



Deval L. Patrick, Governor
Richard A. Davey, Secretary & CEO
Frank DePaola, Administrator



603690-14

February 28, 2014

ADDENDUM NO. 2

To Prospective Bidders and Others on:

CHATHAM

**Federal Aid Project No. NHP-002S(539)
Bridge Replacement Br. No. C-07-001 (Single Leaf Bascule) Bridge Street
over the Mitchell River (ABP)**

This proposal to be opened and read: **TUESDAY, MARCH 11, 2014 @ 2:00 P.M.**

Transmitting revisions to Proposal Documents as follows:

BIDDERS' QUESTIONS AND RESPONSES: 6 pages and two catalog pages attached.

DRAWINGS: 9 Revised drawings,

Sheets No. 36, 38, 58, 59, 64, 67, 68, 126 and 154 of 214, attached.

PLAN Revision: Official plan changes will be made at a later date.

DOCUMENT 00104: NOTICE TO CONTRACTORS: Revised page 00104-2, attached.

DOCUMENT 00715: INTERIM SUPPLEMENTAL SPECIFICATIONS:

Delete the old Document in its entirety, and insert the new Document,
dated 02-21-2014, 12 pages, attached.

DOCUMENT A00801: SPECIAL PROVISIONS:

4 Revised pages, A00801-332, -361, -415, and -416, attached.

4 New pages, A00801-415A, B, C, and D, attached.

Please note the Responses to Bidder's Questions and revisions in drawings, delete document as indicated, insert new document and new pages in correct sequence, substitute original pages in the Proposal with the revised pages, and acknowledge Addendum No. 2 in your Expedite Proposal File before submitting your bid.

Very truly yours,

Frank Kucharski, P.E.
Construction Contracts Engineer

HKB

cc: Joseph Pavao, Project Manager

Ten Park Plaza, Suite 4160, Boston, MA 02116

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www.mass.gov/massdot

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CHATHAM
Federal Aid Project No. NHP-002S(539)
Bridge Replacement Br. No. C-07-001 (Single Leaf Bascule)
Bridge Street over the Mitchell River (ABP)

PROJECT NO. 603690

RESPONSE TO BIDDER QUESTION

ADDENDUM NO. 2, February 28, 2014

Question No. 1, dated February 21, 2014, 1:57 PM, from William H. Barr and Rod Cummings, Kodiak Corporation, 65 Glenn Street, Lawrence, Ma 01843, including 2 attachments titled as Attachment No.1 and Attachment No.2:

We are requesting a clarification to a specific requirement in the Contract specifications regarding the above referenced project.

MassDot Specifications Item 995.01, page A00801-380

Preservative treatment:

Preservative treatment for glulam bridge members shall consist of pressure-treated laminated lumber (treated prior to gluing) with Chromated Copper Arsenate (CCA) to a minimum retention of 0.6 lbs/ft³ in accordance with AITC 109 and AWPA U1 and U1

Bridge 603690 Bridge Plans MassDOT Sheet 3 of 173, Wood Preservation Treatment notes:

All Southern Yellow Pine Glulam shall be pressure treated with Chromated Copper Arsenate (CCA) preservative. Southern Yellow Pine used to construct Glulam beams shall be treated prior to gluing in accordance with AWPA Standard U1 to the requirements of Use Category 4B (UC4B)

We have attached all appropriate specifications listed and they state that the retention level for glulam , treated after gluing with CCA is to be 0.40 pcf.

This treatment is listed in AWPA UC4A. The specification UC4B does not apply to CCA treatments before gluing.

We are requesting the approval of the 0.40 pcf retention level to be accepted.

Response No. 1:

0.40 pcf retention level of CCA is a minimum given by the AITC/APWA. Due to the use of the bridge, categorized under UC4B, the minimum retention of CCA for this project is 0.6 pcf.

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ADDENDUM NO. 2, February 28, 2014

Question No. 2, dated February 24, 2014, 11:07 AM, from Charles DeBardeleben, Hardie-Tynes Co., Inc., 800 28th St N, Birmingham, AL 35203:

Do you think the engineers will allow Carburized and Ground gearing for the planetary gearboxes? Do you think the engineers will accept a concentric gearbox, standard parallel shaft but with the input and output shaft in-line like the planetary? This concept will result in a larger footprint for the gearbox. Finally the larger footprint for the concentric unit could be reduced if carburized and ground gearing is acceptable. We are working on a concentric envelope to give an idea on the size.

Response No. 2:

No exception to the use of carburized and ground gearing for the planetary reducers (gearboxes). No exception to the use of concentric gearboxes (i.e. standard parallel shaft but with input and output shaft in line) with carburized and ground teeth provided that the gearboxes fit within the same general envelope shown in the Plans so that same inspection and maintenance access is provided.

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ADDENDUM NO. 2, February 28, 2014

Question No. 3, dated February 25, 2014, 3:39 PM, from William F Tyrrell, Northern Construction Service, LLC, 775 Pleasant Street/ Unit 11, Weymouth, MA 02189:

Question No. 3(i):

Please reference add # 1 item 952.1 (Addendum No. 1 Attached).

The special provision states that the work includes complete removal of the temporary sheeting. Under measurement of payment it references a cut-off elevation payment limit or elevation 7.0 whichever is lower. This usually means that payment is to be made for the actual amount of sheeting left in place. Please confirm that on this project the contractor will be paid for the total sf of sheeting installed @ 22 lbs/ sf as measured from the actual top of sheeting to a maximum elevation of 7.0 whichever is lower, to the sheet pile tip elevation regardless if it is to be removed at the completion of the work.

Response No. 3(i):

Confirmed, the contractor will be paid for the total square foot (sf) of sheeting installed @ 22 lbs/sf as measured from the actual top of sheeting to a maximum elevation of 7.0 whichever is lower, to the sheet pile tip elevation regardless if it is to be removed at the completion of the work. However, the sheet piles must be removed. Cost of removal and salvage of removed sheet piles is included in the payment.

Question No. 3(ii):

In addition item **990.1 Cofferdam** states under measurement of payment that the steel sheeting is to be paid under item 952 steel sheeting per pound which was removed from the contract by add # 1. Item 952.1 clarifies this issue but it should be clarified under this item as well. Please confirm that the sheeting for Item 990.1 is to be paid under the lump sum.

Response No. 3(ii):

Please see revised Page A00801-332 attached where Item 952 is replaced with Item 952.1, to be applied for payment of steel sheeting under reference. The sheeting for item 990.1 is to be paid under the lump sum.

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RESPONSE TO BIDDER QUESTION

ADDENDUM NO. 2, February 28, 2014

Question No. 4, dated February 26, 2014, 12:29 PM, from Philip Hoilien, Project Manager, Casco Bay Steel Structures, Inc., 1 Wallace Ave, South Portland, ME 04106:

Question regarding Design Sheet 85 of 173 and special provisions page A00801-39.

- Lower LH part of Design Sheet 85 - - - “Typical Grid Deck Support Detail”
- Weld symbol implies that Grid Deck Panels should be shop welded to W16 x 36 stringers, please clarify whether the intent for this weld is to be a shop weld or a field weld?
- Grid Deck Panels welded to Stringers would be difficult to erect.
- Page A00801-39 implies verify fit only, not welded.

Response No. 4:

It is the intent for the steel grid deck panels to be field welded to the top flange of the stringers and not shop welded. It is the intent for the steel grid deck panels to be shipped to the shop where the bascule leaf is fabricated and shop assembled to verify fit-up and alignment with the stringers.

Question No. 5, dated February 26, 2014, 2:03 PM, from Charles DeBardeleben, Hardie-Tynes Co., Inc., 800 North 28th Street, Birmingham, AL 35203:

Question No. 5(i):

Hardie-Tynes Co., Inc. respectfully requests clarification of conflicting information in reference to the specified bolts to fasten the 3 x 8 Timber Plank Wearing Surface to the Grid Deck.

Note 3 on Drawing Sheet 85 of 173 – Bascule Leaf Grid Deck Details calls for the use of “**stainless steel ½” Dia. hex. head cap screws Threaded ½”-13 Class 2A**” and for the 3 x 8 Timber Plank Wearing Surface to be “**counterbored 1¼” Dia. X ½” Deep**” to accept them.

Specification Item 995.01 – Page A00801-361 Section: Timber Wearing Surface Installation calls for the use of “**stainless steel socket head, countersunk cap screws**”

Response No. 5(i):

Note 3 on Drawing 85 of 173 is the intended fastener configuration. The fastener configuration described in Specification Item 995.01 – Page A00801-361 is revised.

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Question No. 5(ii):

We haven't been able to find anyone who will quote chrome plating the lock bars and trunnion shafts either.

Response No. 5(ii):

Response to this question will be furnished in a future addendum

Question No. 6, dated February 27, 2014, 10:29 PM, from Philip Hoilien, Project Manager, Casco Bay Steel Structures, Inc., 1 Wallace Ave, South Portland, ME 04106:

Question No. 6 (i) [Question regarding Design Sheet 126 of 173]:

Section 104 and Section 105 indicate the direction of rolling of trunnion plates running the length of the trunnion girder.

Response No. 6(i):

See Response to question 6 (iv) and (v)

Question No. 6 (ii) [Question regarding Design Sheet 126 of 173]:

Normally direction of rolling is perpendicular to the direction of bend.

Response No. 6(ii):

See Response to question 6 (iv) and (v)

Question No. 6 (iii) [Question regarding Design Sheet 126 of 173]:

Plate rolling suppliers are indicating that likelihood of plate cracking is great with bending in the same direction of rolling

Response No. 6(iii):

See Response to question 6 (iv) and (v)

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ADDENDUM NO. 2, February 28, 2014

Question No. 6 (iv) [Question regarding Design Sheet 126 of 173]:
Please verify if plans are correct.

Response No. 6(iv):
The direction of rolling for the 1" plate used to fabricate the trunnion girder tubes should be in the circumferential direction and not along the axis of the tube. .

Question No. 6 (v) [Question regarding Design Sheet 126 of 173]:
If direction of rolling is changed as noted in item #2 above, will a butt weld be allowed in the length of the center trunnion girder since 1" plate cannot be purchased 20' wide?

Response No. 6(v):
A complete joint penetration butt welded splice will be permitted at the center of the tube.

Preservative Retentions (kg/m³) --- Glue-laminated Members (laminations treated prior to gluing)

USE CATEGORY Species	Preservative System									
	Creosote			PCP-A	Cu8	Cu N	ACQ-C	ACC	ACZA	CCA
	CR	CR-S	CR-PS	PCP-C						
UC1, UC2, UC3B										
Southern Pine	128	128	NR	4.8	0.32	0.64	4.0	4.0	4.0	4.0
Coastal Douglas-fir	128	NR	128	4.8	0.32	0.64	4.0	4.0	4.0	4.0
Western Hemlock	128	NR	128	4.8	0.32	0.64	4.0	4.0	4.0	4.0
Hem-Fir	128	NR	128	4.8	0.32	0.64	4.0	4.0	4.0	4.0
UC4A										
Southern Pine	160	160	NR	9.6	NR	0.96	6.4	8.0	6.4	6.4
Coastal Douglas-fir	160	NR	160	9.6	NR	0.96	6.4	8.0	6.4	6.4
Western Hemlock	160	NR	160	9.6	NR	0.96	6.4	8.0	6.4	6.4
Hem-Fir	160	NR	160	9.6	NR	0.96	6.4	8.0	6.4	6.4

NR = Not Recommended

Preservative Retentions (pcf) --- Glue-laminated Members (laminations treated prior to gluing)

USE CATEGORY Species	Preservative System									
	Creosote			PCP-A	Cu8	Cu N	ACQ-C	ACC	ACZA	CCA
	CR	CR-S	CR-PS	PCP-C						
UC1, UC2, UC3B										
Southern Pine	8.0	8.0	NR	0.30	0.020	0.040	0.25	0.25	0.25	0.25
Coastal Douglas-fir	8.0	NR	8.0	0.30	0.020	0.040	0.25	0.25	0.25	0.25
Western Hemlock	8.0	NR	8.0	0.30	0.020	0.040	0.25	0.25	0.25	0.25
Hem-Fir	8.0	NR	8.0	0.30	0.020	0.040	0.25	0.25	0.25	0.25
UC4A										
Southern Pine	10	10	NR	0.6	NR	0.06	0.40	0.50	0.40	0.40
Coastal Douglas-fir	10	NR	10	0.6	NR	0.06	0.40	0.50	0.40	0.40
Western Hemlock	10	NR	10	0.6	NR	0.06	0.40	0.50	0.40	0.40
Hem-Fir	10	NR	10	0.6	NR	0.06	0.40	0.50	0.40	0.40

NR = Not Recommended

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Standard for Preservative Treatment, AITC 109-2007 9

Table 3. Retention Requirements (pcf) for Laminated Timber – Members Treated After Gluing
(adapted from AWWA U1-06, Commodity Specification F)

USE CATEGORY Species	Preservative				
	Creosote	PCP	Cu8	CuN	ACZA
UC2, UC3					
Southern Pine	8.0	0.30	0.02	0.040	NR
Coastal Douglas fir	8.0	0.30	NR	0.040	0.30
Western Hemlock, Hem-Fir	8.0	0.30	0.02	0.040	NR
Red Oak	7.0	NR	NR	NR	NR
Red Maple, Yellow Poplar	8.0	NR	NR	NR	NR
UC4A					
Southern Pine	10.0	0.60	NR	0.060	NR
Coastal Douglas fir	10.0	0.60	NR	0.060	0.60
Western Hemlock, Hem-Fir	10.0	0.60	NR	0.060	NR
Red Oak	8.5	NR	NR	NR	NR
Red Maple, Yellow Poplar	10.0	NR	NR	NR	NR
UC4B, UC4C: Glued Laminated Poles. See Table 5					

NR = Not Recommended

Table 4. Retention Requirements (pcf) for Laminated Timber – Laminations Treated Before Gluing
(adapted from AWWA U1-06, Commodity Specification F)

USE CATEGORY Species	Preservative						
	PCP	Cu8	CuN	ACQ-C	ACC	ACZA	CCA
UC2, UC3							
Southern Pine	0.30	0.020	0.040	0.25	0.25	0.25	0.25
Coastal Douglas fir	0.30	0.020	0.040	0.25	0.25	0.25	0.25
Western Hemlock	0.30	0.020	0.040	0.25	0.25	0.25	0.25
Hem-Fir	0.30	0.020	0.040	0.25	0.25	0.25	0.25
UC4A							
Southern Pine	0.6	NR	0.06	0.40	0.50	0.40	0.40
Coastal Douglas fir	0.6	NR	0.06	0.40	0.50	0.40	0.40
Western Hemlock	0.6	NR	0.06	0.40	0.50	0.40	0.40
Hem-Fir	0.6	NR	0.06	0.40	0.50	0.40	0.40
UC4B, UC4C: Glued Laminated Poles. See Table 5							

NR = Not Recommended

Table 5. Retention Requirements (pcf) for Laminated Timber – Glued Laminated Poles (adapted from AWWA U1-06, Commodity Specification D)

USE CATEGORY Species	Preservative		
	Creosote	PCP-A, PCP-C	CuN
UC4A, UC4B			
Southern Pine	7.5	0.38	0.08
Coastal Douglas fir – Outer zone	9.0	0.45	0.095
Inner zone	4.5	0.23	0.048
UC4C			
Southern Pine	9.0	0.45	0.13
Coastal Douglas fir – Outer zone	12.0	0.60	0.15
Inner zone	6.0	0.30	0.075

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STRUCTURAL STEEL:

UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M270 (ASTM A709) GRADE 50.
PIPE PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A252, GR3. PILE TIPS SHALL BE CAST STEEL AND CONFORM TO THE REQUIREMENTS OF ASTM A27.

GLUED LAMINATED TIMBER (GLULAM):

ALL STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M111. AND, ALL BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
MANUFACTURE, APPEARANCE GRADE, AND MARKING OF ALL GLUED LAMINATED TIMBER (GLULAM) SHALL BE IN ACCORDANCE WITH ANSI/AITC A190.1.
APPEARANCE GRADE SHALL BE "ARCHITECTURAL GRADE."

