

December 29, 2017  
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION  
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7565516

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2017-CB-070

FEDERAL-AID PROJECT NO. FAP Nos: BRO-472(001), STP-RESF(360)

**Horton Farm Bridge No. 472**

Horton Farm Road Bridge No. 472

CITY/TOWN OF East Providence

COUNTY OF PROVIDENCE

**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. Clarification**

1. Bid Opening Date

Bid Opening Date updated to "01/17/2018" at 2:00pm.

2. Item Code 212.2000

Item Code 212.2000 "CLEANING AND MAINTENANCE OF EROSION CONTROLS" now includes a minimum acceptable bid price.

3. Item Code 943.0200

The unit price for Item Code 943.0200 "TRAINEE MAN-HOURS" has been modified and now includes a minimum acceptable bid price.

4. Item Code T12.9901

The unit price for Item Code T12.9901 "MOBILE CAMERA SURVEILLANCE SYSTEM" has been updated to account for the relocation of the existing system that is currently located within project limits.

**B. Proposal Pages**

1. Proposal Pages P-28(Revision-6) and P-29(Revision-6)

Remove and replace Proposal Pages P-28(Revision-6) and P-29(Revision-6) in their entirety with revised Proposal Pages P-28(Revision-7) and P-29(Revision-7) attached to this Addendum No. 7. The Bid Opening Date has been updated to "01/17/2018" at 2:00pm.

**C. General Provisions - Contract Specific**

1. Page CS-14

Remove and replace page CS-14 in its entirety with revised page CS-14(R-1) attached to this Addendum No. 7. Section 11 "Steel Fabrication and Delivery" has been updated to remove precast deck panels.

**D. Specifications - Job Specific**

1. Page JS-46A

Remove and replace page JS-46A in its entirety with revised page JS-46A(R-1) attached to this Addendum No. 7. The specification for Item Code 702.9912 "INFILTRATION BASIN" has been revised to include a sedimentation basin.

2. Page JS-86

Remove and replace page JS-86 in its entirety with revised page JS-86(R-1) attached to this Addendum No. 7. The specifications for Item Code 828.9901 "SEISMIC ISOLATION BEARINGS FOR HORTON FARM ROAD BRIDGE NO. 472" have been revised.

3. Pages JS-88 and JS-89

Remove pages JS-88 and JS-89 in their entirety and replace with revised pages JS-88(R-1) and JS-89(R-1) attached to this Addendum No. 7. The specifications for Item Code 828.9901 "SEISMIC ISOLATION BEARINGS FOR HORTON FARM ROAD BRIDGE NO. 472" have been revised.

4. Page JS-96

Remove and replace page JS-96 in its entirety with revised page JS-96(R-1) attached to this Addendum No. 7. The specification for Item Code 926.9901 "TEMPORARY IMPACT ATTENUATOR" has been revised to replace the 70 MPH requirement with a NCHRP 350 Test Level 3 rating requirement.

5. Pages JS-109 thru JS-113

Remove and replace pages JS-109 thru JS-113 in their entirety with revised pages JS-109(R-1) thru JS-113(R-1) attached to this Addendum No. 7. Item Code T12.9901 "MOBILE CAMERA SURVEILLANCE SYSTEM" has been updated to account for the relocation of the existing camera system that is currently located within project limits.

**E. Distribution of Quantities**

1. Index Pages 1(R-4) thru 4(R-4)

Remove and replace index pages 1(R-4) thru 4(R-4) in their entirety with revised index pages 1(R-5) thru 4(R-5) attached to this Addendum No. 7. The index has been revised and updated items are indicated in bold.

2. Index Page 5

Remove and replace index page 5 in its entirety with revised index page 5(R-1) attached to this Addendum No. 7. The index has been revised and updated items are indicated in bold.

3. Page 70

Remove and replace page 70 in its entirety with revised page 70(R-1) attached to this Addendum No. 7. The quantity for Item Code L01.0104 has been updated to match the quantity for Item Code L02.0101.

**F. Plans**

1. VOLUME 1 SHEET 17(R-2) - GENERAL PLAN SHEET 6 OF 11

Remove and replace Sheet 17(R-2) in its entirety with revised Sheet 17(R-3) attached to this Addendum No. 7. This sheet has been revised.

2. VOLUME 1 SHEET 19(R-2) - GENERAL PLAN SHEET 8 OF 11

Remove and replace Sheet 19(R-2) in its entirety with revised Sheet 19(R-3) attached to this Addendum No. 7. This sheet has been revised.

3. VOLUME 1 SHEET 30(R-2) - DRAINAGE AND UTILITY PLAN SHEET 6 OF 11

Remove and replace Sheet 30(R-2) in its entirety with revised Sheet 30(R-3) attached to this Addendum No. 7. This sheet has been revised.

4. VOLUME 1 SHEET 32(R-2) - DRAINAGE AND UTILITY PLAN SHEET 8 OF 11

Remove and replace Sheet 32(R-2) in its entirety with revised Sheet 32(R-3) attached to this Addendum No. 7. This sheet has been revised.

5. VOLUME 1 SHEET 36A - PROPOSED BASIN GRADING PLAN

Insert Sheet 36A attached to this Addendum No. 7. The "Proposed Basin Grading Plan" has been added.

6. VOLUME 1 SHEET 42(R-1) - LOCATION PLAN SHEET 6 OF 11

Remove and replace Sheet 42(R-1) in its entirety with revised Sheet 42(R-2) attached to this Addendum No. 7. This sheet has been revised.

7. VOLUME 1 SHEET 44(R-1) - LOCATION PLAN SHEET 8 OF 11

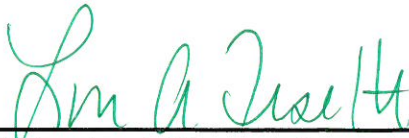
Remove and replace Sheet 44(R-1) in its entirety with revised Sheet 17(R-2) attached to this Addendum No. 7. This sheet has been revised.

8. VOLUME 2 SHEET 44(R-1) - BEARING DETAILS SHEET 1 OF 3

Remove and replace Sheet 44(R-1) in its entirety with revised sheet 44(R-2). This sheet has been revised.

9. VOLUME 2 SHEET 46(R-1) - BEARING DETAILS SHEET 3 OF 3

Remove and replace Sheet 46(R-1) in its entirety with revised sheet 46(R-2). This sheet has been revised.

  
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R/Department of Transportation  
Administrator, Division of Project Management

Revised: 2/19/2002

Total or gross sum of bid for Rhode Island Contract Number: 2017-CB-070

Federal-Aid Project Number(s): BRO-472(001), STP-RESF(360)

**WRITTEN IN WORDS:**

The undersigned bidder declares that this Proposal is made without connection with any other person or persons making proposals for the same work, and is in all respects fair and without collusion or fraud. The undersigned bidder submits herewith, a proposal guarantee in the form of a bid bond in favor of the State of Rhode Island in the amount of 5% of the total or gross sum of the bid and agrees and consents that the proposal guarantee shall be forfeited to the State as liquidated damages if the required contract agreement and contract bond are not executed within ten(10) days of the notice of award. All surety companies must be listed with The Department of the Treasury, Fiscal Services, Circular 570, (Latest Revision published by The Federal Register). The State reserves the right to retain the surety of all bidders until the successful bidder enters into the Contract or until such time as the award or cancellation of the Contract is announced at which point Sureties will be returned to all bidders by the State of Rhode Island, Office of Purchases. The undersigned bidder further agrees, if awarded the contract on this proposal, to begin work within ten (10) calendar days after the date of execution of the contract unless otherwise specified under special provisions or permitted by the Engineer, and further agrees to complete the work on or before the dates outlined in the Contract Documents.

**COMPLETION DATE(S)**

<b>DESCRIPTION</b>	<b>DATE</b>
Substantial Completion Date	June 29, 2019
Bid-Opening Date	January 17, 2018
Advertise Date	September 29, 2017

**THE BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING:**

<b>ADDENDA</b>	<b>DATE POSTED</b>	<b>DOCUMENT(S)</b>	<b>PAGE</b>
NO.1	October 13, 2017	Status Certification for: Debarment, Eligibility, Indictments, Convictions or Civil Judgements	
NO.2	October 26, 2017	Anti-Collusion Certificate	
NO.3	November 22, 2017	DBE Affirmative Action Certification	
NO.4	December 7, 2017	Disclosure of Lobbying Activities	
NO.5	December 13, 2017		
NO.6	December 18, 2017		
NO.7			

**Total or gross sum of bid for Rhode Island Contract Number: 2017-CB-070**

**Federal-Aid Project Number(s): BRO-472(001), STP-RESF(360)**

Whoever, being an officer, agent, or employee of the United States, or of any State, or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the costs thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction of any highway or related project submitted for approval to the Secretary of Transportation; or Whoever, knowingly makes any false statement, false representation, false report, or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or Whoever, knowingly makes any false statement or false representation as to a material fact in any statement, certificate, or report submitted pursuant to the provisions of the Federal-aid Road Act approved July 11, 1916 (39 Stat. 355), as amended and supplemented, Shall be fined not more than \$10,000 or imprisoned not more than five years, or both. By signing here the signee agrees that the disk submitted is the same as the paper submitted and that any discrepancies may result in disqualification of the bid.

BEING EITHER A (INDIVIDUAL, PARTNERSHIP,  
(OR CORPORATION INCORPORATED)  
(UNDER THE LAWS OF ANY STATE)  
(IN THE UNITED STATES OF AMERICA)

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**Contractor**

COMPOSED OF OFFICERS, PARTNERS  
OR OWNER, AS FOLLOWS.

