



**US Army Corps
of Engineers®**
New England District
696 Virginia Road
Concord, MA 01742-2751

PUBLIC NOTICE

Comment Period Begins: March 16, 2021

Comment Period Ends: April 15, 2021

File Number: NAE-2018-00339

In Reply Refer To: Alan R. Anacheke-Nasemann

Phone: (978) 318-8214

E-mail: alan.r.anacheke-nasemann@usace.army.mil

The District Engineer has received a permit application to conduct work in waters of the United States from the Massachusetts Bay Transportation Authority (MBTA), 10 Park Plaza, Boston, MA 02116. This work is proposed in the Saugus River at the MBTA Railroad Bridge near Route 1A, Saugus and Lynn, Massachusetts. The site coordinates are: Latitude 42.44717; Longitude -70.97203.

MBTA is proposing to replace the Saugus Drawbridge that spans the Saugus River between the City of Lynn and the Town of Saugus (Site). The existing drawbridge, Bridge No. S-05-40 (ASE), is located approximately 1 mile upstream from Lynn Harbor and carries two tracks of the Eastern Route Main Line on which the Newburyport/Rockport Line of the MBTA Commuter Rail travels (Figure 1). The structure consists of a through-girder bascule draw span. The total bridge span is a link of approximately 487 feet. The bridge was built in 1911. In 1987, major bridge rehabilitation work included replacement of the mechanical and electrical drive and major repairs, and in 2012, emergency rehabilitation was completed on a peer.

Approximately 0.51 acre of saltmarsh wetlands and approximately 0.87 acre of mudflat are proposed to be permanently filled. An additional 0.40 acre of wetlands and 1.69 acres of mud flat would be temporarily impacted; these areas would be restored upon completion of this project. In addition, approximately 0.74 acre of land underwater is proposed for the new bridge abutments, parallel to the existing bridge. When the bridge is complete, the old abutments would remain and serve as retaining walls to maintain structural integrity of the new embankment. Only the old bridge piers will be removed.

The new bridge is proposed to be located directly adjacent, downstream (East), and parallel to, the existing bridge alignment. Elements to be replaced include foundations, piers, approach span superstructure, the movable bridge, bridge mechanical and electrical systems, the control house, track, deck, peer protective system, and necessary signal facilities. Approach work will be required and impact the right of way, utilities, grades, track, jurisdictional environmental areas, and signals are anticipated. The anticipated service life of the new bridge is approximately 75 years. Construction of the Project will be achieved using barges and temporary pile supported trestles for equipment and material staging and access.

The work is shown on the enclosed plans entitled "MASSACHUSETTS BAY TRANSPORTATION AUTHORITY REPLACEMENT OF THE SAUGUS DRAW BRIDGE," on 16 sheets, and dated "December 21, 2020," and 2 additional drawings, dated "3/4/2021." The existing Federal Channel would be widened from 40' to its original size of 50', and the length of the channel would be extended downstream.

As mitigation for the potential wetland losses, the applicant has proposed saltmarsh restoration in areas 11 and 21 of Massachusetts Department of Conservation and Recreation property, located in Saugus, MA; Latitude: 42.441943; Longitude: -70.990392. Specifically, the applicant proposes to restore 27.4 acres of wetlands within

the existing but abandoned I-95 “highway to nowhere” project, which was constructed in the late 1980s, but then abandoned. The site has known wetland/muck soils below this abandoned fill.

The applicant has looked at various alternatives to impacts as proposed. One alternative would’ s completely shut down the tracks for a minimum of 3 years while MBTA constructs new tracks along the same alignment. MBTA states that this is not practicable because it would totally shut down the commuter railroad to Salem, Gloucester, Rockport and Newberryport, among others, while at the same time, causing many more people to commute, resulting in serious delays, and parking problems in the City of Boston. A second option would shut down only one track at a time allowing the other to keep running while the closed track is rebuilt; however, MBTA argues that given the amount of traffic on the train line would cause serious delays and greatly reduce the amount of traffic going to Newberryport/Rockport. Additionally, the close proximity of the existing tracks makes railroad worker safety extremely hazardous. Accordingly, MBTA states that the filling of wetlands and temporary impacts is the minimum necessary to complete this project in a way that makes MBTA remain profitable.

AUTHORITY

Permits are required pursuant to:

- ☒ Section 10 of the Rivers and Harbors Act of 1899
- ☒ Section 404 of the Clean Water Act
- ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act.
- ☒ Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408)

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers, New England District (Corps), is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. The Corps will consider all comments received to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Where the activity involves the discharge of dredged or fill material into waters of the United States or the transportation of dredged material for the purpose of disposing it in ocean waters, the evaluation of the impact of the activity in the public interest will also include application of the guidelines promulgated by the Administrator, U.S Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act of 1972, as amended.

The activities proposed herein will also require permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project known as Saugus River Federal Navigation Project (FNP). The proposed alteration involves replacement of the Saugus River Drawbridge. The proposed alteration is located in the Saugus River, Saugus and Lynn, MA. A permit pursuant to Section 10/404/103 shall not be granted until the Section 408 permission is issued. Through this public notice we are soliciting information necessary to inform the Corps evaluation and review.

ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). Essential Fish Habitat describes waters and substrate necessary for fish for spawning, breeding, feeding or growth to maturity.

This project will impact 3.5 acres of EFH. This habitat consists of some wetlands (0.9 acre) and mud flat area (2.6 acres). Loss of this habitat may adversely affect species that use these waters and substrate. However, the District Engineer has made a preliminary determination that the site-specific adverse effect will not be substantial. Further consultation with the National Marine Fisheries Service regarding EFH conservation recommendations is being conducted and will be concluded prior to the final decision.

NATIONAL HISTORIC PRESERVATION ACT

Based on his initial review, the District Engineer has determined that little likelihood exists for the proposed work to impinge upon properties with cultural or Native American significance, or listed in, or eligible for listing in, the National Register of Historic Places. Therefore, no further consideration of the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, is necessary. This determination is based upon one or more of the following:

- a. The permit area has been extensively modified by previous work.
- b. The permit area has been recently created.
- c. The proposed activity is of limited nature and scope.
- d. Review of the latest published version of the National Register shows that no presence of registered properties listed as being eligible for inclusion therein are in the permit area or general vicinity.
- e. Coordination with the State Historic Preservation Officer and/or Tribal Historic Preservation Officer(s).

ENDANGERED SPECIES CONSULTATION

The Corps has reviewed the application for the potential impact on Federally-listed threatened or endangered species and their designated critical habitat pursuant to section 7 of the Endangered Species Act as amended. It is our preliminary determination that the proposed activity for which authorization is being sought is designed, situated or will be operated/used in such a manner that it is not likely to adversely affect a listed species or their critical habitat. We are coordinating with the National Marine Fisheries Service and/or U.S. Fish and Wildlife Service on listed species under their jurisdiction and the ESA consultation will be concluded prior to the final decision.

OTHER GOVERNMENT AUTHORIZATIONS

The states of Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island have approved Coastal Zone Management Programs. Where applicable, the applicant states that any proposed activity will comply with and will be conducted in a manner that is consistent with the approved Coastal Zone Management Program. By this Public Notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

The following authorizations have been applied for, or have been, or will be obtained:

- (X) Permit, license or assent from State.
- () Permit from local wetland agency or conservation commission.
- (X) Water Quality Certification in accordance with Section 401 of the Clean Water Act.

COMMENTS

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you have any questions, please contact Alan R. Anacheke-Nasemann at (978) 318-8214, (800) 343-4789 or (800) 362-4367, if calling from within Massachusetts.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.

Paul M. Maniccia

Paul M. Maniccia
Chief, Permits and Enforcement Branch
Regulatory Division

CENAE-R
FILE NO. NAE-2018-00339

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here () and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____
ADDRESS: _____
PHONE: _____



0 6,000 12,000 24,000 Feet
1 inch = 2,000 feet

FIGURE 1 - USGS MAP
SAUGUS DRAWBRIDGE REPLACEMENT
SAUGUS, ESSEX COUNTY, MASSACHUSETTS



Prepared for:



Prepared by:

Jacobs



0 1,000 2,000 4,000 Feet
1 inch = 333 feet

FIGURE 2 - AERIAL MAP
SAUGUS DRAWBRIDGE REPLACEMENT
SAUGUS, ESSEX COUNTY, MASSACHUSETTS



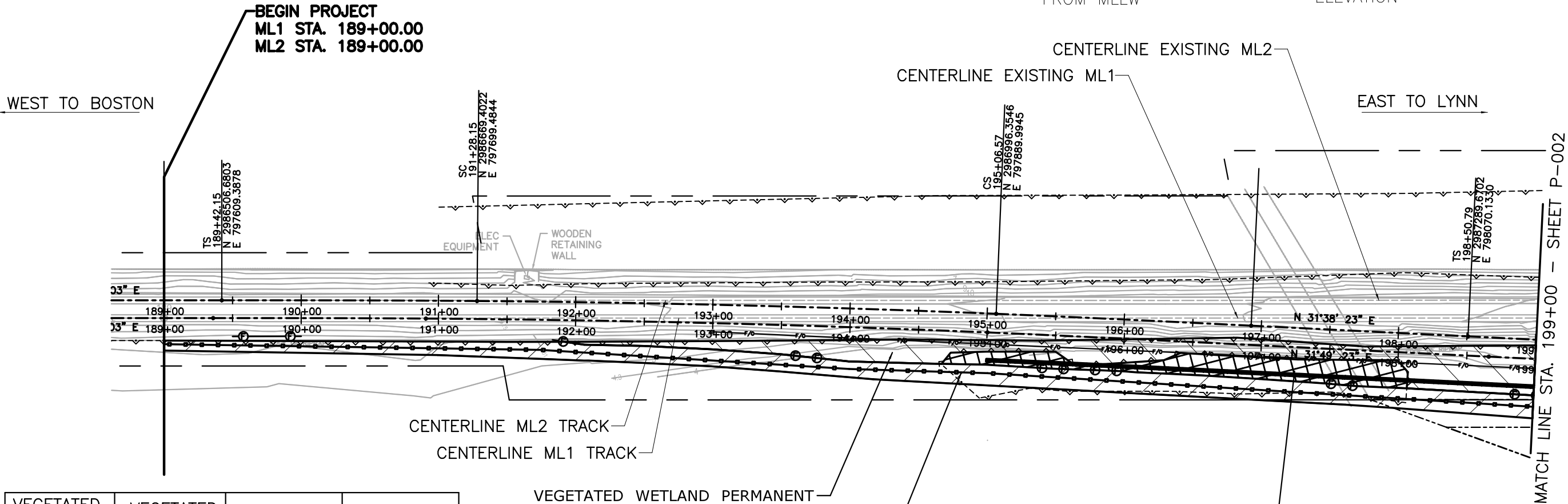
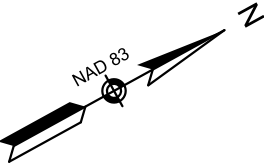
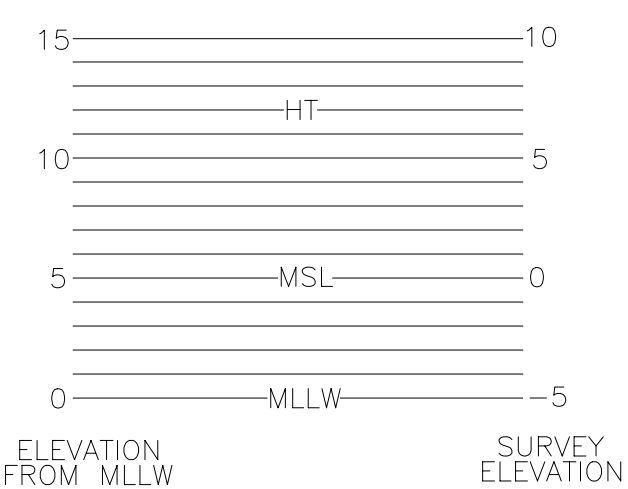
Prepared for:



Prepared by:

Jacobs

DATUM	EL.	DESCRIPTION
HT	12.00	HIGH TIDE
MHHW	9.94	MEAN HIGHER-HIGH WATER
MHW	9.50	MEAN HIGH WATER
MTL	4.92	MEAN TIDE LEVEL
MSL	5.00	MEAN SEA LEVEL (NAVD 88 0 EL.)
DTL	4.97	MEAN DIURNAL TIDE LEVEL
MLW	0.34	MEAN LOW WATER
MLLW	0.00	MEAN LOWER-LOW WATER



VEGETATED WETLAND TEMPORARY IMPACT S.F.	VEGETATED WETLAND PERMANENT IMPACT S.F.	LAND UNDER WATER PERMANENT IMPACT S.F.	LAND UNDER WATER TEMPORARY IMPACT S.F.
12705	9812	4256	0

VEGETATED WETLAND PERMANENT IMPACT = 9812 SF

VEGETATED WETLAND TEMPORARY IMPACT = 12705 SF

LAND UNDER WATER PERMANENT IMPACT = 4256 SF

LEGEND

- TEMPORARY IMPACT
- VEGETATED WETLAND PERMANENT IMPACT
- LAND UNDER OCEAN PERMANENT IMPACT
- DELINEATED BOUNDARY



PERMIT PLANS
NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	BY	CHKD	APP.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

31 MILK STREET, SUITE 400, BOSTON, MA 02109

APPROVED BY: [Signature] DATE: [Blank]

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
APPROVED BY: [Signature] DATE: [Blank]

SCALE: [Blank] DATE: 10/02/2020

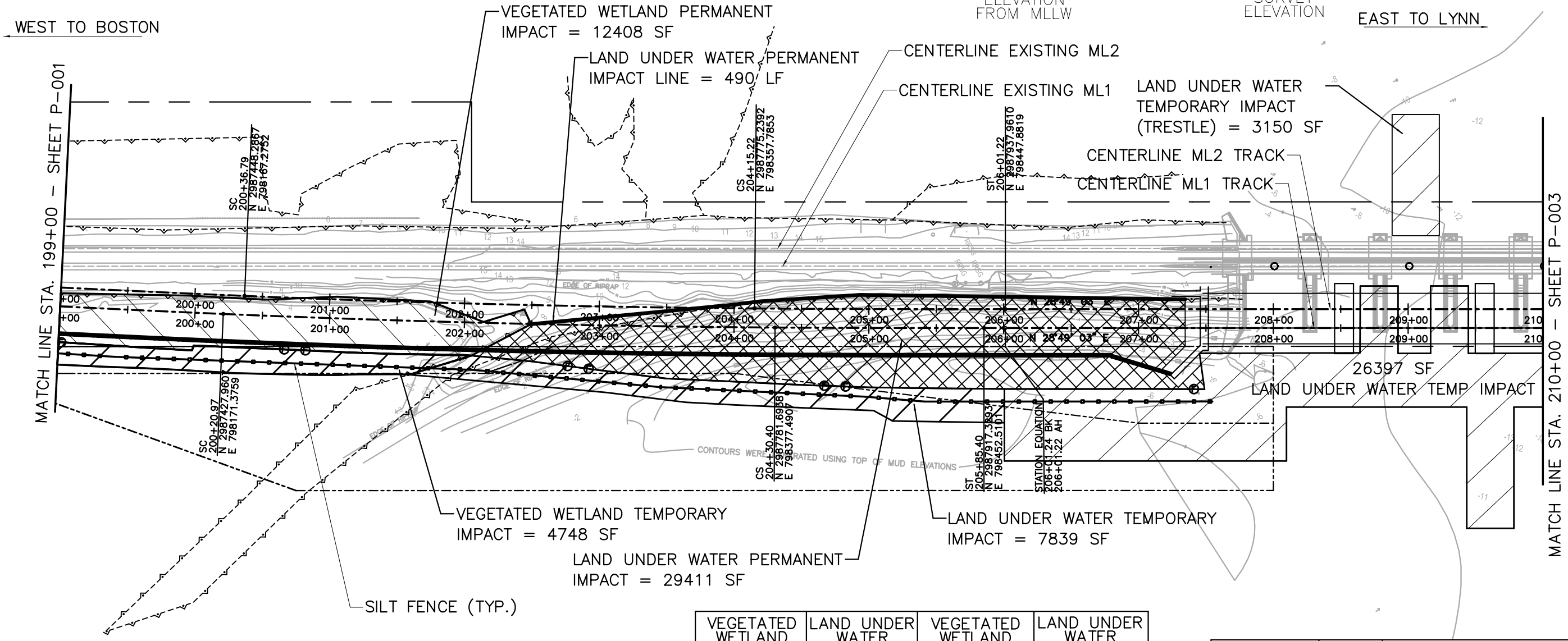
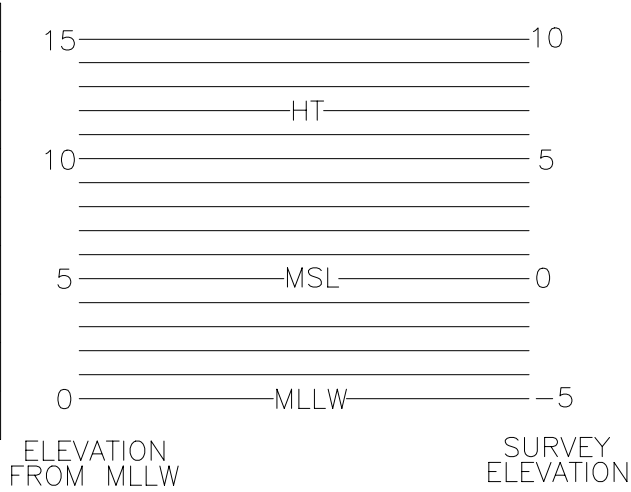
PROJECT MANAGER: [Blank] DATE: [Blank]

DRAWN BY: AJM DESIGN BY: RG CHECK BY: CV

PLAN NO. [Blank] SHEET: P-001

ISSUE [Blank]

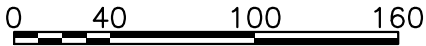
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MHW	9.50	MEAN HIGH WATER
MTL	4.92	MEAN TIDE LEVEL
MSL	5.00	MEAN SEA LEVEL (NAVD 88 0 EL.)
DTL	4.97	MEAN DIURNAL TIDE LEVEL
MLW	0.34	MEAN LOW WATER
MLLW	0.00	MEAN LOWER-LOW WATER



LEGEND

- TEMPORARY IMPACT
- VEGETATED WETLAND PERMANENT IMPACT
- LAND UNDER WATER PERMANENT IMPACT
- DELINEATED BOUNDARY

VEGETATED WETLAND TEMPORARY IMPACT S.F.	LAND UNDER WATER TEMPORARY IMPACT S.F.	VEGETATED WETLAND PERMANENT IMPACT S.F.	LAND UNDER WATER PERMANENT IMPACT S.F.
4748	34236	12408	29411



PERMIT PLANS
NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	BY	CHKD	APP.

T

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

SITE CIVIL TRACK PLANS
STA. 199+00 TO STA. 210+00

Hardesty & Hanover
31 MILK STREET, SUITE 400, BOSTON, MA 02109

APPROVED BY:

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

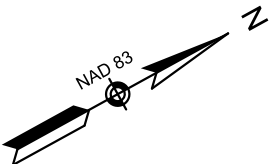
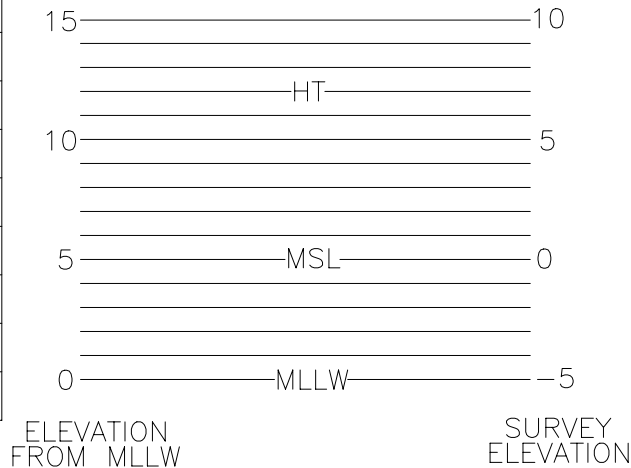
APPROVED BY:

SCALE: DATE: 10/02/2020

DRAWN BY: AJM DESIGN BY: RG CHECK BY: CV

PLAN NO. SHEET: P-002

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MHW	9.50	MEAN HIGH WATER
MTL	4.92	MEAN TIDE LEVEL
MSL	5.00	MEAN SEA LEVEL (NAVD 88 0 EL.)
DTL	4.97	MEAN DIURNAL TIDE LEVEL
MLW	0.34	MEAN LOW WATER
MLLW	0.00	MEAN LOWER-LOW WATER



WEST TO BOSTON

EAST TO LYNN

MATCH LINE STA. 210+00 - SHEET P-002

LAND UNDER WATER
TEMPORARY IMPACT
(TRESTLE) = 3150 SF

LAND UNDER WATER
TEMPORARY IMPACT
(TRESTLE) = 3150 SF

EXISTING CONTROL HOUSE

PROPOSED CONTROL AND SIGNAL HOUSE

SILT FENCE (TYP.)

CENTERLINE
EXISTING ML2

CENTERLINE
EXISTING ML1

CENTERLINE
ML2 TRACK
CENTERLINE
ML1 TRACK

LAND UNDER WATER
TEMPORARY IMPACT
(TRESTLE) = 3391 SF

LAND UNDER WATER PERMANENT
IMPACT = 1474 SF

LAND UNDER WATER PERMANENT
IMPACT = 3100 SF

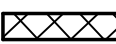
LAND UNDER WATER TEMPORARY
IMPACT = 3764 SF

LAND UNDER WATER TEMPORARY
IMPACT LINE = 70 LF

LEGEND



TEMPORARY IMPACT



LAND UNDER WATER PERMANENT IMPACT



DELINEATED BOUNDARY

LAND UNDER WATER TEMPORARY IMPACT S.F.	LAND UNDER WATER PERMANENT IMPACT S.F.
36285	4574

PERMIT PLANS
NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	BY	CHKD	APP.



