

Middle Street/Plummer Spring Road over Upper Artichoke Reservoir Bride Replacement Project

Permit Approvals and Authorizations

PREPARED FOR

Town of West Newbury
381 Main Street
West Newbury, MA 01985

City of Newburyport
16C Perry Way
Newburyport, MA 01950

PREPARED BY

BSC GROUP 
BUILD | SUPPORT | CONNECT
1 Mercantile Street, Suite 610
Worcester, MA 01606

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Middle Street/Plummer Spring Road over Upper Artichoke Reservoir
West Newbury and Newburyport, MA

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**Massachusetts Department of Environmental
Protection**

ORDER OF CONDITIONS

West Newbury

Extension and Original



WPA Form 7 – Extension Permit for Orders of Conditions

78-724

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by DEP

A. General Information

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Applicant:

Town of West Newbury - C/O Angus Jennings, Town Manager

Name

381 Main Street

Mailing Address

West Newbury

City/Town

MA

State

01985

Zip Code

2. Property Owner (if different):

SAME

Name

Mailing Address

City/Town

State

Zip Code

B. Authorization

The Order of Conditions (or Extension Permit) issued to the applicant or property owner listed above on:

06/29/2021

Date

Issued by:

West Newbury

Conservation Commission

for work at:

Middle Street Bridge over Upper
Artichoke Reservoir

Lat: 42.802999, Lon:
70.931053

Parcel/Lot Number

recorded at the Registry of Deeds for:

N/A Town roadway layout

County

Book

Page

Certificate (if registered land)

is hereby extended until:

06/29/2027

Date

N/A

Date the Order was last extended (if applicable)

This date can be no more than 3 years from the expiration date of the Order of Conditions or the latest extension. Only unexpired Orders of Conditions or Extension may be extended.

This Extension Permit must be signed by a majority of the Conservation Commission and a copy sent to the applicant and the appropriate DEP Regional Office (<https://www.mass.gov/service-details/massdep-regional-offices-by-community>).



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP File Number:

WPA Form 7 – Extension Permit for Orders of Conditions

38-724
Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Authorization (cont.)

Issue Date (mm/dd/yyyy)

Signatures:

[Handwritten Signature]
Signature

David Parrott
Printed Name

[Handwritten Signature]
Signature

Margaret Hawkins
Printed Name

[Handwritten Signature]
Signature

George Preble
Printed Name

[Handwritten Signature]
Signature

John T. Haley Jr
Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
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A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

a. County	b. Certificate Number (if registered land)
N/A Town roadway Layout	
c. Book	d. Page

7. Dates: 1/21 6/21/21 6/29/21
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Bridge Replacement Project

a. Plan Title	c. Signed and Stamped by
BSCS Group	varies
b. Prepared By	e. Scale
5/7/2021	
d. Final Revision Date	
f. Additional Plan or Document Title	g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

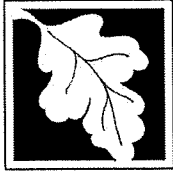
Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- | | | |
|---|--|---|
| a. <input checked="" type="checkbox"/> Public Water Supply | b. <input type="checkbox"/> Land Containing Shellfish | c. <input checked="" type="checkbox"/> Prevention of Pollution |
| d. <input checked="" type="checkbox"/> Private Water Supply | e. <input checked="" type="checkbox"/> Fisheries | f. <input checked="" type="checkbox"/> Protection of Wildlife Habitat |
| g. <input checked="" type="checkbox"/> Groundwater Supply | h. <input checked="" type="checkbox"/> Storm Damage Prevention | i. <input checked="" type="checkbox"/> Flood Control |

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



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B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	<u>175</u> a. linear feet	<u>175</u> b. linear feet	<u>47</u> c. linear feet	<u>47</u> d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	<u>996</u> a. square feet <u>67cf</u> e. c/y dredged	<u>996</u> b. square feet <u>67cf</u> f. c/y dredged	<u>443</u> c. square feet	<u>443</u> d. square feet
7. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	<u>167</u> a. square feet <u>393</u> e. cubic feet	<u>167</u> b. square feet <u>393</u> f. cubic feet	<u>311</u> c. square feet <u>1438</u> g. cubic feet	<u>311</u> d. square feet <u>1438</u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u> </u> a. square feet <u> </u> c. cubic feet	<u> </u> b. square feet <u> </u> d. cubic feet	<u> </u> e. cubic feet	<u> </u> f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	<u>5759</u> a. total sq. feet <u>5759</u> c. square feet	<u>5759</u> b. total sq. feet <u>5759</u> d. square feet	<u>570</u> e. square feet	<u>570</u> f. square feet
Sq ft within 100 ft	<u> </u> g. square feet	<u> </u> h. square feet	<u> </u> i. square feet	<u> </u> j. square feet
Sq ft between 100-200 ft	<u> </u>	<u> </u>	<u> </u>	<u> </u>



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B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

- | | Proposed
Alteration | Permitted
Alteration | Proposed
Replacement | Permitted
Replacement |
|--|---|-------------------------|-------------------------|--------------------------|
| 10. <input type="checkbox"/> Designated Port Areas | Indicate size under Land Under the Ocean, below | | | |
| 11. <input type="checkbox"/> Land Under the Ocean | _____ | _____ | _____ | _____ |
| | a. square feet | b. square feet | | |
| | _____ | _____ | | |
| | c. c/y dredged | d. c/y dredged | | |
| 12. <input type="checkbox"/> Barrier Beaches | Indicate size under Coastal Beaches and/or Coastal Dunes below | | | |
| 13. <input type="checkbox"/> Coastal Beaches | _____ | _____ | _____ cu yd | _____ cu yd |
| | a. square feet | b. square feet | c. nourishment | d. nourishment |
| 14. <input type="checkbox"/> Coastal Dunes | _____ | _____ | _____ cu yd | _____ cu yd |
| | a. square feet | b. square feet | c. nourishment | d. nourishment |
| 15. <input type="checkbox"/> Coastal Banks | _____ | _____ | | |
| | a. linear feet | b. linear feet | | |
| 16. <input type="checkbox"/> Rocky Intertidal Shores | _____ | _____ | | |
| | a. square feet | b. square feet | | |
| 17. <input type="checkbox"/> Salt Marshes | _____ | _____ | _____ | _____ |
| | a. square feet | b. square feet | c. square feet | d. square feet |
| 18. <input type="checkbox"/> Land Under Salt Ponds | _____ | _____ | | |
| | a. square feet | b. square feet | | |
| | _____ | _____ | | |
| | c. c/y dredged | d. c/y dredged | | |
| 19. <input type="checkbox"/> Land Containing Shellfish | _____ | _____ | _____ | _____ |
| | a. square feet | b. square feet | c. square feet | d. square feet |
| 20. <input type="checkbox"/> Fish Runs | Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above | | | |
| | _____ | _____ | | |
| | a. c/y dredged | b. c/y dredged | | |
| 21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage | _____ | _____ | | |
| | a. square feet | b. square feet | | |
| 22. <input type="checkbox"/> Riverfront Area | _____ | _____ | | |
| | a. total sq. feet | b. total sq. feet | | |
| Sq ft within 100 ft | _____ | _____ | _____ | _____ |
| | c. square feet | d. square feet | e. square feet | f. square feet |
| Sq ft between 100-200 ft | _____ | _____ | _____ | _____ |
| | g. square feet | h. square feet | i. square feet | j. square feet |



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B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. Restoration/Enhancement *:

a. square feet of BVW

b. square feet of salt marsh

24. Stream Crossing(s):

0

1

a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on 6/29/24 unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



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C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
"File Number 78-724 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) is subject to the Massachusetts Stormwater Standards
- (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See attached four pages Standard and two pages Special Conditions

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.

SPECIAL CONDITIONS
MIDDLE STREET OVER THE UPPER ARTICHOKE RESERVOIR BRIDGE
DEP #78-0724

1. All work shall conform to the following approved plans and documents, Bridge Replacement Project. Revised 5/7/21
2. Pesticides, insecticides, herbicides and fertilizers shall not be used on site within 100 feet of a resource area. Any proposed change in this limitation requires the submission of a plan to the WNCC and its approval by the WNCC before implementation of any change.
3. A construction schedule shall be submitted to the WNCC at least one week prior to the commencement of any site work.
4. A detailed plan for dewatering shall be submitted to and approved by the WNCC before the commencement of any dewatering.
5. A qualified wetlands scientist, whose qualifications and contact information shall be provided to the WNCC prior to any work under this Order, shall be on-site during the installation of dewatering structures, removal and replacement of the streambed materials, and other times deemed necessary by the WNCC.
6. Wetland flagging shall be reviewed and refreshed by the qualified wetland scientist prior to the commencement of work under this Order.
7. A pre-construction site meeting to review all documents associated with the work under this Order and the locations of erosion and sedimentation controls shall be held prior to any work under this Order and shall be attended by the contractor, resident engineer, the qualified wetland scientist, any other project supervisors, and the West Newbury Conservation Agent.
8. Erosion and sedimentation control measures, consisting of staked 12" compost filter tubes, shall be installed by the contractor and shall be inspected and approved by the WNCC prior to any other work under this Order. The installation shall be completed according to approved plans and the installation will be reviewed by the Qualified Wetland Scientist. The erosion control line along resource areas, except land under water, indicated on the plan shall be the limit of disturbance on the project.
9. Erosion and sedimentation control shall be maintained in good working order throughout all work under this Order. Built up sediment shall be removed when it reaches one-third the height of the filter tube and shall be disposed of outside the buffer zone of any resource area. The erosion and sedimentation controls shall be checked on a weekly basis and following storm events of more than .5 inch.

Inspection reports shall be submitted to the qualified wetland scientist and the WNCC.

10. Areas for stockpiling construction materials and the natural streambed material removed prior to streambed excavation within any resource area or any buffer zone shall be designated on a plan submitted to and approved by the WNCC prior to any work under this Order. Stockpiled materials shall be covered with tarps and surrounded by erosion control measures.
11. Material from demolition shall be disposed of outside any resource area and any buffer zones
12. All trees with a dbh of 3 inches or greater to be removed shall be marked in the field and reviewed by the WNCC prior to removal. Stumps shall remain in place where removal is not required for construction.
13. Any fill materials shall be free from masonry stumps, wood, tree branches, organic materials (other than topsoil), construction debris, refuse, trash and other similar materials.
14. A plan for the treatment of the bridge and approach road with deicing agents in winter shall be submitted to and approved by the WNCC prior to the conclusion of work.
15. 401 Water Quality Certification by the Massachusetts DEP shall be submitted to the WNCC prior to any work under this Order.
16. Confirmation from DEP that the project has been approved under MEPA or that a MEPA filing is not required shall be submitted to the WNCC prior to any work under this Order.
17. Work shall be done in accordance with the authorization and four special conditions provided by the US Army Corps of Engineers in its April 9, 2021 letter to Jon-Eric White, City engineer, City of Newburyport, a copy of which is attached to this Order
18. No time of year work restrictions are applicable to this project. Special Condition #18 supersedes Standard #19.
19. Condition #2 shall run with the land and shall remain in full force and effect after the issuance of a Certificate of Compliance.

The following Conditions are issued pursuant to Mass. General Laws c. 131 S40 and 301 CMR 10.00 et seq, and regulate those activities conducted in a Resource Area or Buffer Zone thereto.

STANDARD ORDER OF CONDITIONS

PROCEDURES:

1. All work must conform to the plans submitted and to the Notice of Intent unless otherwise stipulated in the Order of Conditions or authorized by the West Newbury Conservation Commission.
2. This Order of Conditions must be recorded at the Registry of Deeds, with the recording information submitted to this Commission, prior to the commencement of site work or construction, or within 60 days of the issuance of this Order if construction is not commenced.
3. If the applicant is not the record owner of the property subject to this Order of Conditions, the applicant must, prior to the recording of this Order, provide to this Commission, a written, notarized statement, executed by the owner of the property approving the recording of the Order of Conditions at said Registry of Deeds.
4. The Conservation Commission shall be notified, in writing, at the time of all transfers of title on this property that occur prior to the issuance of a Certificate of Compliance.
5. In conjunction with the sale of any lot with a resource area under an Order of Conditions, the applicant shall submit to the WNCC a signed statement by the buyer that he is aware of an outstanding Order of Conditions on the property.
6. The applicant or his successor shall notify the WNCC, in writing, and before site work begins, of the name, address, business and home phone numbers of the project supervisor responsible for compliance with this Order.
7. This Order shall be made part of all general and subcontractors' (responsible for site work) written contract.
8. Any modifications or revisions to the referenced plans and/or Notice of Intent shall be submitted to the WNCC for review and to determine if a new Notice of Intent is required. The WNCC reserves the right to require the applicant to file a new Notice of intent for any appropriate plan changes or submittals.
9. No additional new construction or disturbance of a wetland resource area, or the 100ft. buffer zone around a wetland resource area, shall be permitted on this site until the Commission has made a determination.

10. Issuance of this condition does not in any way imply or certify that the site or downstream areas will not be subject to flooding, storm damage, or any other form of damage due to wetness.
11. Upon completion of work, and in order to receive a Certificate of Compliance, the applicant shall submit an as-built plan of all areas within jurisdiction of the Wetlands Protection Act. The professional engineer of record, certifying compliance with this Order of Conditions, shall sign the plan. The plan shall include:
 - a. As-built elevations of all drainage ways constructed within 100 ft. of any wetland resource area.
 - b. As-built elevations and grades of all filled or altered wetland resource areas, buffer zones and replicated wetland areas.
 - c. Distances to all structures within 100ft. of any wetland resource area.
 - d. The original plan can be used and any changes in the elevations or locations be marked in red. Submit the request in writing or use the DEP form (WPA 8A). Make sure all the original Conditions were met.
12. All erosion control shall be removed as soon as disturbed areas have been revegetated and stabilized, but only after consultation with the Agent and a determination by the Agent that disturbed areas have been sufficiently revegetated/stabilized to warrant removal of the erosion control. The erosion control must be removed before a request for Certificate of Compliance is requested.
13. The Order of Conditions is valid for three years. A Certificate of Compliance must be requested before the Order of Conditions expires unless the Order has been extended.

SITE WORK

14. Erosion and siltation prevention measures must be properly installed before construction. Securely installed silt fence backed with doubly staked hay bales, both embedded a minimum of 6" into existing grade, shall be placed between construction areas and wetland areas. Unless otherwise specified. Prior to installation of these devices, the Conservation Agent shall be contacted for instruction as to proper installation. Both hay bales and silt fence shall be maintained throughout the project until all disturbed areas have been mulched, seeded and stabilized to prevent erosion.
15. The erosion control shall indicate the limit of construction on site and there shall be no disturbance between the erosion control and a wetland resource area unless specifically allowed by the Order of Conditions.
16. If during the course of construction, it is found that further erosion or siltation is needed, the WNCC shall direct the applicant upon its placement.

17. Grading shall conform to the plans and data referenced in special condition #1 above. In all cases final grades shall have a minimum of two inches of topsoil (measured in place) over all disturbed areas. In all cases exposed soil areas shall be stabilized with vegetation, e.g., grass or some form of ground cover plant. Pavement milling mulch alone may be used under the guardrail between the edge of the roadway and back of retaining wall.
18. Upon completion of construction and grading, all disturbed areas located outside resource areas shall be stabilized permanently against erosion. This shall be done either by sodding, or by loaming, seeding, and mulching according to Soil Conservation Service standards. If the latter course is chosen, stabilization will be complete when the surface shows complete vegetative cover.
19. Unless otherwise stipulated herein, all work within a resource area, or the 100ft. buffer zone, shall cease on October 15th of any given year, and the site shall be stabilized either with winter rye, mulch hay or other suitable material by November 1st. No work in the above stated areas should recommence until April 15th, of the following year.
20. Before hay bales or silt fences are removed, after the area in question has been stabilized by revegetation or at the completion of a project, all accumulated silt behind the fences shall be carefully removed and placed sufficiently far from the wetland area that it cannot wash into the wetlands.
21. No earthen embankment in any buffer zone area shall have a slope steeper than 2:1.
22. Dust control, if required, shall be limited to water; no salts or other wetting agents shall be used.
23. No dirt stockpiles, construction materials, spoils of construction, or equipment shall be stored, placed or operated in a wetland resource area, unless specifically allowed by the Order of Conditions.
24. Fill stored within 100ft. of the wetland of the must have adequate erosion control measures surrounding it.
25. Only clean fill shall be used on this site, as indicated in General Condition #6.
26. No construction site bury holes shall be located within 100ft. of the wetland.

POLLUTION CONTROL

27. No on-site dumpster shall be located within 100ft. of the wetland.
28. During and after work on this project, there shall be no discharge or spillage of fuel, oil, construction debris, or other pollutants into any wetland resource area.

29. Petroleum products, toxic materials, and construction debris shall be disposed of off-site.
30. Since the underground storage of petroleum products cannot be effectively monitored for loss, and presents a hazard to ground water and wetland resources, such storage is prohibited. This condition shall be included with the Certificate of Compliance so as to run with the land.
31. Equipment must be washed prior to entering the work area to remove leaked petroleum products and avoid introduction of invasive plants.
32. To avoid leaks, equipment must be repaired prior to construction.
33. Applicant must be prepared to use petroleum absorbing "diapers" if necessary.
34. Refueling areas and hazardous material containment areas shall be located away from streams and other sensitive areas. All refueling areas shall be outside of the 100 foot buffer zone and the 200 Riverfront Areas.
35. Appropriate areas for washing concrete mixers must be established outside the 100 foot buffer zone of a wetland resource area and outside the Riverfront Area; in order to prevent concrete wash water from entering rivers and streams.
36. Temporary stockpiles must be covered or surrounded with erosion controls to prevent erosion into resource areas



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
78-724
MassDEP File #

eDEP Transaction #
West Newbury
City/Town

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No
2. The _____ hereby finds (check one that applies):
Conservation Commission

- a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw

2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
78-724
MassDEP File #

eDEP Transaction #
West Newbury
City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

6/29/21
1. Date of Issuance

Please indicate the number of members who will sign this form.

four
2. Number of Signers

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

[Signature]
Signature
Thomas M. Atwood
Signature

Katherine T. Federer
Printed Name
Thomas M. Atwood
Printed Name

[Signature]
Signature
Margaret Hawkins
Signature

MARGARET HAWKINS
Printed Name

[Signature]
Signature

JULIA H. MIZNER
Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

by hand delivery on

by certified mail, return receipt requested, on

6/29/21
Date

Date



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

78-724

MassDEP File #

eDEP Transaction #

West Newbury

City/Town

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



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Provided by MassDEP:
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eDEP Transaction #
West Newbury
City/Town

G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

West Newbury

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

West Newbury

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Upper Artichoke Bridge, Middle St.

Project Location

78-724

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for:

Town of West Newbury

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

6/29/2021

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

**Massachusetts Department of Environmental
Protection**

ORDER OF CONDITIONS

Newburyport

Extension and Original



A. General Information

Important:
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Applicant:

City of Newburyport c/o Sara Kreisel, BSC Group
 Name

1 Mercantile Street, Suite 610
 Mailing Address

Worcester MA 01606
 City/Town State Zip Code

2. Property Owner (if different):

Name

Mailing Address

City/Town State Zip Code

B. Authorization

The Order of Conditions (or Extension Permit) issued to the applicant or property owner listed above on:

February 2, 2021 Issued by: Newburyport
 Date Conservation Commission

for work at: Plummer Spring Road
 Street Address Assessor's Map/Lot Number

recorded at the Registry of Deeds for:

Southern Essex
 County Book Page

Certificate (if registered land)

is hereby extended until: June 7, 2027
 Date Date the Order was last extended (if applicable)

This date can be no more than 3 years from the expiration date of the Order of Conditions or the latest extension. Only unexpired Orders of Conditions or Extension may be extended.

This Extension Permit must be signed by a majority of the Conservation Commission and a copy sent to the applicant and the appropriate DEP Regional Office (<https://www.mass.gov/service-details/massdep-regional-offices-by-community>).



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 7 - Extension Permit for Orders of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File
Number:

051-1047
Provided by
DEP

B. Authorization (cont.)

E-Signatures:

The following signatures are made in accordance with M.G.L. c.110G and pursuant to the Commission's electronic signature authorization vote recorded on 3/23/2022 in Book 40811 and Page 353 at the Essex South Registry of Deeds. The name(s) typed below represent the intent to sign the foregoing document:

<input checked="" type="checkbox"/> <u>Joe Teixeira</u> Signature	<u>Joe Teixeira</u> Printed Name
<input checked="" type="checkbox"/> <u>Stephen Moore</u> Signature	<u>Stephen Moore</u> Printed Name
<input checked="" type="checkbox"/> <u>David Vine</u> Signature	<u>David Vine</u> Printed Name
<input checked="" type="checkbox"/> <u>Dan Warchol</u> Signature	<u>Dan Warchol</u> Printed Name
<input checked="" type="checkbox"/> <u>William Mullen</u> Signature	<u>William Mullen</u> Printed Name



C. Recording Confirmation

The applicant shall record this document in accordance with General Condition 8 of the Order of Conditions (see below), complete the form attached to this Extension Permit, have it stamped by the Registry of Deeds, and return it to the Conservation Commission.

Note: General Condition 8 of the Order of Conditions requires the applicant, prior to commencement of work, to record the final Order (or in this case, the Extension Permit for the Order of Conditions) in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, it shall be noted in the Registry's Granter Index under the name of the owner of the land upon which the proposed work is to be done. In the case of registered land, it shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done.

Detach this page and submit it to the Conservation Commission prior to the expiration of the Order of Conditions subject to this Extension Permit.

To:

_____ Conservation Commission

Please be advised that the Extension Permit to the Order of Conditions for the project at:

_____ Project Location _____ DEP File Number

has been recorded at the Registry of Deeds of:

_____ County

for:

_____ Property Owner

and has been noted in the chain of title of the affected property in accordance with General Condition 8 of the original Order of Conditions on:

_____ Date _____ Book _____ Page

If recorded land the instrument number which identifies this transaction is:

_____ Instrument Number

If registered land, the document number which identifies this transaction is:

_____ Document Number

_____ Signature of Applicant



CITY OF NEWBURYPORT
CONSERVATION COMMISSION

60 PLEASANT STREET
NEWBURYPORT, MA 01950
978-465-4400

June 07, 2021

Jon-Eric White
City of Newburyport Department of Public Services
16C Perry Way
Newburyport MA 01950

Re: Order of Conditions File # 051-1047
- Plummer Spring Road

Dear Applicant:

Enclosed is the Order of Conditions for your project at the above referenced property. Before any work may begin, you must wait 10 business days (the appeal period) and then record this Order with the Registry of Deeds. Once the Order is recorded, you must submit proof to me (see page 11) prior to starting any work.

Please read the Order very carefully as it will govern how you may proceed with your project so that any potential impacts to the resource areas are minimized. Failure to adhere to the conditions specified in the Order may result in enforcement action, including fines. In addition, please note the following special conditions that must be met prior to your start of work:

- Prior to the commencement of any activity on the site, the applicant shall complete and submit the enclosed "Permit Compliance Contact Form".
- The applicant shall display the DEP file number for this Order on a sign within the minimum dimensions of two feet by two feet at a location clearly visible from the street. This sign shall remain in place and visible until a Certificate of Compliance is issued for the activity.
- The Conservation Administrator shall be notified at least 48 hours in advance of the commencement of work at the site.

Information may be provided to the Conservation Administrator by phone at (978) 465-4400 xt 1224, by email at: jgodtfredsens@cityofnewburyport.com, or by mail at 60 Pleasant Street, Newburyport, MA 01950.

Best of luck on your project and don't hesitate to contact me if you have questions.

Sincerely,

Julia Godtfredsen
Conservation Administrator



CITY OF NEWBURYPORT
CONSERVATION COMMISSION
60 PLEASANT STREET
NEWBURYPORT, MA 01950
978-465-4462

PERMIT COMPLIANCE CONTACT FORM

INSTRUCTIONS

Please complete the permit compliance contact form on the following page and return to the Conservation Administrator prior to the start of construction.

The purpose of this form is to ensure proper contact information for compliance with the permit (Order of Conditions) and follow-through with application for the Certificate of Compliance at the conclusion of construction.

Please Note:

1. No work shall begin on site until this form has been completed and received by the Conservation Administrator. The form may be hand delivered or mailed, faxed to 978-465-4452, or sent by email to: jgodtfredsen@cityofnewburyport.com.
2. Any changes to the responsible parties and/or their contact information that occur during the course of construction shall be immediately supplied to the Conservation Administrator on an updated form. Forms are downloadable from the Commission's website at: <http://www.cityofnewburyport.com/conservation-commission>
3. The Request for Certificate of Compliance must be submitted by the applicant at the completion of construction and prior to the expiration date of the Order of Conditions. If the Request for Certificate of Compliance is not submitted prior to the expiration date of the Order of Conditions, the applicant will be in violation of permit conditions and may be subject to enforcement action.

Corrected
10/3/2022



Massachusetts
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
051-1047
MassDEP File #
eDEP Transaction #
Newburyport
City/Town

A. General Information

Please note:
this form has
been modified
with added
space to
accommodate
the Registry
of Deeds
Requirements

Important:
When filling
out forms on
the
computer,
use only the
tab key to
move your
cursor - do
not use the
return key.



1. From: Newburyport
Conservation Commission

2. This issuance is for (check one):
a. Order of Conditions b. Amended Order of Conditions

3. To: Applicant:
Jon-Eric White
a. First Name b. Last Name

City of Newburyport Department of Public Services
c. Organization

16C Perry Way
d. Mailing Address

Newburyport MA 01950
e. City/Town f. State g. Zip Code

4. Property Owner (if different from applicant):
a. First Name b. Last Name

City of Newburyport
c. Organization

60 Pleasant Street
d. Mailing Address

Newburyport MA 01950
e. City/Town f. State g. Zip Code

5. Project Location:
- Plummer Spring Road Newburyport
a. Street Address b. City/Town

n/a n/a
c. Assessors Map/Plat Number d. Parcel/Lot Number

Latitude and Longitude, if known: d m s d m s
d. Latitude e. Longitude



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 051-1047
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A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Essex
 a. County
 b. Certificate Number (if registered land)
 c. Book
 d. Page

7. Dates: 1/12/2021 5/18/2021 6/7/2021
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Project Site Plans, Bridge Replacement Project, Middle Street/Plummer Spring Road
 a. Plan Title
 BSC Group varies
 b. Prepared By c. Signed and Stamped by
 12/21/2020, 5/7/2021 e. Scale
 d. Final Revision Date
 f. Additional Plan or Document Title g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- a. Public Water Supply
- b. Land Containing Shellfish
- c. Prevention of Pollution
- d. Private Water Supply
- e. Fisheries
- f. Protection of Wildlife Habitat
- g. Groundwater Supply
- h. Storm Damage Prevention
- i. Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection
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 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) 0
 a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	<u>68</u> a. linear feet	<u>68</u> b. linear feet	<u>14</u> c. linear feet	<u>14</u> d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	<u>43168</u> a. square feet <u> </u> e. c/y dredged	<u>431</u> b. square feet <u> </u> f. c/y dredged	<u>198</u> c. square feet	<u>198</u> d. square feet
7. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	<u>44</u> a. square feet	<u>44</u> b. square feet	<u>344</u> c. square feet	<u>344</u> d. square feet
Cubic Feet Flood Storage	<u>68132</u> e. cubic feet	<u>132</u> f. cubic feet	<u>1857</u> g. cubic feet	<u>1857</u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> e. cubic feet	<u> </u> f. cubic feet
Cubic Feet Flood Storage	<u> </u> c. cubic feet	<u> </u> d. cubic feet	<u> </u> e. cubic feet	<u> </u> f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	<u>13158</u> a. total sq. feet	<u>13158</u> b. total sq. feet	<u> </u> c. square feet	<u> </u> d. square feet
Sq ft within 100 ft	<u>1333</u> c. square feet	<u>1333</u> d. square feet	<u>702</u> e. square feet	<u>702</u> f. square feet
Sq ft between 100-200 ft	<u> </u> g. square feet	<u> </u> h. square feet	<u> </u> i. square feet	<u> </u> j. square feet



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
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Provided by MassDEP:
 051-1047
 MassDEP File # _____
 eDEP Transaction # _____
 Newburyport
 City/Town

B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	_____ a. square feet	_____ b. square feet	_____ c. nourishment cu. yd	_____ d. nourishment cu. yd
14. <input type="checkbox"/> Coastal Dunes	_____ a. square feet	_____ b. square feet	_____ c. nourishment cu. yd	_____ d. nourishment cu. yd
15. <input type="checkbox"/> Coastal Banks	_____ a. linear feet	_____ b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	_____ a. square feet	_____ b. square feet		
17. <input type="checkbox"/> Salt Marshes	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	_____ a. c/y dredged	_____ b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____ a. square feet	_____ b. square feet		
22. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet



Massachusetts Department of Environmental Protection
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B. Findings (cont.)

- * #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.
23. vv Restoration/Enhancement *:
 0 _____ 0 _____
 a. square feet of BVW b. square feet of salt marsh
24. Stream Crossing(s):
 _____ 1 _____
 a. number of new stream crossings b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on 6/7/2024 unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
051-1047
MassDEP File #
eDEP Transaction #
Newburyport
City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
"File Number 051-1047 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



Massachusetts Department of Environmental Protection
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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
 - (1) is subject to the Massachusetts Stormwater Standards
 - (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
 - i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See Attached

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes
2. The Newburyport Conservation Commission hereby finds (check one that applies):
Conservation Commission
 - a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw	2. Citation
---------------------------------	-------------

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw	2. Citation
---------------------------------	-------------
3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):



CITY OF NEWBURYPORT
CONSERVATION COMMISSION
60 PLEASANT STREET
NEWBURYPORT, MA 01950
978-465-4400

Order of Conditions for Plummer Spring Road Bridge

Electronic Signature Page

DEP File Number: 051-1047

Public Hearing Date: May 18, 2021

Applicant: City of Newburyport, DPS

Property Owner: Same

Project Location: Plummer Spring Road

Map: n/a

Lot: n/a

Project Description: Reconstruction and widening of the bridge crossing the Upper Artichoke Reservoir.

E-Signatures:

The name(s) typed below represent the intent to sign the foregoing document:

Joe Teixeira, Chair

Stephen Moore, Vice Chair

Paul Healy, Member

David Vine, Member

Dan Warchol, Member

Ronald DiCola, Member

Carole Wagan, Member

Date Signed: May 18, 2021



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
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Provided by MassDEP:
 051-1047
 MassDEP File #
 eDEP Transaction #
 Newburyport
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E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

6/7/2021

1. Date of Issuance

Please indicate the number of members who will sign this form.

7

This Order must be signed by a majority of the Conservation Commission.

2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

by hand delivery on

by certified mail, return receipt requested, on

6/7/2021

 Date

Date



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

051-1047

MassDEP File #

eDEP Transaction #

Newburyport

City/Town

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 051-1047
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G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Newburyport

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant



CITY OF NEWBURYPORT
CONSERVATION COMMISSION
60 PLEASANT STREET • P.O. BOX 550
NEWBURYPORT, MA 01950
(978) 465-4400
WWW.CITYOFNEWBURYPORT.COM

Standard and Special Conditions for Plummer Spring Road Bridge

DEP File Number: 051-1047

Date: June 7, 2021

Applicant: City of Newburyport, DPS

Property Owner: Same

Project Location: Plummer Spring Road **Map:** n/a **Lot:** n/a

Project Description: Reconstruction and widening of the bridge crossing the Upper Artichoke Reservoir.

These conditions are in addition to and part of the Order of Conditions (WPA Form 5) for the property located at **Plummer Spring Road Bridge**, Newburyport, MA 01950.

This project shall conform to the following documents and plans unless otherwise specified:

1. WPA Form 3 Notice of Intent, project narrative, and supporting documentation, prepared by BSC Group, dated January 2021.
2. Project Site Plans, Bridge Replacement Project, Middle Street/Plummer Spring Road, prepared by BSC Group, dated 12/21/2020. Revised by Addendum dated 05/07/2021.

A. General Conditions

19. The Conservation Commission shall be informed of all changes that may be made to the Plan(s) of Record by any other Board, Commission or Authority or as a result of changes by the Applicant. All changes shall require additional approvals from the Conservation Commission.
20. A member of the Newburyport Conservation Commission (the Commission) or its administrator may enter and inspect the property and the activity that are the subjects of this Order at all reasonable times, with or without probable cause or prior notice, and until a Certificate of Compliance is issued, for the limited purpose of evaluating compliance with this Order.
21. With respect to all conditions the Conservation Commission designates the Conservation Administrator as its agent with full powers to act on its behalf in administering and enforcing this Order.
22. The term "Applicant" as used in this Order of Conditions shall refer to the owner, any successor in interest or successor in control of the property referenced in the Notice of Intent, supporting documents and this Order of Conditions. The Commission shall be

notified in writing within 30 days of all transfers of title of any portion of property that take place prior to the issuance of the Certificate of Compliance.

23. This document shall be included by reference in all contracts, plans and specifications dealing with the activity that is the subject of this Order, and that are created or modified after the issuance date of this Order, along with a statement that this Order shall supersede any conflicting contractual arrangements, plans or specifications.
24. The applicant shall provide a copy of this Order to the person or persons supervising the activity that is the subject of this Order, and shall be responsible for ensuring that all persons performing the permitted activity are fully aware of the terms and conditions of this Order.
25. Any person performing work on the activity that is the subject of this Order is individually responsible for understanding and complying with the requirements of this Order, the Act, 310 CMR 10.00.
26. The Commission reserves the right to impose additional conditions on this project, including but not limited to, additional or modified erosion/siltation controls during construction, if it deems that site conditions warrant such measures to mitigate potential impacts.
27. If any changes are made in the above-described plan(s) which, in the Commission's opinion, may alter an area subject to protection under the Wetlands Protection Act, 310 CMR 10.00 or the Newburyport Wetlands Ordinance, the applicant shall inquire from this Commission or its agent, prior to implementing the change in the field, whether the change is significant enough to require the filing of a new Notice of Intent. Any errors in the plans or information submitted by the applicant shall be considered changes and the above procedures shall be followed. Approval of changes must be granted by the Conservation Commission before such work may continue.
28. This Order authorizes only the activity described on the approved plan(s) and approved documents referenced in this Order. Any other or additional activity in areas within the jurisdiction of the Commission shall require separate review and approval by the Commission or its agent.
29. The limits of work in the field shall be clearly marked and all workers shall be instructed not to work beyond the specified limits. Resource area flags shall be maintained and replaced as necessary until a final Certificate of Compliance is issued for the project.

B. Pre-Construction

30. Prior to the commencement of any activity on this site, the applicant or owner shall complete and submit the attached "Permit Compliance Contact Form," providing the name(s), address(es), phone number(s) and email address(es) of a contact person or persons responsible for compliance with this Order. Should the responsible parties change during the course of the project, the Commission shall be notified as soon as practical of such change.
31. The applicant shall display the Department of Environmental Protection (DEP) file number for this Order on a sign within the minimum dimensions of two feet by two feet at a location clearly visible from the street. This sign shall remain in place and visible until a Certificate of Compliance is issued for the activity.
32. The applicant shall arrange for a pre-construction meeting with the Conservation Commission or its designated representative(s) no less than 72 hours prior to the

commencement of construction. Commencement of construction includes any site clearing or grading. The purpose of this meeting is to inspect the erosion controls and to review all conditions of this Order of Conditions with the applicant, contractor and sub-contractors as appropriate to ensure they are understood.

33. The Commission shall be notified at least 48 hours in advance of the commencement of work at the site.

C. During Construction

34. A copy of this Order of Conditions and approved Plan(s) of Record shall be on the site upon commencement and during any site work for contractors to view and adhere to.
35. Any material placed in wetland resource areas or outside the Limit of Work by the applicant without express authorization under this Order shall be removed as soon as possible by the applicant upon the request of the Conservation Commission or its administrator.
36. All construction materials, earth stockpiles, landscaping materials, slurry pits, waste products, refuse, debris, stumps, slash, or excavate may only be stockpiled or collected in areas as shown and labeled on the approved plan(s) or in a stockpile location to be submitted on a plan and approved by the Conservation Administrator prior to the start of construction. All such materials must be covered and surrounded by a double-staked row of hay bales or other approved erosion control device to prevent contact with rain water.
37. As soon as possible, all disturbed areas shall be brought to final grade and shall be permanently stabilized within 30 days of that time by measures acceptable to the Commission.
38. The project manager shall be responsible for regular inspections of the erosion controls on at least a weekly basis and after each rain storm. Necessary repairs and maintenance of the erosion control devices shall be made expeditiously.
39. Any and all demo/construction debris resulting from the approved construction shall be placed in an enclosed covered container or removed from the site daily.
40. Trash dumpsters shall be located as far away from the resource areas as possible and shall be emptied at least once a week during construction.
41. No material of any kind may be buried, placed or dispersed in areas within the jurisdiction of the Commission by activities that are the subject of this Order.
42. No fuel, oil, urethanes, or other pollutants shall be stored in any resource area or the buffer zone.

D. Special Conditions

43. Prior to the start of construction, the applicant shall provide to the Commission for review and approval, an inventory, including caliper size, species and photographs, of all trees expected to be removed or damaged as part of the project and a plan to replace them within the project area with similar native species
44. Prior to the start of construction, the project contractor shall submit to the Commission for review and approval a dewatering and stabilization plan, showing the details,

dimensions and location of the dewatering area and shall locate this dewatering area within the already paved roadway to the greatest extent practicable.

45. A qualified wetland scientist shall join the selected contractor on-site during special activities such as a pre-construction kickoff meeting to go-over permits and emergency sheets in case of a release, and to identify locations of Erosion and Sedimentation (E&S) Controls as identified on the approved plans. The Qualified Scientist would then review the installed E&S Controls, ensure wetland resource area flags are in-place and send a report on such by email to the Commission at jgodtfredsen@cityofnewburyport.com.
46. The project's Resident Engineer shall be in-charge of day-to-day oversight during construction and for major storm rainfall events of > 0.5-inch. Reports by the Resident Engineer may then be reviewed by a Qualified Scientist, and the Engineer shall make them available to the Commission upon request.

E. Post Construction

47. Within 90 days after the completion of construction and prior to the expiration date of this Order of Conditions, the applicant shall submit the following to the Conservation Commission:
 - a. A completed Request for a Certificate of Compliance – WPA form 8A.
 - b. A letter from a registered professional engineer certifying compliance of the property with this Order of Conditions and detailing any deviations that exist and their potential effect on the project. A statement that the work is in "substantial compliance" with no detailing of the deviations shall not be accepted.
 - c. Photos of the completed project and an "As-Built" plan showing post-construction conditions, stamped and signed by a professional engineer or land surveyor. This plan shall note any deviations from the original plans/profiles and shall include final lot elevations when grades have been changed.

**Massachusetts Department of Environmental
Protection**

NOTICE OF INTENT

West Newbury

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
West Newbury, and Newburyport, Massachusetts

Addendum to Notice of Intent Submitted January 2021

Town of West Newbury
Conservation Commission
May 2021

Prepared for:

Town of West Newbury
381 Main Street
West Newbury, MA 01985

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

May 10, 2021

Town of West Newbury
Conservation Commission
381 Main Street
West Newbury, MA 01985

**RE: Bridge Replacement Project
Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir
West Newbury/Newburyport, Massachusetts
Notice of Intent - Addendum to NOI Presented to Commission January 25, 2021
Response to Commissioner Comments from February 7, 2021 Site Visit**

Dear Members of the West Newbury Conservation Commission:

BSC Group Inc., on behalf of The Town of West Newbury (“the Applicant”), is pleased to submit this Addendum to its Notice of Intent (NOI) submitted to the West Newbury Conservation Commission on January 4, 2021 and previously presented to the Commission on January 25, 2021, for project activities associated with the replacement of the structurally deficient bridge (Bridge No. N-11-007) which carries Middle Street, West Newbury, MA over the Upper Artichoke Reservoir (hereby referred to as “the bridge”). The proposed updates are concessions for increased stormwater treatment along the proposed roadway in response to Commission requests, as discussed with, and agreed to, by the Applicant in each respective municipality. Additionally, we would like to take this opportunity to follow-up on questions previously asked by the Commission at the Site Walk on February 7, 2021.

Addendum to the NOI Submitted on January 4, 2021 and presented January 25, 2021

This addendum addresses additional steps to treat stormwater along the roadway, which will result in minor adjustments to the impacts to the 200-foot Riverfront Area (RFA). The proposed retaining walls in West Newbury will also be trimmed back slightly. The rest of the original NOI is still accurate and applicable to this Project as submitted.

Proposed work and updates are as follows:

West Newbury. The lowest point of the project occurs within the roadway on the West Newbury side of the project area. Currently the drawings show two deep sump catch basins at the low point of the project on either side of the roadway that flow to a drain manhole and discharge to a stone splash pad. It is now proposed that the deep sump catch basins flow to a 900-gallon water quality treatment unit. From there the runoff is directed northwest to a

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



flared end section that discharges towards the reservoir onto stone at the end of the pipe. The project limits will generally stay the same, no additional berm/curbing will be included.

Newburyport. Existing conditions in Newburyport utilize country drainage, and the NOI submittal from January 2021 proposed no additional treatment. The Municipalities now propose the addition of two deep sump catch basins on either side of the roadway just before the ends of the retaining walls. The deep sump catch basins will flow to a 900-gallon water quality unit. From there runoff is directed south to a flared end section that discharges towards the reservoir onto a stone splash pad. These additions will ensure the treatment of some of the stormwater entering the Reservoir by reducing the amount entering by country drainage. The project limits will generally stay the same, no additional berm/curbing will be included.

Between the deep sump catch basins and the water quality units, more than 80% of TSS will be removed from runoff captured by the catch basins across the entire project area.

To facilitate your review, we have included an updated version of the following: environmental resources map, streamlined stormwater report, checklist, and calculations, water quality unit specifications, and proposed plans.

There are no proposed changes to the work in Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), nor the Bank across the entire project.

There are minor increased impacts proposed to the RFA as a result of the stormwater treatment installations. An additional 74 sf of permanent impacts to RFA are proposed in the Town of West Newbury (190 sf project-wide). Temporary impacts will actually decrease 18 sf in West Newbury as a result of a minor reconfiguration of the stormwater improvements; however, temporary impacts due to construction will increase an additional 136 sf project-wide due to stormwater improvement work proposed in Newburyport. All additional proposed work will occur entirely within the proposed paved roadway. All the proposed changes are denoted in the plans, attached to this submittal.

Table 1 – Summary of Wetland Resource Area Impacts

Resource Area	Impact Type	West Newbury {(Jan-2021) May 2021}	Newburyport {(Jan-2021) May 2021}	TOTAL {(Jan-2021) May 2021}
200-foot Riverfront Area (RFA)	Redevelopment	3,203 sf	2,669 sf	5,872 sf
	Permanent	(1,986 sf) 2,060 sf	(1,217 sf) 1,333 sf	(3,203 sf) 3,393 sf
	Temporary	(570 sf) 552 sf	(548 sf) 702 sf	(1,118 sf) 1,254 sf



Response to Commissioner Comments from February 7, 2021 Site Visit

In addition to the Addendum above, we would like to take this opportunity to provide the information requested by the Commission during the site visit that occurred on February 7, 2021. Specifically, a Commissioner asked that we provide information about the vegetative makeup of the peninsula that occurs to the southwest portion of the site, and to discuss trees that would require removal for the installation of the retaining walls and new bridge.

1. We'd like to provide the following information as denoted in the site delineation for the vegetative analysis:

The proposed project was delineated on December 13, 2019, 33°F, on a clear day. The Reservoir was generally frozen except for a small portion north of the bridge. Patches of snow were present on the ground but did not obstruct the view of the ground surface.

Wetlands were delineated in accordance with the methods developed by the Massachusetts Department of Environmental Protection's (MassDEP) Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act, dated 1995, as well as definitions set forth in the Wetlands Regulations 310 CMR 10.00 (Wetlands Protection Act Regulations).

There is a distinct vegetated embankment along the southern side of Middle Street / Plummer Spring Road. The peninsula was observed as a continuation of the upland, with a distinct bank and similar trees and shrubs as observed within the upland. Dominant vegetative species identified on the peninsula is provided in the table on following page. Groundcover at the peninsula consists of compacted soil, gravel, some mosses and occasional grasses on the edge of the bank. Due to soil compaction, augering the soil was not feasible. The peninsula is located well-above the ordinary high-water line (12.6-foot) and 13-foot base flood elevation (100-year flood elevation). The Reservoir is maintained at the 12.6-foot elevation due to the elevation of the downstream dam. No signs of hydrology were observed along the peninsula at the time of the visit. Additional representative photos taken at the time of delineation are included as an attachment to this letter.

Vegetation at the peninsula is comprised of the following predominantly FACU (upland) species:

Table 2 – Vegetative Composition of the Peninsula

<u>Species</u>	<u>Wetland Indicator Status</u>
eastern white pine (<i>Pinus strobus</i>)	FACU
red oak (<i>Quercus rubra</i>)	FACU
red maple (<i>Acer rubra</i>)	FAC
white cedar (<i>Tsuga occidentalis</i>)	FACU
gray birch (<i>Betula populifolia</i>)	FAC
dogwood (<i>Cornus sp.</i>)	FACW
highbush blueberry (<i>Vaccinium corymbosum</i>)	FACW
Japanese knotweed (<i>Polygonum cuspidatum</i>)	FACU
poison ivy (<i>Toxicodendron radicans</i>)	FACU
river grape (<i>Vitis riparia</i>)	FAC



- 2. As denoted on the plans, the project area beyond the proposed bridge and its abutments will require the installation of retaining walls. The type of blocks selected are a lighter modular option that will reduce impacts to the Reservoir as compared to other proposed types. By installing the retaining walls, the need to expand the slopes further into the Reservoir for stability, is eliminated. Expanding the slopes would otherwise increase impacts to the waterway. The proposed retaining walls have been trimmed approximately 10 feet in length on the West Newbury side as a result of using deep post guardrails; which further reduces impacts to RFA from this activity.

Requirements for construction access, as well as the installation of retaining walls and the bridge structure will require some tree-removal along the slopes. Tree removal will occur according to MassDOT Standards Specifications for selective clearing and grubbing. Additionally, care will be taken to ensure trees removed do not fall into the Reservoir, to the extent practicable.

Specifically, removal of the following trees \geq 3-inches dbh in West Newbury is anticipated:

Table 3 – DBH of Trees and Saplings That Will Likely Require Removal

	Type	Diameter at Breast Height (dbh)
Sapling	Deciduous	3 < 4.5-inches (5)
		4.5 < 6-inches (1)
	Coniferous	3 < 6-inches (1)
Tree	Deciduous	6 < 9-inches (4)
		9 < 10.5-inches (1)
	Dead snag	9-inches (1)
Total		7 Saplings
		5 Trees
		1 Snag

- 3. Additionally, as discussed, the flags will be refreshed prior to construction to ensure that the Contractor avoids impacts to the delineated Wetland Resource Areas.

We look forward to presenting this information to the Commission at the next regularly scheduled Conservation Commission public hearing on May 17, 2021. Please do not hesitate to contact me at 617-896-4579, or skreisel@bscgroup.com with any inquiries you may have.

Sincerely,
BSC Group, Inc.

Sara Kreisel, PWS
Ecological Project Manager

cc: Angus Jennings, Town of West Newbury
MassDEP Northeast Regional Office
Similar version to Newburyport Conservation Commission for adjacent work
Micah Morrison, BSC Group

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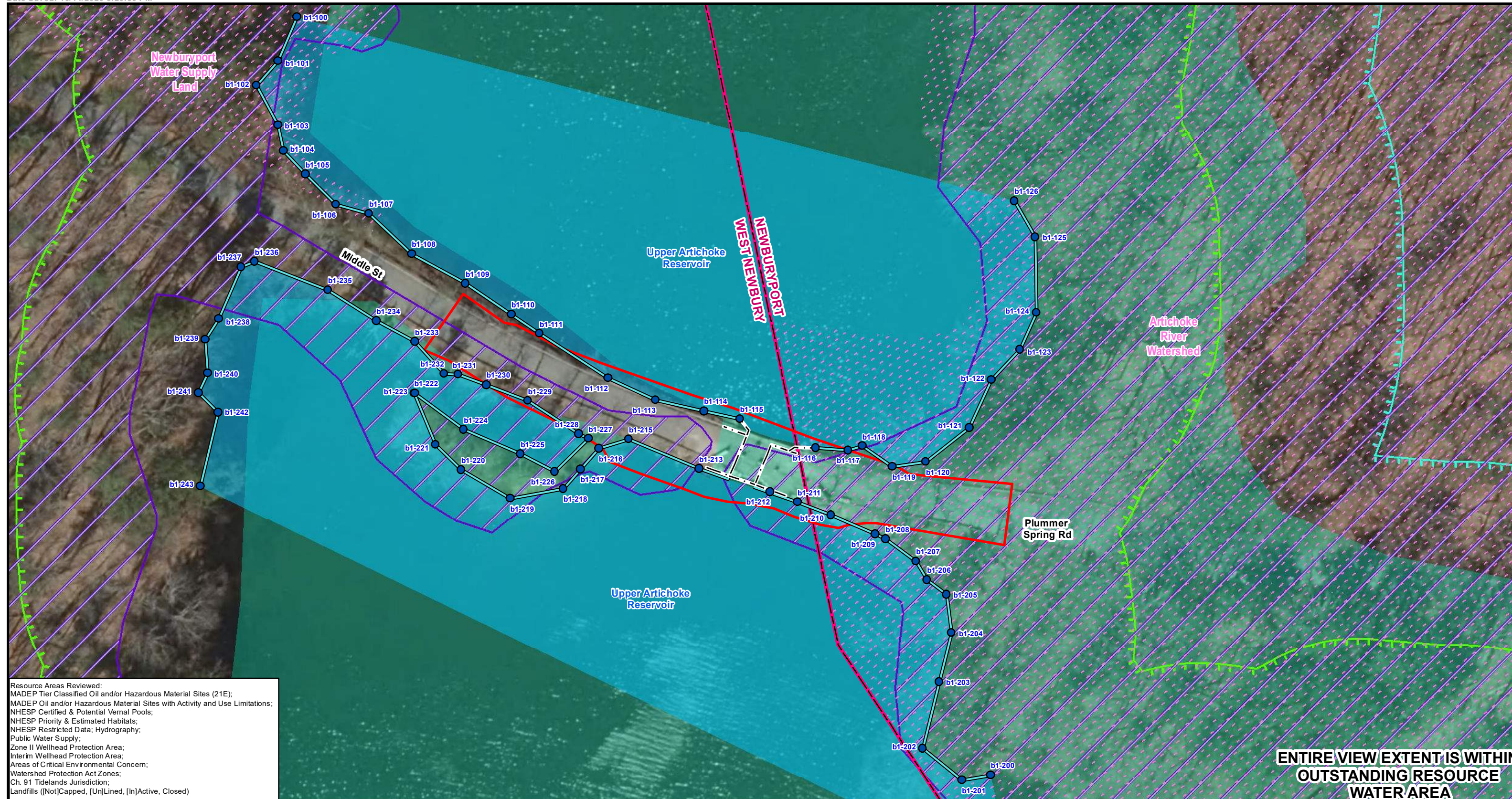
Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

ATTACHMENT A	ENVIRONMENTAL RESOURCES MAP
ATTACHMENT B	UPDATED STREAMLINED STORMWATER MANAGEMENT REPORT
ATTACHMENT C	WATER QUALITY UNIT SPECIFICATIONS
ATTACHMENT D	UPDATED PROJECT PLANS

Attachment A

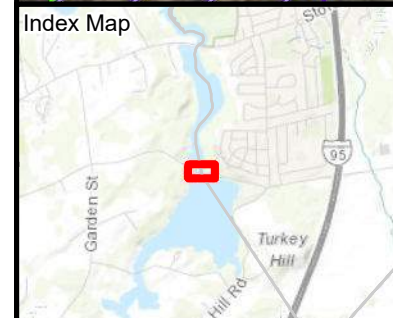
Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
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ENVIRONMENTAL RESOURCES MAP



Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;
 NHESP Certified & Potential Vernal Pools;
 NHESP Priority & Estimated Habitats;
 NHESP Restricted Data; Hydrography;
 Public Water Supply;
 Zone II Wellhead Protection Area;
 Interim Wellhead Protection Area;
 Areas of Critical Environmental Concern;
 Watershed Protection Act Zones;
 Ch. 91 Tidelands Jurisdiction;
 Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)

**ENTIRE VIEW EXTENT IS WITHIN
 OUTSTANDING RESOURCE
 WATER AREA**



Legend

Project Area	100ft Buffer to Wetlands & Streams	Article 97 Lands
Existing Bridge Structure	200ft Riverfront Area	Municipal
Field Delineated Bank Flags	FEMA 100yr Floodplain (Zone AE)*	Surface Water Protection Zone
Field Delineated Edge of Bank	Town Boundary	
Field Delineated Waterbody		
MADEP Hydrologic Connections		

1 inch = 50 feet
 0 25 50
 Feet
 *Indicates Layers Set to Transparency

**MIDDLE STREET / PLUMMER SPRING ROAD
 OVER THE UPPER ARTICHOKE RESERVOIR
 BRIDGE REPLACEMENT PROJECT**

Environmental Resources Map
 West Newbury & Newburyport, MA

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Attachment B

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

UPDATED STREAMLINED STORMWATER MANAGEMENT REPORT

Streamlined Stormwater Management Report

According to the Massachusetts Department of Environmental Protection Stormwater Management Regulations, the project is considered a redevelopment project. As such, the project has been designed to meet all applicable standards of the MassDEP Stormwater Management Handbook to the maximum extent practicable. In accordance with the DEP Stormwater Management Handbook, Standards 1,8, 9, and 10 must be met fully, while the remaining standards must be met to the maximum extent practicable.

