



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

# PUBLIC NOTICE

**Comment Period Begins: February 16, 2016**  
**Comment Period Ends: March 1, 2016**  
**File Number: NAE-2015-02009**  
**In Reply Refer To: Kevin R. Kotelly, P.E.**  
**Phone: (978) 318-8703**  
**E-mail: kevin.r.kotelly@usace.army.mil**

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The District Engineer has received a permit application to conduct work in waters of the United States from the City of Boston Public Works Department, One City Hall Plaza, Room 710, Boston, Massachusetts 02201-2013. This work is proposed at the Northern Avenue Bridge in the Fort Point Channel of Boston Harbor at Northern Avenue, Boston, Massachusetts and on the Chelsea River at 338 East Eagle Street, East Boston, Massachusetts.

The work involves work, structures, and fill below the high tide line of waters of the United States at two separate sites in Boston, Massachusetts as follows:

**Northern Avenue Bridge Site (Coordinates are: Latitude N 42.35455°, Longitude W 71.04956°)**

The existing Northern Avenue Bridge is proposed to be removed. The City of Boston proposes to remove the bridge superstructure in sections and float the sections intact via barge to a City of Boston owned property in East Boston. Approximately 14 piles will be placed to anchor a proposed floating fender system which will surround the work area. The work also includes the removal of an existing submarine cable from the channel bed in Fort Point Channel. The excavation of the cable would impact approximately 720 square feet (SF) of the channel bottom and require the removal of approximately 960 cubic feet of material.

**East Boston Site (Coordinates are: Latitude N 42.38273°, Longitude W 71.02793°)**

The removed bridge sections would be floated intact to a City owned storage yard at 338 East Eagle Street, East Boston, Massachusetts, on the Chelsea River. A temporary ramp and trestle system is proposed to be constructed in the Chelsea River to offload the bridge at the storage yard. The Trestle would be 118 feet (ft) wide by 100 ft long and supported by approximately 36, 24 inch diameter pipe piles. Some of the piles would be batter piles. The ramp would be 118 ft wide by 85 ft long. The ramp and trestle would be constructed of steel beams and plates with timber matting at the surface. Temporary impacts to 69,698 SF of mud flats associated with the installation of the ramp and trestle are proposed. Pile driving and the use of barges, anchors, and other equipment in the intertidal area during construction of the trestle system would contribute to the temporary impacts.

The work is shown on the attached plans entitled, "Capital Improvement Project 16-93, Bridge B-16-184 (38K), Northern Avenue Over Fort Point Channel, Northern Avenue Bridge Construction – Phase 1," on 14 sheets, and dated February, 2016.

The project has been designed to avoid and minimize impacts. Impacts to waters of the US would be temporary. Mitigation for unavoidable impacts is being considered as part of this public notice.

**CENAE-R**  
**FILE NO. NAE-2015-2009**

**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.

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 Corps of Engineers 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. Any comments received will be considered by the Corps of Engineers 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.

**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).

This project would impact approximately 1.6 acres of Essential Fish Habitat (EFH) for various life stages of Atlantic cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), pollock (*Pollachius virens*), whiting (*Merluccius bilinearis*), red hake (*Urophycis chuss*), white hake (*Urophycis tenuis*), winter flounder (*Pseudopleuronectes americanus*), yellowtail flounder (*Limanda ferruginea*), windowpane flounder (*Scophthalmus aquosus*), American plaice (*Hippoglossoides platessoides*), ocean pout (*Macrozoarces americanus*), Atlantic halibut (*Hippoglossus hippoglossus*), Atlantic sea scallop (*Placopecten magellanicus*), Atlantic sea herring (*Clupea harengus*), bluefish (*Pomatomus saltatrix*), long finned squid (*Loligo pealeii*), short finned squid (*Illex illecebrosus*), Atlantic butterfish (*Peprilus triacanthus*), Atlantic mackerel (*Scomber scombrus*), summer flounder (*Paralichthys dentatus*), scup (*Stenotomus chrysops*), black sea bass (*Centropristis*

**CENAE-R**  
**FILE NO. NAE-2015-2009**

striata), surf clam (*Spisula solidissima*), and bluefin tuna (*Thunnus thynnus*). This habitat consists of subtidal silt and sand and mudflat. Loss of this habitat may adversely affect the species listed above. 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 the proposed work may have an adverse effect on properties listed in, or eligible for listing in, the National Register of Historic Places, specifically, the Northern Avenue Bridge. Additional review and consultation to fulfil requirements under Section 106 of the National Historic Preservation Act of 1966, as amended, will be ongoing as part of the permit review process.

**ENDANGERED SPECIES CONSULTATION**

The New England District, Army Corps of Engineers has reviewed the list of species protected under the Endangered Species Act of 1973, as amended, which might occur at the project site. 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 any Federally listed endangered or threatened species or their designated critical habitat. By this Public Notice, we are requesting that the appropriate Federal Agency concur with our determination.

**COASTAL ZONE MANAGEMENT**

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.
- (X) Permit from Local Wetland Agency or Conservation Commission.
- (X) Water Quality Certification in accordance with Section 401 of the Clean Water Act.

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 Kevin Kotelly at (978) 318-8703, (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.



**Alan R. Anacheka-Nasemann, PWS**  
**Chief, Permits and Enforcement Branch**  
**Regulatory Division**

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](mailto: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: \_\_\_\_\_

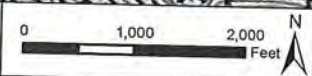
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PHONE: \_\_\_\_\_

Path: R:\Projects\GIS\_20161249671\_NorthernAveBridge\_EastBoston\MXD\NorthernAveBridge\_Phase1\_SiteLocus\_20160203.mxd



 Approximate Site Boundary



Wannalanci Mills  
650 Suffolk Street  
Lowell, MA 01854  
978-970-5600



**MASSACHUSETTS**

**SITE LOCUS**

**NORTHERN AVENUE BRIDGE**

**PHASE 1 PROJECT**


Service Layer Credits: Copyright © 2013 National Geographic Society, I-cubed

FIGURE 1

FEBRUARY 2016

Path: R:\Projects\GIS\_2016\249671\_NorthernAveBridge\_EastBoston\MXD\NorthernAveBridge\_Staging\_SiteLocus\_EBoston\_2016\_02\_01.mxd



 Approximate Site Boundary



 Wannalancit Mills  
650 Suffolk Street  
Lowell, MA 01854  
978-970-5600



**SITE LOCUS**  
**NORTHERN AVENUE BRIDGE**  
**EAST BOSTON, MA**

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FIGURE 1

FEBRUARY 2016

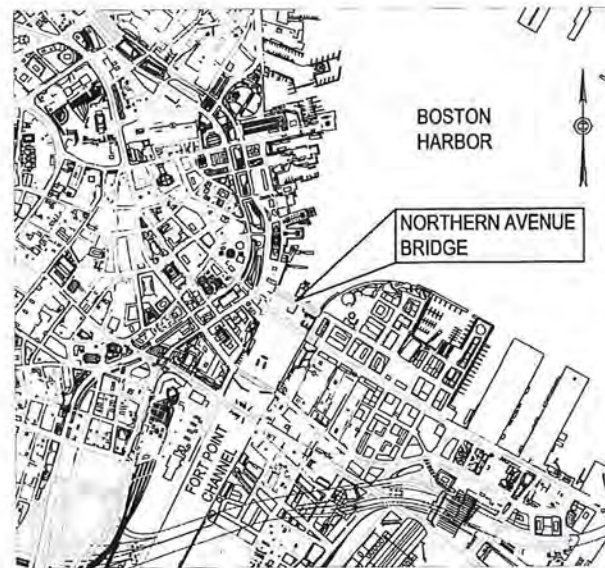
# CITY OF BOSTON PUBLIC WORKS DEPARTMENT

HON. MARTIN J. WALSH - MAYOR  
MICHAEL D. DENNEHY - COMMISSIONER OF PUBLIC WORKS

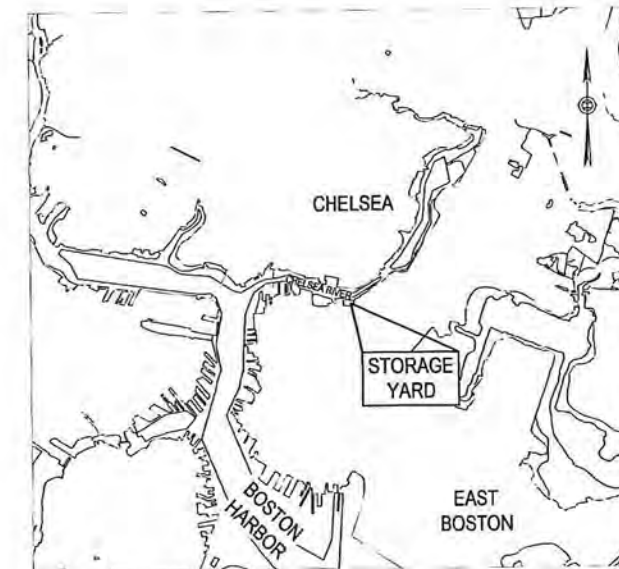
**CAPITAL IMPROVEMENT PROJECT 16-93**

**BRIDGE B-16-184 (38K)**

**NORTHERN AVENUE OVER FORT POINT CHANNEL  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1**



BRIDGE LOCATION PLAN



STORAGE YARD LOCATION PLAN

PLANS PREPARED BY:

**TranSystems**

101 ARCH STREET, SUITE 301, BOSTON, MA 02110



DATE: FEB 2016  
P.S.&E. SUBMISSION

APPROVED:

*Michael Dennehy*  
COMMISSIONER OF PUBLIC WORKS

2/3/2016  
DATE

R-3512-1

**GENERAL NOTES**

1. THE BOSTON PUBLIC WORKS DEPARTMENT MAKES NO ASSURANCES REGARDING THE PRESENTED CONDITIONS, DIMENSIONS AND MATERIAL OF THE EXISTING STRUCTURES. THE CONTRACTOR SHALL DETERMINE AND VERIFY EXISTING CONDITIONS AND CONSTRUCTION FEATURES OF THE STRUCTURES AS NECESSARY FOR PLANNING AND COMPLETION OF THE WORK.
2. THE CONTRACTOR SHALL VISIT THE PROJECT SITES PRIOR TO BIDDING TO FAMILIARIZE HIMSELF WITH THE SITE CONDITIONS AND THE EXTENT AND NATURE OF THE WORK TO BE PERFORMED UNDER THIS CONTRACT. THE SWING PIER, SWING SPAN AND TENDER'S HOUSE CAN ONLY BE ACCESSED BY BOAT IN COORDINATION WITH CITY PERSONNEL.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS REQUIRED FOR THE PROPER PERFORMANCE OF THE WORK. FIELD CONDITIONS MAY EXIST WHICH DEVIATE FROM THE TYPICAL AND THEORETICAL DIMENSIONS SHOWN ON THE PLANS, IN CONDITION REPORTS, AND FIELD INSPECTION NOTES.
4. EXISTING BRIDGE PLANS, CONDITION REPORTS, FIELD INSPECTION NOTES AND CALCULATIONS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE ASSUMED TO BE ACCURATE OR COMPLETE. THE CONTRACTOR SHALL DETERMINE THE AS-BUILT AND CURRENT CONDITION OF THE BRIDGE. ALL CALCULATIONS REQUIRED TO PERFORM CONTRACT WORK IN A SAFE AND EFFECTIVE MANNER SHALL BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS IN THE EMPLOY OF THE CONTRACTOR.
5. DIMENSIONS, ANGLES, AND ELEVATIONS SHOWN ON THE EXISTING DETAILS ARE TAKEN FROM EXISTING BRIDGE PLANS SUPPLEMENTED BY LIMITED FIELD MEASUREMENTS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS, ANGLES, ELEVATIONS, AND EXISTING DETAILS NECESSARY FOR THE COMPLETION OF ALL WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF AND SHALL NOT COMMENCE ANY WORK UNTIL THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE HAVE BEEN MADE.
6. SOME OF THE EXISTING STRUCTURAL ELEMENTS ARE IN ADVANCED STAGES OF DETERIORATION. LOCAL FAILURES ARE POSSIBLE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ASSESSING THE CONDITION OF THE STRUCTURE AND ENSURING THE SAFETY AND STABILITY OF THE EXISTING ELEMENTS DURING AND THROUGH ALL THE STAGES OF REMOVAL AND DISPOSAL OR REMOVAL AND RELOCATION, AS APPLICABLE.
7. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANALYZING AND ASSESSING THE SAFETY AND STABILITY OF THE EXISTING BRIDGE STRUCTURE FOR SUITABILITY OF CONTRACTORS OWN SEQUENCE AND MEANS AND METHODS OF BRIDGE REMOVAL. DUE CONSIDERATION SHALL BE GIVEN TO EQUIPMENT, MATERIAL AND PERSONNEL TO BE PLACED ON THE EXISTING STRUCTURE DURING THE DEMOLITION PROCESS.
8. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND MASSACHUSETTS DEP THE PROPOSED METHOD OF WORK, SCHEDULE AND IDENTIFICATION OF EQUIPMENT TO BE USED FOR ALL ITEMS OF WORK AT LEAST ONE WEEK PRIOR TO THE START OF CONSTRUCTION. THE FINAL STORAGE ARRANGEMENT OF MATERIALS AND BRIDGE SECTIONS AT THE EAST BOSTON STORAGE YARD SHALL BE ALSO SUBMITTED TO THE ENGINEER FOR APPROVAL.
9. AT LEAST ONE WEEK PRIOR TO THE START OF THE CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT DETAILED PLANS AND PROCEDURES (WITH SUPPORTING WORKING DRAWINGS, CALCULATIONS, BARGE ANALYSIS, DEMOLITION METHODS, EQUIPMENT, CREW SIZES, SEQUENCE, DURATIONS, ETC.) FOR THE FIXED SPANS, SWING SPAN, AND TENDER'S HOUSE TO THE ENGINEER FOR REVIEW AND APPROVAL. IN ADDITION, TEMPORARY SUPPORTS, TEMPORARY SHIELDING, OR ANY REQUIRED SHORING SHALL HAVE SHOP AND WORKING DRAWINGS PREPARED AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. AN ANALYSIS OF THE STAGING BARGE AT THE POINTS WHERE THE BRIDGE SPANS ARE SUPPORTED ON THE DECK IS ALSO REQUIRED FOR REVIEW AND APPROVAL BY THE ENGINEER. ALL SUBMITTALS SHALL BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS IN THE EMPLOY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOT COMMENCE ANY WORK UNTIL THE APPLICABLE SUBMITTALS ARE APPROVED BY THE ENGINEER.
10. WORKING DRAWINGS SHALL STATE THAT DIMENSIONS HAVE BEEN FIELD VERIFIED BY THE CONTRACTOR. DRAWINGS SUBMITTED WITHOUT THIS STATEMENT WILL NOT BE REVIEWED OR APPROVED. DIMENSIONS SHALL NOT BE SCALED FROM THE DRAWINGS. SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZED PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZE PRINTS.
11. DETERMINATION OF OBSTRUCTIONS REQUIRING REMOVAL WITHIN THE CHANNEL ABOVE THE MUDLINE SHALL BE COMPLETED USING AVAILABLE METHODS AND MAY INCLUDE BUT NOT LIMITED TO: VISUAL INSPECTION AT LOW TIDE, DIVER INSPECTION, OR SIDE SONAR.
12. CONTRACTOR SHALL RETRIEVE THE SPAN 1 LOWER CHORD MEMBER L1L2 OF THE SOUTH EXTERIOR FIXED TRUSS THAT HAS FALLEN INTO THE CHANNEL.

13. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND LICENSES FOR THE MANAGEMENT OF LEAD, ASBESTOS AND ANY OTHER HAZARDOUS MATERIAL AND PAY ALL CHARGES AND FEES INCURRED.
14. FOR THE PERMITS ACQUIRED BY THE CITY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ASSOCIATED DELAYS AND COSTS DUE TO CHANGES REQUIRED TO THESE PERMITS.
15. THE CONTRACTOR SHALL GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK, AND SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE FEDERAL GOVERNMENT, THE STATE, THE CITY OF BOSTON AND OTHERS HAVING JURISDICTION OVER THE WORK AND ENCOMPASSED BY THE CONTRACT.
16. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT THE BRIDGE CROSSES NAVIGABLE WATERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT OPERATIONS AS TO COMPLY WITH ALL THE REGULATIONS AND REQUIREMENTS OF THE U.S. COAST GUARD, THE CORPS OF ENGINEERS, AND THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION.
17. THE USE OF BARGES, FALSEWORK, FORMWORK, RIGGING, SCAFFOLDING AS WELL AS OTHER CONSTRUCTION METHODS AND PROCEDURES SHALL BE SCHEDULED AND PERFORMED IN SUCH A WAY THAT IT SHALL NOT INTERFERE WITH OR CAUSE UNAUTHORIZED INTERRUPTIONS TO NAVIGATION. THE EXTENT AND LIMITS OF ENCROACHMENT, IF ANY, ON THE NAVIGATION CLEARANCES SHALL BE SUBMITTED TO THE USCG FOR APPROVAL. NO ENCROACHMENT SHALL BE CAUSED UNTIL WRITTEN AUTHORIZATION IS RECEIVED FROM THE USCG.
18. BEFORE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL LOCATE ANY UTILITIES IN THE WORK AREAS AND PERFORM SITE SURVEYS TO THE LEVEL OF DETAIL NECESSARY TO IDENTIFY AND PROTECT THE UTILITIES.
19. EXISTING ELECTRIC SERVICE ON THE BRIDGE IS TO BE SHUT OFF, CUT AND CAPPED, PRIOR TO ANY BRIDGE REMOVAL ACTIVITIES.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT NO DAMAGE OCCURS TO EXISTING UTILITIES WITHIN THE VICINITY OF THE PROJECT AS A RESULT OF THE WORK. THE CONTRACTOR SHALL CONTACT DIGSAFE (811) A MINIMUM OF 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
21. EXISTING SUBMARINE CABLES SHALL BE REMOVED.
22. THE CONTRACTOR SHALL CONDUCT CONSTRUCTION OPERATIONS IN ORDER TO PRECLUDE THE INTERRUPTION OF MARINE AIDS TO NAVIGATION LOCATED ON THE BRIDGE OR APPURTENANCES OF THE BRIDGE; IF OPERATIONS REQUIRE INTERRUPTION OF EXISTING AIDS, PROVIDE TEMPORARY AIDS OF POWER AS REQUIRED FOR THE DURATION OF THE INTERRUPTION IN ORDER TO MAINTAIN THE MARINE AIDS TO NAVIGATION IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
23. ALL CONSTRUCTION EQUIPMENT MUST BE MARKED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS WHEN NOT ENGAGED IN CONSTRUCTION ACTIVITIES. THE CONTRACTOR'S SUBMITTED PLAN AND SCHEDULE SHALL SHOW THE PROPOSED LOCATION TO MOOR HIS CONSTRUCTION VESSELS WHEN THEY ARE NOT ENGAGED IN CONSTRUCTION ACTIVITIES.
24. THE U.S. COAST GUARD, CITY OF BOSTON, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION, ENVIRONMENTAL PROTECTION AGENCY, AND THE MASSACHUSETTS STATE POLICE HAVE THE RIGHT TO CLEAR THE CHANNEL FOR EMERGENCIES.
25. THE CONTRACTOR SHALL NOT IMPACT THE NAVIGATION CHANNEL AND ANY CLOSURES ASSOCIATED WITH THE REMOVAL OR DEMOLITION OPERATIONS SHALL BE COORDINATED AND APPROVED BY THE USCG.
26. PRIOR TO MOBILIZATION, THE CONTRACTOR IS REQUIRED TO CONTACT THE MARINE SAFETY OFFICER AT THE ADDRESS BELOW AND PROVIDE THE OFFICER A SCHEDULE OF HIS CONSTRUCTION ACTIVITIES WHICH WOULD IMPACT MARINE TRAFFIC.  
U.S. COAST GUARD  
408 ATLANTIC AVENUE  
BOSTON, MA 02110
27. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE PLAN AND SCHEDULE OF ALL WORK THAT WILL RESTRICT THE NAVIGATIONAL CHANNEL TO MARINE TRAFFIC. THE CONTRACTOR SHALL NOTIFY THE U.S. COAST GUARD (BOSTON) IN WRITING AS PER CONTRACT REQUIREMENTS. ALL REQUESTS ARE TO BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO COAST GUARD SUBMITTAL. THIS SHALL INCLUDE TEMPORARY NAVIGATION LIGHTING ON CONTRACTOR EQUIPMENT AS REQUIRED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
28. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS AGAINST THE WAKE CURRENT PRODUCED BY NEARBY VESSELS ON HIS EQUIPMENT AND SHALL NOT BE ENTITLED TO ANY TIME DELAYS OR EXTRA MONIES DUE TO ANY

- DAMAGE CAUSED BY SUCH PASSING MARINE TRAFFIC.
29. THE CONTRACTOR IS ADVISED THAT THERE IS VESSEL TRAFFIC IN CLOSE PROXIMITY OF THE BRIDGE SERVING THE ADJACENT FACILITIES (ROWE'S WHARF, MARINA NEXT TO BARKING CRAB RESTAURANT, NOAA TIDE STATION, JAMES HOOK & CO., WATER SHUTTLE, ETC.). THE CONTRACTOR SHALL PERFORM THE WORK UNDER THIS CONTRACT SO AS TO MINIMIZE INTERFERENCE WITH NAVIGATION.
  30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL OF ALL EXISTING MATERIALS WHICH ARE TO BE REMOVED AND DISPOSED OF FROM THE STRUCTURE AS SHOWN ON THE PLANS. THE BID PRICE SHALL INCLUDE THE COMPLETE COST OF REMOVAL, HANDLING AND LEGAL DISPOSAL OF SUCH MATERIALS. THE CHANNEL IS TO REMAIN CLEAR OF DEBRIS AND MATERIALS.
  31. NO PART OF THE EXISTING SUPERSTRUCTURE ELEMENTS SHALL BE ALLOWED TO FALL INTO THE WATER DURING THE PROCESS OF REMOVAL.
  32. THE EXISTING BRIDGE IS COATED WITH A LEAD-BASED PAINT. LEAD IS A HAZARDOUS MATERIAL. REFER TO THE SPECIAL PROVISIONS FOR A DESCRIPTION OF THE LEAD PAINT REMOVAL, CONTAINMENT AND DISPOSAL REQUIREMENTS AS WELL AS THE WORKER HEALTH AND SAFETY CONTROLS, AND REQUIRED REGULATORY AGENCY FILINGS AND APPROVALS.
  33. IN ADDITION TO THE REQUIREMENTS FOR CONTAINMENT OF LEAD-CONTAMINATED DEBRIS DESCRIBED IN THE SPECIAL PROVISIONS, THE CONTRACTOR SHALL AT NO TIME DROP WASTE, STEEL, DEBRIS OR OTHER MATERIAL TO THE AREAS BELOW THE BRIDGE. PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES SHALL BE USED TO CATCH ALL SUCH MATERIAL. IF THE ENGINEER DETERMINES THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED WITHOUT ADDITIONAL COMPENSATION.
  34. CONTRACTOR SHALL PROVIDE PERMANENT VEHICLE BARRIERS (MASSDOT ITEM 629.2 E 403.4.0) AND PERMANENT CHAIN LINK FENCING (MASSDOT ITEM 644 E 404.1.0), 8' HIGH WITH ANTI-CLIMBING TOP DETAILS ON BOTH SIDES OF THE BRIDGE APPROACHES TO PREVENT ACCIDENTAL OR UNAUTHORIZED ENTRY. FINAL CONDITION SAFETY MEASURES ARE TO BE IN PLACE PRIOR TO REMOVAL OF TEMPORARY SAFETY BARRIERS AND FENCING.
  35. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.
  36. THE CONTRACTOR IS NOT PERMITTED TO STOCKPILE ANY MATERIALS REMOVED FROM THE BRIDGE OVERNIGHT ON THE CONTRACTOR STAGING AREAS ALONG NORTHERN AVENUE.

**INDEX OF DRAWINGS**

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1.	TITLE SHEET
2.	GENERAL NOTES & INDEX OF DRAWINGS
3.	GENERAL PLAN AND ELEVATION
4.	SUGGESTED CONSTRUCTION SEQUENCE 1 OF 2
5.	SUGGESTED CONSTRUCTION SEQUENCE 2 OF 2
6.	TENDER'S HOUSE REMOVAL
7.	SWING SPAN REMOVAL & RELOCATION
8.	APPROACH TRUSS SPANS 1 & 2 REMOVAL & RELOCATION
9.	SWING PIER FENDER SYSTEM REMOVAL
10.	PLAN OF FLOATING BARRIER SYSTEM
11.	ELEVATION AND DETAILS OF FLOATING BARRIER SYSTEM
12.	PERMANENT BARRIER LOCATION PLAN
13.	STORAGE YARD LAYOUT
14.	TEMPORARY TRESTLE DETAILS

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SURVEY BY NONE  
 DRAWN BY CCJ  
 CHECKED BY FDP

CIP 16-93 SHEET 2 OF 14

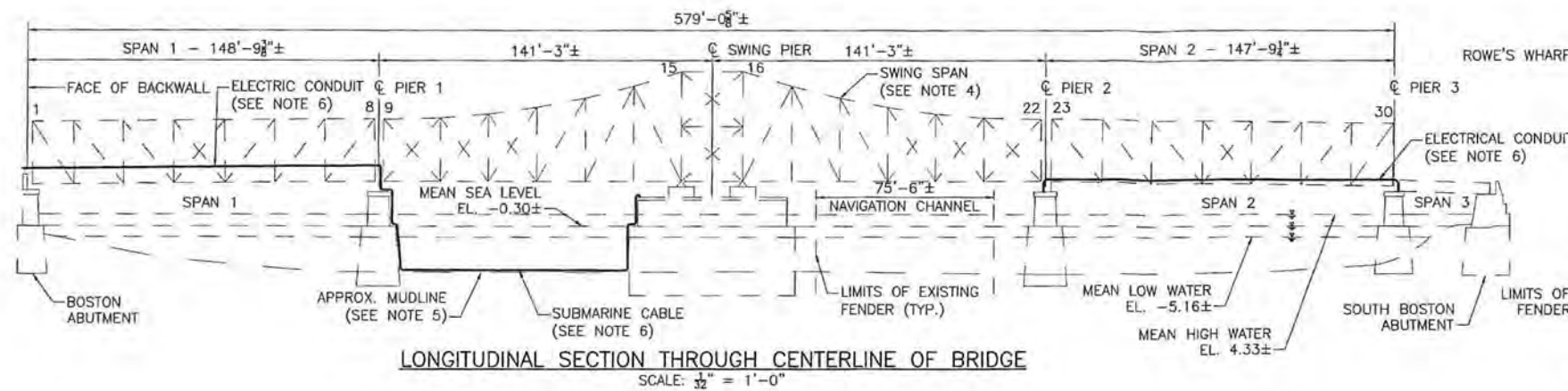
CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
 ENGINEERING DIVISION  
 NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1

**GENERAL NOTES & INDEX OF DRAWINGS**

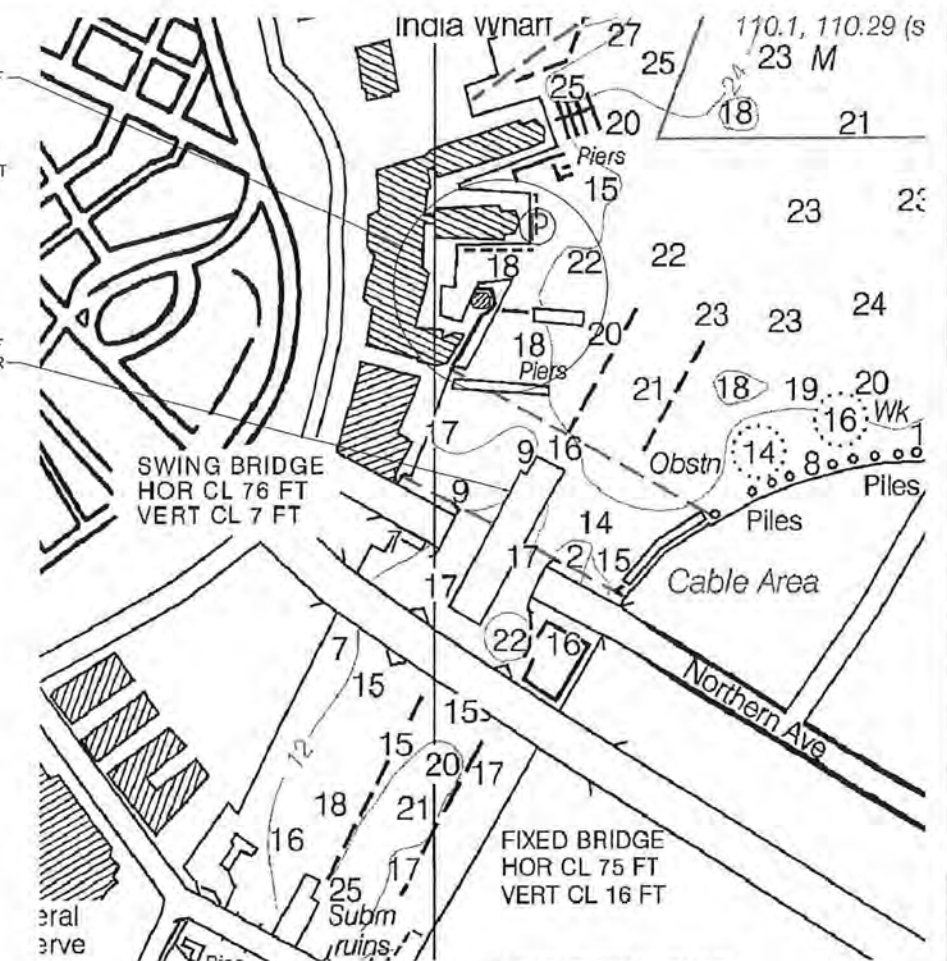
SCALE: AS NOTED  
 DATE: FEB 2016

*P. L. M. / W.*  
 CITY ENGINEER





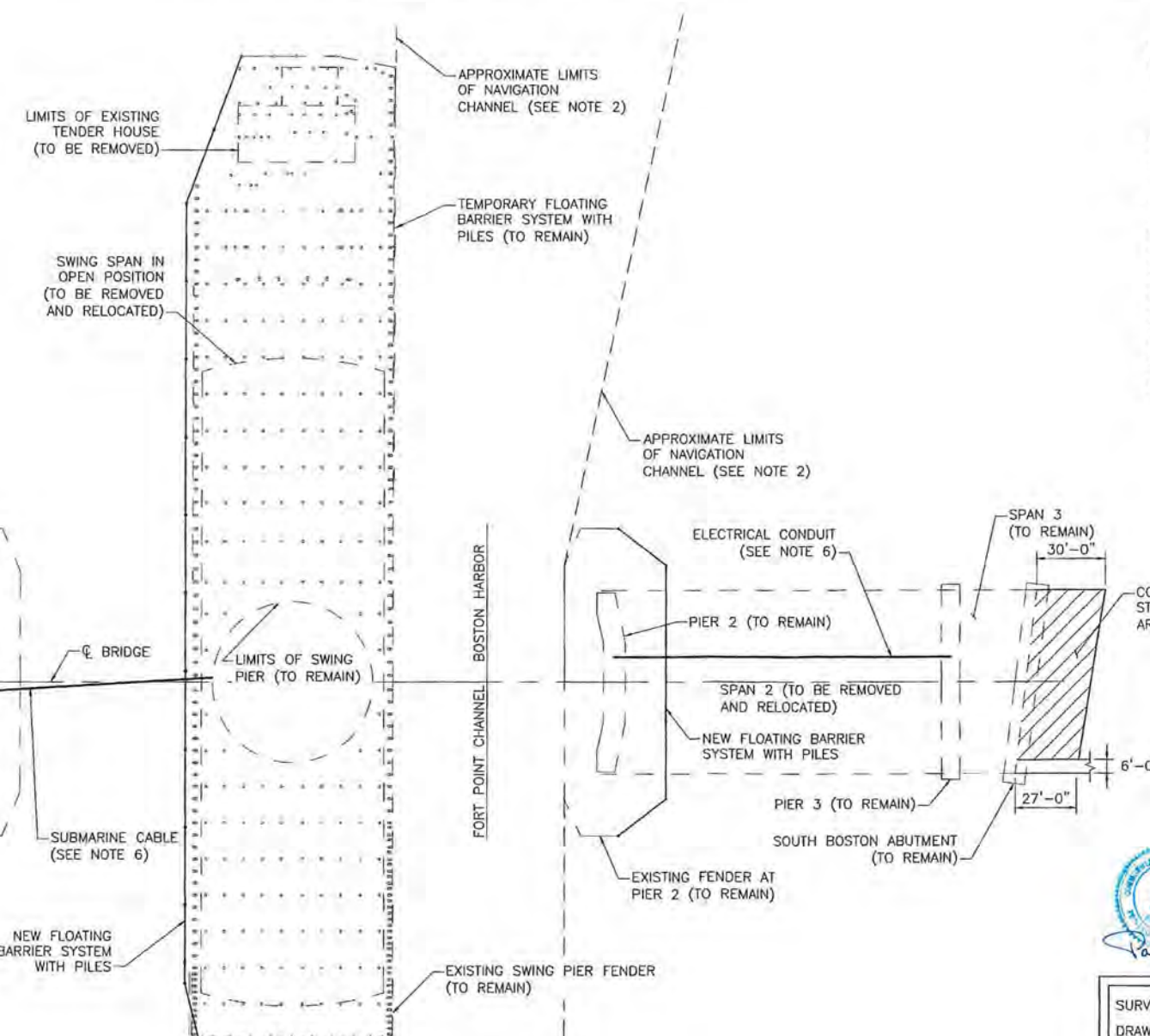
LONGITUDINAL SECTION THROUGH CENTERLINE OF BRIDGE  
SCALE: 1/32" = 1'-0"