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**President**

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**Vice-President**

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**Secretary**

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**Treasurer**

**Address**

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**CERTIFICATION SUMMARY: I hereby certify that I have read all of the above requirements and understand that it affects the acceptability of my bid(s).**

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Name of Signatore - Title

Date

## **11. STEEL FABRICATION AND DELIVERY**

The Contractor shall schedule the work such that all structural steel for the Bridge is fabricated, coated, delivered to the Department approved pre-assembly shop/site for prefabrication of the two-girder modular units. This shall include girders, diaphragms, and other miscellaneous members. The steel shall be stockpiled at a location, secured by the Contractor on land that is in the Contractor's control. The location shall be fenced. The Contractor may stockpile the steel on site however the Department will not consider any claims for costs or delays for stockpiling on site. The Department will not accept responsibility for the security of the steel if it is stockpiled on site.

The steel shall be stockpiled in such a manner so as not to damage or deform it, or mark the surface. The contractor shall provide all cribbing, trailers, loading, unloading, fencing, and security. The Contractor shall be liable for repairing all damage, including graffiti, to the satisfaction of the Engineer.

At the time of the execution of the Contract, the successful bidder must furnish the Department with a Contract Bond for the structural steel and the work associated with meeting the requirements in the previous two paragraphs, in a sum equal to the value of the steel and the work. The bond shall meet all other requirements of section 103.05 of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction.

The cost for securing the location, fabricating, delivering, stockpiling, loading and unloading, and securing the steel shall be incidental to the contract. No additional payment shall be made for the requirements stated above.

**CODE 702.9912**  
**INFILTRATION BASIN**

**DESCRIPTION:** Except for the excluded items of work indicated below, the work under this item shall consist of furnishing all labor, materials, tools, equipment and incidentals to construct the infiltration basin as detailed on the plans and as directed by the engineer. The work shall include all excavating soil, placing gravel, placing plantable soil, trimming and fine grading, and seeding for the construction of the infiltration basin, sedimentation basin, and associated swales. All incidentals required to complete the work as described in the Special Provisions and elsewhere in the Contract Documents complete and in place and accepted by the Engineer.

**Excluded Items of Work:** The item of work is excluded from this item and instead will be measured and paid separately under their own appropriate bid item as listed in the proposal is the 12 inch BCCMP discharging into the swale.

**MATERIALS:**

Gravel Borrow shall be specified on the plans and shall meet the requirements as specified in the RIDOT Standard Specifications for Road and Bridge Construction. Plantable Soil shall be specified on the plans and shall meet the requirements as specified in the RIDOT Standard Specifications for Road and Bridge Construction. Seeding shall be specified on the plans and shall meet the requirements as specified in the RIDOT Standard Specifications for Road and Bridge Construction.

**CONSTRUCTION METHODS:** All construction shall be in accordance with the contract documents and the specifications and in accordance with RIDOT Standard Specifications for Road and Bridge Construction.

Where possible the excavation to remove the original soil shall be accomplished using light equipment with turf-type tires. The use of equipment with narrow tracks or narrow tires, rubber tires with large lugs or high pressure tires is not acceptable

**METHOD OF MEASUREMENT:** The item will not be measured for payment.

**BASIS OF PAYMENT:** Item 702.9912 will be paid for at the contract unit price per lump sum as listed in the proposal. The price so stated shall constitute full and complete the work as described in this Special provision and elsewhere in the contract documents, complete in place and acceptable by the engineer.

**THIS IS A PROPRIETARY BEARING SPECIFICATION**

**CODE 828.9901**

**SEISMIC ISOLATION BEARINGS FOR HORTON FARM ROAD BRIDGE NO. 472**

**DESCRIPTION:** The work under this item shall consist of designing, furnishing, and installing Isolation Bearing Assemblies at the existing abutments and pier of the Horton Farm Bridge No. 472. These Special Provisions shall supplement the relevant sections of the State of Rhode Island Standard Specifications for Road and Bridge Construction, Amended December 2010, including all applicable compilations of approved specifications (hereinafter referred to as the RI Standard Specifications), not replace them. All work shall be in accordance with the contract drawings, the RI Standard Specifications as modified by this Special Provision, the *AASHTO LRFD Bridge Design and Construction Specifications*, and as directed by the Engineer. Where no specific requirement is directed for a component part of this item, the RI Standard Specifications shall apply, except for payment.

This specification is intended to define the minimum requirements of the seismic isolation bearings (isolators), distribution plates, distribution pads, and connection hardware. The work includes the furnishing of all materials, labor, equipment and services for the supply, installation and finish of the isolators. Included as components of seismic isolation bearings are masonry, sole and shim plates, lower bearing plates, anchor bolts, spring assemblies, shear-resisting mechanisms, PTFE (teflon) sheets or surfacing, lubricants and adhesives.

The general contractor or subcontractor shall furnish all materials, tools, equipment, transportation, necessary storage, access, labor and supervision required for the proper installation of the isolators.

The work included for this item shall comprise all work pertaining to the design and construction of the isolators consisting of fabricating, furnishing, and installing all seismic isolation bearings. All of the above work shall be complete in place and accepted in accordance with the Contract Documents except that the Method of Measurement and Basis of Payment will be in accordance with these Special Provisions.

**Reference Standards**

Isolation bearings shall be designed and constructed in accordance with *AASHTO LRFD Bridge Design Specifications 5th Edition, Section 14, and Construction Specifications 3rd Edition, Section 18* for non-seismic loading conditions. Seismic design, performance, and testing shall be assessed in accordance with the *AASHTO Guide Specifications for Seismic Isolation Design; 3rd Edition*.

**MATERIALS:** Each bidder is required to identify their intended isolation system supplier at the time of bid. Materials for the isolator systems shall be pre-qualified and be supplied by the following manufacturer:

1. R.J. Watson, Inc. (11035 Walden Ave., Alden, NY 14004. Tel: 716-901-7020, Email: sales@rjwatson.com)



- (2) Complete details and sections showing all materials, with ASTM or other designations, incorporated in the isolators.
- (3) Vertical and horizontal load and movement capacities.
- (4) All bearing connection details.

The shop drawings and design calculations shall be sealed by a professional engineer registered in Rhode Island and employed by the bearing supplier with at least 5 years of documented history of isolation bearing design experience.

### Product Information

1. Provide a current ICC Evaluation Service Report, compliant with the 2009 IBC, for the proposed products.
2. Manufacturer's product data sheets (MPDS) indicating physical, mechanical and chemical characteristics of all materials used in the isolator system.
3. Manufacturer's Material Safety Data Sheets (MSDS) for all materials to be used.
4. Within sixty working days following the contract award, the isolation system supplier shall submit prototype test data for review by the Engineer.
5. In addition to records of test results, the Contractor's isolator supplier shall submit Certificates of Compliance for the isolators indicating the materials, fabrication, testing, and installation are as specified herein.
6. The Contractor shall provide the Engineer with written notification prior to the start of bearing fabrication. This notification shall include all of the information shown on the shop drawings which are required by the "Materials" section of these specifications.

### Performance

1. The use of base isolators can substantially reduce forces transferred to the existing bridge substructures. The substructure will resist seismic forces generated using isolators with the characteristics in Table A. Maximum seismic forces and displacements resulting from analyses per this section shall be submitted to the Engineer. Calculations demonstrating service load displacements and forces are less than those listed on the bridge plans shall be submitted to the Engineer.

**Table A - Bearing Characteristics – Seismic**

EQS Bearing Summary - <i>Seismic ULE</i>								Keff =	Keff =			EDC =	EDC =		
		Avg	Kd	Kd	di	di		(Qd/d) + Kd	(Qd/d) + Kd	F	F	4*Qd*d	4*Qd*d		
EQS		Qd	(kips/in)	(kips/in)	(in)	(in)		(kips/in)	(kips/in)	(kips)	(kips)	(kips*in)	(kips*in)	β	β
Model	Location	(kips)	Longit	Trans	Longit	Trans		Longit	Trans	Longit	Trans	Longit	Trans	Longit	Trans
EQS200	N ABUT	90	1.4	3.0	3.0	1.00	1.00	4.4	4.4	4.4	4.4	5.4	5.4	0.20	0.20
EQS175	S ABUT	71	1.1	3.0	3.0	1.00	1.00	4.1	4.1	4.1	4.1	4.3	4.3	0.17	0.17
EQS475	Pier	261	20.9	10.0	10.0	1.00	1.00	30.9	30.9	30.9	30.9	83.5	83.5	0.43	0.43
EQS Bearing Summary - <i>Seismic LLE</i>								Keff =	Keff =			EDC =	EDC =		
		Avg	Kd	Kd	di	di		(Qd/d) + Kd	(Qd/d) + Kd	F	F	4*Qd*d	4*Qd*d		
EQS		Qd	(kips/in)	(kips/in)	(in)	(in)		(kips/in)	(kips/in)	(kips)	(kips)	(kips*in)	(kips*in)	β	β
Model	Location	(kips)	Longit	Trans	Longit	Trans		Longit	Trans	Longit	Trans	Longit	Trans	Longit	Trans
EQS200	N ABUT	90	1.4	3.0	3.0	0.25	0.25	8.4	8.4	2.1	2.1	1.4	1.4	0.41	0.41
EQS175	S ABUT	71	1.1	3.0	3.0	0.25	0.25	7.3	7.3	1.8	1.8	1.1	1.1	0.37	0.37
EQS475	Pier	261	20.9	10.0	10.0	0.25	0.25	93.5	93.5	23.4	23.4	20.9	20.9	0.57	0.57
EQS Bearing Summary - <i>Non-Seismic</i>								Keff =	Keff =						
		Avg	Kd	Kd	dt	dt		(Qd/d) + Kd	(Qd/d) + Kd	F	F				
EQS		Qd	(kips/in)	(kips/in)	(in)	(in)		(kips/in)	(kips/in)	(kips)	(kips)				
Model	Location	(kips)	Longit	Trans	Longit	Trans		Longit	Trans	Longit	Trans				
EQS200	N ABUT	90	1.4	3.0	3.0	1.30	0.88	4.0	4.5	5.3	4.0				
EQS175	S ABUT	71	1.1	3.0	3.0	1.30	0.88	3.8	4.2	5.0	3.7				
EQS475	Pier	261	13.8	10.0	10.0	0.00	0.00	N/A	N/A	N/A	N/A				