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL GLULAM MEMBERS TO BE VERIFIED BY THE ENGINEER. WHEREVER PRACTICAL, FABRICATION (CUTS AND DRILLED HOLES) SHALL BE COMPLETED PRIOR TO PRESSURE TREATMENT WITH PRESERVATIVE. ALL SHOP FABRICATION AND FIELD DRILLED HOLES SHALL BE LOCATED AND CLEARLY IDENTIFIED ON SHOP DRAWINGS.
ALL GLULAM SHALL BE SOUTHERN PINE AND MEET OR EXCEED THE FOLLOWING DESIGN VALUES:

STRINGERS, CURB, SCUPPER, WEARING SURFACE:

MINIMUM DESIGN VALUES FOR GLUED LAMINATED TIMBER (GLULAM)

STRESS CLASS	BENDING F _b (PSI)	COMPRESSION PERPENDICULAR TO GRAIN F _{cperp} (PSI)	SHEAR PARALLEL TO GRAIN F _{vx} (PSI)	MODULUS OF ELASTICITY E (10 ⁶ PSI)
26F-V4	2600	740	300	1.9

STRUCTURAL DECK, HYBRID TL-2/TL-4 TIMBER TRAFFIC BRIDGE RAIL:

ID NUMBER	GRADE	BENDING F _b (PSI)	COMPRESSION PERPENDICULAR TO GRAIN F _{cperp} (PSI)	SHEAR PARALLEL TO GRAIN F _{vx} (PSI)	MODULUS OF ELASTICITY E (10 ⁶ PSI)
50	N1D14	2300	740	260	1.9

TIMBER:

ALL TIMBER SHALL BE SOUTHERN PINE SELECT STRUCTURAL, SURFACED FOUR SIDES. ALL TIMBER SHALL MEET OR EXCEED THE FOLLOWING DESIGN VALUES:

SIZE	BENDING F _b (PSI)	COMPRESSION PERPENDICULAR TO GRAIN F _{cperp} (PSI)	SHEAR PARALLEL TO GRAIN F _{vx} (PSI)	MODULUS OF ELASTICITY E (10 ⁶ PSI)
4" X 6"	2850	565	175	1.8
3" X 8"	2850	565	175	1.8
8" X 8"	1500	375	165	1.5
8" X 10"	1500	375	165	1.5

PLYWOOD:

ALL PLYWOOD TO BE APA MARINE GRADE CATEGORY B-B, PRESSURE TREATED.

WOOD PRESERVATION TREATMENT:

GLULAM: ALL SOUTHERN YELLOW PINE GLULAM SHALL BE PRESSURE-TREATED WITH CHROMATED COPPER ARSENATE (CCA) PRESERVATIVE. SOUTHERN YELLOW PINE USED TO CONSTRUCT GLULAM BEAMS SHALL BE TREATED PRIOR TO GLUING IN ACCORDANCE WITH AFWA STANDARD U1 TO THE REQUIREMENTS OF USE CATEGORY 4B (UC4B).
SAWN LUMBER: SAWN LUMBER SHALL BE PRESURE TREATED WITH ALKALINE COPPER QUATERNARY (ACO-D) PRESERVATIVE. LUMBER SHALL BE TREATED IN ACCORDANCE WITH AFWA STANDARD U1 TO THE REQUIREMENTS OF USE CATEGORY 4B (UC4B).

WHERE A PRESERVATIVE-TREATED MEMBER IS FIELD CUT, NOTCHED OR DRILLED, TREAT CUT END NOTCH, OR HOLE WITH COPPER NAPHTHENATE.

CONSTRUCTION REQUIREMENTS AND PROCEDURES:

THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO INSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION AND CONSTRUCTION.

WELDING:

ALL WELDING, AND THE PREPARATION AND ASSEMBLY OF MATERIAL FOR WELDING, SHALL CONFORM TO THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. THE BRIDGE WELDING CODE (ANSI/AASHTO/AWS D1.5) AND ALL INTERIM REVISIONS.

EPOXY COATED BARS:

ALL REINFORCING BARS EXCEPT FOR THE APPROACH SLABS SHALL BE EPOXY COATED.

CONCRETE MIX: 3,000 PSI, 1 1/2", 470 CEMENT CONCRETE..... TREME SEAL
4,000 PSI, 1 1/2", 565 CEMENT CONCRETE.....
4,000 PSI, 1 1/2", 610 CEMENT CONCRETE.....
4,000 PSI, 1 1/2", 585 HP CEMENT CONCRETE.....
APPROACH SLABS [WINGWALLS] APPROACH SLABS [WINGWALLS]
BACKWALLS-PIER-SCAFFS-CHEEKWALLS BACKWALLS-PIER-SCAFFS-CHEEKWALLS
PIER-CAPS-AND CONCRETE FILLED PIPE PILES WINGWALL COPING, ABUTMENTS, BACKWALLS, BASCULE PIER WALLS AND PLATFORMS, COUNTERWEIGHT BALLAST, PEDESTALS, PIER CAPS, REST PIER WALLS AND PLATFORMS, AND WINGWALLS

DESIGN:
IN ACCORDANCE WITH 2010 SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH EDITION, WITH CURRENT INTERIM SPECIFICATIONS THROUGH 2011, FOR HL-93 LOADING, AND THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS) 2012 EDITION.

EXISTING PLANS:

EXISTING BRIDGE PLANS "BRIDGE STREET OVER MITCHELL RIVER BRIDGE NO. C-7-1" ARE AVAILABLE FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, 10 PARK PLAZA BOSTON, MA.

EXISTING CONDITIONS:

DIMENSIONS AND ELEVATIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND FIELD OBSERVATIONS AND ARE NOT GUARANTEED. THE CONTRACTOR IS REQUIRED TO EXAMINE THE DRAWINGS AND SPECIFICATIONS, AND TO VISIT THE SITE TO FULLY GET INFORMED ABOUT THE EXISTING CONDITIONS AND LIMITATIONS PRIOR TO AGREEING TO PERFORM THE WORK. FAILURE TO DO THIS WILL IN NO WAY RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF FURNISHING ANY MATERIALS OR PERFORMING ANY WORK IN ACCORDANCE WITH THESE DRAWINGS AND SPECIFICATIONS. ALL ELEVATIONS, DIMENSIONS AND CONDITIONS OF THE STRUCTURE SHOWN SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION OR CONSTRUCTION.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE PLANS AND ACTUAL FIELD CONDITIONS. THE CONTRACTOR MAY BE REQUIRED TO DOCUMENT EXISTING CONDITIONS IN SKETCHES OR OTHER METHODS AS DIRECTED BY THE ENGINEER.

MASSDOT BENCH MARK:

BENCH MARK: TIDAL STATION DISK - PID - AB7694
MASSDOT GPS PNT 1 (BRD1)
ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

GEOTECHNICAL REPORT:

REFER TO GEOTECHNICAL REPORT DATED DECEMBER 19, 2003 AND SUBSEQUENT ADDENDUMS THROUGH APRIL 12, 2013 PREPARED BY URS CORPORATION, 260 FRANKLIN ST., BOSTON, MA. A COPY OF THE REPORT MAY BE OBTAINED FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION.

MASSDOT SURVEY NOTEBOOKS:

SURVEY INFORMATION WAS PREPARED BY GORODETSKY ENGINEERING, LLC. ACCURACY IS NOT GUARANTEED. THE COPIES OF ELECTRONIC SURVEY FILES MAY BE OBTAINED FROM THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION.

HYDRAULIC REPORT:

REFER TO HYDRAULIC REPORT DATED MARCH 2, 2010, UPDATED AUGUST 16, 2012. PREPARED BY MASSACHUSETTS DEPT. OF TRANSPORTATION.

FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

DATE:

TO BE PLACED ON THE INSIDE FACE OF THE WINGWALLS AT THE NE AND SW ENDS. THE DATE USED SHALL BE THE LATEST YEAR OF THE CONTRACT COMPLETION AS OF THE DATE THE FIRST WINGWALL IS CONSTRUCTED. BOTH WINGWALLS SHALL FEATURE THE SAME DATE.

SEISMIC GROUND SHAKING HAZARD:

DESIGN SPECTRA:
As = 0.064
SDS = 0.143
SD1 = 0.068
SITE CLASS = D

SEISMIC DESIGN CATEGORY (SDC) = A

SEISMIC DESIGN CATEGORY (SDC) = A

SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZE PRINTS.

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS. ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS
1. NONE	21"	26"
2. 12" OF CONCRETE BELOW BAR	29"	36"
3. COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	31"	39"
4. COATED BARS, ALL OTHER CASES	25"	31"
5. CONDITION 2. AND 3.	35"	44"
6. CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

WATERPROOFING PROTECTION:

PROVIDE A LAYER OF GRACE ICE & WATER SHIELD BY W. R. GRACE & CO. OR ENGINEER APPROVED EQUAL BETWEEN THE TIMBER BEAMS AND THE TIMBER DECK PLANKS (ADHERE TO TIMBER BEAMS). FOLLOW ALL REQUIREMENTS OF THE MANUFACTURER WHEN STORING AND INSTALLING THIS PRODUCT. WATERPROOFING SHALL NOT BE CONTINUOUS OVER GAP BETWEEN BEAMS, BUT SHALL BE CUT FOR THE FULL LENGTH OF EACH BEAM TO PREVENT THE TRAPPING OF WATER AND DEBRIS. SEE SPECIFICATIONS.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-0025(639)	38	214
PROJECT FILE NO. 603690			

GENERAL NOTES

CONSTRUCTION JOINTS:
CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

UTILITIES:

DURING CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES THAT ARE TO REMAIN.

HYDRAULIC DATA

DRAINAGE AREA: N/A
DESIGN DISCHARGE: 1190 CUBIC FEET PER SECOND
DESIGN FREQUENCY: 10 YEARS - TIDAL FLOOD
DESIGN VELOCITY: 1.7 FEET PER SECOND
DESIGN FLOOD STAGE ELEVATION: 4.75 FEET, NAVD

Q (100 YEAR) : 3050 CUBIC FEET PER SECOND

WATER SURFACE ELEVATION: 9.2 FEET, NAVD

FLOOD OF RECORD UNKNOWN

Q: FREQUENCY (IF KNOWN): BETWEEN 50 AND 100 YEARS

WATER SURFACE ELEVATION: 8.5 FEET

DATE: SEPTEMBER 14-15, 1944

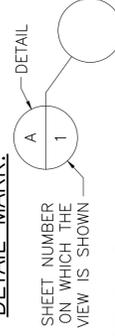
HISTORY OF ICE FLOES: N/A

EVIDENCE OF SCOUR OR EROSION: N/A

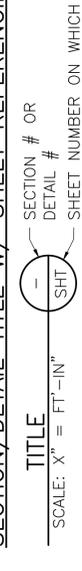
SECTION MARK:



DETAIL MARK:



SECTION/DETAIL TITLE W/ SHEET REFERENCING



ESTIMATED QUANTITIES: (NOT GUARANTEED)

	ESTIMATED QUANTITIES (NOT GUARANTEED)
ELECTRICAL WORK - BRIDGE	.....1 LS
BRIDGE MACHINERY	.....1 LS
TRAFFIC GATE FOR DRAW SPAN	.....1 LS
RESISTANCE GATE FOR DRAW SPAN	.....1 LS
DEMOLITION OF BRIDGE C-07-001 (437)	.....1 LS
BRIDGE EXCAVATION	.....3729 CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	.....700 CY
TIMBER GUARDRAIL STEEL BACKED - 5 FT POST SP.	.....160 FT
TIMBER GUARDRAIL STEEL BACKED - TRANSITION	.....4 EA
STEEL PIPE PILE 16 INCH OUTSIDE DIAMETER	.....14,254 FT
PRE-DRILLING FOR PILES	.....655 FT
QUICK LOAD TEST	.....2 EA
DYNAMIC LOAD TEST BY CONTRACTOR	.....15 EA
PILE SHOES	.....226 EA
TEMPORARY STEEL SHEETING	.....283,800 LB
RIPRAP	.....787 TON
COFFERDAM - STRUCTURE NO. C-07-001 (437)	.....1 LS
CONTROL OF WATER - STRUCTURE NO. C-07-001 (437)	.....1 LS
TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. C-07-001 (437)	.....1 LS
BRIDGE STRUCTURE, BRIDGE NO. D-07-001 (BAH)	.....1 LS

REVISED CONCRETE MIX NOTE - ADDENDUM 2	^2^
FEB. 28, 2014	
OCT. 26, 2013	
DATE	
ISSUED FOR CONSTRUCTION	
DESCRIPTION	
USE ONLY PRINTS OF LATEST DATE	

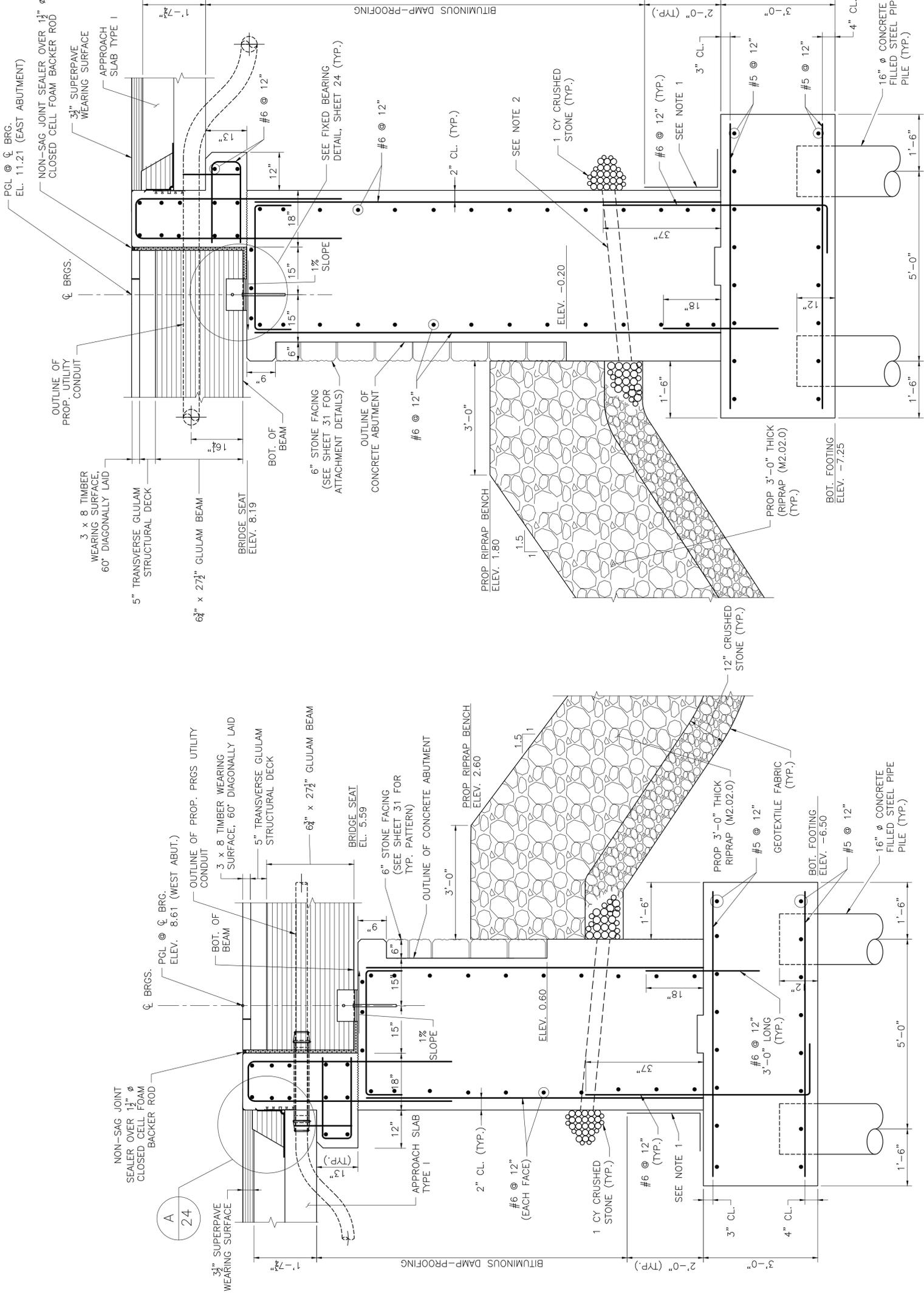
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-0025(539)	58	214
PROJECT FILE NO.		603690	

ABUTMENT SECTIONS

NOTES:

- MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, 3/4 IN, 610 CEMENT CONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MHD STANDARD SPECIFICATIONS.
- 4" Ø WEEP HOLES 10'-0" O.C. (JUST ABOVE PROTECTIVE COURSE), PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
- ALL CONCRETE SHALL BE 4000 PSI, 3/4 IN, 565 CEMENT CONCRETE EXCEPT THE BACKWALL WHICH SHALL BE 4000 PSI, 3/4 IN, 610 CEMENT CONCRETE.