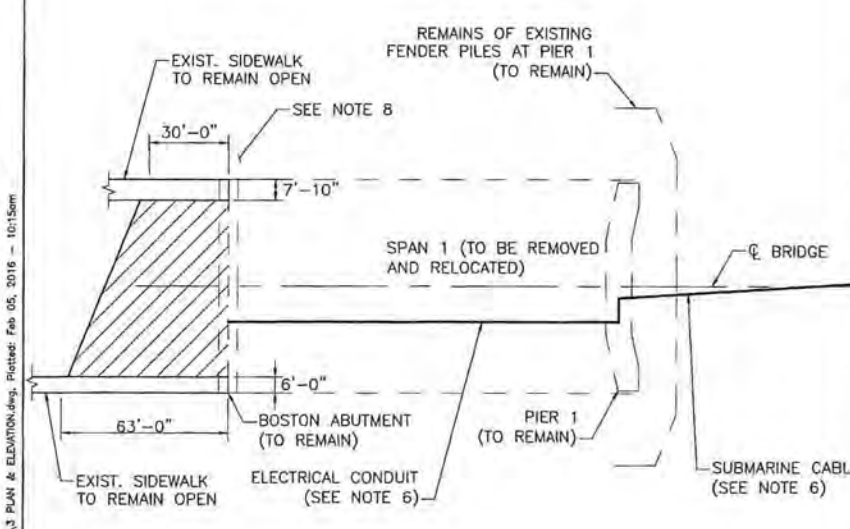
NOAA NAUTICAL NAVIGATIONAL CHART  
"BOSTON INNER HARBOR"  
LAST UPDATE 1/28/2014  
SCALE: 1" = 200'-0"

NOTES:

- FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
- APPROXIMATE LIMITS SHOWN OF THE NAVIGATION CHANNEL ARE BASED ON NOAA NAUTICAL NAVIGATIONAL CHART.
- CONTRACTOR IS ADVISED THAT THERE IS A CABLE AREA INDICATED ON THE NOAA NAUTICAL NAVIGATIONAL CHART.
- IN THE LONGITUDINAL SECTION, THE SWING SPAN IS SHOWN IN THE CLOSED (TO NAVIGATION) POSITION FOR SCHEMATIC ILLUSTRATION PURPOSES ONLY. THE SWING SPAN IS IN THE OPEN POSITION AS SHOWN IN GENERAL PLAN. THE CONTRACTOR WILL NOT BE PERMITTED TO ROTATE THE SWING SPAN.
- REFER TO HYDROGRAPHIC SURVEY IN APPENDIX A OF CONTRACT DOCUMENTS.
- EXISTING ELECTRIC CONDUITS FROM THE DECK OF SPANS 1 AND 2 AND THE SUBMARINE CABLE ON THE CHANNEL BED BETWEEN PIER 1 AND THE SWING PIER SHALL BE DE-ENERGIZED AND REMOVED.
- THIS SHEET IS INTENDED TO SHOW THE GENERAL PLAN AND ELEVATION OF THE BRIDGE ONLY. THE CONTRACTOR IS NOTIFIED THAT THERE ARE NUMEROUS ADJACENT STRUCTURES (INCLUDING DOCKS) WITHIN CLOSE PROXIMITY OF THE BRIDGE. THE CONTRACTOR'S OPERATIONS SHALL NOT INTERFERE WITH THE OPERATIONS OF THE EXISTING ADJACENT STRUCTURES.
- CONTRACTOR OPERATIONS SHALL NOT INTERFERE WITH ACCESS TO THE BOSTON HARBOR WALK OR THE U.S. DEPARTMENT OF COMMERCE'S NATIONAL OCEAN SERVICE TIDE STATION WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER.



GENERAL PLAN OF BRIDGE  
SCALE: 1/32" = 1'-0"



SURVEY BY: NONE  
DRAWN BY: CCJ  
CHECKED BY: FDP

CIP 16-93 SHEET 3 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**GENERAL PLAN AND ELEVATION**

SCALE: AS NOTED  
DATE: FEB 2016

*Paul J. Smith*  
CITY ENGINEER

C:\B008\044\Bridges\Demolition\NOA Bridge Demolition\NOA Plans\044\3 PLAN & ELEVATION.dwg, Plotter: Feb 05, 2016 - 10:15am

R-3512-3

## SUGGESTED SEQUENCE OF CONSTRUCTION

### GENERAL

THE FOLLOWING CONSTRUCTION PROCEDURE AND EQUIPMENT INFORMATION (IDENTIFIED IN THESE PLANS) IS INTENDED AS A SUGGESTION OF ONE FEASIBLE METHOD IN ORDER TO PROVIDE A UNIFORM BASIS FOR BIDDING AND TO ACQUIRE THE APPROPRIATE PERMITS. ANY CHANGES TO THE PERMITS DUE TO THE CONTRACTOR'S MEANS AND METHODS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL SUBMIT THE INTENDED CONSTRUCTION PROCEDURE, TAILORED TO THEIR FIRM'S CAPABILITIES, TO THE ENGINEER FOR APPROVAL. CONSTRUCTION PROCEDURES SHALL BE SUBMITTED FOR ALL ITEMS OF WORK.

SUBMITTED SEQUENCES WHICH RESULT IN A LONGER DURATION OF WORK, RESULT IN ADDITIONAL RESOURCE AREA IMPACTS, OR ADVERSELY AFFECT NAVIGATION WILL NOT BE FAVORABLY CONSIDERED. SHORT-TERM PARTIAL CLOSURE OF THE NAVIGATION CHANNEL (WHEN NECESSARY) SHALL BE COORDINATED AND SCHEDULED WITH THE CITY AND APPROVED BY THE UNITED STATES COAST GUARD. PLEASE NOTE THAT THE UNITED STATES COAST GUARD IS LOCATED IN THE 8-STORY BUILDING ADJACENT TO SPAN 1.

PRIOR TO ANY MODIFICATION TO EXISTING STEEL (CUTTING, WELDING, ETC.) REMOVE LEAD PAINT IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED LEAD ABATEMENT PLAN.

### NOTE WELL

THE CONTRACTOR IS CAUTIONED THAT STRUCTURAL INTEGRITY OF THE EXISTING TRUSS SPANS IS NOT ASSURED DUE TO STRUCTURAL STEEL DETERIORATION. LOCAL FAILURES ARE POSSIBLE. THE CONTRACTOR SHALL MAINTAIN BALANCE AND STABILITY OF THE SWING SPAN DURING CONSTRUCTION WITH REMOVAL OPERATIONS PROCEEDING IN A SYMMETRICAL SEQUENCE.

CAUTION - THE TENDER'S HOUSE IS SUSPECTED OF CONTAINING ASBESTOS AND ALL STRUCTURAL STEEL IS SUSPECTED OF BEING COATED WITH LEAD BASED PAINT.

### PROHIBITION OF EXPLOSIVE REMOVAL METHODS

THE USE OF EXPLOSIVE REMOVAL METHODS IS STRICTLY PROHIBITED.

### GENERAL PRELIMINARY PREPARATION

WITHIN 72-HOURS OF NOTICE-TO-PROCEED THE CONTRACTOR SHALL MOBILIZE ON BOTH SITES - THE BRIDGE (BOSTON) AND THE STORAGE YARD (EAST BOSTON). BEGIN BRIDGE WORK BY CUTTING AND REMOVING PILES BELOW THE SWING SPAN AT THE BRIDGE AND BEGIN STORAGE YARD WORK BY CLEARING THE SITE. THE STORAGE YARD IS LOCATED AT 338 EAST EAGLE STREET IN EAST BOSTON.

THE CONTRACTOR IS REQUIRED TO MAKE ALL NECESSARY FIELD MEASUREMENTS AND SUBMIT REQUIRED SHOP/WORKING/REMOVAL DRAWINGS FOR APPROVAL. UPON APPROVAL, THE CONTRACTOR SHALL PROCURE MATERIALS AND EQUIPMENT IN A MANNER AND SEQUENCE SO AS TO AVOID DELAYS IN THE WORK.

THE CONTRACTOR SHALL SUBMIT A WORK SCHEDULE AND DETAILED CONSTRUCTION PROCEDURES FOR ALL REMOVAL STEPS, WHICH MUST BE A WELL PLANNED AND COORDINATED SEQUENCE OF ACTIVITIES. THIS WORK SCHEDULE AND ANY REQUIRED DETAILED CONSTRUCTION PROCEDURES SHALL BE SUBMITTED FOR APPROVAL.

THE CONTRACTOR WILL NOT BE PERMITTED TO UTILIZE A CONSTRUCTION PROCEDURE THAT ALLOWS ANY PORTION OF THE STRUCTURE TO BE DROPPED INTO THE WATER AND LATER PICKED FOR REMOVAL.

CONTRACTOR STAGING AREAS INCLUDE: A PORTION OF THE ROADWAY AREA NEXT TO THE BOSTON ABUTMENT BETWEEN THE JAMES HOOK PROPERTY AND THE USCG BUILDING; SPAN 3 AND A PORTION OF THE ROADWAY ADJACENT TO THE SOUTH BOSTON ABUTMENT; AND, A PORTION OF THE STORAGE YARD IN EAST BOSTON LOCATED AT 338 EAST EAGLE STREET.

### IMPORTANT FIRST ITEMS

1. THE CONTRACTOR SHALL PERFORM A SURVEY OF THE CHANNEL BOTTOM AT THE BRIDGE WITHIN THE LIMITS SHOWN IN THE 2010 HYDROGRAPHIC SURVEY PROVIDED IN APPENDIX A OF THE CONTRACT DOCUMENTS. IN ADDITION, THE CONTRACTOR SHALL OBTAIN LOW TIDE COLOR PHOTOGRAPHS OF THE TIDAL FLAT AREA ADJACENT TO THE STORAGE YARD.
2. THE CONTRACTOR SHALL FIND, COLLECT, AND SECURE SALVAGE ITEMS / COMPONENTS OF HISTORICAL SIGNIFICANCE AND ITEMS / COMPONENTS THAT THE CITY WANTS TO RECLAIM FOR USE AT ANOTHER LOCATION. THESE ITEMS SHALL BE RELOCATED AND PROTECTED AT THE STORAGE YARD.

### REMOVAL OF TENDER'S HOUSE

3. POSITION WORK BARGES ADJACENT TO TENDER'S HOUSE.
4. PERFORM PHOTOGRAPHIC DOCUMENTATION OF THE INSIDE AND OUTSIDE OF THE TENDERS HOUSE.
5. REMOVE ASBESTOS CONTAINING MATERIALS AND DISPOSE OF IN AN APPROVED MANNER.
6. REMOVE THE ROOF OF THE TENDERS HOUSE.
7. PICK THE COMPONENTS OF HISTORICAL SIGNIFICANCE AND RELOCATE TO THE STORAGE YARD.
8. REMOVE THE REMAINING TENDERS HOUSE WALLS, FLOOR, AND SUPPORTING TIMBER PILES. ALL TENDER'S HOUSE PILES SHALL BE CUT AND REMOVED TO AN ELEVATION 3- FEET ABOVE THE MUDLINE.

### REMOVAL OF SWING SPAN TRUSS

9. THE CONTRACTOR SHALL DISCONNECT ALL POWER TO THE SWING SPAN BY REMOVAL OF THE ELECTRIC CABLE LOCATED ON TOP OF THE DECK IN SPAN 1. THE SUBMARINE CABLE ON TOP OF THE MUCK LINE BETWEEN PIER 1 AND THE SWING PIER SHALL BE REMOVED AFTER THE TIME OF YEAR RESTRICTION FOR WORK DISTURBING SEDIMENTS. INSTALL TEMPORARY LIGHTING ON FENDER SYSTEM.
10. REMOVE THE TOP PORTION OF ALL TIMBER PILES THAT ARE DIRECTLY UNDERNEATH THE SWING SPAN AND BEHIND THE NAVIGATION CHANNEL FENDER SYSTEM TO FACILITATE BARGE OPERATIONS. EACH INDIVIDUAL PILE SHALL BE CUT AND REMOVED AT AN ELEVATION OF APPROXIMATELY 3- FEET ABOVE THE MUDLINE.
11. REMOVE THE FENDER TAIL (IDENTIFIED ON THE PLANS) TO FACILITATE BARGE OPERATIONS WHICH ALLOWS FOR BARGE ACCESS ABOVE THESE PILES. THE CONTRACTOR MUST LEAVE A SUFFICIENT LENGTH OF THE EXISTING PILE TO FACILITATE PILE REMOVAL BY PULLING AFTER BRIDGE REMOVAL (ASSUMED TO BE APPROXIMATELY 3- FEET ABOVE THE MUDLINE). AT A FUTURE DATE (PHASE II) EACH REMAINING STUB OF A PILE SHALL BE LOCATED AND PULLED IN ITS ENTIRETY.
12. THE CONTRACTOR MAY DRIVE UP TO 12 TIMBER PILES (12-INCH DIAMETER) AT EACH END OF THE SWING SPAN TO SUPPORT THE ENDS OF THE SWING SPAN. IN ADDITION, THE CONTRACTOR MAY INSTALL AND TENSION WIRE ROPE TIEDOWNS AS NECESSARY TO ENHANCE THE STABILITY OF THE SWING SPAN.
13. PLACE FLOAT-OUT BARGES (WITH SPUDS REMOVED) DIRECTLY UNDERNEATH EACH CANTILEVERED PORTION OF THE SWING SPAN TRUSS DURING LOW TIDE. UTILIZE FULL BALLAST TO MAINTAIN A LOW POSITION.
14. SECURE THE FLOAT-OUT BARGES BY MOORING TO THE EXISTING FENDER SYSTEM AND THE SWING PIER TO PREVENT LATERAL MOVEMENT OR HORIZONTAL LOADS ON THE SWING TRUSS DURING BRIDGE LIFTING AND FLOAT-OUT OPERATIONS. THE MOORING LINES SHOULD BE CLEARLY MARKED AND ILLUMINATED AT NIGHT IN ACCORDANCE WITH UNITED STATES COAST GUARD REGULATIONS. THE MOORING LINES SHOULD NOT INFRINGE ON THE NAVIGATIONAL CHANNEL.
15. PLACE A WORKING BARGE ADJACENT TO EACH FLOAT-OUT BARGE AWAY FROM THE NAVIGATION CHANNEL ON THE WEST SIDE OF THE SWING PIER UTILIZING SPUDS TO PREVENT LATERAL MOVEMENT.
16. INSTALL TEMPORARY TRUSS STRENGTHENING FOR MEMBERS SHOWN AS REQUIRED. PREPARATION OF THESE LOCATIONS REQUIRES SPECIAL CONSIDERATION DUE TO LEAD PAINT. THE CONTRACTOR SHALL SUBMIT COMPLETE DETAILED CALCULATIONS AND PROCEDURES FOR THE ENTIRE REMOVAL PROCESS FOR APPROVAL BASED UPON THEIR MEANS AND METHODS PRIOR TO REMOVAL.
17. PLACE SUPPORT POINTS AT EACH CANTILEVERED PORTION OF THE SWING TRUSS ON LOWER CHORD TRUSS JOINTS AT MULTIPLE LOCATIONS AS SHOWN ON THE PLANS.
18. PLACE GRILLAGE ON FLOAT-OUT BARGE AT LOCATIONS SHOWN ON THE PLANS AND INSTALL WIRE ROPE TIE-DOWNS TO THE BARGE WITH ADEQUATE SLACK AS REQUIRED. SHIM AS REQUIRED ALLOWING APPROXIMATELY 6-INCH GAP BETWEEN THE TOP OF THE GRILLAGE AND THE UNDERSIDE OF THE TRUSS LOWER JOINT.
19. PREPARATION OF THE CUT LOCATIONS REQUIRES SPECIAL CONSIDERATION DUE TO LEAD PAINT. ALONG THE CENTERLINE OF THE SWING PIER BAY, CUT

THE DECK, STRINGERS, FLOORSYSTEM LATERAL BRACING AND TOP CHORD LATERAL BRACING ACROSS THE FULL WIDTH OF THE SPAN. REMOVE THE NUTS FOR BOLTS CONNECTING THE INTERIOR TRUSS BEARINGS TO THE TOP FLANGE OF THE DISTRIBUTION GIRDER SUPPORTS. DISCONNECT ANY OTHER CONNECTIONS AS REQUIRED TO PROVIDE FREEDOM OF MOVEMENT FOR LIFT PROVIDED BY THE BARGES.