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

SITE CIVIL TRACK PLANS
STA. 210+00 TO STA. 221+00

Hardesty & Hanover
31 MILK STREET, SUITE 400, BOSTON, MA 02109

APPROVED BY: _____
Project Manager

DATE: 10/02/2020

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY: _____
Project Manager

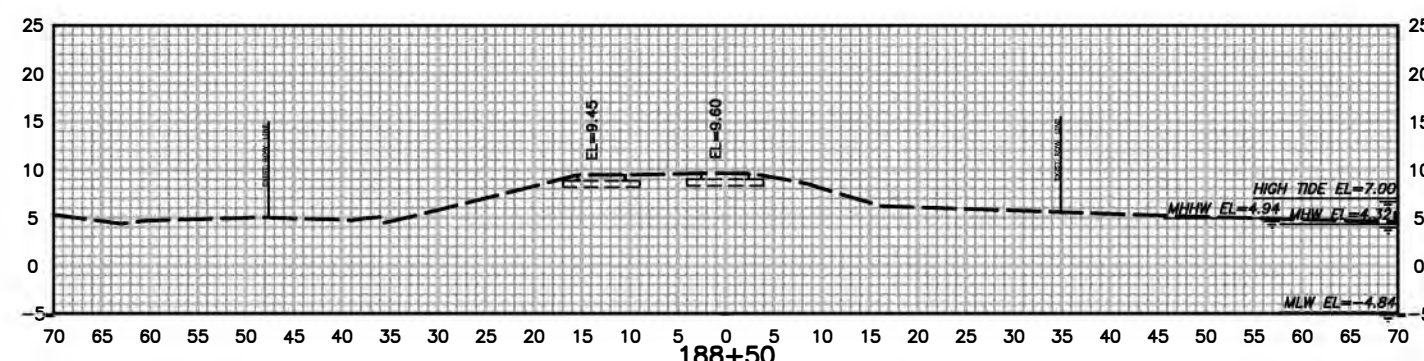
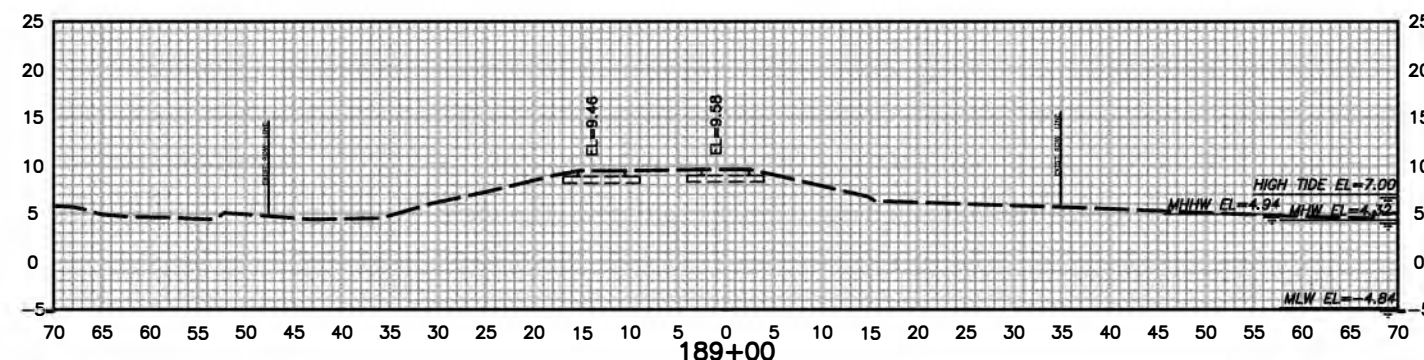
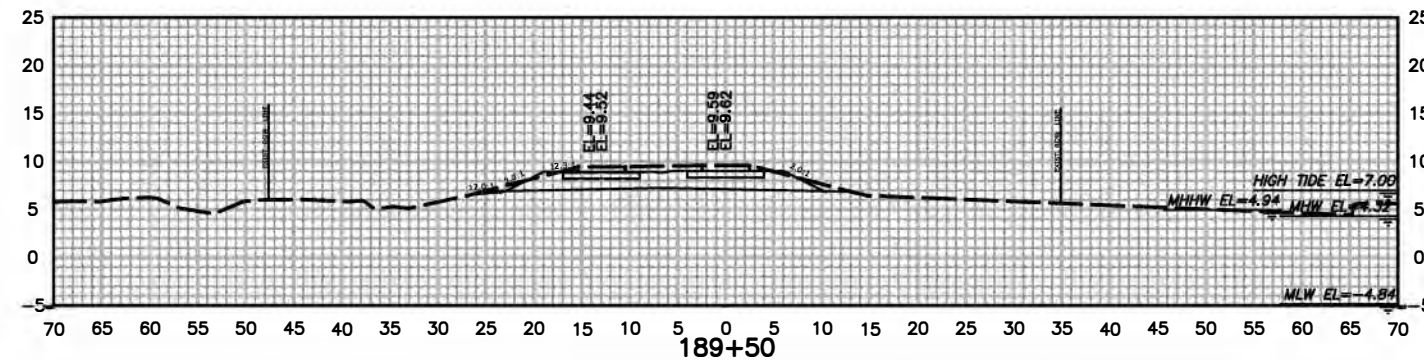
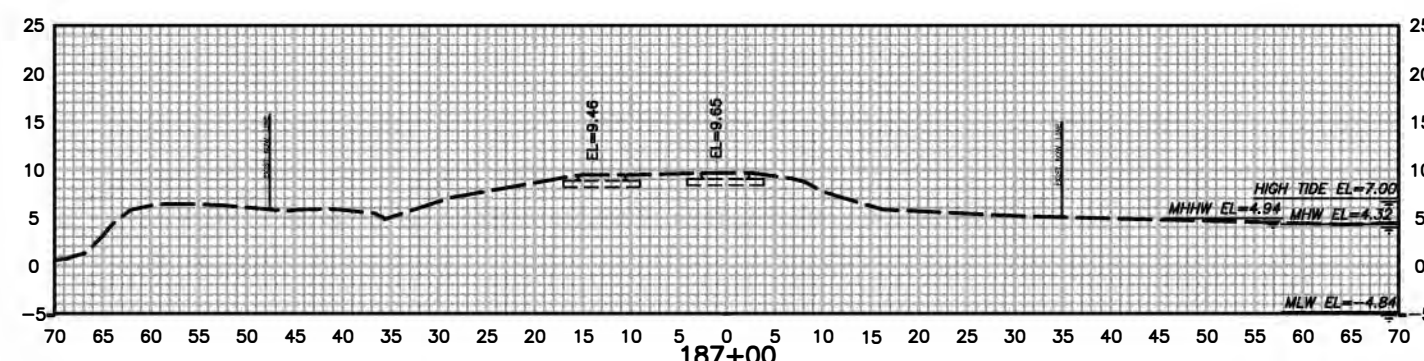
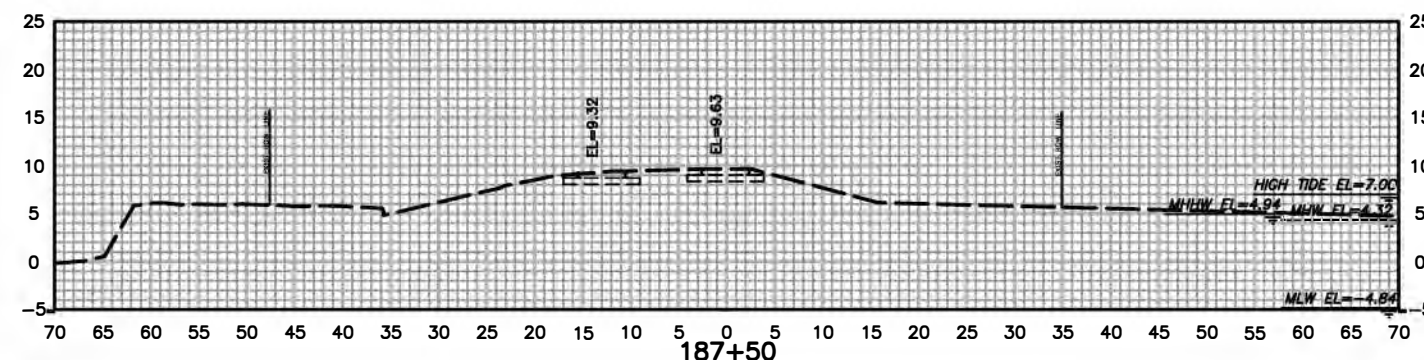
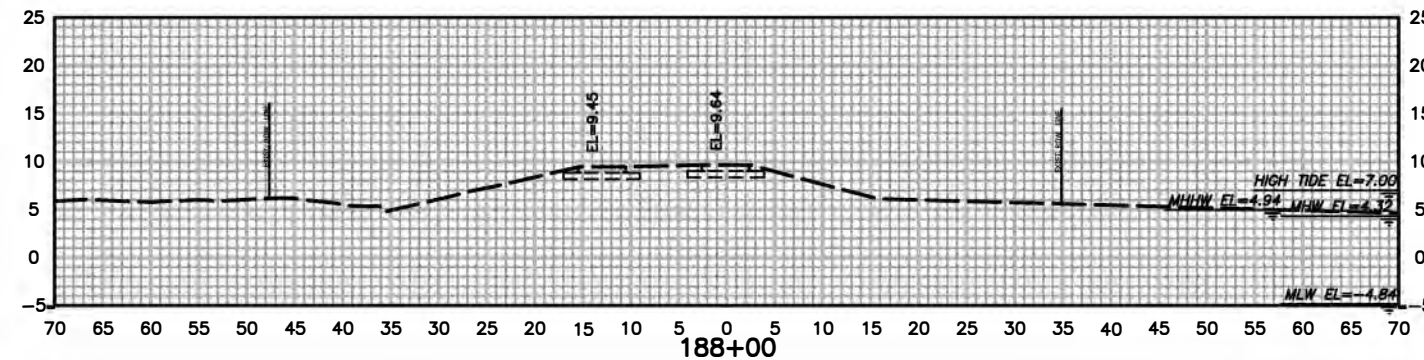
DATE: _____

SCALE: _____
DATE: 10/02/2020

DRAWN BY: AJM
DESIGN BY: RG
CHECK BY: CV

PLAN NO. _____
SHEET: P-003

ISSUE _____

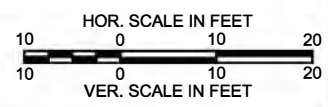


STA. 187+00 TO STA. 189+50

NOTES:

1. SURVEY ELEVATIONS BASED ON NAVD88 ELEVATIONS AND SET TO MEAN SEA LEVEL (MSL).
0' = MSL = 5' ABOVE MLLW
2. ALL ELEVATIONS SHOWN ARE FROM NAVD88.

PERMIT PLANS
NOT FOR CONSTRUCTION

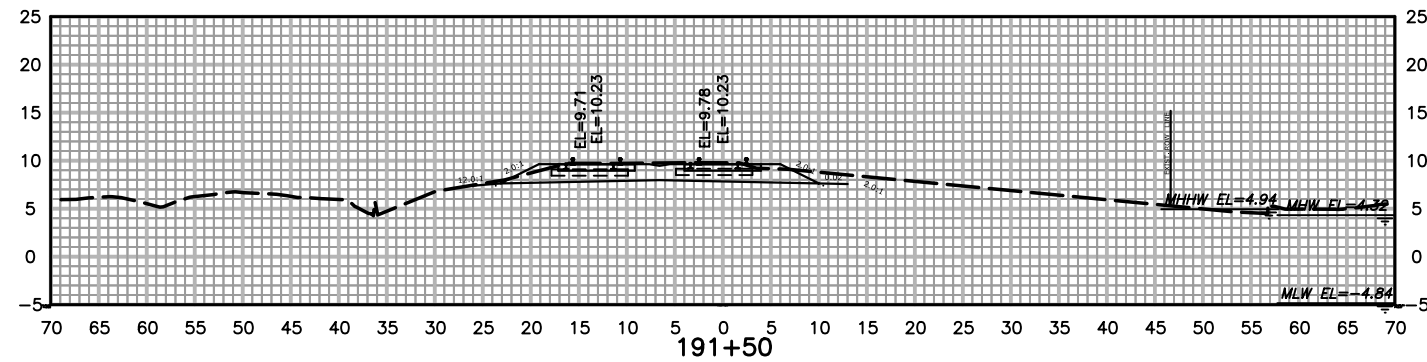
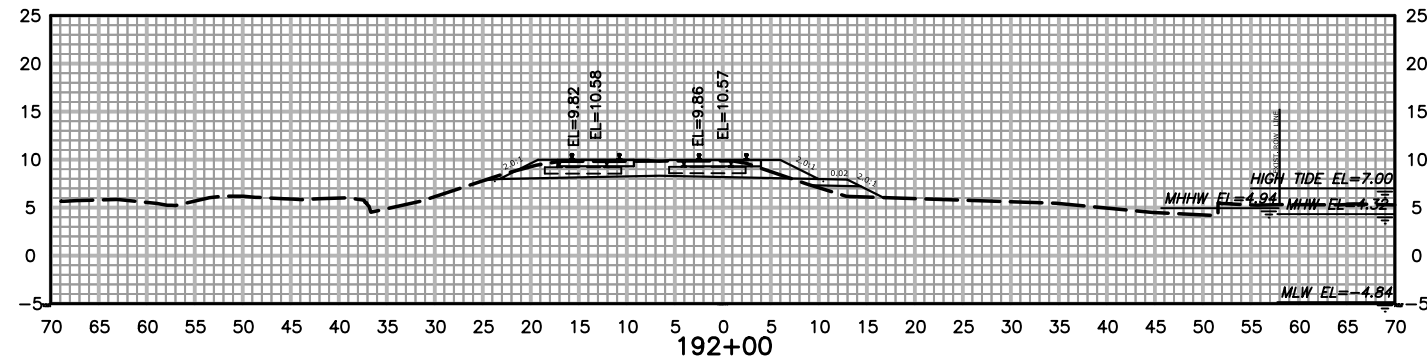
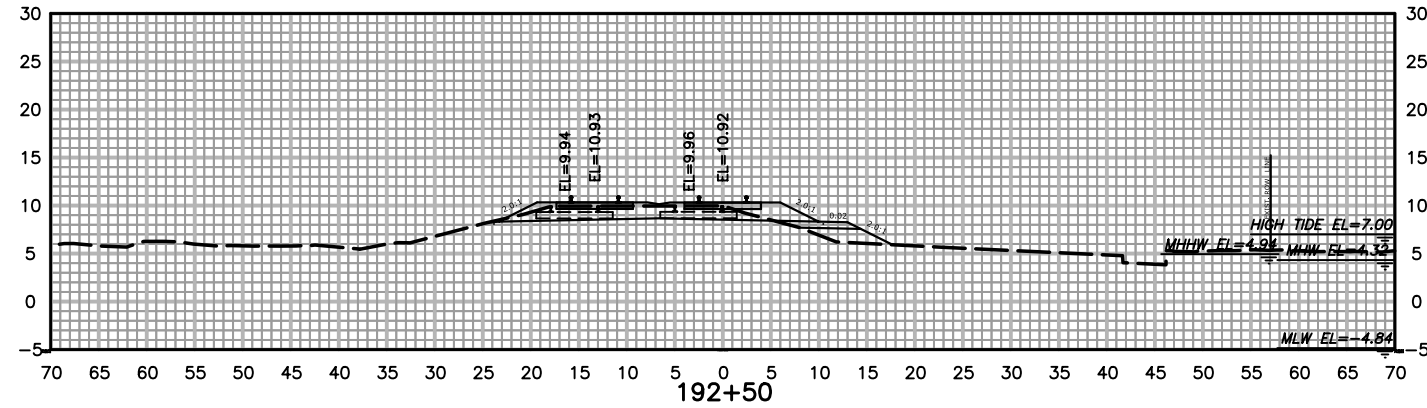
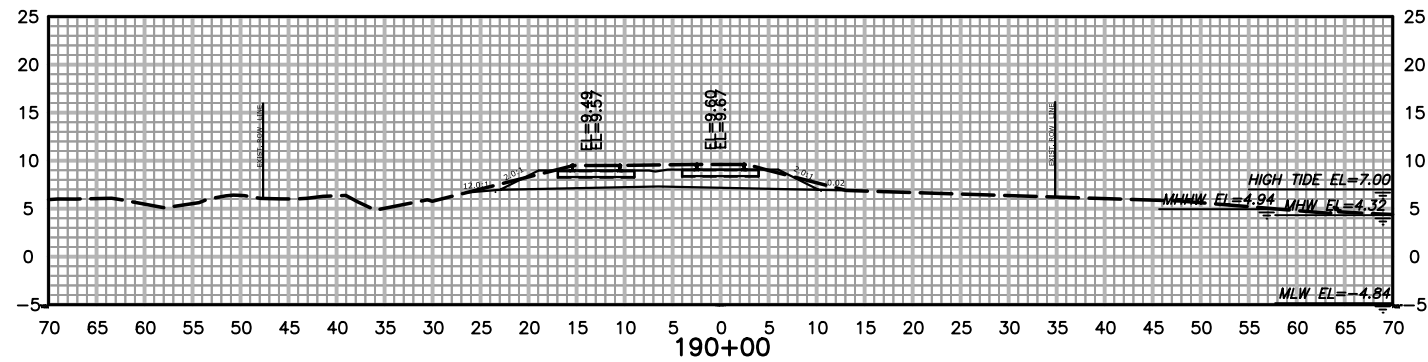
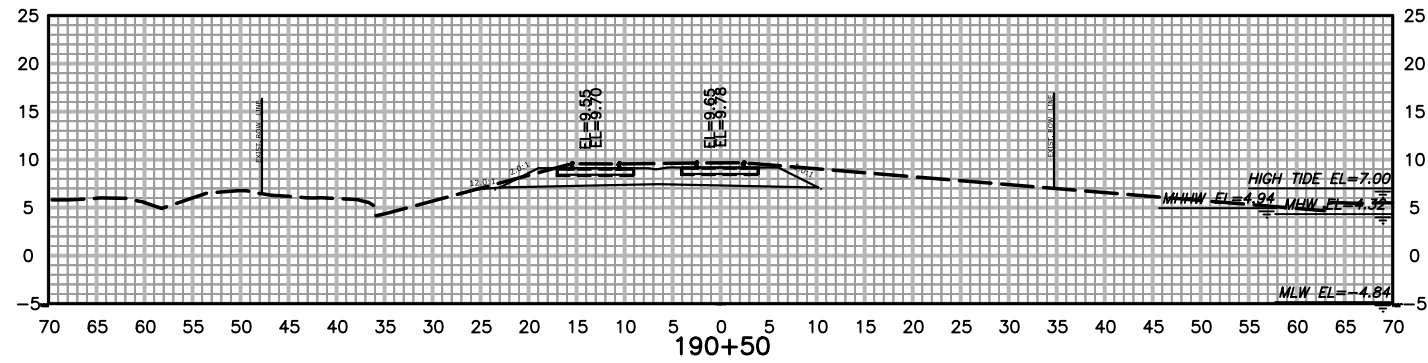
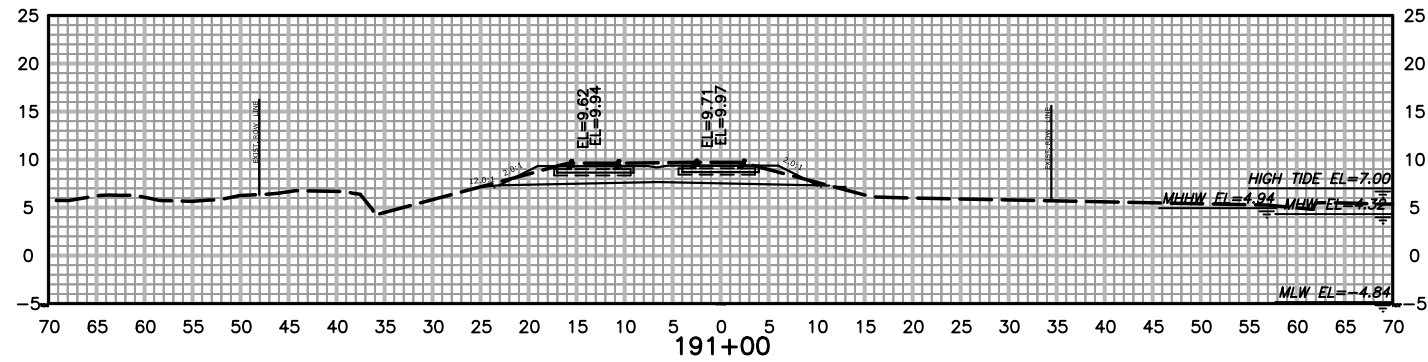


MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS

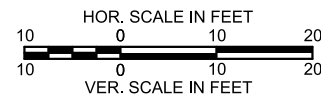
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APPROVED BY:				APPROVED BY:			
Project Manager				Project Manager			
Date				Date			
SCALE:				PLAN NO.			
DATE: 10/05/2020				SHEET: P-004			
DRAWN BY: AJM				CHECK BY: RG			
DESIGN BY: RG				ISSUE			
CHECK BY: CV				DATE			

PLotted: WATER
DRAWING: PLAN



STA. 190+00 TO STA. 192+50

PLotted: 04/15/2020
Drawing: 04/15/2020



PERMIT PLANS

NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	BY	CHK'D	APP.