EAST ABUTMENT SECTION

SCALE: 3/4" = 1'-0"

WEST ABUTMENT SECTION

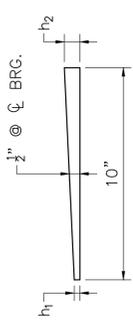
SCALE: 3/4" = 1'-0"

FEB. 28, 2014	REVISED NOTE 3 - ADDENDUM 2
OCT. 26, 2013	ISSUED FOR CONSTRUCTION
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USE ONLY PRINTS OF LATEST DATE	

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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-0025(G39)	59	214
PROJECT FILE NO. 603690			

ABUTMENT AND PIER BEARING DETAILS

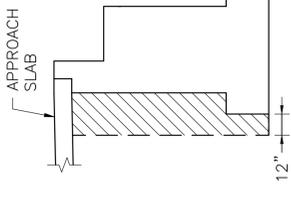


BEARING BASE PLATE DETAIL
SCALE: 3" = 1'-0"

VARYING BASE PLATE THICKNESSES		
LOC.	SPAN	h ₁ h ₂
W. ABUT.	1	5" 11"
PIER #1	1	5" 11"
PIER #1	2	6" 11"
PIER #2	2	6" 11"
PIER #3	3	3" 5"
PIER #3	3	3" 5"
REST PIER #4	4	6" 7"
PIER #5	4	6" 7"
PIER #5	5	6" 7"
E. ABUT.	5	6" 8"

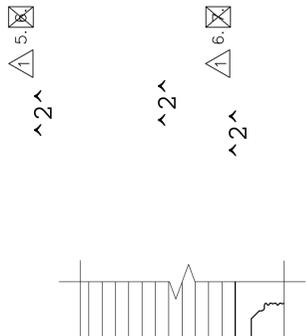
NOTES:

- PROVIDE A LAYER OF ICE & WATER SHIELD AT ENDS OF GLULAM DECK.
- ALL REINFORCEMENT SHOWN IN THIS DETAIL SHALL BE COATED EXCEPT FOR THE APPROACH SLAB REINFORCEMENT.
- ALL BACKWALL CONCRETE ABOVE THE CONSTRUCTION JOINT LOCATED AT THE BRIDGE SEAT SHALL BE 4000 PSI, 3/4 IN. [REDACTED] 585 HP CEMENT CONCRETE. THE CONSTRUCTION JOINT SHALL BE GIVEN A RAKE FINISH WITH A 1/4" MINIMUM AMPLITUDE.
- TOP OF BACKWALL SHALL BE TROWELLED SMOOTH LEVEL TO THE PROFILE GRADE.



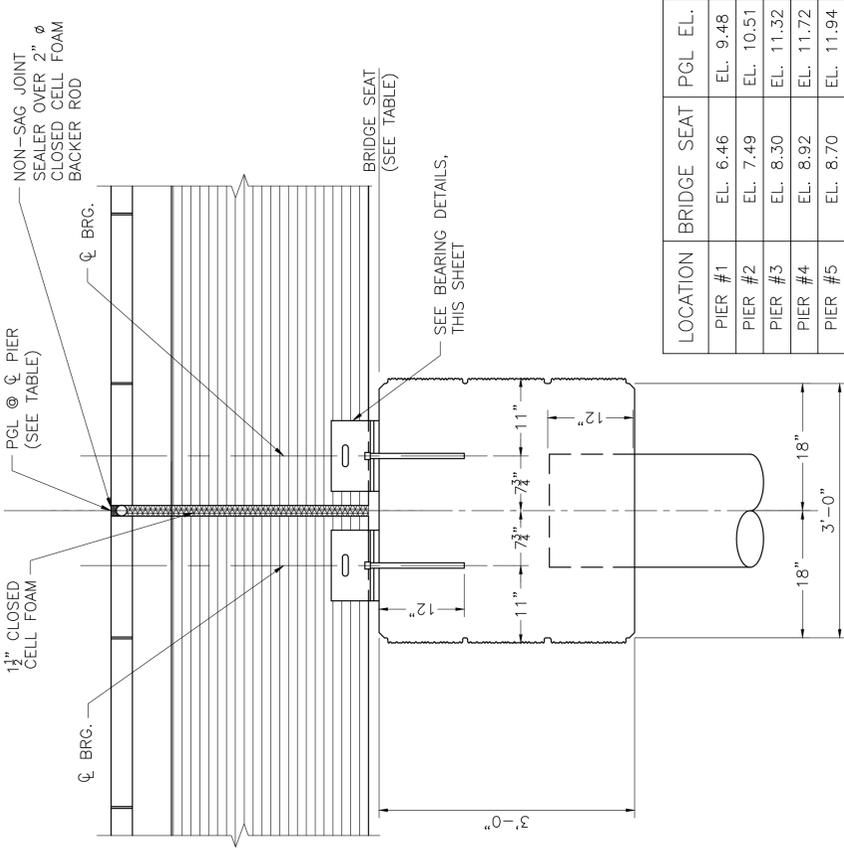
NOTE: HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.

LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES
SCALE: 3/4" = 1'-0"



THE BACKWALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGMS.

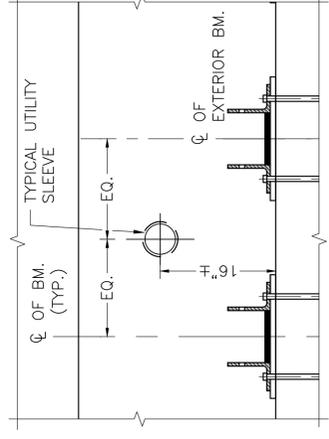
PROTECTIVE COURSE TO BE HOT MIX ASPHALT DENSE BINDER COURSE FOR BRIDGES PLACED IN 2" LAYERS AND COMPACTED WITH A MECHANICAL HAND-GUIDED TAMPER WITHIN 12 HOURS AFTER PLACING MEMBRANE WATERPROOFING AT APPROACH SLABS ONLY. TUCK AND NAIL END OF MEMBRANE WATERPROOFING INTO A TAPERED 3/8" DEEP x 2" HIGH POCKET. FILL POCKET WITH JOINT SEALER.



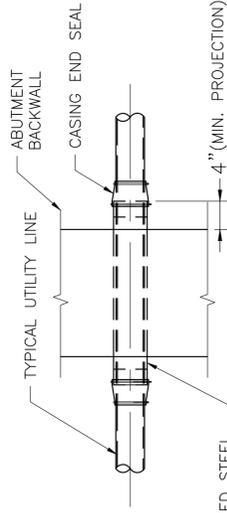
LOCATION	BRIDGE SEAT	PGL EL.
PIER #1	EL. 6.46	EL. 9.48
PIER #2	EL. 7.49	EL. 10.51
PIER #3	EL. 8.30	EL. 11.32
PIER #4	EL. 8.92	EL. 11.72
PIER #5	EL. 8.70	EL. 11.94

BRIDGE SEAT DETAIL AT PIER
SCALE: 1" = 1'-0"

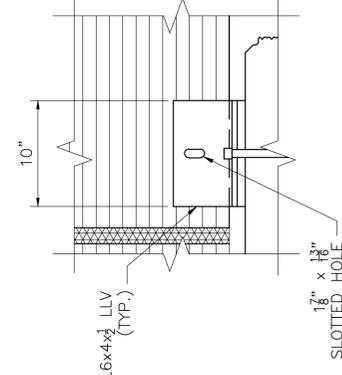
EXPANSION BRIDGE SEAT SHOWN, FIXED BRIDGE SEAT SIMILAR



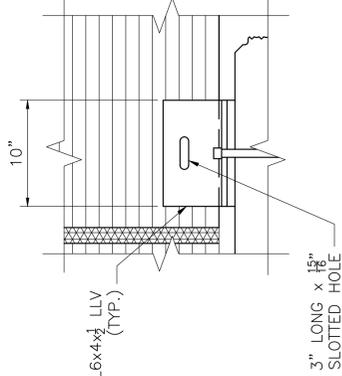
UTILITY DETAIL AT ABUTMENT
SCALE: 1" = 1'-0"



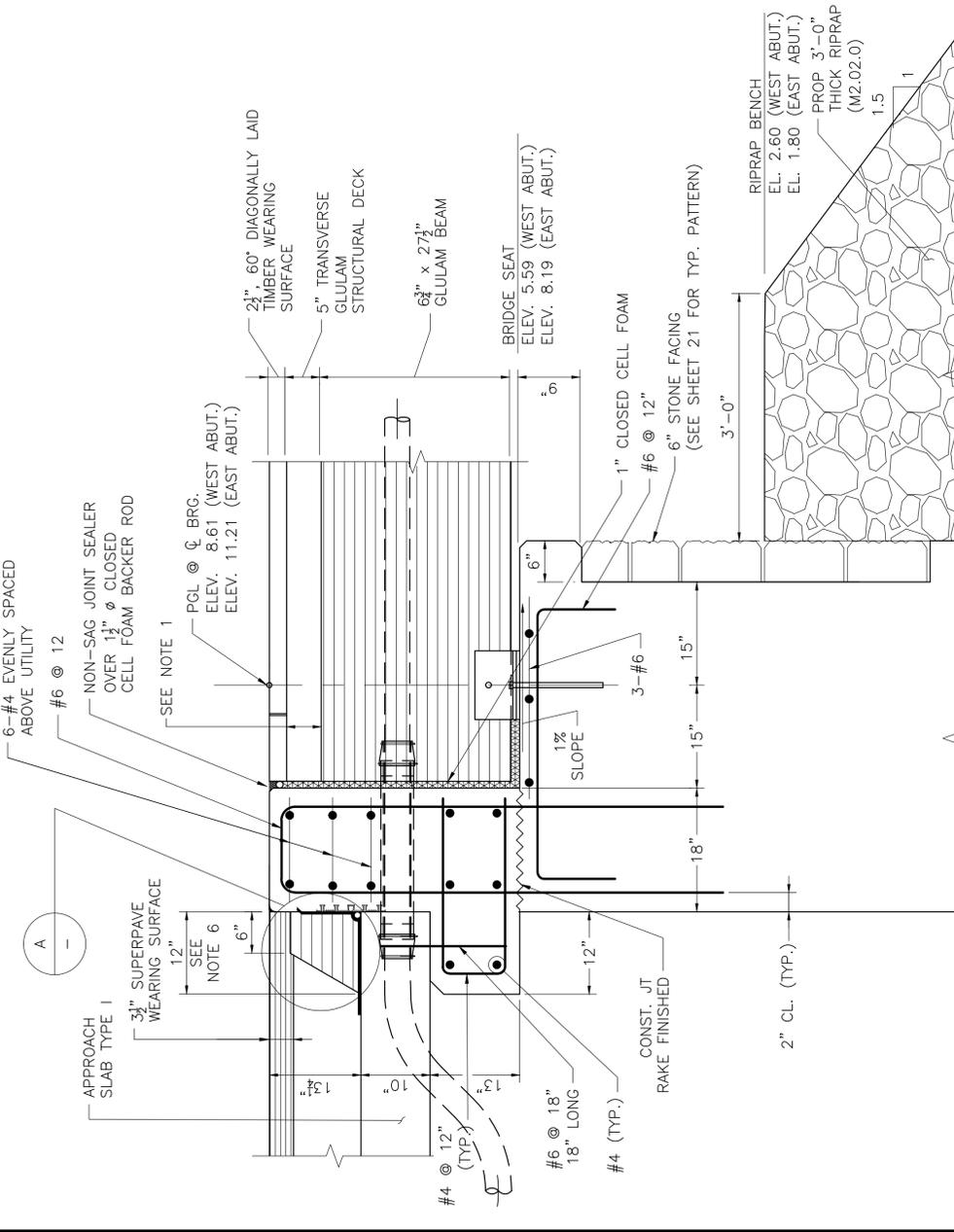
UTILITY SLEEVE DETAIL
SCALE: 1" = 1'-0"



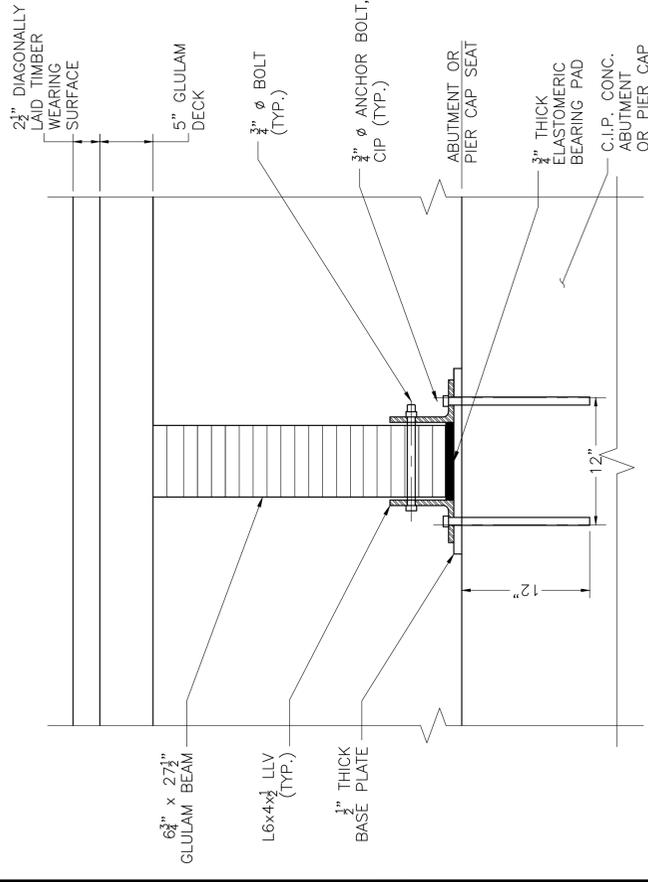
TYPICAL FIXED BEARING DETAIL
SCALE: 1 1/2" = 1'-0"



TYPICAL EXPANSION BEARING DETAIL
SCALE: 1 1/2" = 1'-0"

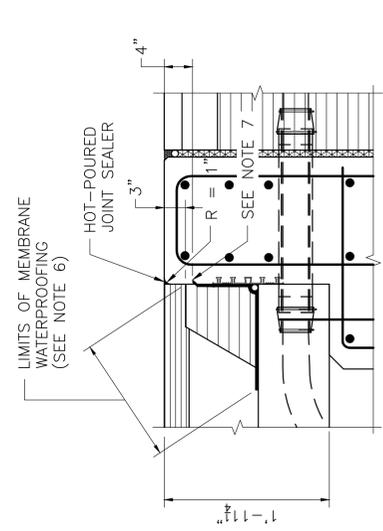


BRIDGE SEAT DETAIL AT ABUTMENT - ROADWAY SECTION
SCALE: 1" = 1'-0"



TYPICAL BEARING SECTION
SCALE: 1 1/2" = 1'-0"

DETAIL A - ABUTMENT FOR EXPOSED CONCRETE DECKS
SCALE: 1" = 1'-0"