20. USING A COMBINATION OF DE-BALLASTING AND A RISING TIDE, RAISE BOTH FLOAT-OUT BARGES SIMULTANEOUSLY SUCH THAT THE CANTILEVERED SPANS FULLY BEAR ON THE GRILLAGES. THE INTENT IS TO TRANSFER THE FULL REACTION OF THE SUPPORTED TRUSS CANTILEVERS OF THE SWING SPAN TO THE BARGES. THIS SHALL BE ACHIEVED BY MONITORING THE FREEBOARD AND ELEVATION OF THE TRUSS SUPPORT POINTS, WITH BARGE RAISING OPERATIONS CONTINUING UNTIL THE TRUSS SUPPORT POINTS START TO LIFT.
21. CUT TRUSS MEMBERS ALONG THE CENTERLINE OF THE SWING PIER BAY AT ALL FOUR TRUSSES (SIMULTANEOUSLY) WHILE THE TIDE AND BARGE ARE STILL RISING. DURING THIS CUTTING OPERATION THE VERTICAL ELEVATION OF THE TRUSS SUPPORT POINTS SHALL BE MONITORED TO ENSURE CONTINUED LOAD TRANSFER TO THE BARGE. THE CONTRACTOR SHALL PUMP BALLAST AS REQUIRED. PRIOR TO CUTTING, ALL TRUSS MEMBERS MUST BE CLEANED TO SSPC SP3 FOR A DISTANCE OF 1'-0" ON EACH SIDE OF THE PLANNED CUT. ALL CLEANING TO BE PERFORMED WITHIN A CONTAINMENT SYSTEM APPROVED BY THE ENGINEER.
22. UPON LOAD TRANSFER TO GRILLAGES, THE ELEVATIONS OF THE BARGES SHALL BE CONTINUOUSLY MONITORED AND MAINTAINED CONSTANT AND LEVEL BY BALLAST ADJUSTMENTS TO COMPENSATE FOR TIDAL VARIATION.
23. FLOAT-OUT EACH CANTILEVERED PORTION OF THE SWING TRUSS SPAN INTO BOSTON HARBOR AND PAST THE MERIDIAN STREET BRIDGE ON THE CHELSEA RIVER TO THE STORAGE YARD.
24. REMOVE THE DISTRIBUTION GIRDERS, DRUM GIRDER, CIRCULAR RACK ON THE TOP OF THE SWING PIER AND ALL STRUCTURAL STEEL AND OTHER MATERIALS WITHIN THE SWING PIER PIT. TRANSPORT THESE MEMBERS TO THE STORAGE YARD.

### REMOVAL OF SPAN 1 TRUSS

25. PLACE REMOVAL BARGES DIRECTLY UNDERNEATH THE SPAN 1 TRUSS.
26. REMOVE THE DECK AND FLOORSYSTEM IN THE MIDDLE BAY AS SHOWN ON THE PLANS AND REMOVE THE DECK IN THE OUTER BAYS. PROVIDE CONTAINMENT BELOW ALL BAYS TO PREVENT DEBRIS FROM FALLING INTO WATER AND IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED LEAD ABATEMENT PLAN AND SPECIAL PROVISIONS.
27. PLACE FLOAT-OUT BARGES (WITH SPUDS REMOVED) DIRECTLY UNDERNEATH EACH HALF OF THE SPAN 1 TRUSSES DURING LOW TIDE. UTILIZE FULL BALLAST TO MAINTAIN A LOW POSITION.
28. SECURE THE REMOVAL BARGES AND FLOAT-OUT BARGES BY MOORING TO THE EXISTING EAST ABUTMENT AND PIER 1 TO PREVENT LATERAL MOVEMENT OR HORIZONTAL LOADS ON THE TRUSS DURING BRIDGE LIFTING AND FLOAT-OUT OPERATIONS. THE MOORING LINES SHOULD BE CLEARLY MARKED AND ILLUMINATED AT NIGHT IN ACCORDANCE WITH UNITED STATES COAST GUARD REGULATIONS.
29. PLACE A WORKING BARGE ADJACENT TO THE FLOAT-OUT BARGES AS NEEDED UTILIZING SPUDS TO PREVENT LATERAL MOVEMENT.
30. INSTALL TEMPORARY TRUSS STRENGTHENING FOR MEMBERS SHOWN ON THE PLANS. THE CONTRACTOR SHALL SUBMIT CONNECTION DETAIL CALCULATIONS AND PROCEDURES FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO REMOVAL.
31. PLACE SUPPORT POINTS AT EACH HALF OF THE SPAN 1 TRUSS ON LOWER CHORD TRUSS JOINTS AT MULTIPLE LOCATIONS AS SHOWN ON THE PLANS.
32. PLACE GRILLAGE ON FLOAT-OUT BARGES AT LOCATIONS SHOWN ON THE PLANS AND INSTALL WIRE ROPE TIEDOWNS TO BARGE WITH ADEQUATE SLACK AS REQUIRED. SHIM AS REQUIRED ALLOWING APPROXIMATELY 6-INCH GAP BETWEEN THE TOP OF THE GRILLAGE AND THE UNDERSIDE OF THE TRUSS LOWER JOINT.
33. USING A COMBINATION OF DE-BALLASTING AND A RISING TIDE, EACH FLOAT-OUT BARGE (ONE AT A TIME) FULLY ENGAGING THE GRILLAGES. UPON LOAD TRANSFER TO GRILLAGES, THE ELEVATIONS OF THE BARGES SHALL BE MONITORED AND ADJUSTED WITH BALLAST AS NECESSARY. TENSION WIRE ROPE TIEDOWNS TO SNUG-TIGHT CONDITION.

34. FLOAT-OUT EACH HALF OF THE SPAN 1 TRUSS SPAN INTO BOSTON HARBOR AND PAST THE MERIDIAN STREET BRIDGE ON THE CHELSEA RIVER TO THE STORAGE YARD.

### REMOVAL OF SPAN 2 TRUSS

35. REPEAT SEQUENCE ITEMS 25 TO 34 FOR THE SPAN 2 TRUSS.

### REMOVAL OF SUBMARINE CABLE

36. REMOVE ELECTRIC SUBMARINE CABLE FROM PIER.

### FENDER SYSTEM

37. INSTALL ADDITIONAL FLOATING FENDER SYSTEM AROUND THE SWING PIER AND PIER 2 AT LOCATIONS SHOWN ON THE PLANS.
38. PROVIDE SOLAR POWERED LIGHTING TO FENDER AND PIERS AS IDENTIFIED IN THE SPECIAL PROVISIONS.

### IMPORTANT LAST ITEMS

39. INSTALL FENCE AND CONCRETE BARRIERS AT BOTH ENDS OF THE BRIDGE.
40. PERFORM SURVEY OF THE CHANNEL BOTTOM AT THE BRIDGE (BOSTON) WITHIN THE LIMITS SHOWN IN THE 2010 HYDROGRAPHIC SURVEY PROVIDED IN APPENDIX A OF THE CONTRACT DOCUMENTS. IN ADDITION, THE CONTRACTOR SHALL OBTAIN LOW TIDE COLOR PHOTOGRAPHS OF THE TIDAL FLAT AREA ADJACENT TO THE STORAGE YARD (EAST BOSTON).
41. COMPLETE FINAL REMOVAL OF ANY IDENTIFIED CONSTRUCTION DEBRIS.



CIP 16-93 SHEET 4 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1

**SUGGESTED CONSTRUCTION  
SEQUENCE 1 OF 2**

SCALE: AS NOTED

DATE: FEB 2016

*P. L. M.*  
CITY ENGINEER

SURVEY BY	NONE
DRAWN BY	CCJ
CHECKED BY	FDP

**SUGGESTED SEQUENCE OF CONSTRUCTION (CONTINUED)**

CITY OWNED STORAGE YARD AT EAST EAGLE STREET IN EAST BOSTON

PLEASE NOTE THAT THIS STORAGE YARD HAS SPECIFIC ENVIRONMENTAL CONSIDERATIONS. THE CONTRACTOR IS NOT ALLOWED TO PUNCTURE OR PENETRATE THE TOP SURFACE OF THE YARD. CONSTRUCTION ACTIVITIES AT THE EDGE OF THE YARD ADJACENT TO THE WATER SHOULD MINIMIZE DISTURBANCE OF IN-SITU MATERIAL AS MUCH AS POSSIBLE.

MOBILIZE YARD

1. PREPARE THE YARD BY CLEARING THE WORK AREA TO A FLAT SURFACE. TREES AND OTHER VEGETATION SHOULD BE CUT HORIZONTALLY AT THE GROUND LINE ONLY IN AN ATTEMPT TO AVOID ENVIRONMENTAL DISTURBANCE. THE FENCE ADJACENT TO THE WATER SHOULD BE REMOVED TO THE EXTENT NECESSARY TO FACILITATE THE CONTRACTORS OPERATIONS. OTHER YARD COMPONENTS, OBSTRUCTIONS, OR DEBRIS SHOULD BE REMOVED BY THE CONTRACTOR IN COORDINATION WITH THE CITY.
2. MARKOUT THE FINAL LAYOUT AREAS FOR THE PIECES THAT WILL BE TRANSPORTED AND RECEIVED AT THIS SITE AND THE INTENDED POSITION OF CRANE AND PATH(S) OF SPMT'S (SELF-PROPELLED MODULAR TRANSPORTS). THE PIECES MOVED TO THIS SITE INCLUDE BOTH HALFS OF THE SWING TRUSS, TWO APPROACH TRUSS PIECES FROM TRUSS SPAN 1, TWO APPROACH TRUSS PIECES FROM TRUSS SPAN 2, AND SALVAGE/HISTORIC ITEMS.
3. PLACE STEEL PLATE OR CRANE MATS ON TOP OF THE EXISTING GROUND TO FACILITATE CONTRACTOR PROPOSED OPERATIONS AS NECESSARY.

YARD CONSTRUCTION

4. CONSTRUCT A TEMPORARY STEEL TRESTLE TO SPAN BETWEEN THE ADJUSTABLE TRANSPORT RAMP AND THE STORAGE YARD.
5. FLOAT-IN THE ADJUSTABLE TRANSPORT RAMP (FABRICATED OFF-SITE) AND CONNECT THE LAND SIDE END OF THE RAMP TO THE FIXED TRESTLE. THIS RAMP MUST LAUNCH ON TOP OF THE BARGE AND BE POSITIONED TO ALLOW SPMT'S TO TRANSPORT VARIOUS PIECES OF THE STRUCTURE.
6. THE RIVER SIDE END OF THE ADJUSTABLE TRANSPORT RAMP SHALL BE SUPPORTED BY AN ADJUSTABLE FLOAT TO ACCOMMODATE THE FLOAT-IN BARGES. THIS FLOAT WILL NEED TO BALLAST AS NECESSARY TO INTERFACE WITH THE FLOAT-IN BARGES, MOVE Laterally (TOWARDS LAND AND AWAY FROM LAND ALONG THE RAMP) TO ACCOMDATE POSITIONING OF THE BARGES, AND PROVIDE SUPPORT FOR THE ADJUSTABLE TRANSPORT RAMP PRIOR TO AND AFTER BARGE OPERATIONS. THE FLOAT IS ALSO INTENDED TO KEEP THE END OF THE RAMP OUT OF THE WATER.

RECEIVE SWING TRUSS AND APPROACH SPAN TRUSSES

7. SPMT'S ARRIVE ON-SITE AND ARE POSITIONED TO RECEIVE THE TRUSSES.
8. IMPORTANT - STEPS 12 TO 16 MUST BEGIN ON A RISING TIDE AND BE COMPLETED WHILE ADEQUATE DRAFT REMAINS IN THE TIDAL BASIN WORK AREA DURING ONE TIDE CYCLE SO THAT THE STRUCTURE IS NOT STRANDED ON THE FLOAT-IN BARGE.
9. FIRST HALF OF SWING TRUSS ARRIVES AT THE STORAGE YARD VIA BARGE WHILE THE TIDE IS RISING. THIS FLOAT-IN BARGE IS PLACED ADJACENT TO THE ADJUSTABLE TRANSPORT RAMP AS SOON AS DRAFT IS AVAILABLE AND MOVED TOWARDS THE STORAGE YARD, PUSHING THE FLOAT. THIS PROCESS LAUNCHES THE RAMP ON TOP OF THE BARGE DIRECTLY UNDERNEATH THE SPMT SUPPORT LOCATIONS ON THE TRUSS.
10. REPOSITION THE FLOAT OUT OF THE WAY AND PUSH THE FLOAT-IN BARGE TOWARDS THE TRESTLE.
11. SPMT TRAVELS FROM THE STORAGE YARD, ONTO THE TRESTLE AND ONTO THE RAMP THAT IS NOW ON TOP OF THE BARGE. POSITION SPMT DIRECTLY UNDER THE SPMT SUPPORT LOCATIONS ON THE TRUSS.
12. PICK UP TRUSS AND SLOWLY (IN A CONTROLLED MANNER) MOVE THE TRUSS USING THE SPMT'S ONTO THE TRESTLE, ONTO LAND, AND ONTO THE FINAL LAYOUT POSITION FOR THAT TRUSS PIECE.
13. MOVE BARGE AWAY AND REPOSITION FLOAT TO SUPPORT ADJUSTABLE TRANSPORT RAMP WAITING FOR ARRIVAL OF THE NEXT BARGE AND RISING TIDE.
14. POSITION SPMT'S TO RECEIVE SECOND HALF OF SWING TRUSS AND REPEAT PROCESS UNTIL BOTH HALFS OF THE SWING TRUSSES ARE RESTING IN THEIR FINAL LAYOUT POSITION.

15. REPOSITION FLOAT AND ADJUSTABLE TRANSPORT RAMP AS NECESSARY TO RECEIVE THE APPROACH SPAN TRUSSES.

16. SPMT'S REPEAT PROCESS AS BARGES CARRYING THE FOUR APPROACH SPAN TRUSS PIECES ARRIVE AT THE STORAGE YARD.

DEMOLITIZE YARD

17. REMOVE FLOAT, ADJUSTABLE SUPPORT RAMP, STEEL TRESTLE, AND ANY STEEL PLATES OR CRANE MATS PLACED AND POSITIONED FOR CONTRACTOR OPERATIONS.

18. CONSTRUCT A NEW FENCE AT THE EDGE ON THE BANK IN THE SAME POSITION AS THE ORIGINAL FENCE.

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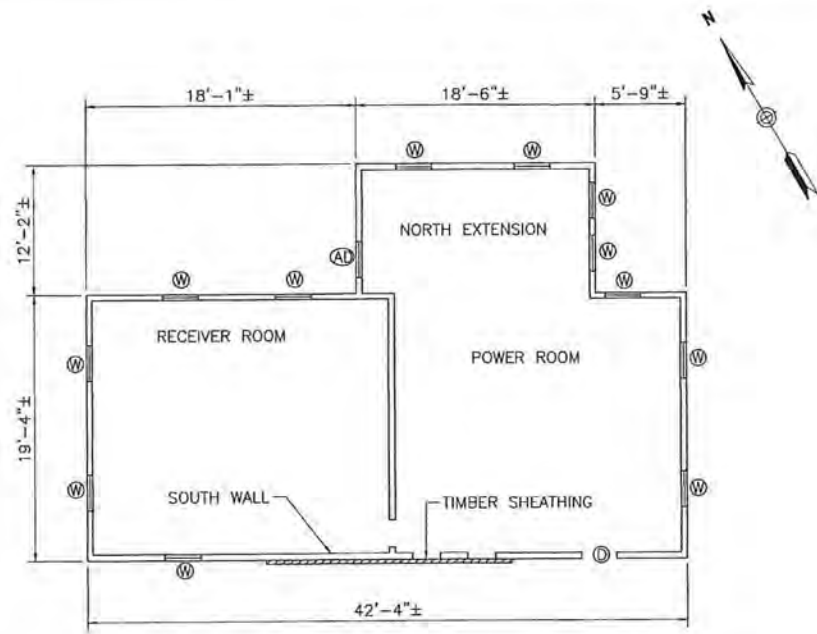
R-3512-5



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 CHECKED BY: FDP

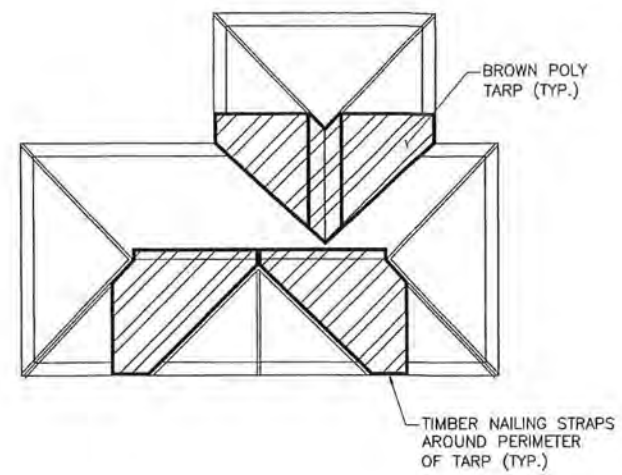
CIP 16-93 SHEET 5 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
 ENGINEERING DIVISION  
 NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**SUGGESTED CONSTRUCTION  
 SEQUENCE 2 OF 2**  
 SCALE: AS NOTED  
 DATE: FEB 2016  
 P. L. M. W.  
 CITY ENGINEER

