bolts is not allowed. The Contractor shall remove the bolts by sawing the anchor bolt unless another method is approved by the Engineer. The Contractor shall grind smooth the portion of welds remaining after removal of the existing sole plate.

Wherever arc gouging, flame cutting or welding will be used, existing lead paint must first be removed from around the area to be affected. Removal of paint for the purpose of removing the existing bearing and installing the new bearing shall be accomplished by methods described in the special provision "Localized Paint Removal" if the paint is being removed prior to abrasive blast cleaning.

The Engineer will inspect the concrete bearing pads before the installation of the elastomeric bearings. Portions of protruding anchor bolts shall be cut off below the surface of the concrete and the void filled in with non-shrink grout. All other cracks, spalls, or deterioration shall be repaired as ordered by the Engineer.

The concrete bearing pads shall have smooth, even, and level surfaces. They shall show no variation from a true plane greater than 1/16 inches over the entire area upon which the elastomeric bearings are to rest. The Contractor shall grind the concrete as required to achieve these requirements.

Before installing the elastomeric bearings, the Contractor shall clean the concrete bearing pad of dirt, grease, oil, or other foreign material.

The Contractor shall install the elastomeric bearings as shown on the plans. The Contractor shall install the elastomeric bearings when the temperature of the ambient air and the bearings is between 40 deg. F to 80 deg. F and has been within this range for at least 2 hours.

Adhesive bonding of the elastomeric bearings to steel and concrete surfaces is not permitted.

Welding with the elastomeric bearings in place will not be permitted unless there is more than 1.5" of steel between the weld and the elastomer. In no case shall the elastomer be exposed to temperatures greater than 400 deg. F. Temperature Indicating Crayons shall be used during field welding to assure that these temperature restrictions are not exceeded.

Welding details, procedures and testing methods shall conform to the latest ANSI/AASHTO/AWS D1.5: Bridge Welding Code, unless otherwise noted. Silicone based caulking material approved by the Engineer shall be used to seal between sole plate and bottom flange weld where weld is discontinued. The caulking material shall be compatible with the paint system used for field painting.

The elastomeric bearings shall rest uniformly on the concrete bearing pads when the bearings are under the full dead load of the superstructure. If uniform contact is not present, the Contractor shall fill the gaps beneath the bearing by inserting elastomeric shims that are slightly thinner than the gaps. The Contractor, in the presence of the Engineer, shall measure the gaps to determine the locations and sizes of the shims.

The Contractor shall bond the individual shims to the elastomer portion of the bearing with adhesive applied over the entire shim interface. The surface preparation, application and curing of the adhesive shall comply with the Manufacturer's recommendations. If shims in excess of 1/8 inches are required, bonding of multiple shims is permitted. In areas that vary in thickness, the Contractor shall shim by stepping shims.

After the removal of anchor bolts prior to painting, the Contractor shall furnish and seal weld 1/4 inch steel plates over the slotted holes as shown on the plans.

The Contractor shall provide the Engineer with safe work access to perform inspection.

Method of Measurement: This work will be measured for payment by the actual number of elastomeric bearing pads installed and accepted. Test bearings will not be measured for payment.

Basis of Payment: This work will be paid for at the contract unit price each for "Bearing Replacement with Elastomeric Bearing Pads" complete, in place and accepted, which price shall include obtaining field measurements of existing bearings and concrete bearing pads, placing non-shrink grout, furnishing and installing sole plates and load plates, application of shop primer coat on the load plates, furnishing and installing elastomeric bearings, steel plates over slotted holes, test bearing, shims, adhesive, removal and disposal of the existing bearings, access to bearing locations and all materials, equipment, tools and labor incidental thereto.

Surface preparation and painting of the beveled sole plates and the steel plates over slotted holes shall be paid for under the item "Abrasive Blast Cleaning and Field Painting of Structure"

<u>Pay Item</u>	<u>Pay Unit</u>
Bearing Replacement with Elastomeric Bearing Pads	EA.

APPENDIX A: Bearing Assembly Field Measurements

Provide all dimensions in inches.

A	B	C	D

Dimension "B" is the bearing assembly height taken at the centerline of bearing.

Concrete Bearing Pad Information:

Transverse Dimension (Width) = _____

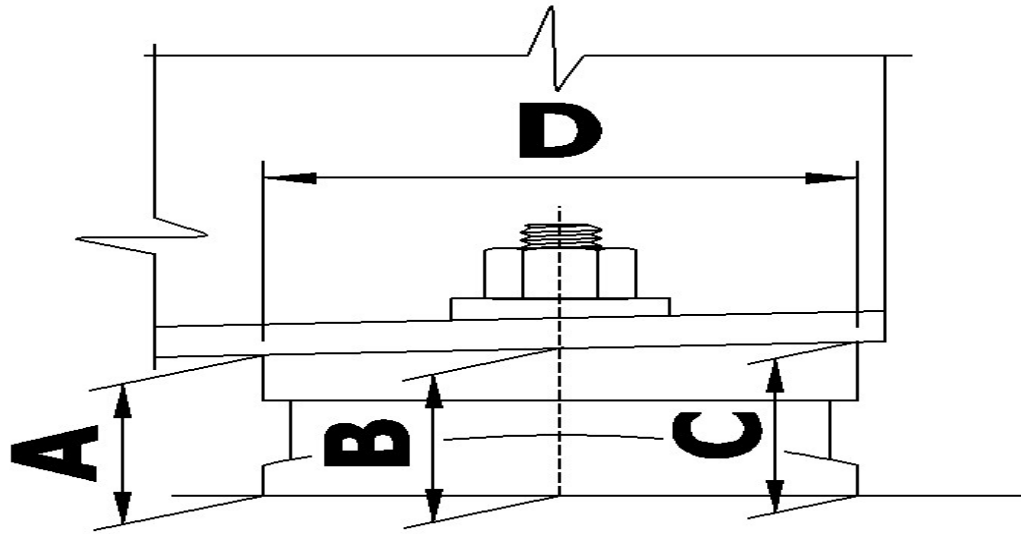
Longitudinal Dimension (Length) = _____

Center line of beam to the top right edge of bevel (measured transversely to the beam) = _____

Center line of beam to the top left edge of bevel (measured transversely to the beam) = _____

Grade of concrete bearing pad to level = _____

Bottom Flange Width = _____



Bridge No. _____ Abutment No. _____ Pier No. _____ Beam No. _____

ITEM #0603081A – STRUCTURAL STEEL REPAIRS (Site No. 1)

Work under this item shall conform to the requirements of Section 6.03 of the Standard Specifications, Form 817, amended as follows:

Description: The following is added to Article 6.03.01:

Work under this item shall consist of removing existing deteriorated structural steel and furnishing, fabricating, transporting, storing, handling and installing new structural steel repair plates, angles, and channels for the purpose of strengthening ends of beam webs, beam flanges and replacing support members as shown on the plans, as directed by the Engineer and in accordance with these specifications.

Materials: Delete the entire article and add the following to Article 6.03.02:

The materials for this work shall meet the requirements of Section M.06.02.

Materials for this work shall be stored off the ground before, during after fabrication. It shall be kept free from dirt, grease and other contaminants and shall be reasonably protected from corrosion.

The epoxy-based filler material shall be Steel-Seam FT910 as manufactured by Sherwin-Williams, or Engineer approved equivalent product.

Construction Methods: The following is added to Article 6.03.03:

- 5. Removal of Deteriorated Steel and Installation of Repair Steel:** Wherever arc gouging, flame cutting, or welding will be used, existing lead paint must first be removed. All steel repair shall be performed after the existing paint is removed. The removal of paint shall be performed per the requirements of item "Abrasive Blast Cleaning and Field Painting of Structure".

Existing deteriorated steel shall be cut out and removed in accordance with the plans and as ordered by the Engineer. Existing welds shall be removed by machining, grinding, chipping, or air carbon-arc gouging and in such a manner that the remaining base metal is not wicked or undercut. A minimum of 1/8" of weld metal shall be left in place if arc gouging is the selected removal method and the remaining weld metal shall be removed by grinding. Welders who perform arc gouging shall be SMAW certified.

Plates shall be installed as shown on the plans and any match marks shall be followed. The plates shall be carefully handled so they will not be bent or otherwise damaged.

Hammering which will injure or distort new or existing members is not permitted. All

surfaces to remain in permanent contact shall be cleaned before the final welding.

The Contractor shall provide the Engineer access to the deteriorated beam end locations and to the portions of the girders that have previous damage from impact or collision as noted in the plans, for the purpose of inspection whenever so requested. Contractor shall grind all gouges found on existing steel flanges and cover plates from previous impact or collision damage as noted in the plans. Prior to performing corrective work to straighten and rehabilitate the steel member, the Contractor shall submit to the Engineer for approval, his procedure for grinding and straightening existing steel. No corrective work shall begin until the Contractor's procedure to rehabilitate the steel has been approved by the Engineer.

Method of Measurement: Delete the entire article and add the following to Article 6.03.04:

This work will be measured for payment at the contract unit price per pound of new steel complete and accepted in place.

The weight of the structural steel to be measured for payment under this item shall be computed on the basis of the net finished dimensions of the plates based on measurements taken by the Engineer. The weight of weld metal and temporary erection bolts, boxes, crates, and other containers used for shipping, materials used for supporting members during transportation and erection, and weld metal shall not be measured for payment.

There shall be no measurement or separate payment for the cost of removing lead paint and for grinding copes, gouges and cuts.

Basis of Payment: Delete the entire article and add the following to Article 6.03.05:

The structural steel, incorporated in the completed and accepted structure, will be paid for at the contract unit price per cwt for "Structural Steel Repairs."

Payment shall be for structural steel, complete in place, which price shall include removing deteriorated steel, grinding copes, gouges and cuts and straightening of steel, fabricating, furnishing, transporting, storing, erecting and installing the new repair plates, bolts with compatible nuts and washers, all welding and weld inspection, and all other materials, equipment, tools, labor and work incidental thereto.

The final cleaning and application of paint on new steel plates added as a result of the steel repair shall be paid for under the item "Abrasive Blast Cleaning and Field Painting of Structure"

Pay Item

Pay Unit

Structural Steel Repairs (Site No. 1)

cwt