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS

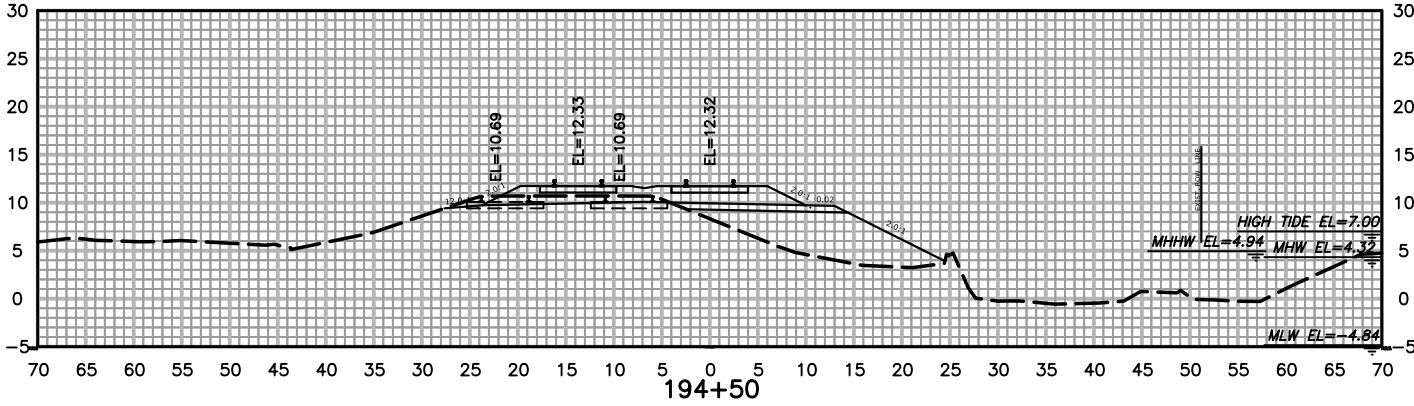
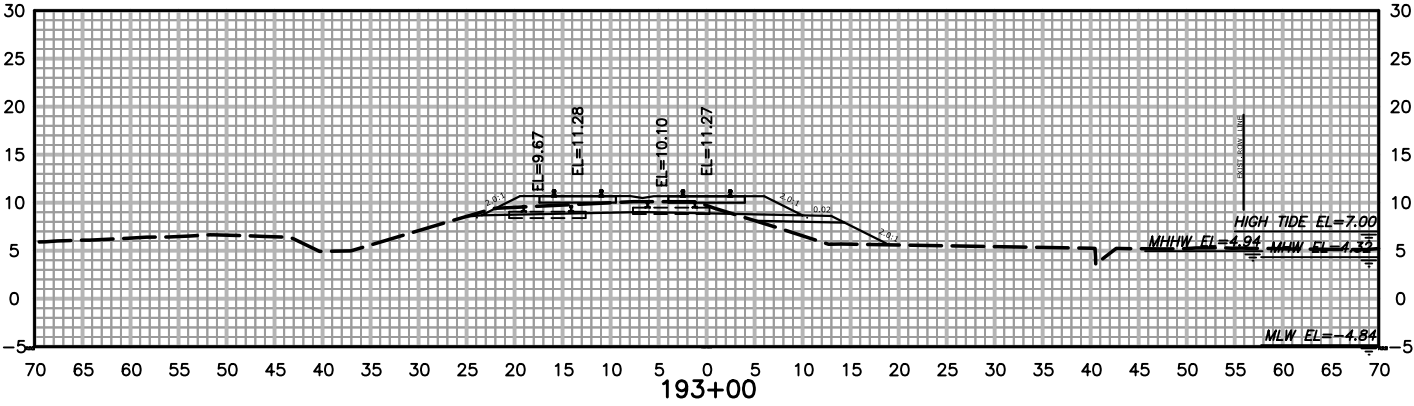
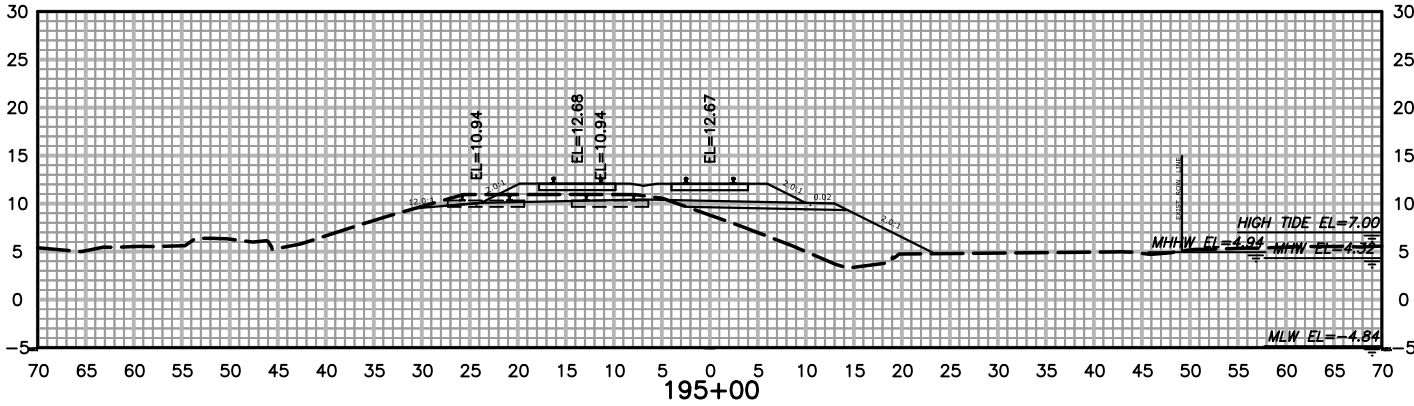
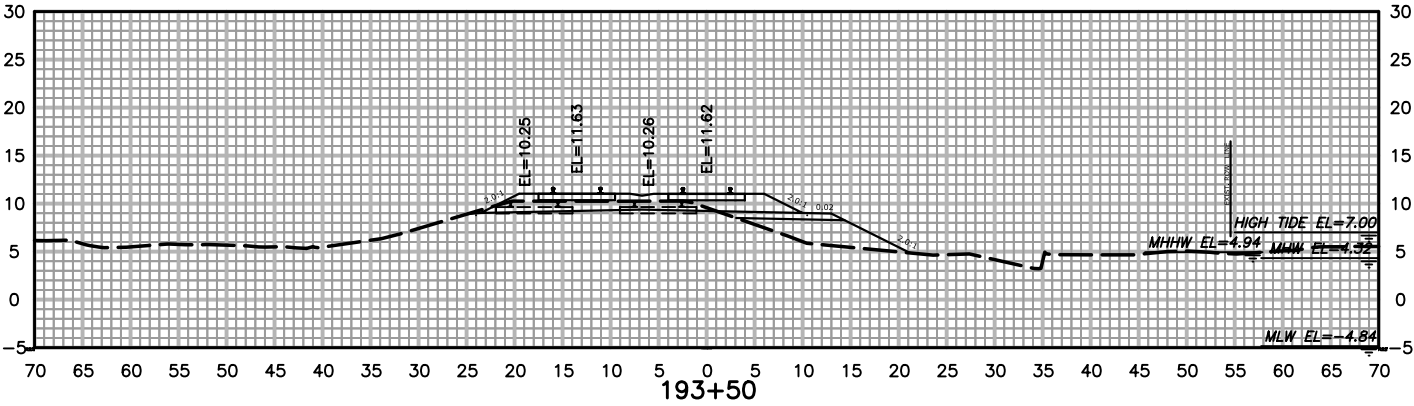
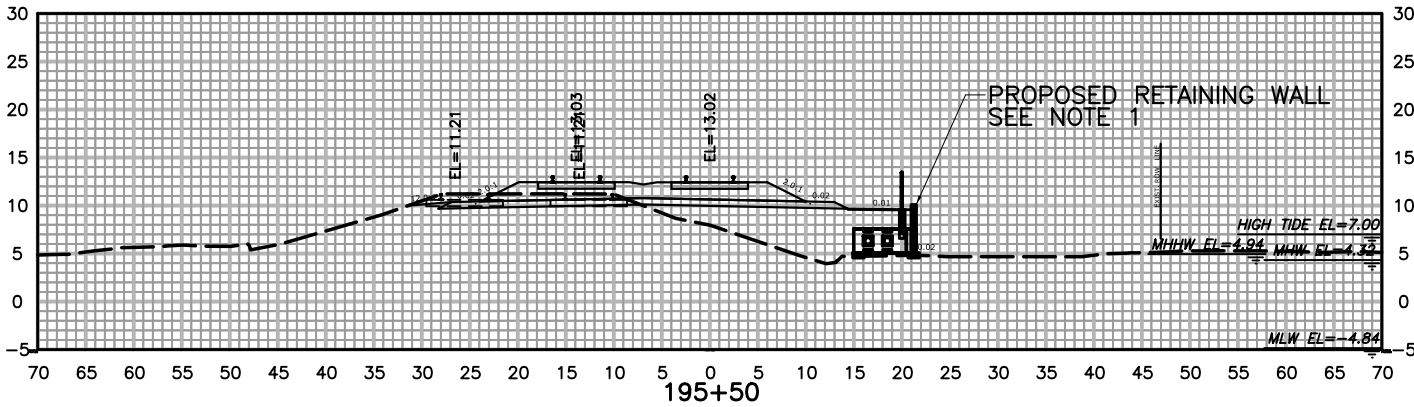
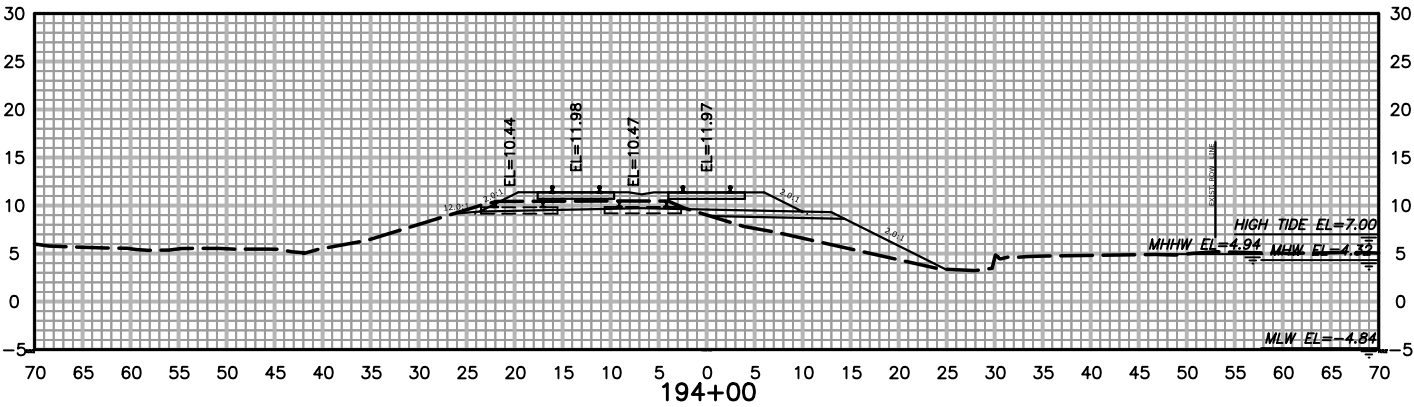
31 MLK STREET, SUITE 405, BOSTON, MA 02109
APPROVED BY: _____
Project Manager _____ Date _____

SCALE:
DATE: 10/05/2020
DRAWN BY: AJM
DESIGN BY: RG
CHECK BY: CV

PLAN NO.
SHEET: P-005

ISSUE

- NOTE:
- 1. HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
 - 2. SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.



STA. 193+00 TO STA. 195+50

PERMIT PLANS
NOT FOR CONSTRUCTION



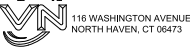
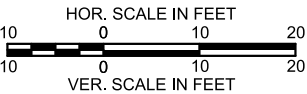
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS



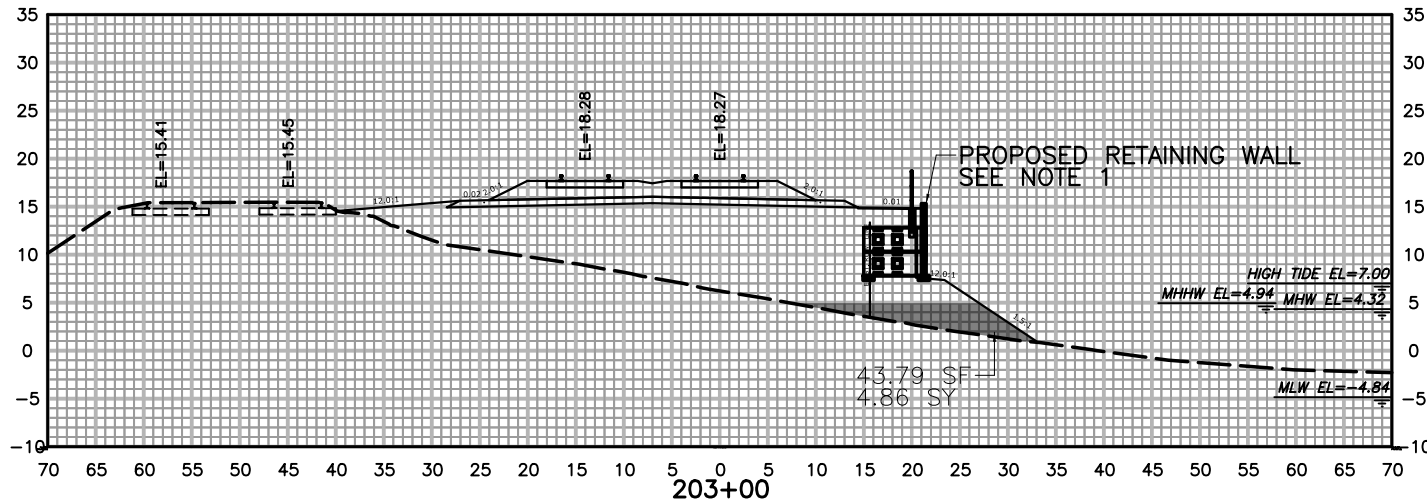
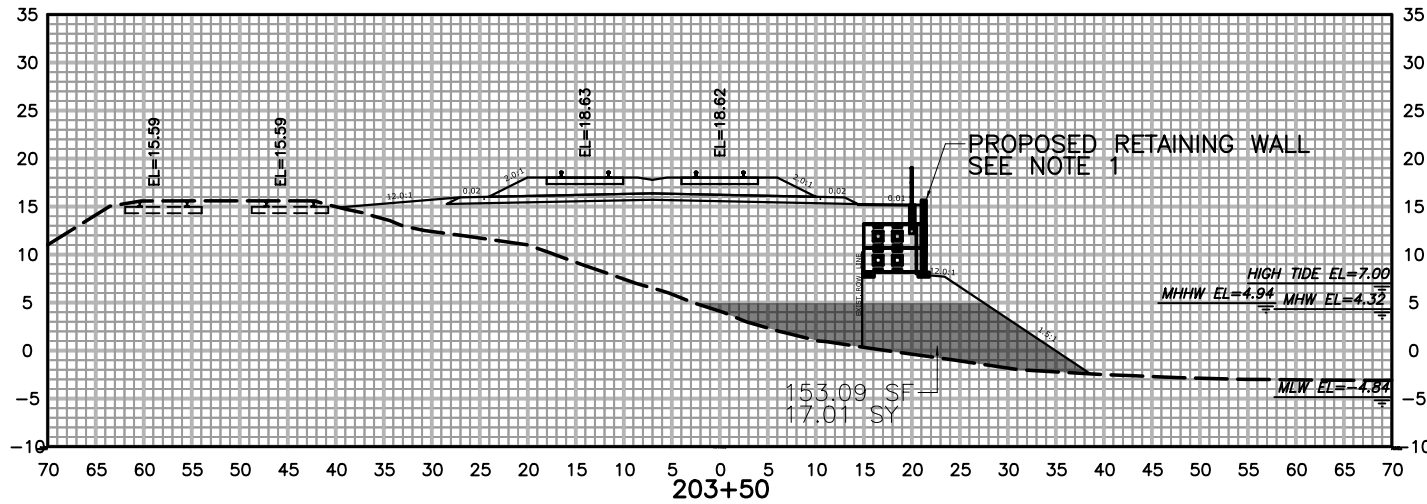
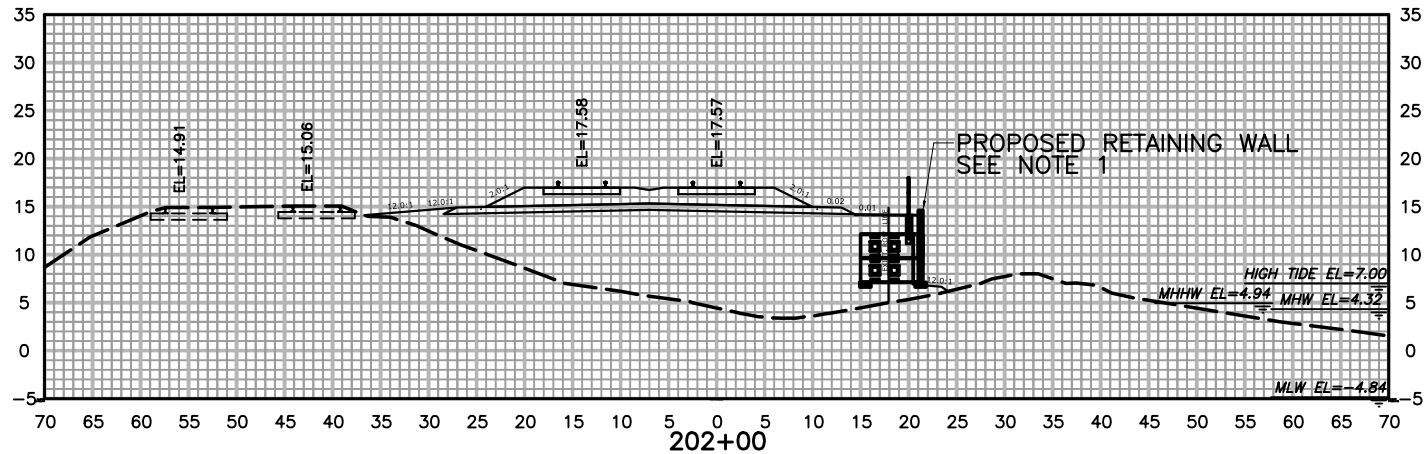
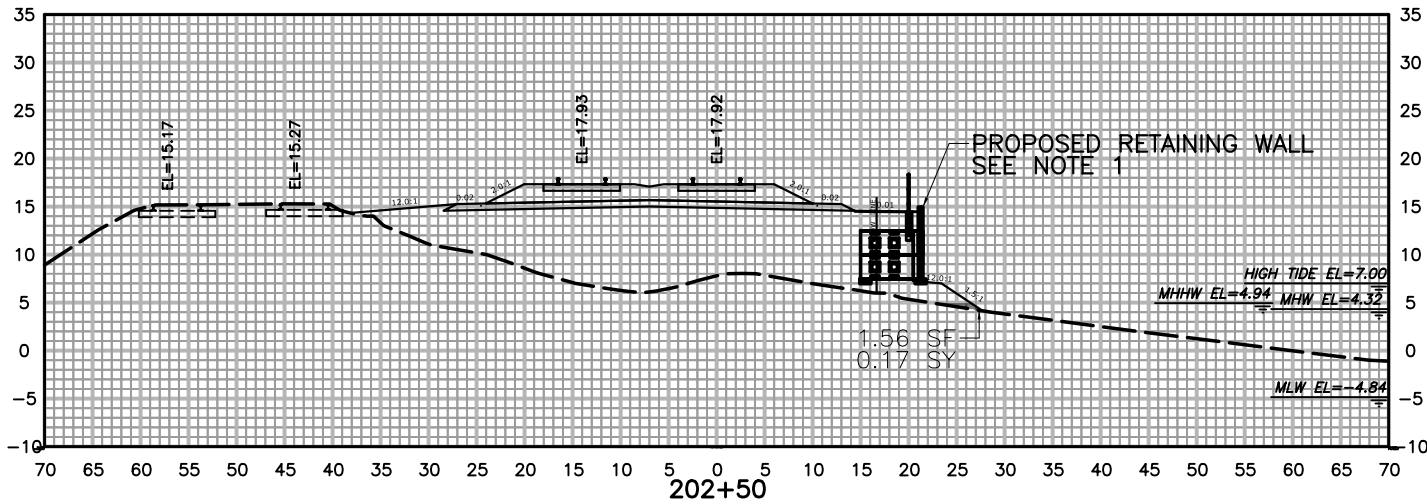
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:	DATE:	PROJECT MANAGER:	DATE:
SCALE:	DRAWN BY:	DESIGN BY:	CHECK BY:
DATE: 10/05/2020	AJM	RG	CV
PLAN NO.	SHEET: P-006	ISSUE	

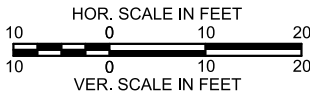


NOTE:

1. HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
2. SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.



PERMIT PLANS
NOT FOR CONSTRUCTION



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS



31 MLK STREET, SUITE 405, BOSTON, MA 02109

APPROVED BY:

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:

ISSUE	DATE	DESCRIPTION	BY	CHK'D	APP.