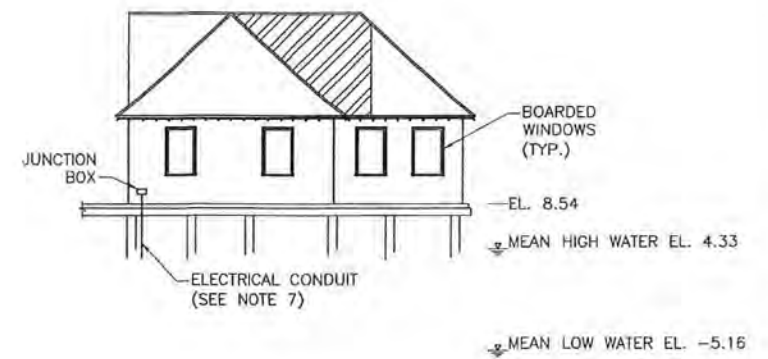


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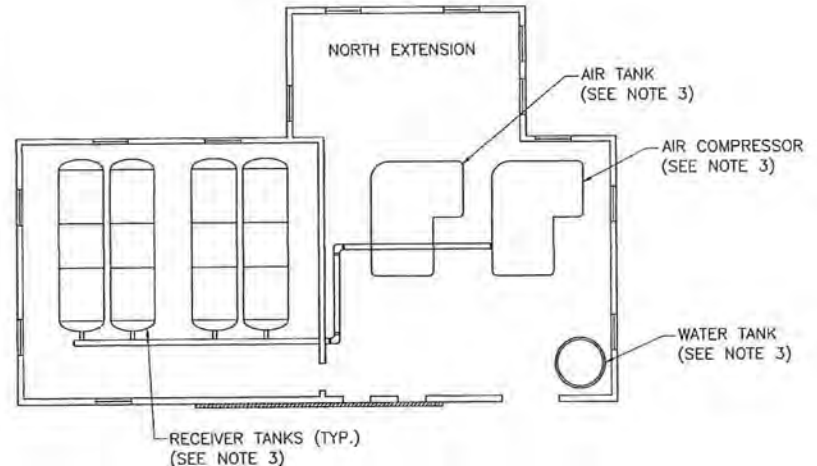
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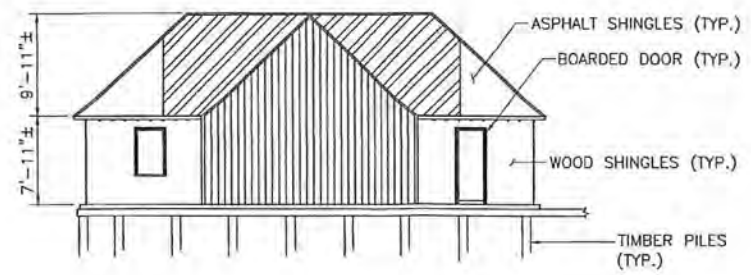
**ROOF PLAN**  
 SCALE: NOT TO SCALE



**EAST EXTERIOR ELEVATION**  
 SCALE: NOT TO SCALE



**PLAN VIEW (EXISTING INTERIOR COMPONENTS)**  
 SCALE: NOT TO SCALE



**SOUTH EXTERIOR ELEVATION**  
 SCALE: NOT TO SCALE

**NOTES**

- FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, SEE SHEETS 2, 4 AND 5.
- PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL OBTAIN PHOTO DOCUMENTATION OF THE ENTIRE EXTERIOR AND INTERIOR OF HOUSE. THIS DOCUMENTATION SHALL BE PERFORMED BY AN ARCHITECTURAL HISTORIAN OR OTHER QUALIFIED PERSONNEL APPROVED BY THE REGULATORY AGENCY.
- THE TENDER'S HOUSE IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIALS (ACM), POLYCHLORINATED BIPHENYLS (PCB'S), AND LEAD CONTAINING PAINT (LCP). SEE SPECIAL PROVISIONS FOR TREATMENT AND DISPOSAL OF THESE HAZARDOUS/REGULATED MATERIALS.
- ALL TANKS AND COMPRESSORS SHALL BE DISCONNECTED AND REMOVED FOR RELOCATION TO THE STORAGE YARD. IN ORDER TO GAIN ACCESS TO REMOVE THESE ITEMS, THE ROOF SHALL BE REMOVED.
- THE ENTIRE HOUSE SHALL BE REMOVED AND DISPOSED.
- FOR ADDITIONAL INFORMATION REGARDING THE HOUSE, THE CONTRACTOR IS DIRECTED TO THE REFERENCE DOCUMENTS IN APPENDIX A OF THE CONTRACT DOCUMENTS, SPECIFICALLY THE AUGUST 2011 DESIGN SKETCHES FOR WEATHERIZING AND PROTECTION OF THE TENDER'S HOUSE.
- THE ELECTRICAL CONDUIT SHALL BE DE-ENERGIZED AND REMOVED.



CIP 16-93 SHEET 6 OF 14

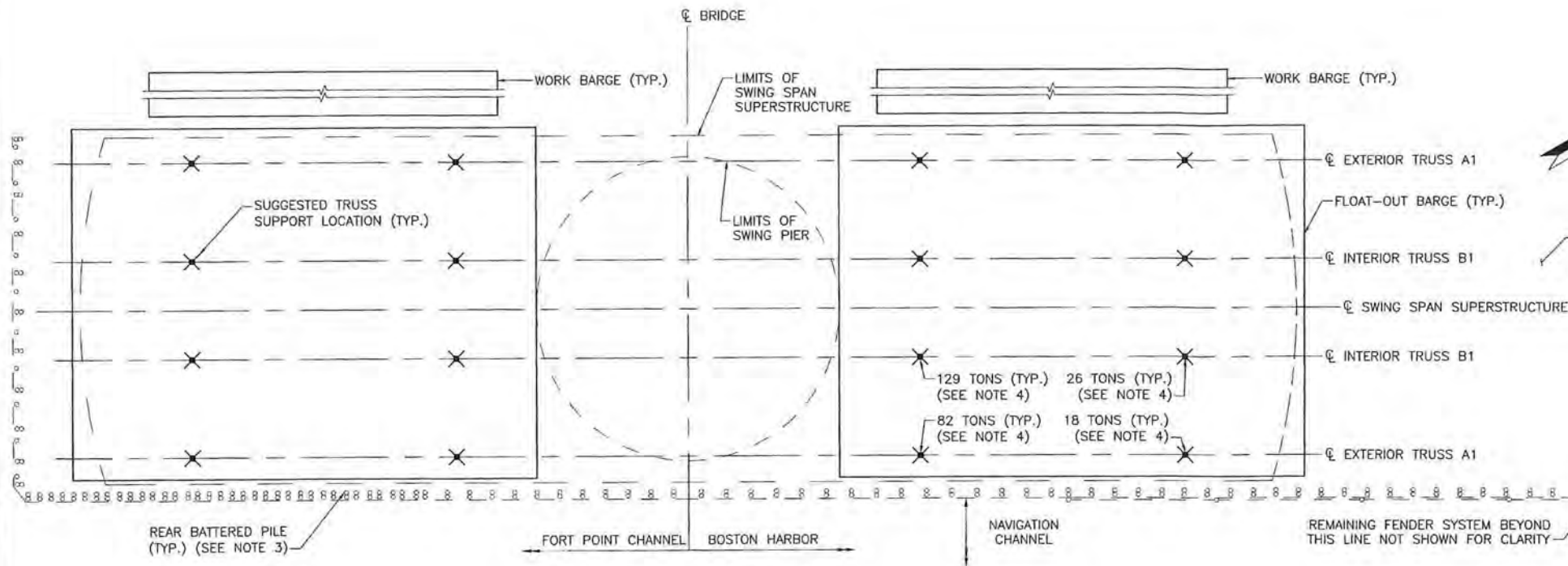
CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
 ENGINEERING DIVISION  
 NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**TENDER'S HOUSE REMOVAL**

SURVEY BY NONE  
 DRAWN BY BB  
 CHECKED BY FDP

SCALE: AS NOTED  
 DATE: FEB 2016  
 P. Hovicki  
 CITY ENGINEER

R-3512-6

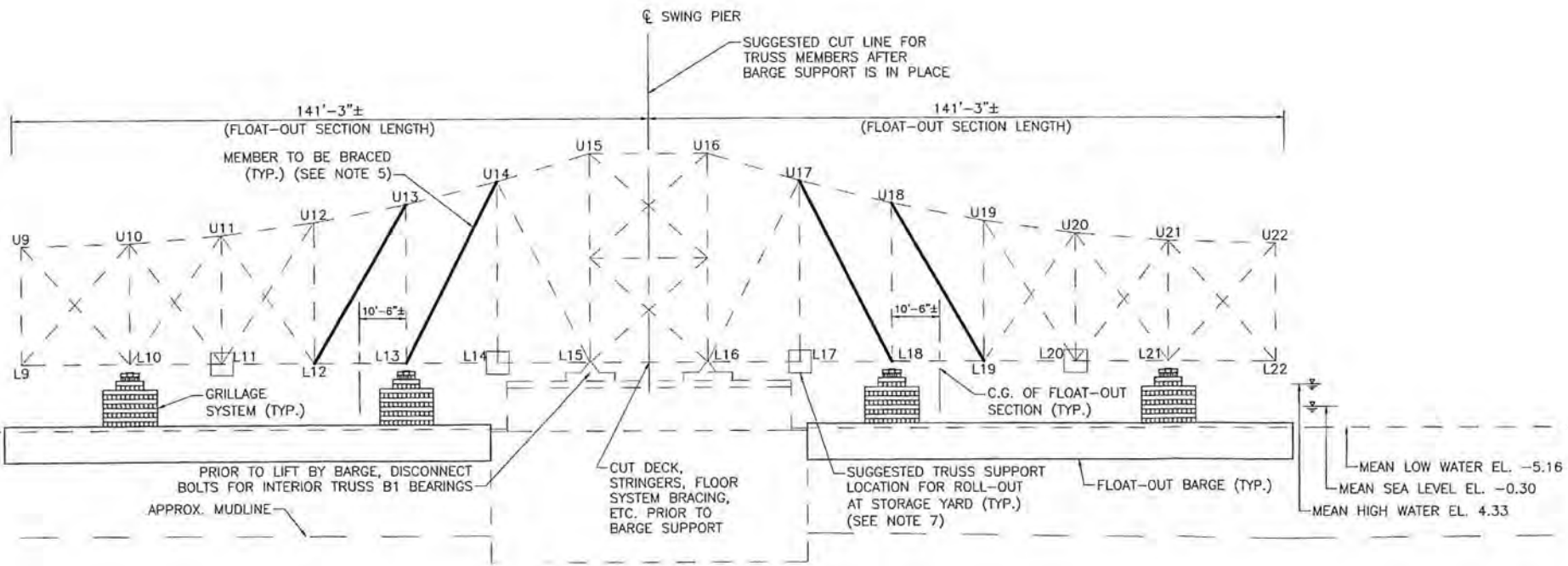
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**GENERAL PLAN OF SWING SPAN**  
SCALE:  $\frac{1}{16}'' = 1'-0''$

**NOTES**

- FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
- FOR EXISTING STRUCTURE INFORMATION, THE CONTRACTOR IS DIRECTED TO APPENDIX A OF THE CONTRACT DOCUMENTS.
- THE CONTRACTOR IS NOTIFIED THAT THE REAR BATTERED PILES TO REMAIN WILL PRESENT A RESTRICTION TO THE FLOAT-OUT BARGE ALONG THE BACK OF THE FENDER PORTION TO REMAIN.
- THE WEIGHT OF EACH SECTION OF THE BRIDGE TO BE LIFTED BY BARGE FOR FLOAT-OUT IS ESTIMATED TO BE APPROXIMATELY 510 TONS. IT SHOULD BE NOTED THAT THE SUPPORT LOCATIONS, LOADS, ETC. ARE BASED ON THE SUGGESTED PROCEDURE ON THIS SHEET. THE CONTRACTOR SHALL DETERMINE AND SUBMIT THEIR PROPOSED PROCEDURE FOR REVIEW AND APPROVAL. THE ESTIMATED LOADS AT EACH OF THE FOUR TYPES OF PICK POINTS ARE IDENTIFIED IN THE PLAN VIEW.
- TRUSS MEMBERS HIGHLIGHTED WITH THICK SOLID LINES ARE SUBJECTED TO COMPRESSIVE FORCES DURING FLOAT-OUT. PRIOR TO LIFTING BY BARGE, MEMBER COMPONENTS (EYEBARS) FOR THESE MEMBERS SHALL BE ADEQUATELY BRACED. THE EYEBARS AT EACH BRACE POINT MAY BE BRACED TOGETHER BY CLAMPING WITH PLATES AND THREADED RODS, WITH BLOCKING BETWEEN EYEBARS TO MAINTAIN EXISTING SPACE BETWEEN EYEBARS. IN ADDITION, THE HIGHLIGHTED DIAGONAL MEMBERS SHALL BE EXTERNALLY BRACED AS REQUIRED BY PROVIDING COMPRESSION STRUTS TO PREVENT BUCKLING IN THE PLANE OF THE TRUSS.
- AT THE LIFTING LOCATIONS, THE TRUSS BOTTOM CHORD AND PIN SHALL BE ADEQUATELY BLOCKED TO ENSURE FULL LOAD TRANSFER TO THE TRUSS.
- AFTER LIFTING BY BARGE AND REMOVAL FROM BRIDGE SITE, ADDITIONAL BARGE SECTIONS SHALL BE ATTACHED TO THE BARGE AT ONE END OF THE BARGE LENGTH TO ENABLE PICK AT BOTTOM CHORD PANEL POINTS L14 & L17 AT EACH TRUSS PRIOR TO ROLL OUT AT THE STORAGE YARD.
- THE CONTRACTOR SHALL MAINTAIN THE BARGE LEVEL IN BOTH DIRECTIONS AT ALL TIMES BY BALLASTING THE BARGE AS REQUIRED.
- FOR EXISTING CROSS-SECTION OF SWING SPAN, REFER TO B-16-184\_06-11-30\_01.TIF, 1974 REHAB PDFS & 1986 REHAB PDFS IN APPENDIX A OF THE CONTRACT DOCUMENTS.