ULE	Upper-level earthquake
LLE	Lower-level earthquake
D	Maximum dead load, unfactored, plus seismic live load, if applicable (kips)
dmax	Maximum seismic displacement across isolator (in)
Keff	Effective stiffness <i>at dmax</i> (kips/in)
Kd	Post-elastic stiffness (kips/in)
EDC	Energy dissipation capacity per cycle <i>at dmax</i> (kips*in)

2. The overall height is as shown on the plans. There shall be no increase or decrease in the overall height of any isolator due to thermal displacements which results in a change of more than 0.125 inches in the pavement profile.
3. Isolation bearing service load resistance shall not be accomplished by friction alone. Friction in conjunction with enclosed energy control devices is acceptable.
4. Stability of isolation bearings shall be evaluated in accordance with Section 12.3 of the *AASHTO Guide Specifications for Seismic Isolation Design*.
5. Isolation bearings shall display the characteristics shown in Table A. Seismic forces and displacements for the structure generated using these bearing properties shall be substantiated using analyses per AASHTO LRFD specifications. Conformance of alternate isolation systems shall be substantiated analytically, at no cost to the owner, using the same methodology as the system shown in the contract plans. The analysis model shall be an accurate representation of the bridge structure, the soil and foundations, and the isolation system.
6. Sliding bearings shall be stiff in shear, i.e. negligible shear displacement shall occur within the load bearing element.
7. Energy dissipation shall not be achieved via the material degradation of a structural element in the bearing system. A structural element in the bearing system is defined as the element resisting AASHTO service loads (WS, WL, CE, BR, etc.)
8. The structural element shall be designed to provide adequate resistance to service loads independent of the rate of load application. The structural element should be able to resist static design lateral loads for a period of 12 hours without creep or excessive displacement.
9. Isolation bearings shall be maintenance free for seismic, post-seismic and non-seismic conditions.
10. The vertical load support element shall be designed for rotational fatigue at the design vertical load. Rotational loading shall be static dead load rotation plus cyclic live load rotation. Bearings that rely upon the lateral confinement of elastomer to sustain the vertical load shall include ½ the design horizontal load.

#### **Product Delivery, Handling, and Storage**

1. Bearings delivered to the bridge site shall be stored under cover on a platform above the ground surface. Bearings shall be protected at all times from injury. When placed, bearings shall be dry, clean, and free from dirt, oil, grease, or other foreign substances.

**CODE 926.9901**

**TEMPORARY IMPACT ATTENUATOR**

**DESCRIPTION:**

The Contractor shall install a Temporary Impact Attenuator Capable at the locations as shown on plans and as directed by the Engineer. The impact attenuators shall meet the requirements of National Cooperative Highway Research Program, Report 350 (NCHRP 350) and has been accepted by Federal Highway Administration for use at the location intended.

**MATERIALS**

The Item shall include all gravel borrow for the foundation, all grading, curb resetting, concrete foundation, and location labeling, fixed end at obstruction to be protected and necessary to install the impact attenuator. The approach end shall be covered with a reflective sheeting, minimum size 12 inch x 12 inch. The color shall match the adjacent pavement marking.

Impact attenuators used shall be designed to a Test Level 3 rating.

Before installation, the Contractor shall provide the Engineer with copies of the manufacturer's documents indicating satisfactory testing in accordance with NCHRP 350 Test Level 3 rating and/or its subsequent revisions, and of the approval by the FHWA for use of the impact attenuator as intended and in the location intended.

No work shall commence under these items until all documents have been returned approved by the Engineer.

The Concrete shall be 5000 psi, 4 inch, 26 lb/ft<sup>3</sup> Cement Concrete Masonry, with 7.0% ± 1.0% Air Entrainment.

Penetrant Sealer - volatile organic compound (VOC) compliant w/ minimum 40% solids. The product should be listed on the RIDOT Approved Products list or approved by the Engineer. Products not on the list must be provided as a submittal that shall conform to the requirements of the Special Provision Code 105.02.

**CONSTRUCTION**

The system shall be installed in accordance with the specifications and recommendations of the manufacturer and approved shop drawings. Additional construction details shall be coordinated

**CODE T12.9901**

**MOBILE CAMERA SURVEILLANCE SYSTEM**

**DESCRIPTION:** This work shall consist of relocating the existing mobile camera surveillance system that is currently located within the project limits and installing it to new locations to view and record the project construction. The existing system include two (2) solar powered, rugged, wind-resistant, mobile trailers with pressure-sealed cameras for traffic management and work zone monitoring. The existing cameras are mounted to a 42 foot telescoping mast to provide a strategic overview of site.

- A. The Contractor shall furnish the Engineer with time-lapse high end imaging documenting all of the bridge construction activities starting with Stage 1 demolition and ending with the completion of Milestone #2.
- B. The Contractor shall take high-resolution 8 Megapixel digital images every 15 minutes and provide live video.
- C. The Contractor shall upload both images and video over a wireless cellular modem.
- D. The content shall be sent to a secure, password protected website with an Interface and Online Software features provided by the Vendor as a Managed Service.

**MATERIALS:** This work shall consist of relocating, installing, testing, and maintaining an existing mobile camera surveillance system that consist of the following components:

- A. Camera: Integrated 8 Megapixel high-definition camera and lens assembly consisting of a charge coupled device (CCD) camera with a remotely controlled focal length lens with the following features:
  - 1. Imager: 1/2.5" CCD 8 Megapixel.
  - 2. Resolution: 3,264 x 2,488 Pixels = 8 Megapixels.
  - 3. Panoramic Resolution: 29,376 x 9,792 = 72 Megapixels.
  - 4. Lens: Zoom 6mm – 72mm capable of 12x Optical, 4x Digital.
  - 5. Video Compression: AVI (Motion JPEG).
  - 6. Auto Features: ISO, Shutter, White Balance and Focus.
- B. Camera Enclosure:
  - 1. Built-in aluminum and epoxy powder painted weatherproof standard IP66/IP67.
  - 2. Body constructed from extruded aluminum and die-cast aluminum end-cover plates.
  - 3. Weatherproof feature is maintained by 2 EPDM-rubber end gaskets between cover plates and 3 cable glands.
- C. Pan and Tilt Robotic Base: High-performance outdoor pan/tilt designed to provide steady images in windy environments with the following features:
  - 1. Pan Range: 360° continuous pan.
  - 2. Tilt Range: +30° to -90° from level.

- 3. Motor Type: Stepper.
- D. Overall System:
  - 1. Camera Enclosure Dimension: 6.9" (175mm) W x 6.6" (168mm) H x 19.4" (493mm) L.
  - 2. Pan/Tilt Unit Dimensions: 7.0" (178mm) W x 10.5" (274mm) H x 6.4" (163mm) D.
  - 3. Operational Temperature: -10°F to +120°F (-23°C to + 49°C).
  - 4. Camera Enclosure Weight: 13lb (5.9kg).
  - 5. Pan/Tilt Unit Weight: 12lb (5.4kg).
- E. Solar Powered Trailer Platform:
  - 1. Operational Temperature Range -4°F to 158°F (-20°C to 70°C).
  - 2. Dimensions 12' L x 6' W x 10' H (3.66m L x 1.82m W x 3m H).
  - 3. Region of Operation: Contiguous United States.
  - 4. Autonomy: 4 days battery backup.
  - 5. Full size spare tire.
  - 6. Guy Wires: To stabilize an extended mast and steady the camera shot.
- F. Battery Bank:
  - 1. Charge controller with remote monitoring.
  - 2. Battery Type: 6 Volt DC deep cycle batteries.
- G. Solar Array:
  - 1. Single crystal (monocrystalline) silicon photovoltaic modules.
- H. Communication
  - 1. Wireless GPS modem EV-DO.
- I. Quantity of Cameras: Two (2).

#### INTERFACE AND ONLINE SOFTWARE

- A. Remote Access: Contractor's System Vendor shall provide an internet based interface and online software as a managed service, to allow the viewing of all high-definition digital still images captured and stored and live video, from any location with internet access via a secure password protected website.
  - 1. Maintain images on the System Vendor's website for reference available at all times during the life of the project and for not less than 60 days after completion.
- B. Online Interface Features:
  - 1. Software delivered by vendor as a managed service.
  - 2. Displays company logo and project name.
  - 3. Capable of viewing live video.
  - 4. Picture in Picture to control and view live video, while viewing high definition images.
  - 5. Robotic pan, tilt and zoom control of robotic camera system.
  - 6. Featuring high-definition panoramic images with a panoramic image comparison tool.
  - 7. Calendar based navigation system for selecting specific images and panoramas.
  - 8. Multifunction image browsing.
  - 9. Pan, tilt and zoom control capability within a high-definition image.
  - 10. Onscreen button for wiper control to allow remote cleaning of the viewing window.

11. A multiview screen to view all of the cameras on a project at the same time.
12. Graphical mark-up tools for detailing and creating overlays on images.
13. Graphical weather applet displaying ten points of local weather data and 48-hour forecast.
14. Remote solar monitoring screen displaying the DC amperage output of solar panels.
15. Remote battery monitoring screen displaying battery voltage, temperature and status.
16. Remote cellular monitoring screen displaying connectivity, network traffic and modem temperature.
17. Remote wireless radio monitoring screen displaying connectivity, network traffic and Google Map features including wireless radio locations.
18. Share image tools: save, print, email and post to message board or mobile devices.
19. Automated progress reports in Power Point, Open Office and PDF formats.
20. Map, aerial and satellite view by Google.
21. Time lapse features include – Instant time lapse play back by day, week, month or year.
22. Machine to machine self-healing technology that automates maintenance of camera up to 288 times daily.
23. Account security features include – Four levels of password protection, IP address block / permission and SSL protection of the user login password.
24. All Images are the copyright of the client and protected on secure servers owned and operated by the system vendor.