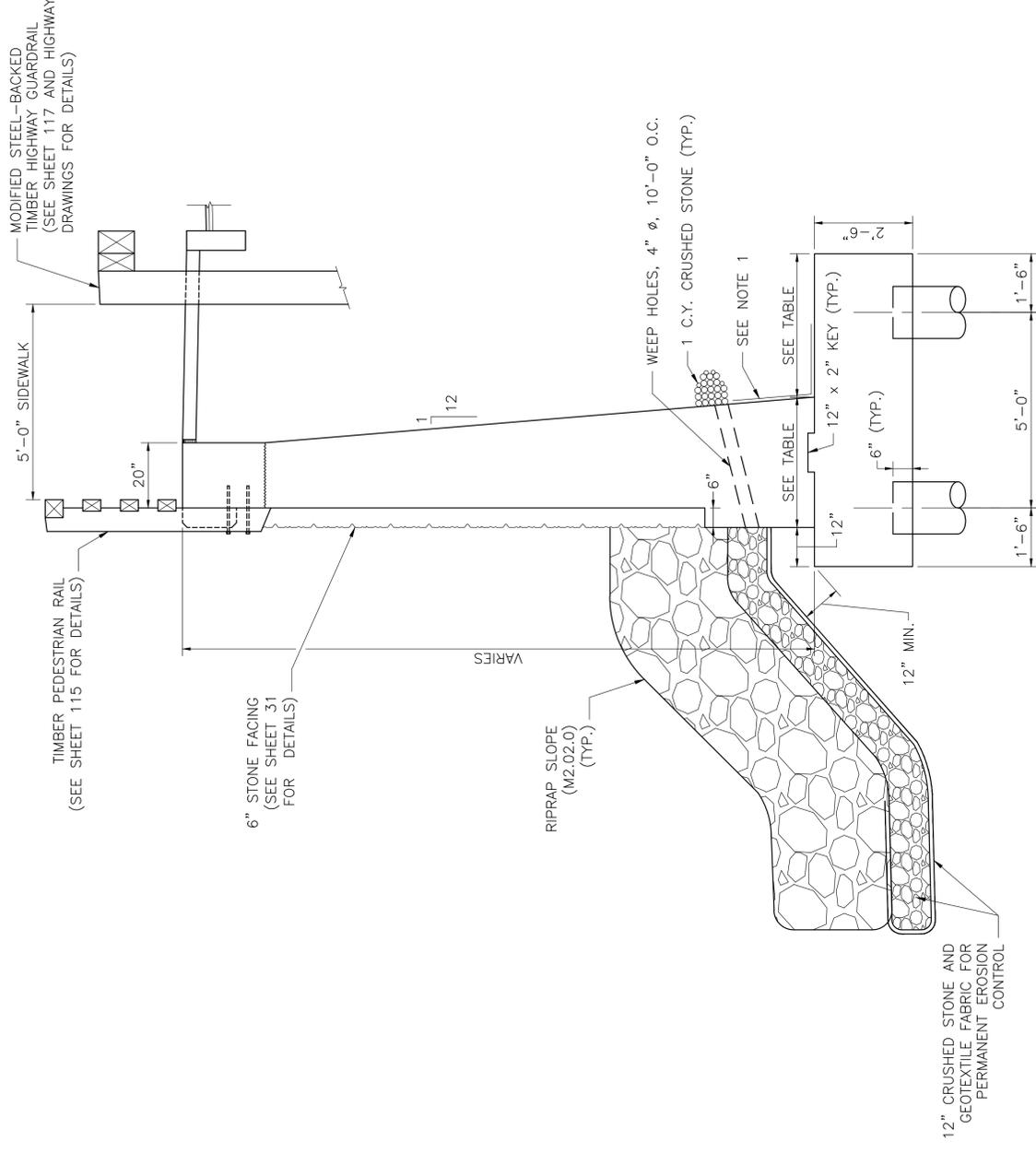


DETAIL A - ABUTMENT FOR EXPOSED CONCRETE DECKS
SCALE: 1" = 1'-0"

23 24

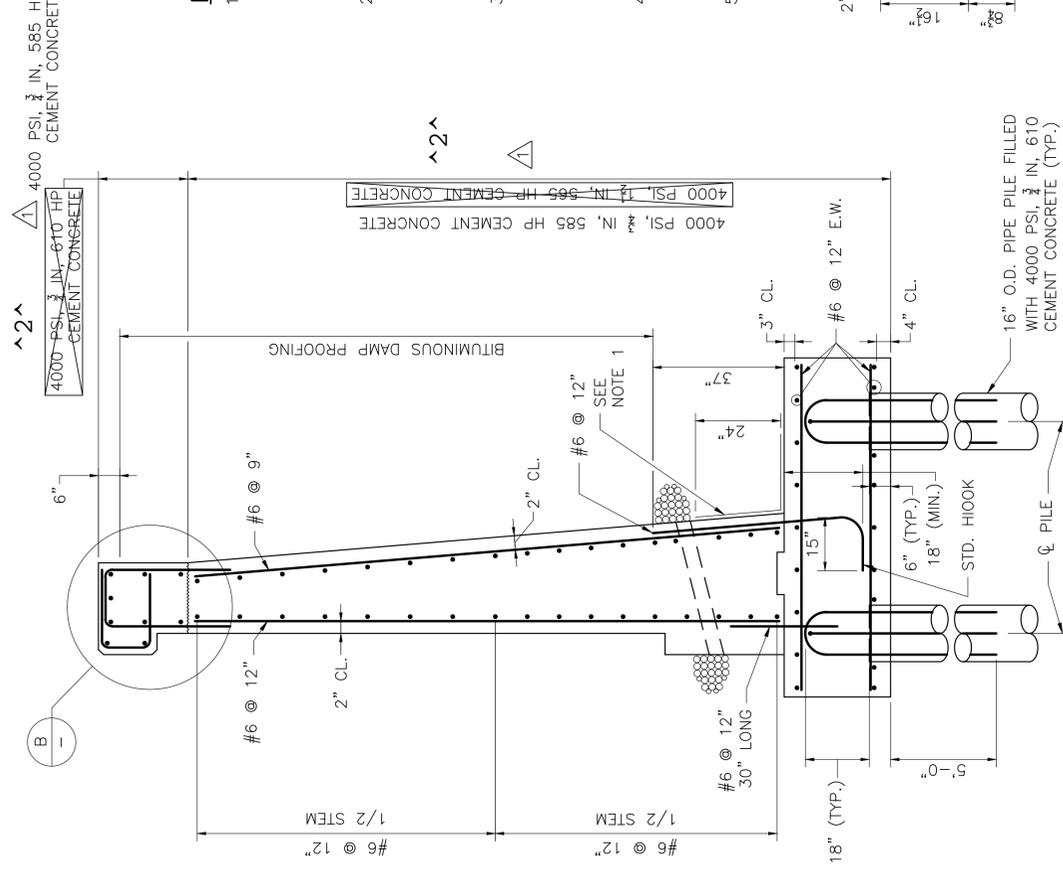
FEB. 28, 2014	REVISED NOTE 3 & 6, DELETED NOTE 5 - ADDENDUM 2
OCT. 26, 2013	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

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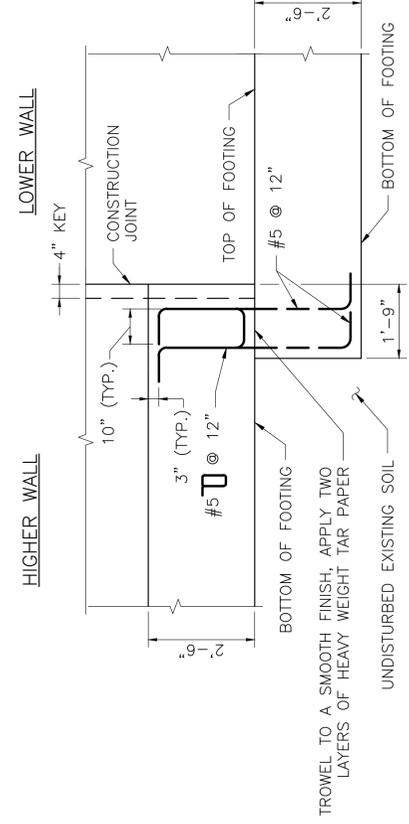


TYPICAL WINGWALL - SECTION
SCALE: 1/2" = 1'-0"

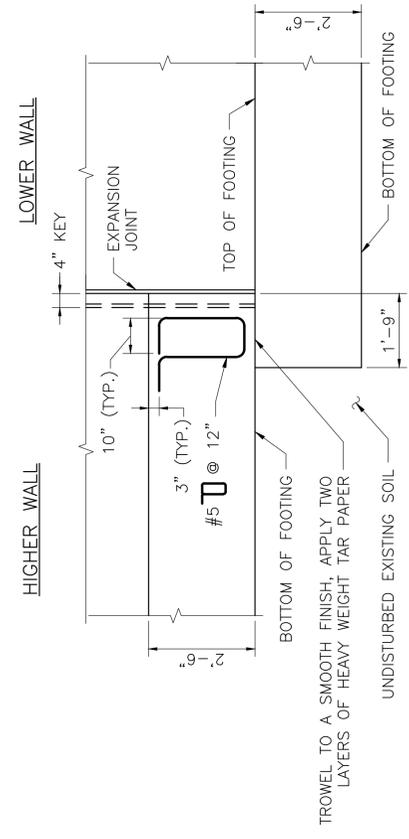
VARYING WINGWALL WIDTHS		
NORTHEAST		
WALL NUMBER	STEM BASE WIDTH	HEEL WIDTH
1	3'-2 7/8"	3'-9 1/8"
2	3'-0 1/2"	3'-11 3/8"
NORTHWEST		
1	3'-0 1/2"	3'-11 1/2"
SOUTHEAST		
1	3'-4 1/8"	3'-7 7/8"
2	3'-1 1/2"	3'-10 1/2"
SOUTHWEST		
1	3'-0 1/2"	3'-11 1/2"



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



STEPPED-UP FOOTING DETAIL @ CONSTRUCTION JOINT
SCALE: 1/2" = 1'-0"



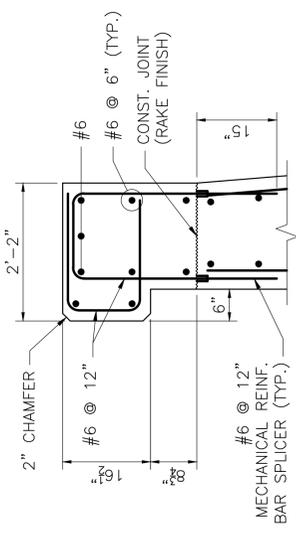
STEPPED-UP FOOTING DETAIL @ EXPANSION JOINT
SCALE: 1/2" = 1'-0"

WINGWALL DETAILS
1 OF 2

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-002(S(539))	64	214
PROJECT FILE NO. 603690			

NOTES:

- MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, 3/4" IN. 610 CEMENT CONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MHD STANDARD SPECIFICATIONS.
- ALL CONCRETE SHALL BE 4000 PSI, 3/4" IN. 585 HP CEMENT CONCRETE EXCEPT THE PARAPET WHICH SHALL BE 4000 PSI, 3/4" IN. 610 CEMENT CONCRETE.
- 4000 PSI, 3/4" IN. 585 HP CEMENT CONCRETE.
- DETERMINATION OF THE DRIVEN PILE RESISTANCE, PILE DRIVING CRITERIA, AND PILE INTEGRITY SHALL BE PERFORMED USING THE PDA DRIVING/TESTING METHOD WITH A RESISTANCE FACTOR OF 0.65. PILES SHALL BE INSTALLED TO ACHIEVE A FACTORED AXIAL DESIGN LOAD.
- THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION, AND PILE DRIVING/TESTING PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER.
- WALL NUMBERS IN THE VARYING WALL WIDTH TABLE CORRESPOND TO THE WALL NUMBERS SHOWN ON SHEETS 27 AND 28.



DETAIL
SCALE: 3/4" = 1'-0"

^2^

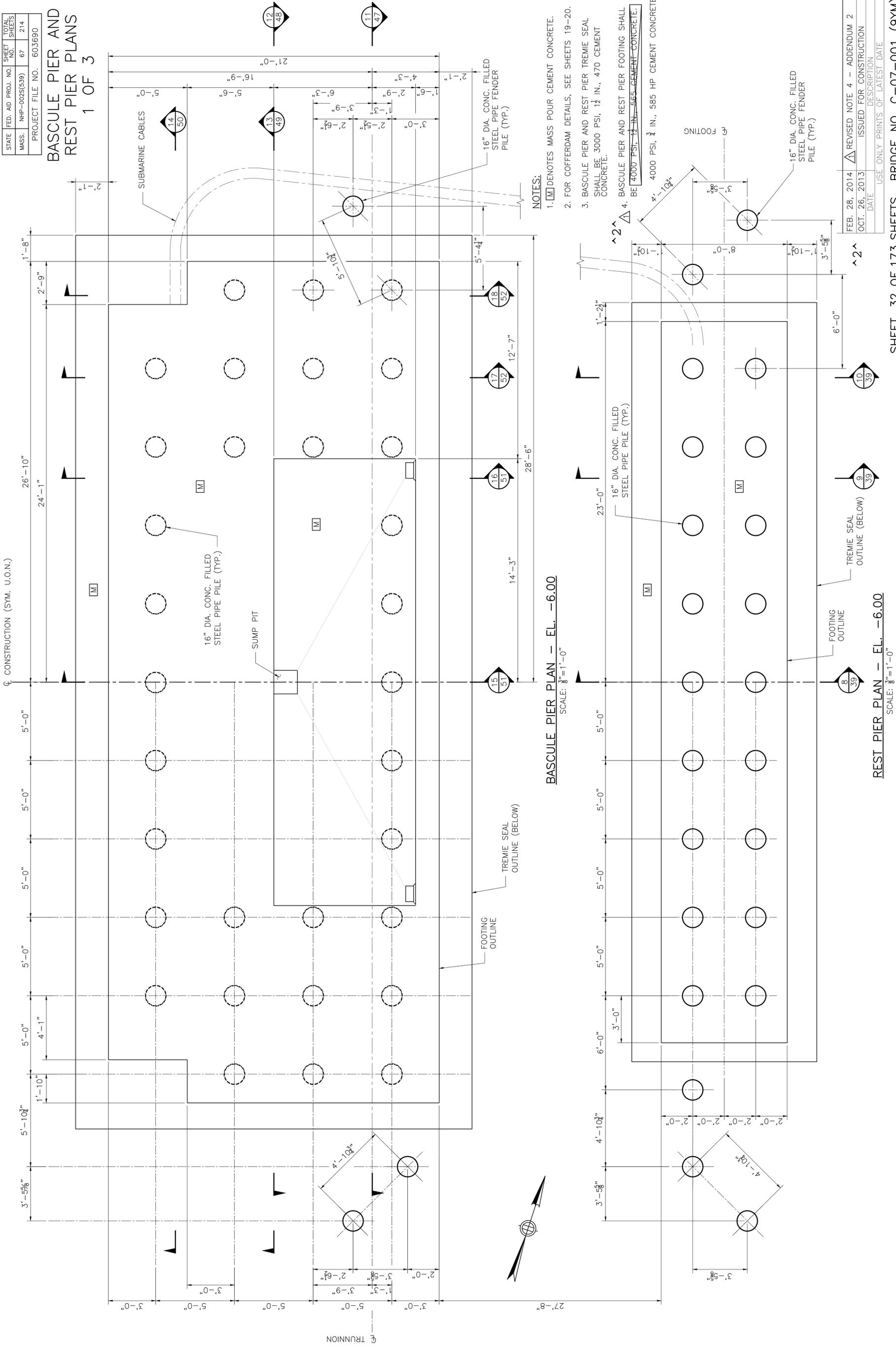
FEB. 28, 2014	REVISED CONCRETE TYPE - ADDENDUM 2
OCT. 26, 2013	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

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CONSTRUCTION (SYM. U.O.N.)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-025(539)	67	214
PROJECT FILE NO. 603690			

BASCULE PIER AND REST PIER PLANS
1 OF 3



BASCULE PIER PLAN - EL. -6.00
SCALE: 3/8"=1'-0"

REST PIER PLAN - EL. -6.00
SCALE: 3/8"=1'-0"