**GENERAL ELEVATION**  
SCALE:  $\frac{1}{16}'' = 1'-0''$



CIP 16-93 SHEET 7 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1

**SWING SPAN REMOVAL & RELOCATION**

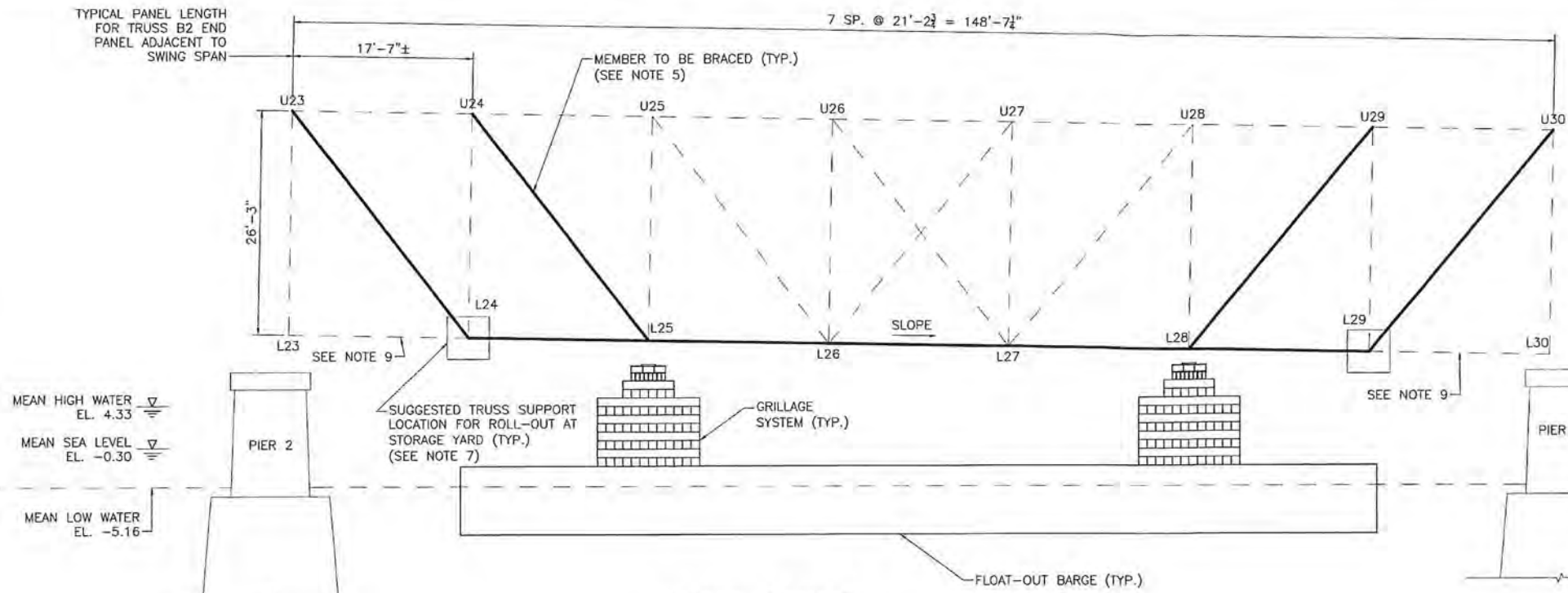
SCALE: AS NOTED DATE: FEB 2016

*P. H. M. J. R.*  
CITY ENGINEER

SURVEY BY NONE  
DRAWN BY CCJ  
CHECKED BY FDP

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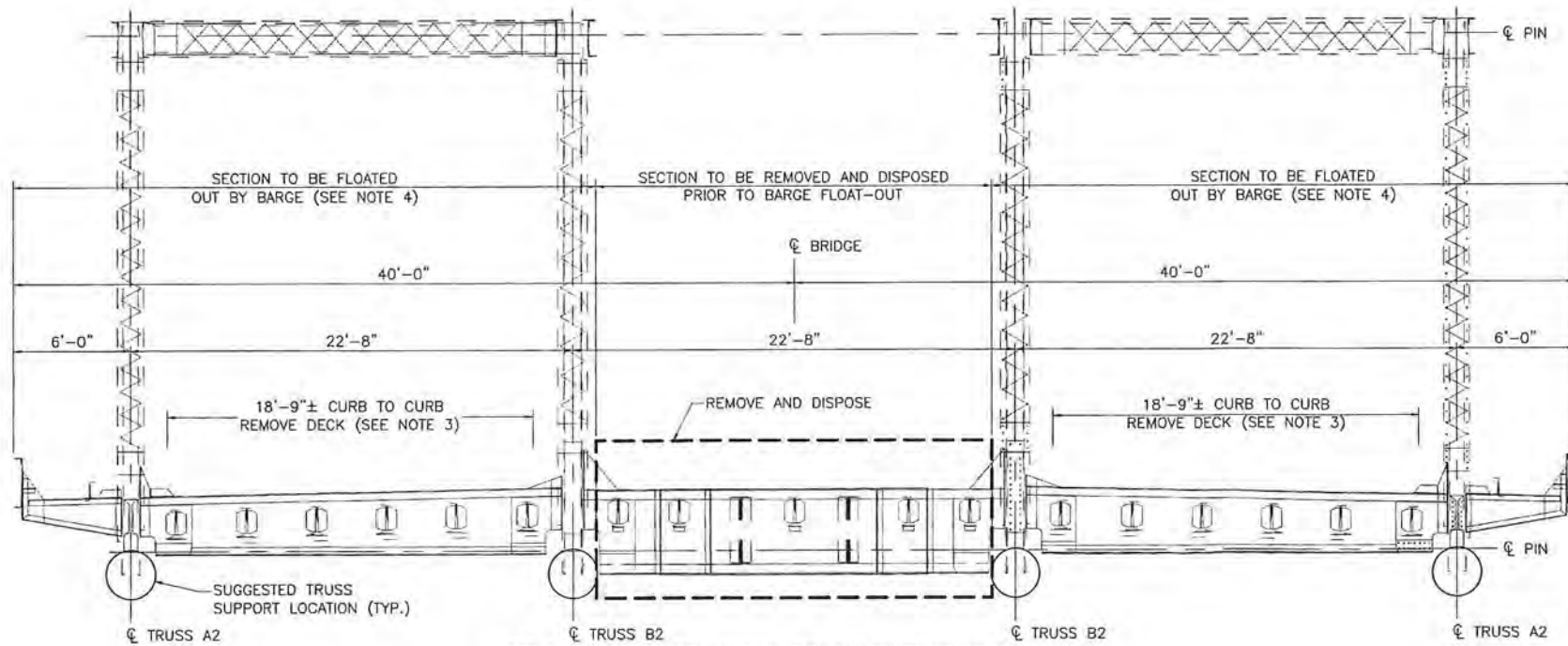
R-3512-7



**GENERAL ELEVATION**  
 (SPAN 2, TRUSS A2 SHOWN,  
 TRUSS B2 & SPAN 1 SIMILAR)  
 SCALE: 1/4" = 1'-0"

**NOTES**

- FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
- FOR EXISTING STRUCTURE INFORMATION, THE CONTRACTOR IS DIRECTED TO APPENDIX A OF THE CONTRACT DOCUMENTS.
- THE SUGGESTED CONSTRUCTION PROCEDURE IS BASED ON THE FULL THICKNESS OF THE ROADWAY DECK IN THE TWO EXTERIOR BAYS BEING REMOVED PRIOR TO LIFTING BY BARGE FOR FLOAT-OUT. IT IS BELIEVED THAT THE ROADWAY DECK CONSISTS OF 2.5" THICK ASPHALT, 6.5" THICK GRANITE BLOCK LAYER AND 1.5" THICK PAVING SAND LAYER OVER A 6" THICK TIMBER DECK. THE CONTRACTOR IS ADVISED THAT THE FLOOR SYSTEM AND TRUSS MEMBERS HAVE AREAS OF ADVANCED SECTION LOSS WHICH HAVE SIGNIFICANTLY REDUCED THEIR LOAD CARRYING CAPACITY. SEE CONTRACT BOOK APPENDIX A.
- THE WEIGHT OF EACH SECTION OF THE BRIDGE TO BE LIFTED BY BARGE FOR FLOAT-OUT (TWO TRUSSES, FRAMING AND SIDEWALK) IS ESTIMATED TO BE APPROXIMATELY 220 TONS. THE LOAD AT EACH OF THE TWO PICK POINTS PER TRUSS IS ESTIMATED TO BE 60 TONS ON THE EXTERIOR TRUSS A2, AND 50 TONS ON THE INTERIOR TRUSS B2. IT SHOULD BE NOTED THAT THE SUPPORT LOCATIONS, LOADS, ETC. ARE BASED ON THE SUGGESTED CONSTRUCTION PROCEDURE SHOWN ON THIS SHEET. THE CONTRACTOR SHALL DETERMINE AND SUBMIT THEIR PROPOSED PROCEDURE FOR REVIEW AND APPROVAL.
- TRUSS MEMBERS HIGHLIGHTED WITH THICK SOLID LINES ARE SUBJECTED TO COMPRESSIVE FORCES DURING FLOAT-OUT. PRIOR TO LIFTING BY BARGE, MEMBER COMPONENTS (EYEBARS) FOR THESE MEMBERS SHALL BE ADEQUATELY BRACED. THE EYEBARS AT EACH BRACE POINT MAY BE BRACED TOGETHER BY CLAMPING WITH PLATES AND THREADED RODS, WITH BLOCKING BETWEEN EYEBARS TO MAINTAIN EXISTING SPACE BETWEEN EYEBARS. IN ADDITION, THE HIGHLIGHTED DIAGONAL MEMBERS SHALL BE EXTERNALLY BRACED AT MIDPOINT TO PROVIDE A COMPRESSION STRUT PREVENTING BUCKLING IN THE PLANE OF THE TRUSS.
- AT THE LIFTING LOCATIONS, THE TRUSS VERTICAL MEMBER AND THE PIN SHALL BE ADEQUATELY BLOCKED TO ENSURE FULL LOAD TRANSFER TO THE TRUSS.
- AFTER LIFTING BY BARGE AND REMOVAL FROM BRIDGE SITE, ADDITIONAL BARGE SECTIONS SHALL BE ATTACHED TO THE BARGE AT EACH END OF THE BARGE LENGTH TO ENABLE PICK AT BOTTOM CHORD PANEL POINTS L24 & L29 AT EACH TRUSS PRIOR TO ROLL-OUT AT THE STORAGE YARD.
- THE CONTRACTOR SHALL MAINTAIN THE BARGE LEVEL IN BOTH DIRECTIONS AT ALL TIMES BY BALLASTING THE BARGE AS REQUIRED.
- THE CONTRACTOR IS NOTIFIED THAT THE LOWER CHORD MEMBER L1L2 IN SPAN 1 SOUTH EXTERIOR TRUSS (A ZERO FORCE MEMBER) HAS FALLEN INTO THE WATER. IN ADDITION, THE CONTRACTOR IS CAUTIONED THAT OTHER END PANEL LOWER CHORDS L1L2, L7L8, L23L24 AND L29L30 OF THE EXTERIOR TRUSSES ALSO TYPICALLY EXHIBIT ADVANCED SECTION LOSSES. THE CONTRACTOR SHALL PROVIDE BRACING BETWEEN THE PANEL POINTS OF THESE LOWER CHORD MEMBERS AS NECESSARY TO MAINTAIN THE CONFIGURATION AND INTEGRITY OF THE TRUSSES.



**TYPICAL CROSS SECTION OF APPROACH TRUSS SPAN**  
 SCALE: 1/4" = 1'-0"

NOTE: ROADWAY DECK AND SIDEWALK DECK NOT SHOWN FOR CLARITY.

SURVEY BY	NONE
DRAWN BY	JRM
CHECKED BY	FDP



CIP 16-93 SHEET 8 OF 14

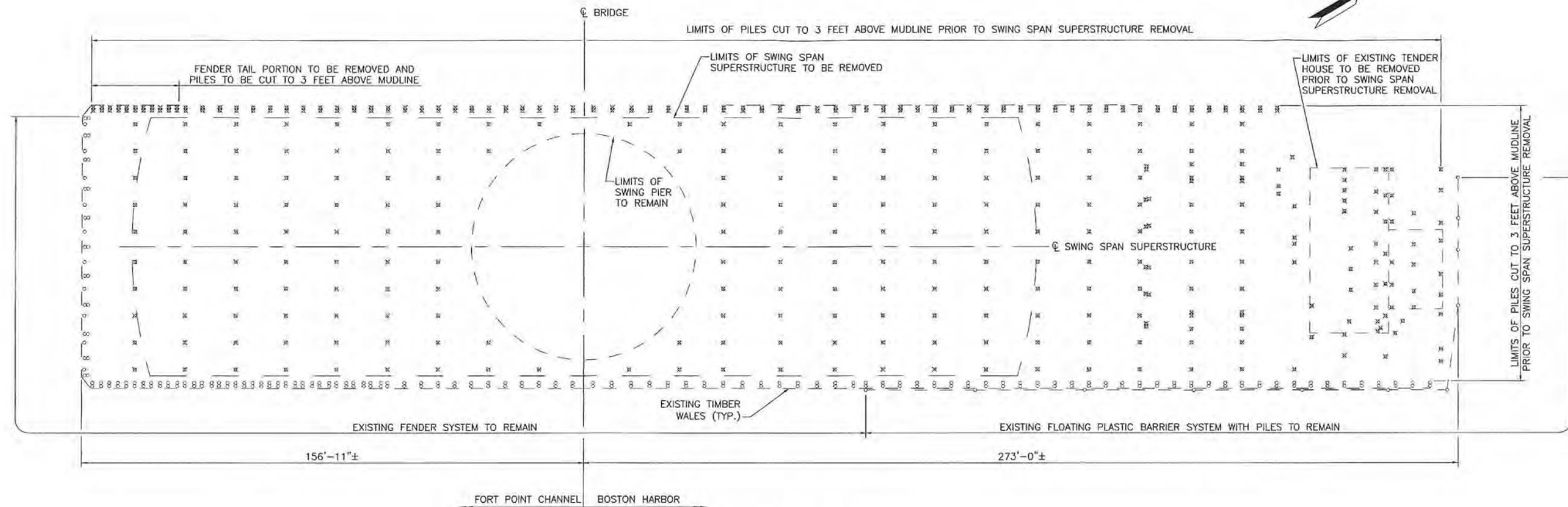
CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
 ENGINEERING DIVISION  
 NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**APPROACH TRUSS SPANS 1 & 2  
 REMOVAL & RELOCATION**

SCALE: AS NOTED DATE: FEB 2016

*P. H. M. J.*  
 CITY ENGINEER

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R-3512-8



PLAN OF FENDER AT SWING PIER  
SCALE: 1/16" = 1'-0"

**NOTES**

- FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
- IN ORDER TO FACILITATE SWING SPAN REMOVAL OPERATIONS, ALL PILES UNDER THE SWING SPAN SUPERSTRUCTURE WITHIN THE LIMITS SHOWN ON THIS SHEET SHALL BE CUT AND REMOVED AT AN ELEVATION APPROXIMATELY 3 FEET ABOVE THE MUDLINE.
- THE WORK ALSO INCLUDES REMOVAL OF ALL BROKEN AND/OR OTHERWISE SUBMERGED TIMBER FENDER MEMBERS BELOW THE WATERLINE UP TO AN ELEVATION OF 3 FEET ABOVE THE MUDLINE. THERE MAY BE AS MANY BROKEN AND/OR OTHERWISE SUBMERGED MEMBERS AS THERE ARE VISIBLE ABOVE THE WATER LINE.
- DIMENSIONS SHOWN AND EXISTING FENDER CONFIGURATION ARE BASED UPON LIMITED FIELD MEASUREMENTS AND OBSERVATIONS AND ARE NOT GUARANTEED. MANY FENDER SYSTEM COMPONENTS APPEAR TO BE MISSING, DAMAGED OR NOT VISIBLE ABOVE THE WATERLINE DUE TO DETERIORATION AND ALLUSION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE FENDER SYSTEM AND VERIFY DETAILS, DIMENSIONS AND OTHER PERTINENT DATA IN THE FIELD PRIOR TO BIDDING.
- FOR DETAILS OF THE FENDER SYSTEM AT THE SWING PIER, THE CONTRACTOR IS DIRECTED TO APPENDIX A OF THE CONTRACT DOCUMENTS.

**LEGEND**

- EXISTING TIMBER PILE TO REMAIN
- ⊙ EXISTING TIMBER PILES WITH REAR PILE BATTERED TO REMAIN
- ⊗ EXISTING TIMBER PILE CUT TO 3 FEET ABOVE MUDLINE
- ⊗⊗ EXISTING TIMBER PILES WITH REAR PILE BATTERED CUT TO 3 FEET ABOVE MUDLINE



SURVEY BY NONE  
DRAWN BY CCJ  
CHECKED BY FDP

CIP 16-93 SHEET 9 OF 14

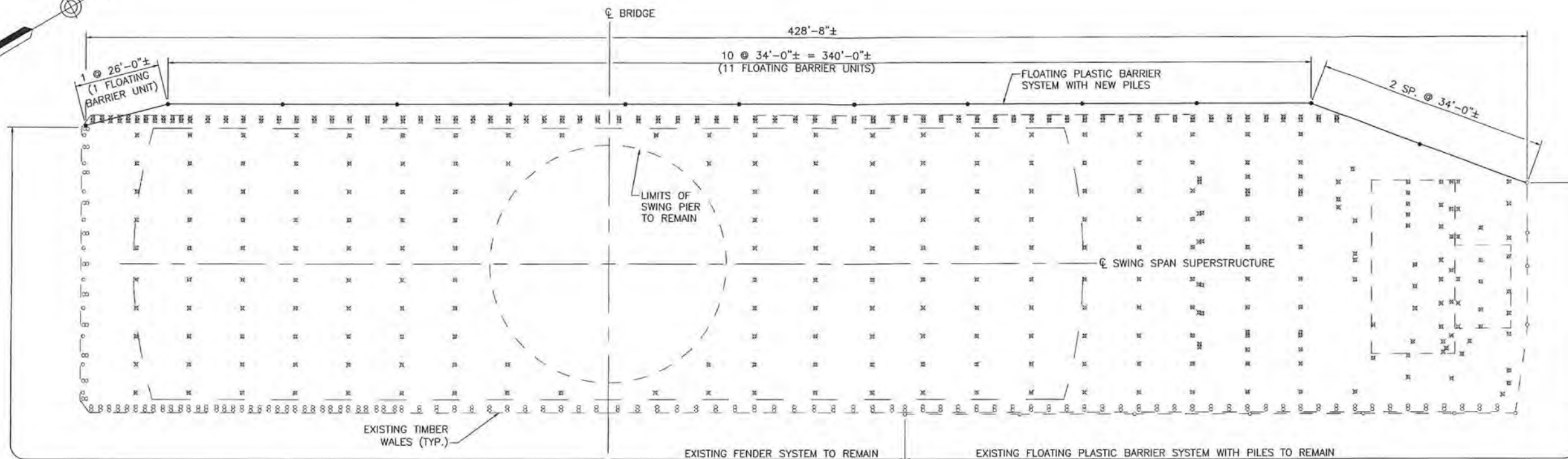
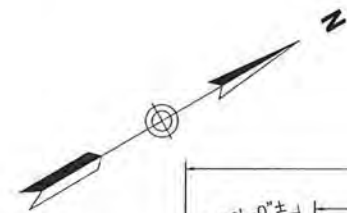
CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**SWING PIER FENDER SYSTEM  
REMOVAL**

SCALE: AS NOTED DATE: FEB 2016

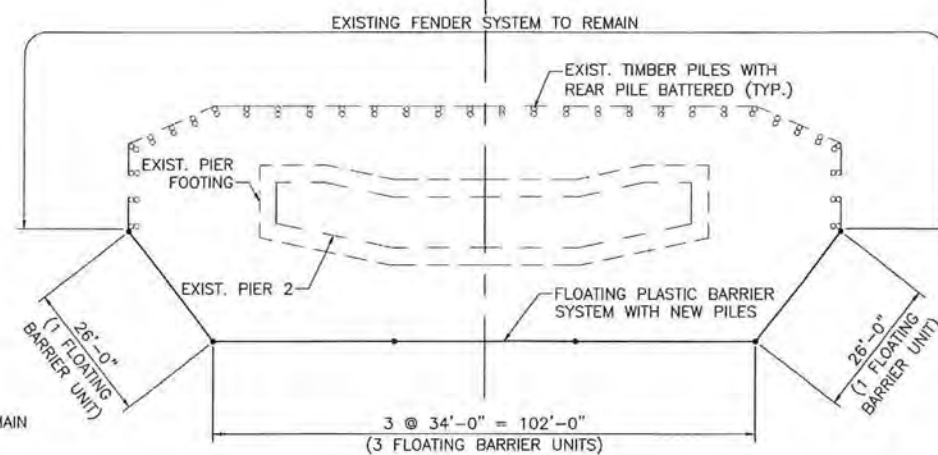
*P. L. Hynes*  
CITY ENGINEER

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R-3512-9



FORT POINT CHANNEL BOSTON HARBOR



**PLAN OF FLOATING BARRIER SYSTEM**  
SCALE: 1/8" = 1'-0"

**LEGEND**

- EXISTING TIMBER PILE TO REMAIN
- ⊙ EXISTING TIMBER PILES WITH REAR PILE BATTERED TO REMAIN
- ⊗ EXISTING TIMBER PILE, CUT TO 3 FEET ABOVE MUDLINE
- ⊗⊗ EXISTING TIMBER PILES WITH REAR PILE BATTERED, CUT TO 3 FEET ABOVE MUDLINE
- PROPOSED TIMBER PILE

**NOTES**

1. FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
2. SEE SHEET 11 OF 14 FOR PROPOSED FLOATING PLASTIC BARRIER DETAILS.
3. CONTRACTOR TO INSTALL A TYPE II FLOATING SILT CURTAIN COMPLETELY ENCIRCLING THE WORK AREA PRIOR TO DRIVING PILES. SILT CURTAIN TO EXTEND TO THE MUDLINE.