Standard 1: New Stormwater Conveyances

Per Massachusetts Stormwater Management Standard #1, no new outfalls may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. On the West Newbury side of the project, to capture runoff at the low point in the road, two deep sump catch basins, on either side of the roadway, are proposed. The deep sump catch basins flow to a 900 gallon water quality unit. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends.

On the Newburyport side of the project, two deep sump catch basins on either side of the roadway are proposed just before the ends of the retaining walls. The deep sump catch basins flow to a 900 gallon water quality unit. From there runoff is directed south to a flared end section that discharges towards the reservoir into stone for pipe ends.

Between the deep sump catch basins and the water quality units, more than 80% of TSS will be removed from runoff captured by the catch basins.

Standard 2: Stormwater Runoff Rates

The proposed widening of the roadway over the new bridge will result in an increase in impervious area over existing conditions. Due to site limitations, mitigation measures are not feasible to reduce runoff rates. As a redevelopment project, this standard is not applicable, however, the proposed design meets this standard to the maximum extent practicable.

Standard 3: Groundwater Recharge

As a redevelopment project, this standard is not applicable. Due to site limitations, implementing groundwater recharge measures are not feasible. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 4: Water Quality

As a redevelopment project, this standard is not applicable. However, two water quality units will be implemented to improve the water quality of the runoff at the site. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 5: Land Uses with Higher Pollutant Loads (LUHPPL)

The Project is not a land use with higher potential pollutant loads.

Standard 6: Stormwater Discharges to a Critical Area

The project is not located within a Critical Area.

Standard 7: Redevelopment Projects

This project is a redevelopment project. In accordance with the DEP Stormwater Management Handbook, standards 1, 8, 9 and 10 have been fully met. In addition, the project has met all other standards (Standards 2, 3, 4, 5, 6, and 7) to the maximum extent practicable.

Standard 8: Sedimentation and Erosion Control Plan

Erosion control measures, including compost filter tubes and sediment control barriers will be placed at the bottom of proposed slopes and limits of work.

Standard 9: Long Term Operations and Maintenance Plan

Temporarily impacted areas associated with project construction activities will be restored following the completion of project work and will result in an overall improvement over existing conditions. Proposed project activities will not be considered complete until the areas disturbed as part of project activities are considered adequately stabilized, as determined by the Newburyport and West Newbury Conservation Commissions.

Standard 10: Illicit Discharges to the Stormwater Management System are Prohibited

There are no known illicit discharges to the proposed Stormwater Management System.

Operation and Maintenance Plan

Water Quality Units

The water quality structure will require periodic inspection and cleaning to maintain operation and function. Owners should have these units inspected on a quarterly basis and after periods of intense precipitation. Inspection of the unit can be done by using a clear Plexiglas tube (sludge judge) to extract a water column sample. When sediment depth exceeds 12 inches then cleaning of the unit is required. These water quality structures will be checked and cleaned after petroleum spills. The appropriate regulatory agencies (Department of Environmental Protection, and the Environmental Protection Agency) should immediately be contacted following a petroleum spill.

Maintenance of these units should be done by a vacuum truck that will remove water, sediment, debris, floating hydrocarbons and other materials in the unit. The proper cleaning and disposal of the removed materials and liquid must be followed. Inlet and outlet pipes must also be checked for any obstructions. Structural parts of the Stormceptor units shall be repaired as necessary.

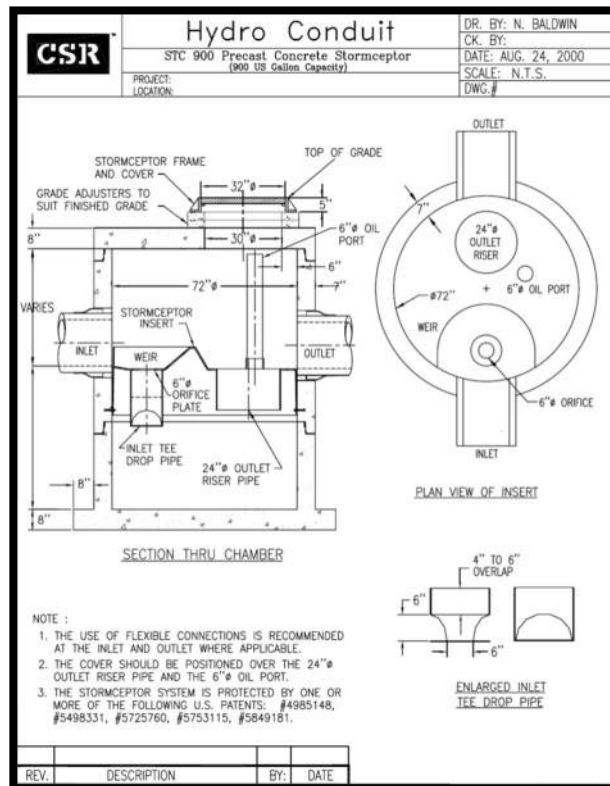


Figure 1 - Example Water Quality Unit



Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Kath Eagan

5/6/21

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of “country drainage” versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): _____

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
 - Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Calculation Sheet



Project No. 28395.00
Subject Drainage Areas
Location Plummer Spring Rd/Middle Street
Newburyport/West Newbury, MA

Calc By K. Eagan
Date 5/3/2021
Checked by _____
Date _____

Proposed Drainage Areas

AREA	TOTAL AREA (SF)	TOTAL AREA (ACRE)	TOTAL IMPERVIOUS AREA (SF)	TOTAL IMPERVIOUS AREA (ACRE)	TOTAL PVIOUS AREA (SF)	TOTAL PVIOUS AREA (ACRE)	PERCENT IMPERVIOUS AREA (%)
1S	7,300	0.168	7,300	0.168	0	0.000	100.0%
2S	1,000	0.023	1,000	0.023	0	0.000	100.0%
SITE TOTAL	8,300	0.191	8,300	0.191	0	0.000	100.0%
		IMPERV AREA =	8,300	SF			
		IMPERV AREA =	0.19	AC			

Water Quality Unit Sizing

Volume (Gal)	Max Impervious Area (AC) (77% TSS Removal)
900	0.45
1200	0.7
1800	1.25
2400	1.65
3600	2.6
4800	3.6
6000	4.6
7200	5.55

TSS Removal Calculation Worksheet

Location: Newburyport/West Newbury, MA

Project: 28395.00



Prepared By: K. Eagan

Date: 05/3/21

AREA 1 - West of Bridge (West Newbury)
Total Impervious Area, Acres= 0.168

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Deep Sump and Hooded Catchbasins	0.25	1.00	0.25	0.75
StormCeptor	0.77	0.75	0.58	0.17
				0.17

TSS Removal =

AREA 2 - East of Bridge (Newburyport)
Total Impervious Area, Acres= 0.023

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Deep Sump and Hooded Catchbasins	0.25	1.00	0.25	0.75
StormCeptor	0.77	0.75	0.58	0.17
				0.17

TSS Removal =

Weighted Annual Average TSS Removal Rate

[TSS Removal-1 (Area-1) + TSS Removal-2 (Area-2)+] / [Area-1 + Area-2 + ...] = 0.83

Project Site TSS Removal =

PROPRIETARY STORMWATER SIZING CALCULATION



Project No. 28395.00
Subject WQU Peak Flow Rate Calc
Location Newburyport/West Newbury, MA

Calc By K. Eagan
Date 5/3/2021
Checked by _____
Date _____

WQU-1

$$Q50 = (qu)(A)(WQV)$$

Q50 = peak flow rate associated with the first 1/2-inch of runoff
qu = the unit peak discharge (csm/in)
A = impervious surface drainage area (square miles)
WQV = water quality volume in watershed

Step 1: Determine WQV

$$\begin{aligned} \text{Impervious Area} &= \boxed{7,300} \text{ sf} \\ & \quad 0.00026 \text{ square miles} \\ \text{WQV} &= 3,650 \text{ cf} \end{aligned}$$

Step 2: Determine tc

$$tc = \boxed{6} \text{ min}$$

Step 3: Determine qu using DEP figure 2

$$qu = \boxed{752} \text{ csm/in}$$

Step 4: Calculate Q50

$$Q50 = \underline{\underline{0.10 \text{ cfs}}}$$

WQU-2

$$Q_{50} = (q_u)(A)(WQV)$$

Q_{50} = peak flow rate associated with the first 1/2-inch of runoff
 q_u = the unit peak discharge (csm/in)
 A = impervious surface drainage area (square miles)
 WQV = water quality volume in watershed

Step 1: Determine WQV

$$\begin{aligned} \text{Impervious Area} &= \boxed{1,000} \text{ sf} \\ & \quad 0.00004 \text{ square miles} \\ \text{WQV} &= 500 \text{ cf} \end{aligned}$$

Step 2: Determine t_c

$$t_c = \boxed{6} \text{ min}$$

Step 3: Determine q_u using DEP figure 2

$$q_u = \boxed{752} \text{ csm/in}$$

Step 4: Calculate Q_{50}

$$Q_{50} = \underline{\underline{0.01}} \text{ cfs}$$

OUTLET PROTECTION SIZING



Project No. 28395.00
 Subject Outlet Protection Sizing Calcs
 Location Newburyport/West Newbury, MA

Calc By K. Eagan
 Date 5/3/2021
 Checked by _____
 Date _____

FES-1

Q=Design Discharge, (ft³/s) = 12 cfs
 D=Culvert Diameter, (ft) = 1.00 ft
 TW=Tailwater Depth, (ft) = 0.4 ft, (0.4xD for unknown tailwater, or enter known tailwater)
 (Tailwater depth is to be limited to between 0.4D and 1.0D)

Riprap Rock Sizing

$D_{50} = 0.2D \left[\frac{Q}{\sqrt{gD}^{2.5}} \right]^{4/3} \left[\frac{D}{TW} \right]$ g=32.2 fps
D₅₀ = median rock size, ft

$D_{50} = 0.2 \left| \frac{12.00}{5.67} \right|^{(4/3)} \left| \frac{1.00}{0.40} \right| = 1.36 \text{ ft}$
 = 5 inches

Table 1 : Riprap Classes and Apron Dimensions

Class	D ₅₀ (in)	Apron Length	Apron Depth
1	5	4D	3.5D ₅₀
2	6	4D	3.5D ₅₀
3	10	5D	3.3D ₅₀
4	14	6D	2.2D ₅₀
5	20	7D	2.0D ₅₀
6	22	8D	2.0D ₅₀

Use Class 1

Apron Dimensions

Length, L=4D = 4 ft
 Depth=3.5D₅₀ = 17.50 inches
 Width=3D+(2/3)L = 5.67 ft (at apron end)

OUTLET PROTECTION SIZING



Project No. 28395.00
 Subject Outlet Protection Sizing Calcs
 Location Newburyport/West Newbury, MA

Calc By K. Eagan
 Date 5/3/2021
 Checked by _____
 Date _____

FES-2

Q=Design Discharge, (ft³/s) = 0.12 cfs
 D=Culvert Diameter, (ft) = 1.00 ft
 TW=Tailwater Depth, (ft) = 0.4 ft, (0.4xD for unknown tailwater, or enter known tailwater)
 (Tailwater depth is to be limited to between 0.4D and 1.0D)

Riprap Rock Sizing

$D_{50} = 0.2D \left[\frac{Q}{\sqrt{g}D^{2.5}} \right]^{4/3} \left[\frac{D}{TW} \right]$ $g=32.2 \text{ fps}$
 $D_{50} = \text{median rock size, ft}$

$D_{50} = 0.2 \left[\frac{0.12}{5.67} \right]^{(4/3)} \left[\frac{1.00}{0.40} \right] = 0.00 \text{ ft}$
 = 5 inches

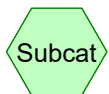
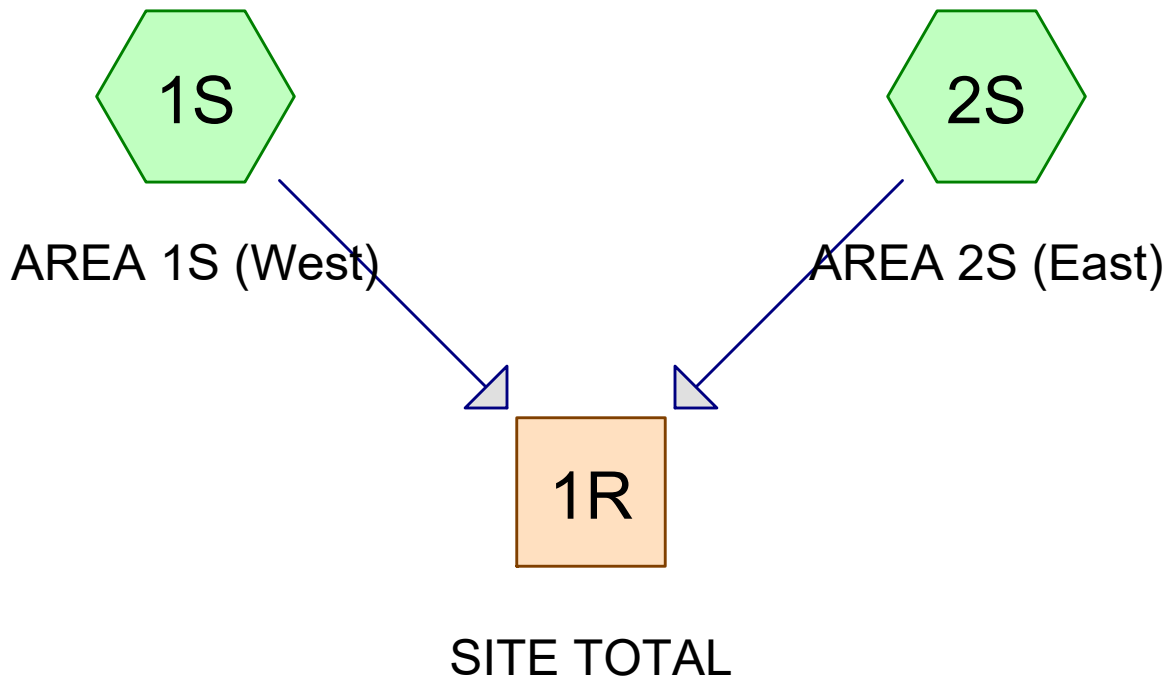
Table 1 : Riprap Classes and Apron Dimensions

Class	D ₅₀ (in)	Apron Length	Apron Depth
1	5	4D	3.5D ₅₀
2	6	4D	3.5D ₅₀
3	10	5D	3.3D ₅₀
4	14	6D	2.2D ₅₀
5	20	7D	2.0D ₅₀
6	22	8D	2.0D ₅₀

Use Class 1

Apron Dimensions

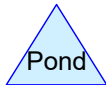
Length, L=4D = 4 ft
 Depth=3.5D₅₀ = 17.50 inches
 Width=3D+(2/3)L = 5.67 ft (at apron end)



Subcat



Reach



Pond



Link

2839500_Newburyport-WestNewbury

Prepared by BSC Group

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.191	98	Paved roads w/curbs & sewers, HSG B (1S, 2S)
0.191	98	TOTAL AREA

2839500_Newburyport-WestNewbury

Prepared by BSC Group

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.191	HSG B	1S, 2S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.191		TOTAL AREA

2839500_Newburyport-WestNewbury

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.191	0.000	0.000	0.000	0.191	Paved roads w/curbs & sewers	1S, 2S
0.000	0.191	0.000	0.000	0.000	0.191	TOTAL AREA	

Summary for Subcatchment 1S: AREA 1S (West)

Runoff = 0.46 cfs @ 12.13 hrs, Volume= 0.036 af, Depth> 2.60"

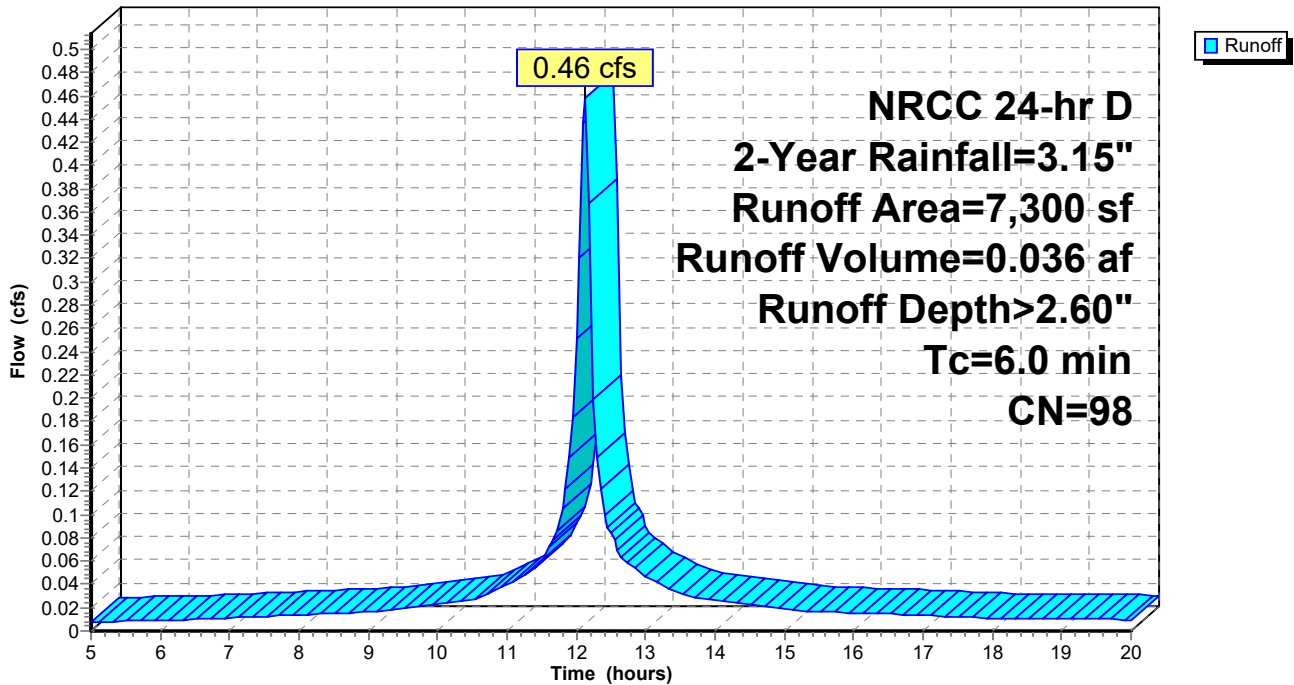
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 2-Year Rainfall=3.15"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)

Hydrograph



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.06 cfs @ 12.13 hrs, Volume= 0.005 af, Depth> 2.60"

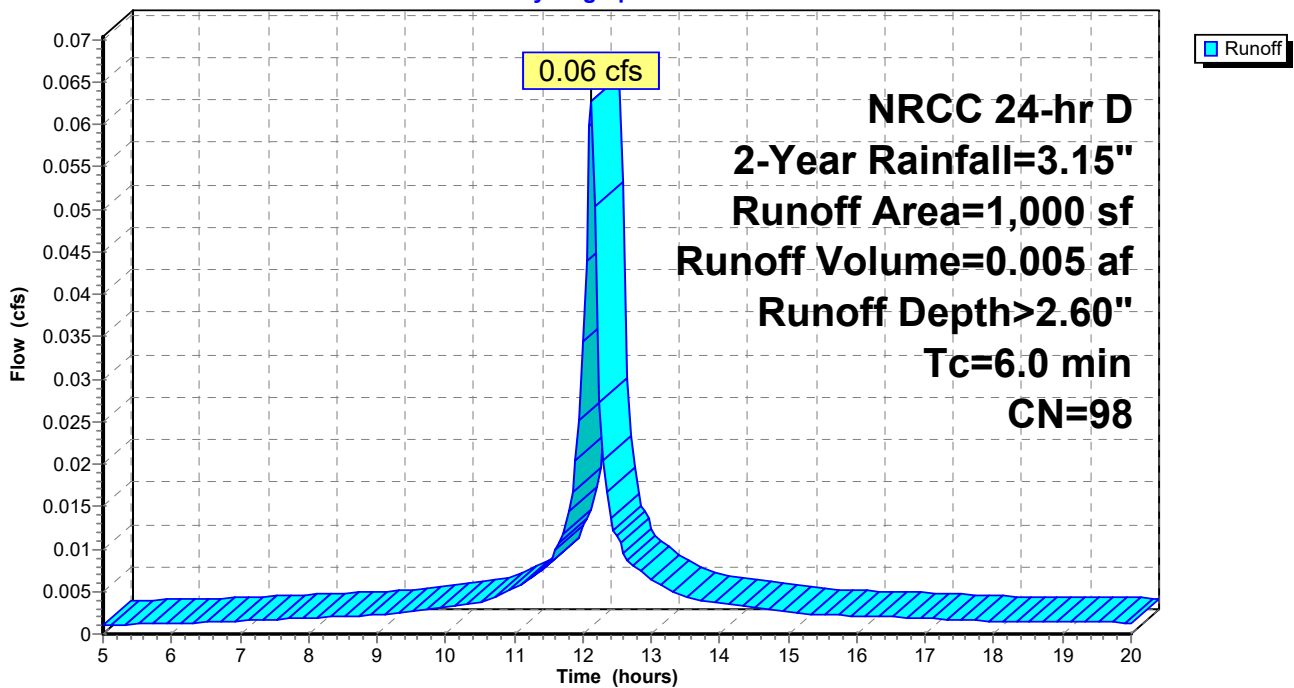
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 2-Year Rainfall=3.15"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



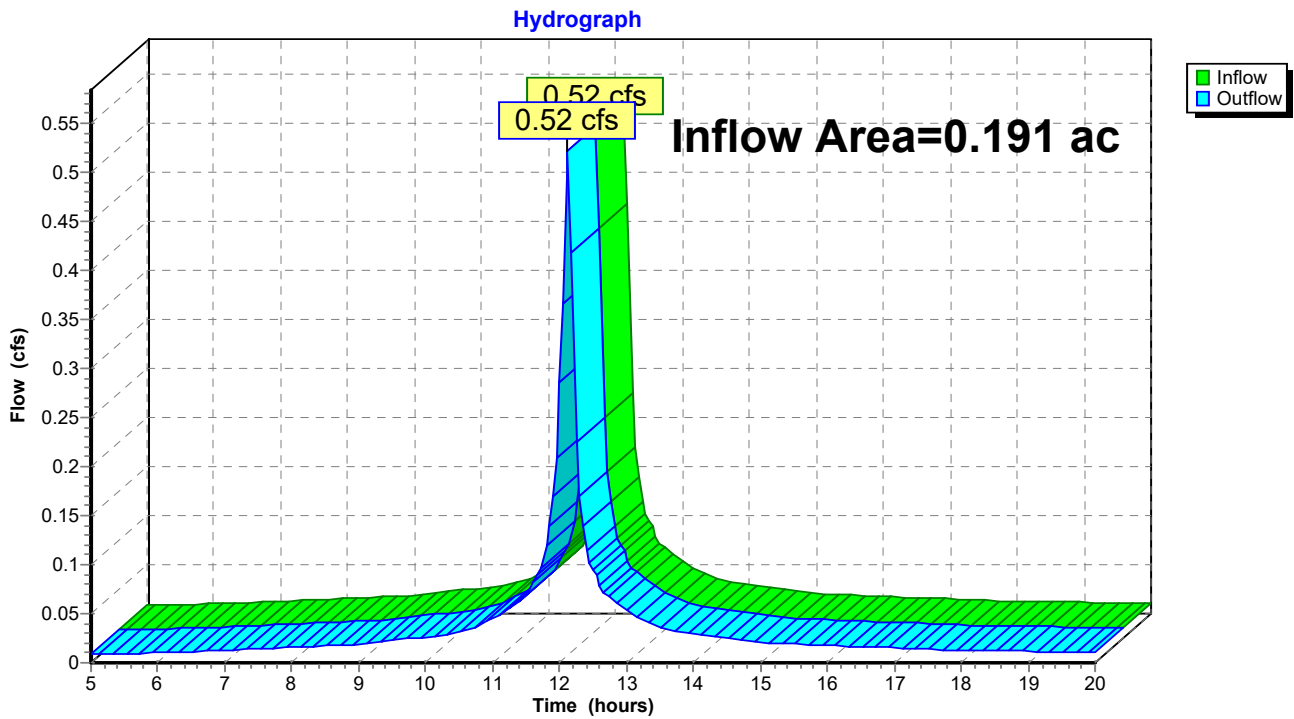
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 2.60" for 2-Year event
Inflow = 0.52 cfs @ 12.13 hrs, Volume= 0.041 af
Outflow = 0.52 cfs @ 12.13 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

Runoff = 0.71 cfs @ 12.13 hrs, Volume= 0.057 af, Depth> 4.06"

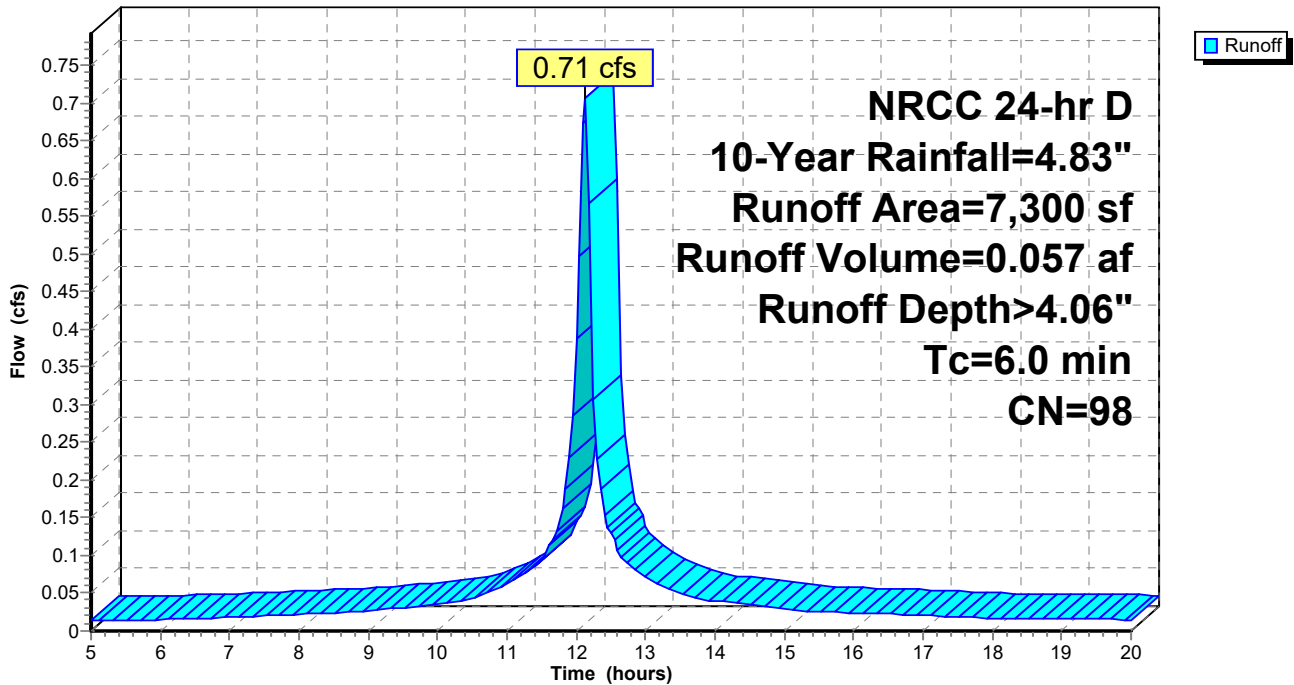
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.83"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)

Hydrograph



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.10 cfs @ 12.13 hrs, Volume= 0.008 af, Depth> 4.06"

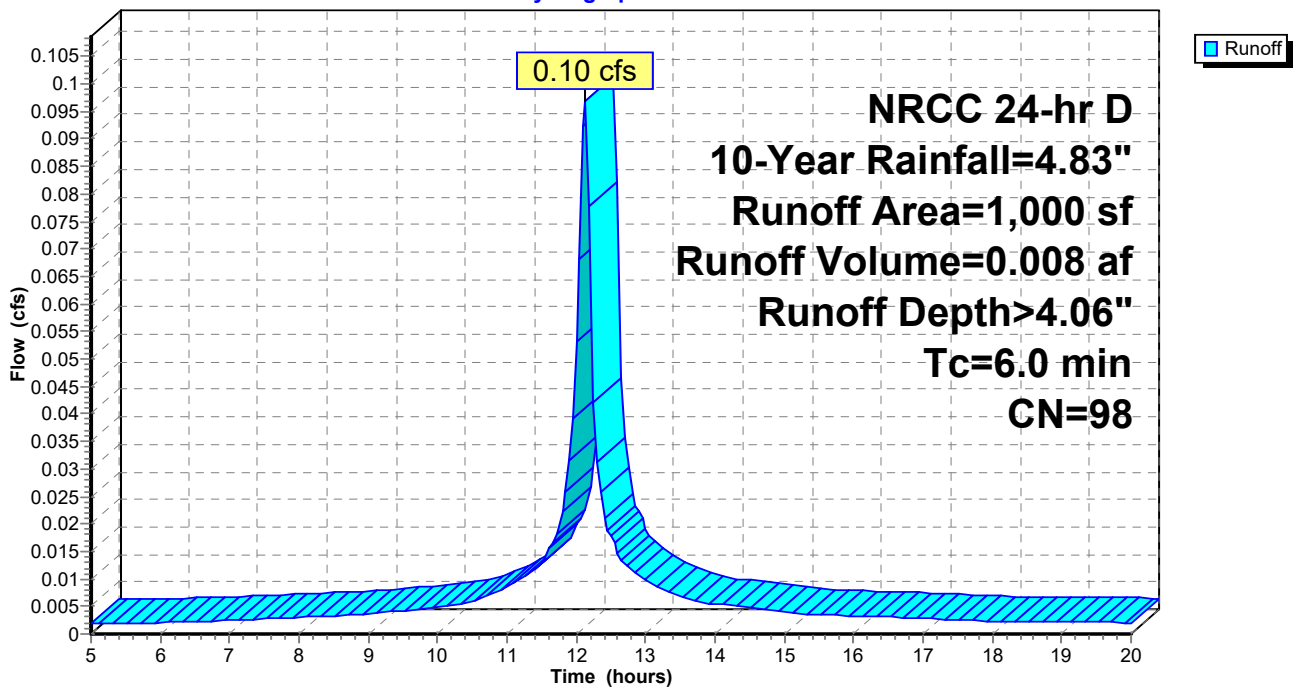
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.83"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



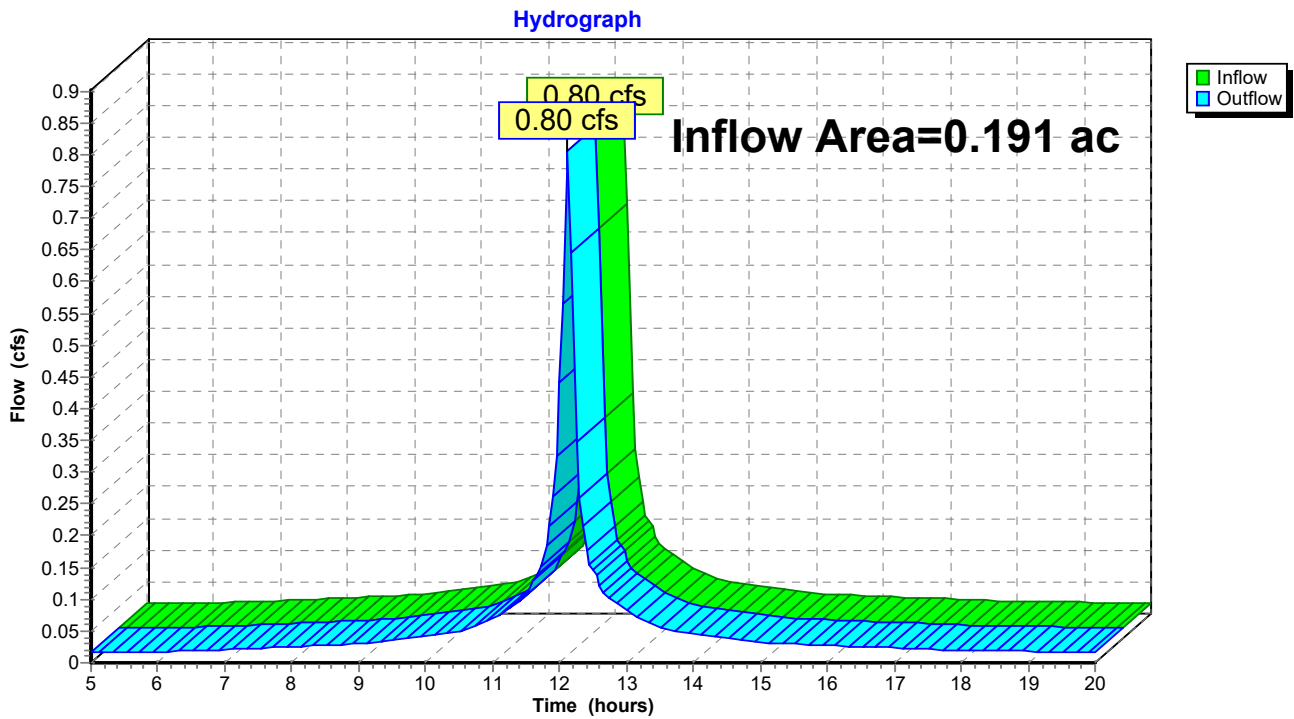
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 4.06" for 10-Year event
Inflow = 0.80 cfs @ 12.13 hrs, Volume= 0.064 af
Outflow = 0.80 cfs @ 12.13 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

Runoff = 0.90 cfs @ 12.13 hrs, Volume= 0.073 af, Depth> 5.20"

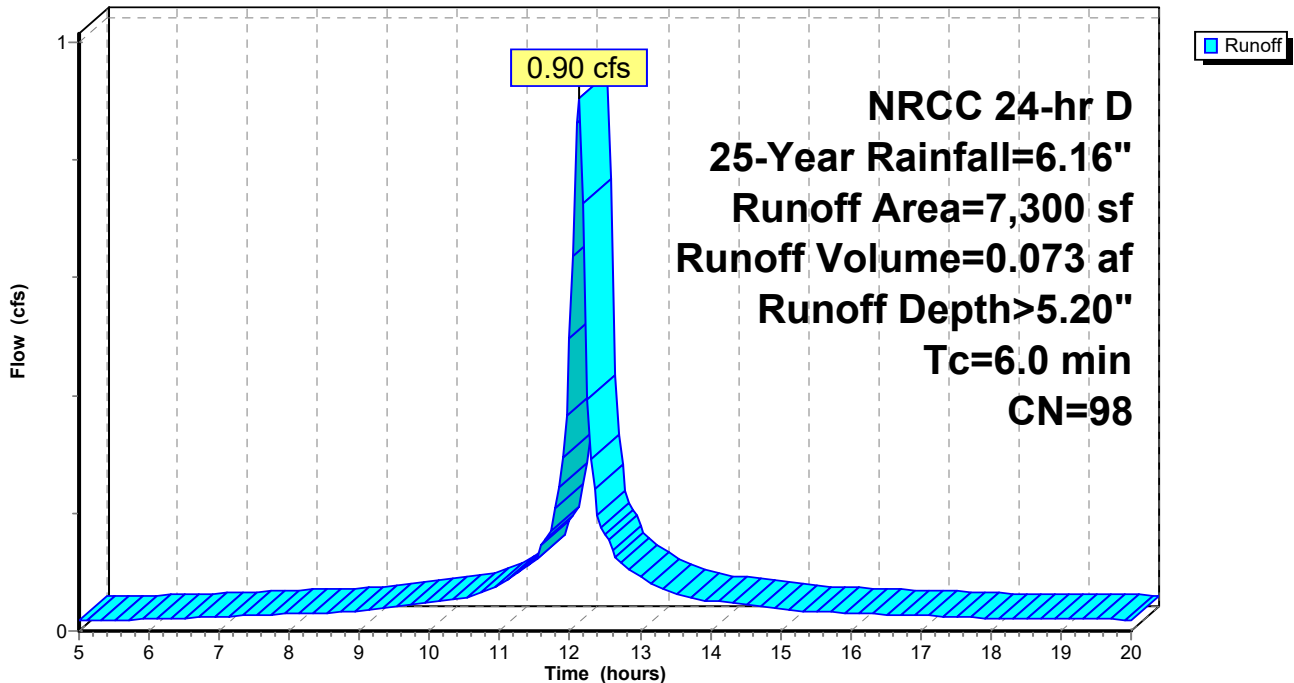
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.16"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)

Hydrograph



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.010 af, Depth> 5.20"

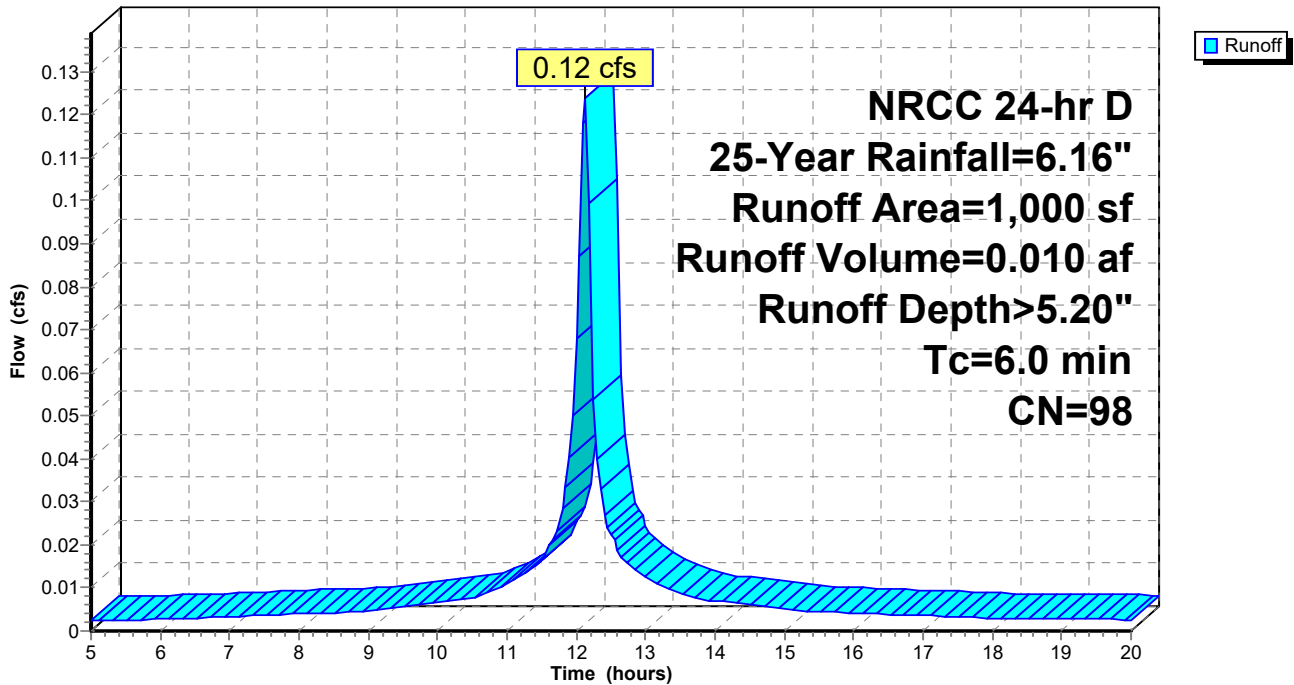
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 25-Year Rainfall=6.16"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



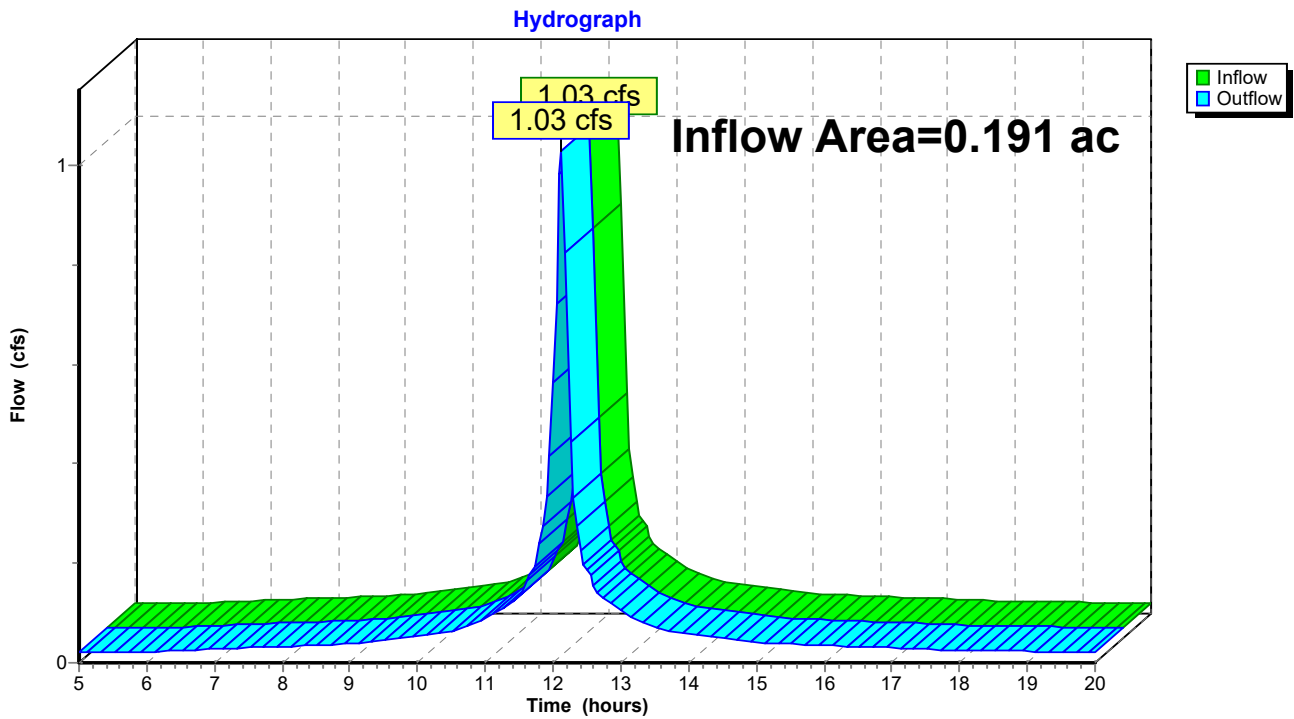
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 5.20" for 25-Year event
Inflow = 1.03 cfs @ 12.13 hrs, Volume= 0.083 af
Outflow = 1.03 cfs @ 12.13 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

Runoff = 1.09 cfs @ 12.13 hrs, Volume= 0.088 af, Depth> 6.28"

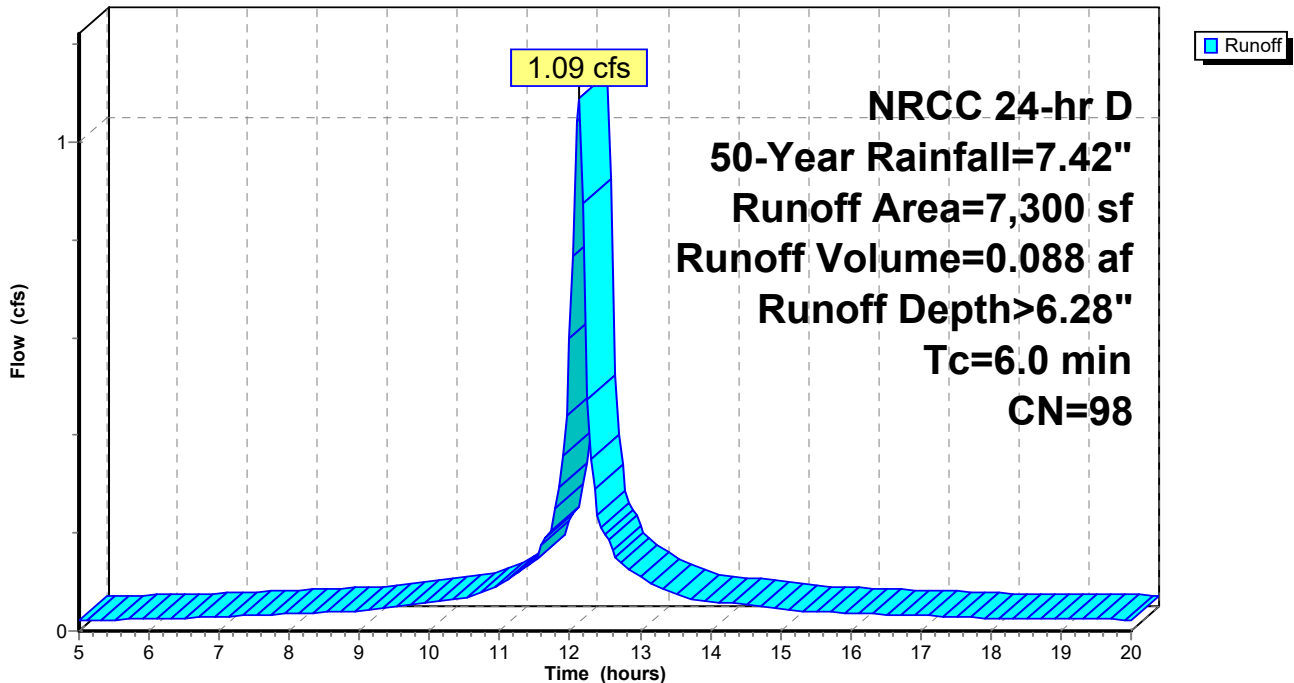
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 50-Year Rainfall=7.42"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)

Hydrograph



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.15 cfs @ 12.13 hrs, Volume= 0.012 af, Depth> 6.28"

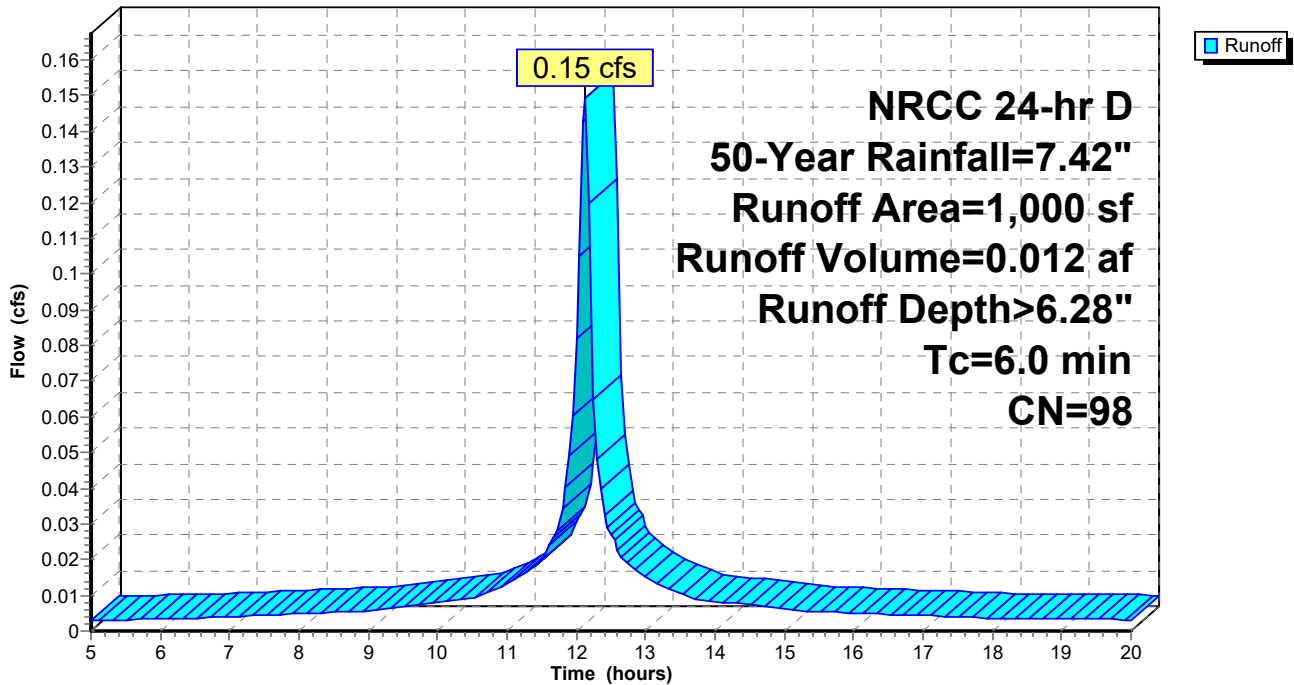
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 50-Year Rainfall=7.42"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



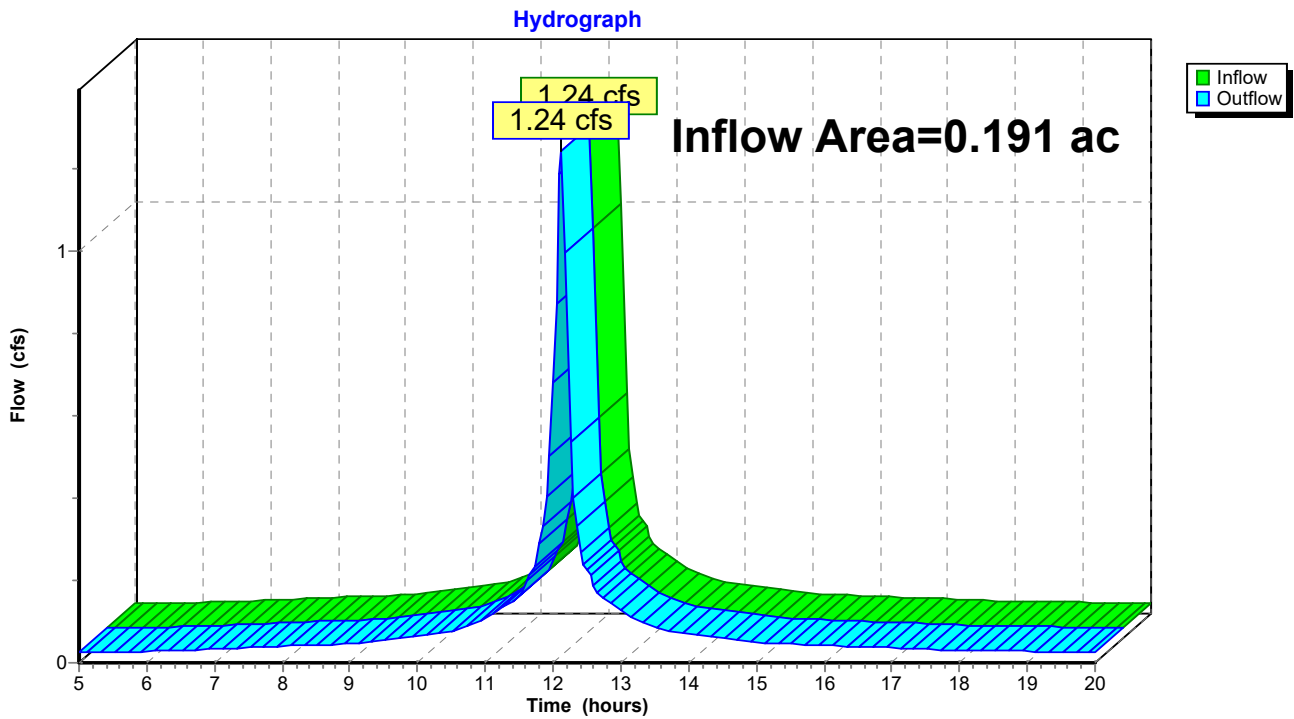
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 6.28" for 50-Year event
Inflow = 1.24 cfs @ 12.13 hrs, Volume= 0.100 af
Outflow = 1.24 cfs @ 12.13 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