SCALE:

DATE:10/05/2020

AJM

RG

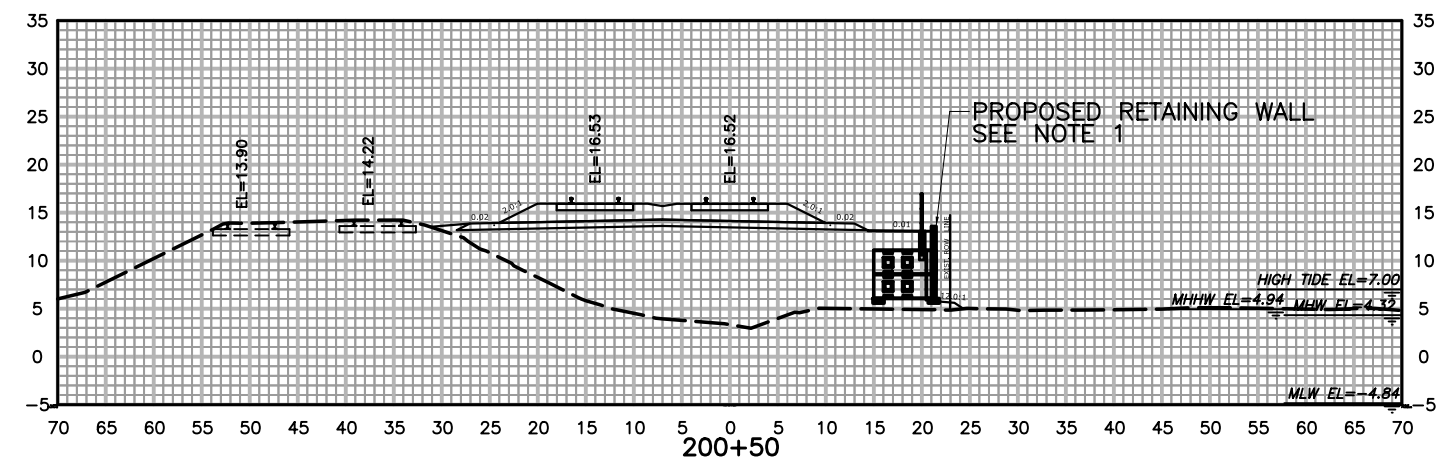
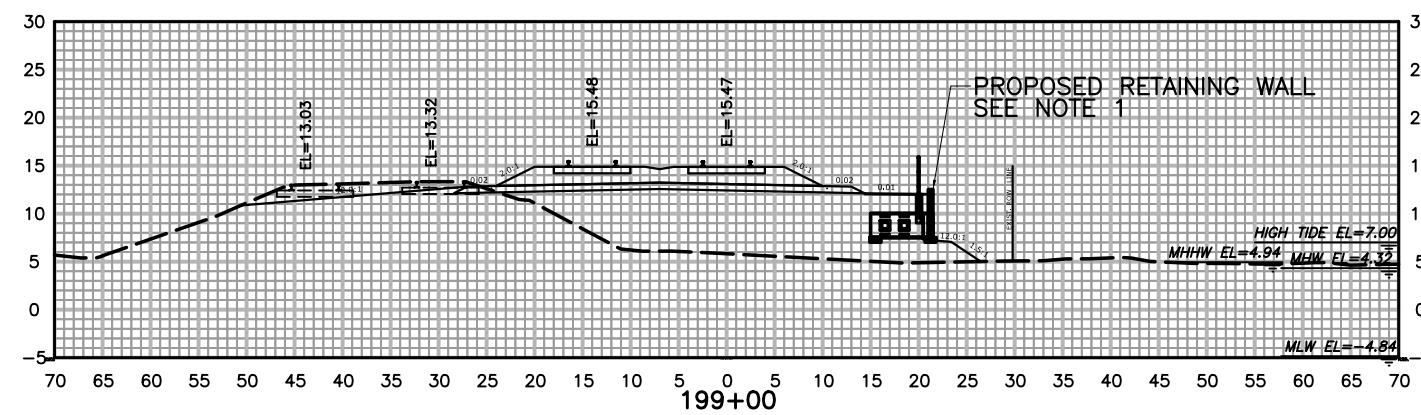
CV

PLAN NO.

SHEET: P-009

STA. 202+00 TO STA. 203+50

1. HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
2. SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.






STA. 199+00 TO STA. 201+50

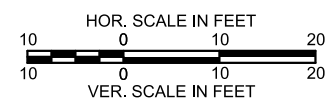


MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS

PERMIT PLANS
NOT FOR CONSTRUCTION

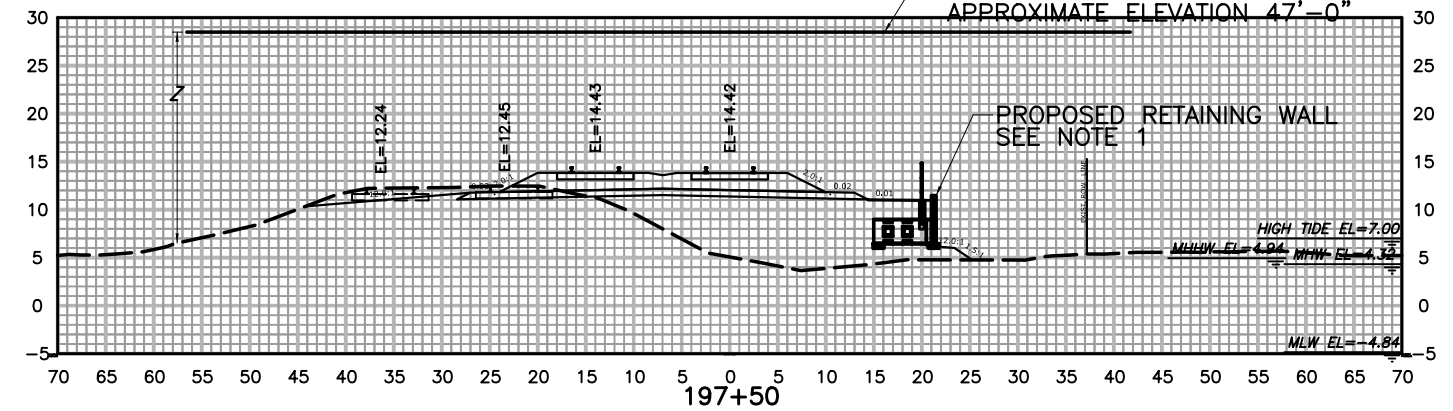
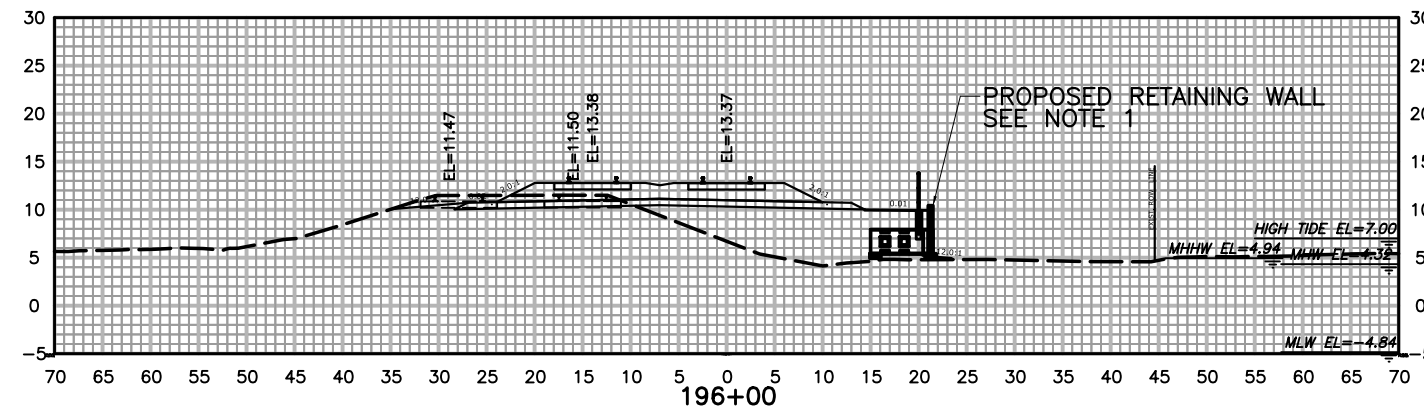
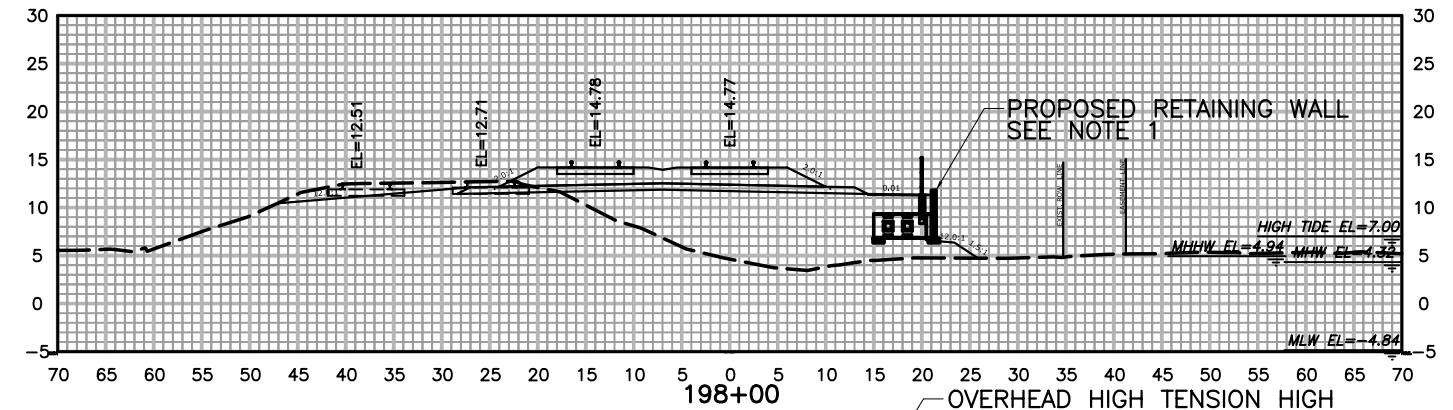
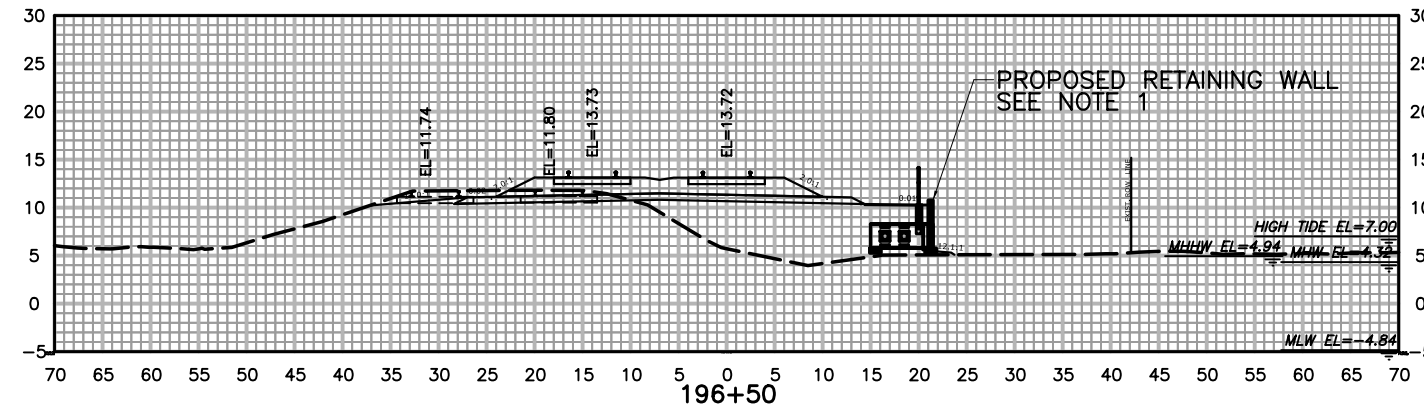
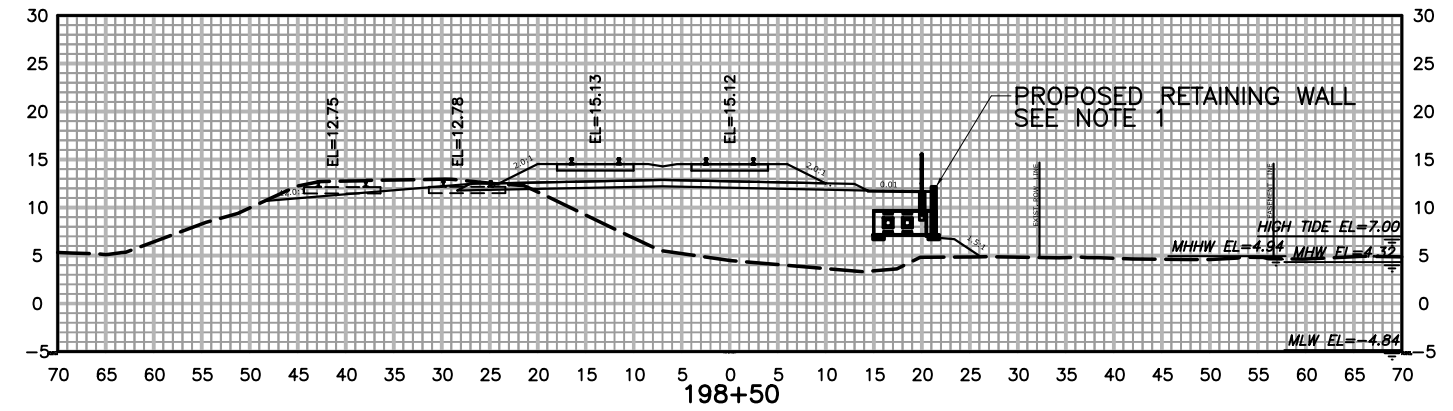
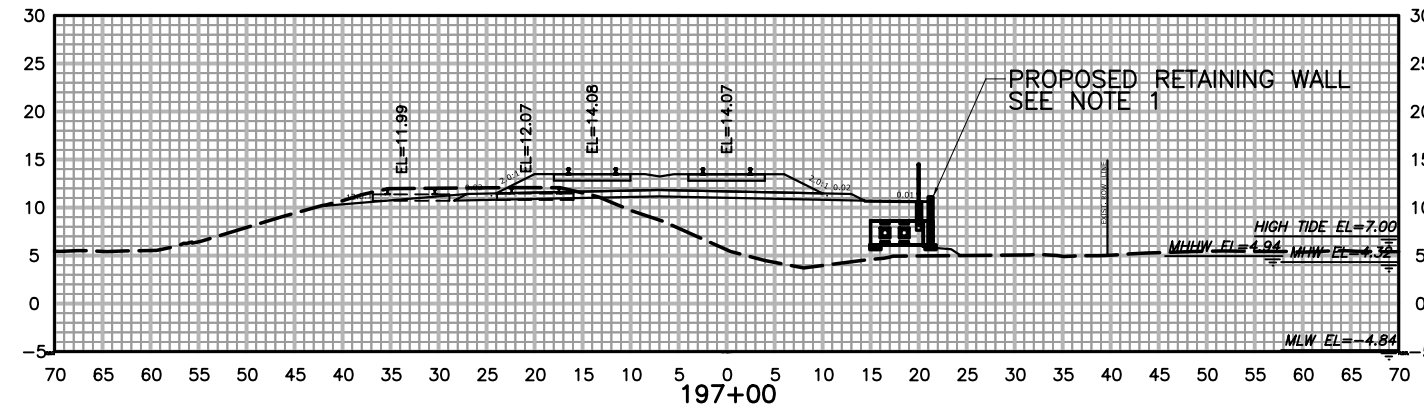
NOT FOR CONSTRUCTION						<div>Hardesty & Hanover 31 MILK STREET, SUITE 405, BOSTON, MA 02109</div> <div>APPROVED BY: _____</div>				<div>MASSACHUSETTS BAY TRANSPORTATION AUTHORITY</div> <div>APPROVED BY: _____</div>				
						Project Manager _____				Date _____				
						Project Manager _____				Date _____				
<div><div>116 WASHINGTON AVENUE NORTH HAVEN, CT 06473</div></div>						SCALE:		DRAWN BY	DESIGN BY	CHECK BY	PLAN NO.		ISSUE	
						DATE: 10/05/2020		AJM	RG	CV	SHEET: P-008			



PLOTTED: \$DATE\$
DRAWING: \$FILENAME\$

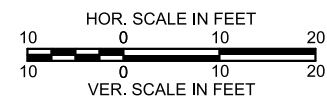
NOTE:

1. HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
2. SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.






STA. 196+00 TO STA. 198+50

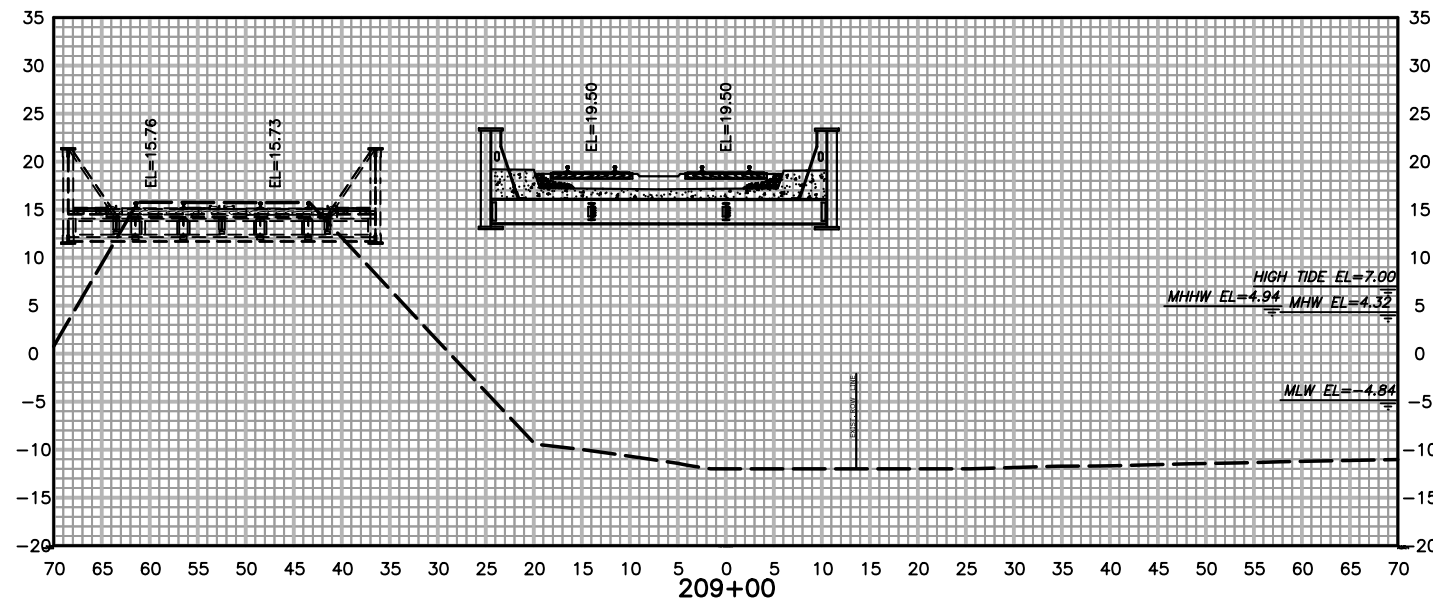
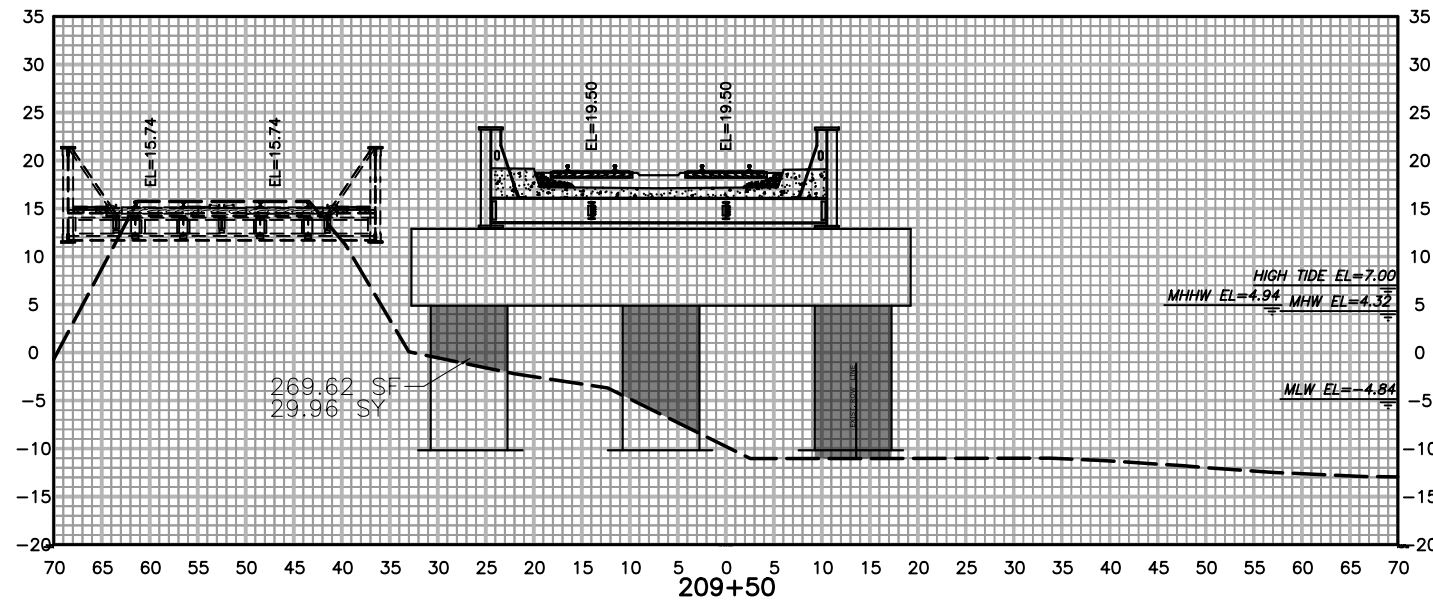
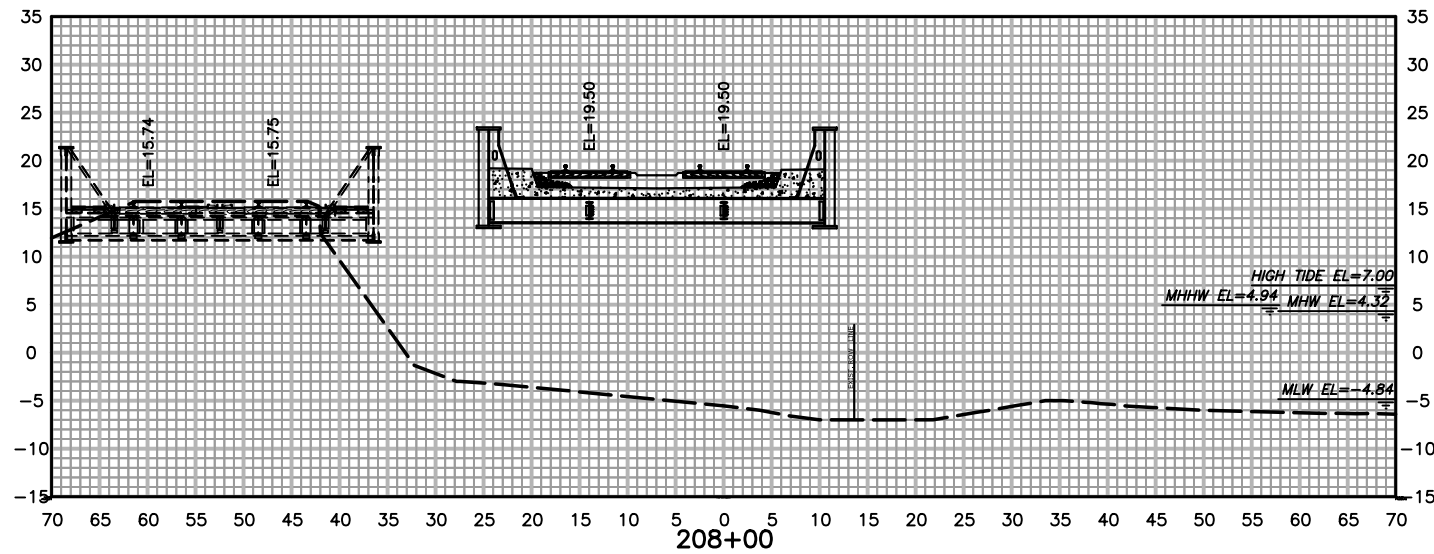
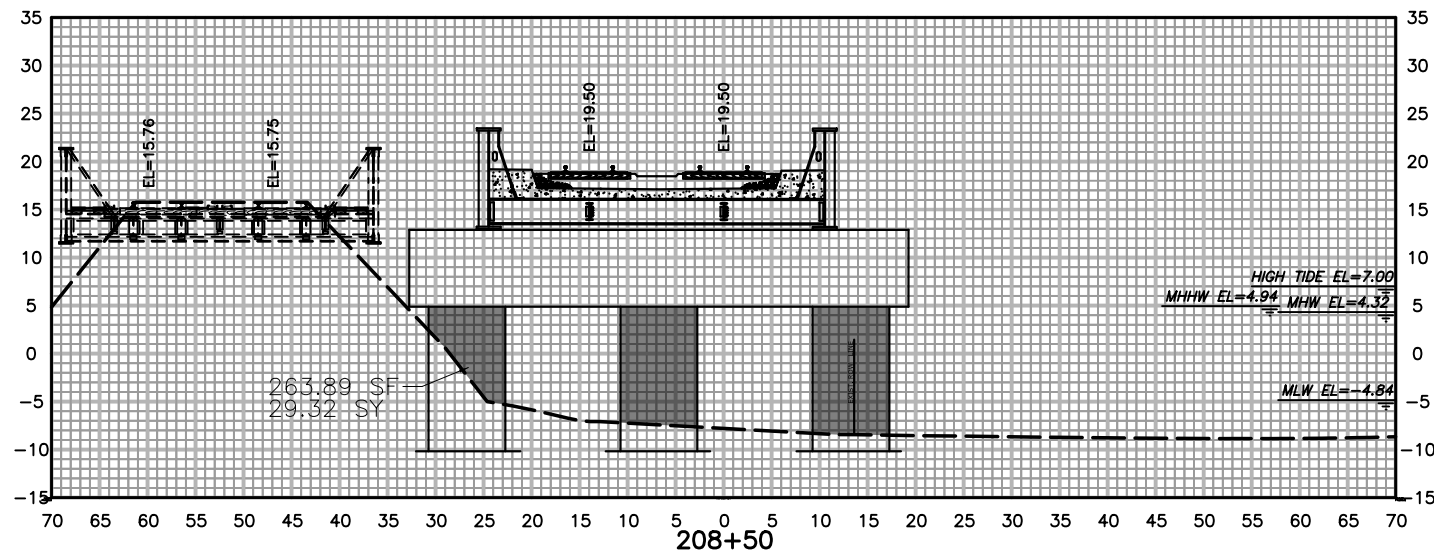
PERMIT PLANS
NOT FOR CONSTRUCTION