SURVEY BY	NONE
DRAWN BY	CCJ
CHECKED BY	FDP

CIP 16-93 SHEET 10 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1

**PLAN OF FLOATING BARRIER SYSTEM**

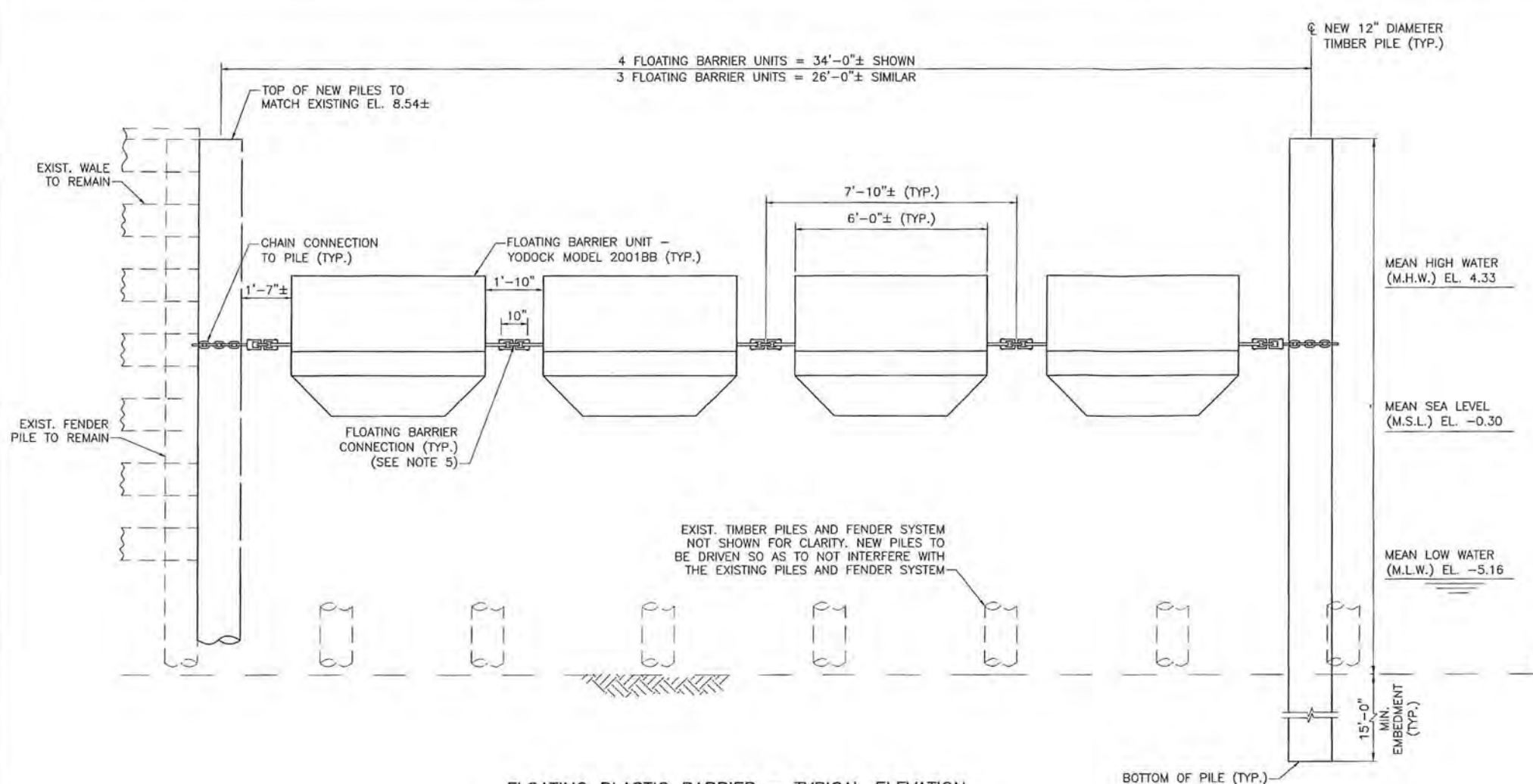
SCALE: AS NOTED  
DATE: FEB 2016

*P. h. m. j.*  
CITY ENGINEER

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R-3512-10





FLOATING PLASTIC BARRIER - TYPICAL ELEVATION  
SCALE: 1/2" = 1'-0"

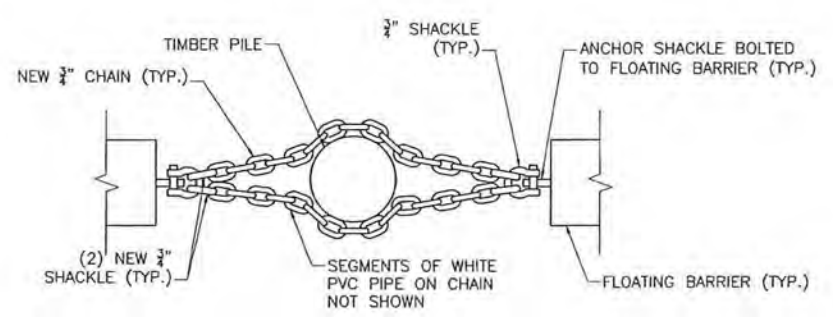


FLOATING BARRIER UNIT - YODOCK MODEL 2001BB  
SCALE: N.T.S.

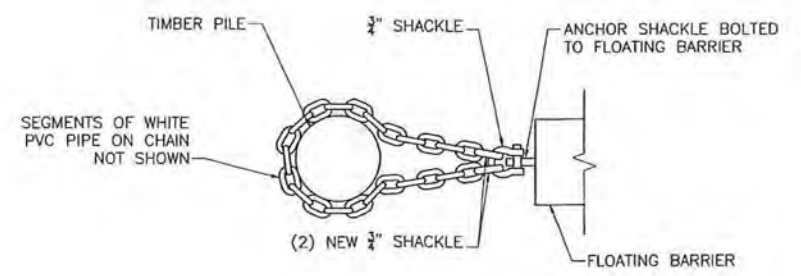


TYPICAL FLOATING BARRIER CONNECTION DETAIL  
SCALE: N.T.S.

EXIST. TIMBER PILES AND FENDER SYSTEM NOT SHOWN FOR CLARITY. NEW PILES TO BE DRIVEN SO AS TO NOT INTERFERE WITH THE EXISTING PILES AND FENDER SYSTEM



CHAIN CONNECTION TO INTERIOR PILE  
SCALE: N.T.S.



CHAIN CONNECTION TO EXTERIOR PILE  
SCALE: N.T.S.

NOTES:

1. FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
2. SEE PREVIOUS SHEET FOR FENDER PLAN AND ADDITIONAL NOTES.
3. INSTALLATION OF YODOCK MODEL 2001BB SHALL CONFORM TO MANUFACTURER'S INSTALLATION MANUAL.
4. NEW PILE LOCATIONS MAY BE MODIFIED AS REQUIRED TO AVOID INTERFERENCE WITH EXISTING PILES.
5. CONNECTION BETWEEN FLOATING BARRIER UNITS SHALL CONSIST OF TWO 3/4" GALVANIZED SAFETY ANCHOR SHACKLES AND ONE 3/4" GALVANIZED CONNECTION RING.
6. CHAIN CONNECTION AT PILES SHALL CONNECT TO FLOATING BARRIER WITH SAME ANCHOR SHACKLES USED TO CONNECT ADJOINING FLOATING BARRIER UNITS.
7. REFER TO HYDROGRAPHIC SURVEY IN APPENDIX A OF CONTRACT DOCUMENTS.

CIP 16-93 SHEET 11 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1

ELEVATION AND DETAILS OF  
FLOATING BARRIER SYSTEM

SCALE: AS NOTED DATE: FEB 2016

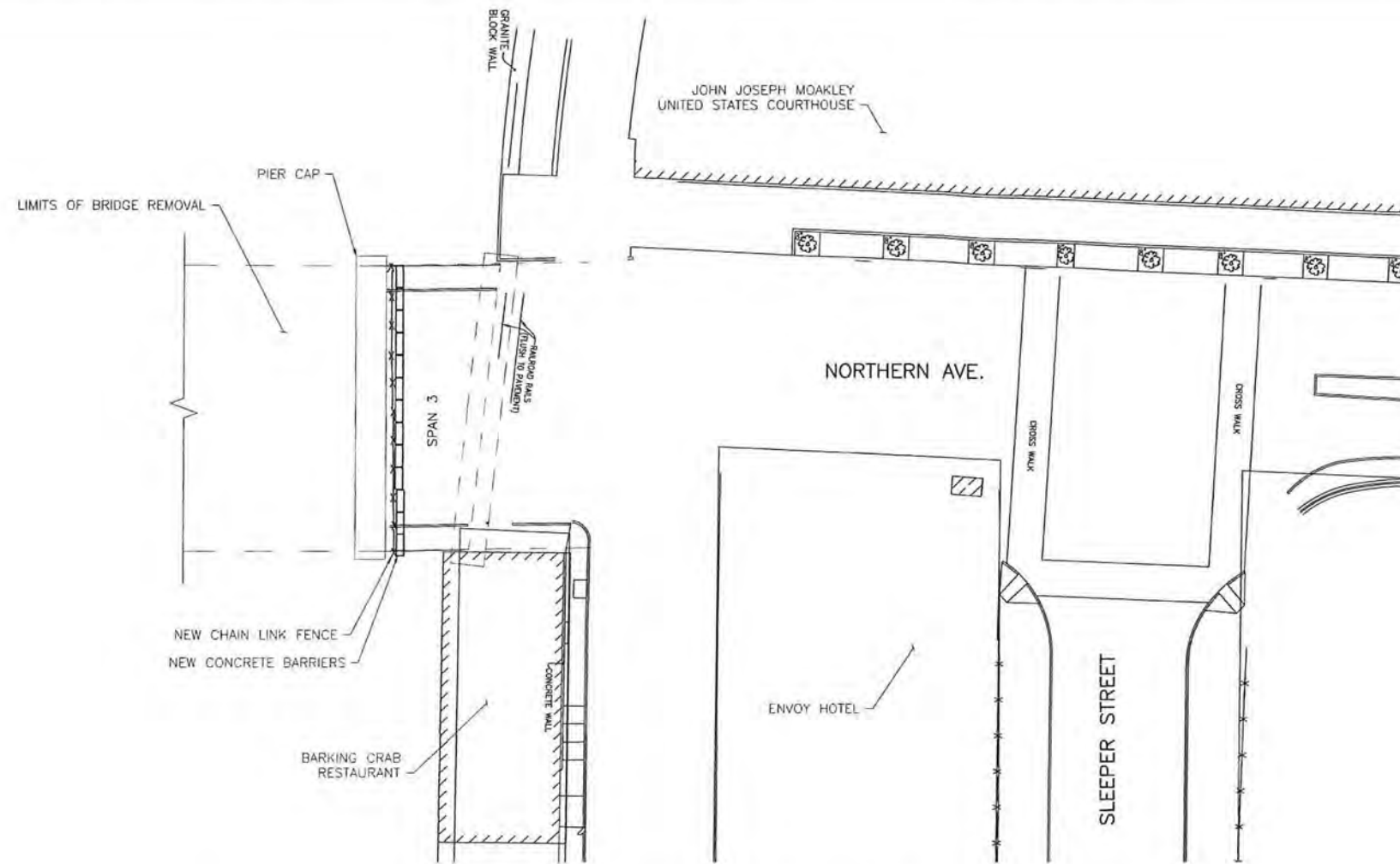
*Paul A. ...*  
CITY ENGINEER

SURVEY BY: NONE  
DRAWN BY: GJP  
CHECKED BY: FDP



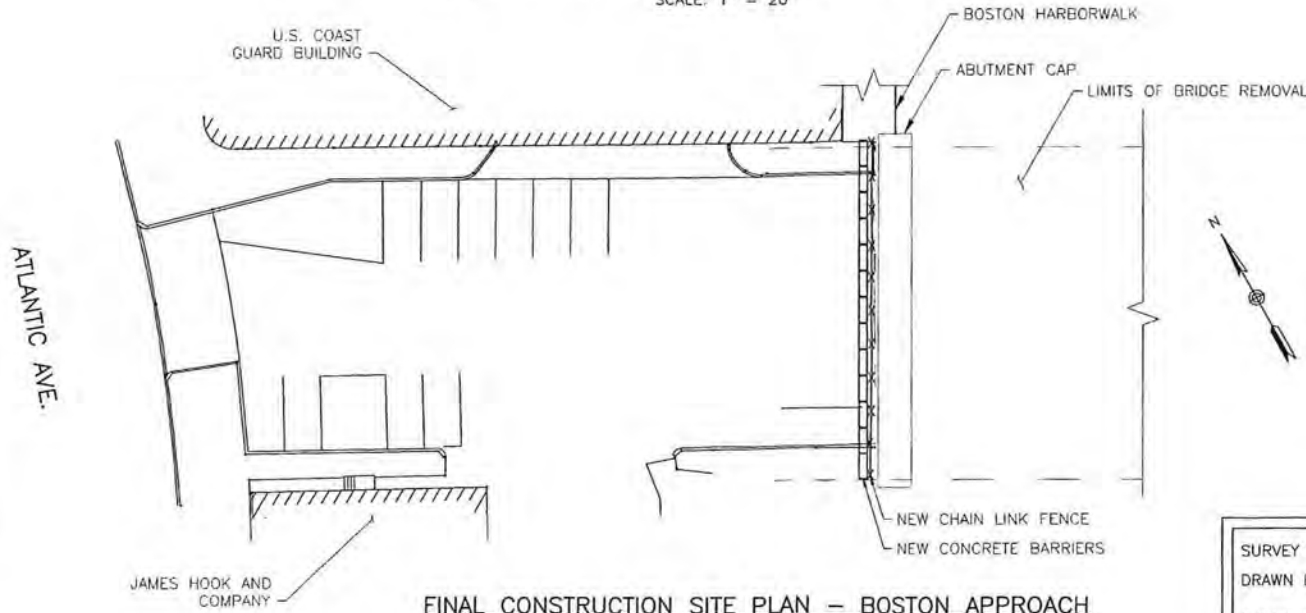
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FINAL CONSTRUCTION SITE PLAN - EAST APPROACH

SCALE: 1" = 20'



FINAL CONSTRUCTION SITE PLAN - BOSTON APPROACH

SCALE: 1" = 20'

**NOTES:**

1. FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
2. CONTRACTOR TO PROVIDE TRAFFIC SAFETY MEASURES AT ALL TIMES ON EAST APPROACH AND BOSTON APPROACH SIDES OF THE BRIDGE DURING CONSTRUCTION.
3. THIS DRAWING SHOWS FINAL CONDITIONS PLAN, INTERIM AND DURING CONSTRUCTION CONDITIONS TO BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
4. CONTRACTOR TO LEAVE ALL TRAFFIC CONTROL/SAFETY MEASURES AT COMPLETION OF THE CONTRACT IN PERMANENTLY MAINTAINABLE CONDITION. ALL MATERIALS ARE TO BECOME THE PROPERTY OF THE CITY OF BOSTON UPON COMPLETION.