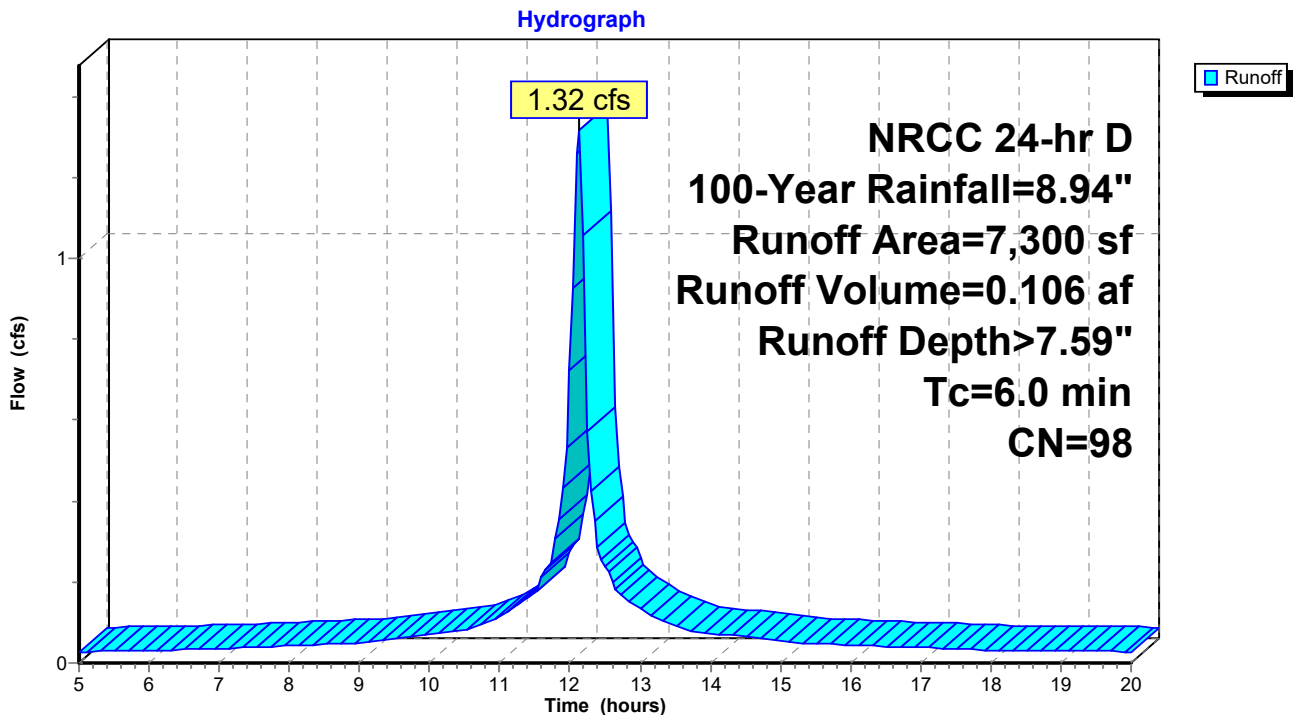
Runoff = 1.32 cfs @ 12.13 hrs, Volume= 0.106 af, Depth> 7.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 100-Year Rainfall=8.94"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.18 cfs @ 12.13 hrs, Volume= 0.015 af, Depth> 7.59"

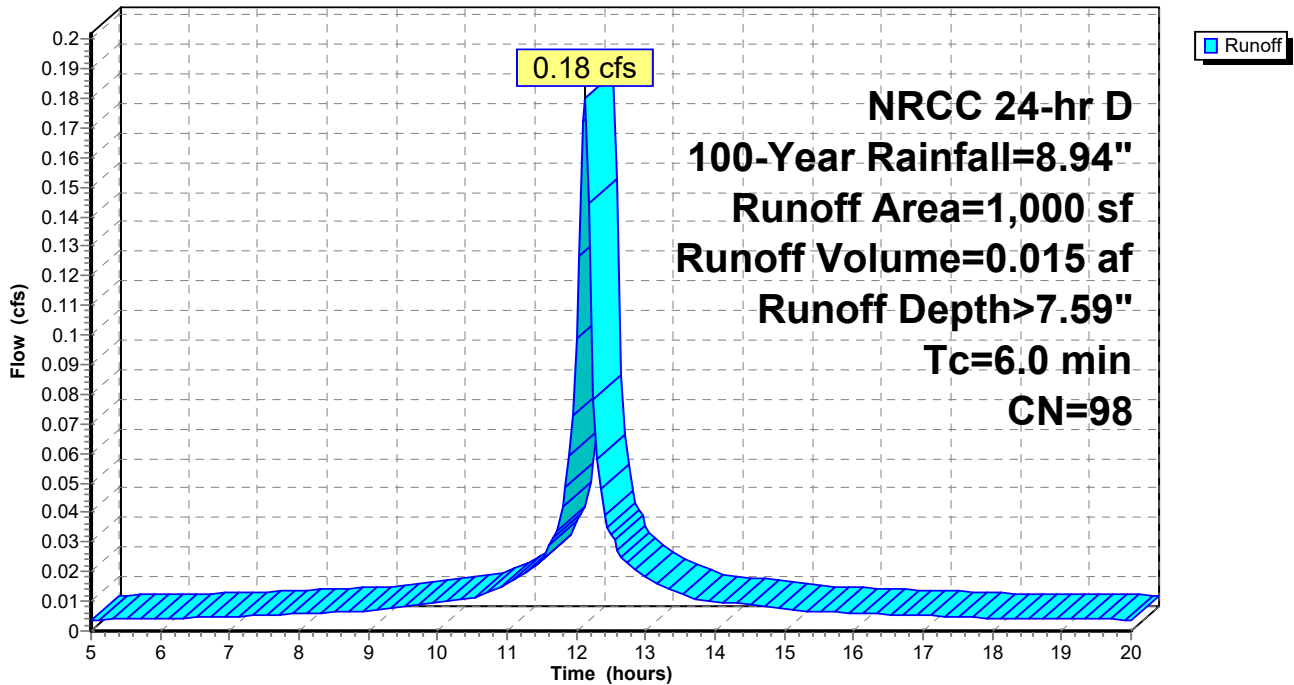
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 100-Year Rainfall=8.94"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



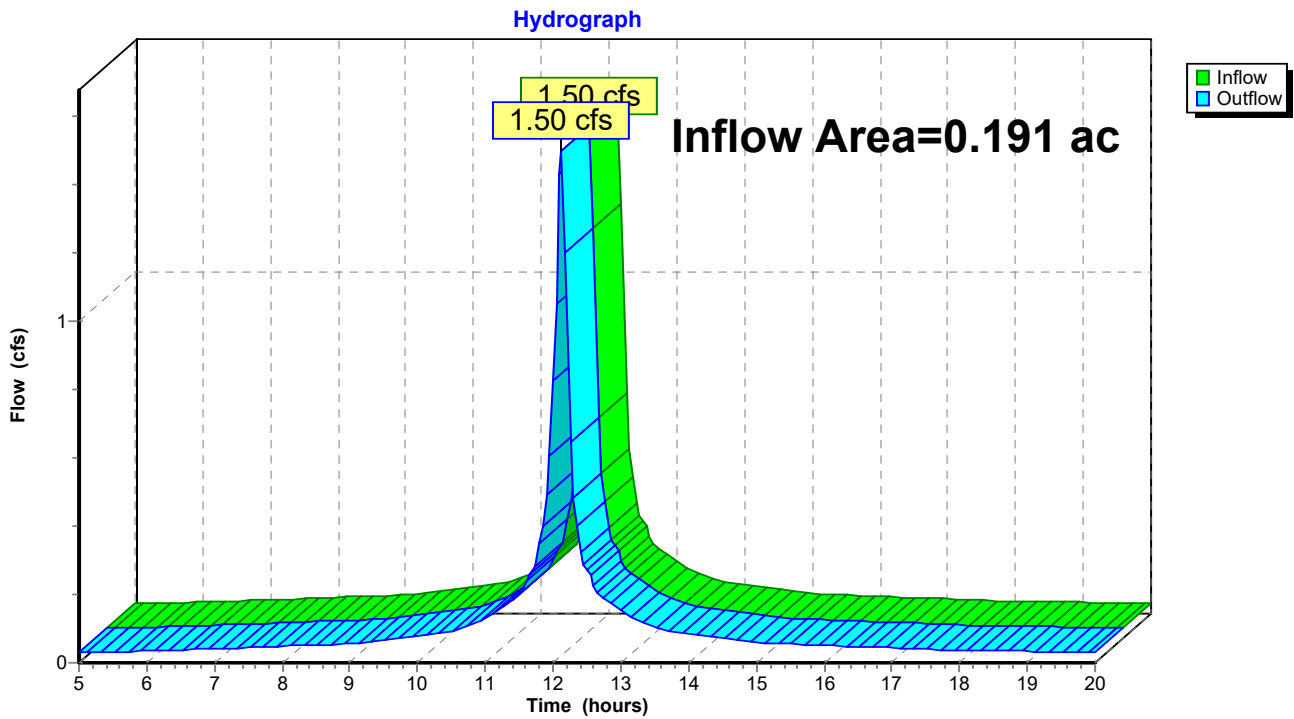
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 7.59" for 100-Year event
Inflow = 1.50 cfs @ 12.13 hrs, Volume= 0.120 af
Outflow = 1.50 cfs @ 12.13 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Attachment C

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

WATER QUALITY UNIT SPECIFICATIONS

ITEM 202.5**WATER QUALITY UNIT****EACH****DESCRIPTION**

The work under these items shall conform to the relevant provisions of Section 200 of the Standard Specifications and the following:

The work shall consist of furnishing and installing hydrodynamic separators as water quality units in conformance with the construction details, and at locations shown on the plans.

The water quality unit shall be Stormceptor Model STC-900 as manufactured by Rinker Materials or approved equal. Other acceptable water quality units include, but are not limited to, appropriately sized models of Vortechs and CDS as manufactured by Contech and Downstream Defender as manufactured by Hydro International. Any substitutions must demonstrate that they are capable of providing equivalent total suspended solids (TSS) removal with equivalent scour protection and internal high flow bypass ability.

The water quality units shall be sized to treat runoff from 1/2-inch rainfall intensity and provide 80% TSS removal for the impervious areas indicated below.

The impervious area contributing to each unit is as follows:

Location 1: West Newbury (West of Bridge) – 0.17 acres

Location 2: Newburyport (East of Bridge) – 0.03 acres

The Contractor is advised that the proposed locations of the separator units under this item are shown on the drawings in their approximate locations. The Contractor is responsible to coordinate the exact locations and exact elevations of the separator units in the field, and as required by the Engineer, to ensure the proper functional operation of all elements of the proposed stormwater drainage system(s) constructed as part of this project. All separator units under these items and their components shall be installed in accordance with the manufacturer requirements and as required by the Engineer.

The separators shall be capable of trapping silt and clay sized particles, in addition to large particles, and shall be installed underground as part of the stormwater drainage system(s). The separators shall be structurally designed for HS-20 (minimum) traffic loading at the surface, with the storage in the separator vertically oriented. The separator should be maintained from the surface via one access point.

The separator should be equipped with an internal high flow bypass that regulates the flow rate into the treatment chamber and conveys high flows directly to the outlet so the scour and/or resuspension of material previously collected in the separator does not occur. External bypasses are not acceptable. The bypass area must be physically separated from the separation area to prevent mixing with the separator circular and constructed from either fiberglass or precast concrete risers. The concrete separator shall be designed and manufactured in accordance with ASTM C-478.

The concrete joints shall be oil resistant, watertight and meet the design criteria according to ASTM C-443. A minimum of 12 inches of oil storage should be lined with fiberglass to provide secondary containment of any hydrocarbon materials.

The difference between the separator inlet pipe elevation and the separator outlet pipe elevation must be 1 inch. For configurations consisting of multiple inlet pipes, a 3 inch difference between horizontal inlet pipe inverts and the outlet pipe invert shall occur. The separators shall be capable of being used as a bend structure in the stormwater drainage system(s).

The separator shall be capable of handling floatable substance spills including free oil and shall not be compromised by temporary backwater conditions (i.e. trapped pollutants should not be resuspended and scoured from the separator during backwater conditions). The capabilities of the selected separator shall be documented with scientific studies and reports. Preference will be given to devices that have been verified by a state or federal storm water verification program.

The frame and cover shall include an indented top design with lettering of the unit's name cast into the cover to allow for easy identification in the field.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 202.5 shall be measured and paid for at the contract unit price per Each, complete in place. This price shall include all compensation for labor, materials, and equipment necessary to complete the work. Excavation and appurtenances for the units as shown on the details including the frame and cover shall be considered incidental to this item.

Attachment D

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

UPDATED PROJECT PLANS

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10-15	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF
200-FOOT RIVERFRONT AREA (RFA)	REDEVELOPMENT	3,203	2,669	5,872	SF
	PERMANENT IMPACT	2,060	1,333	3,393	SF
	TEMPORARY IMPACT	552	702	1,254	SF
BORDERING LAND SUBJECT TO FLOODING (BLSF)	PROPOSED ALTERATION	167	44	211	SF
	PROPOSED REPLACEMENT	311	344	655	SF
	FLOOD STORAGE LOST	393	132	525	CF
	FLOOD STORAGE REPLACED	1,438	1,857	3,295	CF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

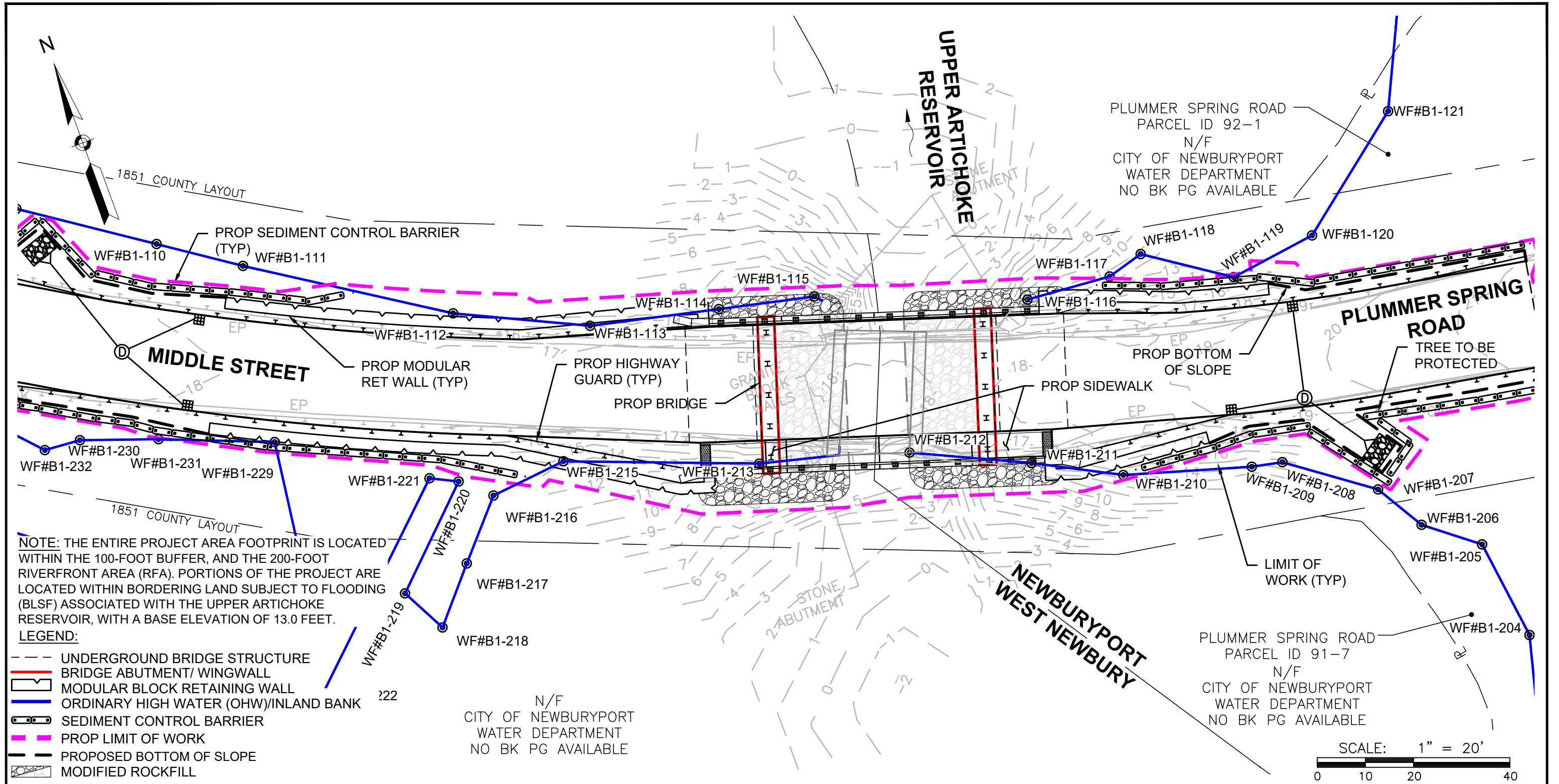
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: 05/07/2021
 Description: INDEX Figure: 1 OF 15

 **BSC GROUP**
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source:

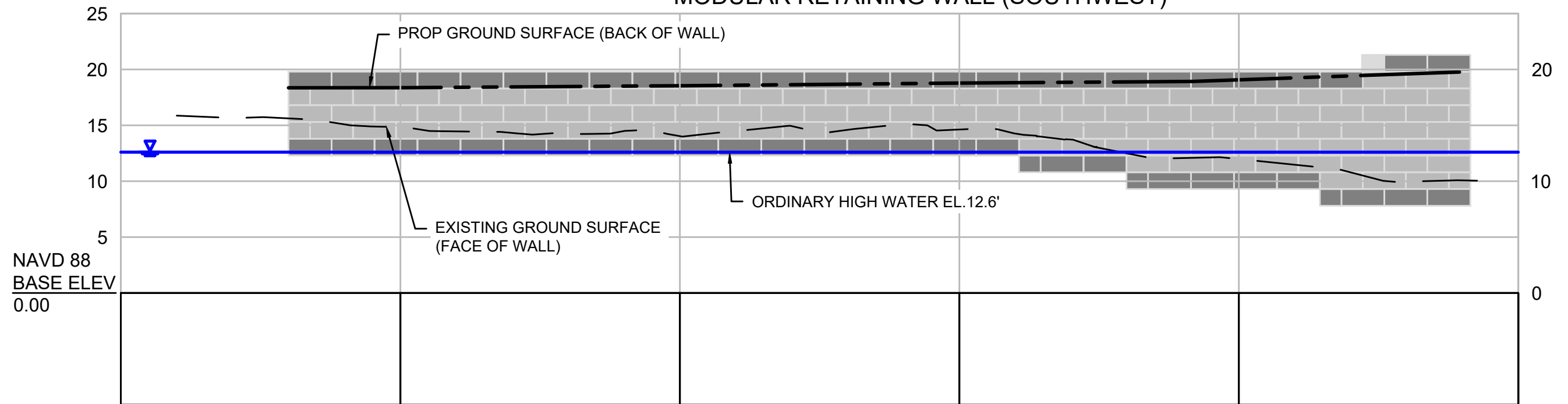
PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

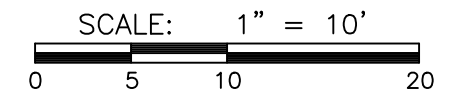
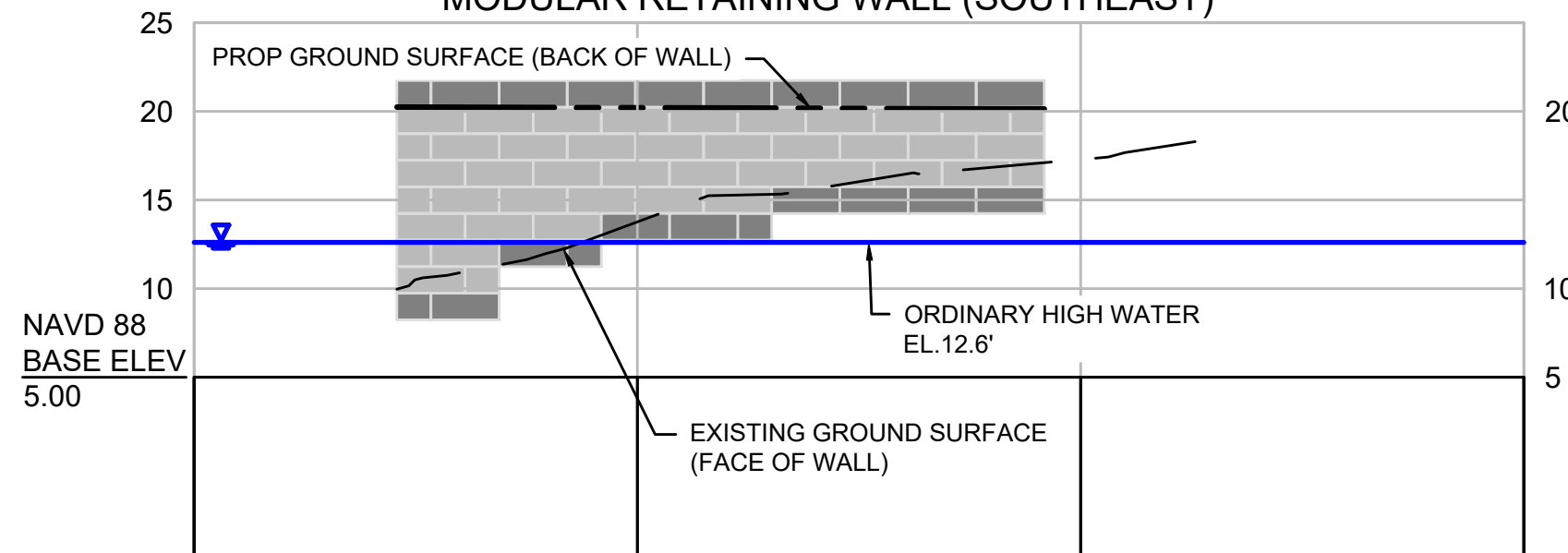
Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: PROP COND Figure: 4 OF 15

BSC GROUP
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 617 896 4300

MODULAR RETAINING WALL (SOUTHWEST)



MODULAR RETAINING WALL (SOUTHEAST)



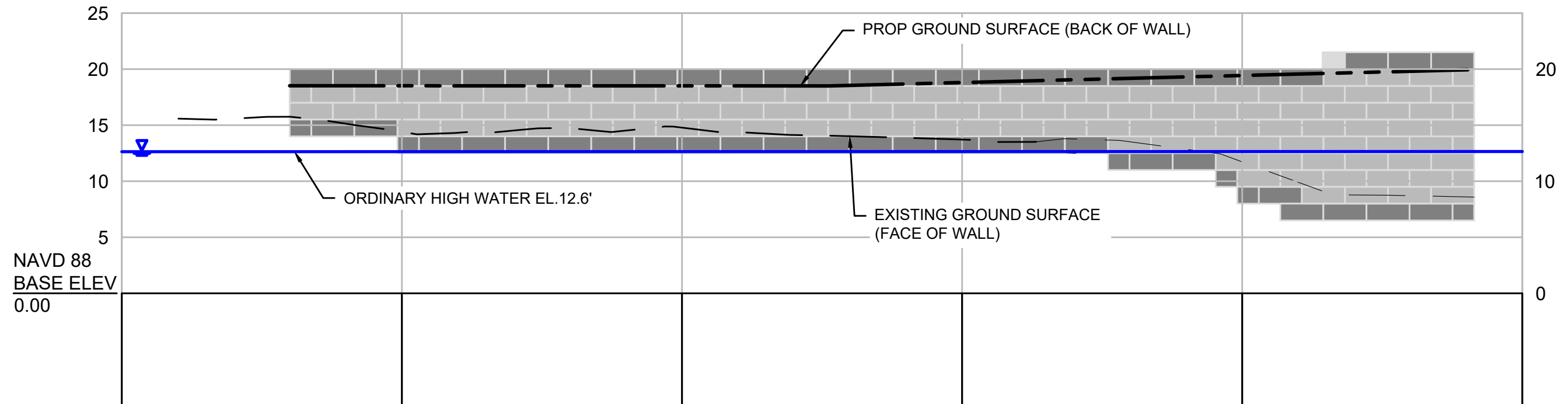
PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

PROPOSED WALL PROFILE
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

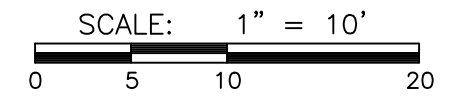
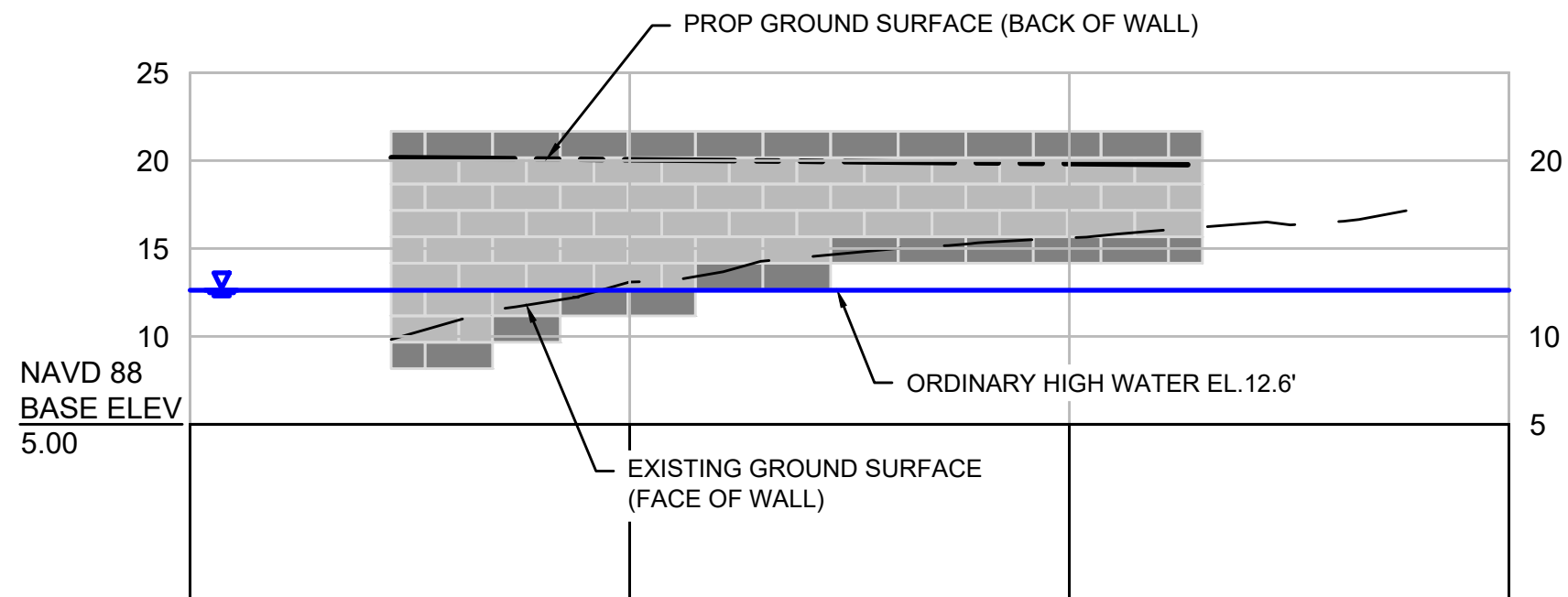
Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10' Revised: 05/07/2021
 Description: PR WALL PROF Figure: 5 OF 15

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 Boston, Massachusetts
 02127
 617 896 4300

MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

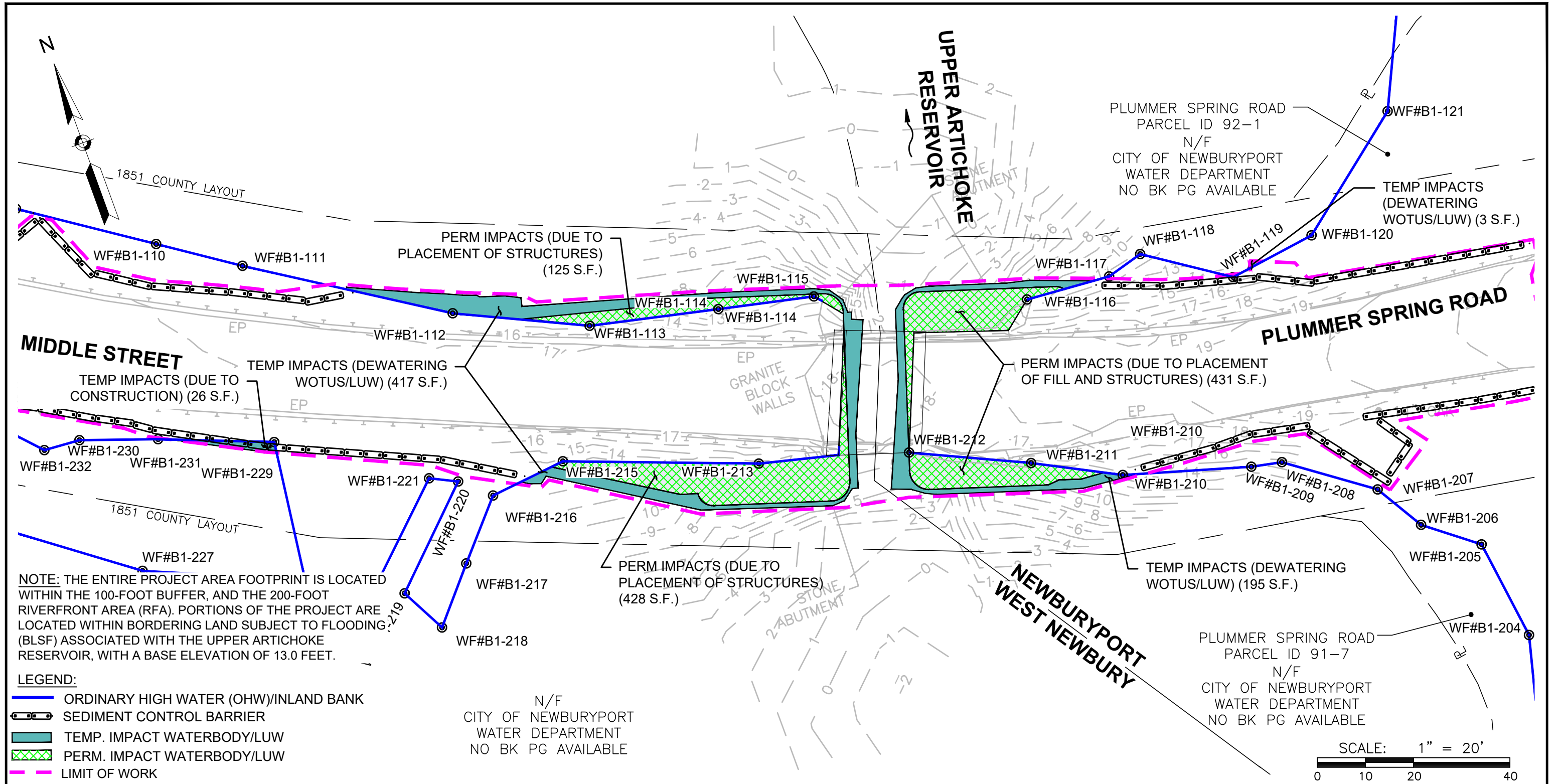


PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

PROPOSED WALL PROFILE
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10'
 Description: PR WALL
 PROF Revised: 05/07/2021
 Figure: 6 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- LIMIT OF WORK

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

IMPACTS

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

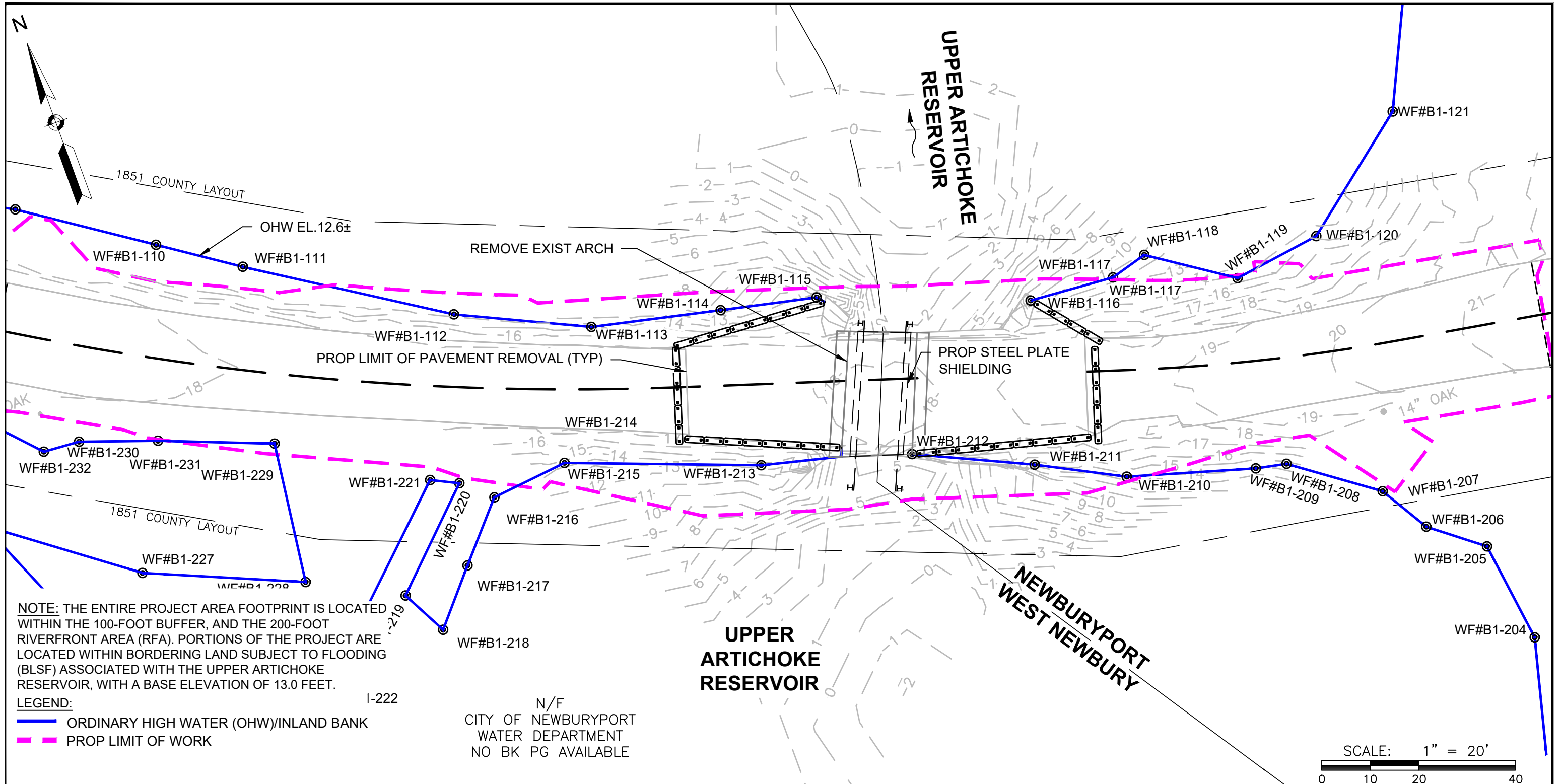
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: 05/07/2021

Description: IMPACTS Figure: 9 OF 15

BSC GROUP

803 Summer Street
Boston, Massachusetts
02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

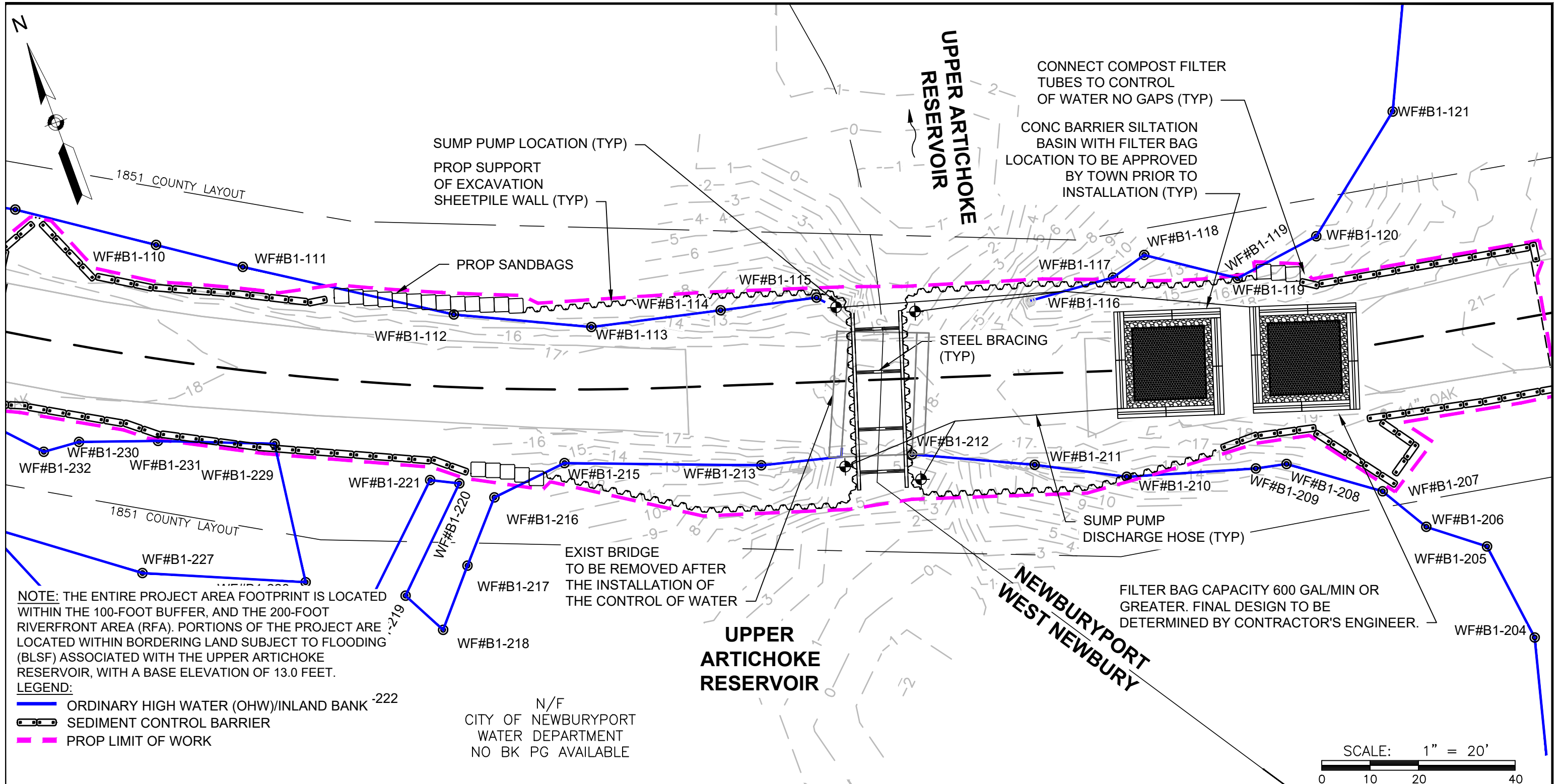
LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 - - - PROP LIMIT OF WORK

PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 11 OF 15

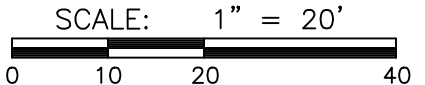
BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 — SEDIMENT CONTROL BARRIER
 - - - PROP LIMIT OF WORK

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

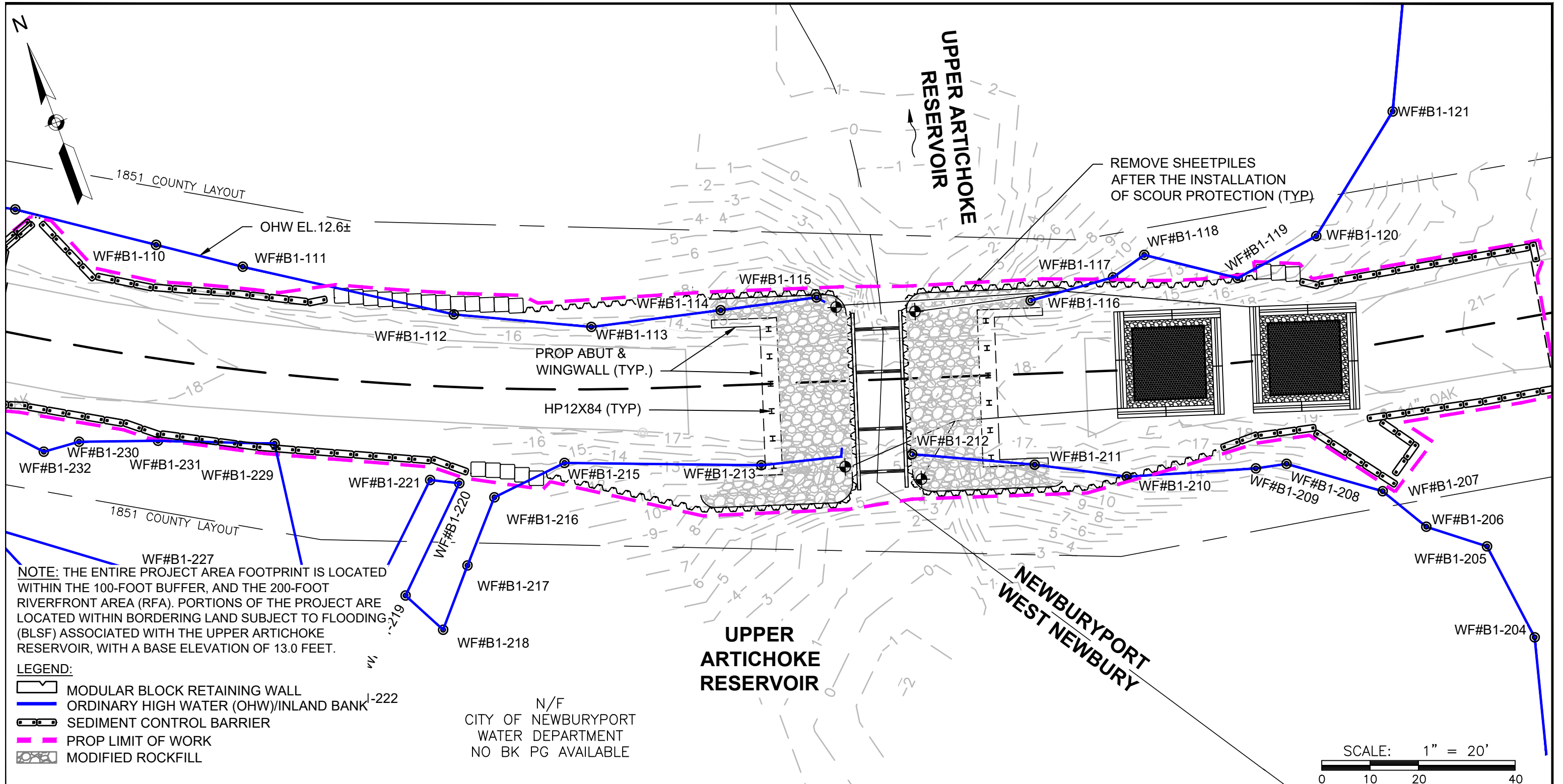


PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **CONTROL OF WATER - PHASE 1 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 12 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



1851 COUNTY LAYOUT
 OHW EL. 12.6±
 WF#B1-110
 WF#B1-111

1851 COUNTY LAYOUT
 WF#B1-230
 WF#B1-231
 WF#B1-229
 WF#B1-227

NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - MODIFIED ROCKFILL

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

REMOVE SHEETPILES AFTER THE INSTALLATION OF SCOUR PROTECTION (TYP)

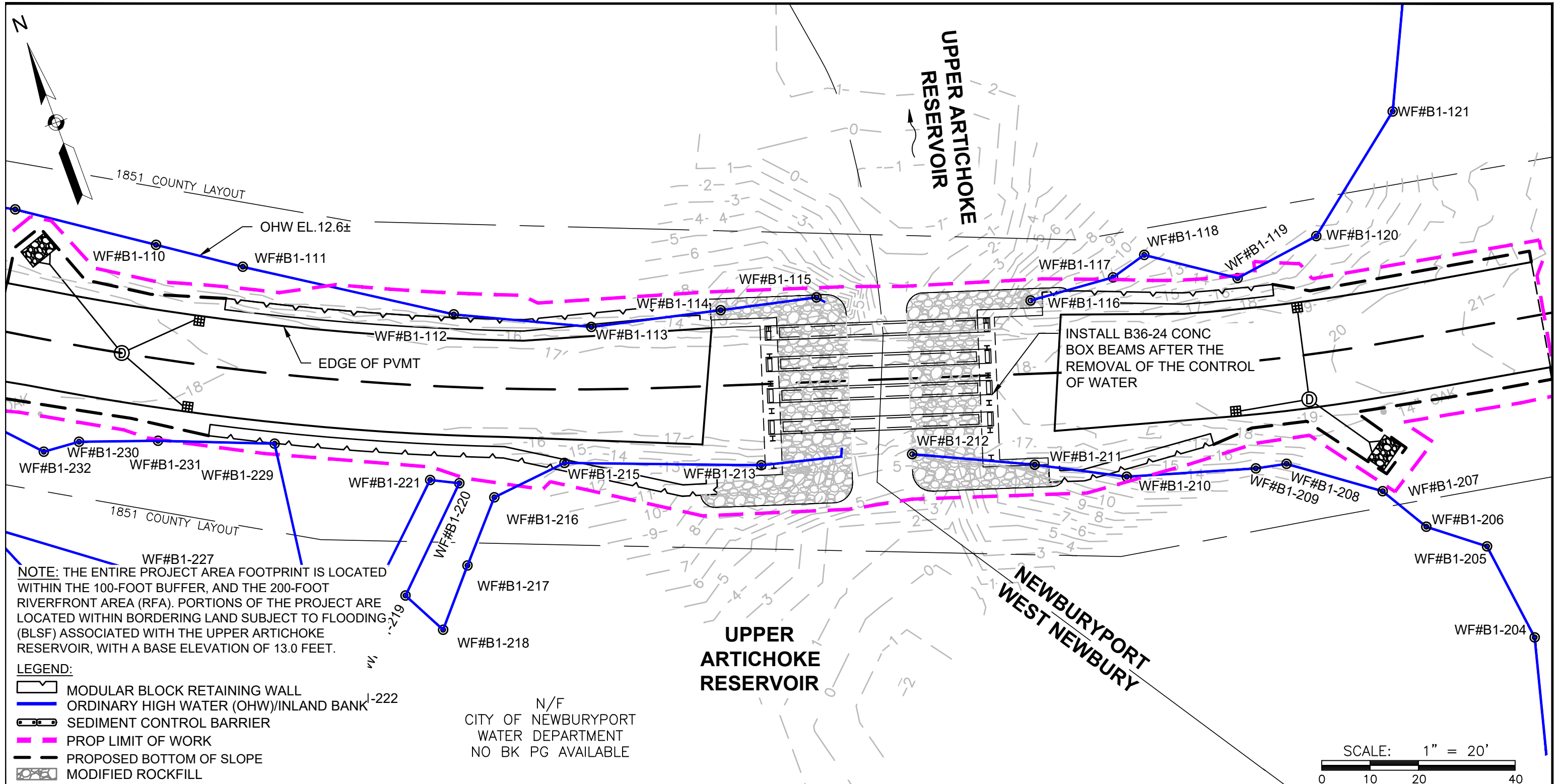
PROP ABUT & WINGWALL (TYP.)
 HP12X84 (TYP.)

PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 13 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source: **CONTROL OF WATER - PHASE 3 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: 05/07/2021
Description: COW Figure: 14 OF 15

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
West Newbury, and Newburyport, Massachusetts

Notice of Intent

Town of West Newbury
Conservation Commission
January 2021

Prepared for:

Town of West Newbury
381 Main Street
West Newbury, MA 01985

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

January 4, 2021

Town of West Newbury
Conservation Commission
381 Main Street
West Newbury, MA 01985

**RE: Bridge Replacement Project
Middle Street over Upper Artichoke Reservoir
West Newbury, Massachusetts
Notice of Intent**

Dear Members of the West Newbury Conservation Commission:

BSC Group Inc., on behalf of The Town of West Newbury (“the Applicant”) is pleased to submit this Notice of Intent (NOI) to the West Newbury Conservation Commission for project activities associated with the replacement of the structurally deficient bridge (Bridge No. N-11-007) which carries Middle Street, West Newbury, MA over the Upper Artichoke Reservoir (hereby referred to as “the bridge”). The Applicant is seeking an Order of Conditions to authorize the replacement. The bridge is in poor condition and the road is currently closed due to structural deficiencies. Therefore, the applicant proposes to replace the bridge structure with a new structure on a similar horizontal and vertical alignment. The proposed bridge will expand the hydraulic opening of this stream crossing while also improving roadway safety.

This NOI has been prepared in accordance with the Massachusetts Wetland Protection Act, M.G.L. c.131 s. 40 (the Act) and implementing regulations (310 CMR 10.00), as well as the Town of West Newbury Wetland Protection Bylaw (Section XXV). Additionally, this project is being proposed as a Limited Project, per 310 CMR 10.53(3)(i) which allows for (in part) maintenance, repair and improvement of bridges, 310 CMR 10.53(3)(l) which allows for the construction, reconstruction, operation or maintenance of water dependent uses, and 310 CMR 10.53(8) which allows for the replacement of an existing stream crossing while avoiding impacts where possible and minimizing / mitigating impacts when not. Because the bridge lies within both the Town of West Newbury and City of Newburyport, an NOI is being concurrently filed in Newburyport for this bridge replacement project.

Notification to abutters within 100 feet of the project site has been made by certified mail. A copy of the abutter notification, and a list of abutters are provided in the NOI. As a municipal project, the Town is exempt from filing fees.

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



We respectfully request that you place this project on the next regularly scheduled Conservation Commission public hearing. Please do not hesitate to contact me at 617-896-4579, or skreisel@bscgroup.com with any inquiries you may have.

Sincerely,
BSC Group, Inc.