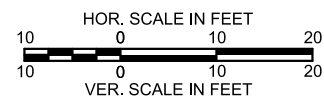
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS

				<div>Hardesty & Hanover 31 MLK STREET, SUITE 405, BOSTON, MA 02109</div> <div>APPROVED BY: _____</div> <div>Project Manager _____ Date _____</div>				<div>MASSACHUSETTS BAY TRANSPORTATION AUTHORITY</div> <div>APPROVED BY: _____</div> <div>Project Manager _____ Date _____</div>								
ISSUE	DATE	DESCRIPTION	BY	CHK'D	APP.											
<div><div>116 WASHINGTON AVENUE NORTH HAVEN, CT 06473</div></div>						<div>SCALE: _____</div> <div>DATE: 10/05/2020</div>				<div>DRAWN BY</div> <div>AJM</div>	<div>DESIGN BY</div> <div>RG</div>	<div>CHECK BY</div> <div>CV</div>	<div>PLAN NO.</div> <div>SHEET: P-007</div>		<div>ISSUE</div> <div></div>	



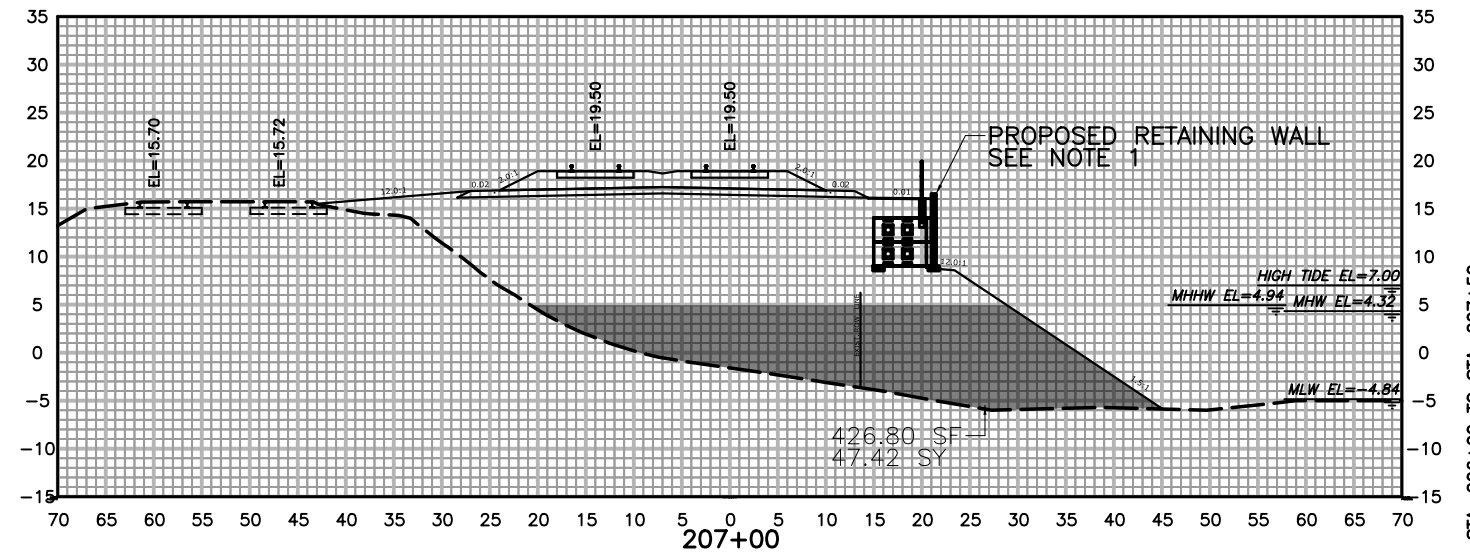
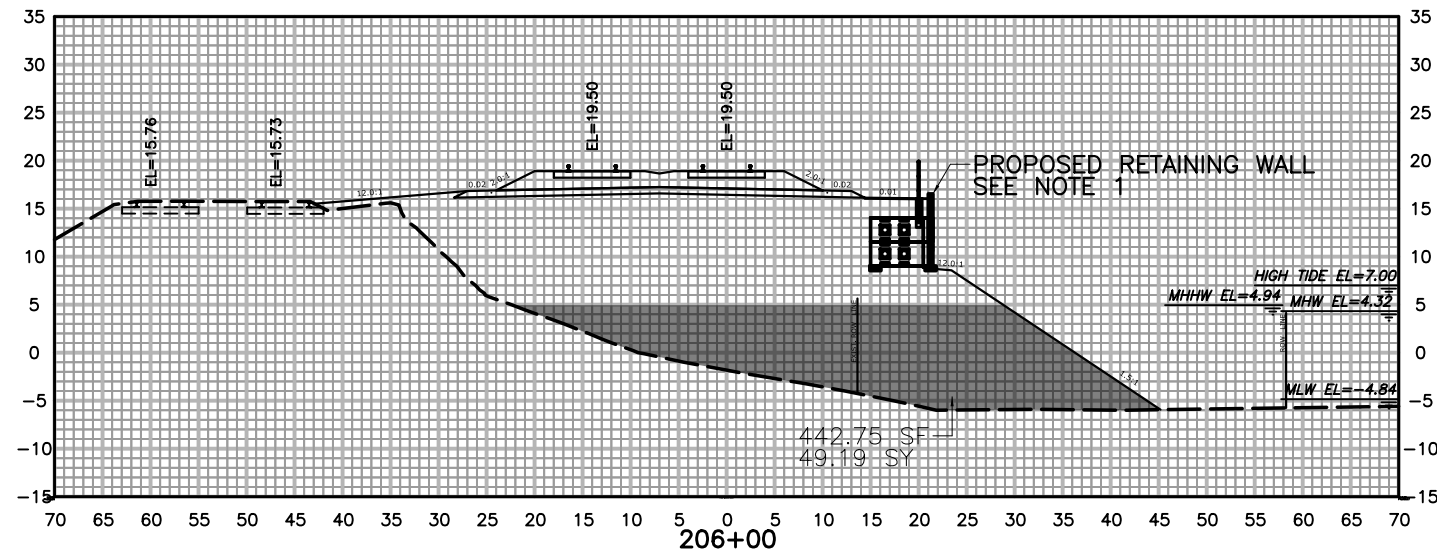
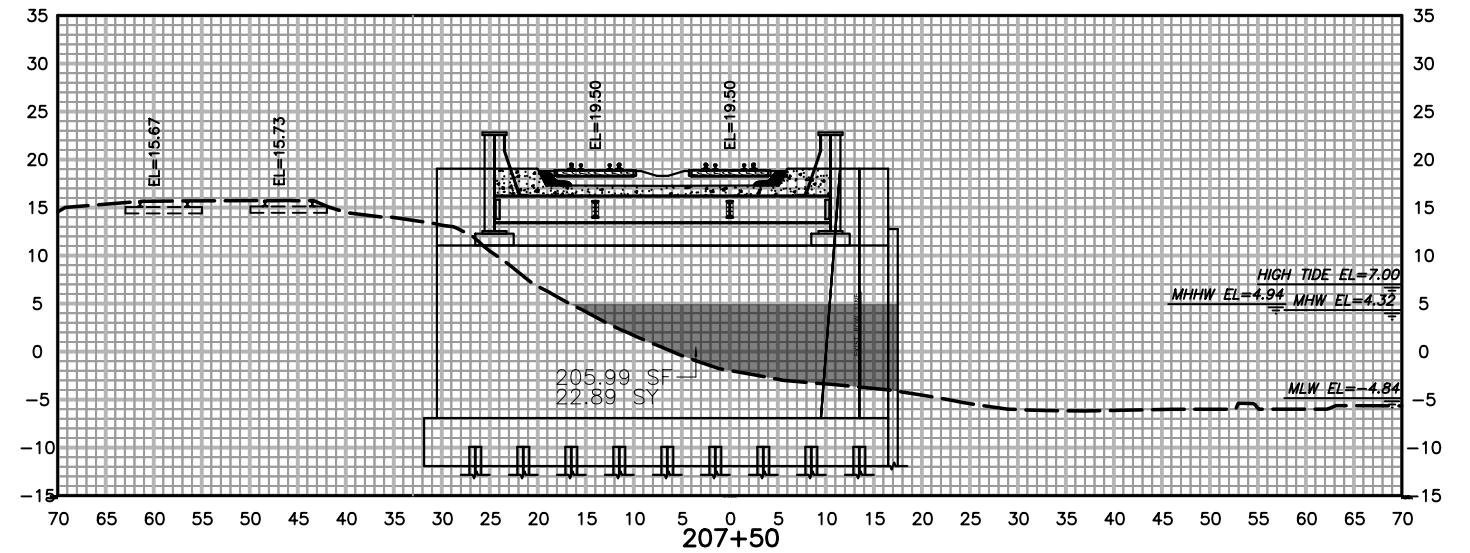
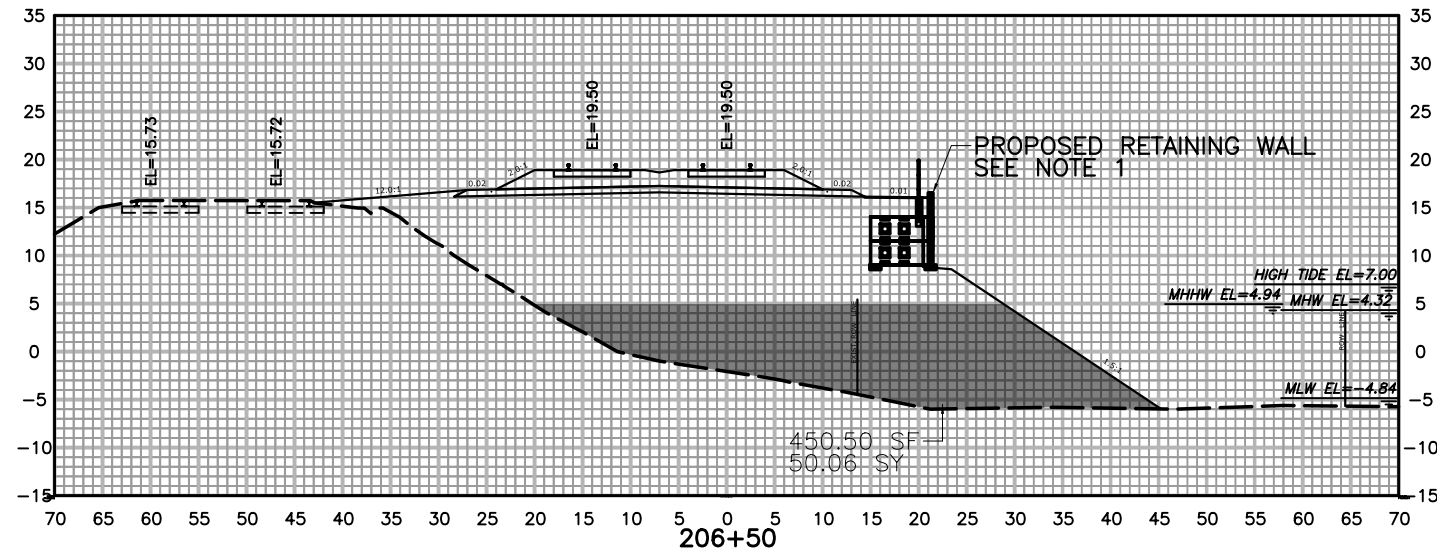
PERMIT PLANS
NOT FOR CONSTRUCTION



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS

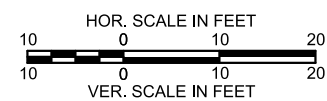
Hardesty & Hanover 31 MLK STREET, SUITE 405, BOSTON, MA 02109 APPROVED BY:				MASSACHUSETTS BAY TRANSPORTATION AUTHORITY APPROVED BY:			
Project Manager				Project Manager			
Date				Date			
SCALE:	DRAWN BY	DESIGN BY	CHECK BY	PLAN NO.	ISSUE		
DATE: 10/05/2020	AJM	RG	CV	SHEET: P-012			



NOTE:

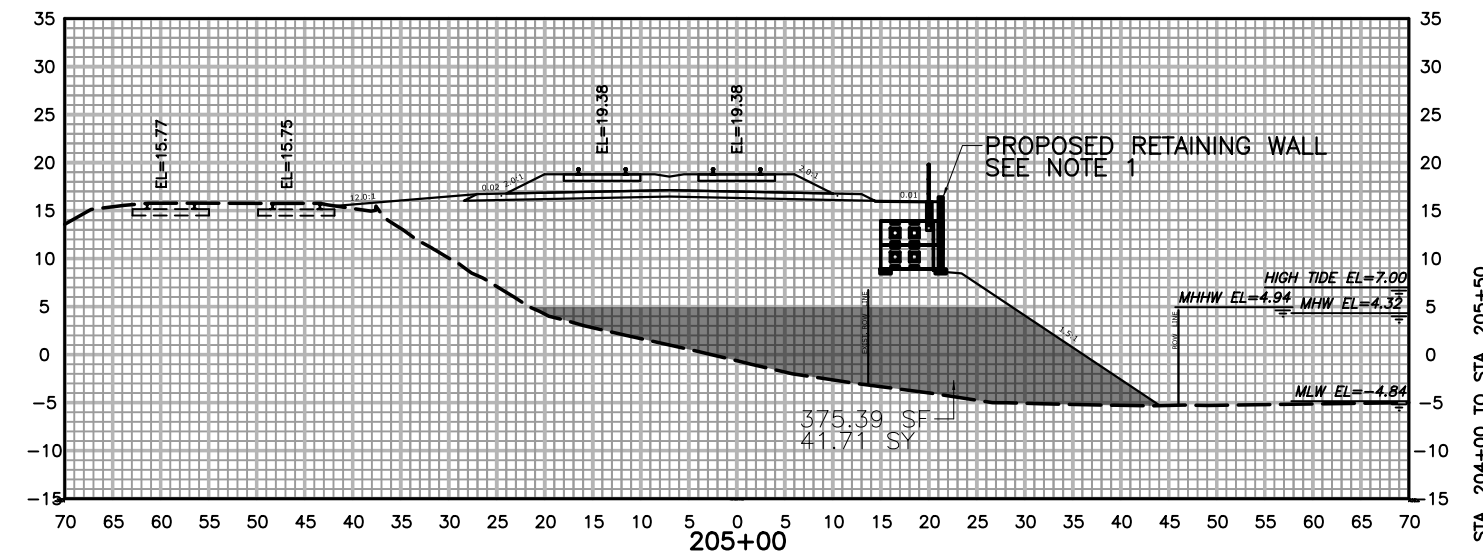
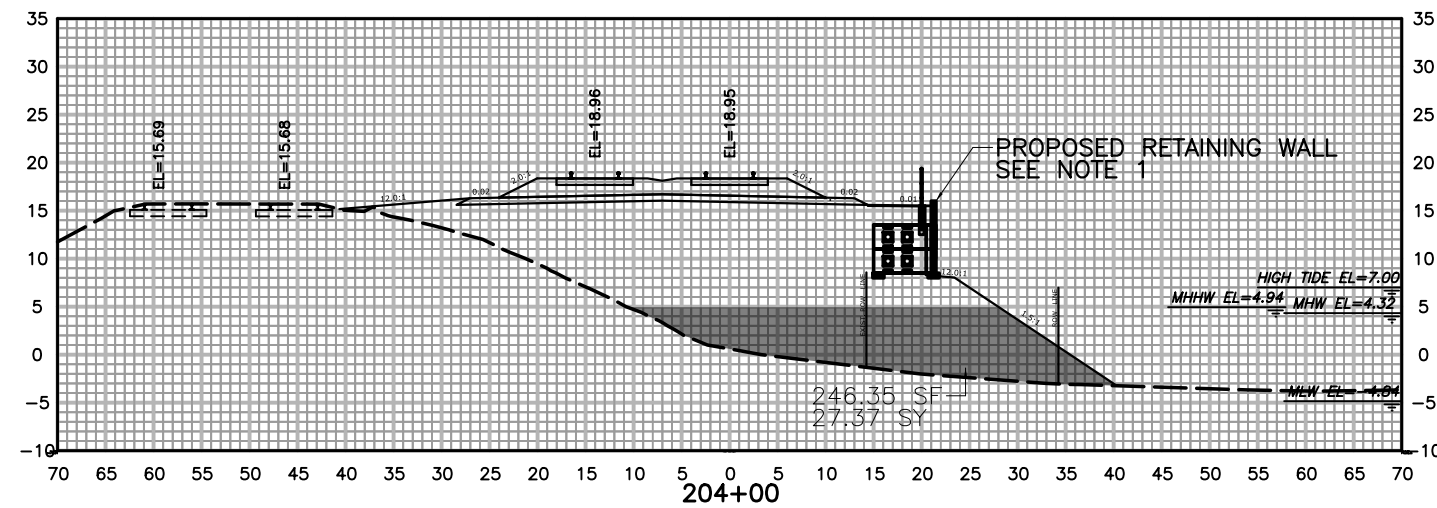
1. HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
2. SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.