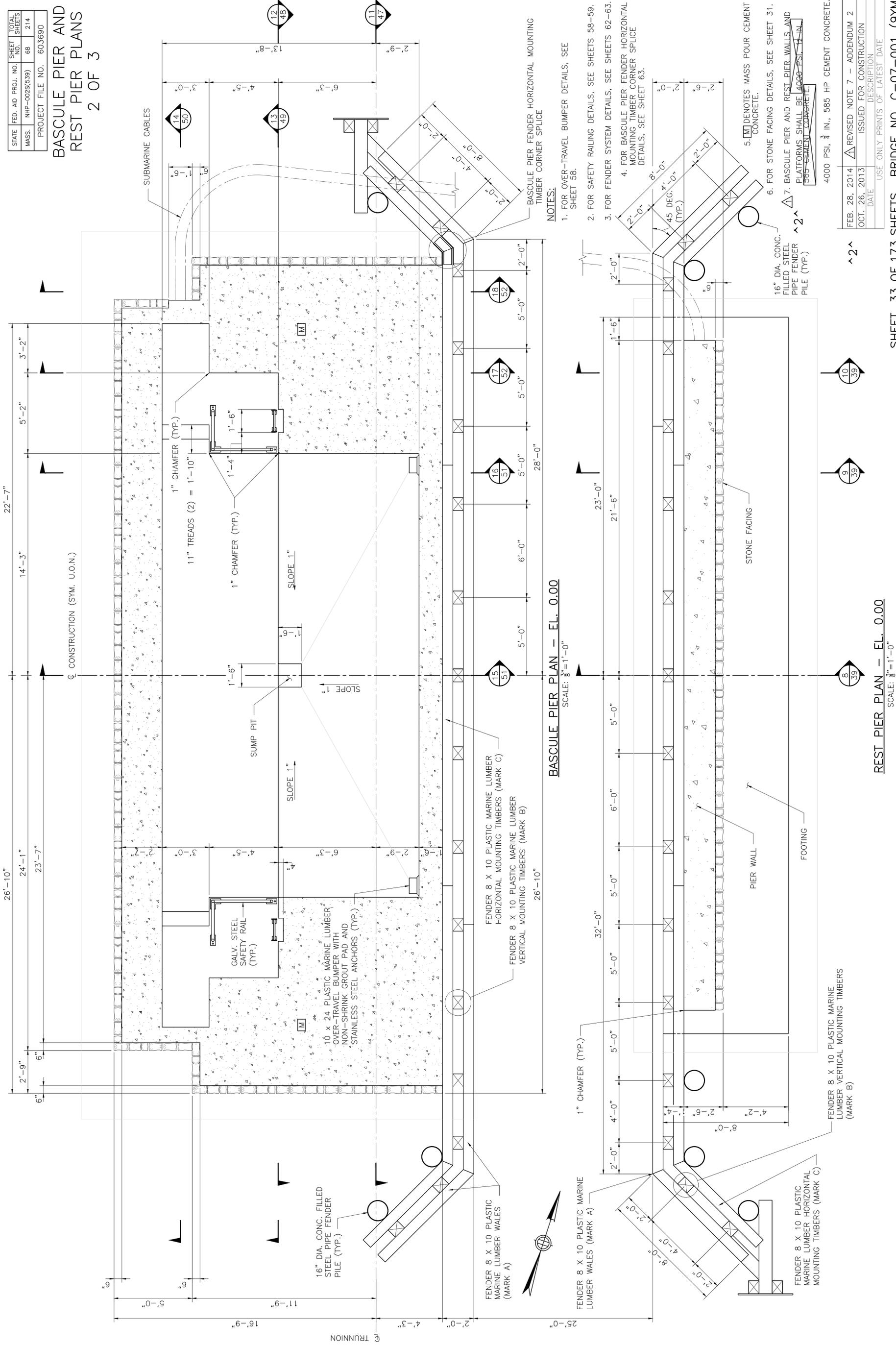
- NOTES:**
1. [M] DENOTES MASS POUR CEMENT CONCRETE.
 2. FOR COFFERDAM DETAILS, SEE SHEETS 19-20.
 3. BASCULE PIER AND REST PIER TREMIE SEAL SHALL BE 3000 PSI, 1 1/2 IN., 470 CEMENT CONCRETE.
 4. BASCULE PIER AND REST PIER FOOTING SHALL BE 4000 PSI, 12 IN., 565 CEMENT CONCRETE.

FEB. 28, 2014	REVISED NOTE 4 - ADDENDUM 2
OCT. 26, 2013	ISSUED FOR CONSTRUCTION
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USE ONLY PRINTS OF LATEST DATE	

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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-025(G39)	68	214
PROJECT FILE NO. 603690			

BASCULE PIER AND REST PIER PLANS
2 OF 3



BASCULE PIER PLAN - EL. 0.00
SCALE: 3/8"=1'-0"

REST PIER PLAN - EL. 0.00
SCALE: 3/8"=1'-0"

NOTES:

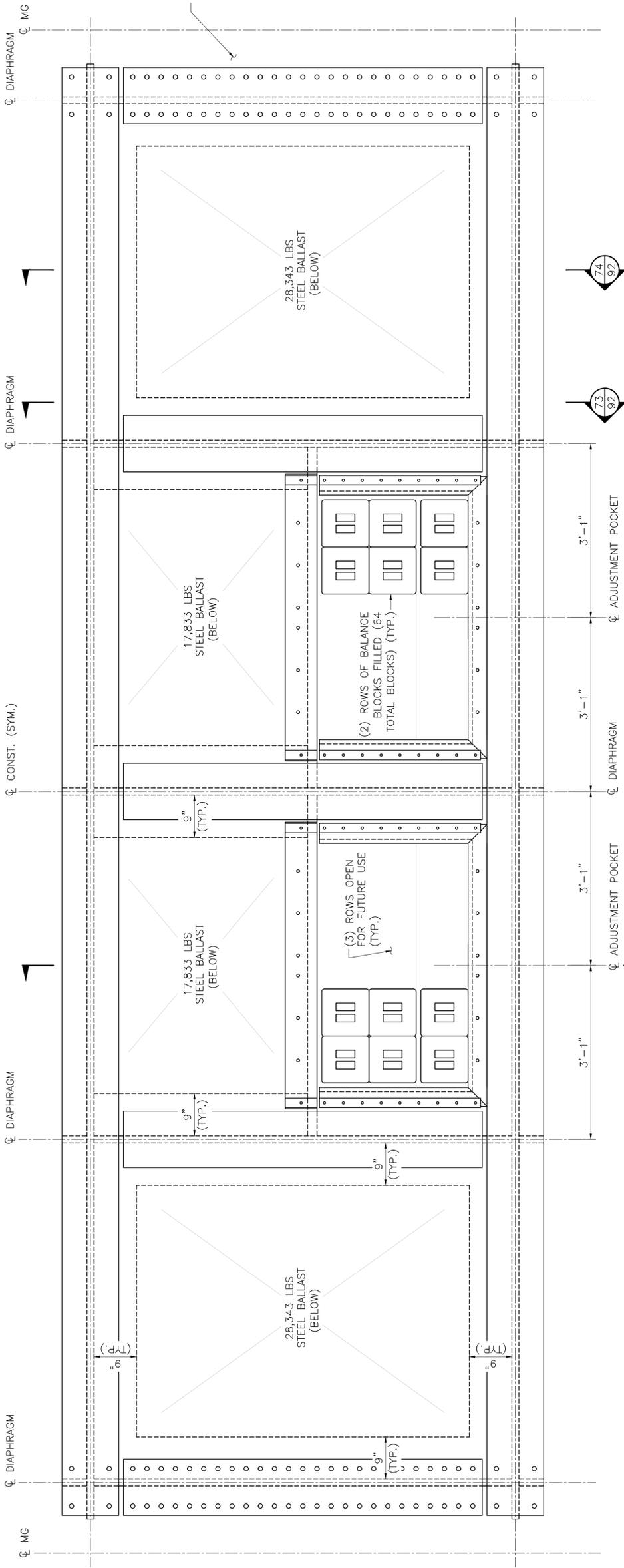
1. FOR OVER-TRAVEL BUMPER DETAILS, SEE SHEET 58.
2. FOR SAFETY RAILING DETAILS, SEE SHEETS 58-59.
3. FOR FENDER SYSTEM DETAILS, SEE SHEETS 62-63.
4. FOR BASCULE PIER FENDER HORIZONTAL MOUNTING TIMBER CORNER SPLICE DETAILS, SEE SHEET 63.
5. [M] DENOTES MASS POUR CEMENT CONCRETE.
6. FOR STONE FACING DETAILS, SEE SHEET 31.
7. BASCULE PIER AND REST PIER WALLS AND PLATFORMS SHALL BE 4000 PSI, 4 IN. 505-CEMENT CONCRETE.

FEB. 28, 2014	REVISED NOTE 7 - ADDENDUM 2
OCT. 26, 2013	ISSUED FOR CONSTRUCTION
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USE ONLY PRINTS OF LATEST DATE	

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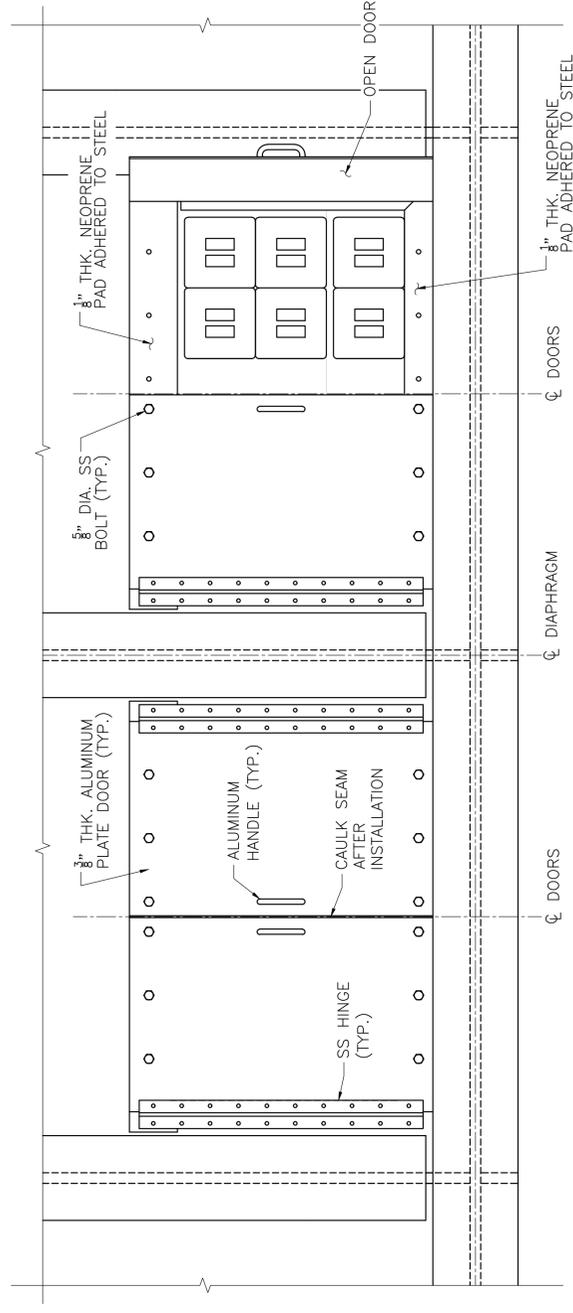
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-025(539)	126	214
PROJECT FILE NO. 603690			

**BASCULE LEAF
COUNTERWEIGHT
BALLAST DETAILS
1 OF 2**



COUNTERWEIGHT BALLAST PLAN
SCALE: 1"=1'-0"

NOTES:
1. COUNTERWEIGHT BALLAST CONCRETE SHALL BE 4000 PSI, 3/4 IN., 585 HP CEMENT CONCRETE.



ALUMINUM PLATE DOOR DETAIL
SCALE: 1"=1'-0"

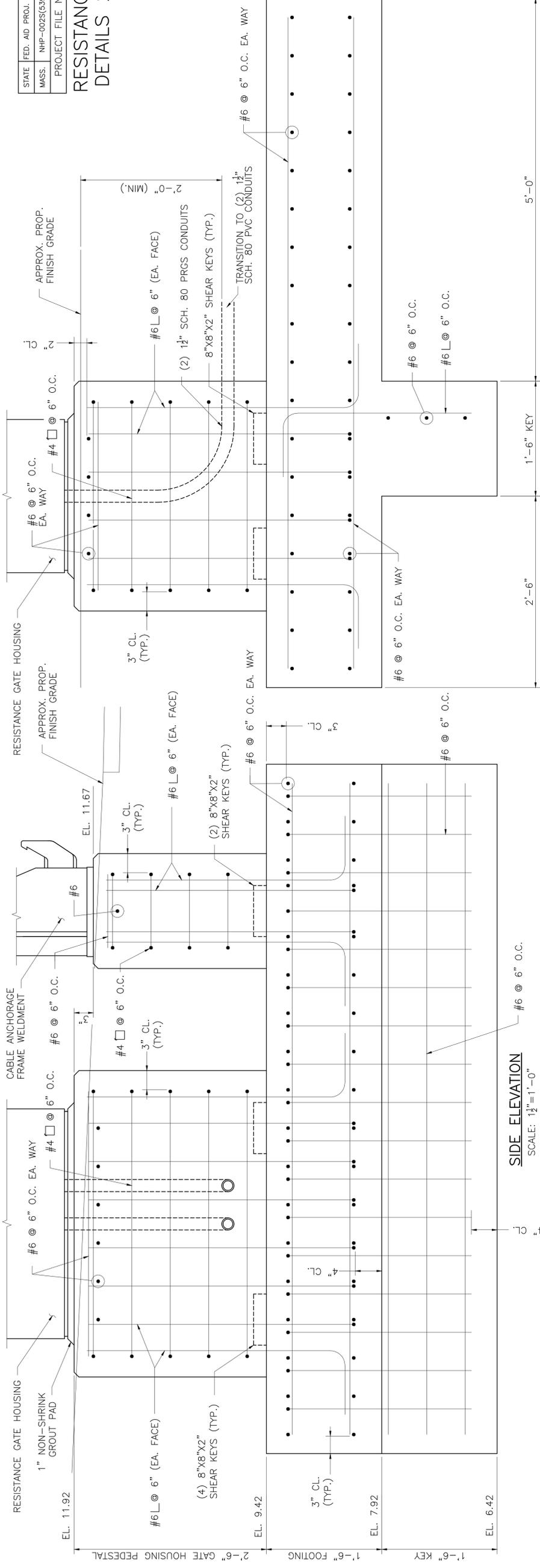
COUNTERWEIGHT ADJUSTMENT POCKETS PLAN
SCALE: 1"=1'-0"

FEB. 28, 2014	ADDED NOTE 1 - ADDENDUM 2
OCT. 26, 2013	ISSUED FOR CONSTRUCTION
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NHP-025(639)	154	214
PROJECT FILE NO.		603690	

RESISTANCE GATE DETAILS 2 OF 2



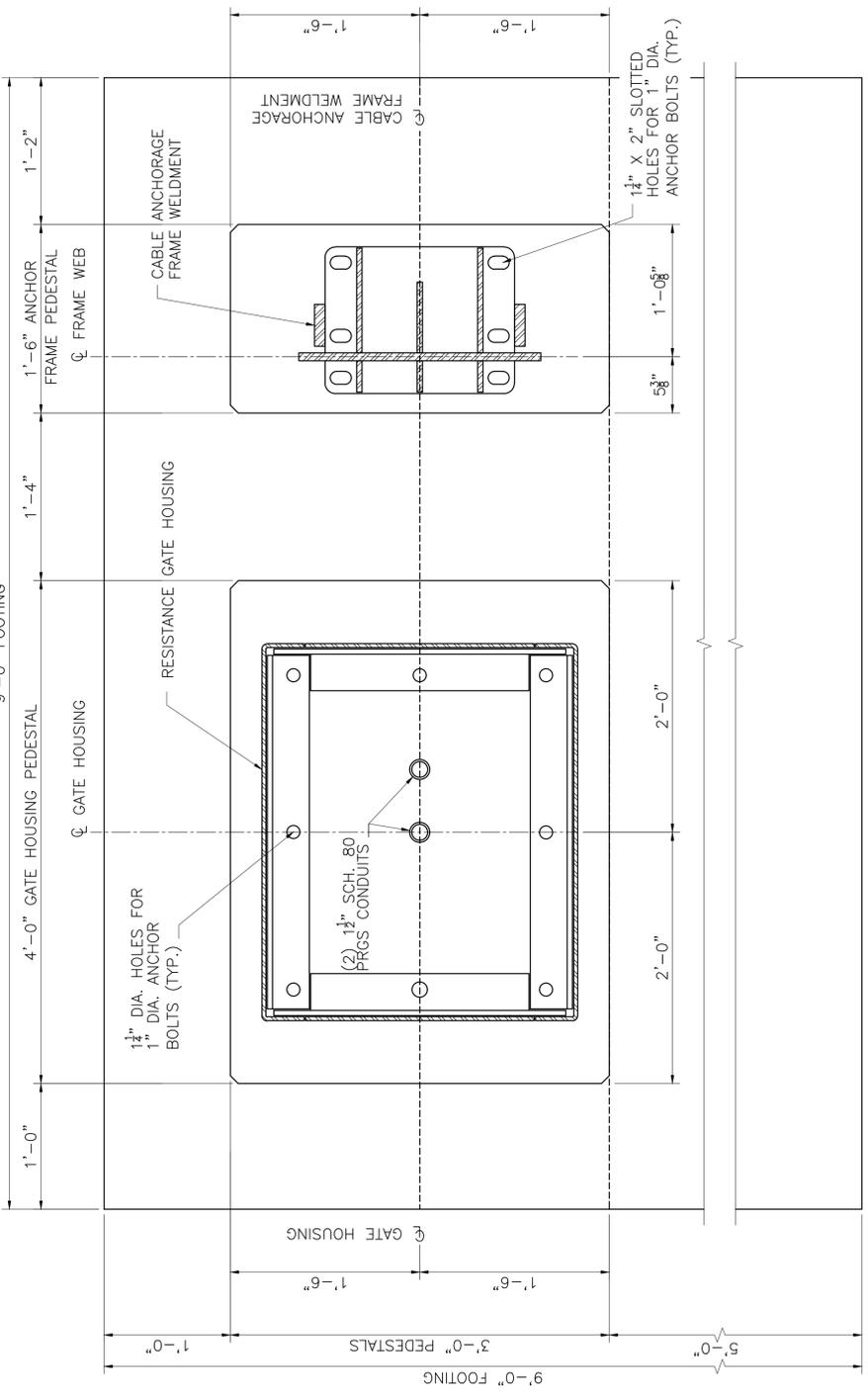
END ELEVATION
SCALE: 1/2"=1'-0"

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



NOTES:

- ALL CONCRETE SHALL BE 4000 PSI, 4 IN. 585 HP CEMENT CONCRETE.
FACTORED BEARING PRESSURE = 1.1 KSF PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS EXTREME EVENT II LOAD COMBINATION.
- FACTORED BEARING RESISTANCE = 6.8 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF NOMINAL BEARING RESISTANCE AND RESISTANCE FACTOR OF 0.45.
- FACTORED LATERAL LOAD = 33 KIPS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS EXTREME EVENT II LOAD COMBINATION.
- FACTORED LATERAL RESISTANCE = 34.7 KIPS. FACTORED LATERAL RESISTANCE IS THE SUM OF:
 - PRODUCT OF THE NOMINAL SLIDING RESISTANCE AND RESISTANCE FACTOR OF 0.80 = 18.0 KIPS
 - PRODUCT OF THE NOMINAL PASSIVE BEARING RESISTANCE AND RESISTANCE FACTOR OF 0.50 = 16.7 KIPS
- ANCHOR BOLTS SHALL BE AS RECOMMENDED BY THE RESISTANCE GATE MANUFACTURER.
- ALL KEYS TO BE SLIGHTLY TAPERED.
- FOR RESISTANCE GATE LAYOUT DRAWINGS SEE SHEET 171.