The existing equipment and software including but not limited to the portable trailer, solar panels, batteries, camera, communications systems, video webcaster, software and online interface were originally provided by EarthCam as a complete unit.

**CONSTRUCTION METHODS:** The Contractor in coordination with the Engineer shall determine the mounting location for each mobile traffic camera trailer. The trailers shall be installed outside of the roadway clear zone or behind protective barrier or guardrail. If the trailers cannot be located outside the clear zone or behind protective devices, the contractor shall provide temporary protective devices in accordance with the latest edition of the AASHTO Roadside Design Guide. The Contractor may be requested to move the trailers up to three times during the construction period by RIDOT. If the trailer needs to be relocated due to Contractor construction activities, it shall not count towards a requested relocation.

The Contractor shall be responsible for all negotiations, fees and agreements with private land owners.

The trailers shall be installed at the agreed locations and made operational and tested 7 days prior to the start of construction. The contractor shall utilize vendor support as needed and perform initial installation and set-up procedures per the vendor's instructions.

## **INSTALLATION:**

### **A. General:**

1. Install camera system in accordance with manufacturer's printed instructions, State and Municipality codes and requirements and approved submittals.
2. Install units plumb and level and at proper angle to provide maximum field of view of on-site operations.
3. Securely and rigidly anchor products in place.
4. Connect cameras to power.

B. Position camera so that field of view covers intended area of site.

1. Locate the trailer so that the solar panels have an unobstructed view of the Southern sky.
2. Locate the trailer so the camera will provide uncompromised visual coverage.
3. Locate the trailer so that position of sun or man-made light sources will not come into direct contact with field of view of camera at any time during construction.

**MAINTENANCE:**

The Contractor shall clean and maintain the units and equipment for the life of the project for 24 hour operation per the vendor's recommended schedule.

The Contractor shall be responsible for all aspects of maintaining a fully operational mobile camera surveillance system from 7 days prior to beginning construction to 30 days after written notification of final acceptance.

**PROJECT COMPLETION:**

Within 30 days after final project completion, the Contractor shall demonstrate to the Engineer that each camera and trailer unit is fully operational and the two mobile camera surveillance system trailers shall be delivered to the RIDOT at the following location with all original literature, instruction, operation, and maintenance manuals:

RIDOT Maintenance Headquarters  
360 Lincoln Avenue  
Warwick RI 02888-3030  
Telephone - 401 222-2378

The Contractor shall contact the RIDOT Maintenance Headquarters a minimum of 7 calendar days in advance to arrange a specific date and time for delivery of the trailers.

**METHOD OF MEASUREMENT:** "MOBILE CAMERA SURVEILLANCE SYSTEM" shall be measured for payment by the unit "Lump Sum" for the system installed and accepted by the Engineer.

**BASIS OF PAYMENT:** “MOBILE CAMERA SURVEILLANCE SYSTEM” shall be paid at the contractor unit bid price “Lump Sum”, which price shall include full compensation for all equipment relocations, tools, labor, maintenance, testing, software, managed service, and work incidental thereto complete in place and accepted by Engineer.



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201.0302	CUTTING AND DISPOSING ISOLATED TREES AND STUMPS (24'' OR PLUS)	1
201.0401	REMOVE AND DISPOSE GRANITE CURB	1
201.0408	REMOVE AND DISPOSE RIGID PAVEMENT	2
201.0409	REMOVE AND DISPOSE FLEXIBLE PAVEMENT	2
201.0414	REMOVE AND DISPOSE PIPE - ALL SIZES	3
201.0415	REMOVE AND DISPOSE GUARDRAIL AND POST ALL TYPES	3
201.0419	REMOVE AND DISPOSE FENCE	4
201.0420	REMOVE AND DISPOSE CONCRETE SLAB	4
201.0421	REMOVE AND DISPOSE BITUMINOUS CURB	4
201.0425	REMOVE AND DISPOSE FLARED END SECTION	6
201.0430	REMOVE AND DISPOSE CONCRETE MEDIAN BARRIER	6
201.0432	REMOVE AND DISPOSE HEADWALL	6
201.0601	REMOVE AND DISPOSE GROUND MOUNTED SIGNS	6
201.0604	REMOVE AND DISPOSE GROUND MOUNTED SIGN POSTS	7
201.0605	REMOVE AND DISPOSE GROUND MOUNTED SIGN BASES	7
201.0610	REMOVE AND DISPOSE DIRECTIONAL, WARNING, REGULATORY, SERVICE, AND STREET SIGNS	7
201.0613	REMOVE AND STOCKPILE LIGHT STANDARDS	7
201.0616	REMOVE AND DISPOSE LIGHT STANDARD FOUNDATIONS	10
201.0622	REMOVE AND DISPOSE OVERHEAD SIGN PANEL	12
201.0623	REMOVE AND DISPOSE OVERHEAD SIGN STRUCTURE	12
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202.0600	LOAM EXCAVATION	14
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<b>203.0700</b>	<b>** ITEM DELETED **</b>	<b>15</b>
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302.0100	GRAVEL BORROW SUBBASE COURSE	20
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<b>401.9902</b>	<b>MODIFIED CLASS 12.5</b>	<b>22</b>
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708.9041	CLEANING CATCH BASINS ALL TYPES AND SIZES	37
708.9042	CLEANING MANHOLES ALL TYPES AND SIZES	41
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708.9902	CLEAN AND REGRADE DITCH	42
708.9905	CLEAN AND REGRADE RIP RAP DITCH	42
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T20.2012	12 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	90
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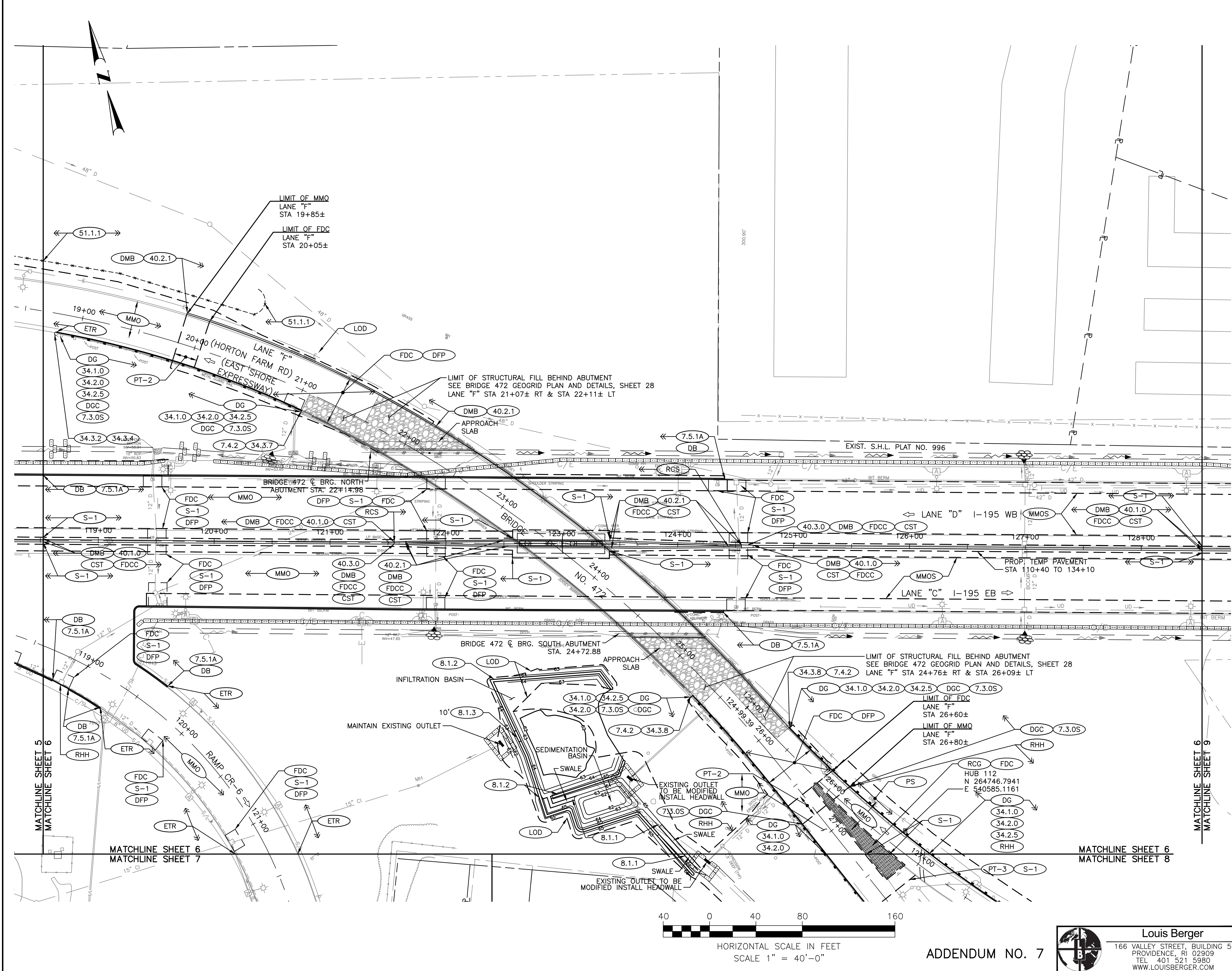
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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
121	942.0200	Cont.				
		12+11, LT		8.00	0005	01
		12+41, RT		8.00	0005	01
		12+67, LT		8.00	0005	01
		12+74, RT		8.00	0005	01
		12+77, LT		8.00	0005	01
		12+98, LT		8.00	0005	01
		13+24, LT		8.00	0005	01
		15+46, LT		8.00	0005	01
		16+11, LT		8.00	0005	01
Item 942.0200 Total:				120.00		
122	943.0200	TRAINEE MAN-HOURS	MHRS			
		FROM RIDOT				
		FROM RIDOT		4,000.00	0005	01
Item 943.0200 Total:				4,000.00		
123	L01.0104	PLANTABLE SOIL 4 INCHES DEEP	SY			
		CONTINGENCY				
		PROJECT WIDE			0005	01
		I-195				
		98+70 TO 99+70, RT		1,034.00	0005	01
		ROUNDING				
		PROJECT WIDE		16.00	0005	01
Item L01.0104 Total:				1,050.00		
124	L02.0101	GENERAL HIGHWAY SEEDING (TYPE 1)	SY			
		I-195				
		98+70 TO 99+70, RT		1,034.00	0005	01
		ROUNDING				
		PROJECT WIDE		16.00	0005	01
Item L02.0101 Total:				1,050.00		
125	L02.9901	GRASS MOWING	EACH			