PERMIT PLANS
NOT FOR CONSTRUCTION



T	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY	
	REPLACEMENT OF THE SAUGUS DRAW BRIDGE BRIDGE NO. S-05-040 (A5E) CONTRACT NO. H62PS02	
CROSS SECTIONS		
APPROVED BY: _____		
DATE: _____		
PROJECT MANAGER: _____		
SCALE: _____		
DRAWN BY: _____		
DESIGN BY: _____		
CHECK BY: _____		
PLAN NO. _____		
SHEET: P-011		

1. HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
2. SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.



YIC 01 004407 YIC

PLOTTED: \$DATE\$
DRAWING: \$FILENAME\$



CROSS SECTIONS

Hardesty & Hanover
31 MILK STREET, SUITE 405, BOSTON, MA 02109

APPROVED BY:

MASSACHUSETTS BAY TRANSPORTATION
AUTHORITY

APPROVED BY: _____

SCALE:

SCALE:

DATE: 10/05

AWN	DESIGN	CHECK
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BY	BY	BY	
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JM	RG	CV
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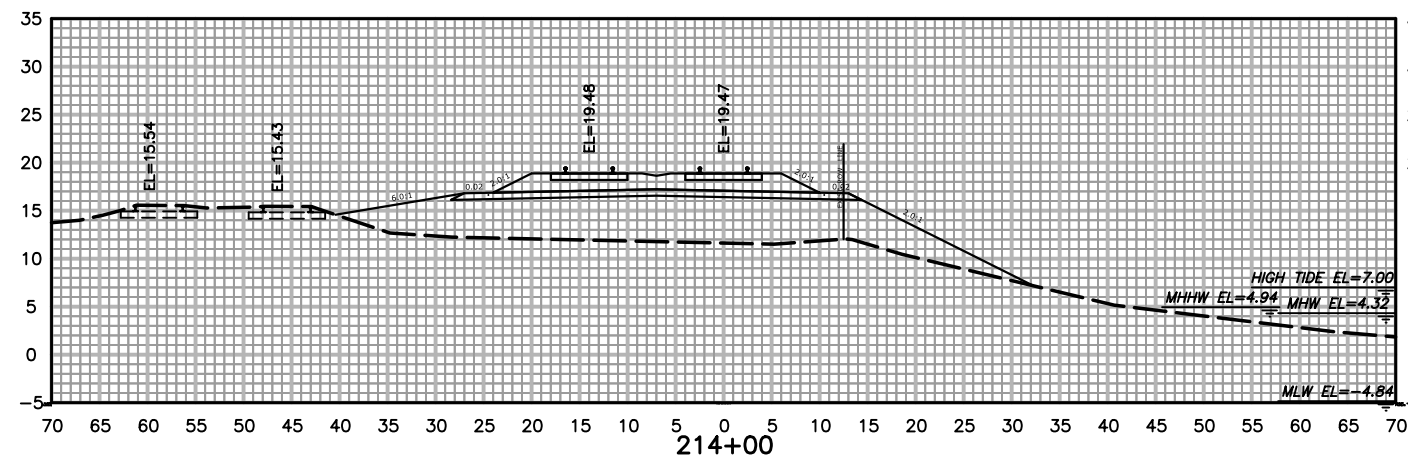
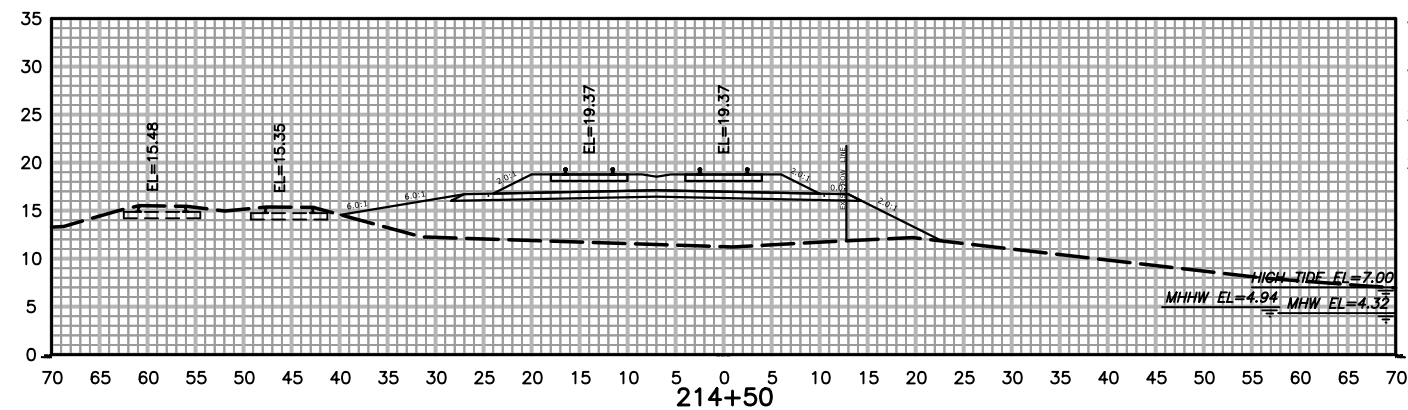
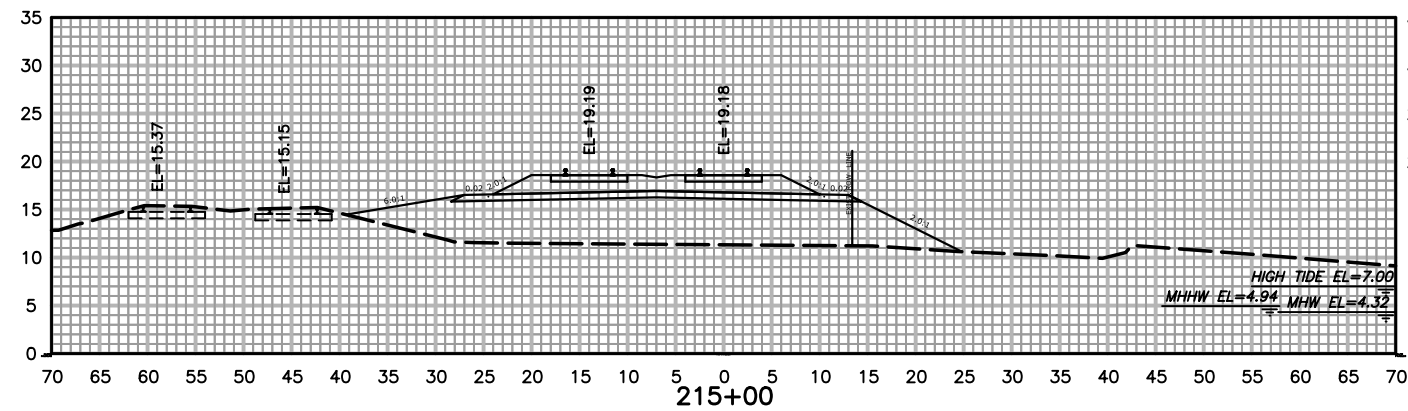
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PLAN NO.	ISSUE
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PLAN NO. 0

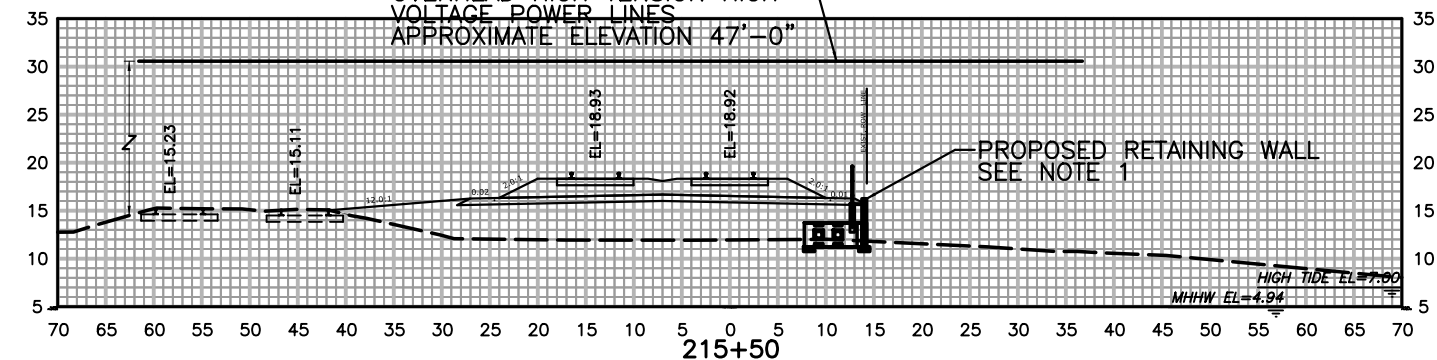
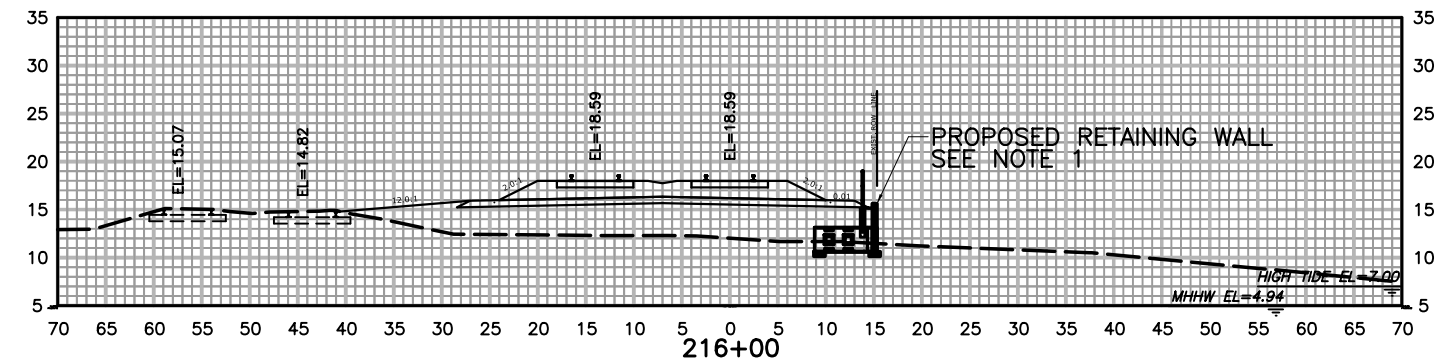
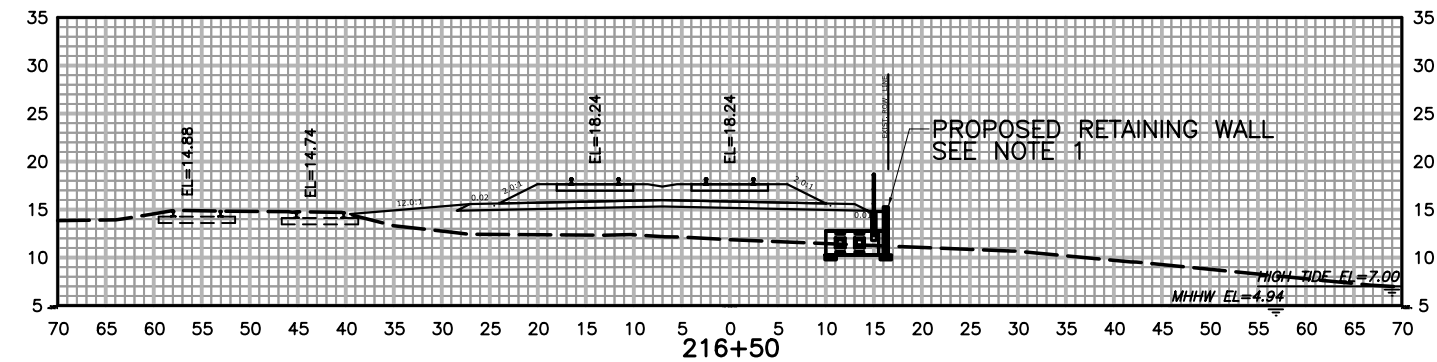
SHEET: P-010

Page 10 of 10



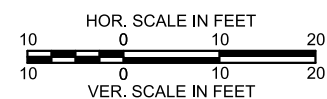
NOTE:

1. HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
2. SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.



STA. 214+00 TO STA. 216+50

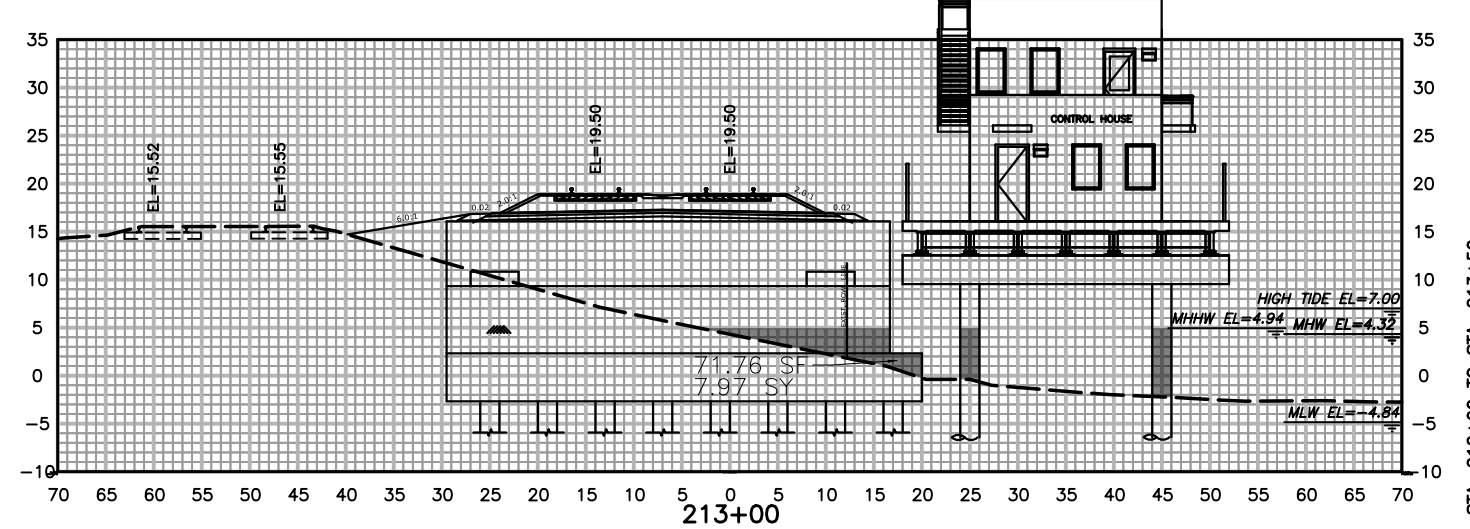
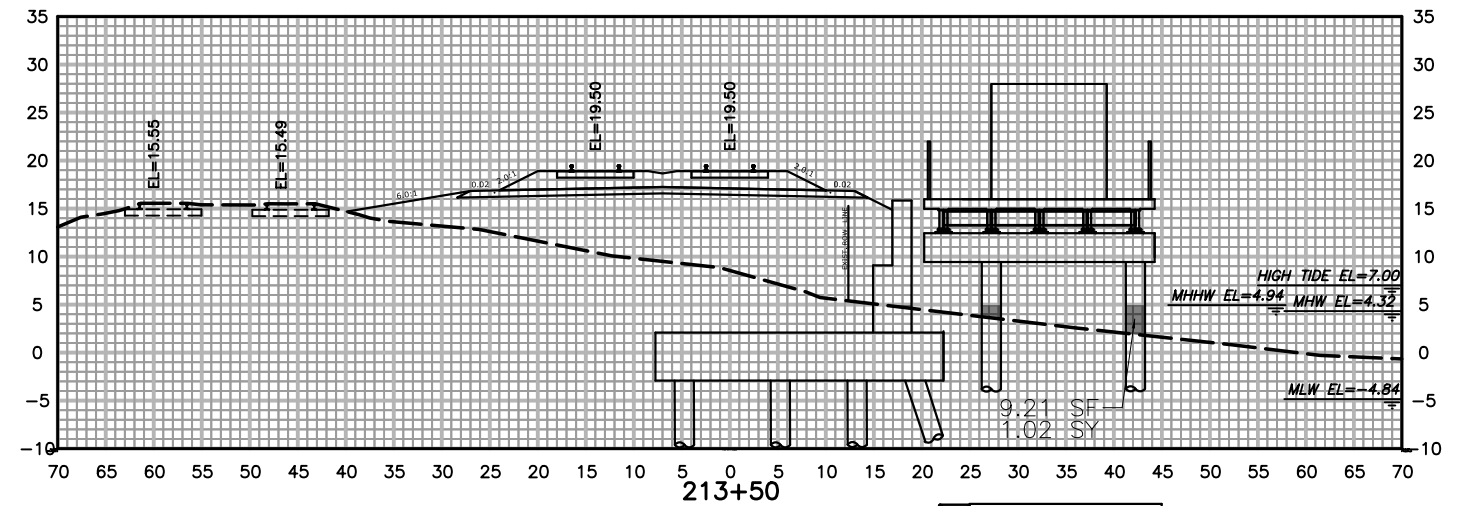
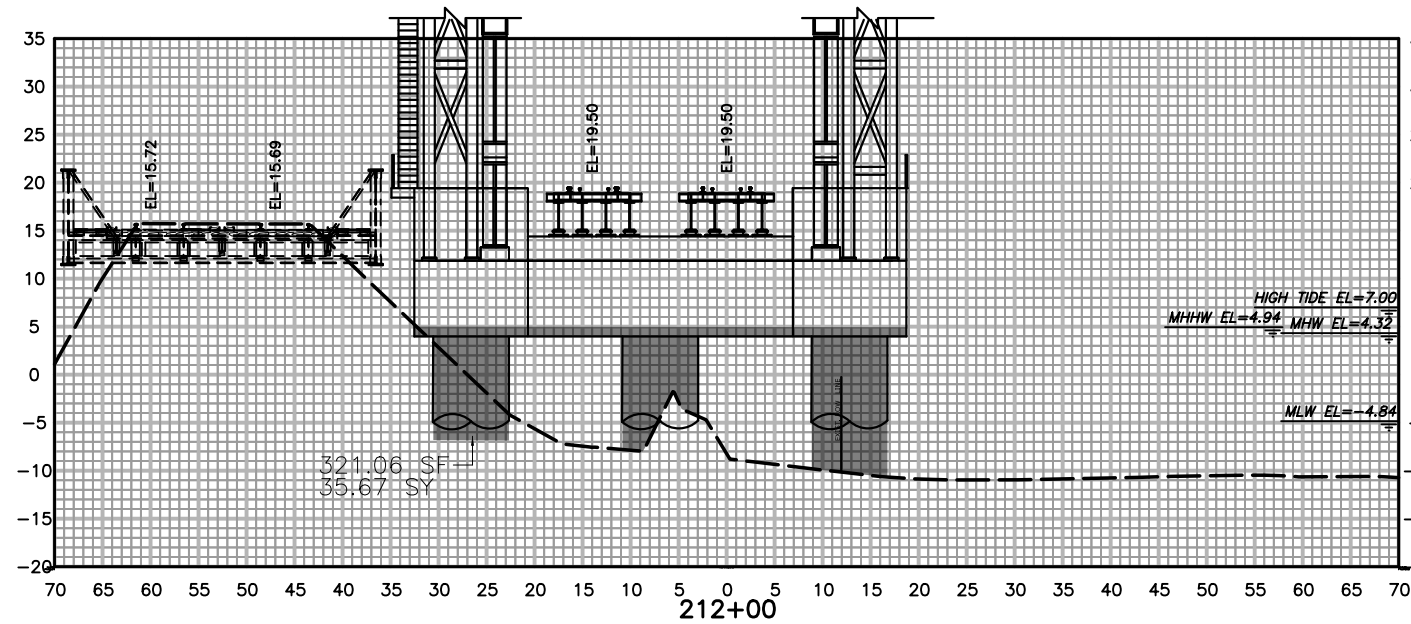
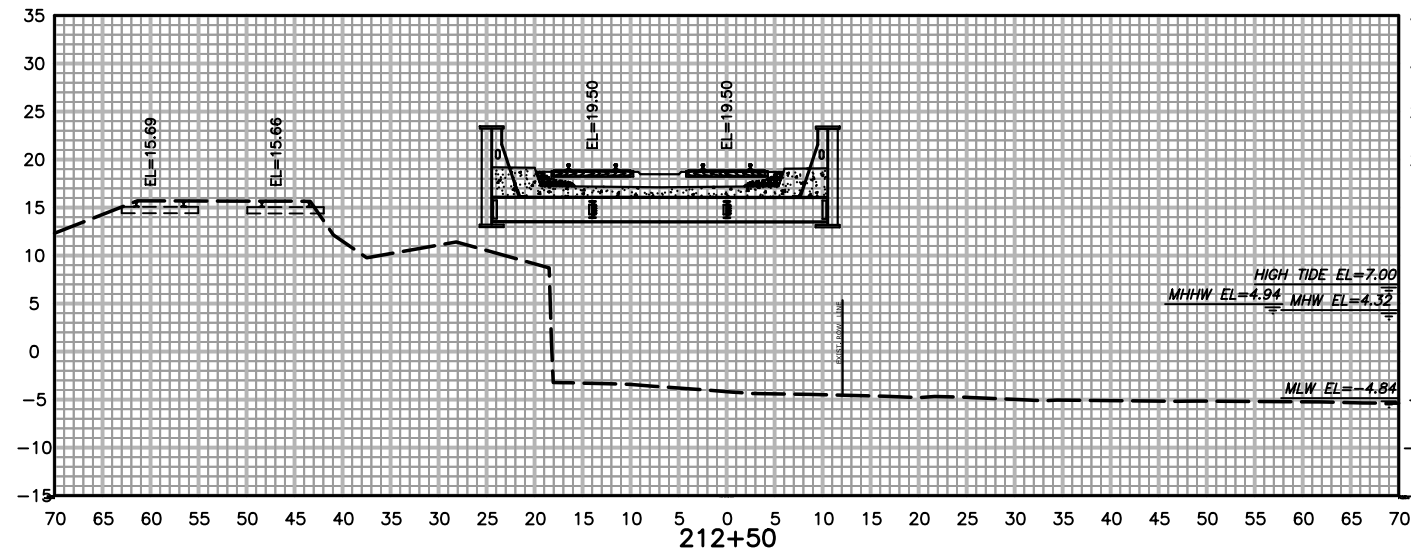
PERMIT PLANS
NOT FOR CONSTRUCTION