PLAN

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

^2^

FEB. 28, 2014	REVISED NOTE 1 - ADDENDUM 2
OCT. 26, 2013	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

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^1^ ADDENDUM NO. 1, February 7, 2014

DOCUMENT 00104

**NOTICE TO CONTRACTORS**

Electronic proposals for the following project will be received through the internet using Bid Express until the date and time stated below and will be posted on www.bidx.com forthwith after the bid submission deadline. No paper copies of bids will be accepted. Bidders must have a valid digital ID issued by MassDOT in order to bid on projects. Bidders need to apply for a Digital ID at least 14 days prior to a scheduled bid opening date with Bid Express.

^1^**TUESDAY, MARCH 11, 2014 at 2:00 P.M.****CHATHAM****Federal Aid Project No. NHP-002S(539)****Bridge Replacement Br. No. C-07-001 (Single Leaf Bascule) Bridge Street over
the Mitchell River (ABP)
(603690)****^1^****PROJECT VALUE = \$12,929,000.00**

Bidders must be pre-qualified by the Department in the BRIDGE-CONSTRUCTION category to bid on the above project. An award will not be made to a Contractor who is not pre-qualified by the Department prior to the opening of Proposals.

Contractors intending to bid on this project must first complete a "Request for Proposal Form"(R-109 Form) and e-mail an electronic copy of this document to the MassDOT Director of Prequalification for approval. Please e-mail these documents to prequal.r109@state.ma.us.

Blank "Request for Proposal Forms"(R-109 Forms) can be obtained at

<http://www.massdot.state.ma.us/highway/Departments/PrequalificationofHorizontalConstructionForms.aspx>

Select the link "Request for Official Proposal Form (R-109 Form)"

Upon approval, the official bidder shall be entitled to receive an officially numbered Compact Disc (CD) containing the plans and specifications, free of charge. Other interested parties may also receive an informational copy of the CD containing the plans and specifications, free of charge. It should be noted that informational copies can not be used for bidding purposes. The bidding for and award of the contract for this project is to be in accordance with the requirements of Massachusetts General Laws Chapter 30 § 39M.

All parties who wish to have the CDs shipped to them must provide a completed mailing label with an approved carrier account number for overnight mail service (i.e. – Federal Express) to the MassDOT Bid Document Distribution Center, Room 6261, 10 Park Plaza, Boston, MA 02116.

^2^ ADDENDUM NO. 2, February 28, 2014**NOTICE TO CONTRACTORS (Continued)**

A Proposal Guaranty in the amount of 5% of the value of the bid is required either using BidX's online form or by separately submitting an electronic copy of the Proposal Guaranty via e-mail to MassDOTBidBonds@dot.state.ma.us .

Bidders are on notice that this project is subject to the schedule of prevailing wage rates as determined by the Commissioner of the Massachusetts Department of Labor and Workforce Development, Division of Occupational Safety, and the United States Department of Labor.

Plans will be on display and information will be available at the MassDOT Boston Office and at the District Office in TAUNTON.

The Department, in compliance with Title 49 Code of Federal Regulations Part 21 (NONDISCRIMINATION IN FEDERALLY-ASSISTED PROGRAMS OF THE DEPARTMENT OF TRANSPORTATION - EFFECTUATION OF TITLE VI OF THE CIVIL RIGHTS ACT OF 1964), hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement that minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on grounds of race, color, or national origin in consideration for an award.

This Proposal contains the "STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)". The goals and timetables applicable to this proposal for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all work, are contained in Appendices A and B of the above Specifications.

^2^ This Contract contains price adjustments for hot mix asphalt, Portland cement, diesel fuel, and gasoline. For this project the base prices are as follows: asphalt cement \$640.00 per ton, Portland cement \$110.00 per ton, diesel fuel \$3.604 per gallon, and gasoline \$3.055 per gallon. MassDOT posts the **Price Adjustments** on their Highway Division's website at <http://www.massdot.state.ma.us/Highway/> under the following link sequences:

Doing Business With Us
Construction
Price Adjustments

STEEL PRICE ADJUSTMENT

This Contract contains Price Adjustments for reinforcing steel and structural steel. See Document 00813 - PRICE ADJUSTMENT FOR STRUCTURAL STEEL AND REINFORCING STEEL of the Special Provisions for their application.

The Base Prices for these items on this project are as follows:

ADDENDUM NO. 2, February 28, 2014**INTERIM SUPPLEMENTAL SPECIFICATIONS****(English / Metric Units)**DATE: February 21, 2014

The 1988 *Standard Specifications for Highways and Bridges*, the 1995 *Standard Specifications for Highways and Bridges (Metric)* and the *Supplemental Specifications dated June 15, 2012 (combined English and Metric)* are amended by the following modifications, additions and deletions. These Interim Supplemental Specifications prevail over those published in the Standard Specifications and the Supplemental Specifications.

The MassDOT–Highway Specifications Committee has issued these Interim Supplemental Specifications for inclusion into each proposal until such time as they are approved as Standard Specifications.

Contractors are cautioned that these Interim Supplemental Specifications are periodically updated and may vary from project to project.

ALL SECTIONS

(SUPPLEMENT C2012-1) Replace this section with the following:

ALL SECTIONS**Global Changes**

Replace the words *Qualified Product Listing maintained by the Research and Materials Division, 400 D Street, South Boston Ma. 02110-1953, telephone number 617-526-8686* and all variations thereof with *Qualified Construction Materials List available at www.massdot.state.ma.us/highway* at each occurrence.

Change the words *Bituminous Concrete* and *Class I Bituminous Concrete Type I-1* to *Hot Mix Asphalt* at each occurrence.

Change the words *Cement Concrete Masonry* to *Cement Concrete* at each occurrence.

Change the words *Linear Foot* and *Vertical Foot* to *Foot* at each occurrence.

Change the words *blast-furnace slag* to *slag cement* at each occurrence.

ADDENDUM NO. 2, February 28, 2014**DIVISION I
GENERAL REQUIREMENTS AND COVENANTS****SECTION 3.00
AWARD AND EXECUTION OF CONTRACT****SUBSECTION 3.04 Contract Bonds Required.**

(page 11 English, page I.14 Metric, page SUPPLEMENT C2012-7) Replace the last paragraph of the subsection with the following:

All alterations, extensions of time, extra work and any other changes authorized under these specifications, or under any part of the Contract may be made by the Department. The Contractor shall notify the surety or sureties regarding changes to the Contract. The Contractor shall provide evidence of revised bond.

Where the Contract utilizes additional artisans, equipment rental, materials, engineering services and specialty services to complete work assignments approved by the Engineer, the Contractor shall notify the surety of the additional work and provide the Department with documentation that the bond has been revised to cover such work.

**SECTION 4.00
SCOPE OF WORK****SUBSECTION 4.03 Extra Work (Also see Subsection 4.05).**

(page 12 English, page I.15 Metric) Change the words Subsection 8.10, Part F. to Subsection 8.10. in the second paragraph.

SUBSECTION 4.04 Changed Conditions.

(page 13 English, page I.16 Metric) Replace the second sentence in paragraph (a) with the following:

The Engineer shall promptly investigate the conditions, and shall promptly prepare a written report of the findings, with a copy to the Contractor. If the Engineer finds that such conditions as have been described in detail by the Contractor do exist and in fact do so differ materially or substantially, an equitable adjustment shall be made and the Contract modified in writing accordingly.

**SECTION 5.00
CONTROL OF WORK****SUBSECTION 5.02 Plans and Detail Drawings.**

(SUPPLEMENT C2012-10) Replace the 8th paragraph of the Subsection (first paragraph of the page) with the following:

The Contractor shall submit two sets of full-scale shop drawing prints to the Engineer for approval. If corrections are required, one set of the marked-up drawings will be returned to the Contractor for revision and subsequent re-submittal. The Engineer shall make all copies of the approved shop drawings as indicated in Table 1 of Subsection 5.02 and will distribute the drawings. No changes shall be made to the approved drawings without the written consent of the Engineer.

**SECTION 7.00
LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC****SUBSECTION 7.02 Pollution Prevention.**

(SUPPLEMENT C2012-16) Under B. Dust Control, delete the words wet mopping in the second paragraph.

ADDENDUM NO. 2, February 28, 2014**SUBSECTION 7.04 Motor Vehicles.**

(page 24 English, page I.32 Metric) Replace the first paragraph with the following:

All motor vehicles (except vehicles used solely for transporting employees to and from the project) and trailers used wholly or in part within the Commonwealth by the Contractor or any Subcontractor, or by any person directly or indirectly employed by them in the execution of the Contract, shall be registered in the Commonwealth of Massachusetts and bear Massachusetts registration plates except as stipulated in Subsection 7.03.

SUBSECTION 7.09 Public Safety and Convenience.

(page 27 English) Change the word include to included in the last sentence of the third paragraph.

SUBSECTION 7.23 Archeological and Paleontological Discoveries.

(page 37 and 38 English, page I.47 Metric) Replace this Subsection with the following:

7.23 Discovery of Unanticipated Archaeological and Skeletal Remains.

Should any archaeological remains be encountered during any phase of construction, the Contractor shall immediately cease all construction activities in the discovery area, secure the area and notify the Engineer. The Engineer shall immediately notify the MassDOT Environmental Services Section in Boston Headquarters Office. The MassDOT Archeologist shall inspect the remains and their context in order to evaluate the discovery.

In the event a potentially significant archaeological find is encountered, as determined by the MassDOT Archeologist, the Contractor shall carefully protect the discovery area by placing snow fencing and/or flagging (with an approximately 30-foot buffer zone) around the find(s). The MassDOT Archeologist shall notify the Federal Highway Administration (if the project is federally funded), the Massachusetts State Archaeologist, the Massachusetts State Historic Preservation Officer/Executive Director of the Massachusetts Historical Commission and other relevant parties (the Massachusetts Commission on Indian Affairs, Tribal Historic Preservation Officers) of the discovery and serve as the liaison on all subsequent actions. Outside the protected discovery area, construction work may continue.

Construction may not resume in the discovery area until the MassDOT Archeologist has secured all necessary regulatory approvals and given the approval to continue to the Engineer.

If skeletal remains are discovered during construction, the Contractor shall immediately cease all work in the discovery area, secure and protect the area and notify the Engineer as stipulated above. The Engineer shall immediately contact the State Medical Examiner, the police and the MassDOT Archeologist. If the skeletal remains prove to be human and more than 100 years old, as determined by the State Medical Examiner, the MassDOT Archeologist shall consult with the Massachusetts State Archaeologist and other relevant parties pursuant to all procedures and protocols under the Massachusetts Unmarked Burial Law (M.G.L. Chapter 38, Section 6; M.G.L. Chapter 9, Section 26A and 27C; and M.G.L. Chapter 7, Section 38A) and Section 106 of the National Historic Preservation Act as amended, and its implementing regulations for emergency situations and post-review discoveries [36 CFR 800.12(b)(2) or 36 CFR 800.13(b)].

**SECTION 9.00
MEASUREMENT AND PAYMENT****SUBSECTION 9.03 Payment for Extra Work.**

(page 45 English, page I.57 Metric and SUPPLEMENT page C2012-25) Replace this Subsection with the following:

A. Payment for work for which there is a unit price provided for in the Contract.

Where the Contract contains a unit price for work and the Engineer orders Extra Work for work of the same kind as other work contained in the Contract and is performed under similar physical conditions, the Contractor shall accept full and final payment at the Contract unit prices for the accepted quantities of Extra Work done.

No allowance will be made for any increased expenses or any damages whatsoever.

ADDENDUM NO. 2, February 28, 2014**SUBSECTION 9.03 (continued)****B. Payment for work or materials for which no price is contained in the Contract.**

If the Engineer directs, the Contractor shall submit promptly in writing to the Engineer an offer to do the required work on a lump sum or unit price basis, as specified by the Engineer. The stated price, either lump sum or unit price, shall be divided so as to show that it is the sum of: (1) the estimated cost of direct labor, materials, and the use of equipment, plus 10 percent of this total for overhead; (2) plus the actual cost of Workmen's Compensation and Liability Insurance, Health, Welfare and Pension benefits, Social Security deductions, Employment Security Benefits, and such additional fringe benefits which the Contractor is required to pay as a result of Union Labor Agreements and/or is required by authorized governmental agencies; (3) plus subcontractor or a Public or Private Utility costs; (4) plus 10 percent of the total of (1), (2) and (3); (5) plus the estimated proportionate cost of surety bonds.

Unless an agreed lump sum and/or unit price is obtained from above and is so stated in the Extra Work Order the Contractor shall accept as full payment for work or materials for which no price agreement is contained in the Contract an amount equal to the following: (1) the actual cost for direct labor, material (less value of salvage, if any) and use of equipment, plus 10 percent of this total for overhead; (2) plus actual cost of Workmen's Compensation and Liability Insurance, Health, Welfare and Pension benefits, Social Security deductions, and Employment Security Benefits; (3) plus subcontractor or a Public or Private Utility costs; (4) plus 10 percent of the total of (1), (2) and (3); (5) plus the estimated proportionate cost of surety bonds. Costs incurred for traffic police, railroad flagging and permits will be reimbursed without mark-up for overhead or profit. No allowance shall be made for general superintendence and the use of small tools and manual equipment. The Contractor shall, when requested by the Engineer, furnish itemized statements of the cost of the work ordered and give the Engineer access to all accounts, bills and vouchers relating thereto, and unless the Contractor shall furnish such itemized statements, access to all accounts, bills and vouchers, the Contractor shall not be entitled to payment for any items of extra work for which such information is sought by the Engineer.

C. Equipment Rates.

In the event there arises the need for determination of costs of use of equipment as part of "actual costs" or "cost of performance" or "damages" under Subsections 4.04, 7.16, 8.05, 9.02 and/or 9.03, or under Chapter 30 of the Massachusetts General Laws, such costs for use of equipment shall be established in accordance with the following:

(1) "Construction equipment" as used herein means equipment in sound workable condition, either owned or controlled by the Contractor or the Subcontractor at any tier, or obtained from a commercial rental source, and furnished for use under the contract.

(2) Allowable hourly ownership and operating costs for contractor-owned or subcontractor-owned equipment shall be determined as follows:

(a) Actual cost data from the Contractor's accounting and operating records shall be used whenever such data can be determined for hourly ownership and operating costs for each piece of equipment, or groups of similar serial or series equipment. Actual costs shall be limited to booked costs of the annual accounting period or periods during which the equipment was utilized on the Contract, and will not include estimated costs not recorded and identifiable in the Contractor's formal accounting records. The Contractor shall afford Department auditors full access to all accounting, equipment usage, and other records necessary for development or confirmation of actual hourly cost rates for each piece of equipment, or groups of similar serial or series equipment. The Contractor's refusal to give such full access shall invalidate any request or claim for payment of the equipment costs. When costs cannot be determined from the Contractor's records, hourly equipment cost rates may be determined under (b) and (c) below.