ENTIRE SHEET REPLACED BY  
ADDENDUM NO. 7

REVISIONS			RHODE ISLAND	
NO.	DATE	BY	DEPARTMENT OF TRANSPORTATION	
			IMPROVEMENTS TO I-195	
			ABC BRIDGE NO. 472 OVER I-195	
			SUPERSTRUCTURE REPLACEMENT	
			EAST PROVIDENCE, RHODE ISLAND	
			GENERAL PLAN	
			SHEET 6 OF 11	
			CHECKED BY PWS	DATE 6/1/17 SCALE 1"=40'

Louis Berger  
166 VALLEY STREET, BUILDING 5  
PROVIDENCE, RI 02909  
TEL 401 521 5980  
WWW.LOUIISBERGER.COM

ADDENDUM NO. 7

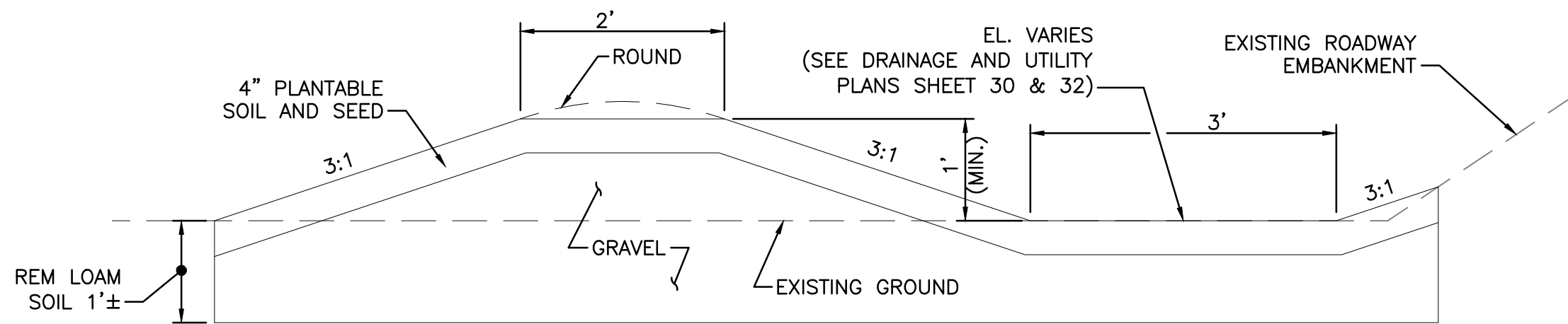




166 VALLEY STREET, BUILDING 5  
PROVIDENCE, RI 02909  
TEL 401 521 5980  
WWW.LOUISBERGER.COM

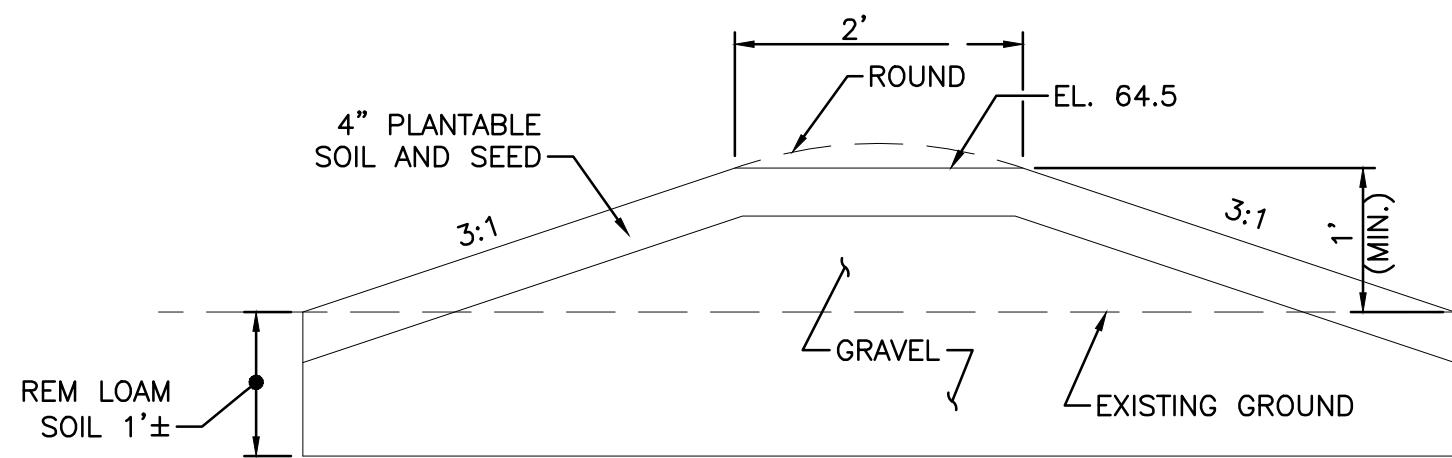
CHECKED BY PWS DATE 6/1/17 SCALE 1"=40'





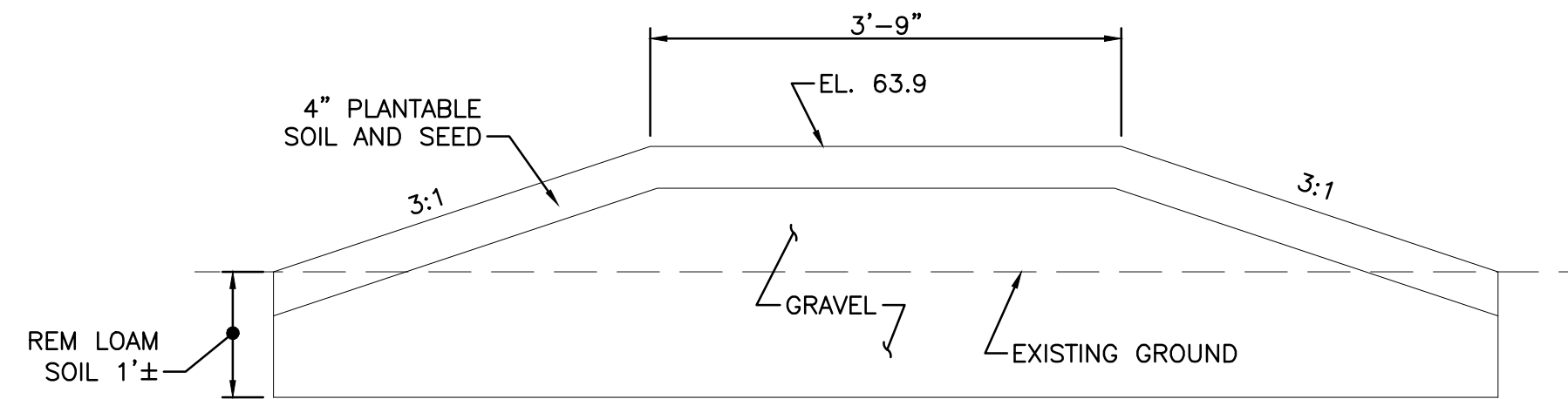
SECTION  
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8.1.1  
SWALE