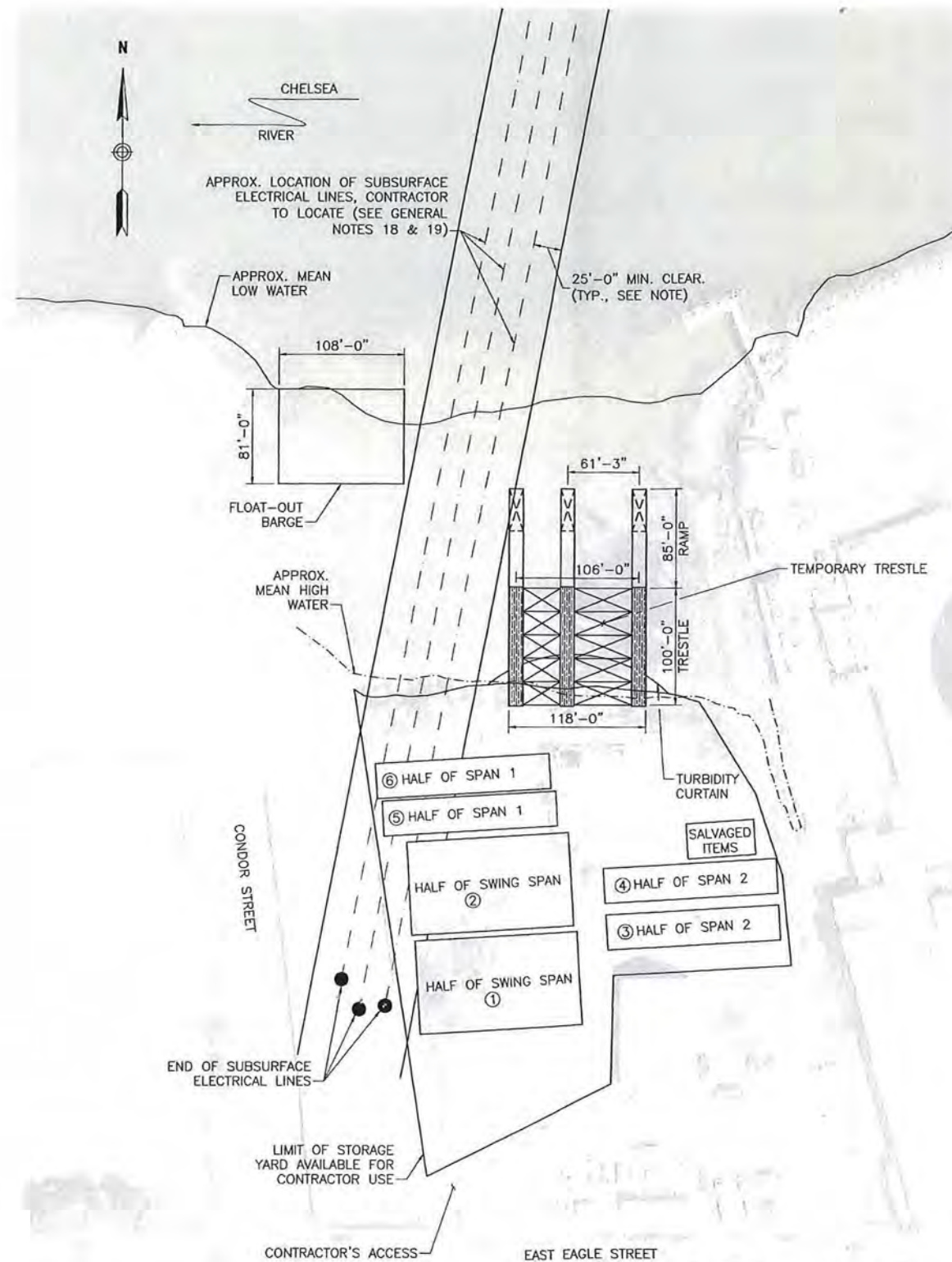
CIP 16-93 SHEET 12 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**PERMANENT BARRIER LOCATION PLAN**

SURVEY BY NONE  
DRAWN BY GJP  
CHECKED BY PGN

SCALE: AS NOTED  
DATE: FEB 2016  
*Ph*  
CITY ENGINEER

R-3512-12



PLAN OF TRUSS UNLOADING AREA  
SCALE: 1" = 60'-0"

**NOTES:**

1. THE CONTRACTOR SHALL NOT PLACE ANY TEMPORARY OR PERMANENT UNDERGROUND WORKS WITHIN 25'-0" OF THE CONTRACTOR LOCATED SUBSURFACE ELECTRICAL LINES.
2. THE CONTRACTOR'S OPERATIONS SHALL NOT DISRUPT BOSTON PUBLIC WORKS DEPARTMENT ACTIVITIES.
3. THE CONTRACTORS ARE RECOMMENDED TO VISIT THE STORAGE YARD BEFORE BIDDING.
4. FOR ADDITIONAL INFORMATION REGARDING THE SUBSURFACE ELECTRIC LINES AND THE TOPOGRAPHIC SURVEY OF THE YARD, THE CONTRACTOR IS DIRECTED TO APPENDIX A OF THE CONTRACT DOCUMENTS.
5. CONTRACTOR TO COORDINATE WITH CITY FOR ANY CLEARING OR OTHER SITE WORK REQUIRED WITHIN THE LIMITS OF THE STORAGE YARD.



CIP 16-93 SHEET 13 OF 14

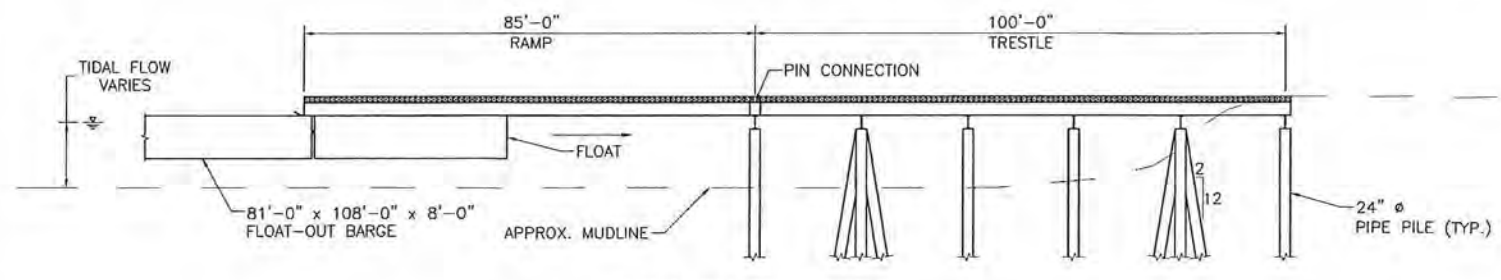
CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**STORAGE YARD LAYOUT**

SURVEY BY NONE  
DRAWN BY KLJ  
CHECKED BY PGN

SCALE: AS NOTED DATE: FEB 2016

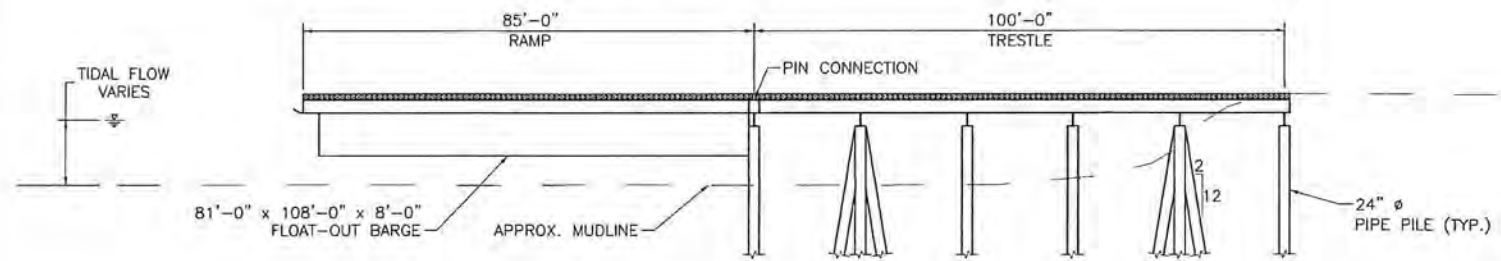
*P. G. Norton*  
CITY ENGINEER

R-3512-13



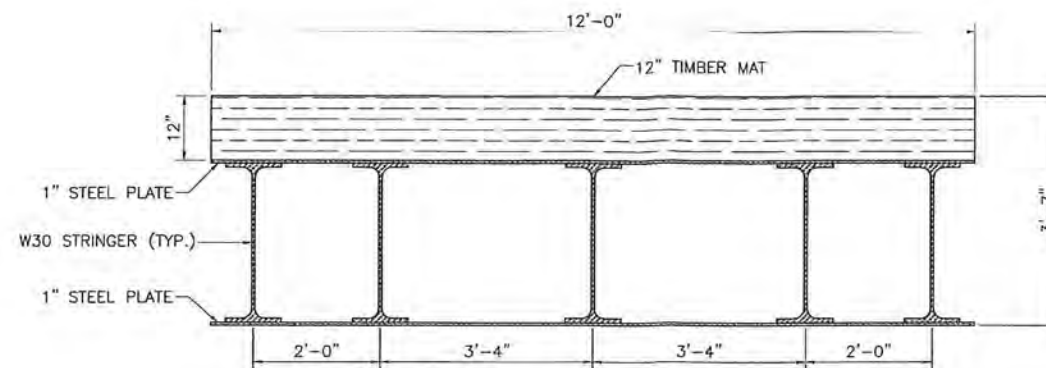
ELEVATION OF TRESTLE  
FLOAT-OUT BARGE ENGAGING RAMP/FLOAT

SCALE: 1/8" = 1'-0"



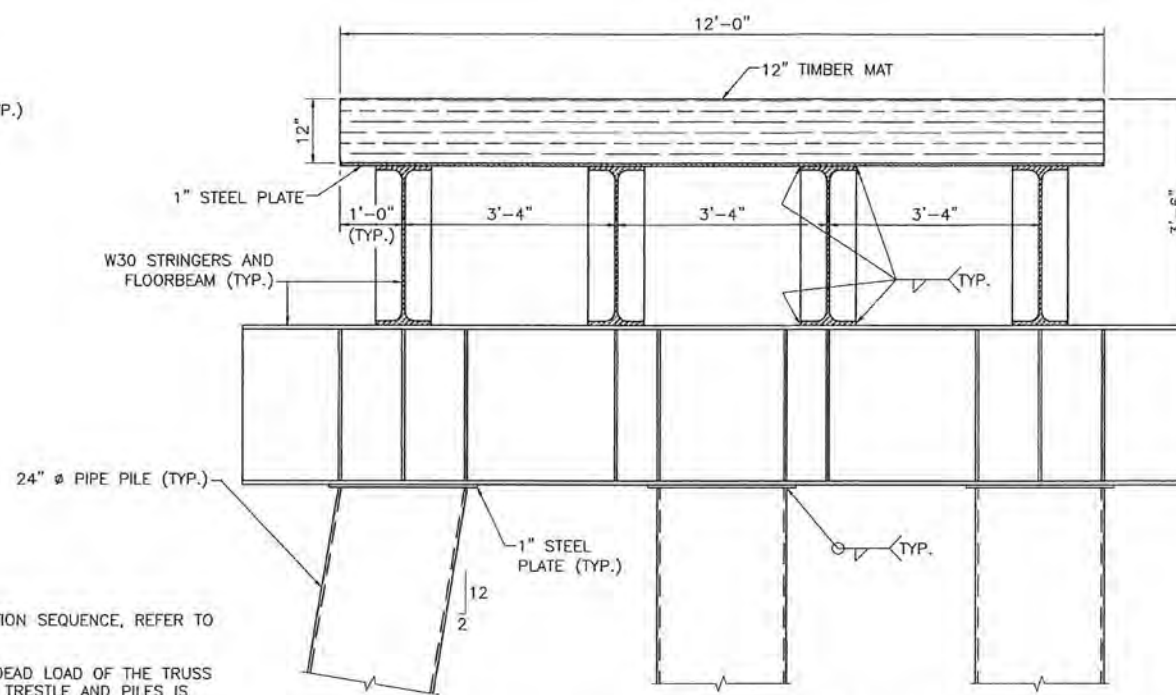
ELEVATION OF TRESTLE  
FLOAT-OUT BARGE POSITION FOR TRUSS REMOVAL

SCALE: 1/8" = 1'-0"



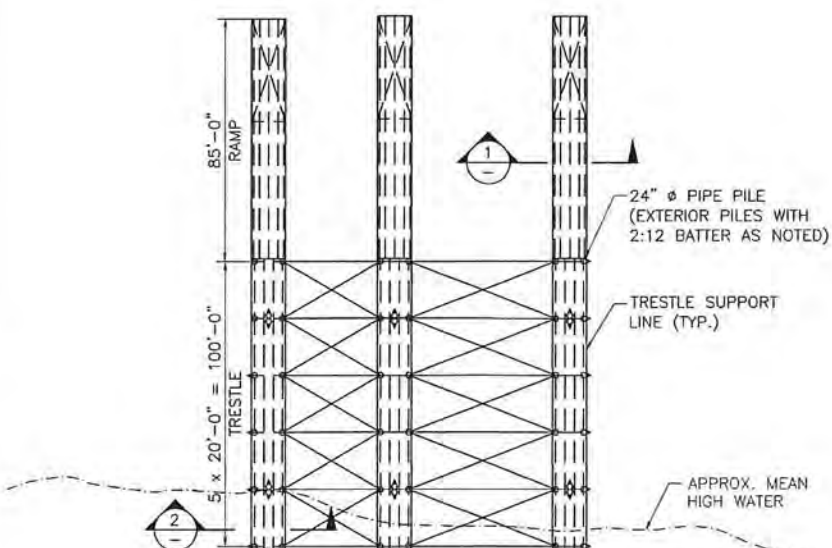
SECTION 1 - RAMP SUPPORT LINE SECTION

SCALE: 3/8" = 1'-0"



SECTION 2 - TRESTLE SUPPORT LINE SECTION

SCALE: 3/8" = 1'-0"



PILE LEGEND:

- PIPE PILE
- ◊ BATTERED PIPE PILE (ARROW INDICATES THE DIRECTION OF BATTER)

TRESTLE AND RAMP DECK AND FRAMING

SCALE: 1" = 30'-0"

NOTES

1. FOR GENERAL NOTES AND SUGGESTED CONSTRUCTION SEQUENCE, REFER TO SHEETS 2, 4 AND 5.
2. FOR BID PURPOSES, THE UNFACTORED VERTICAL DEAD LOAD OF THE TRUSS SECTIONS TO BE SUPPORTED BY THE TEMPORARY TRESTLE AND PILES IS APPROXIMATELY 500 TONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE TEMPORARY TRESTLE AND PILES. SEE SPECIAL PROVISIONS FOR DETAILED DESIGN REQUIREMENTS.
4. THE CONTRACTOR IS CAUTIONED THAT THERE IS SIGNIFICANT VARIATION OF WATER DEPTH IN THIS AREA DUE TO THE TIDES.
5. THE CONTRACTOR MAY NEED TO DECREASE THE DRAFT BY ADDING ADDITIONAL BARGE SECTIONS TO ENSURE SUFFICIENT AVAILABLE WATER DEPTH TO COMPLETE THE UNLOADING PROCESS.

PILE NOTES

1. FOR THE SUGGESTED SEQUENCE OF CONSTRUCTION AND TRESTLE CONCEPT SHOWN, THE DESIGN AXIAL LOAD PER PILE IS APPROXIMATELY 87 KIPS. BASED ON THIS AXIAL LOAD, THE ALLOWABLE STRUCTURAL CAPACITY OF THE PILES SHALL BE 117 KIPS.
2. THE ESTIMATED PILE TIP IS 70 FEET BELOW THE MUDLINE. THE MINIMUM PILE TIP IS 30 FEET BELOW THE MUDLINE.
3. DETERMINATION OF THE DRIVEN PILE CAPACITY, PILE DRIVING CRITERIA, AND PILE INTEGRITY SHALL BE PERFORMED USING THE PDA DRIVING/TESTING METHOD WITH A FACTOR OF SAFETY OF 3.0. PILES SHALL BE INSTALLED TO ACHIEVE A FACTORED DRIVEN RESISTANCE EQUAL TO OR GREATER THAN THE FACTORED AXIAL LOAD PER PILE.
4. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION, AND PILE DRIVING/TESTING PLAN FOR REVIEW AND APPROVAL OF THE ENGINEER.
5. THE CONTRACTOR SHALL REMOVE BY EXTRACTION ALL TEMPORARY TRESTLE PILES. NO PILES SHALL BE ALLOWED TO REMAIN.



CIP 16-93 SHEET 14 OF 14

CITY OF BOSTON PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
NORTHERN AVENUE BRIDGE CONSTRUCTION - PHASE 1  
**TEMPORARY TRESTLE DETAILS**

SURVEY BY	NONE
DRAWN BY	GJP
CHECKED BY	PGN

SCALE: AS NOTED  
DATE: FEB 2016  
*P. G. Norton*  
CITY ENGINEER

R-3512-14