Sara Kreisel, PWS
Ecological Project Manager

cc: Angus Jennings, Town of West Newbury
MassDEP Northeast Regional Office
Similar version to Newburyport Conservation Commission for adjacent work

Table of Contents

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

WPA FORM 3

WETLAND FEE TRANSMITTAL FORM

ATTACHMENT A PROJECT NARRATIVE

ATTACHMENT B SITE FIGURES
FEMA FIRM MAP
PHOTOGRAPHS
USGS STREAM STATS

ATTACHMENT C ALTERNATIVES ANALYSIS

ATTACHMENT D ABUTTER NOTIFICATION LETTER
CERTIFIED LIST OF ABUTTERS

ATTACHMENT E STREAMLINED STORMWATER MANAGEMENT REPORT

ATTACHMENT F CONSTRUCTION SPECIFICATIONS

ATTACHMENT G PROJECT PLANS
CONSTRUCTION DETAILS



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

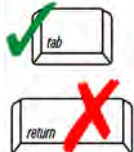
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number
Document Transaction Number
West Newbury
City/Town

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

<u>Middle Street over Upper Artichoke Reservoir</u>	<u>West Newbury</u>	<u>01985</u>
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:		
<u>42.802999</u>	<u>-70.931053</u>	
d. Latitude	e. Longitude	
<u>N/A - Town Roadway Layout</u>	<u>N/A</u>	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

<u>Angus</u>	<u>Jennings</u>	
a. First Name	b. Last Name	
<u>Town of West Newbury</u>		
c. Organization		
<u>381 Main Street</u>		
d. Street Address		
<u>West Newbury</u>	<u>MA</u>	<u>01985</u>
e. City/Town	f. State	g. Zip Code
<u>(978) 363-1100</u>	<u>townmanager@wnewbury.org</u>	
<u>x111</u>	i. Fax Number	j. Email Address

3. Property owner (required if different from applicant): Check if more than one owner

<u></u>	<u></u>	
a. First Name	b. Last Name	
<u></u>		
c. Organization		
<u></u>		
d. Street Address		
<u></u>	<u></u>	<u></u>
e. City/Town	f. State	g. Zip Code
<u></u>	<u></u>	<u></u>
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

<u>Sara</u>	<u>Kreisel</u>	
a. First Name	b. Last Name	
<u>BSC Group, Inc.</u>		
c. Company		
<u>803 Summer Street</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02127</u>
e. City/Town	f. State	g. Zip Code
<u>617-896-4579</u>	<u>skreisel@bscgroup.com</u>	
h. Phone Number	i. Fax Number	j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

<u>Fee Exempt</u>	<u>Fee Exempt</u>	<u>Fee Exempt</u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
West Newbury
City/Town

A. General Information (continued)

6. General Project Description:

The project proposes the replacement of the bridge carrying Middle Street, West Newbury / Plummer Spring Road, Newburyport over the Upper Artichoke Reservoir in a similar horizontal and vertical alignment. Please refer to the Project Narrative for additional details.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- 1. Single Family Home
- 2. Residential Subdivision
- 3. Commercial/Industrial
- 4. Dock/Pier
- 5. Utilities
- 6. Coastal engineering Structure
- 7. Agriculture (e.g., cranberries, forestry)
- 8. Transportation
- 9. Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

- 1. Yes No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)
- 310 CMR 10.53(3)(i):...improvement...bridges...existed prior to 4/1/83; 10.53(3)(l):...construction...of water dependent uses & 10.53(8)(a): Replace...existing stream crossing in a non-tidal crossing.

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
N/A Town Roadway Layout	
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

- 1. Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
- 2. Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

West Newbury

City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input checked="" type="checkbox"/> Bank	<u>128 lf (Perm), 47 lf (Temp)</u> 1. linear feet	<u>47 lf (Restore)</u> 2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	_____ 1. square feet	_____ 2. square feet
c. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	<u>553 sf (Perm), 443 sf (Temp)</u> 1. square feet <u>39 cy (Perm), 28 cy (Temp)</u> 3. cubic yards dredged	<u>443 sf (Restore), 436 sf (Gain)</u> 2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	<u>167 sf</u> 1. square feet <u>393 cf</u> 3. cubic feet of flood storage lost	<u>311 sf</u> 2. square feet <u>1,438 cf</u> 4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ 1. square feet _____ 2. cubic feet of flood storage lost	_____ 3. cubic feet replaced
f. <input checked="" type="checkbox"/> Riverfront Area	<u>Upper Artichoke Reservoir - Inland Waterway</u> 1. Name of Waterway (if available) - specify coastal or inland	

2. Width of Riverfront Area (check one):

- 25 ft. - Designated Densely Developed Areas only
- 100 ft. - New agricultural projects only
- 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 13,158 sf
square feet

4. Proposed alteration of the Riverfront Area:

3,203 sf (Redev.), 1,986 sf (Perm), 570 sf (Temp) 3,203 sf (Redev.), 1,986 sf (Perm), 570 sf (Temp) 0 sf
c. square feet between 100 ft. and 200 ft.

5. Has an alternatives analysis been done and is it attached to this NOI? Yes No

6. Was the lot where the activity is proposed created prior to August 1, 1996? Yes No

3. Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f.** above.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

West Newbury
 City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
 Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	_____	_____
	1. square feet	2. cubic yards dune nourishment

	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	

	1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	
	1. square feet	

4. Restoration/Enhancement
 If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

_____	_____
a. square feet of BVW	b. square feet of Salt Marsh
5. <input checked="" type="checkbox"/> Project Involves Stream Crossings	
0	1
_____	_____
a. number of new stream crossings	b. number of replacement stream crossings



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

West Newbury
City/Town

C. Other Applicable Standards and Requirements

- This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

- a. Yes No **If yes, include proof of mailing or hand delivery of NOI to:**

**Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581**

MassGIS 2020

b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

- c. Submit Supplemental Information for Endangered Species Review*

1. Percentage/acreage of property to be altered:
- (a) within wetland Resource Area _____ percentage/acreage
- (b) outside Resource Area _____ percentage/acreage
2. Assessor's Map or right-of-way plan of site
2. Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **
- (a) Project description (including description of impacts outside of wetland resource area & buffer zone)
- (b) Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <https://www.mass.gov/endangered-species-act-mesa-regulatory-review>).

Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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C. Other Applicable Standards and Requirements (cont'd)

- (c) MESA filing fee (fee information available at <https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review>).

Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

Projects altering 10 or more acres of land, also submit:

- (d) Vegetation cover type map of site
- (e) Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following

1. Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, <https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat>; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

- a. Not applicable – project is in inland resource area only b. Yes No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and
the Cape & Islands:

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

- c. Is this an aquaculture project? d. Yes No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).



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WPA Form 3 – Notice of Intent

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Provided by MassDEP:

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West Newbury
City/Town

Online Users:
Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

C. Other Applicable Standards and Requirements (cont'd)

- 4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
 a. Yes No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
 b. ACEC

- 5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
 a. Yes No
- 6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
 a. Yes No
- 7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
 a. Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
 - 1. Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 - 2. A portion of the site constitutes redevelopment
 - 3. Proprietary BMPs are included in the Stormwater Management System.
 b. No. Check why the project is exempt:
 - 1. Single-family house
 - 2. Emergency road repair
 - 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

- This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

- 1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
- 2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



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D. Additional Information (cont'd)

3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. List the titles and dates for all plans and other materials submitted with this NOI.

Project Site Plans

a. Plan Title

BSC Group, Inc

b. Prepared By

December 2020

d. Final Revision Date

c. Signed and Stamped by

Varies

e. Scale

Environmental Resource Map

f. Additional Plan or Document Title

October 2020

g. Date

5. If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. Attach NOI Wetland Fee Transmittal Form

9. Attach Stormwater Report, if needed.

E. Fees

1. Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent


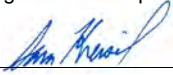
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
West Newbury
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

	12/29/2020
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
	12/30/2020
5. Signature of Representative (if any)	6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

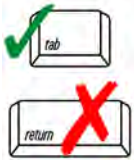
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



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NOI Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

Middle Street over Upper Artichoke Reservoir
 a. Street Address
 West Newbury
 b. City/Town
 N/A - Fee Exempt
 Fee Exempt
 c. Check number
 d. Fee amount

2. Applicant Mailing Address:

Angus
 a. First Name
 Jennings
 b. Last Name
 Town of West Newbury
 c. Organization
 381 Main Street
 d. Mailing Address
 West Newbury MA 01985
 e. City/Town f. State g. Zip Code
 (978) 363-1100 x111 townmanager@wnewbury.org
 h. Phone Number i. Fax Number j. Email Address

3. Property Owner (if different):

a. First Name
 b. Last Name
 c. Organization
 d. Mailing Address
 e. City/Town f. State g. Zip Code
 h. Phone Number i. Fax Number j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. **Please see Instructions before filling out worksheet.**

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.



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B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
N/A - Fee Exempt			

Step 5/Total Project Fee: 0

Step 6/Fee Payments:

Total Project Fee:	0
	a. Total Fee from Step 5
State share of filing Fee:	0
	b. 1/2 Total Fee less \$12.50
City/Town share of filing Fee:	0
	c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

- a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

- b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Attachment A

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

PROJECT NARRATIVE

1.0 Introduction

The BSC Group Inc., on behalf of The Town of West Newbury (“the Applicant”) is seeking an Order of Conditions from the West Newbury Conservation Commission to authorize project activities associated with the replacement of the structurally deficient, undersized bridge (Bridge No. N-11-007) over the Artichoke River / Upper Artichoke Reservoir (hereby referred to as “the bridge”) located on Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA (See Attachment B for Site Location Maps and Photos). The bridge is structurally deficient due to undermining of the existing roadway foundation. The Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness.

This Notice of Intent has been prepared in accordance with the Massachusetts Wetlands Protection Act (WPA), M.G.L. c.131 S.40 (the Act), its implementing regulations (310 CMR 10.00) and the Town of West Newbury Wetlands Protection Bylaw (Title XXV). Additionally, this project is being proposed as a Limited Project, per 310 CMR 10.53(3)(i) which allows for maintenance, repair and improvement (but not substantial enlargement) of (in part) bridges and culverts which existed prior to April 1, 1983, 310 CMR 10.53(3)(l) which allows for the construction, reconstruction, operation or maintenance of water dependent uses, and 310 CMR 10.53(8) which allows for the replacement of an existing stream crossing while avoiding impacts where possible, and minimizing / mitigating impacts when not. A Notice of Intent is also being filed concurrently in Newburyport for bridge replacement activities occurring within the City limits.

Due to the nature of the bridge replacement activities, impacts are proposed to Bank, Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area (RFA), and the 100-foot Buffer Zone to Bank. However, mitigation measures will be implemented to minimize disturbances to the surrounding environment during construction. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment G) for additional detail. The project has been designed to be in compliance with the Massachusetts Stream Crossing Standards to the maximum extent practicable and improves openness and habitat connectivity.

2.0 Existing Conditions

West Newbury is located on the northwestern side of the bridge, and Newburyport is on the eastern side. Plummer Spring Road, Newburyport turns into Middle Street upon entering West Newbury. The project site is approximately 2,000 feet west of the intersection with Turkey Hill Road, Newburyport and approximately 0.7 mile east of the intersection with Garden Street, West Newbury. The crossing occurs within the Upper Artichoke Reservoir, a public water supply. The surrounding area is comprised of Article 97 lands, reserved for water supply protection. Beyond that, the area is generally characterized by low-density residential development. The bridge predates and divides the existing Upper Artichoke Reservoir, through which the Artichoke River flows. The Reservoir was originally formed by damming the Artichoke River which flows north to the Merrimack River. While the majority of the surrounding area consists of residential development and forested land, the project area is limited to previously disturbed Riverfront Area and other resource areas encumbered by the existing bridge.

The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. The road and stone arch bridge were constructed in 1891

before the Upper Artichoke Reservoir was built. The low chord on the existing arch is set at an elevation of 16.20 feet. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10-feet for a total roadway width of approximately 17-feet to 20-feet. There are no sidewalks on the bridge. The bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. The project area consists of country drainage, whereby runoff travels to the approach roadway and informally runs off down the side slopes. Plummer Spring Road / Middle Street is functionally classified as a Rural Local road.

2.1 Wetland Resource Areas

BSC wetland scientists delineated the boundary of existing wetland resource areas within and in the immediate vicinity of the bridge in December 2019. Wetlands were delineated in accordance with the methods developed by the Massachusetts Department of Environmental Protection's (MassDEP) Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act, dated 1995, as well as definitions set forth in the Wetlands Regulations 310 CMR 10.00 (Wetlands Protection Act Regulations). Existing conditions, wetland resource areas, and buffer zones in relation to the proposed activities are shown in the figures and photos in Attachment B.

The wetland resource areas at the site include the Bank, Land Under Waterbodies and Waterways (LUW), Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area (RFA), and the 100-foot Buffer Zone to Bank.

Watershed

The Artichoke River generally flows in a south-to-north orientation in the Upper Artichoke Reservoirs before discharging into the Merrimack River, 1.3 miles north of the project area. The Artichoke River connects the Upper Artichoke Reservoir, the Lower Artichoke Reservoir, and the Merrimack River, by two dams. According to the USGS Stream Stats Report for this area, the drainage area at the Plummer Spring Road / bridge crossing is approximately 5.48 square miles.

Bank

As defined in the WPA regulations 310 CMR 10.54 (2), Bank is a portion of land surface that normally abuts and confines a water body. The upper boundary of Bank is the first observable break in slope. The natural banks of the Reservoir have gradual slopes vegetated mainly by deciduous and occasionally coniferous trees. The banks are littered with leaf detritus as a result. The roadway is steeply sloped, and the banks are vegetated with shrubs and trees growing over a riprap substrate. A 100-foot buffer zone extends from the delineated Bank.

Bordering Vegetated Wetlands

As defined in the WPA regulations 310 CMR 10.55 (2)(a): Bordering Vegetated Wetlands (BVW) are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes where soils are saturated or inundated as a result of a specific hydrology (M.G.L. c. 131, § 40), which results in the predominance of hydrophytic vegetation. No vegetated wetlands were identified within the project site.

Land Under Waterbodies and Waterways

As defined in the WPA regulations 310 CMR 10.56 (2)(a): Land under Water Bodies and Waterways (LUW) is the land beneath any creek, river, stream, pond or lake, which may be composed of organic muck or peat, fine sediments, rocks or bedrock; the boundary of which is the mean annual low water level. The entire bed of the Reservoir upstream and downstream of the existing crossing, and within the existing bridge crossing constitutes LUW. The streambed near the crossing is characterized by sand and cobbles with trace amounts of silt and gravel.

Bordering Land Subject to Flooding

As defined in the WPA regulations 310 CMR 10.57 (2)(a): Bordering Land Subject to Flooding (BLSF) is an area with low, flat topography adjacent to and inundated by flood waters, which extends from the banks of waterways and waterbodies. BLSF is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. According to the FEMA Flood Insurance Rate Maps for Newburyport / West Newbury (Community Panel Number 25009C0116F dated July 2012), the project occurs within the 100-year floodplain (Zone AE). The bridge is located within Zone AE for the 100-year storm event at, and below the 13-foot base flood elevation.

Riverfront Area

As defined in the WPA regulations 310 CMR 10.58 (2)(a): Riverfront Area (RFA) is the area of land between a river's mean annual high water (MAHW) line and a parallel line measured [200-feet] horizontally. The RFA consists of the approximately 14-foot wide paved Middle Street / Plummer Spring Road. Relatively steep slopes extend down towards the water on either side of the road. The slopes consist mainly of rip rap and trees and shrubs with minimal detrital ground cover beneath. All upland portions of the project area occur within the first 100 feet of the RFA.

Buffer Zone

A 100-foot Buffer Zone extends outward from the limit of Bank into the project site. All upland project areas and activities are located within the Buffer Zone associated with the Bank of the Upper Artichoke Reservoir.

2.2 NHESP Mapped Habitat

According to the most-recently published (2017-2020) information using MassGIS data layers, there are no Natural Heritage Endangered Species Program (NHESP) Priority Habitats of Rare Species, Estimated Habitats of Rare Wildlife, potential or certified vernal pools within the vicinity of the proposed project.

2.3 Other Environmental Resources

According to MassGIS data layers and classifications provided in 314 CMR 4.00, the entire project area occurs within an Outstanding Resource Water (ORW) and Surface Water Protection Zone associated with the Upper Artichoke Reservoir, which is an Article 97, municipal land, and a public water supply watershed. According to MassGIS data layers and classifications provided in 301 CMR 12.00, the project area does not fall within an Area of Critical Environmental Concern (ACEC). According to MassGIS data layers, neither the Upper Artichoke Reservoir nor the river are EPA impaired waterways, nor Coldwater Fisheries (CFR).

3.0 Alternative Analysis

The existing bridge over the Upper Artichoke Reservoir has already partially collapsed which has resulted in the road being permanently closed to traffic in its current state. In order to reduce the risk of injury from any further collapse, and to reopen the roadway, it is necessary to replace the bridge. The design of the bridge has been analyzed by engineers with four possible alternatives: a No-build, a Three-sided Open Bottom Bridge with a precast concrete rigid frame (Alternative 1), an Open Bottom Arch Bridge with precast concrete arch (Alternative 2), and a Three-sided Open Bottom Bridge with a precast concrete beam (Alternative 3, preferred alternative). Please refer to Attachment C for a detailed analysis of the different stream crossing alternatives and their abilities to meet Stream Crossing Standards.

4.0 Proposed Project

The purpose of the project is to replace a structurally deficient, undersized bridge with a new bridge along a similar horizontal and vertical alignment. The project activities include the replacement of the bridge over the Upper Artichoke Reservoir in its entirety. The full sequence of project construction activities will take approximately twelve months to complete. The project involves mitigation measures intended to address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The roadway width will increase by approximately 4 feet to include safety improvements to the existing alignment. A safety sidewalk will be added to the south side of the bridge. Roadway reconstruction of Middle Street will occur 160-feet to the west of the bridge and 115-feet to the east on Plummer Spring Road for improved roadway approaches. The total length of the project is approximately 320-feet. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment E) for additional details.

- **Proposed Bridge** – The proposed bridge is a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The proposed span length will increase from the 14-feet to 45-feet. The overall width of the bridge will be 32.5-feet to accommodate safety improvements, including the sidewalk. In addition to substantially increasing the openness ratio, the increased span eliminates the need for the bridge’s substructure to be located in the deep portion of the reservoir. In accordance with the MassDOT Bridge Manual for a Rural Local road, the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing condition.
- **Riprap Scour Protection** –With the increased span, to achieve a 1:1.5 vertical: horizontal ratio from the elevation of the existing streambed to the elevation at the new bridge abutments, slope stabilization is required. The slope stabilization will consist of 36-inches of variable sized riprap (10- to 22-inch stones) placed below the natural streambed material. In addition, 6-inches of natural streambed material is proposed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.
- **Roadway Reconstruction** – At the approaches of the existing bridge the roadway is narrow and the slopes adjacent to the roadway are steep making the existing guardrail ineffective. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced

and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable. However, in areas where slopes with a 1:1.5 vertical: horizontal ratio or less exist, they will be regraded (without impacting the reservoir),

- **Installation of Guardrail and Repaving Activity** – Bridge replacement activities provide an opportunity to make safety improvements to existing conditions surrounding the bridge. The existing functional roadway width will expand from approximately 20-feet to 24-feet wide over the bridge. The widened roadway will meet the existing roadway width at the limits of the project. The approaches to the bridge will be repaved following the completion of project activities. Extended steel guardrail is proposed along the approaches to the bridge to replace existing non-functioning guardrail posts. While these activities will occur within the limits of RFA and BLSF, these areas are currently disturbed and the work within these areas will not adversely affect the resource areas.

Work in Wetland Resource Areas

The bridge replacement project is considered a redevelopment project. As previously stated, portions of the project qualify as a Limited Project. Impacts to wetland resource areas are unavoidable, however upon completion of the project, slopes will be stabilized and the streambed will be restored to match the natural stream channel. The outcome will result in an improvement over existing conditions. Impacts to Bank, Land Under Water, Bordering Land Subject to Flooding, Riverfront Area and buffer zones are anticipated. There will be no BVW impacts from this project.

Impacts denoted below are represented as those occurring within the Town of West Newbury, and then the project as a whole within the Town of West Newbury and the City of Newburyport. Table 1 provides an overview of impacts with regard to each WPA wetland resource area.

Bank

The existing Bank along all four quadrants of the bridge will be impacted to some extent as a result of the proposed project. Retaining walls have been proposed in order to better stabilize the proposed bridge structure. Approximately 47 linear feet (lf) (61 lf project-wide) of temporary Bank impacts are proposed in West Newbury to allow for access to the structures through the dewatering structure installation. Approximately 128 lf (182 lf project-wide) of permanent impacts to Bank are proposed in West Newbury as a result of the placement of the retaining walls and riprap for scour protection to the bridge abutments. Additional bank will be created where it previously did not exist, within the crossing itself. Some smaller trees along the roadway are proposed to be removed as a result of this work (<0.1 acres). Upon completion of the bridge and retaining wall construction, the embankment will be installed to tie into elevations and contours to the extent practicable. Bank above Ordinary High Water (OHW) will be restored where appropriate by installing 12-inches of compost mulch and seeded with a native seed mix. Please refer to Project Specs and Project Site Plans (Attachments F and G) for additional detail.

Land Under Waterbodies and Waterways

Approximately 553 square feet (sf) of permanent impacts (984 sf project-wide) to LUW will occur within the Reservoir and stream channel with the installation of riprap, retaining walls, and the new bridge wingwalls and abutments. The majority of LUW within the existing crossing will not be disturbed. Steel plates will be inserted in the channel abutting the existing structure to allow for its safe removal and to allow water to continue to flow. No other impacts are proposed within the channel itself. In order to protect the new bridge structure, riprap will be installed at the crossing inlet/outlet which will also constitute a permanent impact. A total of 436 sf of new LUW (885 sf project-wide) will be created with the increased openness of the expanded crossing. The new crossing will have a natural streambed installed, similar to what occurs within the existing crossing (Attachments F & G). Additionally, approximately 443 sf of temporary impacts (641 sf project-wide) at the inlet and outlet of the bridge

will occur as a result of dewatering the channel for construction. All temporary impacts will be restored to preconstruction conditions. Please refer to Project Site Plans (Attachment G) for additional detail.

Bordering Vegetated Wetlands

No impacts to Bordering Vegetated Wetlands are proposed.

Riverfront Area

As the project is situated directly over the Upper Artichoke Reservoir, and given that the project area is relatively small, all upland portions of the project area are within the 200-foot RFA. A majority of work within the RFA constitutes a redevelopment project. Nearly all of the work will be within existing roadway, shoulders, or side slopes. Approximately 3,203 sf (5,872 sf project-wide) of RFA impacts constitutes redevelopment and will occur within the previously paved / degraded existing roadway. Approximately 1,986 sf (3,203 sf project-wide) of RFA permanent impacts will result from the construction of the new bridge. These include the installation of the bridge footings and abutments, riprap for scour protection, pavement milling mulch for the shoulders, and drainage structures. Approximately 570 sf (1,118 sf project-wide) of temporary impacts are anticipated during the construction phase of the project as a result of the installation of erosion and sedimentation controls and water diversion.

Upland areas adjacent to the Upper Artichoke Reservoir that are temporarily disturbed by construction activities will be restored through a combination of grading, stabilization, and seeding activities. Some smaller trees along the roadway are proposed to be removed as a result of this work (< 0.1 acres). Any fill introduced to the site for the purposes of re-establishing vegetation will be clean fill, and disturbed areas will be stabilized and restored through the planting of native species as soon as practicable to reduce the likelihood that invasive species become established at the site.

Bordering Land Subject to Flooding

All upland within the project area is also Bordering Land Subject to Flooding (BLSF). Generally, all of the work proposed within BLSF will be temporary in nature. However, there will be some permanent impacts to BLSF as a result of the proposed retaining walls. This work will be compensated for, with the opening-up of the bridge crossing.

Approximately 167 sf (211 sf project-wide) of BLSF will be altered within the project area; however, approximately 311 sf (655 sf project-wide) will be replaced as additional storage capacity. A total of 393 cf (525 cf project-wide) of storage will be lost; however, approximately 1,438 cf (3,295 cf project-wide) will be replaced. Additional work along the roadway is entirely above the 13-foot flood elevation, and remaining work within this resource area will be restored in-kind.

Table 2 provides an overview of cut and fill in BLSF by foot of elevation.

Work within Buffer Zone

The majority of the project site and proposed activities will be located within the 100-foot Buffer Zone to Bank. Vegetation will be maintained whenever possible within the project vicinity, and the area will be returned to preconstruction conditions whenever possible.

Table 1 below provides an overview of impacts with regard to each WPA wetland resource area:

Table 1 – Summary of Wetland Resource Area Impacts

Resource Area	Impact Type	West Newbury	Newburyport	TOTAL
Land Under Water (LUW)	Permanent	553 sf	431 sf	984 sf
	Permanent Dredge / Fill	39 cy / 17 cy	9 cy / 2 cy	48 cy / 19 cy
	Temporary	443 sf	198 sf	641 sf
	Temporary Dredge / Fill	28 cy / 0 cy	22 cy / 0 cy	50 cy / 0 cy
Bank	Permanent	128 lf	54 lf	182 lf
	Temporary	47 lf	14 lf	61 lf
200-foot Riverfront Area (RFA)	Redevelopment	3,203 sf	2,669 sf	5,872 sf
	Permanent	1,986 sf	1,217 sf	3,203 sf
	Temporary	570 sf	548 sf	1,118 sf
Bordering Land Subject to Flooding (BLSF)	Proposed Alteration (sf)	167 sf	44 sf	211 sf
	Proposed Replacement	311 sf	344 sf	655 sf
	Flood Storage Lost (cf)	393 cf	132 cf	525 cf
	Flood Storage Replaced	1,438 cf	1,857 cf	3,295 cf

Table 2 – Summary of Cut and Fill in BLSF By Foot of Elevation

Elevation (ft)	Floodplain Impact (cf)		Floodplain Mitigation (cf)		Floodplain Net (cf)		
	West Newbury	Newburyport	West Newbury	Newburyport	West Newbury	Newburyport	Total
3-4	-	-	-	10.1	No Change	+10.1	+10
4-5	-	-	6.1	46.5	+6.1	+46.5	+53
5-6	-	-	40.4	84.3	+40.4	+84.3	+125
6-7	-	-	78.3	122.2	+78.3	+122.2	+201
7-8	-	-	116.2	160.1	+116.2	+160.1	+276
8-9	0.8	-	154.0	198.0	+153.3	+198.0	+351
9-10	-	24.5	192.9	236.8	+192.9	+212.4	+405
10-11	165.5	43.0	234.3	278.3	+68.8	+235.3	+304
11-12	140.6	38.6	279.8	354.5	+139.2	+315.9	+455
12-13	85.6	25.5	334.3	365.6	+248.7	+340.1	+589
TOTAL	392	131	1,436	1,856	+1,044	+1,725	+2,769

5.0 Stormwater Management

The Project area currently exhibits country drainage whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and while the widened roadway will increase impervious area at the site, mitigation measures are not feasible to reduce runoff rates due to site limitations. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable. As such, a formal Stormwater Management Report has not been prepared for this project, but a streamlined one is included in Attachment E.

To provide stormwater drainage improvements, it's proposed that runoff will be captured at the low points on either side of the roadway via two deep sump catch basins. The deep sump catch basins flow to a manhole on the north side of the roadway. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends. Like the existing conditions, all other runoff within the project limits will continue to flow via country drainage. Please refer to Attachment E for Stormwater Report.

6.0 Construction Considerations and Sequencing

Installation of the recommended foundation system will require control of water during construction and the use of a temporary excavation support system. Control of water during construction, which typically includes water diversion and dewatering operations to maintain dry conditions during foundation placement, is the responsibility of the Contractor. Typical systems for water diversion primarily include cofferdams, which can incorporate steel sheet piling, large sandbags, or other proprietary systems. Based on site constraints, actual flowrates during construction and specific project permitting requirements, cofferdams can be combined with temporary diversion pipes to completely redirect flows around the work area. Final means and methods are up to the contractor.

The temporary excavation support system will be selected by the Contractor, but typical installations for use with the existing subsurface conditions include cantilevered, or braced steel sheet piling systems. The Contractor will select the support of excavation based on site constraints, traffic control plan and other methods of construction.

Following the excavation, proper subgrade preparation must be completed prior to installation of the recommended foundation system. Proper treatment includes the installation of an approved geotextile fabric over the subgrade, followed by the placement and compaction of crushed stone.

The construction is generally proposed as outlined below:

- Additional signage to fully close existing roadway (closed for pedestrian traffic, already closed to vehicles).
- Installation of erosion controls.
- Water handling and dewatering.
- Removal of existing bridge
- Excavation of soils.
- Installation of new bridge structure.
- Placement of riprap for scour protection / placement natural substrate in streambed.
- Construction and pavement of roadway approaches and related work.
- Open new bridge to traffic.
- Site restoration including stabilization and seeding.
- Remove erosion and sedimentation controls.

7.0 Mitigation Measures

The proposed project will occur within the jurisdictional limits of Bank, Land Under Water, BLSF, the 100-foot buffer area and the 200-foot Riverfront Area. The project has therefore been designed to incorporate construction Best Management Practices (BMPs) to ensure adequate protection to wetland resource areas within proximity of the project location.

Disturbed areas within affected resources will be stabilized and restored following the completion of project activities. This will be achieved specifically by limiting alteration within resource areas to the maximum extent practicable. This will also be accomplished through project phasing activities that minimize work within resources to the maximum extent practicable.

Erosion and Sedimentation Controls

Siltation barriers composed of compost filter tubes will be installed at the downgradient limits of work. Sedimentation barriers will be checked on a weekly basis and following significant storm events. Sediment controls

will remain in-place during all phases of the project and will be removed once the area is sufficiently stabilized. Please refer to Attachment G (Site Plans) for erosion and sedimentation control details and the proposed locations of controls.

Construction Stockpiling Locations

In the event stockpiled materials must be left on site overnight, the piles will be covered with tarps and surrounded by erosion control measures (e.g. compost filter tubes). Stockpiled streambed material will be stored at a location determined by the Contractor until needed for use on-site. Staging and storage areas will be outside of all jurisdictional environmental resource areas where feasible and practicable.

Water Control Measures and Dewatering

Prior to work within the stream, cofferdams will be installed for construction activities to occur in dry conditions. As such, work will require dewatering. The contractor will be required to develop and maintain a Construction Water Management Plan that is prepared in accordance with the contract design documents, and generally, the means and methods will be determined by the contractor. Stream flow will be maintained within the existing channel and between the cofferdams while the dewatered construction area can be maintained by pumping the water out of the work areas.

All discharge resulting from dewatering activities shall be directed to temporary sedimentation/retention basins as specified by the contractor to control turbidity. At no time shall the discharge be directly released into adjacent resource areas, nor will any settling tank/basin be located within a wetland/waterway. If stone or other erosion control is utilized at the outlet of the settling tank/basin, this material will be removed, and the area will be restored to existing conditions prior to the completion of the project. Please refer to Attachment G, Project Site Plans for additional detail on proposed water control measures.

8.0 Regulatory Compliance

The project has been designed to comply with the General Performance Standards listed in 310 CMR 10.00. As previously stated, portions of the project qualify as a Limited Project. A comparison of the alternatives considered for this bridge replacement project is in Attachment C – Alternatives Analysis. Table 1 provides an analysis of proposed wetland resource area impacts. The proposed project includes measures to maximize compliance with the applicable performance standards with the WPA and the Town of West Newbury Wetlands Protection Bylaw (Title XXV) for each jurisdictional wetland resource area as discussed below.

According to the Wetlands Protection Act and the Town of West Newbury Wetlands Protection Bylaw, wetland resource areas are presumed significant in varying capacities to flood control, storm damage prevention, prevention of pollution, wildlife habitat, fisheries habitat, protection of public water supply, and protection of groundwater supply. The following section describes how the project will minimize and mitigate wetland resource area impacts to the maximum extent practicable by complying with the general performance standards established for each area:

General Performance Standards

Bank, 310 CMR 10.54 (4)(a)

Work impacting approximately 175 linear feet (243 lf project-wide) of Bank is associated with the Upper Artichoke Reservoir. As indicated in the Wetlands Protection Act 310 CMR 10.54 (4)(a), the proposed work shall not impair the following:

1. *the physical stability of the Bank*

The proposed work will improve the stability of the Bank by replacing the deteriorating bridge structure

and the partially collapsed roadway side-slopes. This, in turn, will reduce scouring and erosion along the adjacent slopes and sedimentation in the waterway. At the completion of construction, the restored Bank will be stabilized by loaming and seeding.

2. *the water carrying capacity of the existing channel within the Bank*

The project will replace a structurally deficient and hydraulically restricted bridge. The proposed design will expand the existing hydraulic opening of the bridge, thereby improving flow conditions and reducing bridge scour and erosion issues. Hydraulic modeling has confirmed that widening the bridge span will not significantly increase upstream or downstream flooding.

3. *ground water and surface water quality*

The proposed project consists of rebuilding the existing bridge structure in the dry and will not result in discharge of sediment to the waterway. Therefore, it will not result in the degradation of groundwater and surface water quality.

4. *the capacity of the Bank to provide breeding habitat, escape cover and food for fisheries.*

The replacement of the existing bridge, with a new, wider bridge structure, will improve fish and wildlife habitat within the vicinity of the bridge as well as up and downgradient of the bridge. The project will minimize disturbance to the vegetation to the maximum extent practical and utilize erosion controls throughout the duration of construction to prevent sedimentation into the waterway.

5. *the capacity of the Bank to provide important wildlife habitat functions.*

The project site is not located within rare species habitat. There will be no permanent adverse effects as a result of the proposed work. The proposed work along the Bank will improve its physical stability which in turn, will improve habitat.

6. *Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.54(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards.... Notwithstanding the requirement of 310 CMR 10.54(4)(a)5., the impact on bank caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures contained in 310 CMR 10.60.*

The project site is not located within rare species habitat. There will be no permanent adverse effects as a result of the proposed work. However, the proposed bridge replacement project will improve the site habitat connectivity. The project meets the Stream Crossing Standards to the maximum extent practicable.

Land Under Water Bodies and Waterways, 310 CMR 10.56 (4)(a)

Work impacting approximately 996 square feet (1,625 sf project-wide) of LUW is associated with the Upper Artichoke Reservoir. Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within the Land Under Water Bodies and Waterways shall not impair the following:

1. *The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;*

Temporary and permanent impacts to LUW are required to remove and replace the existing bridge, and to apply the proposed scour protection measures at the proposed bridge footings. Local scour effects at the

inlet and outlet of the existing crossing were evident, and as such, it is important to protect the new bridge installation. The proposed bridge will have an increased hydraulic opening, thereby improving flow conditions, reducing bridge scour/erosive conditions, and improving water quality. Unabated channel flow and a phased construction approach will allow stream flow to be maintained throughout the duration of project activities. The surface area of LUW provided by the existing bridge will be replaced and expanded (885 sf of LUW will be created) over natural substrate. The project falls within the 100-year FEMA floodplain (Zone AE); however, the project will not adversely affect the floodplain as there will be a net-gain of storage capacity.

2. *Ground and surface water quality;*

Construction will be performed using appropriate erosion and sedimentation controls as previously stated, as well as general BMPs designed to prevent spills, turbidity, or debris generation. Upon completion of this work, flow will function more appropriately at this crossing. Therefore, it will not result in the degradation of groundwater and surface water quality.

3. *The capacity of said land to provide breeding habitat, escape cover and food for fisheries;*

The proposed work will improve the existing habitat by removing the existing bridge and installing a wider span bridge structure with natural streambed material that will better mimic natural conditions.

4. *The capacity of said land to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures established under 310 CMR 10.60.*

As described above, the project involves comparatively minimal new impacts to LUW in order to replace the failing bridge structure. A majority of permanent impacts will occur within the footprint of the existing crossing and as a result of the installation of the new retaining walls to protect the road and proposed bridge structure from scour. Many of the new impacts will be temporary in nature (641 square feet of 1,625 sf project-wide) for construction and dewatering purposes only and will be returned to preconstruction conditions. The new permanent impacts account for 11.8% of the total LUW in the project area. The new bridge will have a wider, natural streambed bottom which will provide environmental benefits such as improved wildlife passage and connectivity. Per 310 CMR 10.56(a)5., this project is exempt from the requirement to perform a wildlife habitat evaluation.

5. *Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.56(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards by consisting of a span or embedded culvert in which, at a minimum, the bottom of a span structure or the upper surface of an embedded culvert is above the elevation of the top of the bank, and the structure spans the channel width by a minimum of 1.2 times the bankfull width. This presumption is rebuttable and may be overcome by the submittal of credible evidence from a competent source. Notwithstanding the requirements of 310 CMR 10.56(4)(a)4., the impact on Land under Water Bodies and Waterways caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures established under 310 CMR 10.60.*

The proposed work is designed to the greatest extent practicable to the Massachusetts Stream Crossing Standards. Please refer to the Stream Crossing Evaluation Worksheet in Attachment C and the Stream Crossing Standards Compliance section below.

Bordering Land Subject to Flooding, 310 CMR 10.57 (4)(a)

Work impacting approximately 478 square feet (866 sf project-wide) of BLSF is associated with the Upper Artichoke Reservoir. Where the presumption set forth in 310 CMR 10.57(3) is not overcome, any proposed work within the Bordering Land Subject to Flooding shall not impair the following:

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

Flood storage will be temporarily altered from the bridge excavation and construction. Riprap is proposed in areas previously unencumbered by the bridge structure and areas with existing riprap, namely, to prevent scour at the openings, but material is also being removed from elevations within, and at the existing bridge opening.

The bridge is located within Zone AE for the 100-year storm event at and below the 13-foot base flood elevation. The retaining walls proposed at each quadrant of the bridge will permanently impact flood storage in these areas. However, a significant amount of roadway will be removed with the replacement of the earth-filled stone arch with a span-bridge which will triple the width of the existing channel, thereby increasing the hydraulic opening and overall flood storage capacity. Slopes will also generally be restored to the extent practicable. The proposed loss will not cause an increase, nor will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows. As a result, compensatory storage mitigation is not proposed.

2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

In accordance with the MassDOT Bridge Manual for a Rural Local road the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing conditions. This will allow for greater volume and flow passage at the crossing, while decreasing peak flow velocity by 30% over current conditions.

Flow will be maintained during construction through the existing channel. While final methodology is up to the contractor, the proposed system meets MassDOT required design standards for a temporary water control system, designed to maintain channel flow.

3. *Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

Generally, impacts to Middle Street / Plummer Spring Road and the adjoining slopes will be temporary in nature and will not impair the capacity of BLSF to provide important wildlife habitat functions. Permanent effects of the project will be to protect the existing bridge structure with retaining walls, and to triple the width of the existing channel width. Widening the span, opening the crossing, and bank restoration efforts, all proposed by this project will promote improvements to wildlife habitat. Additionally, since the proposed

project involves a stream crossing, the project is exempt from the requirement to perform a wildlife habitat evaluation.

Riverfront Area (RFA), 310 CMR 10.58(5)

The proposed work is considered a Redevelopment Project in RFA in accordance with 310 CMR 10.58(5), because the project involves the replacement, rehabilitation or expansion of existing bridge structures and the improvement of existing roads, but will preserve undisturbed areas adjacent to the bridge as much as possible in accordance with 310 CMR 10.58 (4)(d)(1)(a). Work impacting approximately 5,759 square feet (10,193 sf project-wide) of RFA is associated with the Upper Artichoke Reservoir. All Redevelopment projects must comply with the following standards cited under 310 CMR 10.58(5).

- a) *At a minimum, the proposed work [must] result in an improvement over existing conditions of the capacity of the riverfront area to protect the interests identified in M.G.L.c.131 Section 40*

The proposed bridge structure will result in an improvement over existing conditions. The existing bridge is undermined and collapsing which has already resulted in the closing of the roadway. The new bridge will widen the opening, thereby providing improved wildlife passage and habitat connectivity.

- b) *Stormwater management is provided according to standards established by the Department*

The Project area currently exhibits country drainage system whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and while the widened roadway will increase impervious area at the site, mitigation measures are not feasible to reduce runoff rates due to site limitations. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable. As such, a formal Stormwater Management Report has not been prepared for this project, but a streamlined one is included in Attachment E.

- c) *Within 200 foot riverfront areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less*

The proposed project involves the redevelopment of an existing crossing. Proposed redevelopment activities are located entirely within previously disturbed RFA to the extent practicable. Due to the water-dependent nature of the project, it is not possible to locate the entire bridge structure further from the Reservoir than is currently proposed. Only minimal encroachment into non-altered areas is required, and only to the extent required for the most practicable and substantially equivalent economical bridge design.

- d) *Proposed work, including expansion of existing structures, shall be located outside the riverfront area or toward the riverfront area boundary and away from the river*

The proposed project involves the redevelopment of an existing stream crossing. Proposed redevelopment activities are located entirely within previously disturbed RFA to the extent practicable. The proposed activities will result in an increase in size relative to the existing overall bridge footprint, but the design proposes to locate the bridge footings at a greater distance from one another than the existing crossing. This will result in a much more open crossing than the existing structure. Due to the water-dependent nature of the project, it is not possible to locate the bridge further from the water than is currently proposed. Additional required work within the RFA includes the bridge scour protection and riprapped slope, which are required to prevent erosion.

- e) *The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the riverfront area*

The proposed project will be located within previously disturbed or degraded areas. The project involves the replacement of an existing bridge. As stated above, all major redevelopment components of the project are located within the limits of previously disturbed or degraded areas. The total RFA on the subject property is equal to approximately 13,158 sf. The total degraded RFA on the roadway site, 5,872 sf is equal to approximately 44.6%. The new scour protection at the bridge footings and the retaining walls will expand approximately 3,203 sf into non-degraded areas of the lot. While this represents an approximate 24.3% increase in proposed new impervious area within the RFA on the small project site, these improvements ensure the stability of the new bridge structure and prevent degradation of the newly improved site. Riprap above OHW will be loam and seeded with a native grass seed mixture.

- f) *When an applicant proposes restoration on-site of degraded riverfront area, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), and (e) at a ratio in square feet of at least 1:1 of restored area to area of alteration not conforming to the criteria*

All disturbed areas will be restored to pre-existing conditions or better. The proposed bridge will increase openness and increase connectivity.

- g) *Riverfront area mitigation.*

The bridge replacement will serve as an improvement to the RFA and will not have no adverse impact on the Riverfront Area. At the completion of construction, and riprap above OHW within the RA will be loam and seeded with a native grass seed mixture.

Stream Crossing General Standards

The proposed project design complies with the Massachusetts Stream Crossing Standards to the extent practicable, as required for a limited project under the WPA. The proposed project meets all Stream Crossing Standards. The proposed design mitigates for the existing scouring, flow contraction, outlet perching, and inlet drops and will not act as a physical barrier to fish and wildlife passage.

The following outlines compliance with the Stream Crossing General Standards:

1. *Spans (bridges, 3-sided box culverts, open-bottom culverts or arches) that preserve the natural stream channel are strongly preferred.*

Meets standard. The width of the existing span earth filled stone arch is 14.3 feet, while the width of the proposed bridge is 23.4 feet. The replacement structure will mimic natural stream channel conditions.

2. *If a culvert, then it should be embedded:*
 - *a minimum of 2 feet for all culverts,*
 - *a minimum of 2 feet and at least 25 percent for round pipe culverts*
 - *When embedment material includes elements > 15 inches in diameter, embedment depths should be at least twice the D84 (particle width larger than 84 % of particles) of the embedment material.*

Meets Standard. Span bridge proposed with a natural stream bottom.

3. *Spans channel width (a minimum of 1.2 times the bankfull width).*

Meets Standard. According to Stream Stats, the bankfull width is 28.4 feet. To meet the Standard, the minimum bankfull width would need to be 34.0 feet wide. The structure opening is proposed to be 41.5 feet wide.

4. *Natural bottom substrate within the structure.*

Meets Standard. Natural material will remain within the existing channel, and stream material removed during construction will be reused on top of bank scour protection.

5. *Designed with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows.*

Meets Standard. Hydraulic Report prepared for the project indicates the post-construction water depth is approximately the same as existing conditions.

6. *Openness > 0.82 feet (0.25 meters).*

Meets Standard. The proposed openness ratio is 11.7.

7. *Banks should be present on each side of the stream matching the horizontal profile of the existing stream and banks.*

Meets Standard. The proposed design will match the horizontal profile of the existing stream and associated banks.

***If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems.*

- *Inlet drops*
- *Outlet drops*
- *Flow contraction that produces significant turbulence*
- *Tailwater armoring*
- *Tailwater scour pools*
- *Physical barriers to fish and wildlife passage*

Please refer to Attachment C – Alternative Analysis for further stream crossing alternate analysis and compliance with Stream Crossing Standards.

9.0 Summary

The Applicant, the Town of West Newbury, has filed this Notice of Intent under the Massachusetts Wetlands Protection Act and the Town of West Newbury Wetlands Protection Bylaw for the replacement of the existing bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir in West Newbury, MA. The information contained in this Notice of Intent application sufficiently describes the site, proposed work, and the effect of said work on the interests identified in the Wetlands Protection Act and Wetlands Protection Bylaw. Further, as both a limited project, and a project proposed in the public interest the bridge replacement is eligible for permitting under the Wetlands Protection Act. The design approach taken was to first avoid wetland resources impacts where feasible, and where unavoidable, to minimize the impacts to the extent practicable and mitigate where applicable. The application further demonstrates that the project can be constructed in accordance with the applicable general performance standards for the affected resource areas, or as a limited project where applicable. The Applicant therefore respectfully requests that the West Newbury Conservation Commission issue an Order of Conditions with appropriate conditions for work to proceed as described in this narrative and as shown on the project plans.

Attachment B

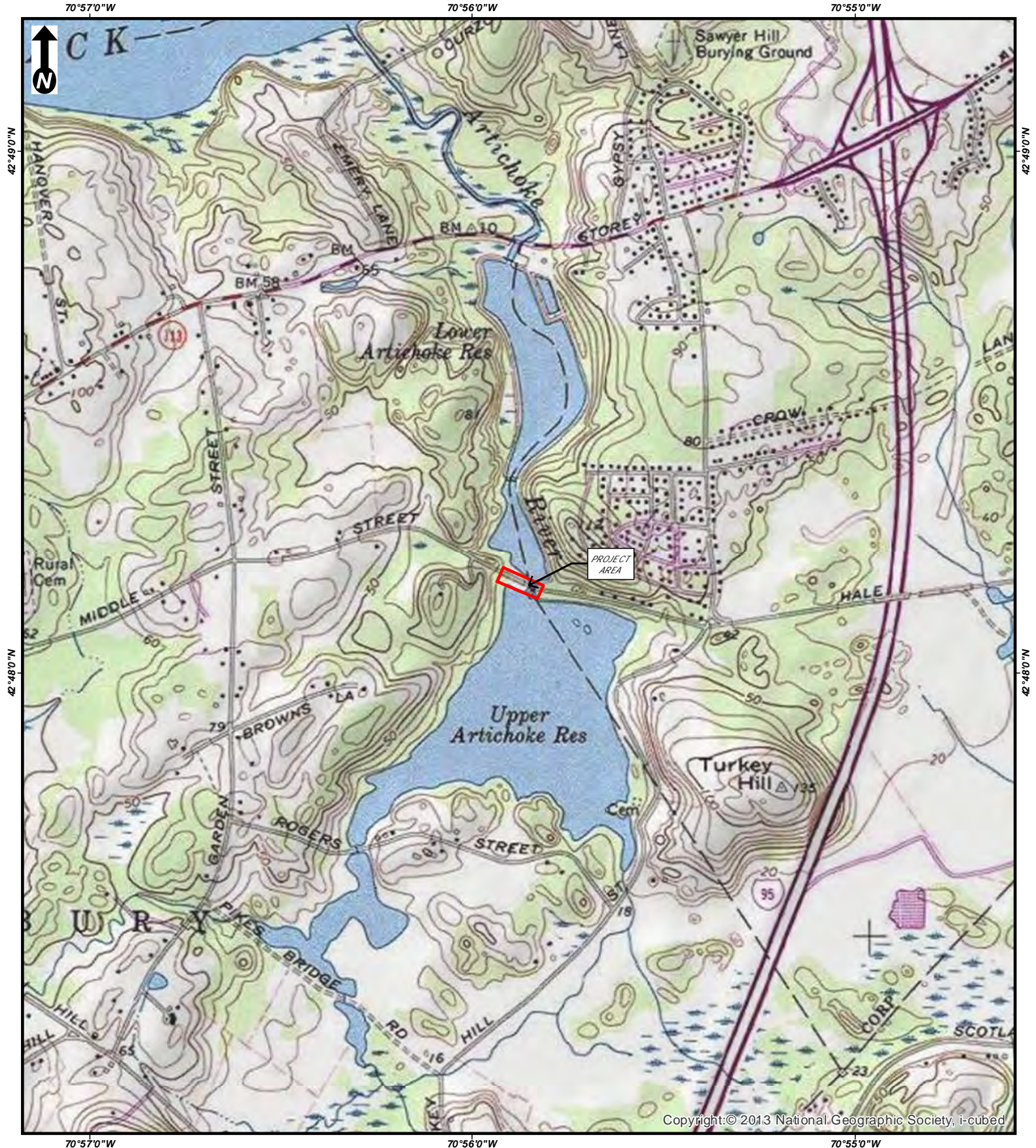
Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

SITE FIGURES

USGS Locus Map
Environmental Resources Map
FEMA FIRM Map

PHOTOGRAPHS

USGS STREAM STATS



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Scale:
1 inch = 2,000 feet
(page size: 8.5 X 11)
0 1,000 2,000
Feet

**MIDDLE ST / PLUMMER SPRING RD OVER UPPER ARTICHOKE RESERVOIR
BRIDGE REPLACEMENT PROJECT**

**USGS Site Location Map
West Newbury & Newburyport, MA**

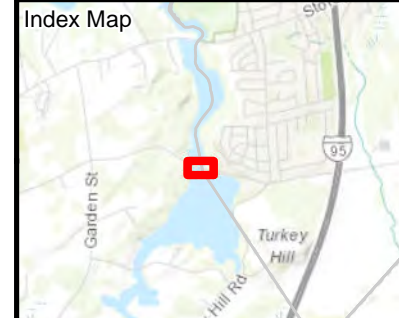
Source: 2013
National Geographic
Society, i-cubed





Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;
 NHESP Certified & Potential Vernal Pools;
 NHESP Priority & Estimated Habitats;
 NHESP Restricted Data; Hydrography;
 Public Water Supply;
 Zone II Wellhead Protection Area;
 Interim Wellhead Protection Area;
 Areas of Critical Environmental Concern;
 Watershed Protection Act Zones;
 Ch. 91 Tidelands Jurisdiction;
 Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)

**ENTIRE VIEW EXTENT IS WITHIN
 OUTSTANDING RESOURCE
 WATER AREA**



Legend

Project Area	100ft Buffer to Wetlands & Streams	Article 97 Lands
Existing Bridge Structure	FEMA 100yr Floodplain (Zone AE)*	Municipal
Field Delineated Bank Flags	Surface Water Protection Zone	
Field Delineated Edge of Bank	Town Boundary	
Field Delineated Waterbody		
MADEP Hydrologic Connections		

1 inch = 50 feet
 0 25 50
 Feet
 *Indicates Layers Set to Transparency

**MIDDLE STREET / PLUMMER SPRING ROAD
 OVER THE UPPER ARTICHOKE RESERVOIR
 BRIDGE REPLACEMENT PROJECT**

Environmental Resources Map

West Newbury & Newburyport, MA

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

National Flood Hazard Layer FIRMMette



70°56'9"W 42°48'23"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99	With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X	Future Conditions 1% Annual Chance Flood Hazard Zone X	Area with Reduced Flood Risk due to Levee. See Notes. Zone X	Area with Flood Risk due to Levee Zone D

OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard Zone X	Effective LOMRs	Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer	Levee, Dike, or Floodwall

OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation	Coastal Transect	Base Flood Elevation Line (BFE)	Limit of Study	Jurisdiction Boundary	Coastal Transect Baseline	Profile Baseline	Hydrographic Feature

MAP PANELS	Digital Data Available	No Digital Data Available	Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/9/2020 at 5:01 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery. Data refreshed April 2020

0 250 500 1,000 1,500 2,000 Feet 1:6,000

70°55'32"W 42°47'57"N



Photo #1: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #2: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #3: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. View of the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #4: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir.. Up close view of the bridge in disrepair.



Photo #5: View southeast of Middle St, West Newbury facing Plummer Spring Rd, Newburyport over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #6: View southwest of the northern side of the roadway and bridge over the Upper Artichoke Reservoir.