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

CROSS SECTIONS

APPROVED BY:				APPROVED BY:			
Project Manager				Project Manager			
DATE				DATE			
SCALE:				PLAN NO.			
DATE: 10/05/2020				SHEET: P-015			
DRAWN BY: AJM				ISSUE			
DESIGN BY: RG							
CHECK BY: CV							



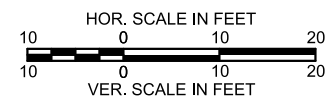
STA. 212+00 TO STA. 213+50

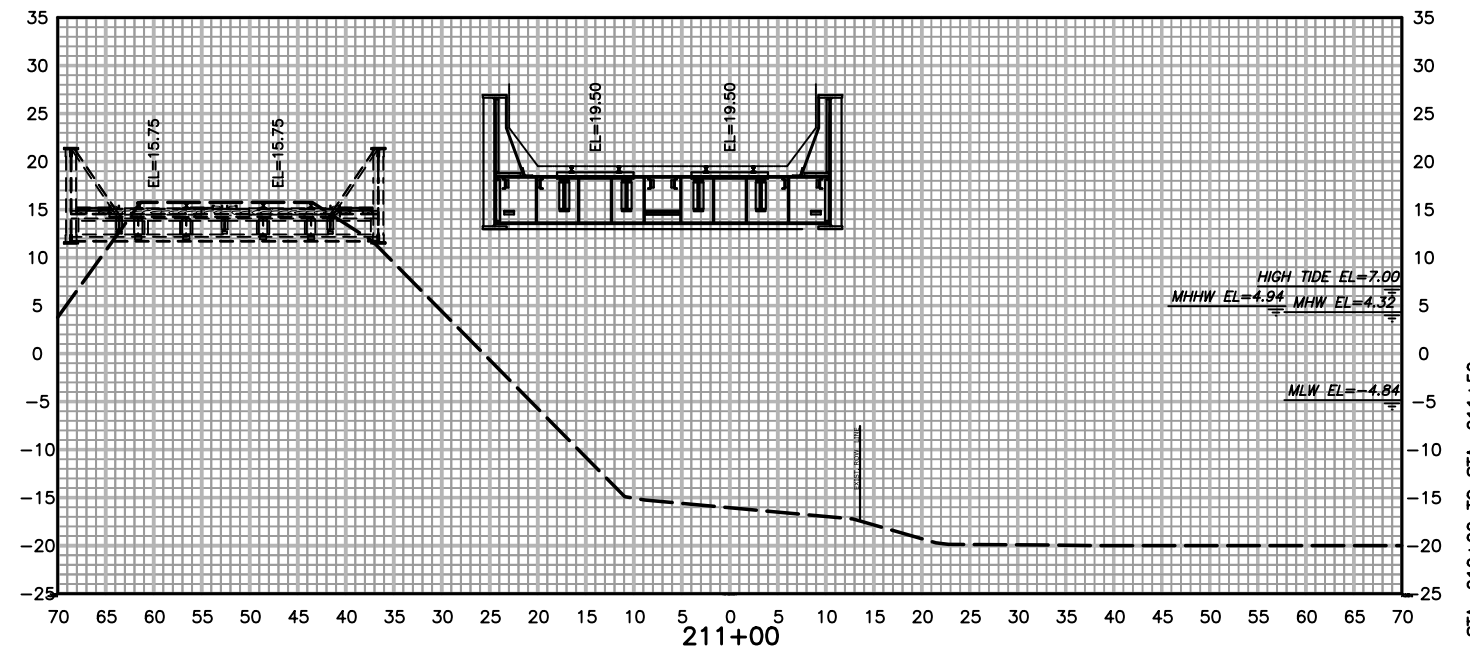
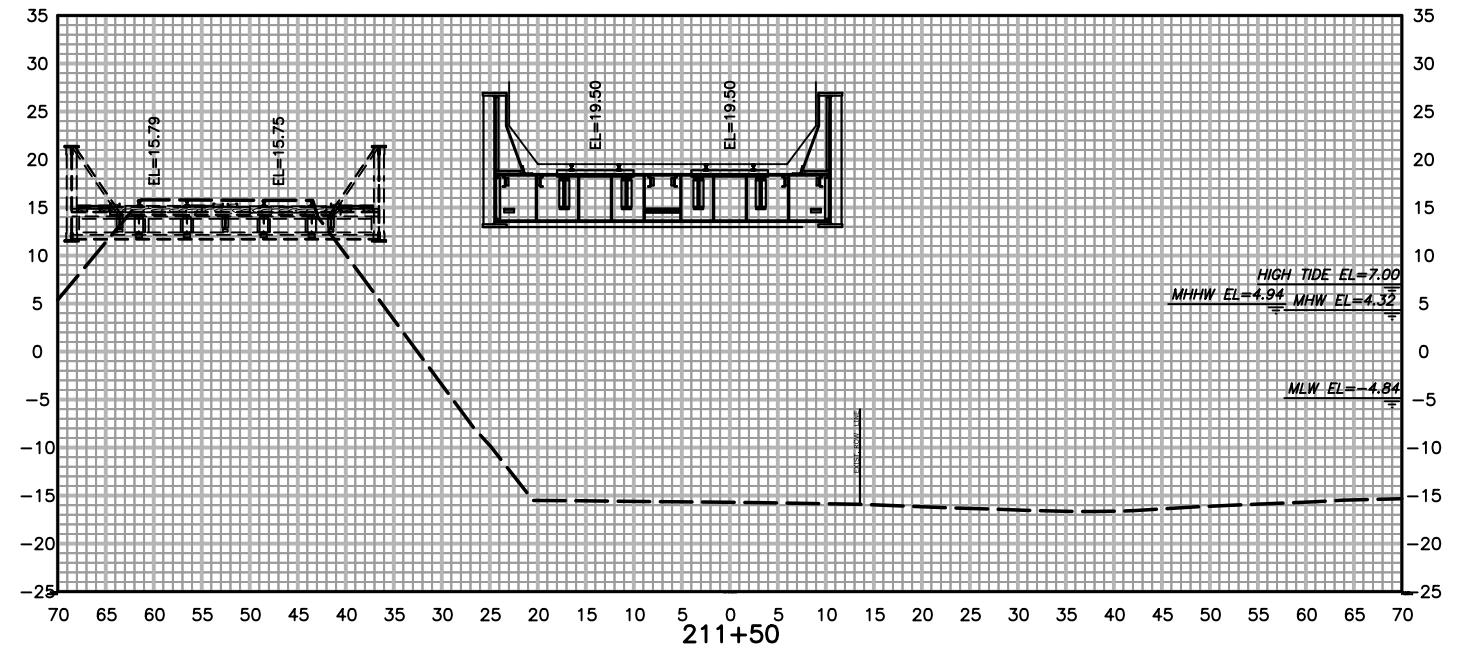
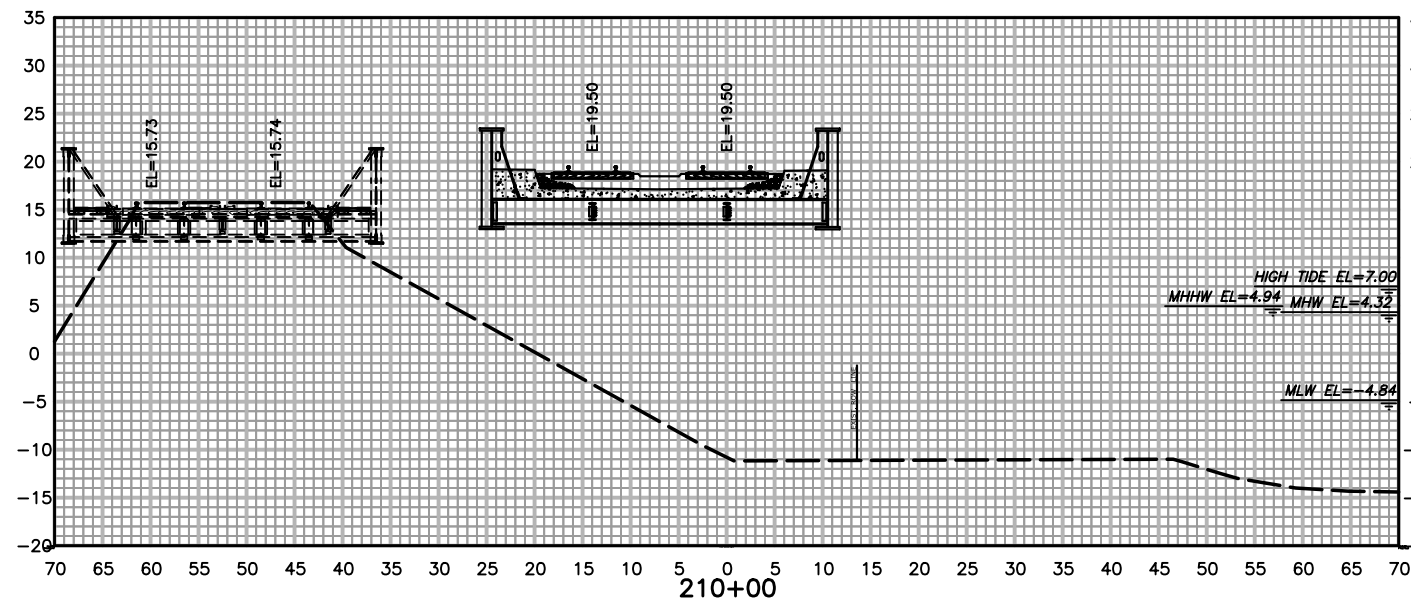
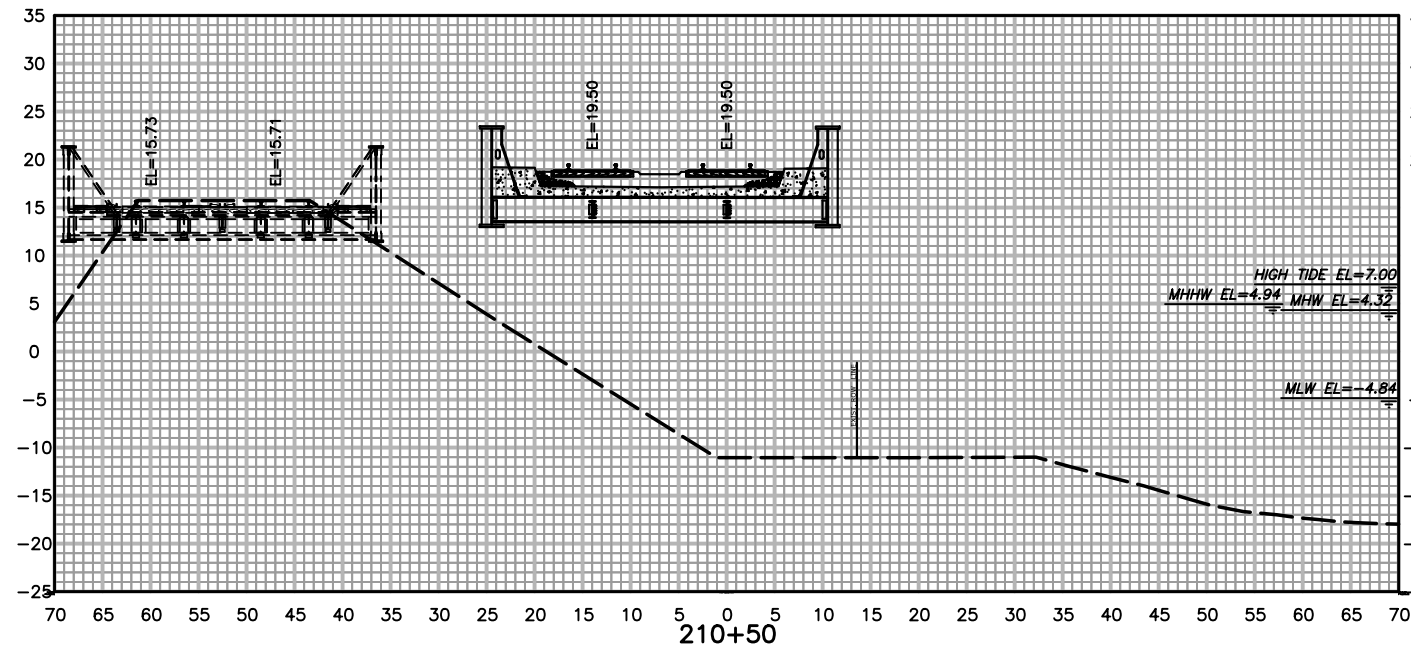
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

PERMIT PLANS
NOT FOR CONSTRUCTION

CROSS SECTIONS

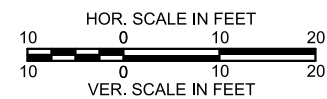
Hardesty & Hanover 31 MLK STREET, SUITE 405, BOSTON, MA 02109 APPROVED BY: _____			MASSACHUSETTS BAY TRANSPORTATION AUTHORITY APPROVED BY: _____		
Project Manager	DATE	Project Manager	DATE	Project Manager	DATE
SCALE:	DRAWN BY	DESIGN BY	CHECK BY	PLAN NO.	ISSUE
DATE: 10/05/2020	AJM	RG	CV	SHEET: P-014	





STA. 210+00 TO STA. 211+50

PLotted: 04/15/2020
Drawing: 04/15/2020




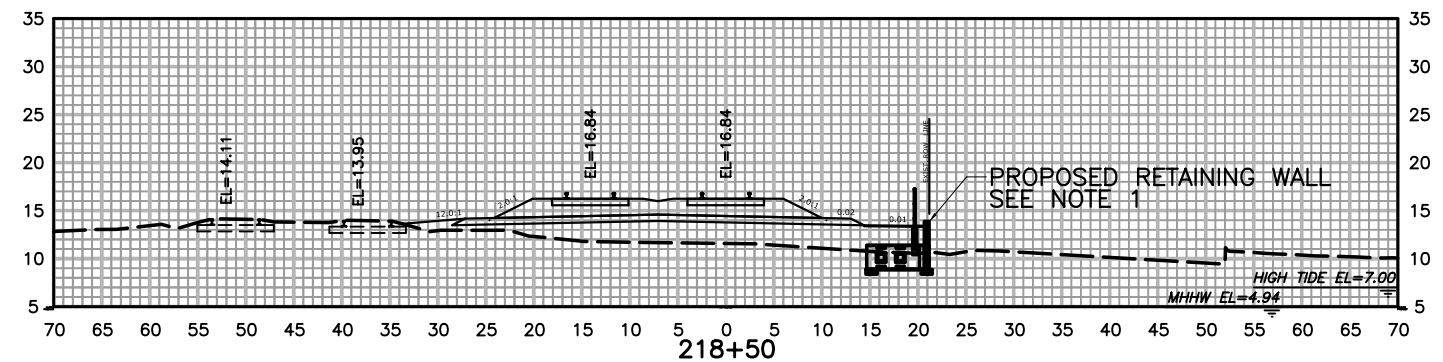
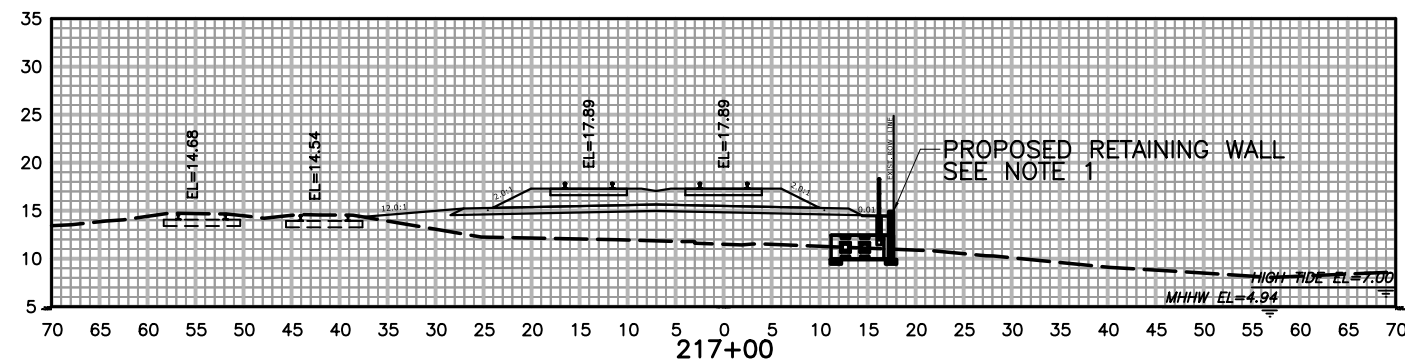
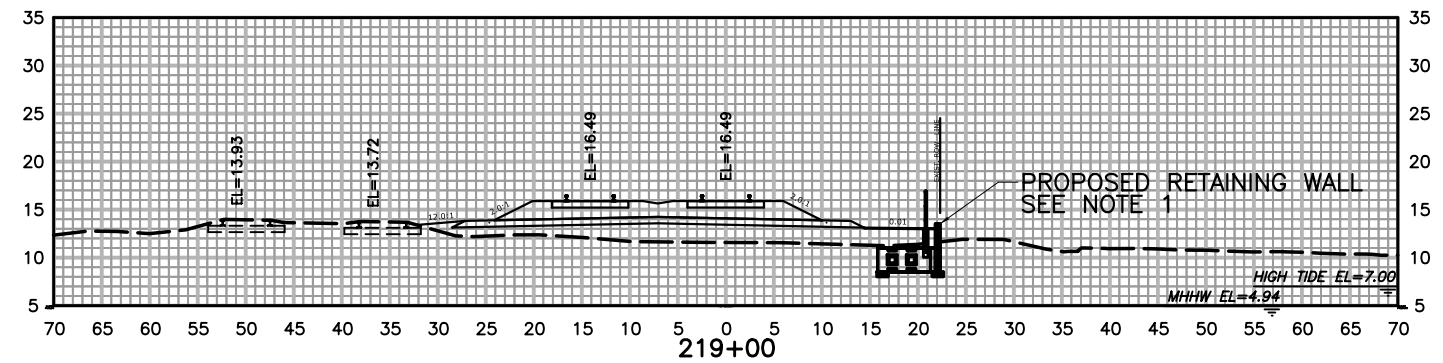
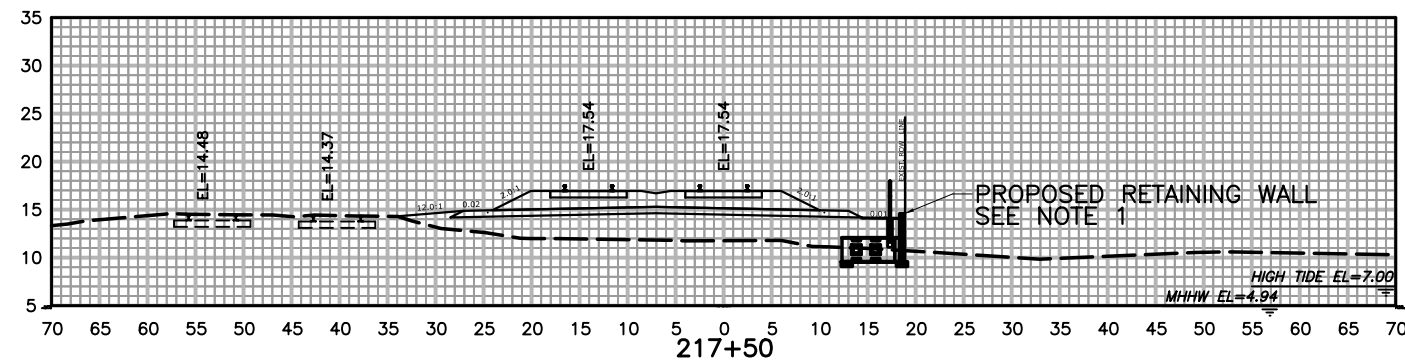
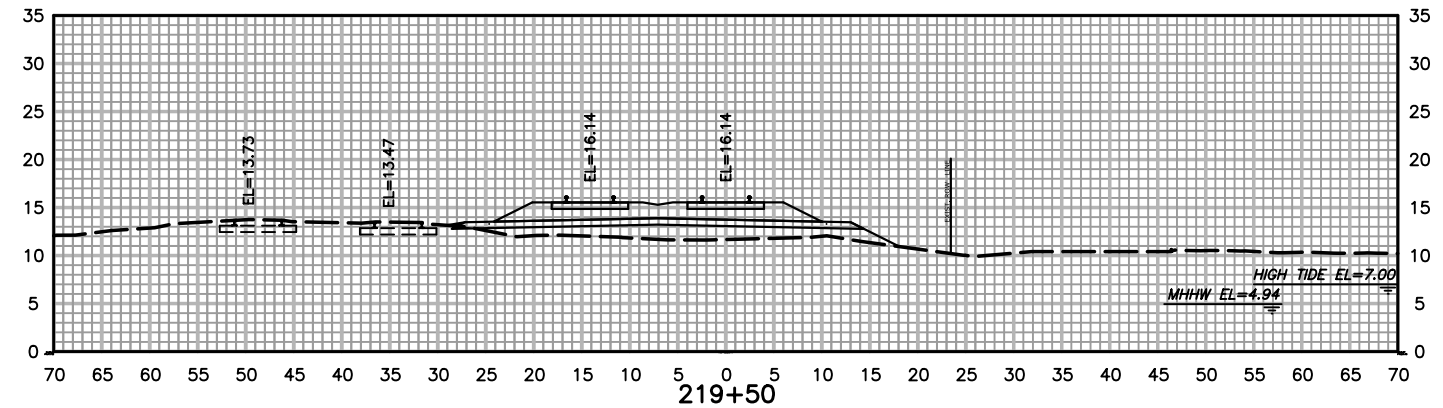
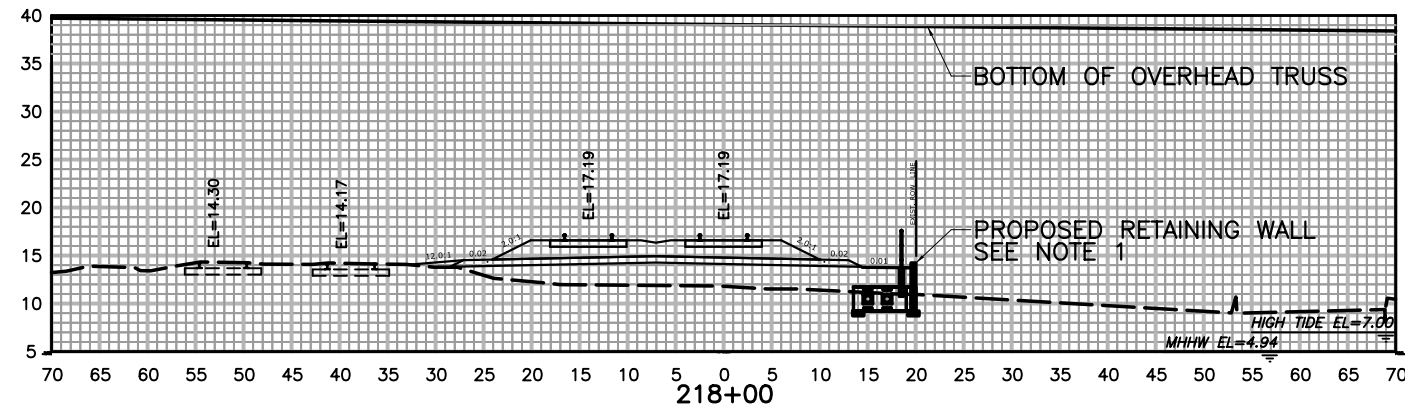
PERMIT PLANS

NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	BY	CHK'D	APP.