(b) When the Department ascertains that it is not practicable to determine actual equipment cost rates from the Contractor's records, hourly equipment cost rates for equipment owned by the Contractor may be determined by the use of rate schedules (with adjustments) contained in the EquipmentWatch Rental Rate Blue Book(s); said publication is incorporated herein by reference.

The Contractor shall provide to the Department, in a format prescribed by the Department, sufficient descriptive ownership and operating records and documentation for each piece of equipment subject to the extra work so that the equipment rates may be determined and adjusted as follows:

- (1) Hourly equipment rates shall be the FHWA rate contained in the Rental Rate Blue Book adjusted by application of the Rate Adjustment Tables (for machine age adjustment) plus adjustments to eliminate equipment overhead (indirect ownership) plus regional adjustments (the weekly, hourly and daily rates listed in the Rental Rate Blue Book will not be used). This rate shall be defined as 'Adjusted FHWA Rate'.
- (2) Equipment standby rates shall be the 'Adjusted FHWA Rate' as described in (1) above, minus the operating rate and reduced by 50%. Standby rates shall not include operating rates:
Equipment standby rate = (Adjusted FHWA Rate – Estimated Operating Rate)/2

ADDENDUM NO. 2, February 28, 2014**SUBSECTION 9.03 (continued)**

The number of equipment hours to be paid for under the extra work or force account work shall be the number of hours that the equipment is actually used on a specific extra work or force account activity.

The current version of the Rental Rate Blue Book will be used in establishing equipment rates. The version applicable to specific extra work or force account work will be the version in effect as of the first day of work is performed on that force account work and that rate shall apply throughout the period the force account work is being performed.

The Department may allow calculation of equipment rates based upon other equipment rate books and guides (i.e. Construction Equipment Ownership and Operating Expense Schedule, Region One published by the Army Corps of Engineer's) or hybrid rates determined to be reasonable by the Department.

(c) In those cases where a 10 percent additive for overhead and profit is to be superimposed on the equipment costs as provided in Subsections 4.04, and 9.03B, equipment cost rates determined under (a) and (b) above shall exclude any overhead costs such as equipment insurance, licenses, or taxes. The 10 percent additive shall compensate the Contractor for all overhead costs, including equipment overhead, general superintendence, small tools, manual equipment, field overhead, and central office overhead. Where the 10 percent overhead additive is not applicable, overhead items clearly related to equipment, (equipment insurance, licenses, taxes), shall be included in the equipment rates; provided, however, that such costs shall be identified and eliminated from any other direct or indirect costs or damages payable by the Department under the Contract. No element of profit shall be allowable in equipment cost rates for Contractor-owned equipment; it being understood that a 10 percent profit additive will be superimposed upon equipment costs when called for by the Contract.

(3) Reasonable hourly costs of renting equipment are allowable subject to the Contractor producing adequate records supporting actual costs incurred, provided further that:

(a) Costs such as fuel, lubricants, and minor or running repairs incident to operating such rented equipment that are not included in the rental rate are allowable.

(b) Costs incidental to major repair and overhaul of rental equipment are not allowed.

(c) Charges for equipment leased or rented from any division, subsidiary organization under common control, or business under common ownership, ordinarily will be reimbursable to the extent that they do not exceed the actual costs of ownership and operating costs determined as in (2), above. Rental cost of equipment leased or rented from any division, subsidiary, affiliate of the Contractor under common control, or business under common ownership, that has an established practice of renting out the same or similar equipment to unaffiliated parties, shall be allowed at rates higher than actual ownership and operating costs, provided that the Contractor furnishes the Department adequate documentation, including the rental and usage records for the same or similar equipment items, demonstrating a reasonable likelihood that the equipment would have been rented out if not used on this Contract, and that the rental rates charged are consistent with rates charged to unaffiliated parties and going market rates. Rental costs under a sale and leaseback arrangement will be allowable only up to the amount the Contractor would be allowed if the Contractor retained title.

(4) Equipment cost rates determined in (2) and (3) shall be exclusive of labor cost of equipment operators. Such costs shall be reimbursable subject to the Contractor producing adequate payroll and other records sufficient for determination of hours, pay rates, and reimbursable fringe costs as defined in Subsection 4.04 and above.

(5) Except in cases of unit price or lump sum extra work orders approved by the Department before the work is done, actual reimbursable hours of equipment usage and operator time must be adequately documented by the Department force account records or Contractor field and office records maintained during performance of the work in a manner acceptable to the Department. Failure of the Contractor to so maintain time records which adequately segregate added equipment hours caused by extra work required by the Department, or caused by other Department actions cited in the Contractor's claim for damages, from other equipment time worked on the Contract, when maintenance of such records would have been feasible, shall constitute a cardinal omission of the Contractor, invalidating any claim for equipment cost reimbursement.

The above provisions constitute an advanced agreement made in general conformance with intent of Federal Acquisition Regulation 31.105, paragraph (d)(1), said intent being to maximize clarity of understanding and minimize possible disputes with respect to determination of reimbursable actual equipment costs under this Contract.

ADDENDUM NO. 2, February 28, 2014**DIVISION II
CONSTRUCTION DETAILS****SECTION 227. DRAINAGE SYSTEM SEDIMENT**

(page 79 English, page II.32 Metric) Add the following Section in numerical order:

**SECTION 227
DRAINAGE SYSTEM SEDIMENT
DESCRIPTION****227.10 General.**

The work shall consist of removal and disposal of accumulated sediment, which may contain refuse and other debris, from designated drainage systems, including: drainage structures, pipes, the gutter mouth of curb inlets, and as directed by the Engineer.

CONSTRUCTION METHODS**227.21 Regulatory Requirements.**

Drainage system sediment is classified as a solid waste by the DEP and must be handled and disposed in accordance with Solid Waste Management Regulations 310 CMR 19.000, as well as all other applicable DEP policies and guidance.

Sediment must arrive at the disposal facility sufficiently dry since DEP regulations prohibit landfills from accepting materials that contain free draining liquids. A permitted solid waste disposal facility may require characterization of the material prior to accepting it for disposal at the facility. The Contractor shall provide copies of all material shipping records to the Engineer.

227.23 Prosecution of Work.

No casting shall be removed until immediately preceding the work and shall be replaced immediately after the cleaning of the drainage structure and/or pipes is completed. Open catch basins shall not be left unattended. The Contractor shall properly secure the grate locking device after cleaning.

The Contractor shall protect the cast iron hood of drainage structures so equipped, during the sediment removal process. Equipment used to collect drainage system sediment shall be capable of decanting free flowing liquids back into the drainage system. Conditions such as location, extraordinary shape due to conduits or public utility pipes, or off pavement work, may require hand work. Drainage system sediment shall be transported to a disposal facility in trucks that will not spill the material along the roadway. Any sediment falling on the roadway shall be removed by the Contractor at his own expense.

COMPENSATION**227.30 Method of Measurement.**

Sediment removed from drainage structures will be measured by the cubic yard after decanting.

Sediment removed from drainage pipes will be measured by the foot of drainage pipe, regardless of the diameter of pipe from which material is removed.

227.31 Basis of Payment.

Removal and disposal of drainage structure sediment will be paid for at the contract unit price per cubic yard.

Removal and disposal of drainage pipe sediment will be paid for at the contract unit price per foot, regardless of the volume of sediment removed.

The price of these items shall include all labor, equipment, approvals, permits, testing, transportation, disposal and all other incidentals necessary to complete the work.

ADDENDUM NO. 2, February 28, 2014**SECTION 227 (continued)****227.32 Payment Items.**

227.3	Removal of Drainage Structure Sediment	Cubic Yard
227.31	Removal of Drainage Pipe Sediment	Foot

SECTION 477
MILLED RUMBLE STRIPS

SECTION 477 MILLED RUMBLE STRIPS.

(page 151 English, page II.111 Metric) Add this new Section in numerical order.

DESCRIPTION**477.20 General.**

The work consists of constructing rumble strips on paved highway shoulders by milling grooves into finished hot mix asphalt surfaces.

CONSTRUCTION METHODS**477.61 Equipment.**

The equipment shall self-align with the slope of the roadway surface and/or any irregularities in the roadway surface.

The Contractor shall demonstrate to the Engineer the ability to achieve the desired groove without tearing or snagging the roadway surface prior to beginning the work.

477.62 Installation of Rumble Strips.

Rumble strips shall be installed in accordance with the locations, dimensions and patterns shown on the plans. Rumble strips shall not be installed on shoulders less than 2 feet wide, on bridge decks, within 50 feet of an intersection or major driveway, or on roadways with posted speeds less than 40 MPH.

In areas where acceleration and/or deceleration lanes have no paved outside shoulders, any rumble strips in the outside shoulders shall be terminated at the beginning of each deceleration lane and initiated at the end of each acceleration lane.

477.63 Control of the Work Area.

At the end of each working day, all equipment shall be moved to a location where it does not present a hazard to traffic. The pavement shall be cleaned by sweeping and the work area shall be reopened to traffic.

Pavement millings shall become the property of the Contractor and shall be removed and disposed off site.

ADDENDUM NO. 2, February 28, 2014

SECTION 477 (continued)

COMPENSATION

477.80 Method of Measurement.

Milled Rumble Strip will be measured by the total length of installed rumble strip. Milled Rumble Strip for Bicycle Traffic will be measured by the total length of installed rumble strip excluding the designed gaps. Breaks at castings, bridge decks, intersections or other breaks will not be measured for payment.

477.81 Basis of Payment.

Payment for Milled Rumble Strip and Milled Rumble Strip for Bicycle Traffic will be made at the contract unit price per foot of rumble strips, complete in place. Such payment will be full compensation for furnishing all equipment and labor for satisfactorily performing the work including cleanup and disposal of excess materials.

477.82 Payment Items.

477.	Milled Rumble Strip	Foot (m)
477.1	Milled Rumble Strip for Bicycle Traffic	Foot (m)

**SECTION 701
SIDEWALKS, WHEELCHAIR RAMPS AND DRIVEWAYS**

SUBSECTION 701.20 General.

(page SUPPLEMENT C2012-61) Replace this subsection with the following:

This work shall consist of the construction of cement concrete wheelchair ramps, hot mix asphalt or cement concrete sidewalks and driveways in accordance with the specifications and within the tolerances established on the plans.

SUBSECTION 701.61 Cement Concrete Sidewalks, Sidewalks at Driveways, and Wheelchair Ramps.

(page SUPPLEMENT C2012-62) Add the following after second paragraph of B. Placing and Finishing Cement Concrete.:

Detectable warning panels conforming to the plans shall be securely incorporated into the work by means acceptable to the Engineer.

SUBSECTION 701.81 Basis of Payment.

(page SUPPLEMENT C2012-63) Replace the first paragraph with the following:

Cement Concrete Sidewalk, Cement Concrete Sidewalk at Driveway and Cement Concrete Wheelchair Ramp will be paid for at the contract unit price per square yard complete in place and shall include detectable warning panels.

ADDENDUM NO. 2, February 28, 2014

**SECTION 740
ENGINEER'S FIELD OFFICE AND MATERIALS LABORATORY
(EACH WITH PERTINENT EQUIPMENT)**

SUBSECTION 740.41 Engineers Field Office (Type A).

(page 186 English, page II.146 Metric) Replace number 8 with the following:

8. An electric sanitary hot and cold water cooler, supplied with cups and drinking water, a 3 cubic foot capacity refrigerator with freezer compartment and a 1 cubic foot capacity microwave oven.

**SECTION 801
CONDUITS, MANHOLES, HANDHOLES, PULLBOXES AND FOUNDATIONS**

SUBSECTION 801.81 Basis of Payment.

(page SUPPLEMENT C2012-80) Replace the first paragraph with the following:

The unit contract price per foot, shall be full compensation for furnishing all conduits, couplings, expansion fittings, elbows, bends, caps, sleeves, clamps, hangers, reducers, tees, jointing compound, sealing compound, cement concrete required in Subsection 801.60-F and 801.60-I planking required in Subsection 801.60-G and gravel required in subsection 801.60-B; for placing the electrical conduit in accordance with these specifications, including all excavation (except Class B Rock) or jacking required, backfilling of the trenches, chipping or sawing of pavement, bedding or hanging of conduit and all other work incidental to the construction of the conduit system, except that when electrical conduit is included on any project as an integral part of a traffic control signal or Highway Lighting System and the conduit is not shown as a pay item, it shall be considered as incidental to the construction and be included in the lump sum price for such systems.

**SECTION 815
TRAFFIC CONTROL SIGNALS**

SUBSECTION 815.80 Method of Measurement.

(page 237/238 English, page II.200 Metric) Add the following paragraph after the third paragraph:

Wire Loop Installed in Roadway will be measured by the foot along the sawcut or trench that contains the wire, multiple wires or preformed loops.

SUBSECTION 815.81 Basis of Payment.

(page 238 English, page II.200 Metric) Add the following paragraph after the second paragraph:

The work of installing Wire Loop Installed in Roadway shall be full compensation for all labor, materials, and equipment necessary to sawcut, install the wire, multiple wires or preformed loops and seal the sawcut or trench as specified.

SUBSECTION 815.82 Payment Items.

(page II.201 Metric) Change the pay unit of item 819.832 from Meter to Each.

(pages 238 English, II.200 Metric) Delete payment items 817.70 to 817.73 and change 817.60 to 817.63 to 817.60 to 817.69.

ADDENDUM NO. 2, February 28, 2014

**SECTION 850
TRAFFIC CONTROLS FOR CONSTRUCTION
AND MAINTENANCE OPERATIONS**

SUBSECTION 850.43 Safety Signing for Traffic Management.

(page SUPPLEMENT C2012-43) Add the following paragraph after the 4th paragraph of the Subsection:

Rollup signs shall be fabricated from vinyl microprismatic retroreflective material.

SUBSECTION 850.44 Temporary Pavement Markings and Temporary Raised Pavement Markers.

(page SUPPLEMENT C2012-96) Replace the first paragraph with the following:

Glass beads, tapes and paints used for temporary pavement markings shall be lead free, conform to Subsections M7.01.07, M7.01.16, M7.01.23 and M7.01.24 and meet the retroreflectivity requirements of the MUTCD for a period of 90 days. Final determination as to pavement marking quality shall be made by the Engineer. The Contractor shall supply a retroreflectometer for this purpose.

SUBSECTION 850.81 Basis of Payment.

(page SUPPLEMENT C2012-106) In the 4th paragraph from the bottom of the page change "...unit price per foot (m)..." to "...unit price each..."

SUBSECTION 850.82 Payment Items.

(page SUPPLEMENT C2012-107) Change the description of payment item 854. to Temporary Raised Pavement Marker, and the description of payment item 854.5 to Raised Pavement Marker Removal.

**SECTION 860
REFLECTORIZED PAVEMENT MARKINGS**

SUBSECTION 860.60 Equipment.

(SUPPLEMENT C2012-108) Add the following paragraphs to the end of this Subsection:

The Contractor shall supply an infrared pistol thermometer meeting the requirements of Section 460.60 for each thermoplastic traffic marking operation on the project. The thermometers will remain the property of the Contractor upon completion of the project.

The Contractor shall supply suitable gauges for measuring the thickness of pavement markings; a digital gauge for thermoplastic lines and wet film thickness gauges for painted lines. The gauges will remain the property of the Contractor upon completion of the project.

ADDENDUM NO. 2, February 28, 2014

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ITEM 983.3**RIPRAP REMOVED AND RELAID****CUBIC YARD**

Work under this item shall conform to the relevant provisions of Section 983 and M2.02.0 of the Standard Specifications and shall consist of the removal, stacking and relaying of existing riprap required to complete the embankment as shown on the Plans and as directed by the Engineer. The riprap shall be removed and temporarily stacked on site and as directed by the Engineer. Once construction of the abutments has been completed and backfilled, the existing riprap shall be relaid as directed prior to placing the new riprap up to the face of the new abutments and wingwalls.

A cofferdam or other approved water control system as prescribed under Item 991.1 shall be installed prior to removing or reworking the existing riprap to prevent silt and sediment from entering the river. Removal of riprap shall be performed in a manner to avoid the flow of sediment into the river.