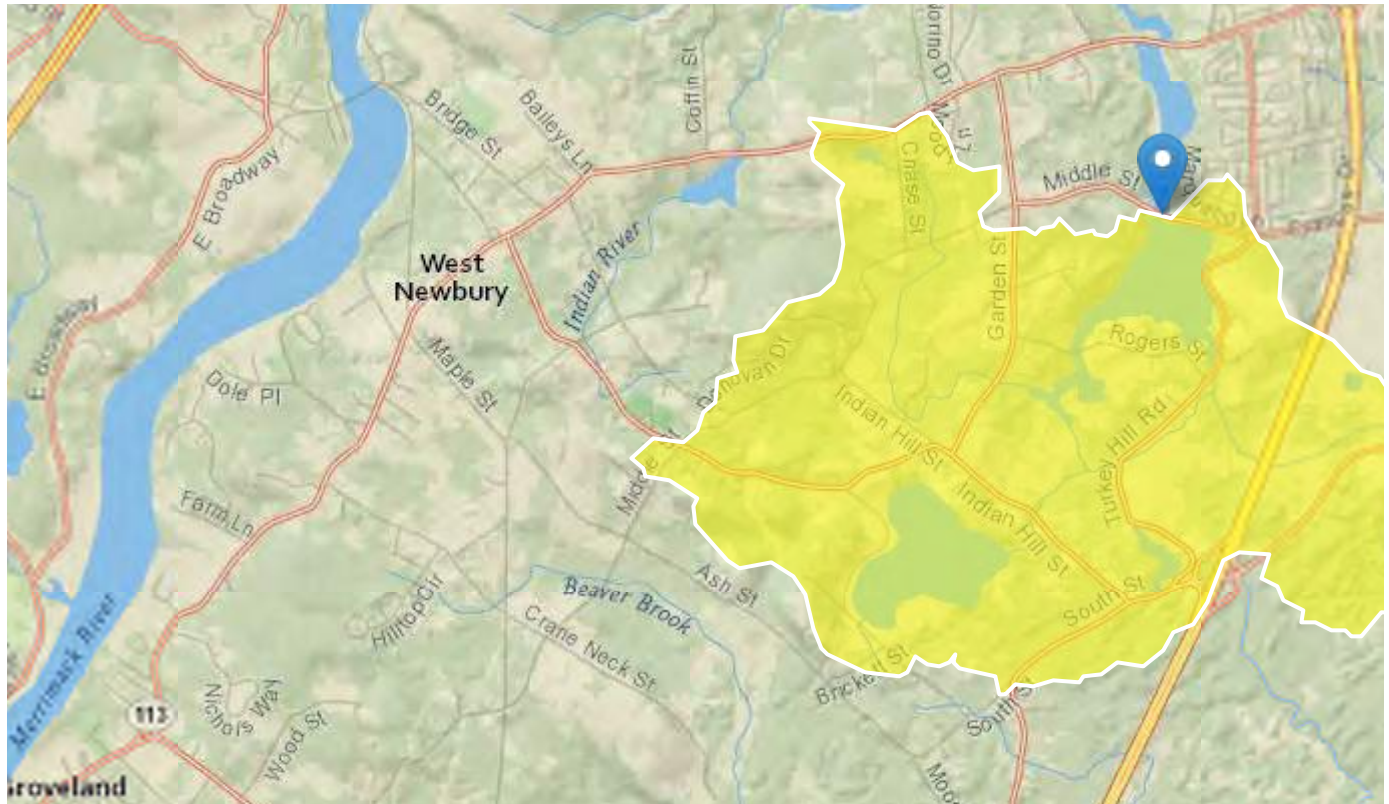
Upper Artichoke Reservoir

Region ID: MA

Workspace ID: MA20181113205234897000

Clicked Point (Latitude, Longitude): 42.80304, -70.93112

Time: 2018-11-13 15:52:50 -0500



Middle Street - West Newbury/Plummer Spring Road - Newburyport

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5.48	square miles
ELEV	Mean Basin Elevation	62.2	feet
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	26.59	percent
BSLDEM10M	Mean basin slope computed from 10 m DEM	5.845	percent

Peak-Flow Statistics Parameters [Peak Statewide 2016 5156]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.48	square miles	0.16	512
ELEV	Mean Basin Elevation	62.2	feet	80.6	1948
LC06STOR	Percent Storage from NLCD2006	26.59	percent	0	32.3

Peak-Flow Statistics Disclaimers [Peak Statewide 2016 5156]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Peak-Flow Statistics Flow Report [Peak Statewide 2016 5156]

Statistic	Value	Unit
2 Year Peak Flood	85.4	ft ³ /s
5 Year Peak Flood	140	ft ³ /s
10 Year Peak Flood	182	ft ³ /s
25 Year Peak Flood	242	ft ³ /s
50 Year Peak Flood	291	ft ³ /s
100 Year Peak Flood	343	ft ³ /s
200 Year Peak Flood	398	ft ³ /s
500 Year Peak Flood	476	ft ³ /s

Peak-Flow Statistics Citations

Zarriello, P.J.,2017, Magnitude of flood flows at selected annual exceedance probabilities for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2016–5156, 99 p. (<https://dx.doi.org/10.3133/sir20165156>)

Bankfull Statistics Parameters [Bankfull Statewide SIR2013 5155]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
----------------	----------------	-------	-------	-----------	-----------

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.48	square miles	0.6	329
BSLDEM10M	Mean Basin Slope from 10m DEM	5.845	percent	2.2	23.9

Bankfull Statistics Flow Report [Bankfull Statewide SIR2013 5155]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SEp
Bankfull Width	28.4	ft	21.3
Bankfull Depth	1.51	ft	19.8
Bankfull Area	42.5	ft ²	29
Bankfull Streamflow	115	ft ³ /s	55

Bankfull Statistics Citations

Bent, G.C., and Waite, A.M., 2013, Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013–5155, 62 p., (<http://pubs.usgs.gov/sir/2013/5155/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.2.1

Attachment C

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

ALTERNATIVES ANALYSIS

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Bridge Replacement Project –Plummer Spring Road/Middle Street over Artichoke Reservoir– Alternatives Analysis

Due to existing site conditions, the proposed project was not able to reach full compliance with the Massachusetts Stream Crossing Standards. However, the project is considered a Limited Project under 310 CMR 10.53(3)(i): the maintenance, repair, and improvement...bridges which existed prior to April 1, 1983, 310 CMR 10.53(3)(l): construction, reconstruction...or maintenance of water dependent uses, and 10.53(8)(a): Replace...existing stream crossing in a non-tidal crossing.

Therefore, it has been designed to meet the Stream Crossing Standards to the maximum extent practicable per the provisions at 310 CMR 10.53(8). The following description provides an overview of the bridge design and is followed by an Alternatives Analysis and an evaluation of compliance with the Stream Crossing Standards.

Table 1.0 – Existing Crossing Data

Stream Crossing Standard	Existing Conditions
Type of Crossing	Single span earth filled stone arch
Size	Width: 14.3-feet Height: 13.2-feet Crossing Length: 24.2-feet Cross Sectional Area: 138 sq. ft.
Bankfull Width (Reported by StreamStats)	28.4-feet (Reported by StreamStats, drainage area = 5.48 square miles). The existing stone arch bridge was built in 1891 before the Upper Artichoke dam was installed to create the Upper Artichoke Reservoir
Openness Ratio	5.7
Water Level	Observed Water Elevation (10/1/2018): 12.5± OHW Elevation 12.6 ± Streambed Elevation 3.0±

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Table 2.0 – Proposed Crossing Conditions

Alternative 1		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete 3-Sided Rigid Frame (open bottom)	Yes	Proposed Concrete Rigid Frame (open bottom) Width: 22-feet Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 27.25-feet Cross Sectional Area: 241 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 22-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 241 sq. ft. Proposed Openness Ratio: 8.8
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 2		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Arch Bridge (open bottom)	Yes	Proposed Precast Concrete Arch Bridge with Pile Supported Footings (open bottom) Width: 30.7-feet Height: 13.2-feet (Measured from top of proposed streambed to center of arch) Crossing Length: 27.3-feet Cross Sectional Area: 246 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have a maximum of 13.2-feet clearance throughout the length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 30.7-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 246 sq. ft. Proposed Openness Ratio: 9.0
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 3 (Proposed Bridge Replacement)		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Beams 3-Sided Bridge (open bottom)	Yes	Proposed Precast Concrete Beam Bridge with Pile Supported Abutments (open bottom) Width: 41.5-feet (Measured between inside faces of bridge sidewalls) Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 32.5-feet Cross Sectional Area: 380 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	Yes	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 41.5-feet.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 380 sq. ft. Proposed Openness Ratio: 11.7
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative: Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Alternative 1: Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Alternative 2: Meet General Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Alternative 3: Stream Crossing Standards 1.2 x bankfull width ² (Proposed Alternative) Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
1) potential for downstream flooding	No change	No change	No change	No change
2) upstream and downstream habitat	No improvement.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.
3) potential for erosion and head-cutting	No change	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.
4) stream stability	No change	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.
5) habitat fragmentation caused by the crossing	No change	Increased openness	Increased openness	Increased openness
6) amount of stream mileage made accessible	No change	Improved stream continuity.	Improved stream continuity.	Improved stream continuity

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative:	Alternative 1:	Alternative 2: Meet General	Alternative 3: Stream Crossing Standards 1.2 x bankfull width²
	Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
7) storm flow conveyance	100-year event water Cross Sectional Area: 111 sq. ft.	100-year event water Cross Sectional Area: 171 sq. ft.	100-year event water Cross Sectional Area: 201 sq. ft.	100-year event water Cross Sectional Area: 242 sq. ft.
8) engineering design constraints	No change, no improvements. Bridge remains closed and roadway width remains inadequate.	The poor soil conditions require large deep footings to distribute the bridge loads. Due to the depth of water and relatively short span extensive retaining walls are required to replace the existing failed stone retaining walls.	The weight of the soil over the arch requires an extensive amount of piles. Installation of heavy arch units would likely require temporary fill to provide a stable work platform for a large crane.	The addition of a sidewalk on the bridge requires widening and retaining of the road at the approaches.
9) hydrologic constraints	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)
10) impacts to wetlands that would occur	No construction impacts to adjacent wetland resource areas.	Permanent impacts to adjacent wetland resource areas due extensive retaining walls and deep excavation for footings.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.
11) potential to affect property and infrastructure	Bridge has failed. Emergency evacuation route remains closed.	None	None	None
12) cost of replacement	N/A	Proposed Replacement Cost: \$2,400,000	Proposed Replacement Cost: \$2,300,000	Proposed Replacement Cost: \$2,600,000

¹ Bank Standards at 310 CMR 10.54 and LUWW Standards at 310 CMR 10.56 (LUWW = Land Under Water Bodies & Waterways)² Per the *Massachusetts River &*

²*Stream Crossing Standards* (March 1, 2011, Revised March 8, 2012), Page 18, Item #2 - If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems: (1) Inlet drops; (2) Outlet drops; (3) Flow contraction that produces significant turbulence; (4) Tailwater armoring; (5) Tailwater scour pools; (6) Physical barriers to fish and wildlife passage.

Attachment D

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

ABUTTER NOTIFICATION LETTER
LIST OF ABUTTERS

**NOTICE OF INTENT APPLICATION
ABUTTER NOTIFICATION LETTER**

DATE: January 4, 2021

**RE: West Newbury Conservation Commission
Notice of Public Hearing**

To Whom It May Concern,

As an abutter within 100-feet of a proposed project, please be advised that a Notice of Intent has been filed with the West Newbury Conservation Commission for project activities associated with a bridge replacement project under the Massachusetts Wetlands Protection Act. Abutters within 100-feet of the subject property will be notified by certified mail in accordance with permit application filing requirements. If you have any questions, please do not hesitate to contact the applicant's agent listed below.

APPLICANT: Town of West Newbury

PROJECT LOCATION: Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir, West Newbury, MA

PROJECT DESCRIPTION: Bridge Replacement. This work will occur within the Bank and Land Under Water of the Upper Artichoke Reservoir, the 100-foot Buffer Zone, the 200-foot Riverfront Area, and within Bordering Land Subject to Flooding

APPLICANT'S AGENT: BSC Group, Inc.
803 Summer Street
Boston, MA 02127
Attn: Sara Kreisel
617-896-4579 or skreisel@bscgroup.com

PUBLIC HEARING: Remotely (via Zoom)
Unless it becomes safe to hold it at:
West Newbury Conservation Office
381 Main Street, Second Floor
West Newbury, MA 01985

DATE AND TIME: Please contact the West Newbury Conservation Commission at 978-363-1100 ext. 126, for date, time, and Login (if applicable) information (<https://www.wnewbury.org/conservation-commission>).

NOTE: Plans are on file with the West Newbury Conservation Commission.

You also may contact the Massachusetts Department of Environmental Protection, Northeast Regional Office for more information about this application or the Wetlands Protection Act at (978) 694-3200.

From: [Assistant Assessor](#)
To: [Safran, Polina](#)
Subject: RE: [Town of West Newbury MA] Abutter List Request Form (Sent by Polina Safran, psafran@bscgroup.com)
Date: Monday, September 28, 2020 1:31:42 PM
Attachments: [MIDDLE STREET BRIDGE LABELS.pdf](#)
[MIDDLE STREET BRIDGE MAP.pdf](#)

Hi Polina,

I have attached the abutters list. I can't do it by coordinates, so I used the closest parcel, R20-11.

Thank you,

Maureen Curtin
Assessors Clerk

Town of West Newbury
381 Main Street
West Newbury, MA 01985
978-363-1100 ex.117

-----Original Message-----

From: cmsmailer@civicplus.com [<mailto:cmsmailer@civicplus.com>]
Sent: Thursday, September 24, 2020 2:54 PM
To: Assistant Assessor
Subject: [Town of West Newbury MA] Abutter List Request Form (Sent by Polina Safran, psafran@bscgroup.com)

Hello mcurtin,

Polina Safran (psafran@bscgroup.com) has sent you a message via your contact form (<https://www.wnewbury.org/user/45/contact>) at Town of West Newbury MA.

If you don't want to receive such e-mails, you can change your settings at <https://www.wnewbury.org/user/45/edit>.

Message:

Hello Maureen,

Attached, please find an Abutters List Request form.

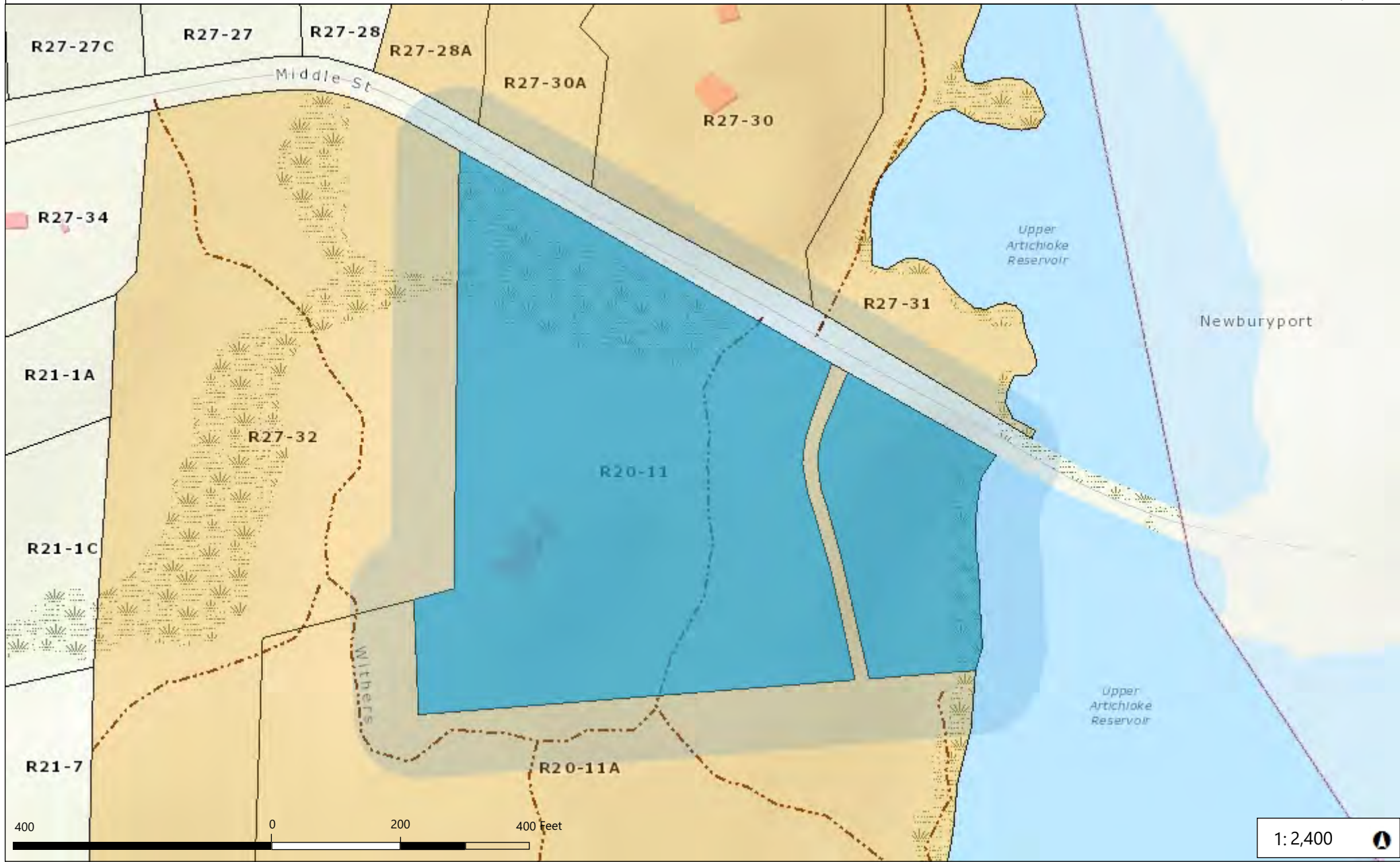
The applicant is the Town of Newburyport and the project is located along a roadway and therefore only coordinates are provided.

Please let me know if you have any questions.

Best,
Polina

MIDDLE STREET BRIDGE

9/28/2020



Data Sources: Produced by Merrimack Valley Planning Commission (MVPC) using data provided by the Town of West Newbury & MassIT/MassGIS. MVPC AND THE TOWN OF WEST NEWBURY MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE ACCURACY, COMPLETENESS, RELIABILITY, OR SUITABILITY OF THESE DATA. THE TOWN OF WEST NEWBURY AND MVPC DOES NOT ASSUME ANY LIABILITY ASSOCIATED WITH THE USE OR MISUSE OF THIS INFORMATION.

- | | | | | |
|---------------------|---------|-----------|-----------------------|------------|
| MVPC Boundary | Parcels | Roads | Interstate | Major Road |
| Building Footprints | Trails | Easements | Hydrographic Features | Streams |
| | | | Wetlands | Local Road |



443 MIDDLE ST 0200 0000 0011
LUC: 374

443 MIDDLE STREET RE TRUST
C/O BENNETT & CO
45 WATER ST
NEWBURYPORT, MA 01950

R MIDDLE ST 0200 0000 0011
LUC: 932

TOWN OF WEST NEWBURY
CONSERVATION COMMISSION
381 MAIN ST
WEST NEWBURY, MA 01985

MIDDLE ST 0270 0000 0028
LUC: 601

ROGERS PRESTON E & DEBORA M
430 MIDDLE ST
WEST NEWBURY, MA 01985-1719

442 MIDDLE ST 0270 0000 0030
LUC: 101

THE CONNERS FAMILY REV LIV TR
CONNORS JOHN J & TR
442 MIDDLE ST
WEST NEWBURY, MA 01985-1719

MIDDLE ST 0270 0000 0030
LUC: 130

CONNORS NOMINEE TRUST
CONNORS JOHN J & DOROTHY D TRS
442 MIDDLE ST
WEST NEWBURY, MA 01985-1719

MIDDLE ST 0270 0000 0031
LUC: 903

CITY OF NEWBURYPORT
CITY HALL
PLEASANT ST
NEWBURYPORT, MA 01950

MIDDLE ST 0270 0000 0032
LUC: 131

MIDDLE STREET REALTY TRUST
ROBERT W HIGGINS TR
45 WATER STREET
NEWBURYPORT, MA 01950

Attachment E

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

STREAMLINED STORMWATER MANAGEMENT REPORT

Streamlined Stormwater Management Report

According to the Massachusetts Department of Environmental Protection Stormwater Management Regulations, the project is considered a redevelopment project. As such, the project has been designed to meet all applicable standards of the MassDEP Stormwater Management Handbook to the maximum extent practicable. In accordance with the DEP Stormwater Management Handbook, Standards 1, 8, 9, and 10 must be met fully, while the remaining standards must be met to the maximum extent practicable.

Standard 1: New Stormwater Conveyances

Per Massachusetts Stormwater Management Standard #1, no new outfalls may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. To capture runoff at the low point in the road, two deep sump catch basins, on either side of the roadway, are proposed. The deep sump catch basins flow to a manhole on the north side of the roadway. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends. Like the existing conditions, all other runoff within the project limits will continue to flow via country drainage.

Standard 2: Stormwater Runoff Rates

The proposed widening of the roadway over the new bridge will result in an increase in impervious area over existing conditions. Due to site limitations, mitigation measures are not feasible to reduce runoff rates. As a redevelopment project, this standard is not applicable, however, the proposed design meets this standard to the maximum extent practicable.

Standard 3: Groundwater Recharge

As a redevelopment project, this standard is not applicable. Due to site limitations, implementing groundwater recharge measures are not feasible. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 4: Water Quality

As a redevelopment project, this standard is not applicable. Due to site limitations, implementing improved water quality measures are not feasible. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 5: Land Uses with Higher Pollutant Loads (LUHPPL)

The Project is not a land use with higher potential pollutant loads.

Standard 6: Stormwater Discharges to a Critical Area

The project is not located within a Critical Area.

Standard 7: Redevelopment Projects

This project is a redevelopment project. In accordance with the DEP Stormwater Management Handbook, standards 1, 8, 9 and 10 have been fully met. In addition, the project has met all other standards (Standards 2, 3, 4, 5, 6, and 7) to the maximum extent practicable.

Standard 8: Sedimentation and Erosion Control Plan

Erosion control measures, including compost filter tubes and sediment control barriers will be placed at the bottom of proposed slopes and limits of work.

Standard 9: Long Term Operations and Maintenance Plan

Temporarily impacted areas associated with project construction activities will be restored following the completion of project work and will result in an overall improvement over existing conditions. Proposed project activities will not be considered complete until the areas disturbed as part of project activities are considered adequately stabilized, as determined by the Winchendon Conservation Commission.

Standard 10: Illicit Discharges to the Stormwater Management System are Prohibited

There are no known illicit discharges to the proposed Stormwater Management System.



Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Kath Eagan

12/29/20

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): _____

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
 - Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Attachment F

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

CONSTRUCTION SPECIFICATIONS

ITEM 765.3**SEED FOR EROSION CONTROL****ACRE**

The work under this item shall conform to the relevant provisions of Section 765 and M6.03.0 of the Standard Specifications and the following:

The work shall consist of planting and establishing a stand of grass in the areas shown on the plans or as required by the Engineer or listed in this document.

For the purposes of these specifications, the term “grass” shall apply to all the forbs, grasses, sedges, and rushes included in the materials.

All seeding shall be done by a company having a minimum of five years of experience with native grass establishment. Prior to beginning work, the applicator shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications includes providing documentation to demonstrate knowledge and expertise with native seeding and proof of having completed successful native seeding projects.

SEEDING SEASON

Seeding seasons shall be April 1 through May 15 and October 1 through November 15 for dormant seeding. For seeding that occurs outside of these periods, the seed rate shall be increased by 50%.

MATERIALS**Samples and Submittals**

- 1) Certificate of Materials. Prior to ordering, the Contractor shall submit to the Engineer the manufacturer or supplier’s notarized Certificate of Materials. This document shall not be used as proof of purchase, proof of material delivered, or proof of material seeded, but simply to verify supplier availability of seed listed on the date certified. The species listed shall match those specified on the plans or herein, however, cultivars may vary due to availability.
- 2) Seed Tag Certification. All seed lots have a seed analysis tag as required by State and Federal law. The contractor shall submit seed tags for each bag of seed used on the project site or ensure that each tag is photo documented by the Engineer. Number of tags shall match number of bags sent by the supplier to meet rate of Pure Live Seed specified on the plans. Tag must include: kind and variety of seed; lot number; origin of seed; net weight; % purity; germination; dormant seed; germination test date; inert matter; weed, noxious and other crop seed; and name and address of company responsible for the analysis. Seeding may be considered unacceptable for payment if no tags are submitted.
- 3) Certificate of Compliance. Prior to payment, contractor shall submit a signed, dated and notarized Certificate of Compliance from the Supplier that serves as proof of purchase or bill of lading. This document shall include kind and variety of seed, lot

number, net weight shipped, date of sale, invoice number under which seed was purchased, and name and address of Supplier or Manufacturer. All information must be included on the notarized form, including lot number and net weight shipped for specified job. This information shall match Seed Tag Certification and quantity of seed applied on the job. Seeding may be considered unacceptable for payment if information is incomplete.

- 4) Seed Sample. Contractor may be asked, prior to seeding, to submit a seed sample for testing. Testing shall be incidental to this item.

Quantities specified are Pure Live Seed (PLS). Greater quantities of ordered seed may be required to achieve actual specified seeding rates. Pure Live Seed is defined as the fraction of pure seed species within the mix that, by standard seed testing practices, will germinate. This is determined by multiplying the percent of seed purity by the percent of seed germination.

Seed mix shall be a custom blend as shown on the plans or shall be as specified below. Seed cultivars shall be those that are as regional to New England or the local ecotype as possible.

Any species substitutions shall be with a species having similar characteristics and native to New England.

Seed Mix

	<u>Botanical Name</u>	<u>Common Name</u>	<u>% PLS By Weight</u>
Grass	Festuca rubra	Creeping Red Fescue	69.5%
	Panicum virgatum 'Shelter'	Switchgrass 'Shelter'	5.0%
	Panicum clandestinum 'Tioga'	Deer Tongue 'Tioga'	5.0%
	Elymus virginicus	Virginia Wild Rye	4.0%
	Elymus canadensis	Canada Wild Rye	4.0%
	Schizachyrium scoparium	Little Bluestem 'Albany	4.0%
	'Albany Pine'	Pine'	
	Agrostis perennans	Upland Bentgrass	4.0%
		<u>Subtotal</u>	<hr/> 95.5%
Herb/Forb	Chamaecrista fasciculata	Partridge Pea	1.5%
	Rudbeckia hirta	Black-eyed Susan	1.2%
	Aster laevis	Smooth Aster	0.8%
	Solidago bicolor	White Goldenrod	0.4%
	Monarda fistulosa	Wild Bergamot	0.4%
	Asclepias syriaca	Common Milkweed	0.2%
		<u>Subtotal</u>	<hr/> 4.5%
		<u>Total</u>	<hr/> 100.00%

Seeding Rate:

Apply this mix at **50 lbs PLS/acre** on areas of less than 3:1 slope and 150 lbs PLS on areas of greater than 3:1 slope. Add 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 July) or grain rye (1 Aug to 31 Dec). Cover crop shall be incidental to seeding item.

Fertilizer

No fertilizers shall be applied.

Water

Water, including hose and all other watering equipment required for the work, shall be furnished by the Contractor to the site at no additional cost. Water shall be suitable for irrigation and free from ingredients harmful to plant life. All plants injured or work damaged due to the lack of water or the use of too much water shall be the Contractor's responsibility to correct.

Mulch

Seed areas shall be separately mulched with hydromulch, straw or as specified below when incorporated with compost topsoil.

Photo Documentation

Contractor shall submit photo documentation to the Engineer
Each photo shall be date stamped. Photos shall be submitted after the following stages of construction:

- Soil preparation
- Seed and hydromulch/Compost topsoil and seed
- Germination
- Grass establishment after one full growing season (June-September)

CONSTRUCTION

Surface Preparation

Soil preparation and seeding shall occur only when the bed is in a friable condition, not muddy or hard. Bare soils shall be raked to remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. All ruts and any depressions caused by settlement, erosion or rolling shall be filled with additional loam or compost and the soil shall be re-graded to a smooth and even finish corresponding to the required grades. No tracking or rolling shall be done on wet soil.

Prior to seeding, site preparation shall be approved by the Engineer.

Seeding Methods

Seeding on Loam

Seeding application shall be by broadcast methods followed by hydromulching. Seed may be broadcast by using a cyclone or whirlwind seeder, or by hand.

If spread by hand, small or light-seeded species such as bluestem may be mixed with approved filler (e.g., sawdust, rice, kitty litter, or clean damp sand) to achieve an even distribution. Broadcast seeding shall be undertaken in two separate passes at ninety degrees to each other. One-half the seeding rate shall be applied in each direction. Seed shall be incorporated 1/8 to 1/4-inch deep by raking or dragging, culti-packing, or tracking with heavy machinery. Raked areas shall be rolled with a weighted roller to provide good seed to soil contact. Do not roll or track the seed if the soil is wet.

Immediately following completion of broadcast seeding and packing, area shall be hydromulched. Hydromulch shall be per the Standard Specifications and per the manufacturer's directions. Mulch for hydroseeding shall be wood fiber only.

Seeding in Combination with Compost Topsoil

If proposed in the contract, compost topsoil shall be as specified under Item 751.7 Compost Topsoil.

Seeding shall be done as a second operation after placement of compost has been approved by the Engineer. Seeding shall be broadcast followed by hydro-mulching.

Contractor shall notify Engineer prior to seeding operation to obtain written approval of site preparation and compost topsoil application.

Irrigation

After seeding and mulching, water seeded areas to moisten soil to a depth of at least 2 inches.

No seeding shall be done if soils are muddy or dry and compacted.

Care during Seed Germination

Contractor shall care for seeded areas as required. Care shall include irrigation and weed removal as necessary for germination and healthy growth.

Over-seeding

If there are numerous areas of bare ground greater than 10-12 inches, these areas shall be over-seeded. Areas where seed fails to germinate and that become invaded by weeds shall be mowed as low as possible and over-seeded. Soil that is compacted shall be raked or roughened prior to seeding to ensure seed to soil contact.

Over-seeding application rates and methods shall be the same as those listed above. After seeding, areas shall be mulched with straw mulch or 1/4 - 1/2 inch compost topsoil and watered with a fine mist to moisten soil to a depth of at least 2 inches.

Over-seeding shall be incidental and shall not be paid for separately.

Care during Grass Establishment

Following germination of seeded species, the contractor shall maintain the stand of grasses to ensure healthy growth.

Work shall include mowing or weed-whacking for weed control, irrigation if necessary, and monitoring for invasive plants. Watering shall provide uniform coverage without eroding soil or grassed surfaces. Treatment of invasive plants shall be per the requirements of the Engineer.

The Contractor shall provide all labor, equipment, materials, and water required for establishment. Contractor shall water all seeded areas as necessary to a depth of 2 inches or greater.

EXPECTATIONS OF ESTABLISHMENT

Native upland grasses and forbs will not look like turf grass. Many of the native grasses are bunch type grasses and will not form a uniform growth or have a sod-type appearance. However, seeded area shall show general uniform growth of the seeded species throughout the area. Areas with gaps of bare soil greater than 10-12 inches will be considered unacceptable and shall be over-seeded.

A well-established stand of grasses at the end of one full growing season (June-September), as determined by the Engineer, will be required for acceptance. At least 80-90 percent of the grass established shall be the seeded species and any invasive or aggressive weeds (mugwort, ragweed, or knapweed) shall have been cut or otherwise managed.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Measurement for Item 765.3 shall be by the ACRE of material installed, approved, and maintained in place as listed. Payment shall be the bid price and shall be compensation for all labor and materials necessary to complete the work specified above and under item 765.3 in the Standard Specifications.

This price shall include surface preparation prior to seeding as specified under Surface Preparation, and as required by the Engineer, seeding, reseeding, irrigation, care during germination and establishment, labor materials, equipment, photo documentation, and all incidental costs required to complete the work to spread the seed mix.

ITEM 983.12**RIPRAP WITH GRAVEL PACKED VOIDS****CUBIC YARD****DESCRIPTION**

The cost of the following items is incidental to the unit price of Riprap with Gravel Packed Voids: Excavation to install Riprap including any chipping and removal of bedrock or boulders, Geotextile Fabric, Crushed Stone, Riprap, Gravel to pack Riprap voids and Natural Streambed Material excavated during the installation of the Riprap shall be stockpiled for reuse as a 6" layer of material on top of the Riprap. Any remaining streambed material shall be removed from the site and become the property of the contractor unless otherwise directed by the Town. If any excavated material is unsuitable natural streambed material as determined by the town, natural streambed material shall be pre-blended outside the project area. The cost of the pre-blended natural streambed, if necessary shall be considered incidental to this item.

The work under this Item shall conform to the relevant provisions of Section 983 and the following:

The work under this item includes furnishing and placing new Riprap to the location and limits as shown on the Plans, and as directed in the field by the Engineer. The Riprap shall be placed to stabilize and protect the embankments and armor the streambed against scour.

Stone for Riprap shall be placed on the prepared slopes or areas in a manner that will produce a well-graded mass of stone with the minimum practicable percentage of voids and thickness as depicted on the contract drawings. Riprap protection shall be placed to its full thickness in one operation in such a manner to avoid displacing the underlying material. Placing of Riprap in layers or by dumping into chutes or by placing by similar methods that are likely to cause segregation will not be permitted.

Riprap shall consist of stones that conform to M2.02.0 as described in Section M2 of the Standard Specifications "*Riprap shall be sound, durable rock which is angular in shape. Rounded stones, boulders, sandstone or similar soft stone or relatively thin slabs will not be acceptable. Each stone shall weigh not less than 50 pounds and at least 75% of the volume shall consist of stones weighing not less than 500 pounds each. The remainder of the stones shall be so graded that when placed with the larger stones the entire mass will be compact.*" All material going into the Riprap protection shall be so placed and distributed that there will be no large accumulations of either the larger or smaller sizes of stone.

It is the intent of this specification to produce compact Riprap aprons and slopes in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual stones by mechanical equipment shall be required to the extent necessary to secure the specified results.

Unless otherwise authorized by the Engineer, the Riprap protection shall be placed in conjunction with the reconstruction of the embankment slopes. The lag time between the placement of the Riprap protection and the reconstruction of the embankment slope shall be minimized to prevent mixture of the embankment and Riprap material.

A geotextile fabric shall be placed under the crushed stone bedding M2.01.4 prior to placement of the Riprap. The geotextile fabric shall meet the requirements of Section M9.50.0 of the relevant provisions and AASHTO M288, Class 2.

DESCRIPTION – GEOTEXTILE

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days. If laid under water, the covering crushed stone or Riprap shall be placed on the same day as the geotextile fabric.

For seams that are sewn in the field, the contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density.

The geotextile shall be placed in intimate contact with the soils without wrinkles or folds, and it shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials, when applicable, will not excessively stretch or tear the geotextile.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. Overlapped seams at roll ends shall be overlapped a minimum of 18 inches, except when placed under water. In such instances, the overlap shall be a minimum of 3 feet. Overlaps of adjacent rolls shall be a minimum of 18 inches in all instances.

Care shall be taken during installation so as to avoid damage to the geotextile as a result of the installation process. Should the geotextile be damaged during installation, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

When stone or Riprap is placed over Geotextile Fabric for Separation, the stone placement shall begin at the toe of slope and proceed up the slope. Placement shall take place so as to avoid stretching and subsequent tearing of the geotextile. Stone shall not be dropped from a height exceeding 12 inches.

Field monitoring shall be performed to verify that the crushed stone or Riprap placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as directed by the Engineer, at the Contractor's expense.

DESCRIPTION – GRAVEL

The finished surface shall be free of voids and shall be approved by the Engineer as it will serve as bedding for natural streambed material. Gravel shall conform to MassDOT Standard Specification Item 151 [Gravel Borrow M1.03.0].

STOCKPILE NATURAL STREAMBED MATERIAL

Natural streambed material is to be stockpiled on site. It shall be contained within an area approved of by the Town with containment methods acceptable to the Town. The excavated streambed material will be placed on a tarp or impervious surface. The stockpiled material will be covered with a tarp and surrounded by sediment barriers until its reuse. Any stone excavated from the existing streambed can be stockpiled and reused for streambed restoration, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area. Any material not reused shall become the property of the Contractor.

PRE-BLENDED NATURAL STREAMBED MATERIAL (IF NECESSARY)

The streambed material shall be comprised of two primary components.

1. Stone 4 inches and under shall meet the following gradation:

<u>Sieve opening</u>	<u>Percent by Mass Passing Through</u>
4"	95
2"	55 – 65
¾"	30 – 45
#4	0 – 5

2. Stone 6 inches to 2.5 foot in diameter:

<u>Stone Size</u>	<u>Percent Passing</u>
2.0'	80
1.5'	25
0.5'	0

The streambed/bank stone for all two components shall be native cobbles and boulders similar in shape and size of streambed/bank stone adjacent to the work area. Partially angular rock is preferred over round and shall be able to lock together to prevent movement during high flows. Crushed Stone will not be accepted for any of the two components. Any stone excavated from the existing streambed can be stockpiled and reused for natural streambed, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area, or meets the above criteria. The elevations and conditions of the existing streambed shall be maintained to the maximum extent practicable.

Components one and two shall be pre-blended outside the project area at a volume ratio of 30% and 70% respectively. The pre-blending shall be done in a way that will prevent the mass from being contaminated by work-place soils. The pre-blended mass shall be placed over areas of proposed Riprap as shown on the plans.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Riprap with Gravel Packed voids will be measured and paid for per cubic yard completed in place. Crushed stone, gravel, geotextile fabric, excavation, and all work related natural streambed material shall be included in the bid price for Riprap with Gravel Packed Voids. Said price shall be considered full compensation for all labor, tools, equipment and materials necessary for the completion of the work.

ITEM 991.1 CONTROL OF WATER-STRUCTURE NO. N-11-007= LUMP SUM

W-20-001

The cost for all excavation (except for within the limits of Bridge Excavation shown on the contract drawings) to install the control of water system shall be included in the bid price for Item 991.1. The environmental permits contained in the contract documents depict a suggested control of water system. Any modification of existing or new permits are at the contractor's expense and the contract completion date will not be altered.

The contractor is alerted to the requirements imposed by the environmental permits contained in the contract documents.

DESCRIPTION

The work to be performed under this Item shall include all pumping, sandbagging, sheeting, for sufficient water control to accomplish the removal of the existing bridge, construction of the proposed bridge and Riprap installation "*in the dry*". Work under this Item shall consist of dewatering within the work limits as shown on the plans. Water within the work area shall be discharged as specified in the contract documents, environmental permits obtained for this project and as directed by the Municipalities. No direct discharge will be allowed into waterways, or the adjacent wetlands during the dewatering operations.

Dewatering shall be conducted to ensure that all bridge components are placed and cured in the dry. For demolition purposes, dewatering shall be conducted for demolition of the existing bridge. Proposed methods of dewatering for the bridge are included in the contract documents. However, it is the responsibility of the Contractor to determine the need and extent of additional dewatering required, sedimentation and dewatering techniques and controls and submit method and materials he/she proposes to use for approval by the Engineer.

Plans and calculations for all the sandbagging, sheeting and other water control measures shall be developed by the Contractor. These plans and calculations shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts and shall be submitted for review prior to the start of construction.

All dewatering and related earthwork shall be conducted in such a manner as to prevent siltation or contamination of the waterway and wetlands. The pumping discharge shall not be allowed to enter the Artichoke Reservoir or the wetland resource areas. The water from the work areas shall be pumped either to a filter bag, temporary settling tank, forebay basin, or other approved containment structure conforming to MassDOT's "*Guidelines for Soil Erosion & Sediment Control*". The containment structure shall be constructed so as to allow for the pumped water to pass through the structure with sediments settling out before outletting to an area enclosed by a concrete barrier siltation basin with a clean layer of crushed stone. Water filtering thorough the containment structure shall not cause erosion of the surrounding area.

An approved method of controlling erosion, such as an erosion control blanket, stone, etc. shall be used at the outlet.

The control of water containment structure shall be maintained as follows:

1. Inspect at least twice daily during dewatering operations.
2. Repair any damage immediately.
3. Clean containment structure daily. Remove any debris immediately.
4. Remove sediments as needed.

The Contractor shall inspect compost filter tubes and sedimentation fence that surround the outlet daily and shall immediately replace any that are damaged.

Placement of the dewatering containment structure will be as approved by the Municipalities and the Engineer based on specific site conditions and staging operations of the Contractor.

The Contractor shall investigate and verify existing conditions and evaluate the need for protection and the type of facilities required. Before commencing construction, the Contractor shall furnish the Engineer with details of the plan and methods he/she proposes to use for handling water including details for material, equipment and pumping based on actual needs to accomplish the work. The Contractor may use barriers, sandbags, sheeting, portadams or other types of protective facilities as approved by the Engineer. The furnishings of such plans and methods shall not relieve the Contractor of his responsibility for the safety of the work and for the successful completion of the project.

All such temporary structures or facilities shall be safely designed, extended to sufficient depth and be of such dimensions and water-tightness so as to assure construction of the permanent work in the dry. Water control structures shall not interfere with the proper performance of the work. Their construction shall be such as to permit excavation for the permanent work and any conflicts shall be corrected at the sole expense of the Contractor.

Any pumping from within the areas of construction shall be done in such a manner as to prevent the possibility of movement of water through any fresh concrete.

Unless otherwise provided or directed by the Engineer, all such temporary protective work shall be removed and disposed of in an approved manner when no longer required.

The Engineer/Municipalities have the right to order the Contractor to stop all work when in his judgment the Contractor's water control operations are failing to produce adequate results or are posing a threat to the environment.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for work under this Item shall be paid at the lump sum contract bid price, complete.

Payment for all water control work, including design for the dewatering operations used to maintain a water free excavation, shall include all labor, tools and equipment materials and installation, piping, pumping, stone ends for pipes, maintenance, subsequent removal of all related materials and equipment all as outlined above; and restoration of site shall be included in the lump sum contract price bid under this Item.

Eighty-five (85%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system. The final fifteen (15%) percent of the Lump Sum Price Bid for this Item will be paid upon the complete removal of the water control system from the project site at the completion of the work.

Compost filter tubes and sedimentation fence provided specifically for the outlet from the sedimentation containment structure shall be included in the lump sum bid price for this Item.

Attachment G

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

PROJECT PLANS
CONSTRUCTION DETAILS

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10-15	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF
200-FOOT RIVERFRONT AREA (RFA)	REDEVELOPMENT	3,203	2,669	5,872	SF
	PERMANENT IMPACT	1,986	1,217	3,203	SF
	TEMPORARY IMPACT	570	548	1,118	SF
BORDERING LAND SUBJECT TO FLOODING (BLSF)	PROPOSED ALTERATION	167	44	211	SF
	PROPOSED REPLACEMENT	311	344	655	SF
	FLOOD STORAGE LOST	393	132	525	CF
	FLOOD STORAGE REPLACED	1,438	1,857	3,295	CF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

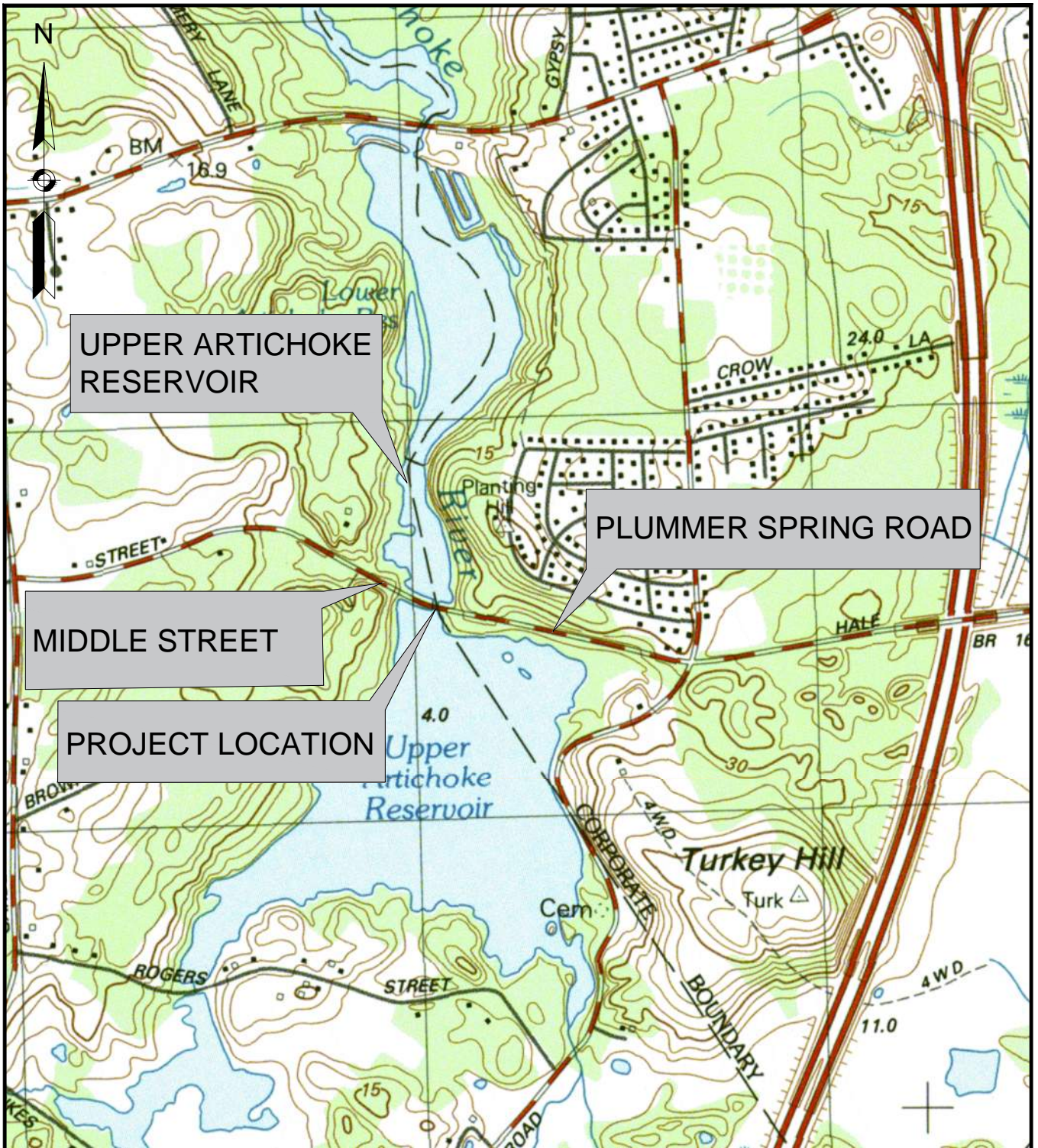
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CITY OF NEWBURYPORT
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 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 15

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UPPER ARTICHOKE RESERVOIR

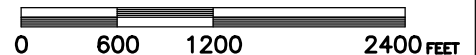
PLUMMER SPRING ROAD

MIDDLE STREET

PROJECT LOCATION

LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'



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LOCUS MAP

Source:

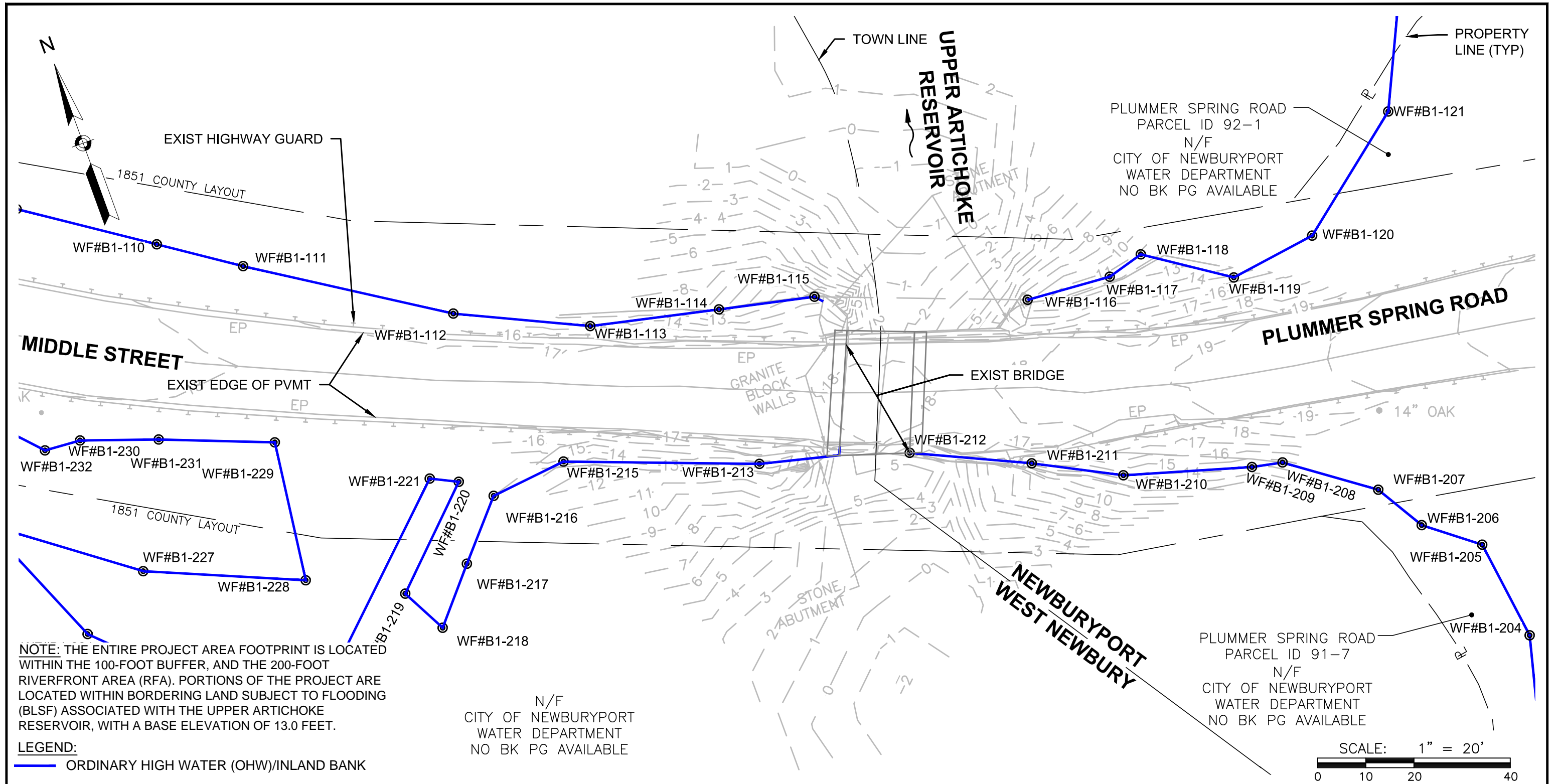
BRIDGE REPLACEMENT PROJECT
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 ROAD OVER UPPER ARTICHOKE
 RESERVOIR, WEST NEWBURY/
 NEWBURYPORT, MA, ESSEX COUNTY



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Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 15



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Source:

EXISTING CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

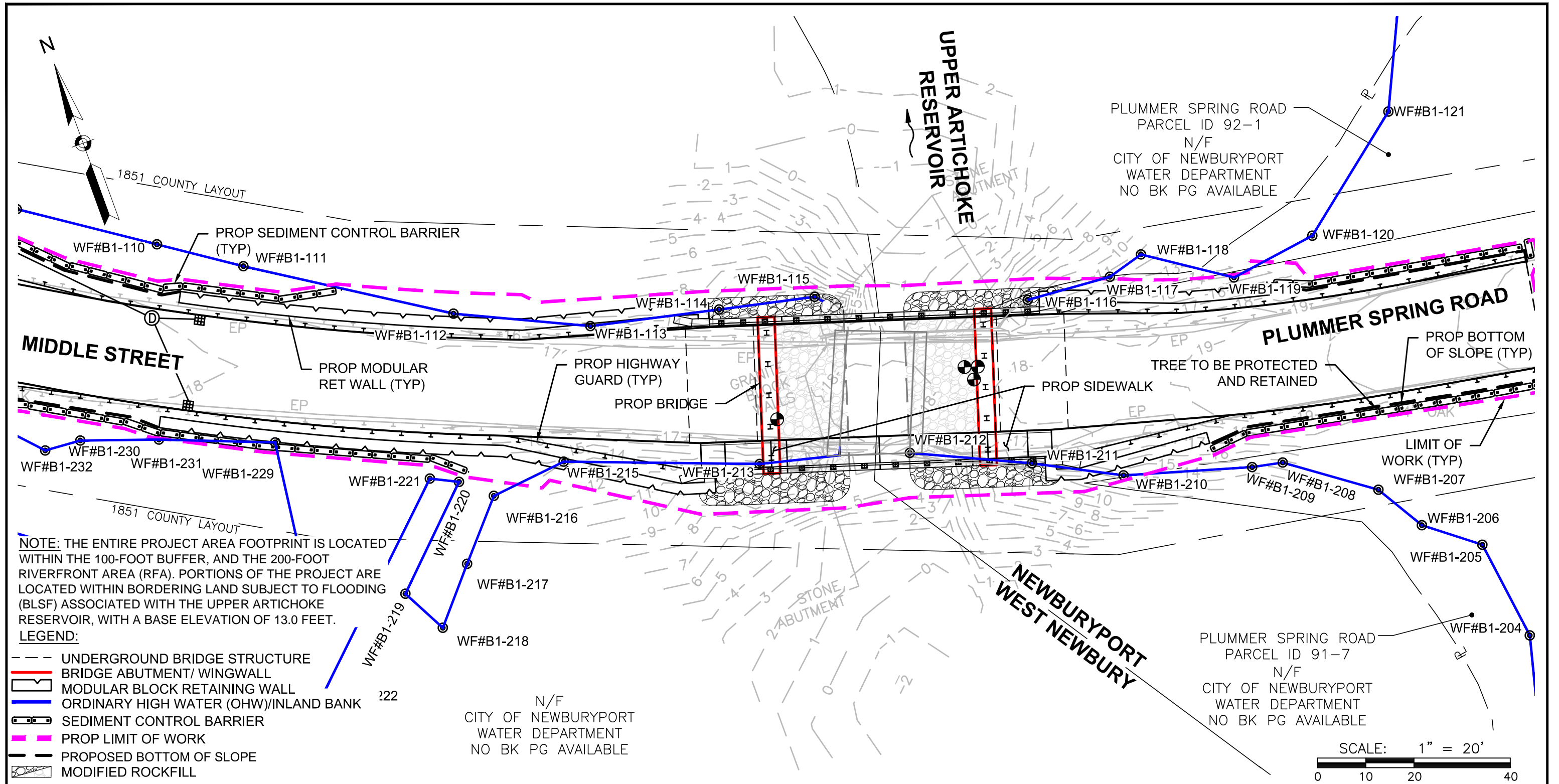
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: EX COND Figure: 3 OF 15

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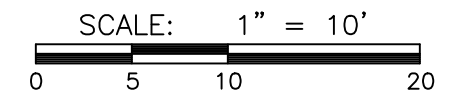
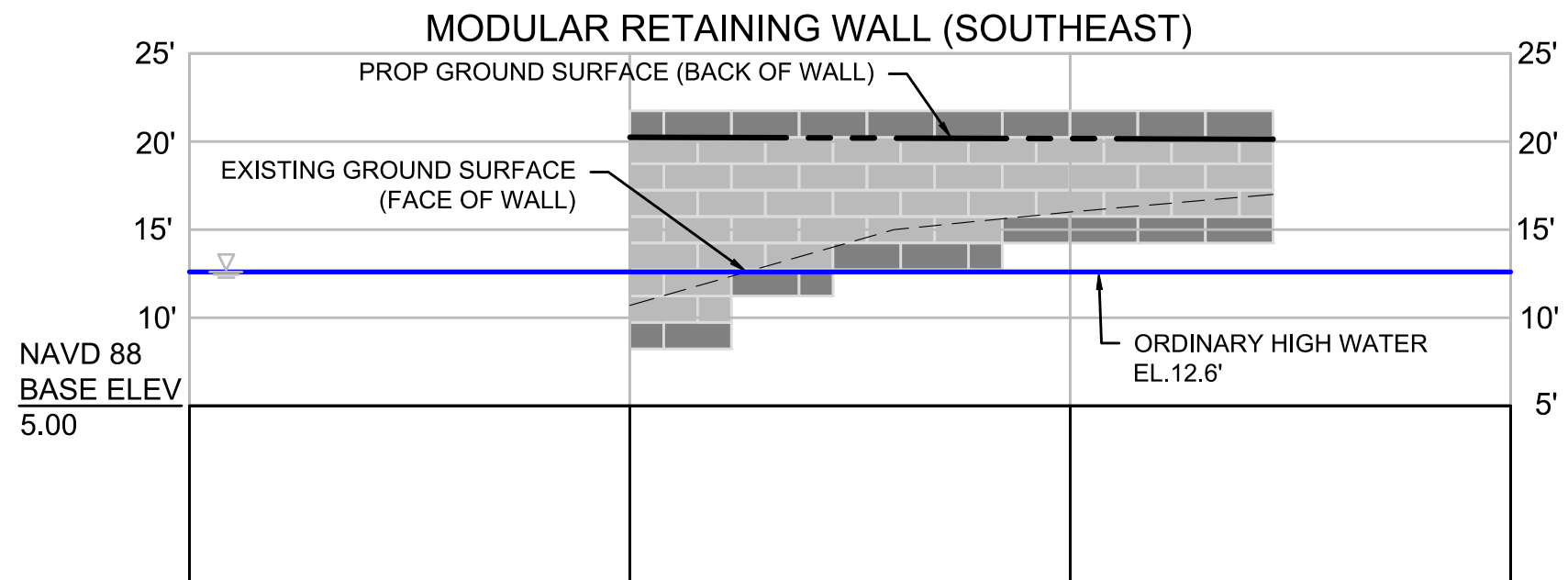
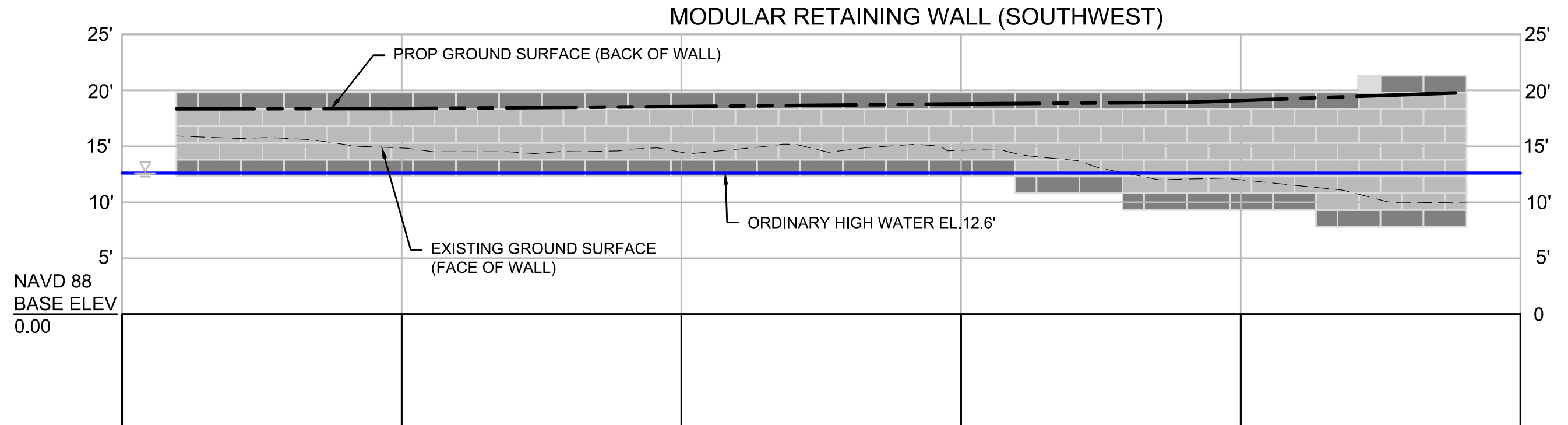
Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
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PROPOSED WALL PROFILE

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

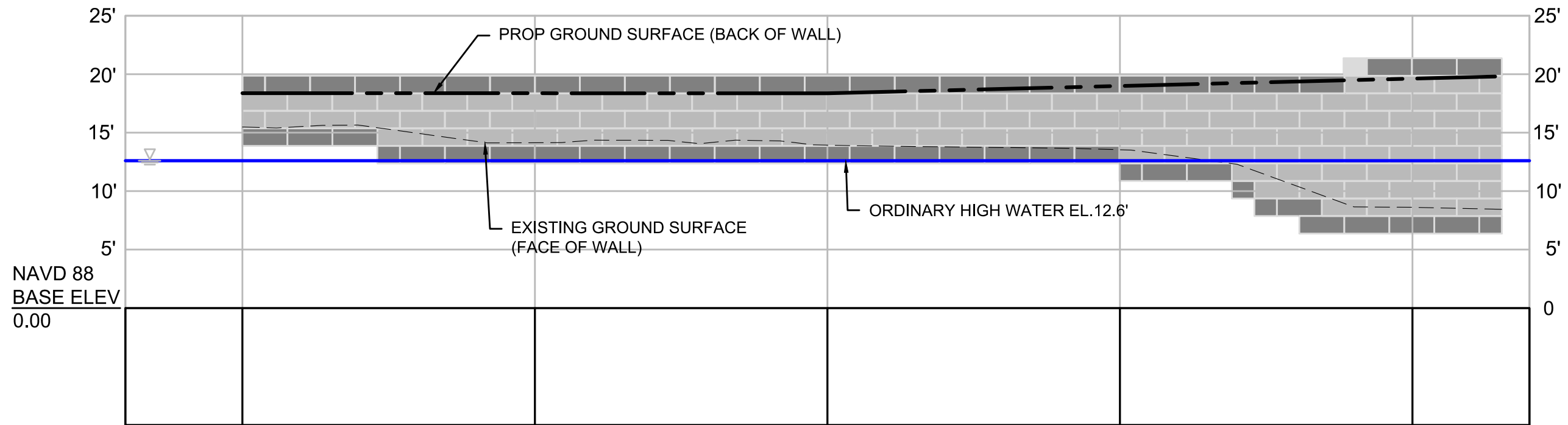
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Description: PR WALL Figure: 5 OF 15

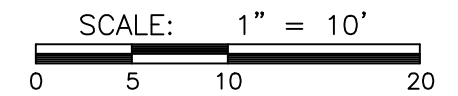
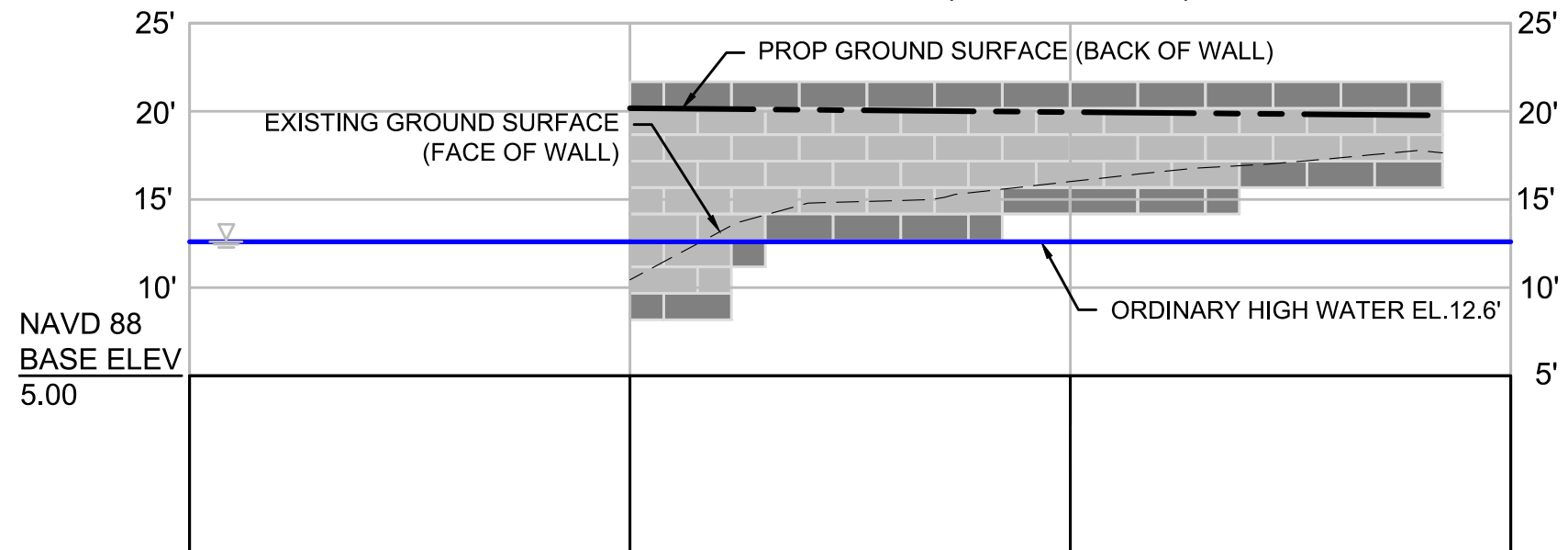
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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

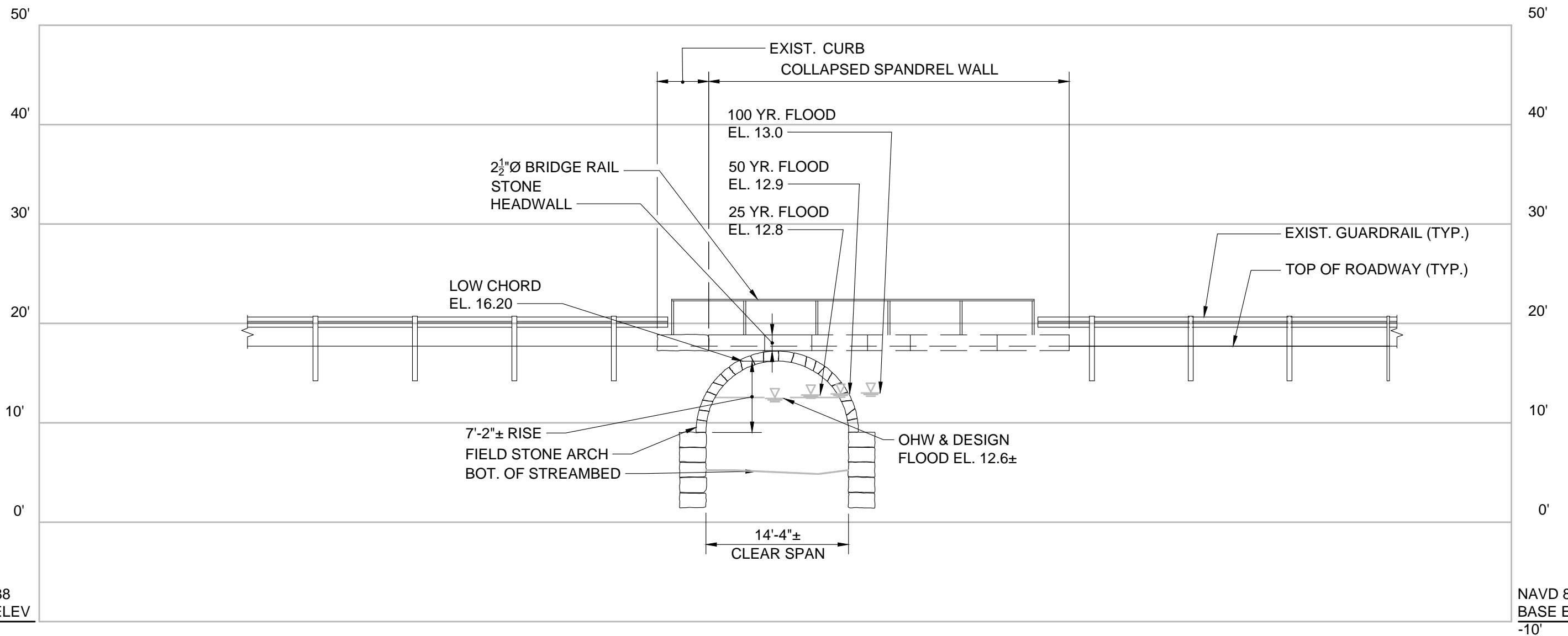


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PROPOSED WALL PROFILE
 Source:
BRIDGE REPLACEMENT PROJECT
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UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10' Revised: _____
 Description: PR WALL Figure: 6 OF 15
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EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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Source:

EXISTING - SOUTH ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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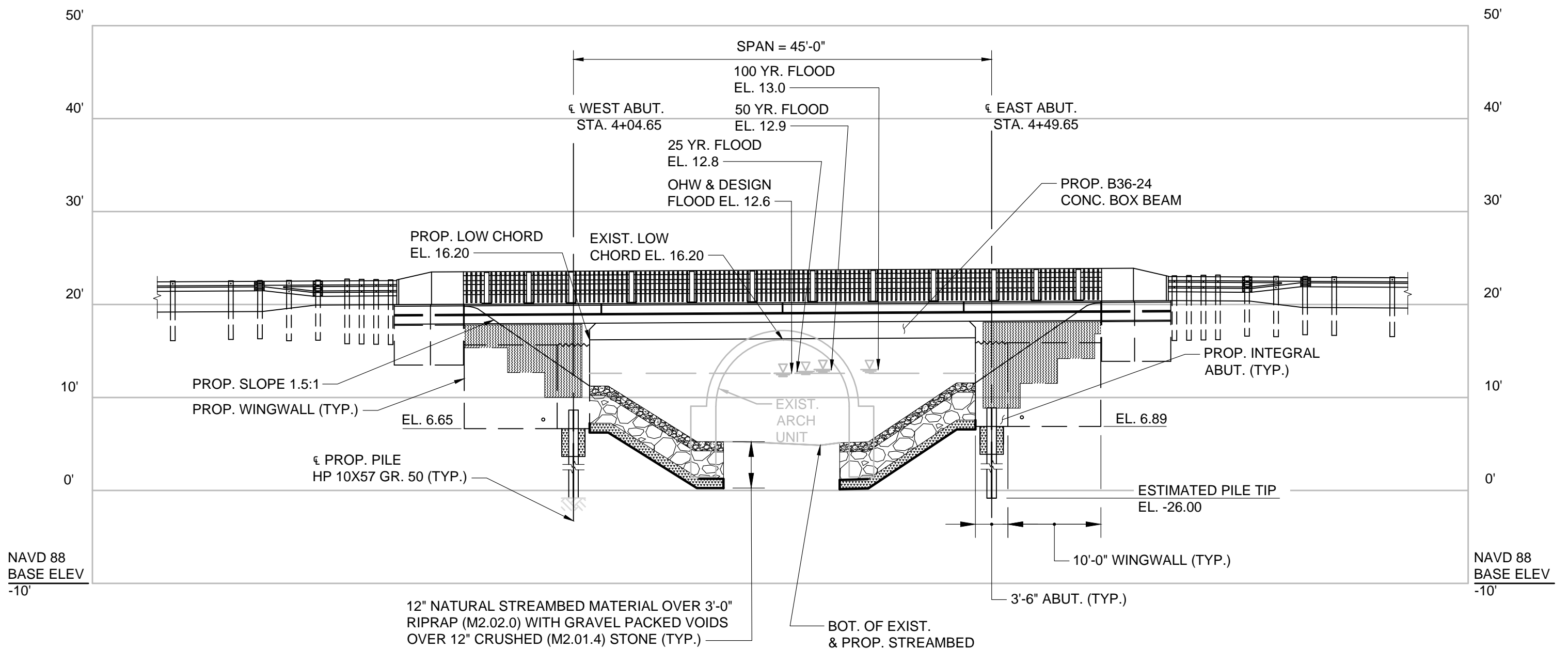
Job No.: 28395.00 Date: 12/21/2020

Scale: 3/32" = 1'-0" Revised: _____

Description: EXIST. EL. Figure: 7 OF 15

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NAVD 88 BASE ELEV -10'

NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

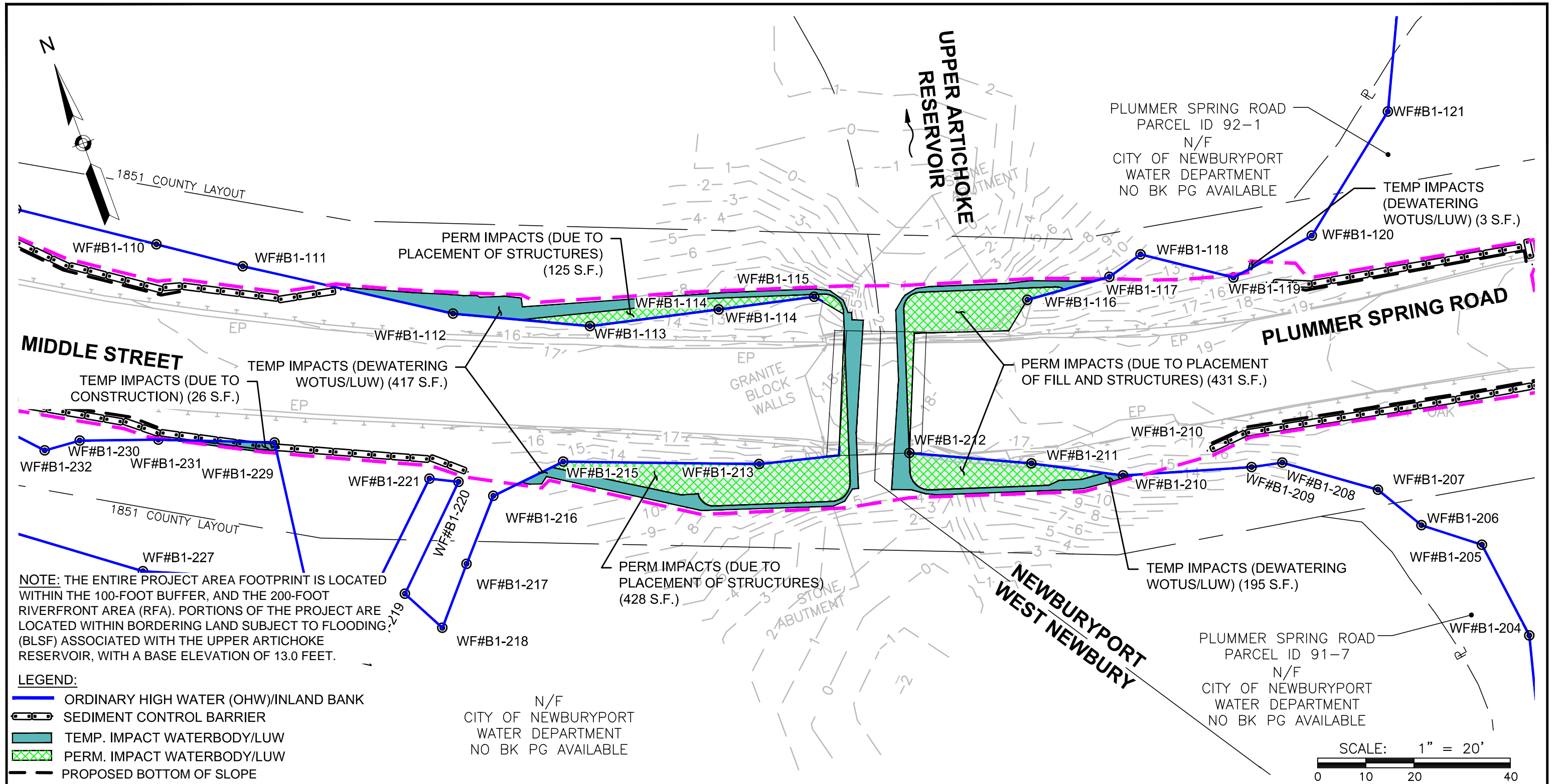
PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

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Source:
PROPOSED - SOUTH ELEVATION
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: PROP. EL. Figure: 8 OF 15

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Source:

IMPACTS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: IMPACTS Figure: 9 OF 15

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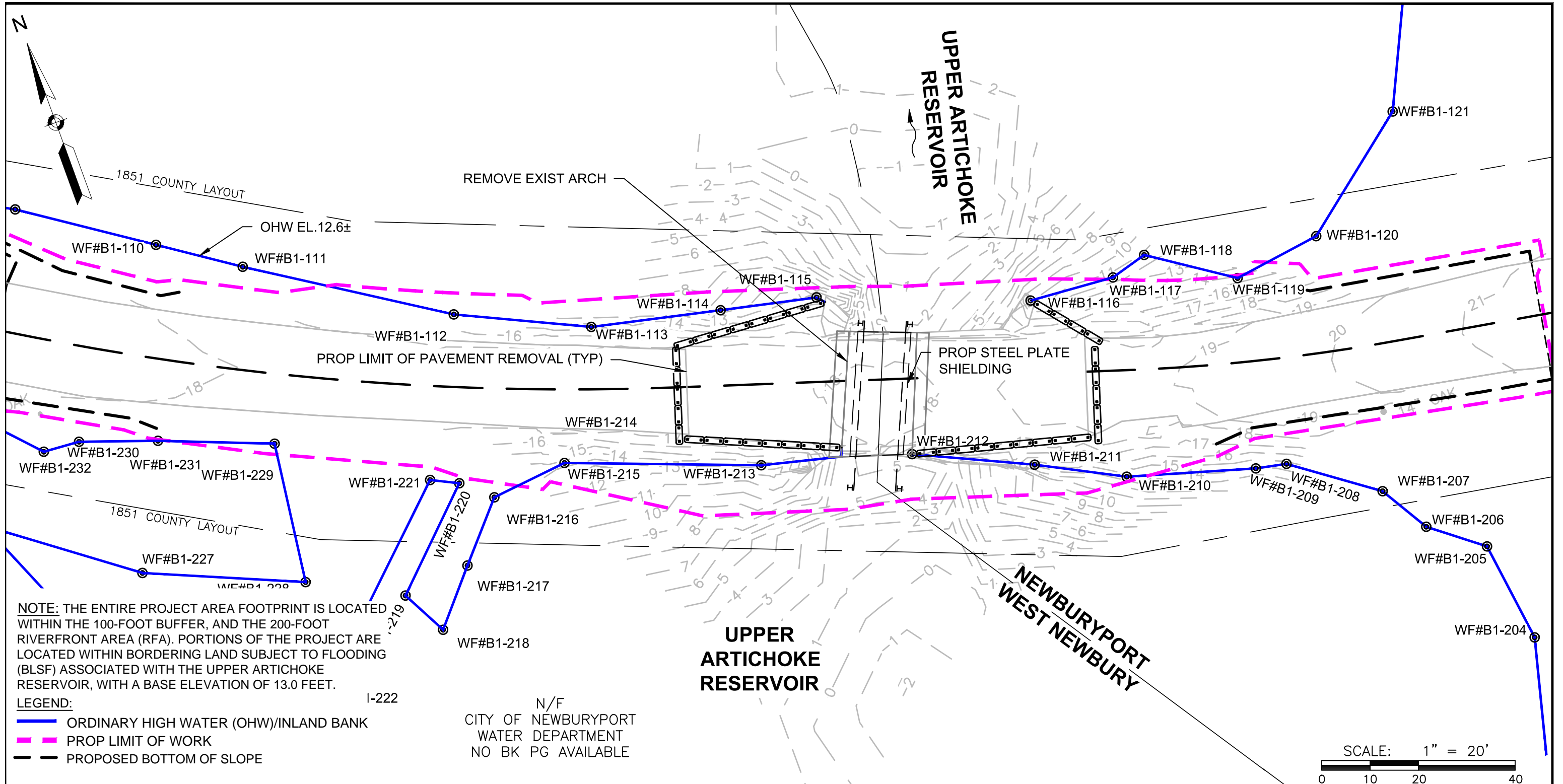
FLOODPLAIN IMPACT AND MITIGATION SUMMARY							
ELEVATION (FT)	FLOODPLAIN IMPACT (CF)		FLOODPLAIN MITIGATION (CF)		FLOODPLAIN NET (CF)		
	WEST NEWBURY	NEWBURYPORT	WEST NEWBURY	NEWBURYPORT	WEST NEWBURY	NEWBURYPORT	TOTAL
3-4	-	-	-	10.1	NO CHANGE	+10.1	+10
4-5	-	-	6.1	46.5	+6.1	+46.5	+53
5-6	-	-	40.4	84.3	+40.4	+84.3	+125
6-7	-	-	78.3	122.2	+78.3	+122.2	+201
7-8	-	-	116.2	160.1	+116.2	+160.1	+276
8-9	0.8	-	154.0	198.0	+153.3	+198.0	+351
9-10	-	24.5	192.9	236.8	+192.9	+212.4	+405
10-11	165.5	43.0	234.3	278.3	+68.8	+235.3	+304
11-12	140.6	38.6	279.8	354.5	+139.2	+315.9	+455
12-13	85.6	25.5	334.3	365.6	+248.7	+340.1	+589
TOTAL	392	131	1,436	1,856	1,044	1,725	<u>2,769</u>

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FLOODPLAIN IMPACT AND MITIGATION SUMMARY
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
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Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: BLSF TABLE Figure: 10 OF 15

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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 - - - PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

I-222
 N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

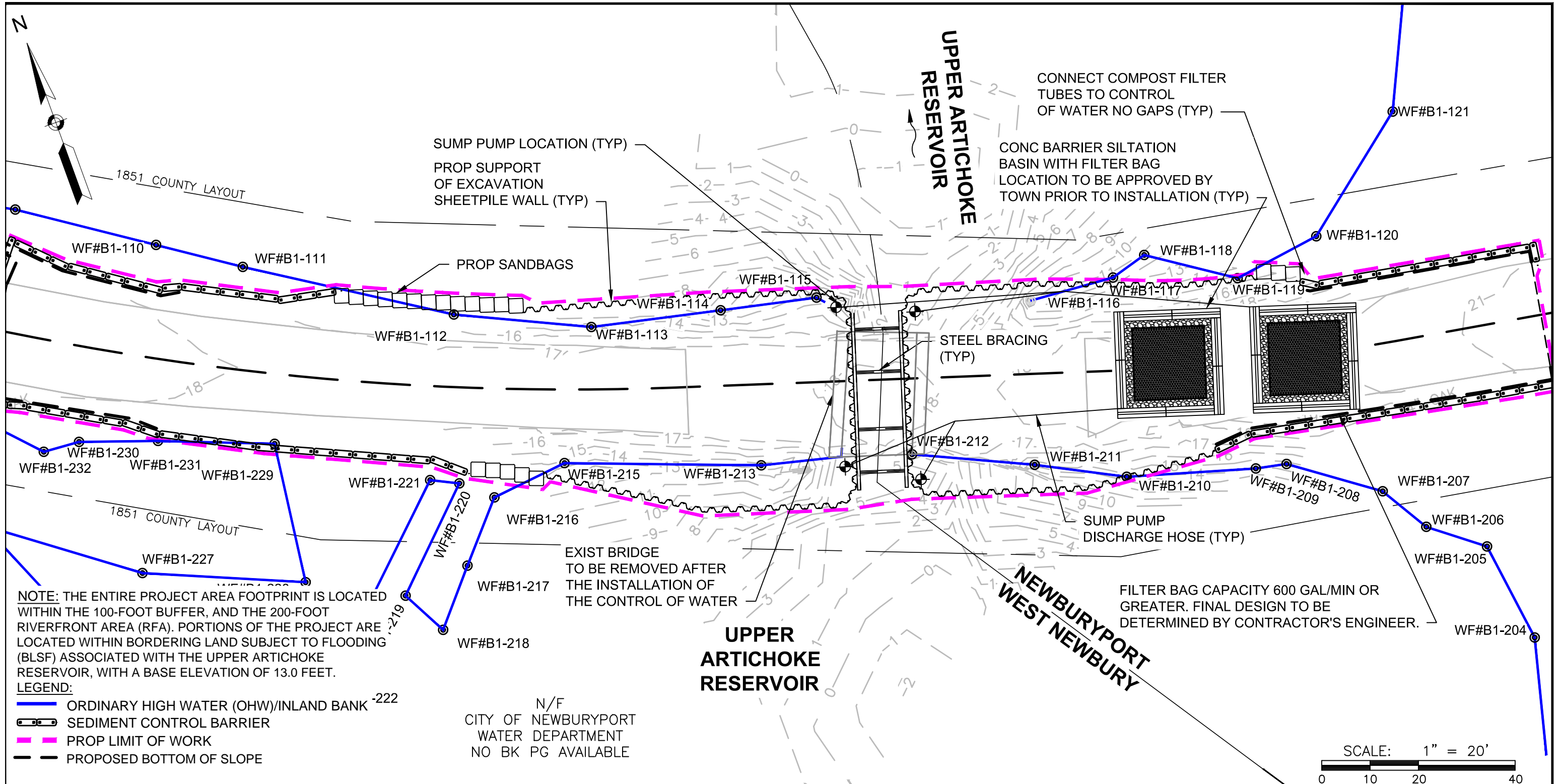
SCALE: 1" = 20'
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SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 11 OF 15

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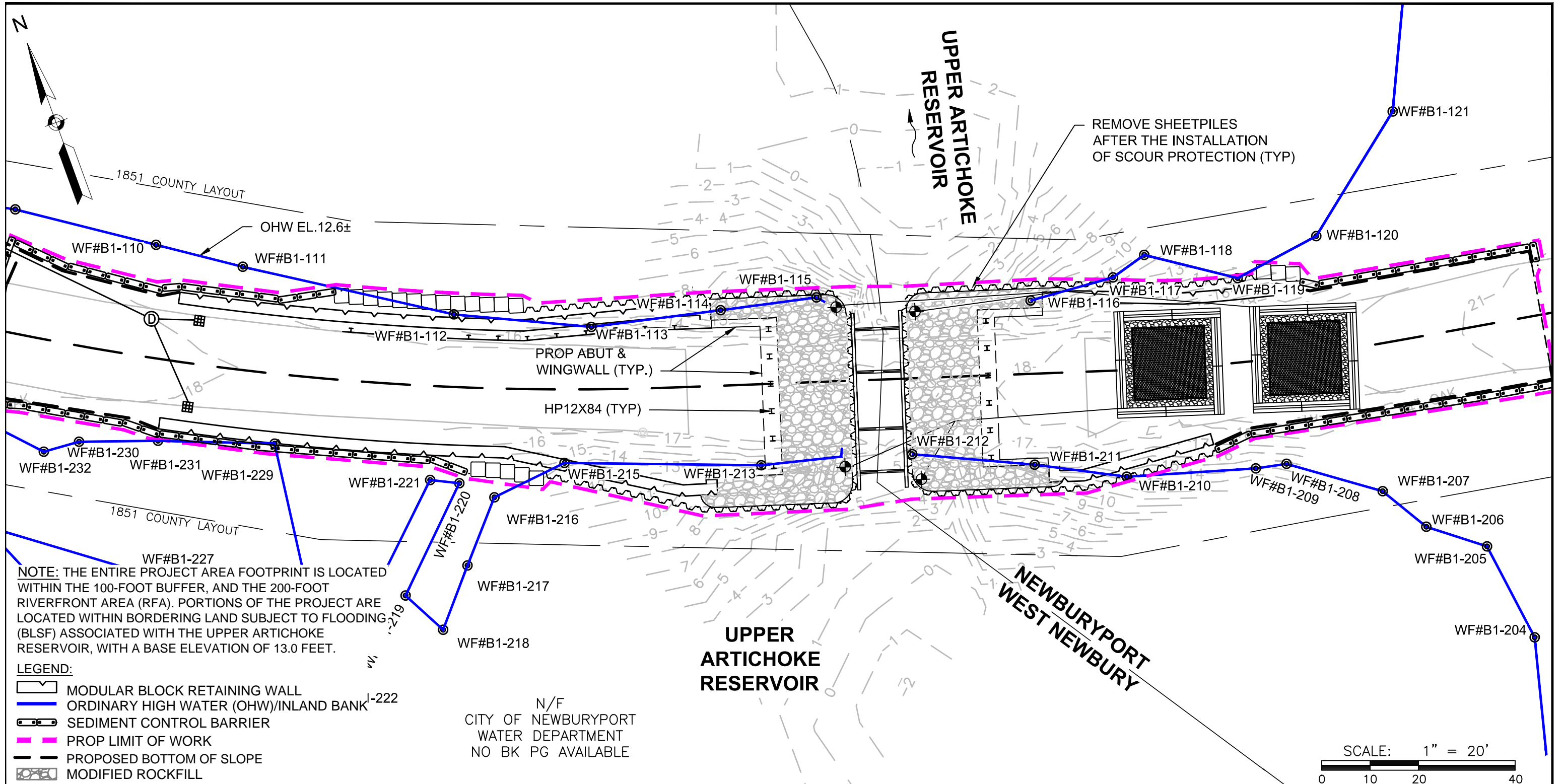


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Source: **CONTROL OF WATER - PHASE 1 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 12 OF 15

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- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

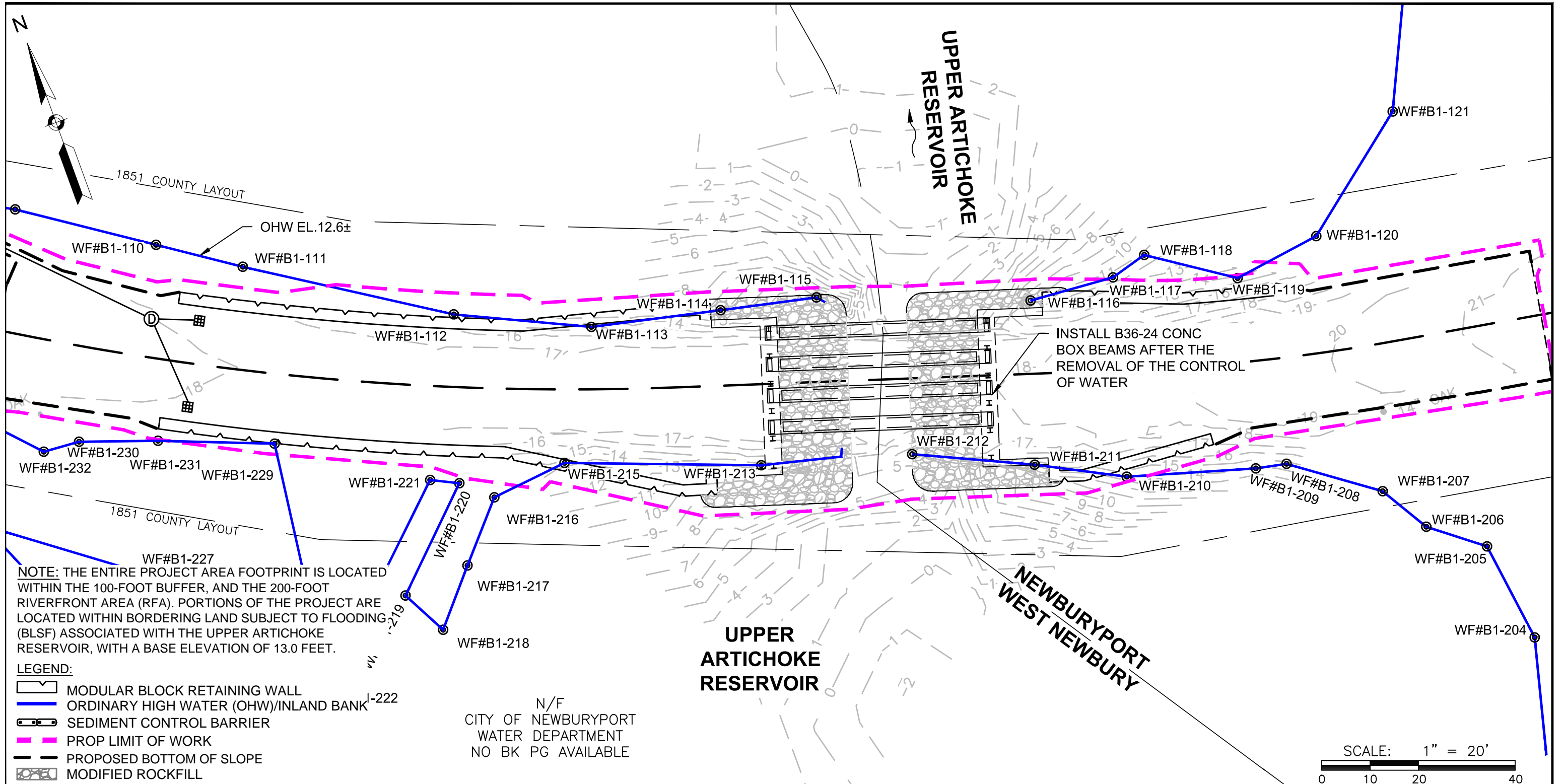
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

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TOWN OF WEST NEWBURY
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Source: **CONTROL OF WATER - PHASE 2 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 13 OF 15

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Boston, Massachusetts
02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

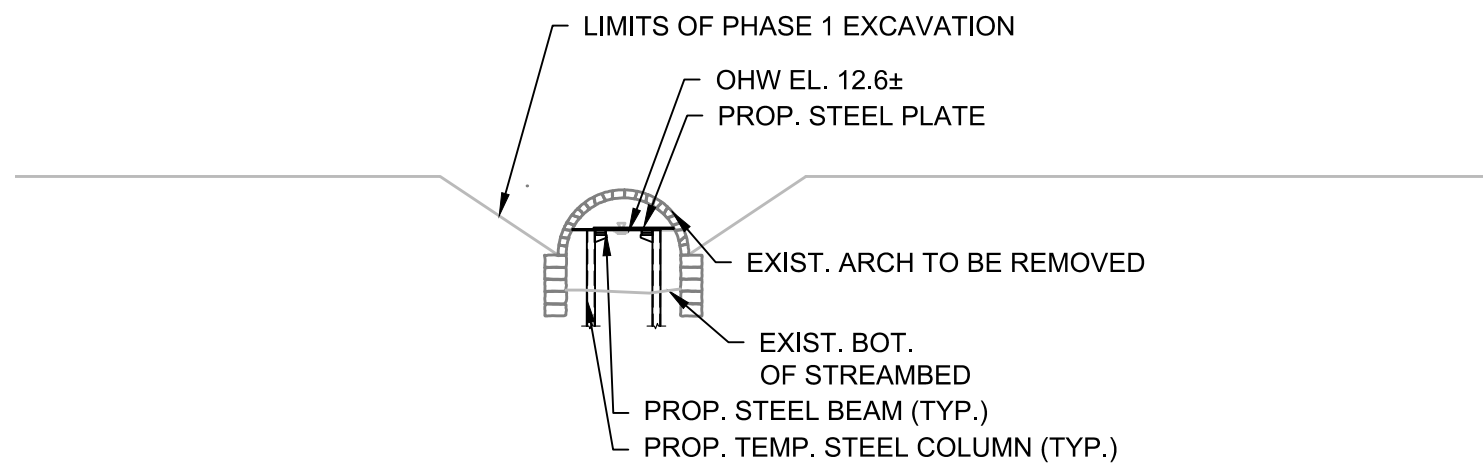
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 381 MAIN ST, WEST NEWBURY,
 MA 01985

CONTROL OF WATER - PHASE 3 - PLAN

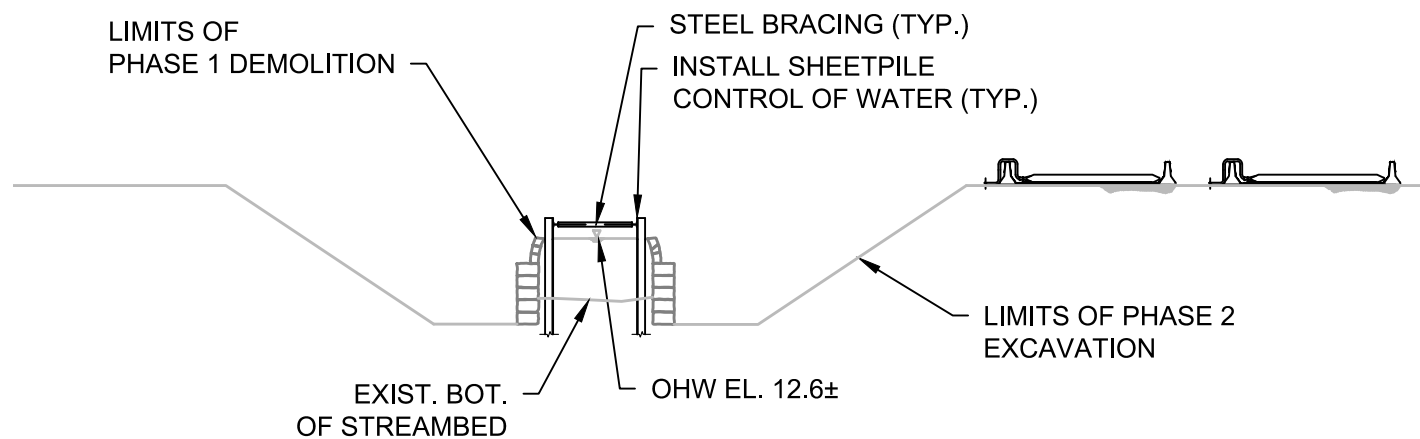
BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 14 OF 15

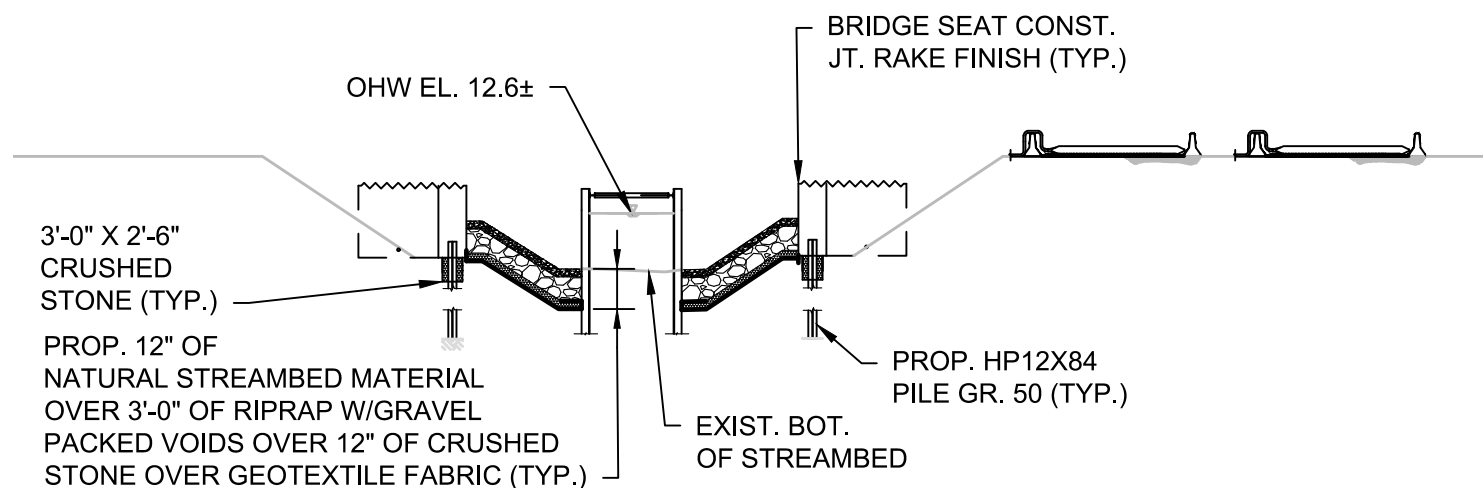
BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



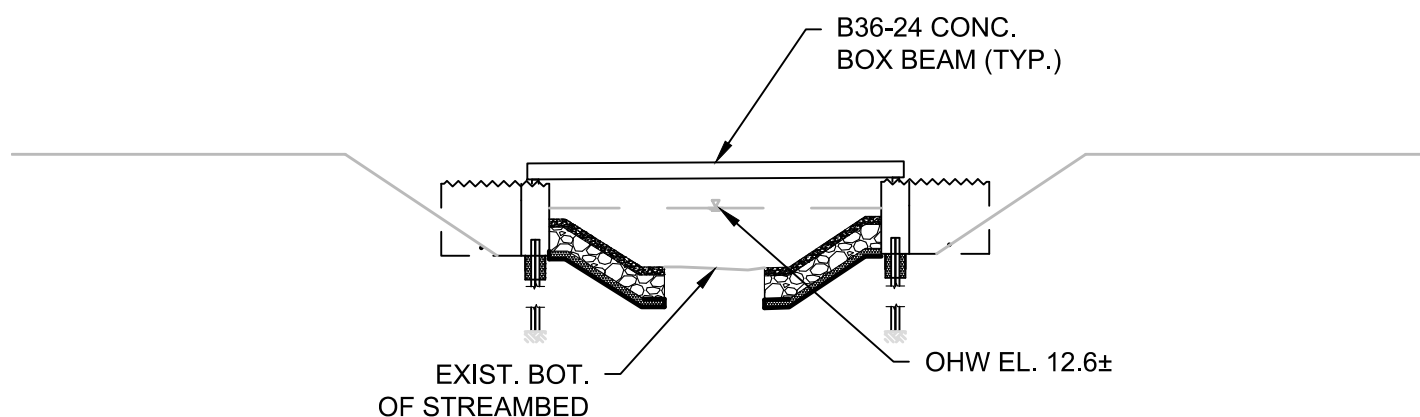
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 15 OF 15

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

**Massachusetts Department of Environmental
Protection**

NOTICE OF INTENT

Newburyport

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
West Newbury, and Newburyport, Massachusetts

Addendum to Notice of Intent Submitted January 2021

City of Newburyport
Conservation Commission
May 2021

Prepared for:
City of Newburyport
16C Perry Way
Newburyport, MA 01950

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

May 10, 2021

City of Newburyport
Conservation Commission
60 Pleasant Street
Newburyport, MA 01950

**RE: Bridge Replacement Project
Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir
West Newbury/Newburyport, Massachusetts
Notice of Intent - Addendum to NOI Presented to Commission February 2, 2021**

Dear Members of the Newburyport Conservation Commission:

BSC Group Inc., on behalf of The City of Newburyport (“the Applicant”), is pleased to submit this Addendum to its Notice of Intent (NOI) submitted to the Newburyport Conservation Commission on January 11, 2021 and previously presented to the Commission on February 2, 2021, for project activities associated with the replacement of the structurally deficient bridge (Bridge No. N-11-007) which carries Plummer Spring Road, Newburyport, MA over the Upper Artichoke Reservoir (hereby referred to as “the bridge”). The proposed updates are concessions for increased stormwater treatment along the proposed roadway in response to Commission requests, as discussed with, and agreed to, by the Applicant in each respective municipality.

Addendum to the NOI Submitted on January 11, 2021 and presented February 2, 2021

This addendum addresses additional steps to treat stormwater along the roadway, which will result in minor adjustments to the impacts to the 200-foot Riverfront Area (RFA). The rest of the original NOI is still accurate and applicable to this Project as submitted.

Proposed work and updates are as follows:

West Newbury. The lowest point of the project occurs within the roadway on the West Newbury side of the project area. Currently the drawings show two deep sump catch basins at the low point of the project on either side of the roadway that flow to a drain manhole and discharge to a stone splash pad. It is now proposed that the deep sump catch basins flow to a 900-gallon water quality treatment unit. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir onto stone at the end of the pipe. The project limits will generally stay the same, no additional berm/curbing will be included.

Newburyport. Existing conditions in Newburyport utilize country drainage, and the NOI submittal from January 2021 proposed no additional treatment. The Municipalities now propose the addition of two deep sump catch basins on either side of the roadway just before the ends of the retaining walls. The deep sump catch basins will flow to a 900-gallon water

Engineers
Environmental
Scientists
Custom Software
Developers
Landscape
Architects
Planners
Surveyors



quality unit. From there runoff is directed south to a flared end section that discharges towards the reservoir onto a stone splash pad. These additions will ensure the treatment of some of the stormwater entering the Reservoir by reducing the amount entering by country drainage. The project limits will generally stay the same, no additional berm/curbing will be included.