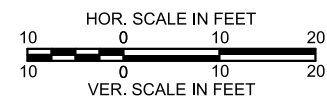
T	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY	
	REPLACEMENT OF THE SAUGUS DRAW BRIDGE BRIDGE NO. S-05-040 (A5E) CONTRACT NO. H62PS02	
CROSS SECTIONS		
 31 MLK STREET, SUITE 405, BOSTON, MA 02109 APPROVED BY: _____		
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY APPROVED BY: _____		
SCALE: DATE: 10/05/2020	DRAWN BY: AJM DESIGN BY: RG CHECK BY: CV	
PLAN NO. SHEET: P-013		



NOTE:

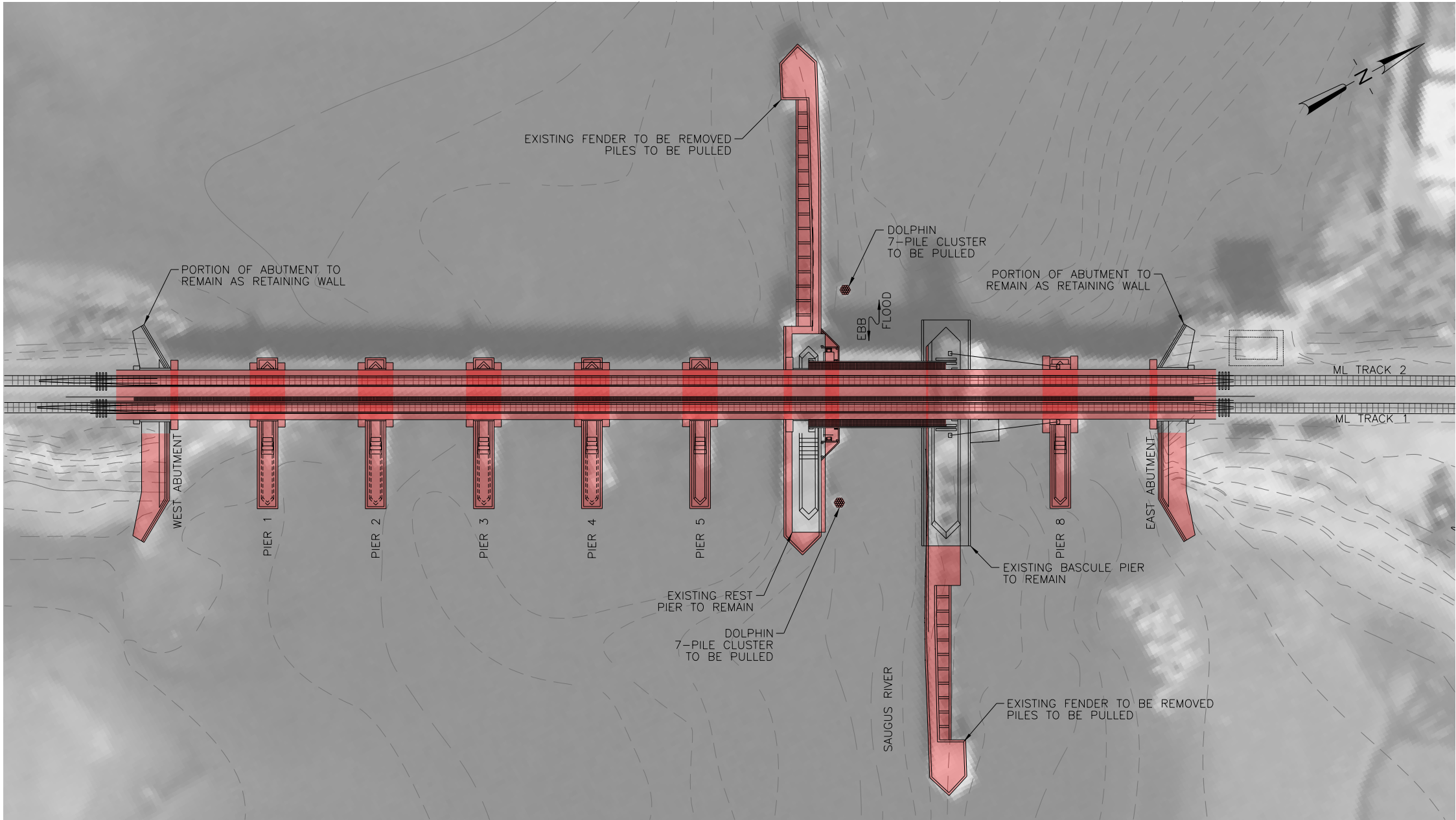
- HEIGHT AND LIMITS OF RETAINING WALL SHOWN ARE APPROXIMATE. FINAL DESIGN OF THE WALL TO BE PERFORMED DURING PHASE 4 AND INCLUDED WITH THE FINAL SUBMISSION.
- SEE GEO SERIES OF DRAWINGS FOR DETAILS OF EMBANKMENT DESIGN.

PERMIT PLANS
NOT FOR CONSTRUCTION



ISSUE	DATE	DESCRIPTION	BY	CHK'D	APP.

<p>MASSACHUSETTS BAY TRANSPORTATION AUTHORITY REPLACEMENT OF THE SAUGUS DRAW BRIDGE BRIDGE NO. S-05-040 (A5E) CONTRACT NO. H62PS02</p>		<p>CROSS SECTIONS</p>	
<p>31 MLK STREET, SUITE 405, BOSTON, MA 02109</p> <p>APPROVED BY: _____</p>		<p>MASSACHUSETTS BAY TRANSPORTATION AUTHORITY</p> <p>APPROVED BY: _____</p>	
<p>DATE: 10/05/2020</p>		<p>PLAN NO. _____</p>	
<p>SCALE: _____</p>		<p>SHEET: P-016</p>	

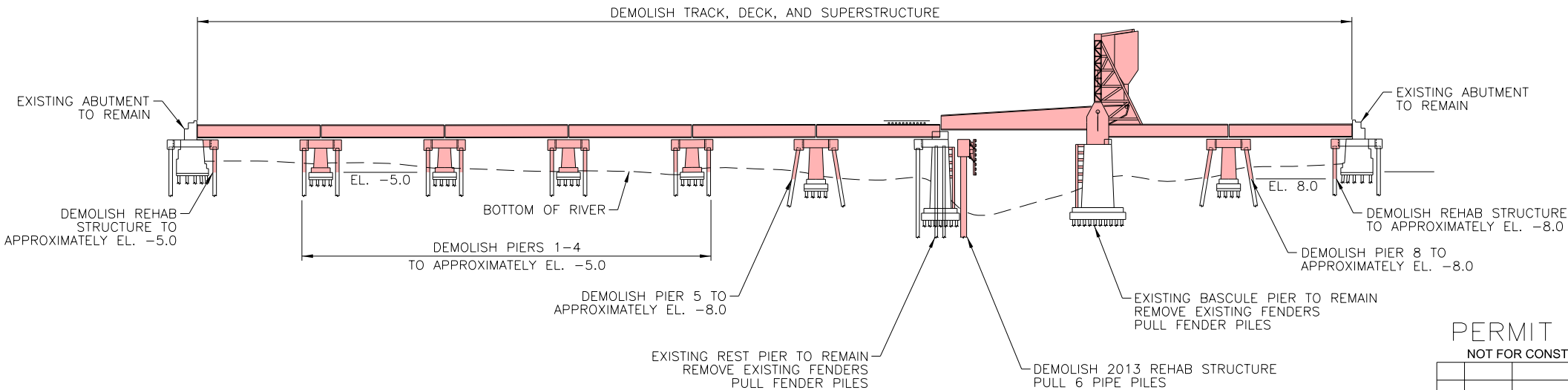


- NOTES:
- PILES WITHIN THE NAVIGATION CHANNEL TO BE PULLED:
 - EXISTING FENDERS: 147 TIMBER PILES
 - REST PIER REHAB STRUCTURE: 6 PIPE PILES
 - DOLPHINS: 14 TIMBER PILES
 - PILES OUTSIDE OF THE NAVIGATION CHANNEL TO REMAIN AND BE CUT AT 3 FEET BELOW THE MUDLINE:
 - WEST ABUTMENT TO ELEV. -5.0
 - PIERS 1-4 TO ELEV. -5.0
 - PIERS 5 AND 8 TO ELEV. -8.0
 - EAST ABUTMENT TO ELEV. -8.0ELEVATIONS ARE APPROXIMATE BASED ON THE SURVEYED MUDLINE.
 - EXISTING REST PIER, BASCULE PIER AND PORTION OF EACH ABUTMENT TO REMAIN IN FINAL CONDITION.
 - SEE P-003B FOR DETAIL OF PROPOSED FENDER SYSTEM.

LEGEND



TO BE REMOVED



T

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
REPLACEMENT OF THE SAUGUS DRAW BRIDGE
BRIDGE NO. S-05-040 (A5E)
CONTRACT NO. H62PS02

EXISTING BRIDGE
DEMO PLAN AND ELEVATION

PERMIT PLAN
NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	BY	CHK'D	APP.

31 MILL STREET, SUITE 405, BOSTON, MA 02109
APPROVED BY:
Project Manager Date

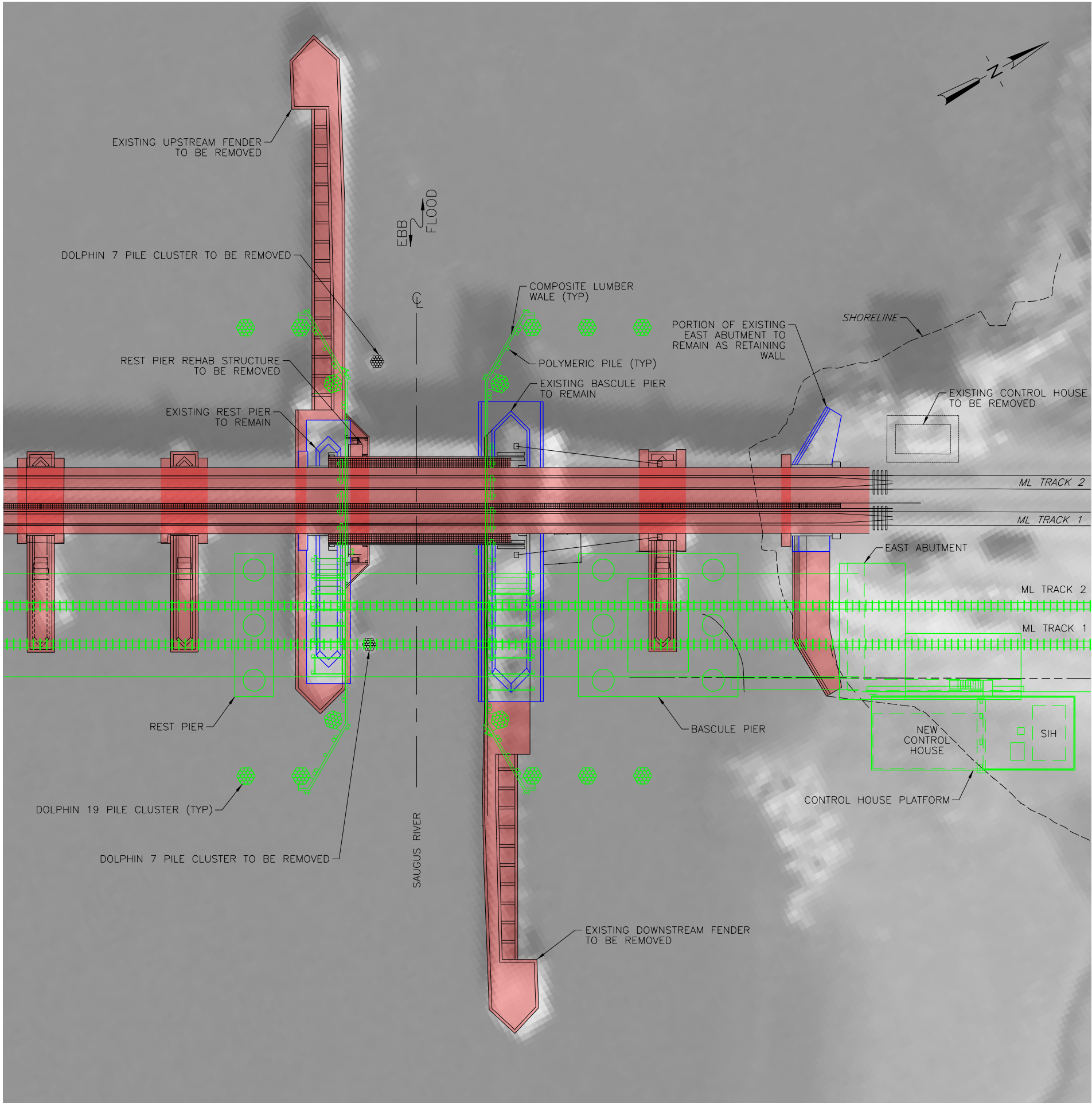
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
APPROVED BY:
Project Manager Date

SCALE:
DATE: 03/03/2021

DRAWN BY: DP
DESIGN BY: DG
CHECK BY: DP

PLAN NO.
SHEET: P-003A

ISSUE



- NOTES:
- PILES WITHIN THE NAVIGATION CHANNEL TO BE PULLED:
 - EXISTING FENDERS: 147 TIMBER PILES
 - REST PIER REHAB STRUCTURE: 6 PIPE PILES
 - DOLPHINS: 14 TIMBER PILES
 - NEW PILES TO BE INSTALLED:
 - FENDER: 28
 - DOLPHINS: 14 19-PILE CLUSTERS (266 TOTAL)
 - PROPOSED PIER FOUNDATIONS TO BE DRILLED SHAFTS.
 - PROPOSED ABUTMENT FOUNDATIONS TO BE PIPE PILES DRIVEN IN THE DRY.
 - EXISTING REST PIER, BASCULE PIER AND PORTION OF EACH ABUTMENT TO REMAIN IN FINAL CONDITION.
 - SEE P-003A FOR FULL BRIDGE DEMO PLAN.

- LEGEND
- TO BE REMOVED
 - NEW CONSTRUCTION
 - EXISTING TO REMAIN



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

T

REPLACEMENT OF THE SAUGUS DRAW BRIDGE

BRIDGE NO. S-05-040 (A5E)

CONTRACT NO. H62PS02

PERMIT PLANS

NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION	BY	CHK'D	APP.

Hardesty & Hanover

31 MELK STREET, SUITE 405, BOSTON, MA 02109

APPROVED BY:

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:

SCALE: DATE: 03/03/2021

DRAWN BY: DP

DESIGN BY: DG

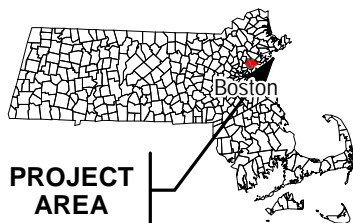
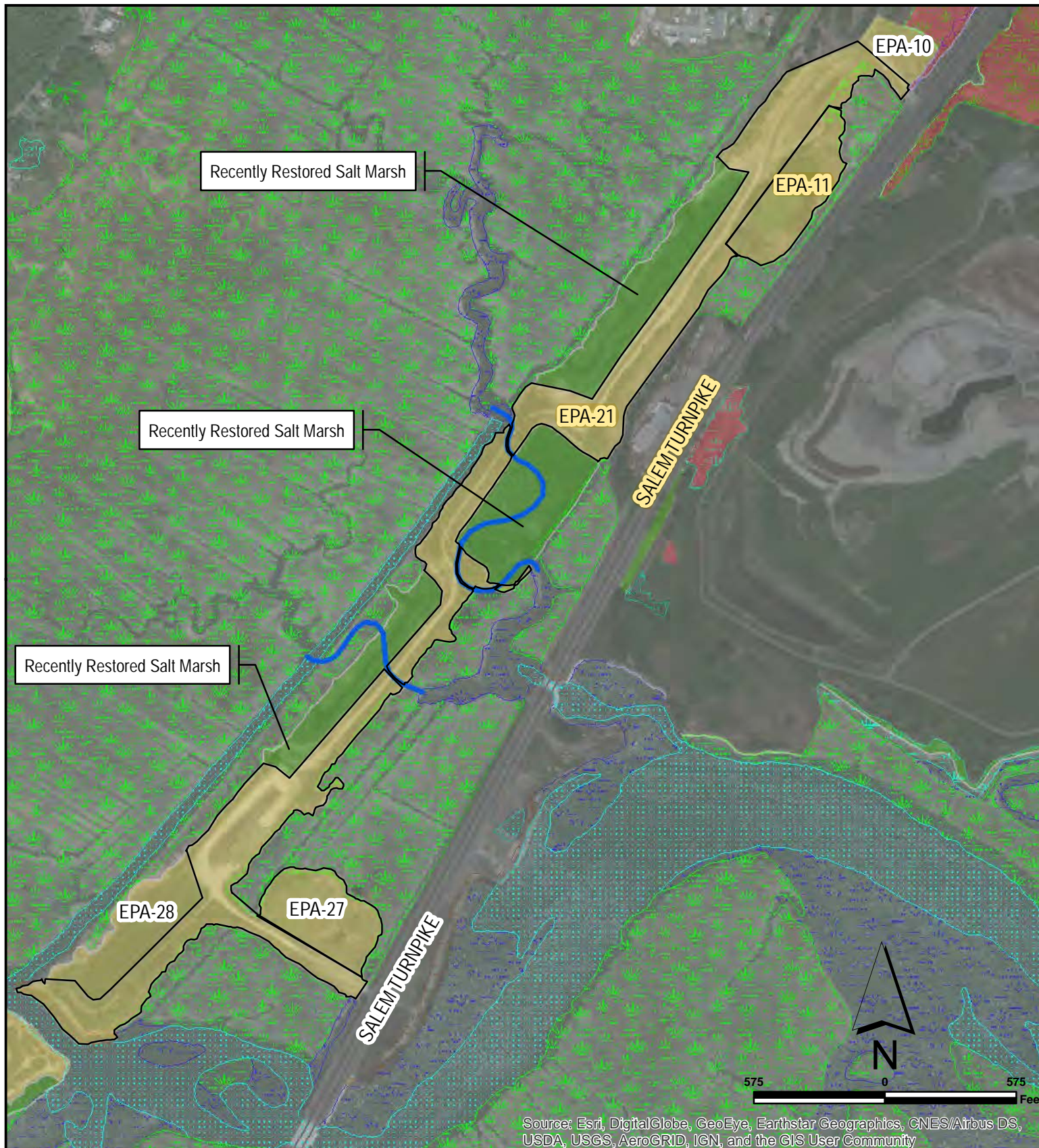
CHECK BY: DP

PLAN NO.

SHEET: P-003B

ISSUE

Wetland Mitigation Figures



Potential Salt Marsh Mitigation Sites

MBTA SAUGUS DRAWBRIDGE REPLACEMENT PROJECT

SAUGUS, ESSEX COUNTY, MASSACHUSETTS

Legend

- Coastal Bank Bluff or Sea Cliff
- Open Water
- Rocky Intertidal Shore
- Salt Marsh
- Shallow Marsh Meadow or Fen
- Tidal Flat
- WOODED SWAMP DECIDUOUS