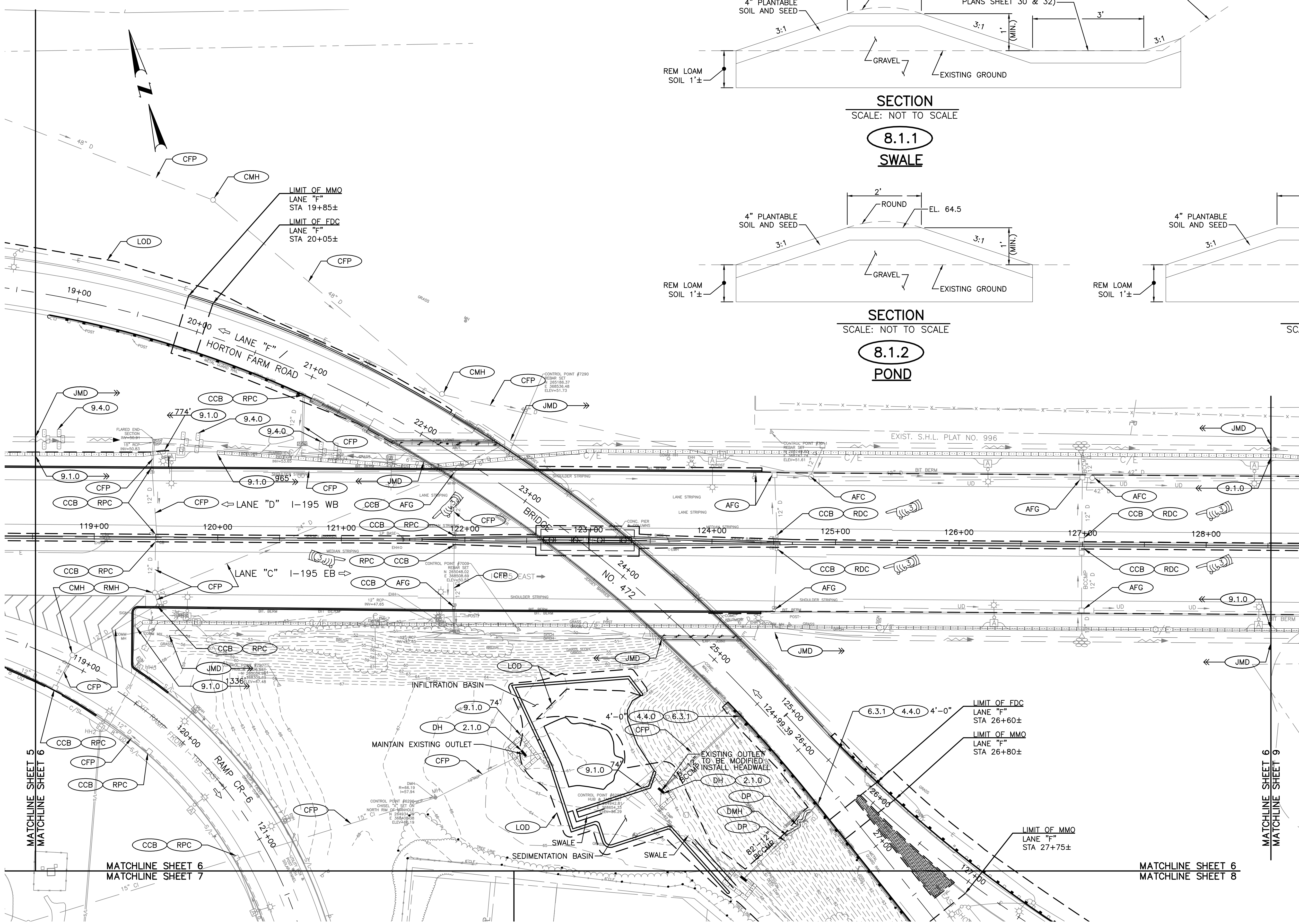
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8.1.2  
POND

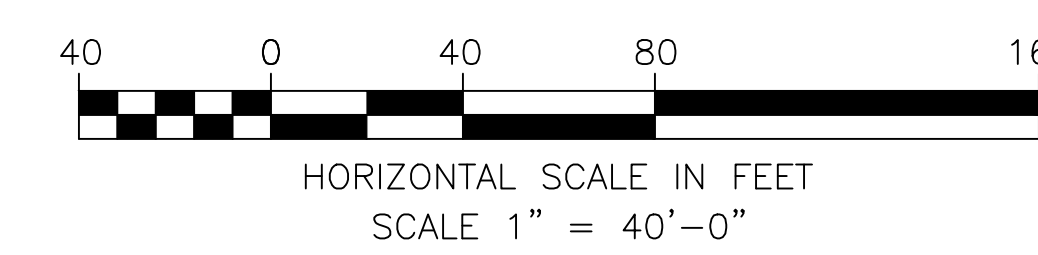


SECTION  
SCALE: NOT TO SCALE

8.1.3  
WEIR



- NOTE:
- SEE DRAINAGE DETAILS FOR DISPOSITION OF STRUCTURE AND FRAME AND GRATE OR FRAME AND COVER.
  - DISPOSITION OF ALL STRUCTURES TO BE VERIFIED BY THE ENGINEER.
  - EXISTING UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE. THE GAS AND ELECTRIC WAS TAKEN FROM PLANS PROVIDED BY NATIONAL GRID.
  - SEE LIGHTING PLANS FOR DISPOSITION OF EXISTING LIGHTING SYSTEM.



ADDENDUM NO. 7

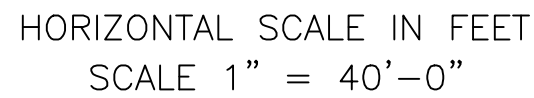
Louis Berger

166 VALLEY STREET, BUILDING 5  
PROVIDENCE, RI 02909  
TEL 401 521 5980  
WWW.LOUIISBERGER.COM

ENTIRE SHEET REPLACED BY  
ADDENDUM NO. 7

REVISIONS			RHODE ISLAND	
NO.	DATE	BY	DEPARTMENT OF TRANSPORTATION	
			IMPROVEMENTS TO I-195	
			ABC BRIDGE NO. 472 OVER I-195	
			SUPERSTRUCTURE REPLACEMENT	
			EAST PROVIDENCE, RHODE ISLAND	
			DRAINAGE & UTILITY PLAN	
			SHEET 6 OF 11	
			CHECKED BY PWS	DATE 6/1/17 SCALE 1"=40'





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[illegible]

CHECKED BY PWS DATE 6/1/17 SCALE 1"=40'

DRAINUTL.DWG

1. SEE DRAINAGE DETAILS FOR DISPOSITION OF STRUCTURE AND FRAME AND GRATE OR FRAME AND COVER.
2. DISPOSITION OF ALL STRUCTURES TO BE VERIFIED BY THE ENGINEER.
3. EXISTING UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE. THE GAS AND ELECTRIC WAS TAKEN FROM PLANS PROVIDED BY NATIONAL GRID.
4. SEE LIGHTING PLANS FOR DISPOSITION OF EXISTING LIGHTING SYSTEM.









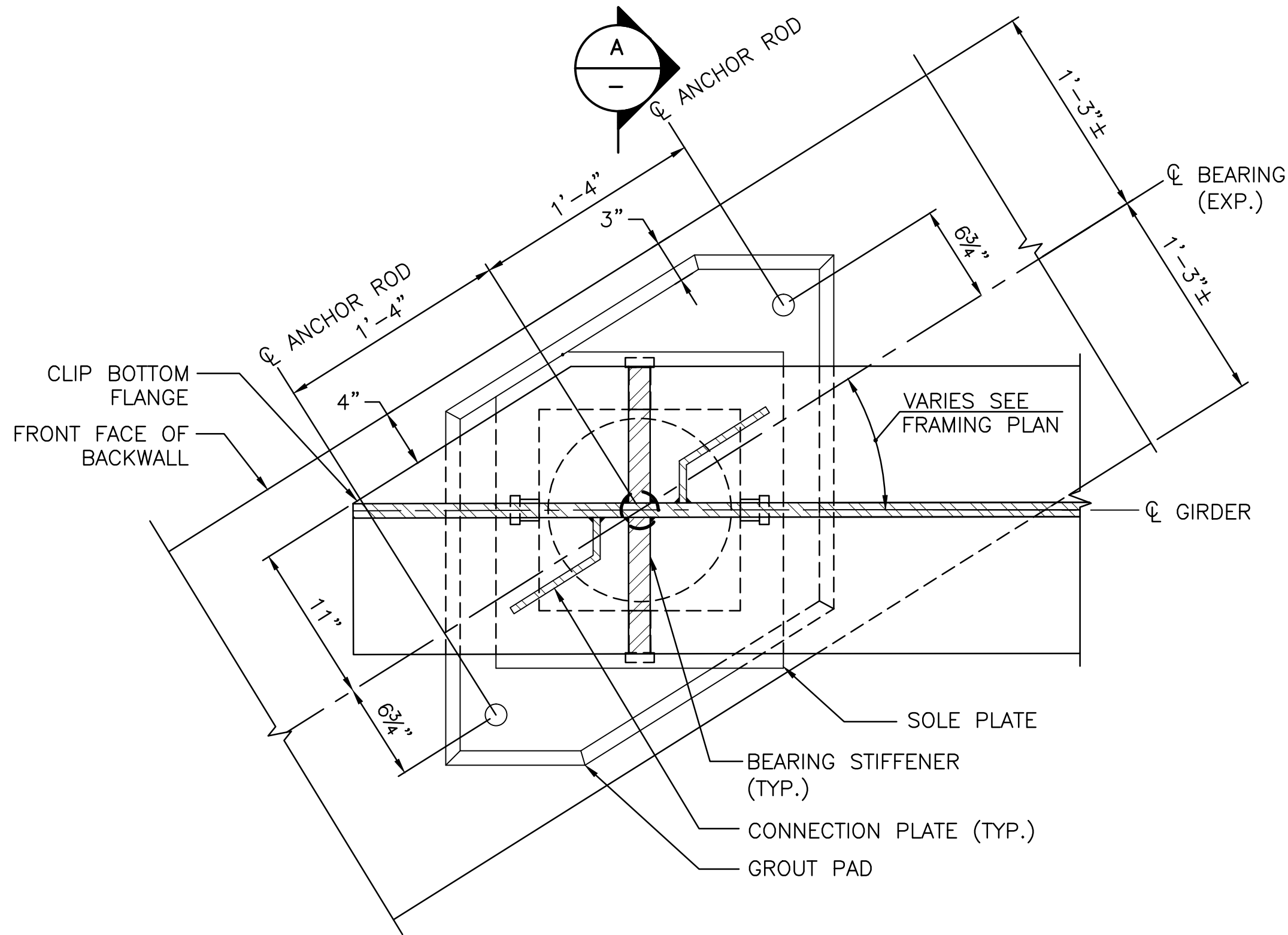






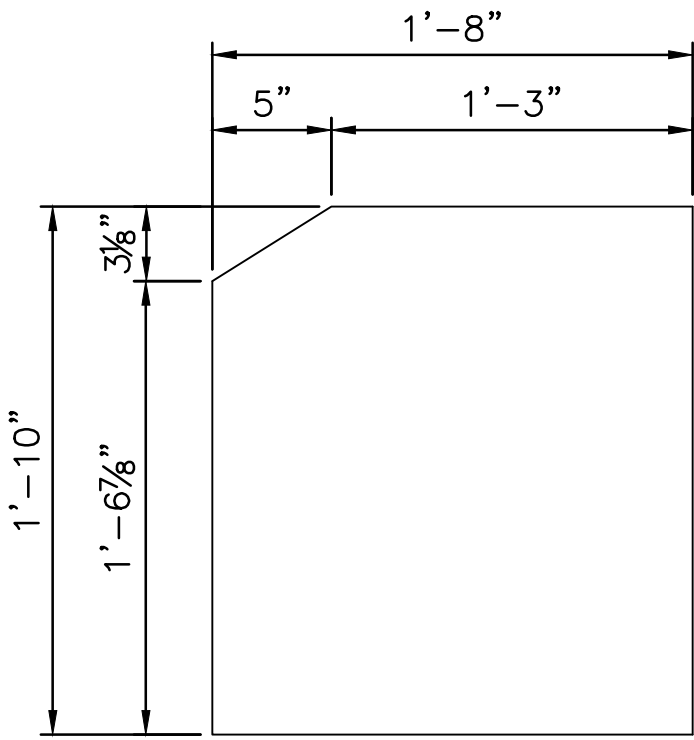
NOTES:

- THE CONTRACTOR SHALL SUBMIT BEARING DESIGN, DETAILS AND SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.
- THE OVERALL HEIGHT OF THE BEARINGS AT THE BEARING CENTERLINES, SHALL BE AS PROVIDED IN THE BEARING HEIGHT TABLE PROVIDED ON THIS SHEET. CONTRACTOR SHALL ADJUST THE THICKNESS OF THE GROUT PADS PER BEARING MANUFACTURER DESIGN.
- ANCHOR ROD OR BOLT SPACING, DIAMETER AND PROJECTION SHALL BE COORDINATED WITH THE BEARING MANUFACTURER.
- BEARING INSTALLATION, DESIGN, MATERIAL, FABRICATION, AND GENERAL CONSTRUCTION REQUIREMENTS SHALL BE IN STRICT CONFORMANCE WITH SPECIAL PROVISIONS OF THE SPECIFICATION AND THE MANUFACTURER'S RECOMMENDATIONS.
- WELDS AND PERTINENT BOLTS ARE AS PER BEARING MANUFACTURER'S RECOMMENDATIONS.
- ALL LOADS ARE UNFACTORED.
- BEARING LOCATIONS SHALL BE SET BY FIELD SURVEY.
- STRUCTURAL STEEL FOR SOLE PLATE AND MASONRY PLATE SHALL BE AASHTO M270, GRADE 50.
- ANCHOR BOLTS (ASTM A449), NUTS (ASTM A563) AND WASHERS (F436) SHALL BE HOT DIPPED GALVANIZED.
- SOLE PLATES ARE TO BE COMPOUND BEVELED AS NEEDED TO ACCOMMODATE THE VERTICAL GEOMETRY OF THE ROADWAY AND GIRDERS. MAINTAIN A MINIMUM THICKNESS OF 1".
- MAXIMUM ALLOWABLE LONGITUDINAL DIMENSIONS FOR THE SOLE AND MASONRY PLATES ARE SHOWN. MINIMUM WIDTH FOR THESE PLATES ARE ALSO PROVIDED, BUT MAY BE INCREASED TO PROVIDE ADEQUATE CLEARANCE. THE BEARING MANUFACTURER SHALL DESIGN THE BEARINGS TO FIT WITHIN THE LIMITS OF THESE PLATES AND CLEAR THE BOLTS.
- BEARING DETAILS SHOWN ARE CONCEPTUAL AND ACTUAL DETAILS MAY VARY SLIGHTLY DEPENDING ON MANUFACTURER.



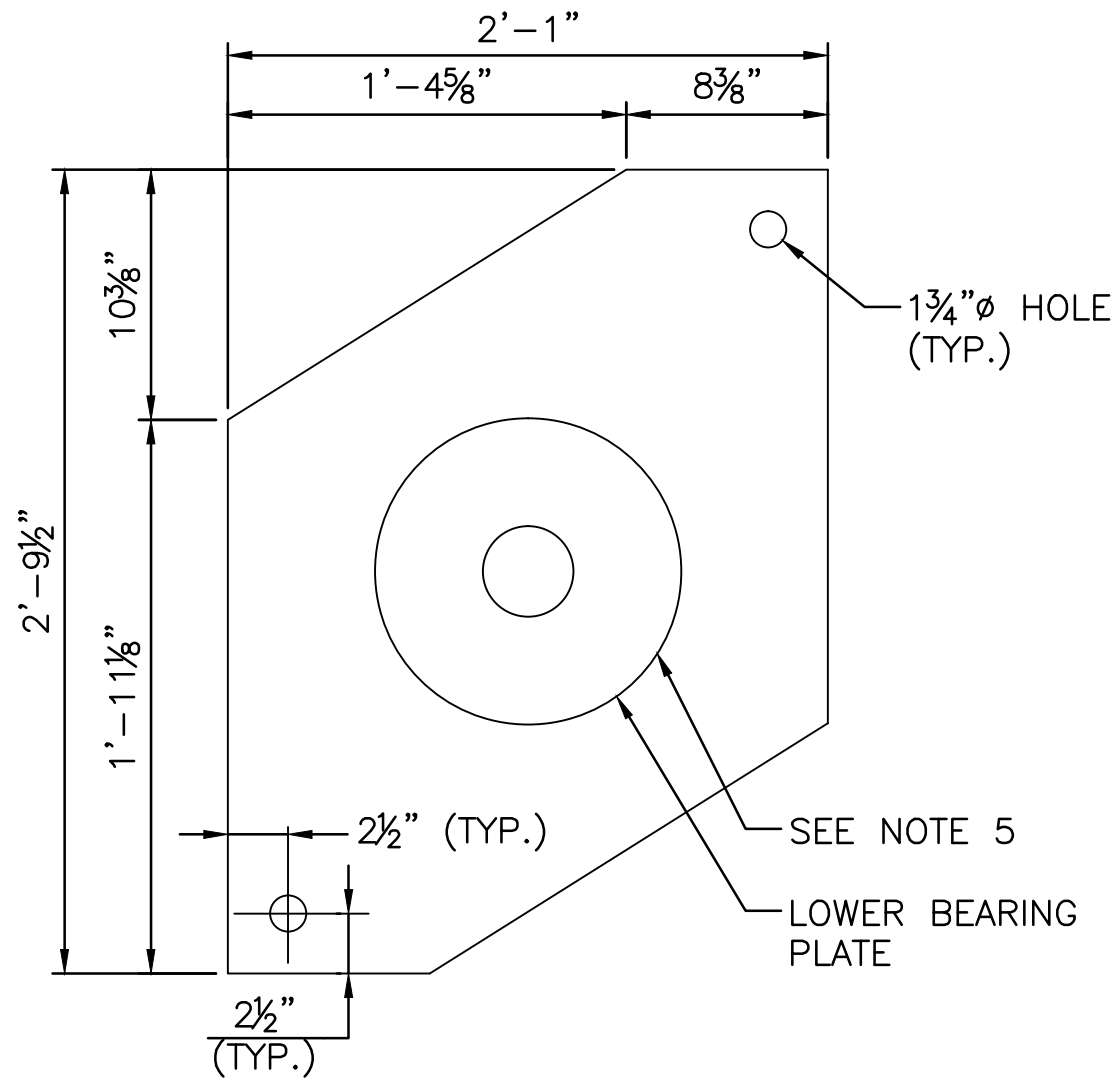
PLAN – EXPANSION BEARINGS  
AT NORTH ABUTMENT

SCALE: 1 1/2"=1'-0"



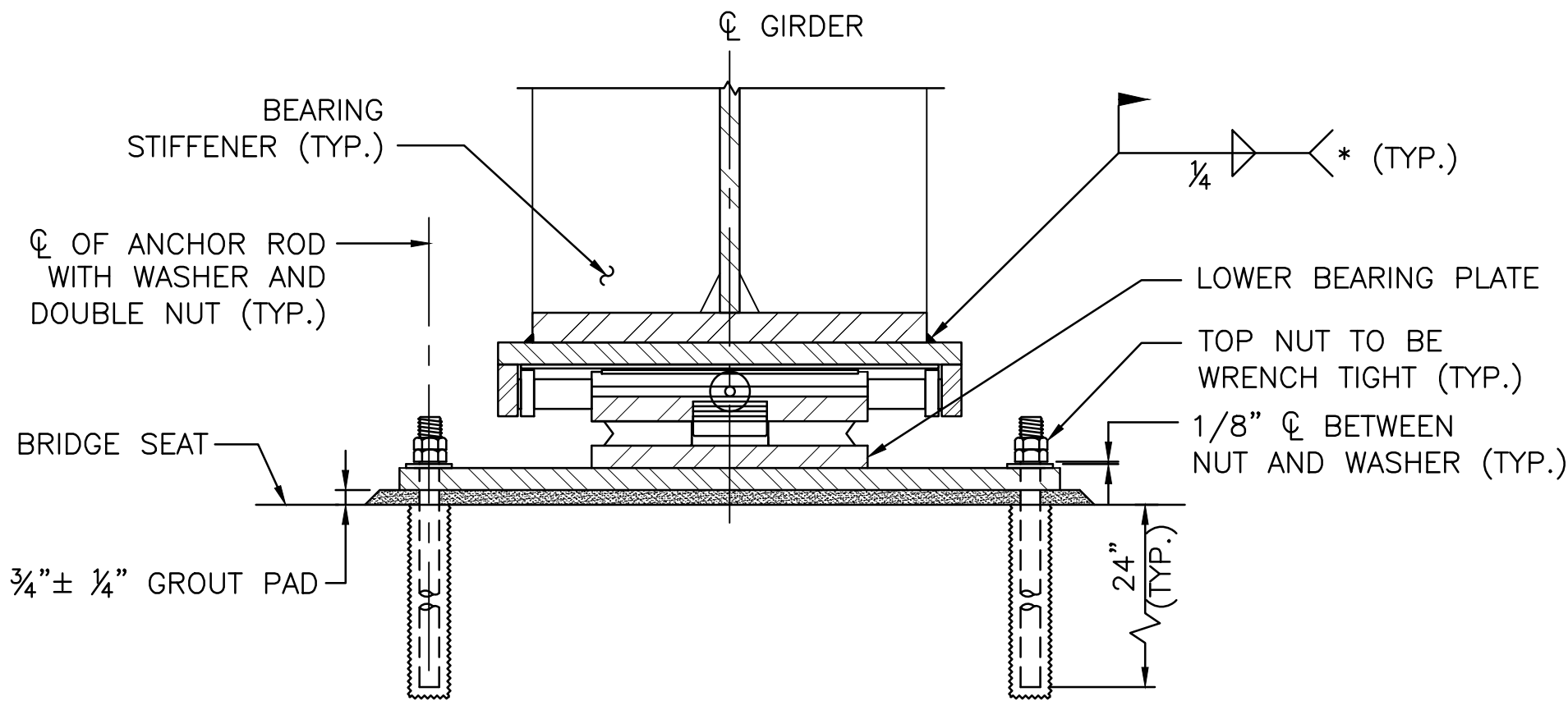
SOLE PLATE DETAIL

SCALE: 1 1/2"=1'-0"