Between the deep sump catch basins and the water quality units, more than 80% of TSS will be removed from runoff captured by the catch basins across the entire project area.

To facilitate your review, we have included an updated version of the following: environmental resources map, streamlined stormwater report, checklist, and calculations, water quality unit specifications, and proposed plans.

There are no proposed changes to the work in Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), nor the Bank across the entire project.

There are minor additional impacts proposed to RFA as a result of the stormwater treatment installations. An additional 116 sf of permanent impacts to the 200-foot RFA are proposed in the City of Newburyport (190 sf project-wide) due to the stormwater improvement work, and an additional 154 sf feet of temporary impacts are required for construction impacts. All additional proposed work will occur entirely within the proposed paved roadway. All the proposed changes are denoted in the plans, attached to this submittal.

Table 1 – Summary of Wetland Resource Area Impacts

Resource Area	Impact Type	West Newbury {(Jan-2021) May 2021]	Newburyport {(Jan-2021) May 2021]	TOTAL {(Jan-2021) May 2021]
200-foot Riverfront Area (RFA)	Redevelopment	3,203 sf	2,669 sf	5,872 sf
	Permanent	(1,986 sf) 2,060 sf	(1,217 sf) 1,333 sf	(3,203 sf) 3,393 sf
	Temporary	(570 sf) 552 sf	(548 sf) 702 sf	(1,118 sf) 1,254 sf

We look forward to presenting this information to the Commission at the next regularly scheduled Conservation Commission public hearing on May 18, 2021. Please do not hesitate to contact me at 617-896-4579, or skreisel@bscgroup.com with any inquiries you may have.

Sincerely,
BSC Group, Inc.

Sara Kreisel, PWS
Ecological Project Manager

cc: Jon-Eric White, City of Newburyport
MassDEP Northeast Regional Office
Similar version to West Newbury Conservation Commission for adjacent work
Micah Morrison, BSC Group

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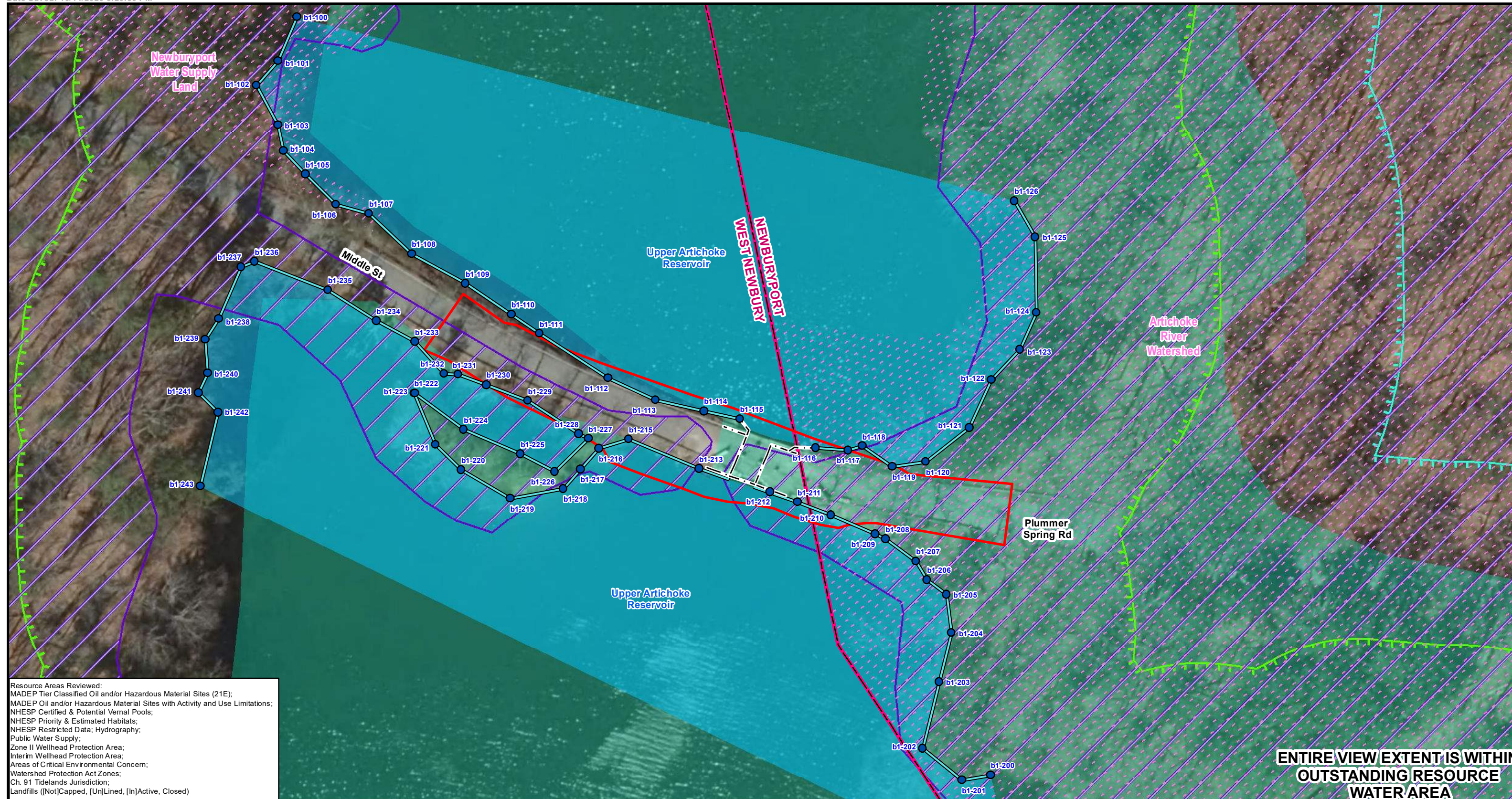
Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

ATTACHMENT A	ENVIRONMENTAL RESOURCES MAP
ATTACHMENT B	UPDATED STREAMLINED STORMWATER MANAGEMENT REPORT
ATTACHMENT C	WATER QUALITY UNIT SPECIFICATIONS
ATTACHMENT D	UPDATED PROJECT PLANS

Attachment A

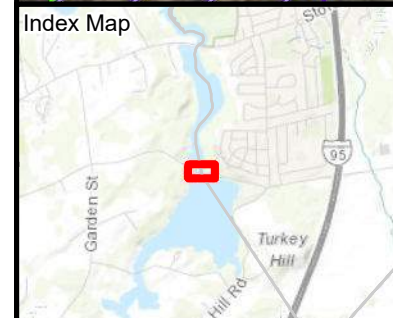
Bridge Replacement Project
Middle Street / Plummer Spring Road
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ENVIRONMENTAL RESOURCES MAP



Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;
 NHESP Certified & Potential Vernal Pools;
 NHESP Priority & Estimated Habitats;
 NHESP Restricted Data; Hydrography;
 Public Water Supply;
 Zone II Wellhead Protection Area;
 Interim Wellhead Protection Area;
 Areas of Critical Environmental Concern;
 Watershed Protection Act Zones;
 Ch. 91 Tidelands Jurisdiction;
 Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)

**ENTIRE VIEW EXTENT IS WITHIN
 OUTSTANDING RESOURCE
 WATER AREA**



Legend

Project Area	100ft Buffer to Wetlands & Streams	Article 97 Lands
Existing Bridge Structure	200ft Riverfront Area	Municipal
Field Delineated Bank Flags	FEMA 100yr Floodplain (Zone AE)*	Surface Water Protection Zone
Field Delineated Edge of Bank	Town Boundary	
Field Delineated Waterbody		
MADEP Hydrologic Connections		

1 inch = 50 feet
 0 25 50
 Feet
 *Indicates Layers Set to Transparency

**MIDDLE STREET / PLUMMER SPRING ROAD
 OVER THE UPPER ARTICHOKE RESERVOIR
 BRIDGE REPLACEMENT PROJECT**

Environmental Resources Map
 West Newbury & Newburyport, MA

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Attachment B

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

UPDATED STREAMLINED STORMWATER MANAGEMENT REPORT

Streamlined Stormwater Management Report

According to the Massachusetts Department of Environmental Protection Stormwater Management Regulations, the project is considered a redevelopment project. As such, the project has been designed to meet all applicable standards of the MassDEP Stormwater Management Handbook to the maximum extent practicable. In accordance with the DEP Stormwater Management Handbook, Standards 1,8, 9, and 10 must be met fully, while the remaining standards must be met to the maximum extent practicable.

Standard 1: New Stormwater Conveyances

Per Massachusetts Stormwater Management Standard #1, no new outfalls may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. On the West Newbury side of the project, to capture runoff at the low point in the road, two deep sump catch basins, on either side of the roadway, are proposed. The deep sump catch basins flow to a 900 gallon water quality unit. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends.

On the Newburyport side of the project, two deep sump catch basins on either side of the roadway are proposed just before the ends of the retaining walls. The deep sump catch basins flow to a 900 gallon water quality unit. From there runoff is directed south to a flared end section that discharges towards the reservoir into stone for pipe ends.

Between the deep sump catch basins and the water quality units, more than 80% of TSS will be removed from runoff captured by the catch basins.

Standard 2: Stormwater Runoff Rates

The proposed widening of the roadway over the new bridge will result in an increase in impervious area over existing conditions. Due to site limitations, mitigation measures are not feasible to reduce runoff rates. As a redevelopment project, this standard is not applicable, however, the proposed design meets this standard to the maximum extent practicable.

Standard 3: Groundwater Recharge

As a redevelopment project, this standard is not applicable. Due to site limitations, implementing groundwater recharge measures are not feasible. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 4: Water Quality

As a redevelopment project, this standard is not applicable. However, two water quality units will be implemented to improve the water quality of the runoff at the site. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 5: Land Uses with Higher Pollutant Loads (LUHPPL)

The Project is not a land use with higher potential pollutant loads.

Standard 6: Stormwater Discharges to a Critical Area

The project is not located within a Critical Area.

Standard 7: Redevelopment Projects

This project is a redevelopment project. In accordance with the DEP Stormwater Management Handbook, standards 1, 8, 9 and 10 have been fully met. In addition, the project has met all other standards (Standards 2, 3, 4, 5, 6, and 7) to the maximum extent practicable.

Standard 8: Sedimentation and Erosion Control Plan

Erosion control measures, including compost filter tubes and sediment control barriers will be placed at the bottom of proposed slopes and limits of work.

Standard 9: Long Term Operations and Maintenance Plan

Temporarily impacted areas associated with project construction activities will be restored following the completion of project work and will result in an overall improvement over existing conditions. Proposed project activities will not be considered complete until the areas disturbed as part of project activities are considered adequately stabilized, as determined by the Newburyport and West Newbury Conservation Commissions.

Standard 10: Illicit Discharges to the Stormwater Management System are Prohibited

There are no known illicit discharges to the proposed Stormwater Management System.

Operation and Maintenance Plan

Water Quality Units

The water quality structure will require periodic inspection and cleaning to maintain operation and function. Owners should have these units inspected on a quarterly basis and after periods of intense precipitation. Inspection of the unit can be done by using a clear Plexiglas tube (sludge judge) to extract a water column sample. When sediment depth exceeds 12 inches then cleaning of the unit is required. These water quality structures will be checked and cleaned after petroleum spills. The appropriate regulatory agencies (Department of Environmental Protection, and the Environmental Protection Agency) should immediately be contacted following a petroleum spill.

Maintenance of these units should be done by a vacuum truck that will remove water, sediment, debris, floating hydrocarbons and other materials in the unit. The proper cleaning and disposal of the removed materials and liquid must be followed. Inlet and outlet pipes must also be checked for any obstructions. Structural parts of the Stormceptor units shall be repaired as necessary.

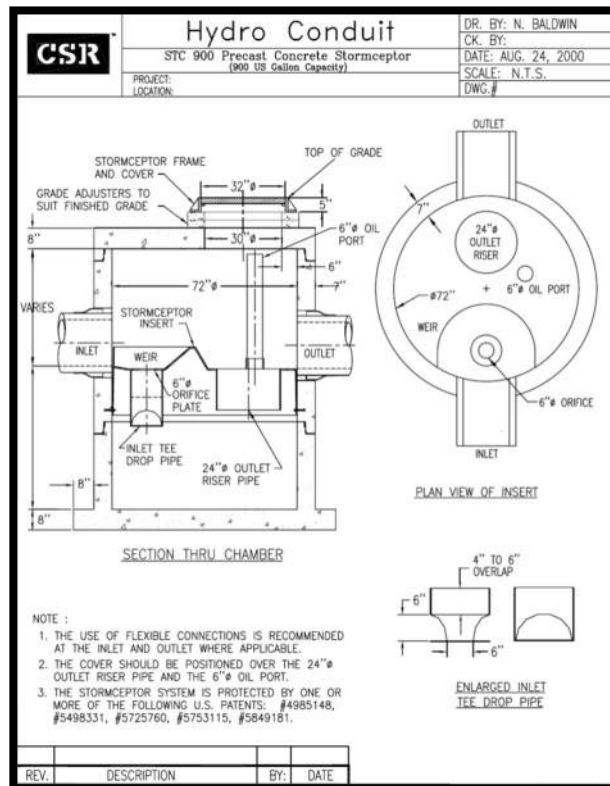


Figure 1 - Example Water Quality Unit



Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



5/6/21

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of “country drainage” versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): _____

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
- Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Calculation Sheet



Project No. 28395.00
Subject Drainage Areas
Location Plummer Spring Rd/Middle Street
Newburyport/West Newbury, MA

Calc By K. Eagan
Date 5/3/2021
Checked by _____
Date _____

Proposed Drainage Areas

AREA	TOTAL AREA (SF)	TOTAL AREA (ACRE)	TOTAL IMPERVIOUS AREA (SF)	TOTAL IMPERVIOUS AREA (ACRE)	TOTAL PVIOUS AREA (SF)	TOTAL PVIOUS AREA (ACRE)	PERCENT IMPERVIOUS AREA (%)
1S	7,300	0.168	7,300	0.168	0	0.000	100.0%
2S	1,000	0.023	1,000	0.023	0	0.000	100.0%
SITE TOTAL	8,300	0.191	8,300	0.191	0	0.000	100.0%
		IMPERV AREA =	8,300	SF			
		IMPERV AREA =	0.19	AC			

Water Quality Unit Sizing

Volume (Gal)	Max Impervious Area (AC) (77% TSS Removal)
900	0.45
1200	0.7
1800	1.25
2400	1.65
3600	2.6
4800	3.6
6000	4.6
7200	5.55

TSS Removal Calculation Worksheet

Location: Newburyport/West Newbury, MA

Project: 28395.00



Prepared By: K. Eagan

Date: 05/3/21

AREA 1 - West of Bridge (West Newbury)
Total Impervious Area, Acres= 0.168

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Deep Sump and Hooded Catchbasins	0.25	1.00	0.25	0.75
StormCeptor	0.77	0.75	0.58	0.17
				0.17

TSS Removal =

AREA 2 - East of Bridge (Newburyport)
Total Impervious Area, Acres= 0.023

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Deep Sump and Hooded Catchbasins	0.25	1.00	0.25	0.75
StormCeptor	0.77	0.75	0.58	0.17
				0.17

TSS Removal =

Weighted Annual Average TSS Removal Rate

[TSS Removal-1 (Area-1) + TSS Removal-2 (Area-2)+] / [Area-1 + Area-2 + ...] = 0.83

Project Site TSS Removal =

PROPRIETARY STORMWATER SIZING CALCULATION



Project No. 28395.00
Subject WQU Peak Flow Rate Calc
Location Newburyport/West Newbury, MA

Calc By K. Eagan
Date 5/3/2021
Checked by _____
Date _____

WQU-1

$$Q50 = (qu)(A)(WQV)$$

Q50 = peak flow rate associated with the first 1/2-inch of runoff
qu = the unit peak discharge (csm/in)
A = impervious surface drainage area (square miles)
WQV = water quality volume in watershed

Step 1: Determine WQV

$$\begin{aligned} \text{Impervious Area} &= \boxed{7,300} \text{ sf} \\ & \quad 0.00026 \text{ square miles} \\ \text{WQV} &= 3,650 \text{ cf} \end{aligned}$$

Step 2: Determine tc

$$tc = \boxed{6} \text{ min}$$

Step 3: Determine qu using DEP figure 2

$$qu = \boxed{752} \text{ csm/in}$$

Step 4: Calculate Q50

$$Q50 = \underline{\underline{0.10 \text{ cfs}}}$$

WQU-2

$$Q_{50} = (q_u)(A)(WQV)$$

Q_{50} = peak flow rate associated with the first 1/2-inch of runoff
 q_u = the unit peak discharge (csm/in)
 A = impervious surface drainage area (square miles)
 WQV = water quality volume in watershed

Step 1: Determine WQV

$$\begin{aligned} \text{Impervious Area} &= \boxed{1,000} \text{ sf} \\ & \quad 0.00004 \text{ square miles} \\ \text{WQV} &= 500 \text{ cf} \end{aligned}$$

Step 2: Determine t_c

$$t_c = \boxed{6} \text{ min}$$

Step 3: Determine q_u using DEP figure 2

$$q_u = \boxed{752} \text{ csm/in}$$

Step 4: Calculate Q_{50}

$$Q_{50} = \underline{\underline{0.01}} \text{ cfs}$$

OUTLET PROTECTION SIZING



Project No. 28395.00
Subject Outlet Protection Sizing Calcs
Location Newburyport/West Newbury, MA

Calc By K. Eagan
Date 5/3/2021
Checked by _____
Date _____

FES-1

Q=Design Discharge, (ft³/s) = 12 cfs
 D=Culvert Diameter, (ft) = 1.00 ft
 TW=Tailwater Depth, (ft) = 0.4 ft, (0.4xD for unknown tailwater, or enter known tailwater)
 (Tailwater depth is to be limited to between 0.4D and 1.0D)

Riprap Rock Sizing

$$D_{50} = 0.2D \left[\frac{Q}{\sqrt{g}D^{2.5}} \right]^{4/3} \left[\frac{D}{TW} \right]$$

$$D_{50} = 0.2 \left[\frac{12.00}{5.67} \right]^{(4/3)} \left[\frac{1.00}{0.40} \right] = 1.36 \text{ ft}$$

$$= 5 \text{ inches}$$

g=32.2 fps
D₅₀ = median rock size, ft

Table 1 : Riprap Classes and Apron Dimensions

Class	D ₅₀ (in)	Apron Length	Apron Depth
1	5	4D	3.5D ₅₀
2	6	4D	3.5D ₅₀
3	10	5D	3.3D ₅₀
4	14	6D	2.2D ₅₀
5	20	7D	2.0D ₅₀
6	22	8D	2.0D ₅₀

Use Class 1

Apron Dimensions

Length, L=4D = 4 ft
 Depth=3.5D₅₀ = 17.50 Inches
 Width=3D+(2/3)L = 5.67 ft (at apron end)

OUTLET PROTECTION SIZING



Project No. 28395.00
 Subject Outlet Protection Sizing Calcs
 Location Newburyport/West Newbury, MA

Calc By K. Eagan
 Date 5/3/2021
 Checked by _____
 Date _____

FES-2

Q=Design Discharge, (ft³/s) = 0.12 cfs
 D=Culvert Diameter, (ft) = 1.00 ft
 TW=Tailwater Depth, (ft) = 0.4 ft, (0.4xD for unknown tailwater, or enter known tailwater)
 (Tailwater depth is to be limited to between 0.4D and 1.0D)

Riprap Rock Sizing

$D_{50} = 0.2D \left[\frac{Q}{\sqrt{g}D^{2.5}} \right]^{4/3} \left[\frac{D}{TW} \right]$ g=32.2 fps
 D₅₀ = median rock size, ft

$D_{50} = 0.2 \left[\frac{0.12}{5.67} \right]^{(4/3)} \left[\frac{1.00}{0.40} \right] = 0.00 \text{ ft}$
 = 5 inches

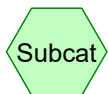
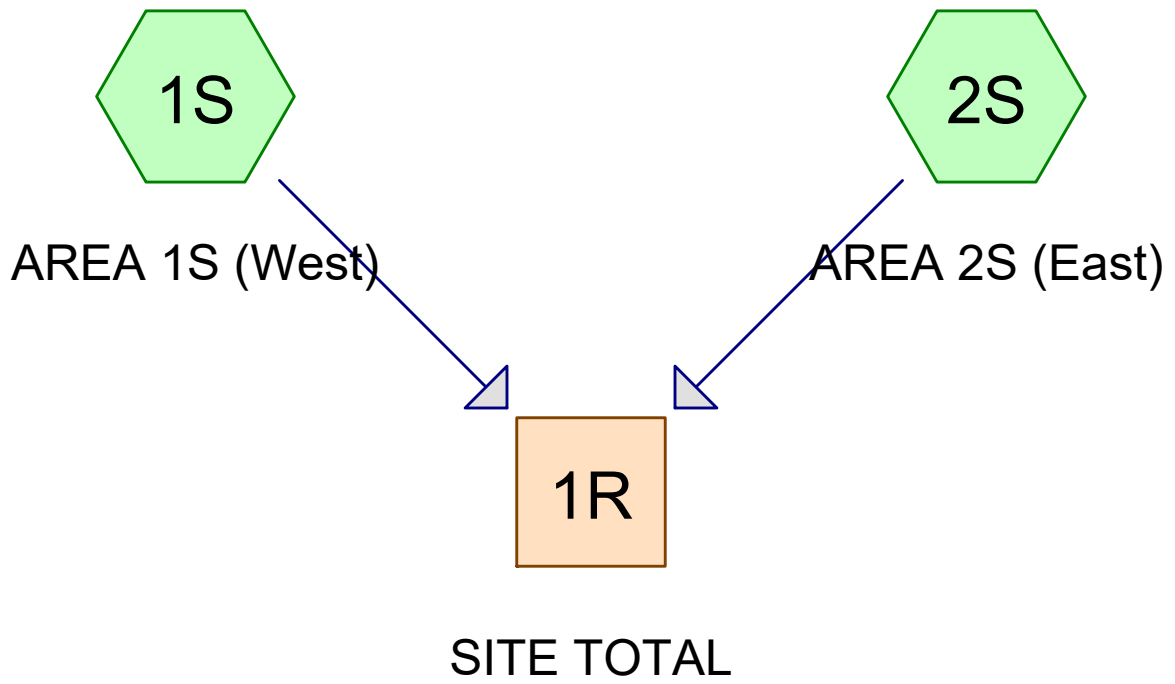
Table 1 : Riprap Classes and Apron Dimensions

Class	D ₅₀ (in)	Apron Length	Apron Depth
1	5	4D	3.5D ₅₀
2	6	4D	3.5D ₅₀
3	10	5D	3.3D ₅₀
4	14	6D	2.2D ₅₀
5	20	7D	2.0D ₅₀
6	22	8D	2.0D ₅₀

Use Class 1

Apron Dimensions

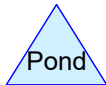
Length, L=4D = 4 ft
 Depth=3.5D₅₀ = 17.50 inches
 Width=3D+(2/3)L = 5.67 ft (at apron end)



Subcat



Reach



Pond



Link

2839500_Newburyport-WestNewbury

Prepared by BSC Group

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.191	98	Paved roads w/curbs & sewers, HSG B (1S, 2S)
0.191	98	TOTAL AREA

2839500_Newburyport-WestNewbury

Prepared by BSC Group

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.191	HSG B	1S, 2S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.191		TOTAL AREA

2839500_Newburyport-WestNewbury

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.191	0.000	0.000	0.000	0.191	Paved roads w/curbs & sewers	1S, 2S
0.000	0.191	0.000	0.000	0.000	0.191	TOTAL AREA	

Summary for Subcatchment 1S: AREA 1S (West)

Runoff = 0.46 cfs @ 12.13 hrs, Volume= 0.036 af, Depth> 2.60"

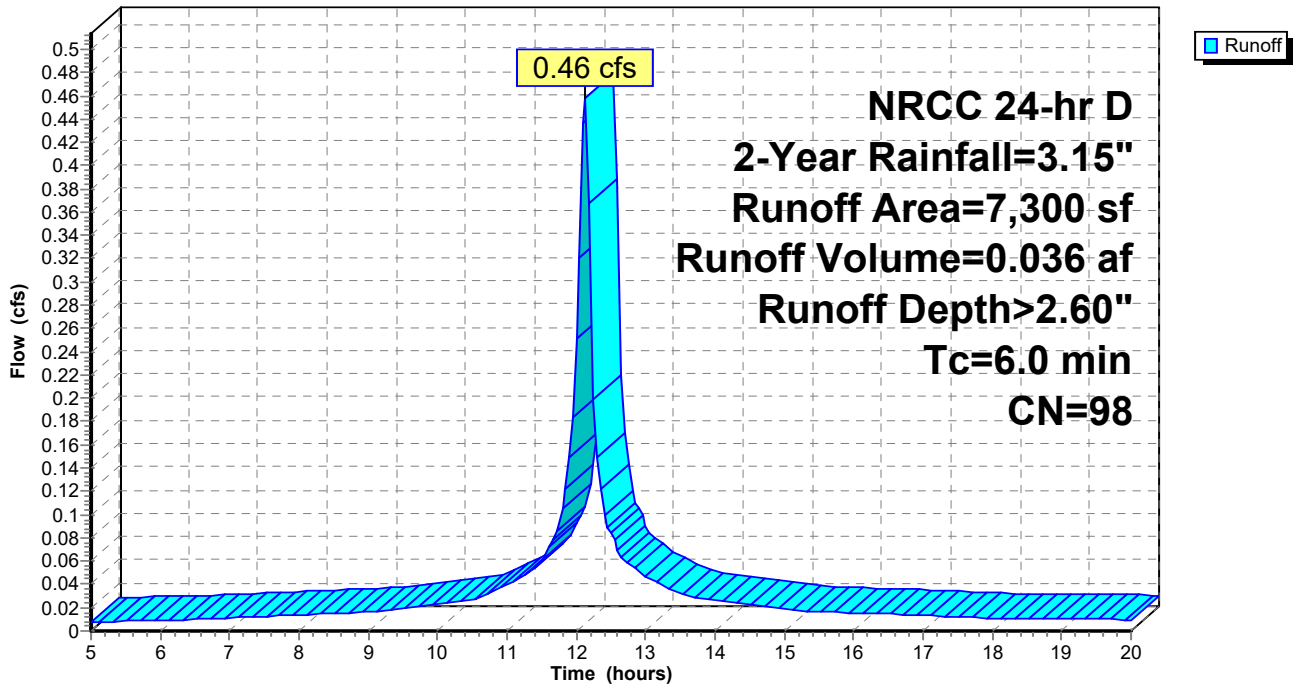
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.15"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)

Hydrograph



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.06 cfs @ 12.13 hrs, Volume= 0.005 af, Depth> 2.60"

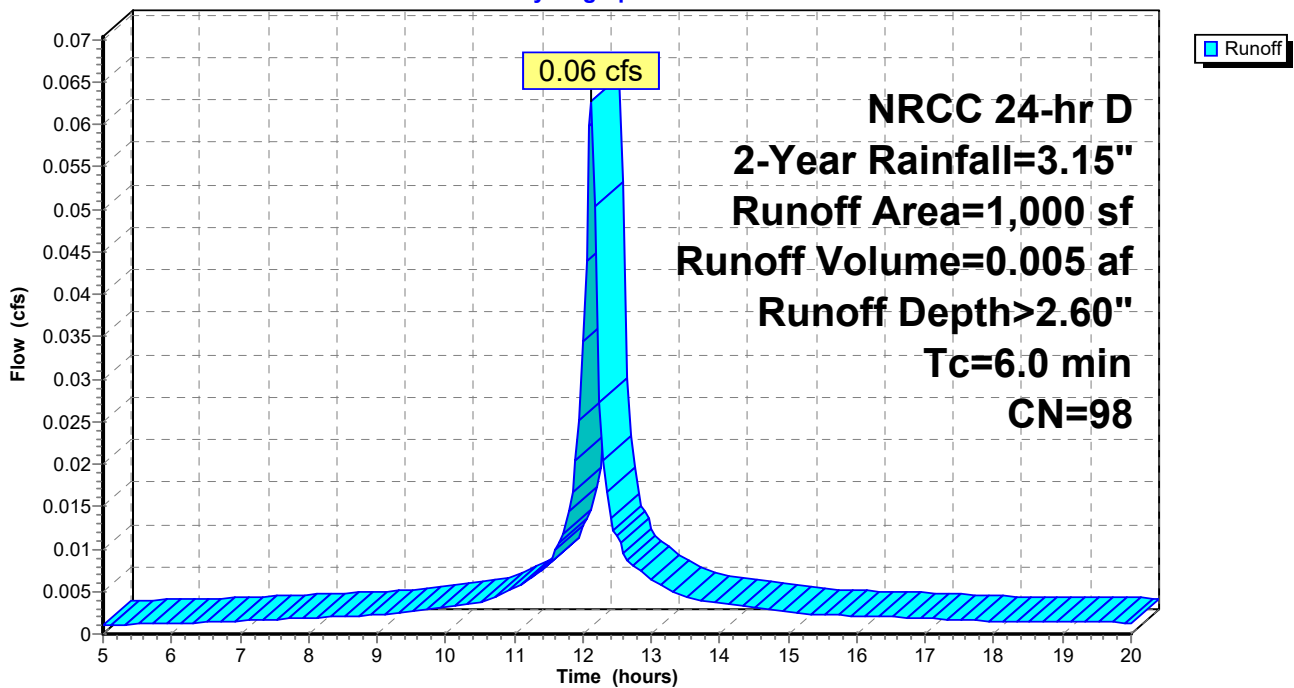
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.15"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



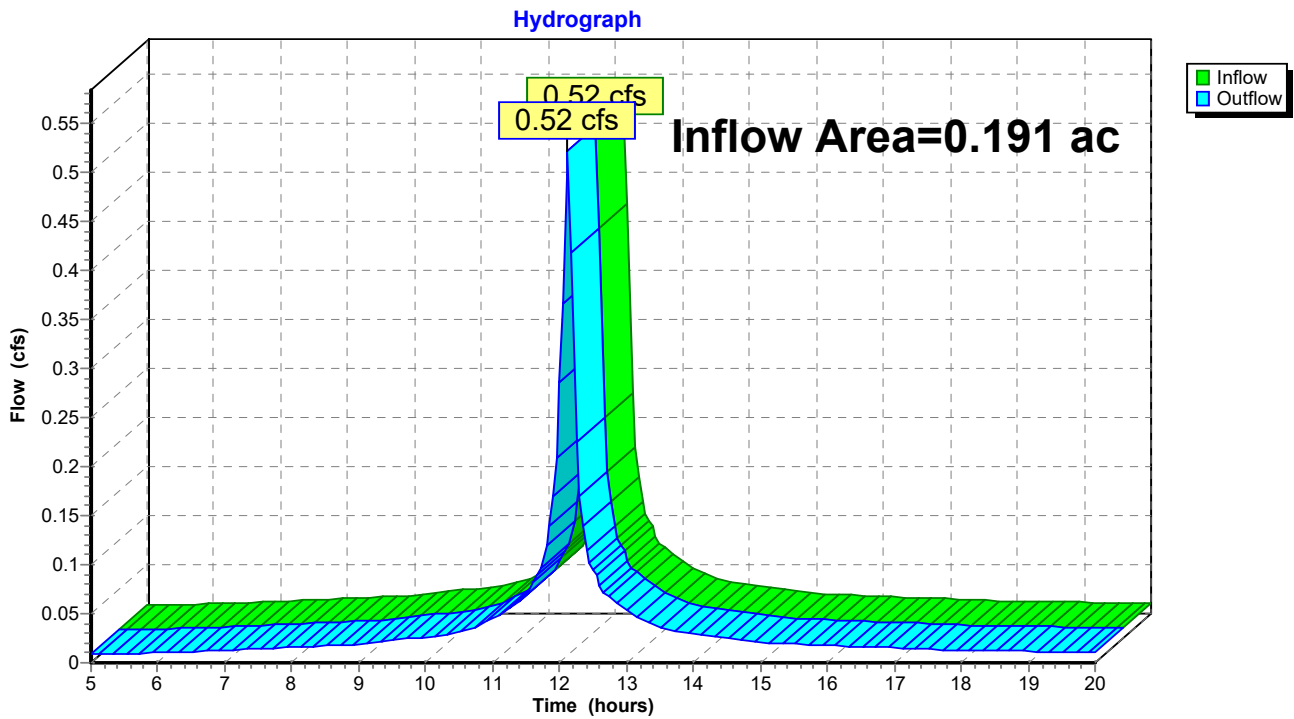
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 2.60" for 2-Year event
Inflow = 0.52 cfs @ 12.13 hrs, Volume= 0.041 af
Outflow = 0.52 cfs @ 12.13 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

Runoff = 0.71 cfs @ 12.13 hrs, Volume= 0.057 af, Depth> 4.06"

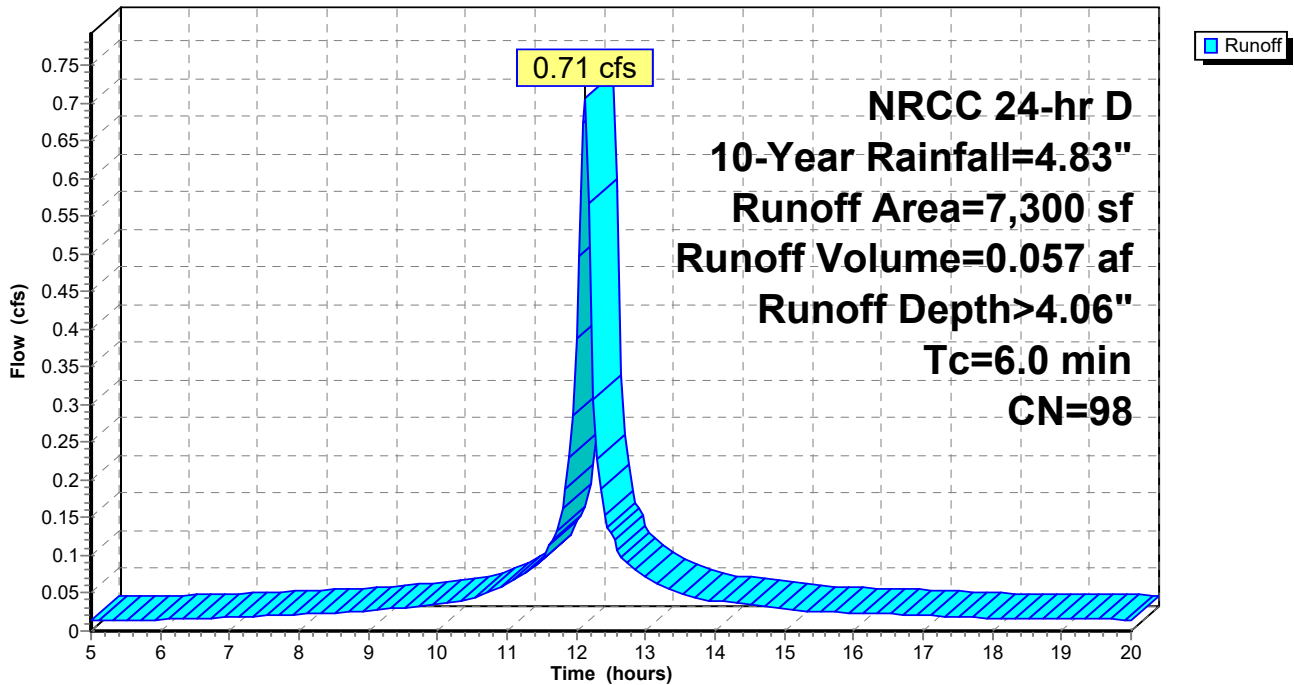
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.83"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)

Hydrograph



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.10 cfs @ 12.13 hrs, Volume= 0.008 af, Depth> 4.06"

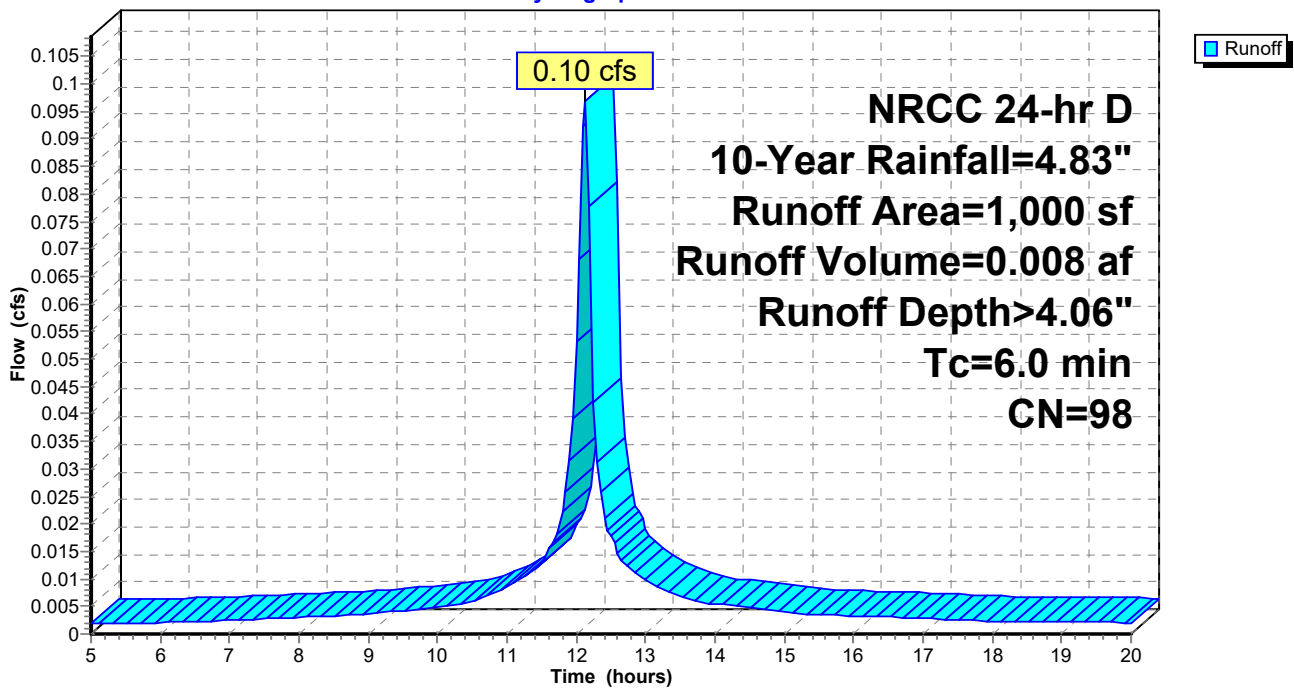
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.83"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



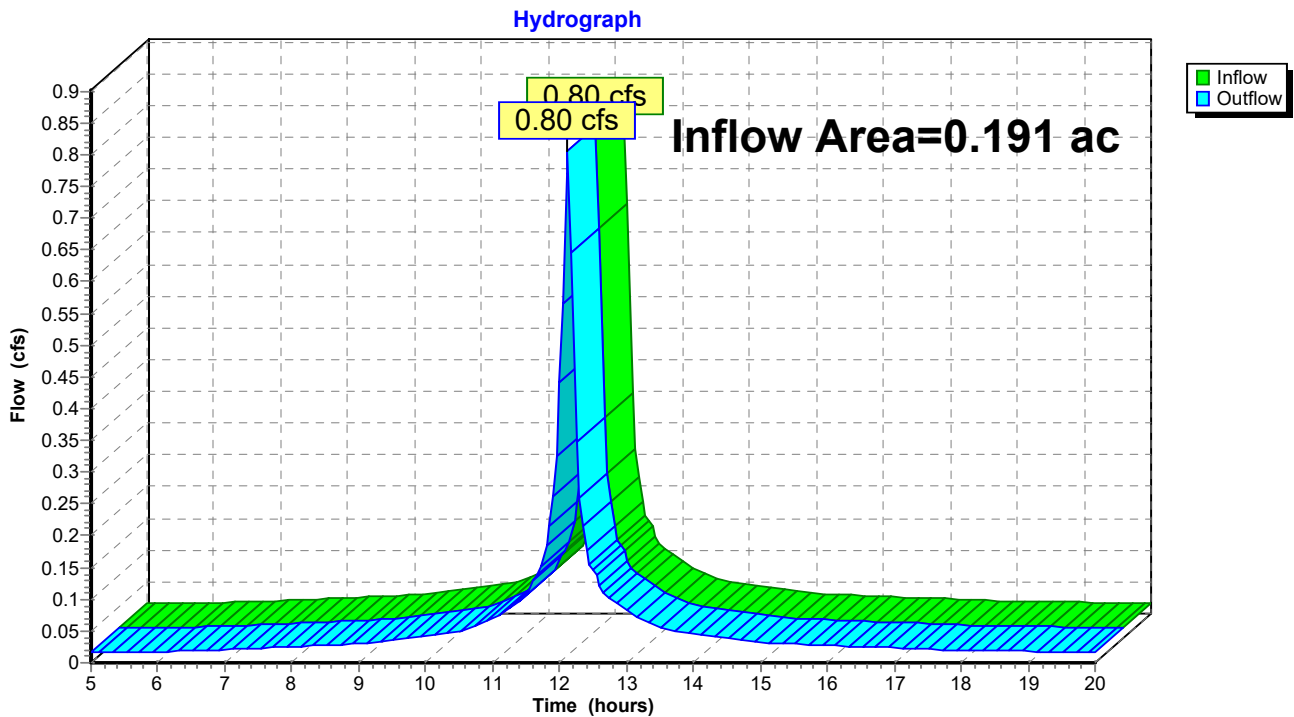
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 4.06" for 10-Year event
Inflow = 0.80 cfs @ 12.13 hrs, Volume= 0.064 af
Outflow = 0.80 cfs @ 12.13 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

Runoff = 0.90 cfs @ 12.13 hrs, Volume= 0.073 af, Depth> 5.20"

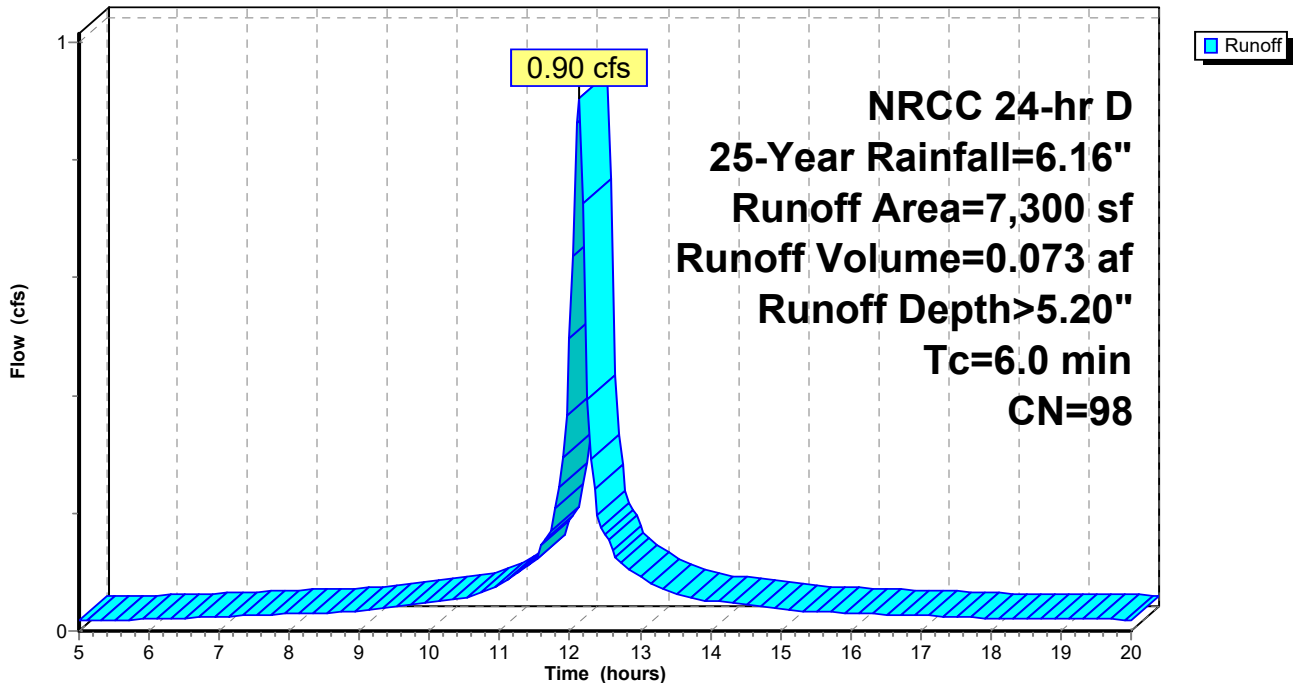
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 25-Year Rainfall=6.16"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)

Hydrograph



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.010 af, Depth> 5.20"

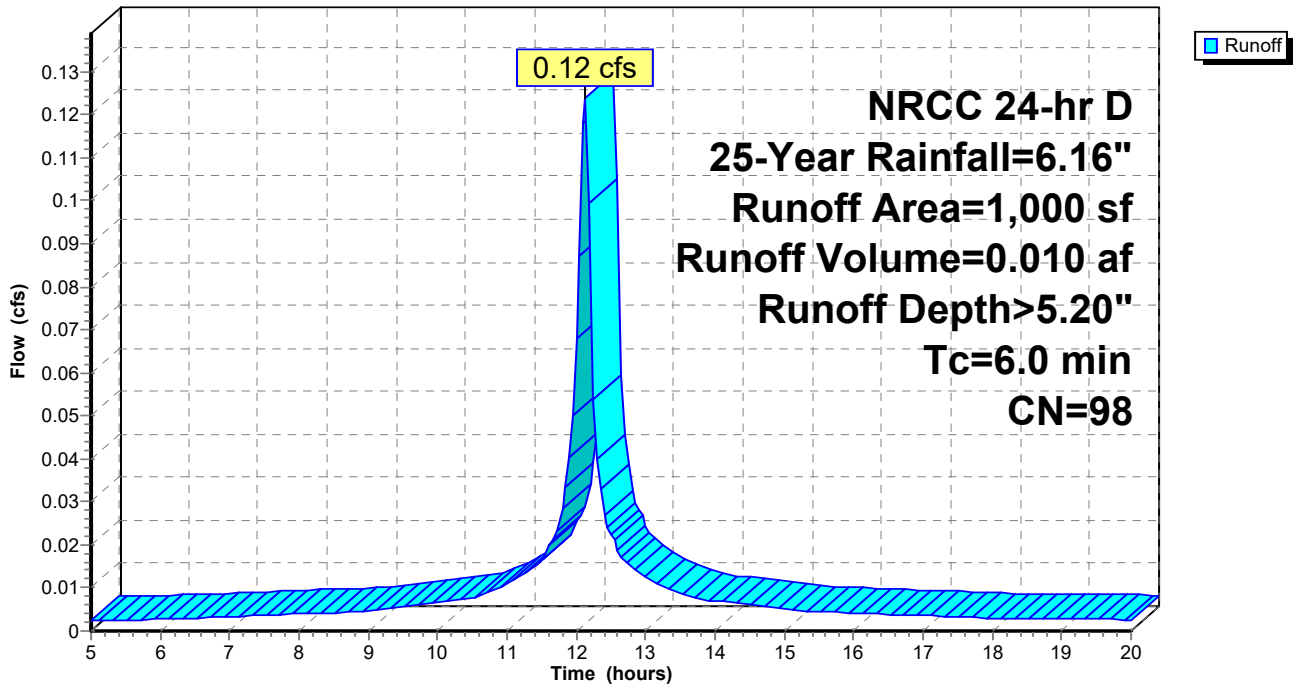
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 25-Year Rainfall=6.16"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



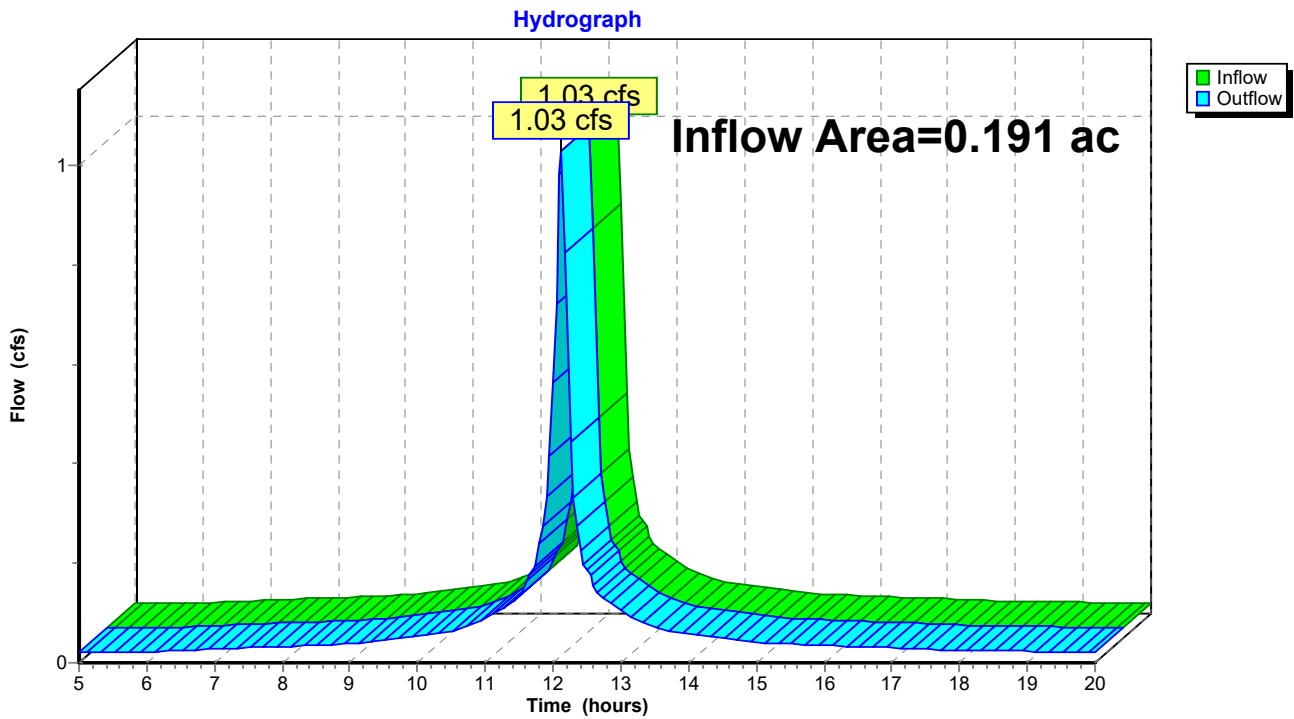
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 5.20" for 25-Year event
Inflow = 1.03 cfs @ 12.13 hrs, Volume= 0.083 af
Outflow = 1.03 cfs @ 12.13 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