The Contractor is advised that some of the voids in the existing riprap may be filled with cement concrete. As part of this work, any cement concrete shall be broken to dislodge stones. Concrete that is removed from riprap shall be disposed by the Contractor. If the Contractor chooses to store the riprap at an off-site location, the Contractor will be responsible for transportation to and from the off-site location, with no additional compensation and at no additional cost to MassDOT.

CONSTRUCTION METHODS

Riprap shall be installed in accordance with Section 983.62, except that the largest stones shall be set at the toe of the revetment to anchor the revetment. A geotextile fabric shall be placed under the crushed stone bedding prior to placement of the riprap. The geotextile fabric shall meet the requirements of Section M9.50.0 of the Supplemental Specifications and AASHTO M288, Class2.

Method of Measurement

Riprap Removed and Relaid will be measured by the Cubic Yard complete in place.

Basis of Payment

Riprap Removed and Relaid will be paid for at the Contract Unit Price per Cubic Yard, which price shall include all labor, tools, materials, equipment and incidental costs required to complete the work. Payment for Crushed Stone bedding under the riprap will be made separately under Item 156. Payment for Geotextile Fabric made separately under Item 698.4.

^2^ ADDENDUM NO. 2, February 28, 2014**ITEM 990.1****COFFER DAM**
STRUCTURE NO. C-07-001 (9YM)**LUMP SUM**

Work under this item shall conform to the relevant provisions of Section 950. and the following:

The Contractor shall design a cofferdam and prepare plans and drawings, including sheeting, bracing, tremie seal and all related work, based on the data furnished at the Contract Drawings and Specifications, to be field verified at Contractor's cost and responsibility. The procedures and calculations of Contractor's cofferdam plan shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts and submitted to the Engineer for approval. All construction activities shall be performed as per the approved plan. The plan shall also include the procedure for complete removal of the cofferdam at Contractor's cost and responsibility.

The contractor is advised that there is an active domestic water pipe located along the north side of the bridge. The contractor shall field verify the location of the water line prior to installing the sheeting, and shall undertake appropriate measures to protect the water line from damage that may result from construction. The contractor shall also coordinate with the Engineer and the Town of Chatham for the temporary shutdown of the waterline before construction as well as re-livening of the water line after the cofferdam is removed. All parts of the cofferdam shall be completely removed after construction.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The Item 990.1 Cofferdam Structure No. C-07-001 (9YM) will be paid in the unit of LUMP SUM at the Contract Bid Price, which price shall include the cost of all material, labor, equipment, machinery, tools, excavation, trenching, pumping, designing and drafting of the plans, construction, maintenance and removal of the cofferdam structures, complete in place.

^2^ Steel Sheeting used for dewatering and pumping shall be paid as specified under Standard Specifications under Item 952.1 Steel Sheeting in the unit of POUND at the Contract Bid Price.

^2^ ADDENDUM NO. 2, February 28, 2014**ITEM 995.01 (Continued)****^2^ Timber Wearing Surface Installation**

Timber plank wearing surface shall be bolted to steel grid deck panels using stainless steel 1/2" diameter hexagonal head cap screws threaded 1/2" -13 Class 2A installed in threaded rivet fasteners (rivnuts) secured to the grid deck main bar top flanges. The 3x8 Timber Plank Wearing Surface to be counterbored 1 1/2" diameter x 1/2" deep to accept the cap screws. The longitudinal axis of the timber planks shall be oriented at a 30 degree angle to the center of construction as shown in the plans. Joints in the timber planks shall be located at the centerline of the intermediate floorbeams. Short length planks shall have no less than two screws per length of plank. Timber planks shall be spaced as shown in the Contract Plans.

PIER CAP FORM LINER AND STAINING

The work to be done under this heading consists of furnishing all materials, labor, tools, equipment, and performing all operations necessary to complete the installation of form liners on the concrete pier caps to simulate the appearance of structural timber.

Fabrication, installation, and removal of form liners shall be done by a contractor experienced in this type of work with a successful record of job performance in works of similar nature including training and experience in manufacturer's technique in achieving realistic surfaces.

Form liner manufacturer representative shall be present for critical decisions on procedures: cost of representative, if any, shall be incidental to this Item.

Stain application shall be by manufacturer or authorized representative.

Prior to construction of samples, schedule a conference with manufacturers' representative(s) to ensure proper understanding and application of form liners, finishing, color application, and all necessary procedures to complete the work.

All work necessary to form, finish and stain concrete pier caps as described herein, including all shop drawings, samples, mockups, fabrication, installation, and removal of concrete form liners.

ITEM 995.01 (Continued)

SUBMITTALS:

Shop drawings of form-lined pier caps, including plans, elevations, and details to show overall pattern, joint locations, end, edge, and other special conditions.

Sample of form ties, as well as method of separation for removing forms.

Samples of materials and/or certificates of compliance with the specifications shall be furnished to the Engineer for approval.

The Contractor shall submit to the Engineer for approval:

1. The type and proportions of materials, including form liner sample and form ties.
2. Construction procedure, including method of separating forms from formwork.
3. Furnish records of past experience in completing form lined concrete to simulate a textured finish.

Form lined concrete samples and mockup as described below.

FORM LINERS

This work shall include the use of form liners on the concrete pier caps of the new bridge such that the completed, colored, and formed concrete surface shall match the look of stacked timber. The pattern of simulated timber shall appear natural and non-repeating. Seam lines or match lines caused from two or more molds coming together shall not be apparent when viewing completed surface. Arrangement of form molds around pier cap surfaces shall create the effect of realistic timber continuing around the corners to simulate sawn ends. In addition, additional grinding and dressing of formed surfaces may be necessary to remove joint lines resulting from separate pours.

Pattern shall be regular stacked timber pattern to match sample as shown in attached photo. All visible portions of the pier cap (ends, sides, and bottom) shall be textured to simulate wood timber. Form shall be fabricated from weathered wood timber.

^^ ADDENDUM NO. 2, February 28, 2014

ITEM 995.01 (Continued)

8. Report of Drawbridge Openings: The primary bridge documentation report, this form is used to log the date, time, direction, weather conditions and name of every vessel accommodated by the bridge.
9. Electrical Components: A checklist for electricians performing routine preventative maintenance procedures.
10. Mechanical Components: A checklist for mechanics performing routine preventative maintenance procedures.

Equipment Failures

1. In the event the bridge becomes inoperable due to an equipment failure, whether the specific item which failed is under contract or not, respond within 30 minutes by notifying the Engineer, and initiate corrective action to remedy the situation using the same design configuration.
2. Document any equipment failure by completing a Preliminary Cause of Failure Report, which must include a description of the event. Submit this report to the Engineer within ten days.
3. If repair is **not** possible within a reasonable time, document temporary resolutions for review and approval by the Engineer.

Specifications

Adhere, at all times, to the U.S. Coast Guard Code of Federal Regulations (CFR) 33.

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^2^ ADDENDUM NO. 2, February 28, 2014**ITEM 995.01 (Continued)****^2^ ELECTRICAL SHED**

The work under this section shall consist of furnishing all labor; materials, plant and equipment, and performing all work necessary for the construction of a timber enclosure for the electrical equipment located on the bascule pier deck as specified herein and indicated on the Plans.

It is the intent and purpose of these Special Provisions to cover and include all materials required for construction of the enclosure including but not limited to pressure treated timber framing and plywood sheathing for the roof, floor and walls, red cedar shingle roofing and siding, pressure treated wood tongue and groove boards, fascia and trim, wire screen soffit, door hardware, paint, nails, screws, nuts, bolts, washers, metal joist hangers and connectors, and other miscellaneous framing hardware. The Contractor's attention is also directed to the other related work appearing in the Item "Electrical Work – Bridge". Any other incidental material, or labor not herein specifically mentioned or included that may be found necessary to comply with the requirements of the related documents and referenced standards or codes shall be furnished by the Contractor without additional cost to the MassDOT.

The Contractor shall obtain any required permits and approvals of all Departments or Agencies with jurisdiction for this building.

MATERIALS AND CONSTRUCTION

The timber electrical shed enclosure shall be constructed in accordance with the International Building Code (IBC), Massachusetts State Building Code and Town of Chatham Local Building Code.

The enclosure dimensions and location on the bascule pier deck are critical to the intended function. The enclosure is mounted to a fixed portion of the bascule pier timber deck and immediately adjacent to a removable portion of the timber deck. The dimensions of the enclosure shall not be adjusted such that the enclosure interferes with or prevents the removal and placement of the removable portion of the bascule pier deck.

Coordinate all electrical work within the enclosure with the electrical work in the bascule pier to produce neat and organized routing of electrical conduits with minimal penetrations through the timber enclosure and fixed bascule pier deck.

ADDENDUM NO. 2, February 28, 2014**ITEM 995.01 (Continued)**

Enclosure shall be constructed on the sloped bascule pier deck with the enclosure floor level and at the specified elevation using the galvanized steel show assemblies shown in the Plans.

Wood Products: Wood for enclosure framing shall conform to the requirements of Section M9.05.1 unless otherwise specified herein or in the Plans. All timber framing members, boards, fascia and trim shall be Pressure Treated Southern Yellow Pine Select Structural Timber. All timber framing members shall be surfaced four sides (S4S).

Timber shall be treated with ACQ to a minimum retention of 0.4 lbs/ft³ in accordance with AWWA U1 unless noted otherwise.

Plywood shall be APA Pressure Treated Marine Grade Category B-B. OSB shall not be used.

Shingle Roofing shall consist of Preservative-Treated No. 1 Grade – 16 x 5/2 Red Cedar Shingle with 30 lbs felt underlayment, starter, and full interlayment. Place single coursed with double lower starting course. Offset outer course 1/2" lower than inner course and project a minimum of 1-1/2" beyond fascia trim and 1" beyond gable end fascia trim as a drip course. Use factory-assembled ridge cap shingles of same grade and roof exposure as roof shingles with approved copper roof flashing. Flashing shall extend not less than 10" under upper shingle course.

Shingle Wall Siding shall consist of Preservative-Treated No. 1 Grade – 16 x 5/2 Red Cedar Shingle with 30 lbs felt underlayment all sides. Place single coursed with double lower starting course. Offset outer course 1/2" lower than inner course as a drip course.

Preservative treatments for shingles shall be EPA registered.

Apply shingles with 1/8" to 1/4" keyway space between shingles. Offset side joints in any one course a minimum of 1-1/2" over joints in adjacent courses. Use straight edge nailed lightly to the wall with edge at the butt line to maintain straight and level courses.

ADDENDUM NO. 2, February 28, 2014**ITEM 995.01 (Continued)**

Roofing and siding shall be applied directly to the plywood sheathing along with the underlayment and interlayment felt. Nails for plywood sheathing shall be flush without protuberances before roofing and siding installation.

Felt underlayment shall conform to the requirements of ASTM D226 Type 30 or ASTM D4869. Secure underlayment with Type 316 stainless steel staples. Interlay felt with roof shingles to create a baffle. Use minimum of 36" wide strip of underlayment felt at roof eave line. Use minimum of 18" wide interlayment strips overlapped with top portion of shingles and extend on to roof sheathing so that bottom edge of the felt is positioned at a distance above shingle butt equal to twice the weather exposure per the local building code. Overlap siding underlayment felt with 2" minimum horizontal laps and 6" minimum vertical laps, and wrap corners a minimum of 4" in each direction.

Shingles shall be nailed using 3d Type 316 stainless steel "box" nails. Staples shall not be used. Nail size and lengths shall be per shingle manufacturer's recommendations and shall be of sufficient length to penetrate through the plywood sheathing with the nail driven flush with the shingle. Nails shall be concealed approximately 1" above butt line of the succeeding course. Use a minimum of two nails in each shingle a minimum of 3/4" from edge for shingles up to 10" in width and use two additional nails approximately 1" apart near center for shingles wider than 10".

Metal Joist Hangers and Connectors: Joist hangers and connectors shall be Type 316 stainless steel and shall be sized per International Building Code (IBC) and manufacturer's recommendations.

Paint: Wood for the enclosure barn doors and other enclosure components denoted in the Plans as 'Trim' shall be painted with an approved alkyd, oil-based primer and two coats of high-quality semi-gloss exterior acrylic latex top coat paint. Apply to both sides of barn doors. Apply paint a minimum of three months after pressure treatment of the wood.

Use paint materials that are compatible with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

^2^ ADDENDUM NO. 2, February 28, 2014**ITEM 995.01 (Continued)**

Store paint materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg. F. Maintain storage containers in a clean condition, free of foreign materials and residue.

Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition.

Apply paint only when temperatures of surfaces to be painted and the surrounding air are between 45 deg F and 90 deg F or as recommended by the sealant manufacturer. Do not apply paint in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; when temperatures are less than 5 deg F above the dew point; or to damp or wet surfaces.

Apply paint at manufacturer's recommended spreading rate. Use applicators and techniques best suited for substrate and type of material being applied. Apply paint evenly with brush, roller, or spray. Thoroughly apply at edges and ends of boards. Brush out excess paint that collects.

Door Hardware: Mount barn doors to the enclosure as shown in the Plans using Type 316 stainless steel, 3" x 4" x 3/8" size, 150 lbs capacity, heavy-duty, surface mounted hinges with 3/8" diameter pin. Use three hinges per door. Mount each hinge using four 3/8" diameter lag screws. Secure barn doors to the enclosure at the top and bottom and in the closed position as shown in the Plans with Type 316 stainless steel 7/16" diameter barrel slide bolts and 3/4" extension. Use two slide bolt assemblies per door. Use single 6"x2"x1/8" Type 316 stainless steel padlock hasp with rotating padlock eye as shown in the Plans to permit locking of barn doors in closed position.

Fasteners: Fasteners including nails for the timber construction shall be Type 316 stainless steel.

^2^ SCHEDULE OF BASIS FOR PARTIAL PAYMENT

Within ten (10) days after the date of the Notice to Proceed, the Contractor shall submit, in duplicate, for the approval of the Engineer, a schedule of unit prices for the major components of the bridge structure as listed below. The bridge structure Lump Sum breakdown quantities provided in the proposal form are estimated and not guaranteed. The total of all partial payments to the Contractor shall equal the Lump Sum contract price regardless of the accuracy of the quantities furnished by the Engineer for the individual bridge components. The cost of labor and materials for any Item not listed but required to complete the work including any necessary temporary operation of the new moveable bridge span during construction and all work associated with providing a temporary navigation channel while the existing channel is closed for construction shall be considered incidental to Item 995.01 and no further compensation will be allowed.

^2^ ADDENDUM NO. 2, February 28, 2014**^1^ ADDENDUM NO.1, February 7, 2014****ITEM 995.01 (Continued)**

	<u>Components</u>	<u>Qty</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
	Test and Balance Movable Span	1	LS	\$	\$
^1^	Electrical Shed	1	LS	\$	\$
^2^	4000 psi – 1 ½” – 565 Cement Concrete	^2^ 17	CY	\$	\$
^2^	4000 psi – 3/4” – 610 Cement Concrete	^2^ 641	CY	\$	\$
^2^	4000 psi – 3/4” – 585 HP Cement Concrete	^2^ 1,263	CY	\$	\$
	Steel Reinforcement for Structures	7,298	LB	\$	\$
	Steel Reinforcement for Structures–Epoxy Coated	175,501	LB	\$	\$
	Elastomeric Bearing Pad	160	EA	\$	\$
	Treated Timber	44	MBM	\$	\$
	Plastic Marine Lumber	15	MBM	\$	\$
	Glue Laminated Timber	91	MBM	\$	\$
	Structural Steel	160,600	LB	\$	\$
	Steel Ballast For Counterweight	92,352	LB	\$	\$
	Balance Blocks For Counterweight	10,780	LB	\$	\$
	Membrane Waterproofing	146	SY	\$	\$
	Bituminous Damp proofing	444	SY	\$	\$
	Bascule Leaf Open Steel Grid Deck	603	SF	\$	\$
	Stone Veneer	3,331	SF	\$	\$
	Concrete Stain	1,800	SF	\$	\$
	Anti-Graffiti Protection - Concrete	1,610	SF	\$	\$
	Anti-Graffiti Protection - Stone	2,080	SF	\$	\$
^1^	Coring And Grouting Anchor Bolts	52	EA	\$	\$
Total Lump Sum Bid Price of Item 995.01=					\$

The above schedule applies only to Bridge Structure No. C-07-001 (9YM). Payment for similar materials and construction at locations other than at this bridge structure shall not be included under this Item.

END OF DOCUMENT