MASONRY PLATE DETAIL

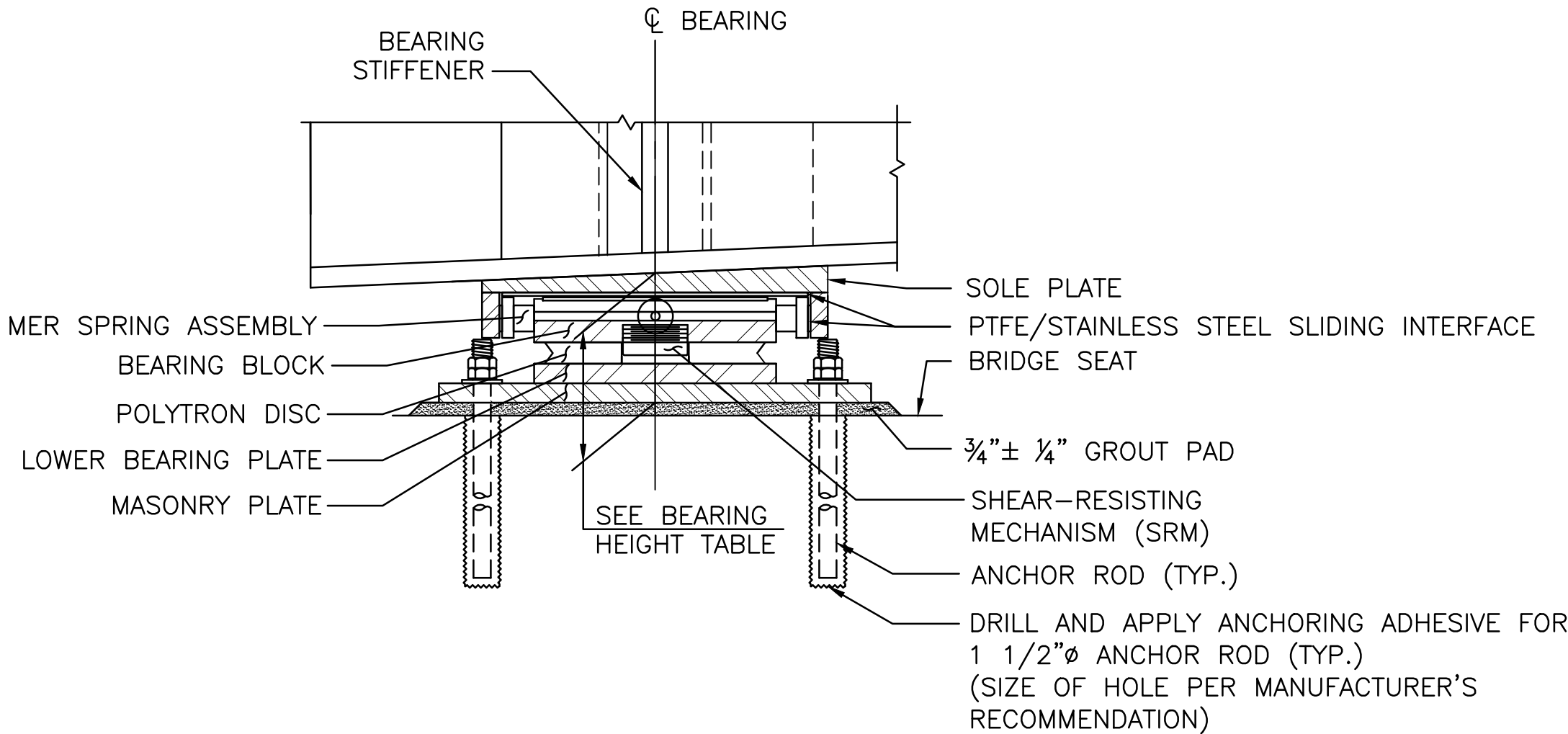
SCALE: 1 1/2"=1'-0"



(\*) – WELDS SHALL TERMINATE 1/4" FROM EDGE OF PLATE, MASKING AND TOUCH-UP PER STANDARD SPECIFICATIONS.

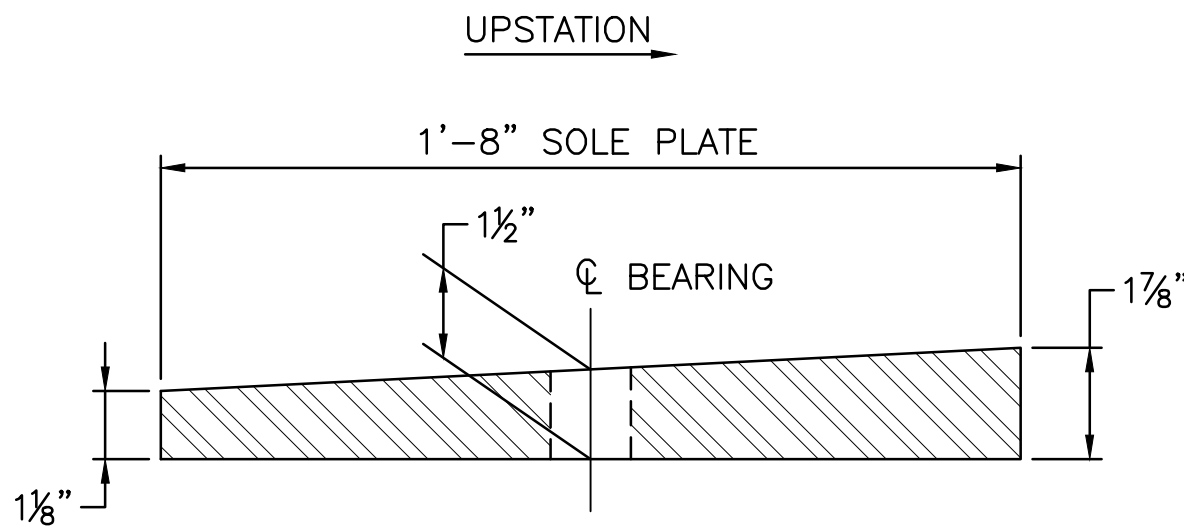
SECTION

SCALE: 1 1/2"=1'-0"



ELEVATION – BEARING

SCALE: 1 1/2"=1'-0"



SOLE PLATE SECTION

NOT TO SCALE

BEARING TYPE: EQS200 BY R.J. WATSON, INC.		
BEARING HEIGHT TABLE		
LOCATION	GIRDER	HEIGHT (IN.)
NORTH ABUTMENT	G1	10.855
NORTH ABUTMENT	G2	7.855
NORTH ABUTMENT	G3	7.855
NORTH ABUTMENT	G4	8.855
NORTH ABUTMENT	G5	9.855
NORTH ABUTMENT	G6	6.855

BEARING TYPE: EQS200 BY R.J. WATSON, INC.			
MAXIMUM BEARING SERVICE LOAD TABLE (KIPS)			
LOCATION	DEAD LOAD	LIVE LOAD	TOTAL
NORTH ABUTMENT	108	87	195

ADDENDUM NO. 7

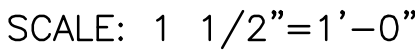


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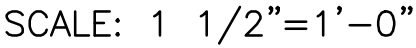
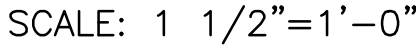
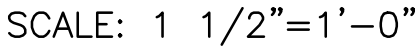
REVISIONS			RHODE ISLAND DEPARTMENT OF TRANSPORTATION	
NO.	DATE	BY	IMPROVEMENTS TO I-195 ABC BRIDGE NO. 472 OVER I-195 SUPERSTRUCTURE REPLACEMENT EAST PROVIDENCE, RHODE ISLAND	
1	12/13/17	LBG		
2	12/29/17	LBG	BEARING DETAILS SHEET 1 OF 3	
			CHECKED BY PNF DATE 9/22/17 SCALE AS NOTED	





SCALE: 1 1/2"=1'-0"

BEARING TYPE: EQS200 BY R.J. WATSON, INC.		
BEARING HEIGHT TABLE		
LOCATION	GIRDER	HEIGHT (IN.)
SOUTH ABUTMENT	G1	9.793
SOUTH ABUTMENT	G2	8.043
SOUTH ABUTMENT	G3	8.043
SOUTH ABUTMENT	G4	8.793
SOUTH ABUTMENT	G5	8.793
SOUTH ABUTMENT	G6	9.793

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IMPROVEMENTS TO I-195  
ABC BRIDGE NO. 472 OVER I-195  
SUPERSTRUCTURE REPLACEMENT  
EAST PROVIDENCE, RHODE ISLAND

# BEARING DETAILS

SHEET 3 OF 3

CHECKED BY PNF DATE 9/22/17 SCALE AS NOTED

BEARING DETAILS.DWG

## ADDENDUM NO. 7



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