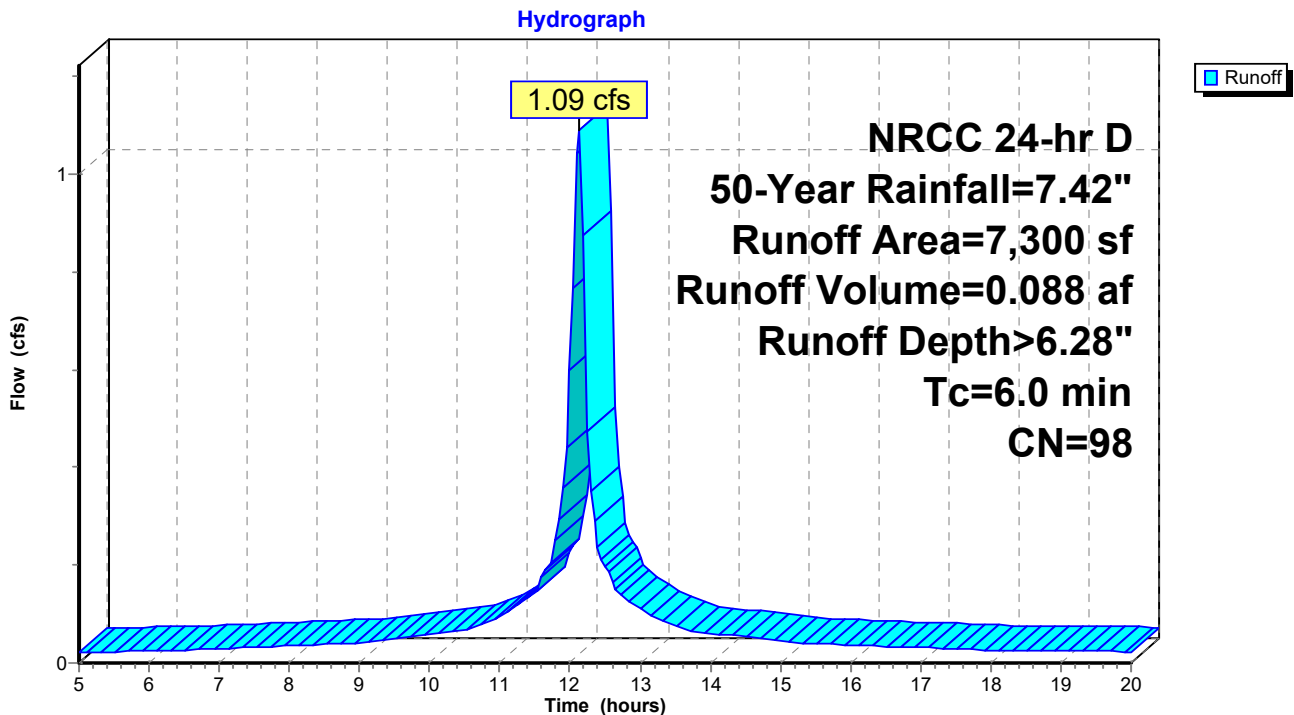
Runoff = 1.09 cfs @ 12.13 hrs, Volume= 0.088 af, Depth> 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 50-Year Rainfall=7.42"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.15 cfs @ 12.13 hrs, Volume= 0.012 af, Depth> 6.28"

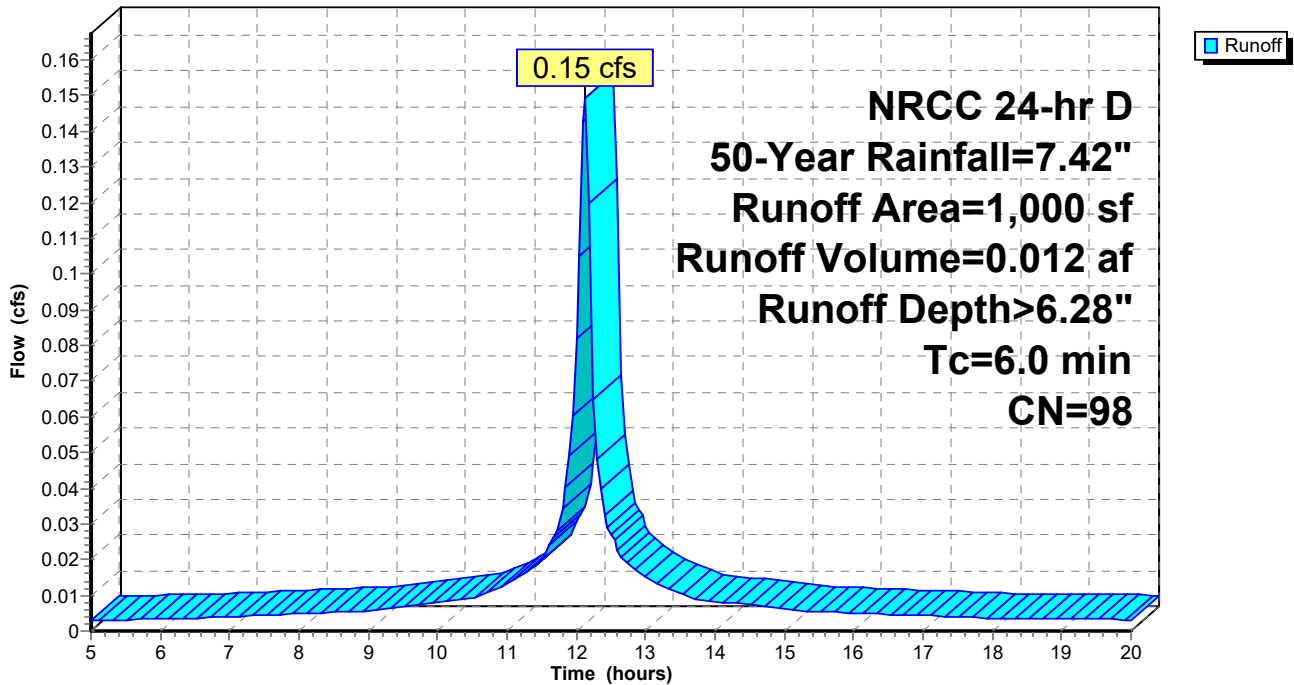
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 50-Year Rainfall=7.42"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



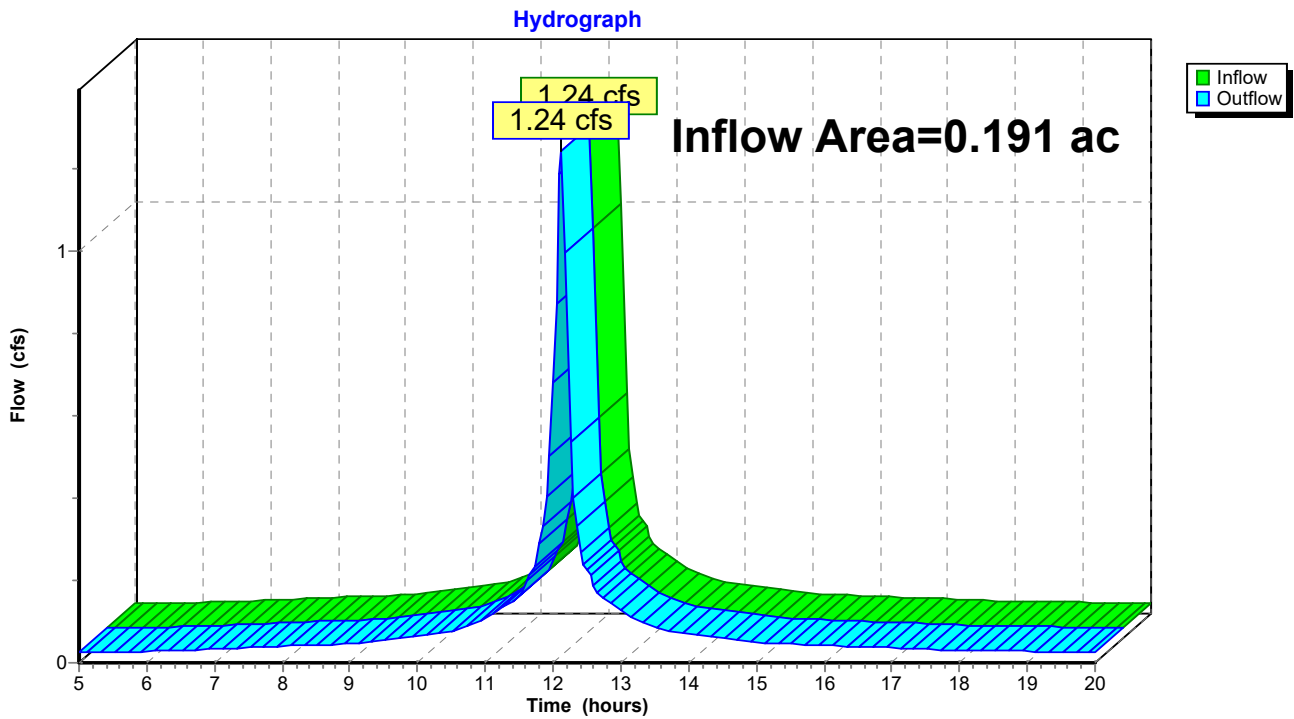
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 6.28" for 50-Year event
Inflow = 1.24 cfs @ 12.13 hrs, Volume= 0.100 af
Outflow = 1.24 cfs @ 12.13 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Summary for Subcatchment 1S: AREA 1S (West)

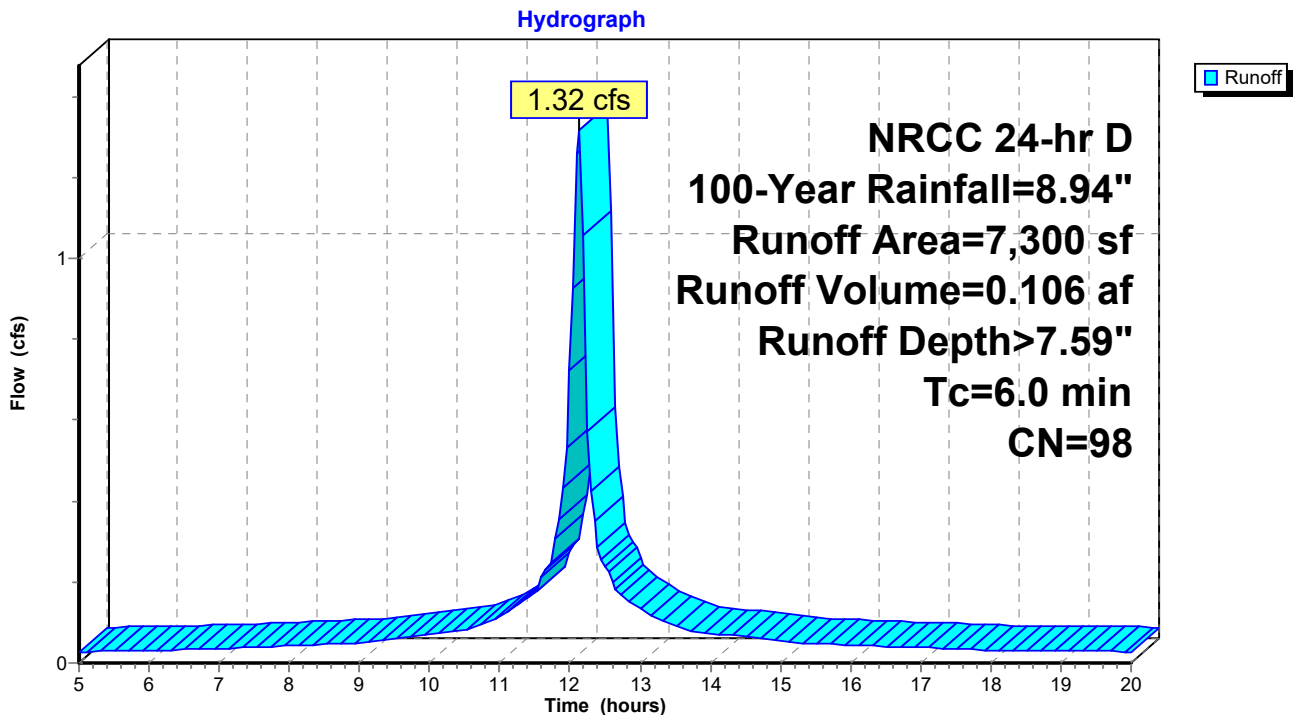
Runoff = 1.32 cfs @ 12.13 hrs, Volume= 0.106 af, Depth> 7.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 100-Year Rainfall=8.94"

Area (sf)	CN	Description
7,300	98	Paved roads w/curbs & sewers, HSG B
7,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 1S: AREA 1S (West)



Summary for Subcatchment 2S: AREA 2S (East)

Runoff = 0.18 cfs @ 12.13 hrs, Volume= 0.015 af, Depth> 7.59"

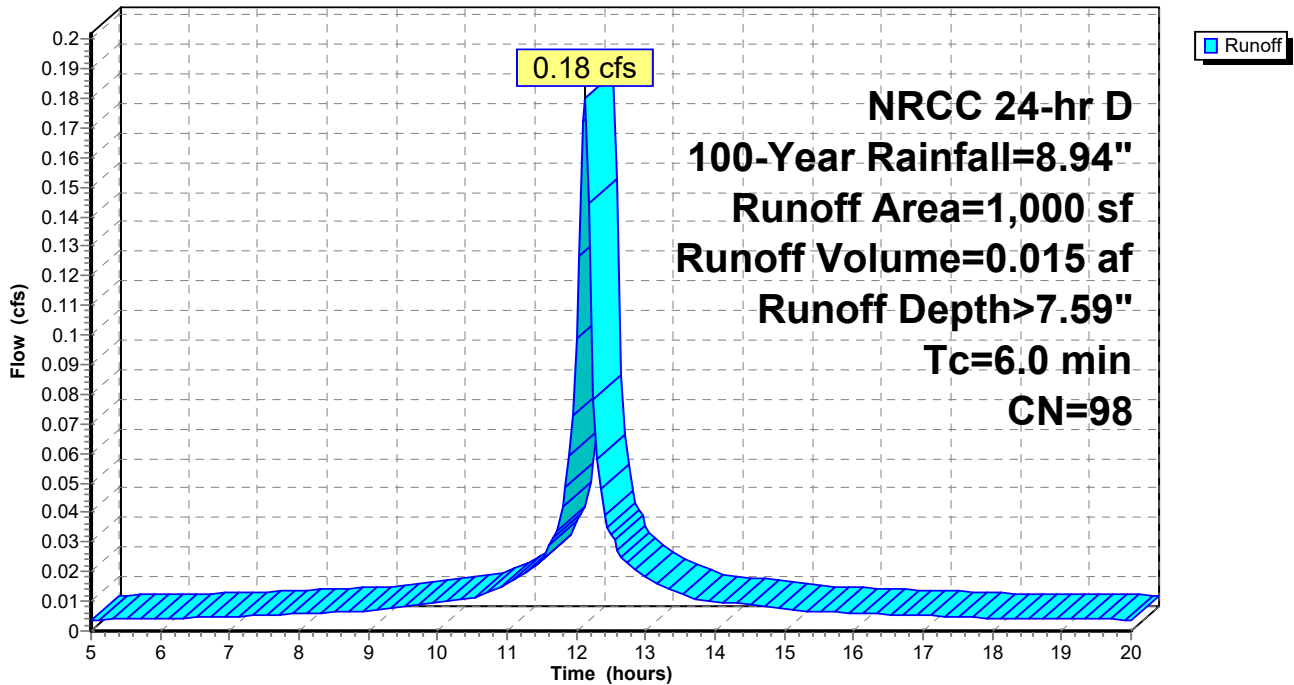
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 NRCC 24-hr D 100-Year Rainfall=8.94"

Area (sf)	CN	Description
1,000	98	Paved roads w/curbs & sewers, HSG B
1,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2S: AREA 2S (East)

Hydrograph



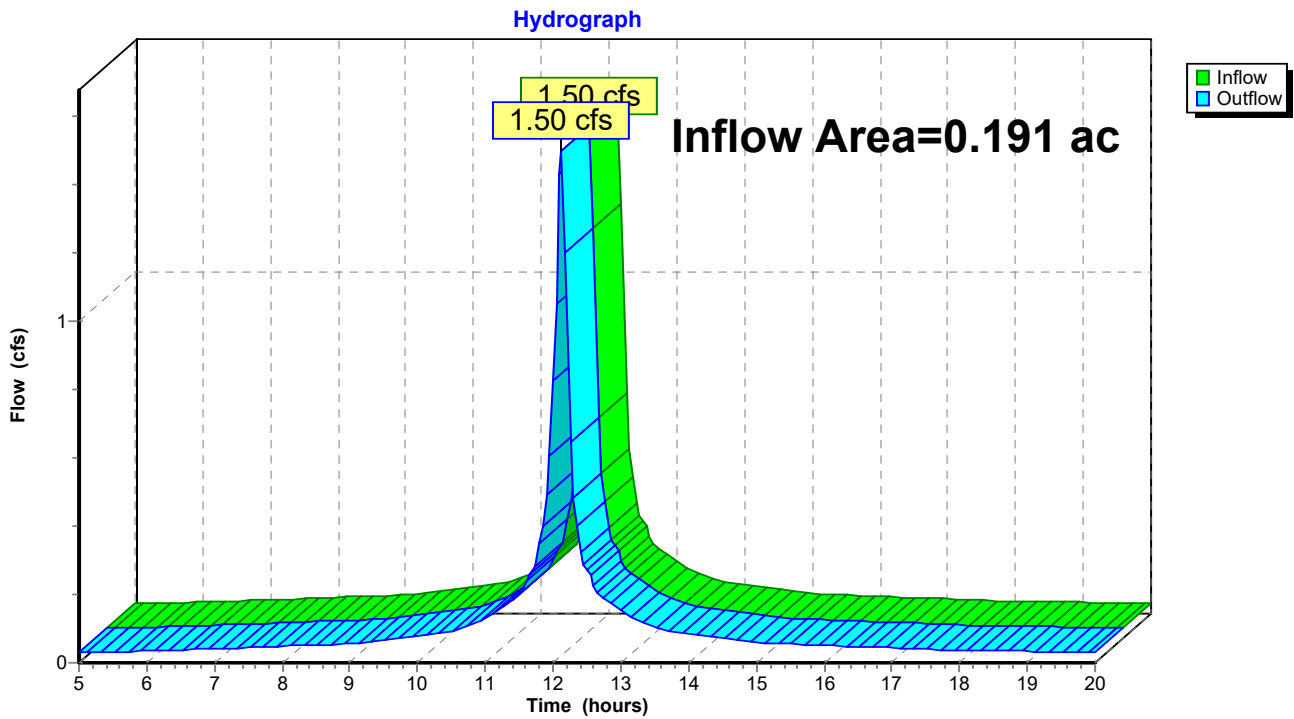
Summary for Reach 1R: SITE TOTAL

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.191 ac, 100.00% Impervious, Inflow Depth > 7.59" for 100-Year event
Inflow = 1.50 cfs @ 12.13 hrs, Volume= 0.120 af
Outflow = 1.50 cfs @ 12.13 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: SITE TOTAL



Attachment C

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

WATER QUALITY UNIT SPECIFICATIONS

ITEM 202.5**WATER QUALITY UNIT****EACH****DESCRIPTION**

The work under these items shall conform to the relevant provisions of Section 200 of the Standard Specifications and the following:

The work shall consist of furnishing and installing hydrodynamic separators as water quality units in conformance with the construction details, and at locations shown on the plans.

The water quality unit shall be Stormceptor Model STC-900 as manufactured by Rinker Materials or approved equal. Other acceptable water quality units include, but are not limited to, appropriately sized models of Vortechs and CDS as manufactured by Contech and Downstream Defender as manufactured by Hydro International. Any substitutions must demonstrate that they are capable of providing equivalent total suspended solids (TSS) removal with equivalent scour protection and internal high flow bypass ability.

The water quality units shall be sized to treat runoff from 1/2-inch rainfall intensity and provide 80% TSS removal for the impervious areas indicated below.

The impervious area contributing to each unit is as follows:

Location 1: West Newbury (West of Bridge) – 0.17 acres

Location 2: Newburyport (East of Bridge) – 0.03 acres

The Contractor is advised that the proposed locations of the separator units under this item are shown on the drawings in their approximate locations. The Contractor is responsible to coordinate the exact locations and exact elevations of the separator units in the field, and as required by the Engineer, to ensure the proper functional operation of all elements of the proposed stormwater drainage system(s) constructed as part of this project. All separator units under these items and their components shall be installed in accordance with the manufacturer requirements and as required by the Engineer.

The separators shall be capable of trapping silt and clay sized particles, in addition to large particles, and shall be installed underground as part of the stormwater drainage system(s). The separators shall be structurally designed for HS-20 (minimum) traffic loading at the surface, with the storage in the separator vertically oriented. The separator should be maintained from the surface via one access point.

The separator should be equipped with an internal high flow bypass that regulates the flow rate into the treatment chamber and conveys high flows directly to the outlet so the scour and/or resuspension of material previously collected in the separator does not occur. External bypasses are not acceptable. The bypass area must be physically separated from the separation area to prevent mixing with the separator circular and constructed from either fiberglass or precast concrete risers. The concrete separator shall be designed and manufactured in accordance with ASTM C-478.

The concrete joints shall be oil resistant, watertight and meet the design criteria according to ASTM C-443. A minimum of 12 inches of oil storage should be lined with fiberglass to provide secondary containment of any hydrocarbon materials.

The difference between the separator inlet pipe elevation and the separator outlet pipe elevation must be 1 inch. For configurations consisting of multiple inlet pipes, a 3 inch difference between horizontal inlet pipe inverts and the outlet pipe invert shall occur. The separators shall be capable of being used as a bend structure in the stormwater drainage system(s).

The separator shall be capable of handling floatable substance spills including free oil and shall not be compromised by temporary backwater conditions (i.e. trapped pollutants should not be resuspended and scoured from the separator during backwater conditions). The capabilities of the selected separator shall be documented with scientific studies and reports. Preference will be given to devices that have been verified by a state or federal storm water verification program.

The frame and cover shall include an indented top design with lettering of the unit's name cast into the cover to allow for easy identification in the field.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 202.5 shall be measured and paid for at the contract unit price per Each, complete in place. This price shall include all compensation for labor, materials, and equipment necessary to complete the work. Excavation and appurtenances for the units as shown on the details including the frame and cover shall be considered incidental to this item.

Attachment D

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Addendum to Notice of Intent Application

UPDATED PROJECT PLANS

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10-15	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF
200-FOOT RIVERFRONT AREA (RFA)	REDEVELOPMENT	3,203	2,669	5,872	SF
	PERMANENT IMPACT	2,060	1,333	3,393	SF
	TEMPORARY IMPACT	552	702	1,254	SF
BORDERING LAND SUBJECT TO FLOODING (BLSF)	PROPOSED ALTERATION	167	44	211	SF
	PROPOSED REPLACEMENT	311	344	655	SF
	FLOOD STORAGE LOST	393	132	525	CF
	FLOOD STORAGE REPLACED	1,438	1,857	3,295	CF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

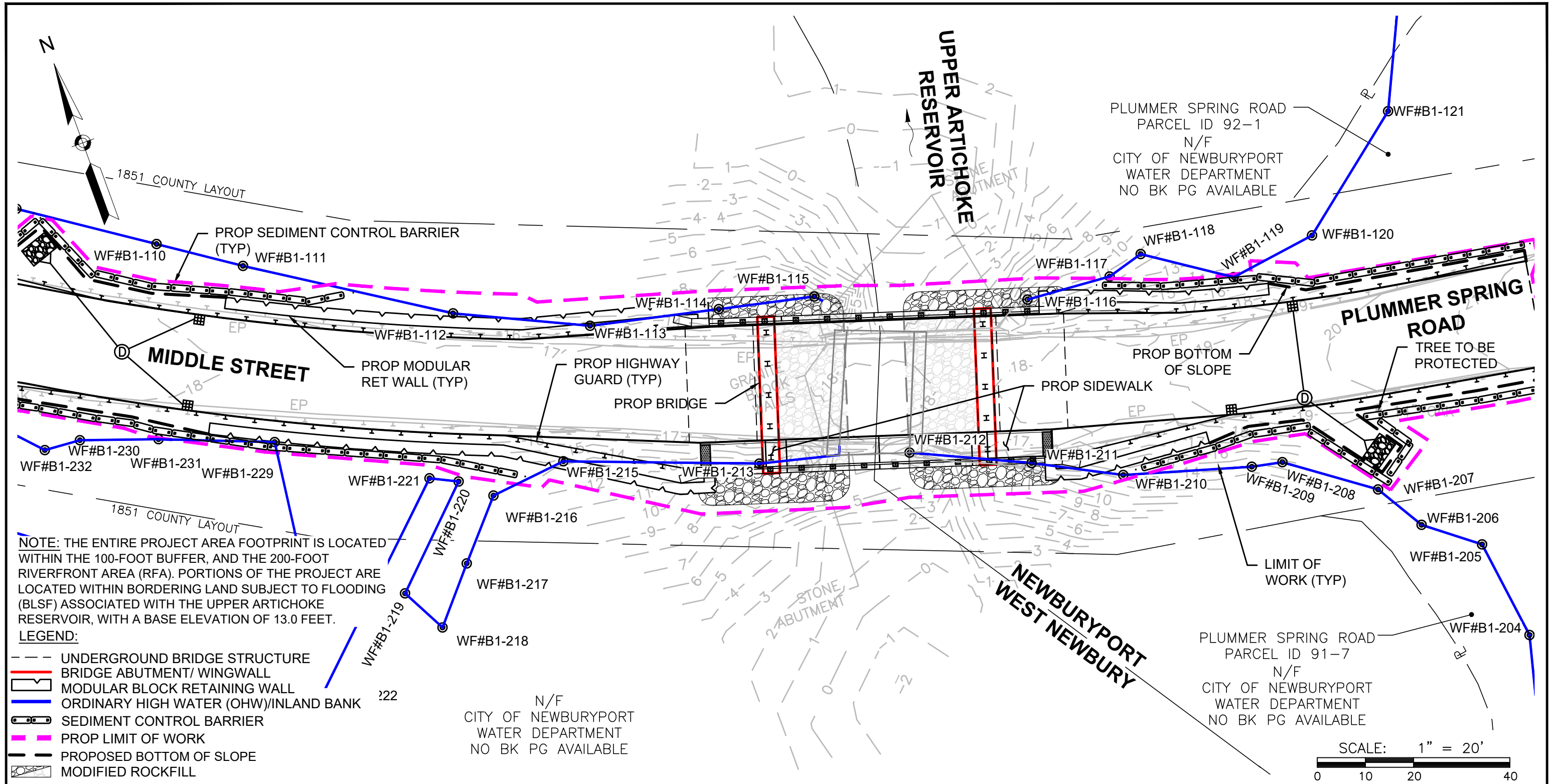
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: 05/07/2021
 Description: INDEX Figure: 1 OF 15

 **BSC GROUP**
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source:

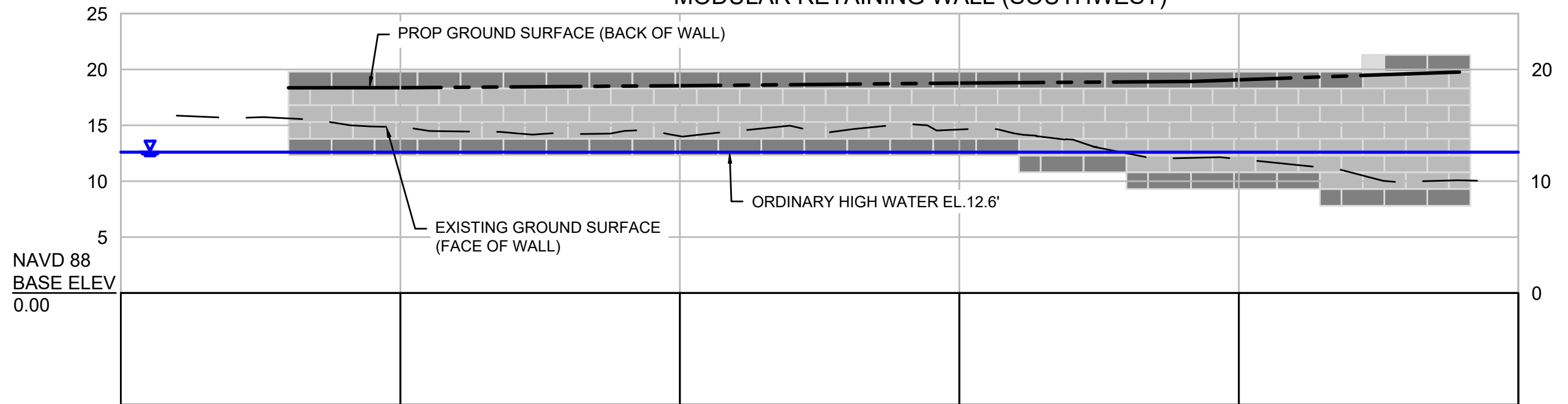
PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

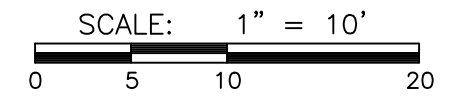
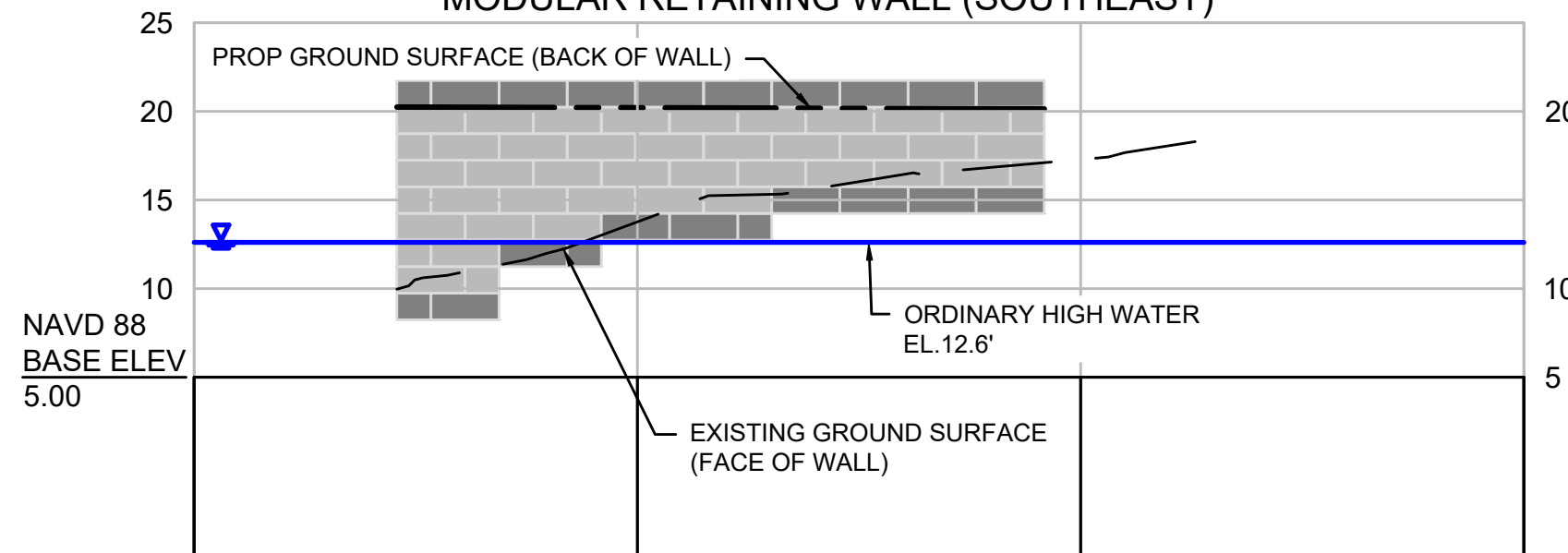
Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: PROP COND Figure: 4 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300

MODULAR RETAINING WALL (SOUTHWEST)



MODULAR RETAINING WALL (SOUTHEAST)



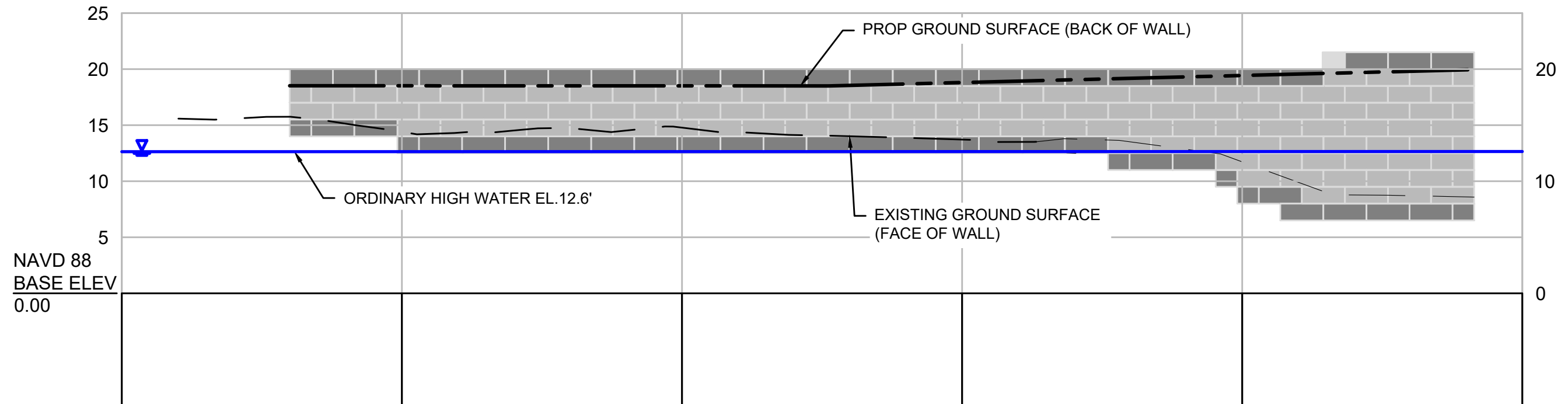
PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

PROPOSED WALL PROFILE
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

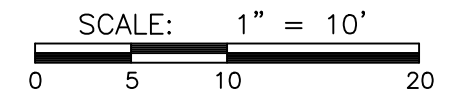
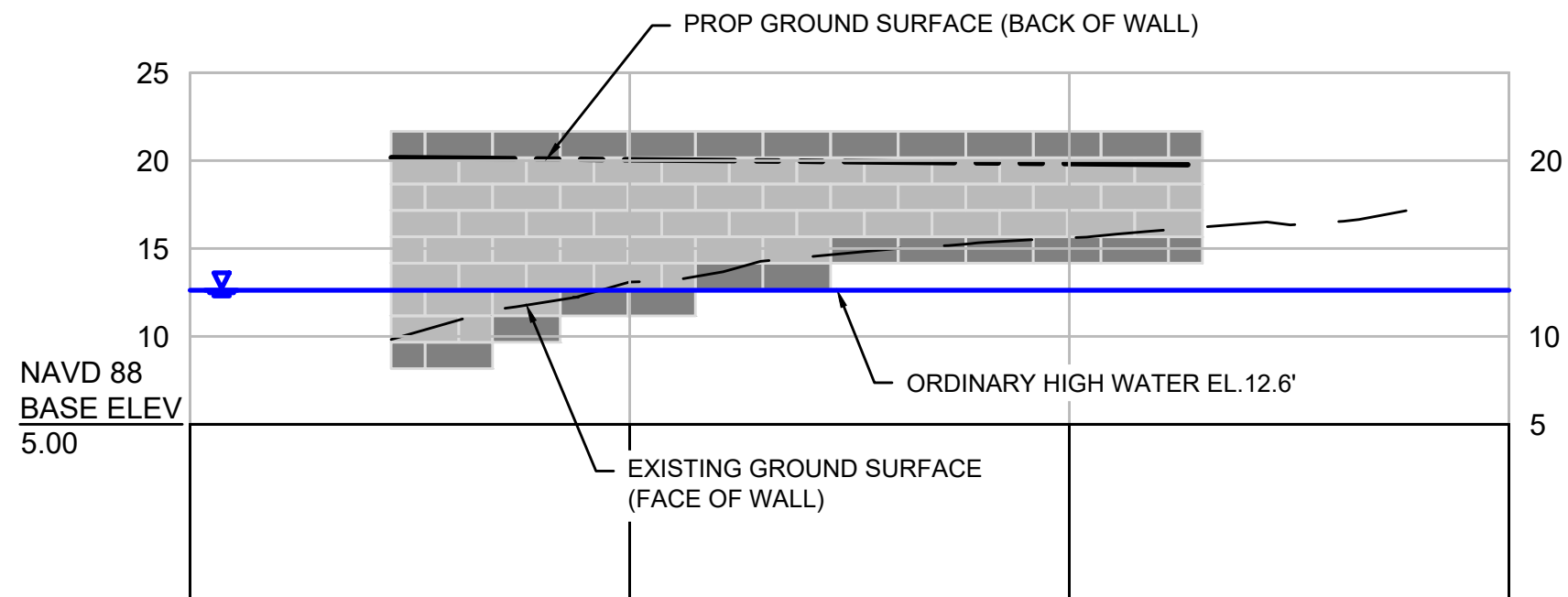
Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10' Revised: 05/07/2021
 Description: PR WALL PROF Figure: 5 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300

MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

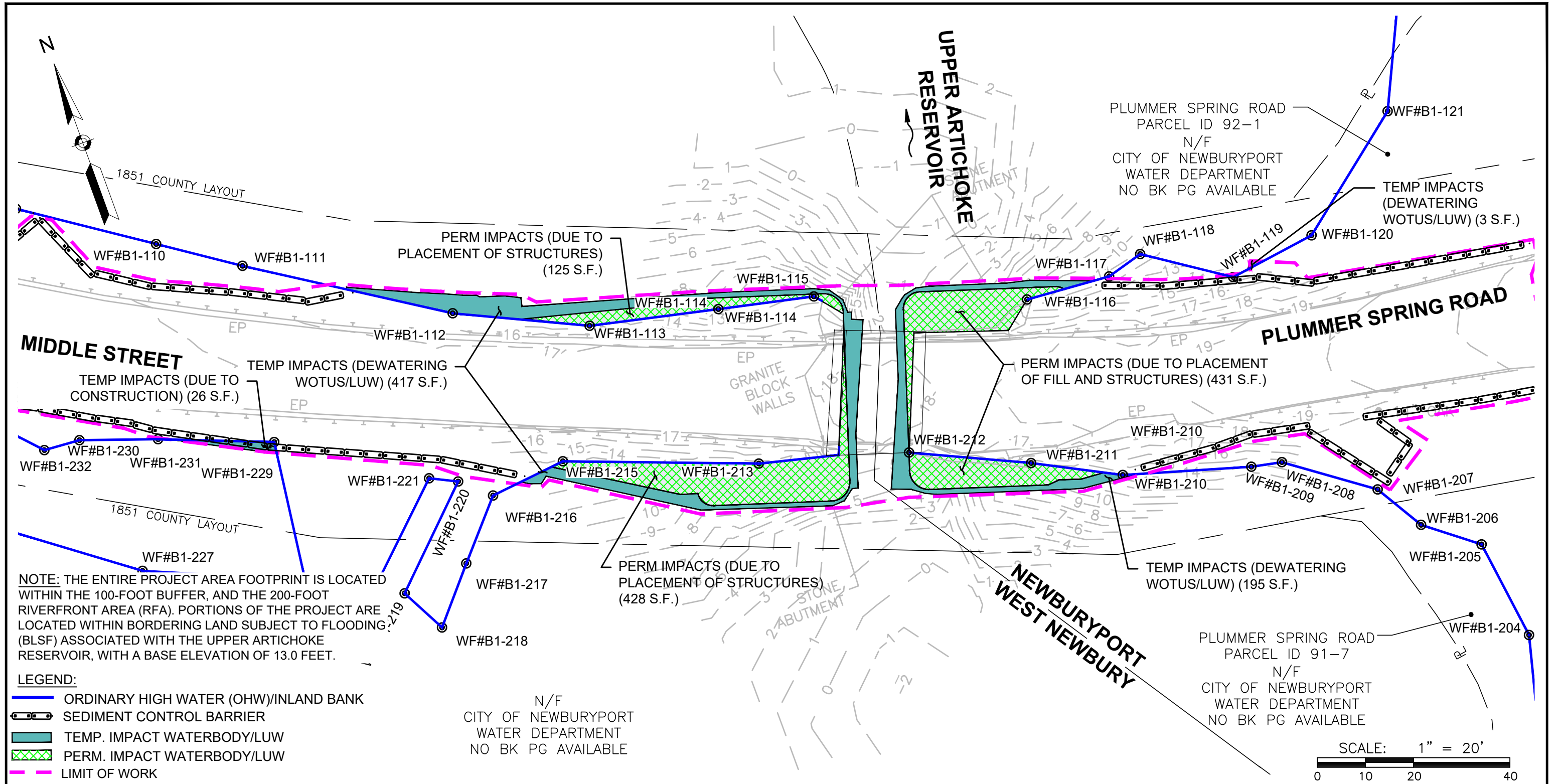


PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

PROPOSED WALL PROFILE
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10'
 Description: PR WALL
 PROF Figure: 6 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source:

IMPACTS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

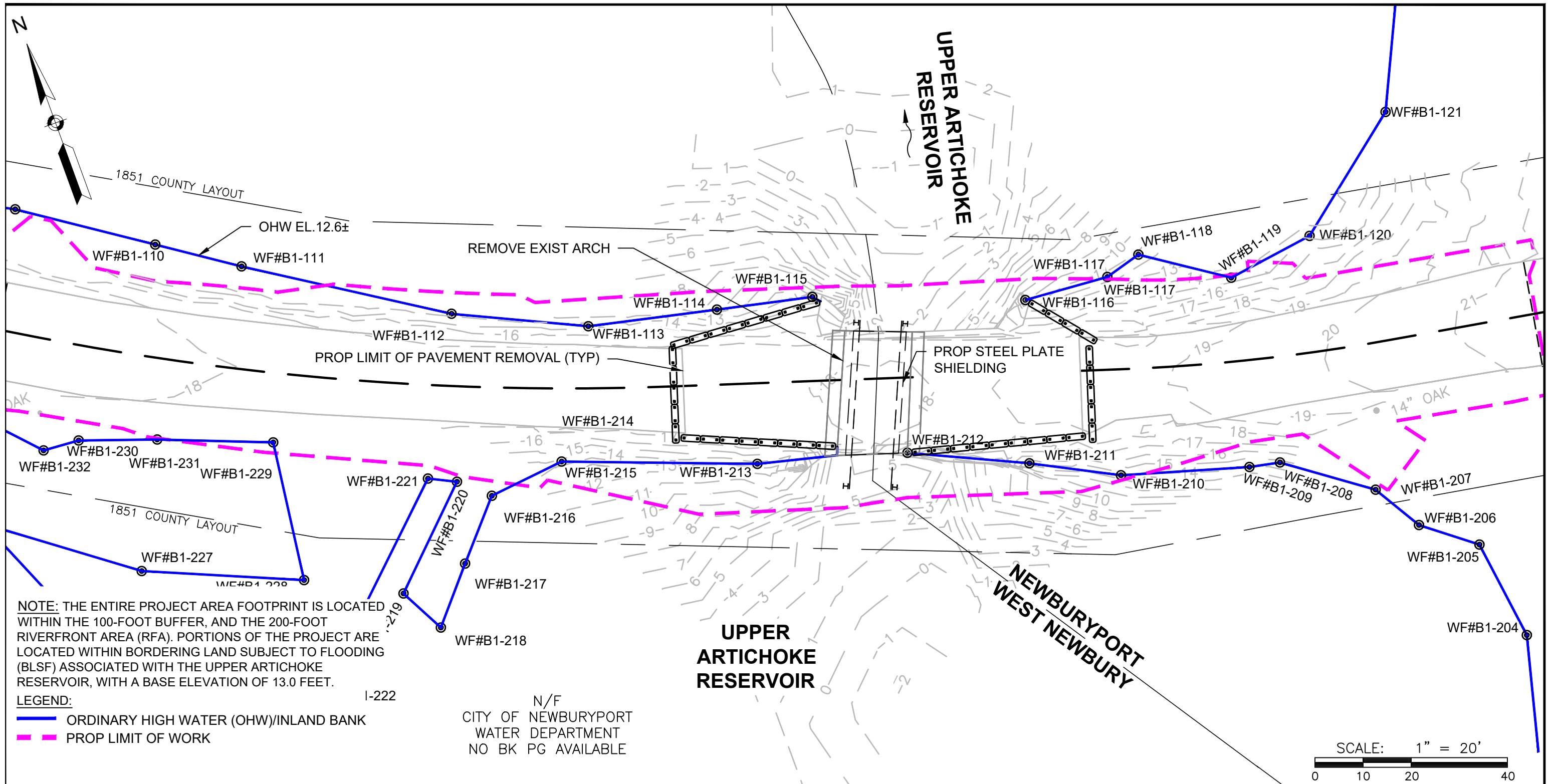
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Scale: 1" = 20' Revised: 05/07/2021

Description: IMPACTS Figure: 9 OF 15

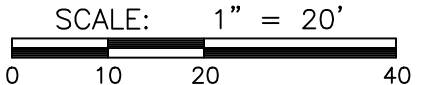
BSC GROUP

803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 - - - PROP LIMIT OF WORK

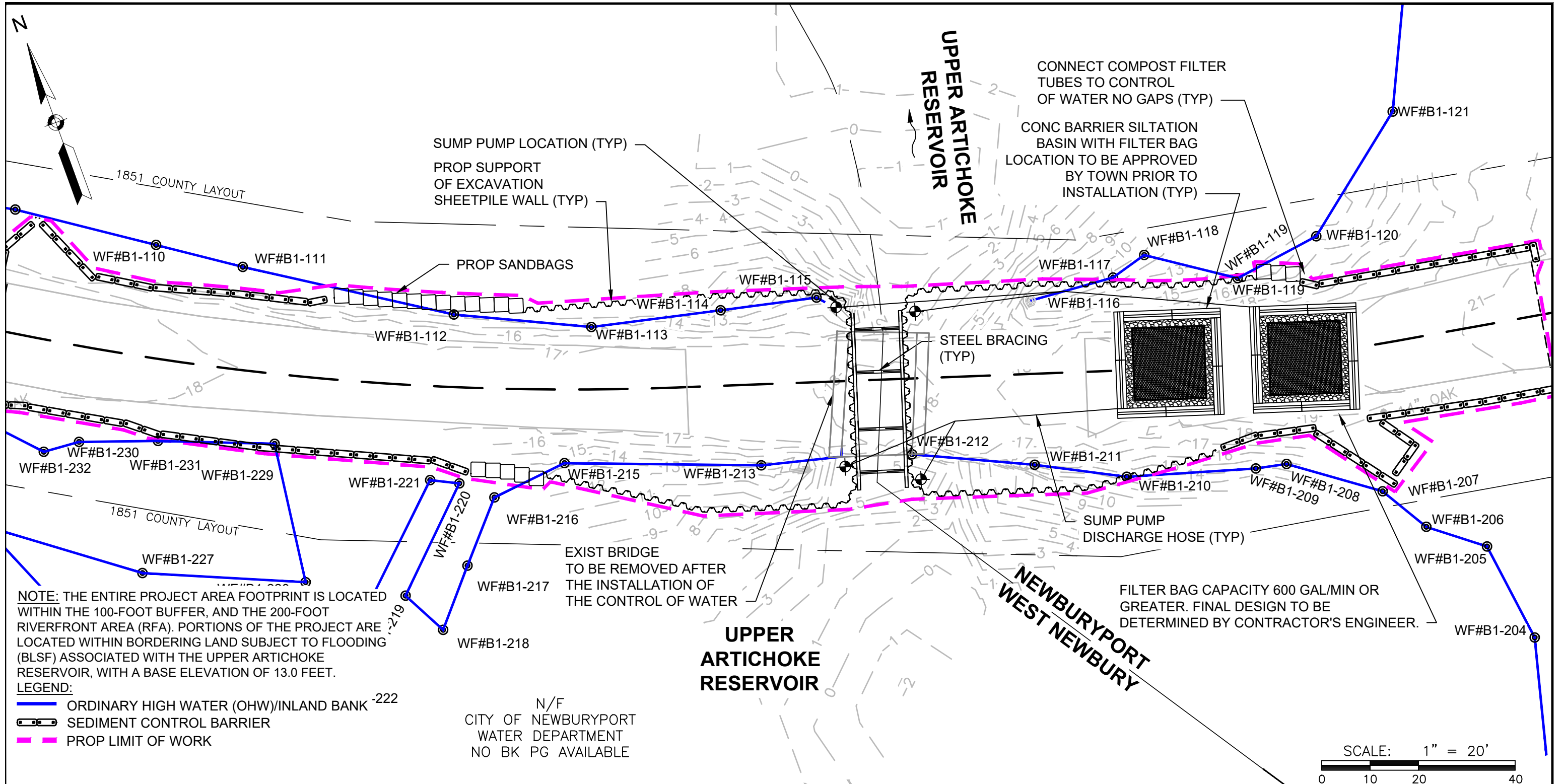


PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 11 OF 15

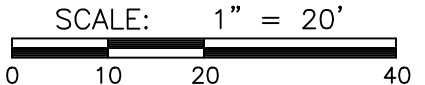
BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 — SEDIMENT CONTROL BARRIER
 — PROP LIMIT OF WORK

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

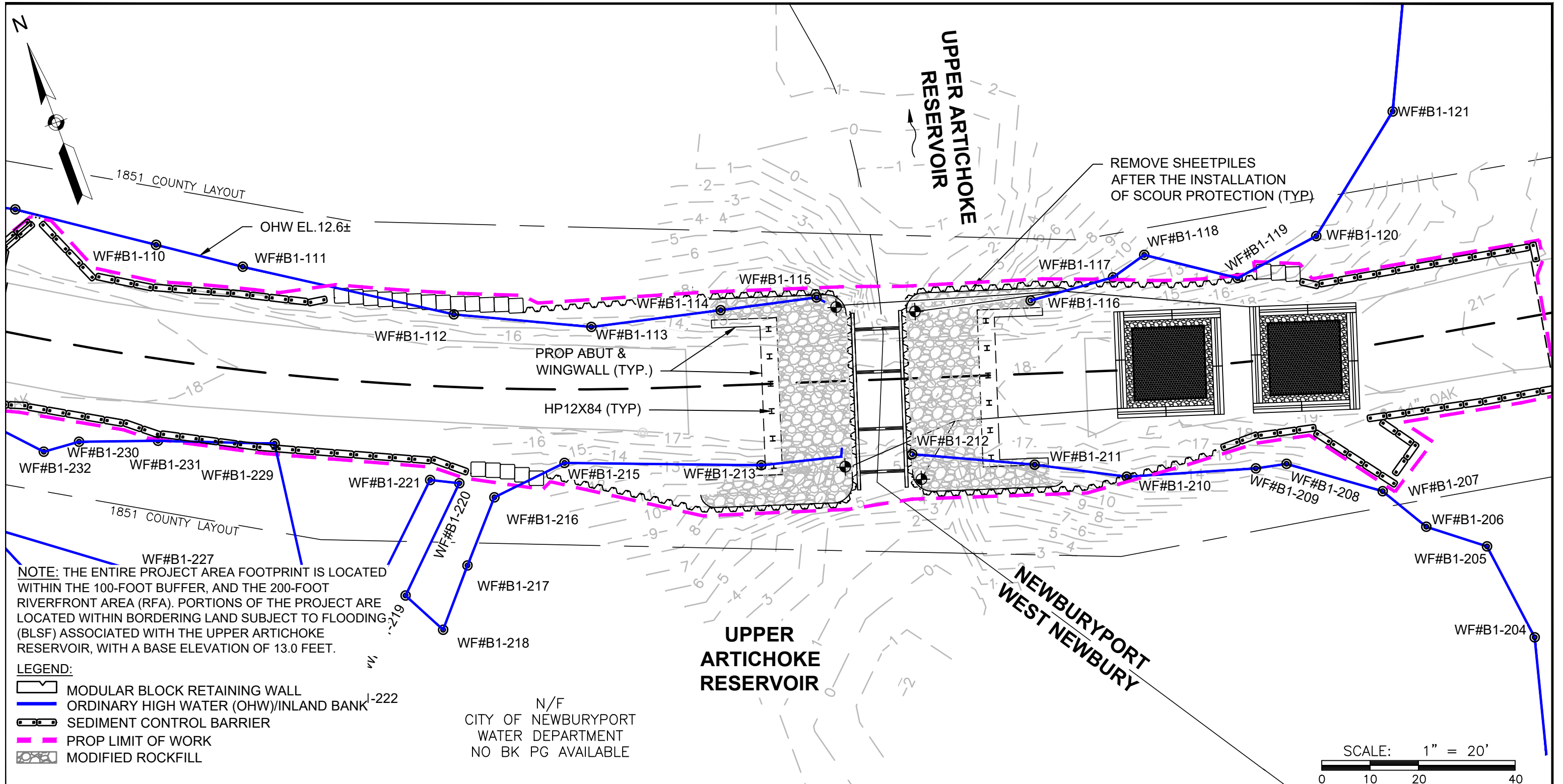


PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **CONTROL OF WATER - PHASE 1 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 12 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



1851 COUNTY LAYOUT
 OHW EL. 12.6±
 WF#B1-110
 WF#B1-111

1851 COUNTY LAYOUT
 WF#B1-230
 WF#B1-231
 WF#B1-229
 WF#B1-221
 WF#B1-220
 WF#B1-219

NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - MODIFIED ROCKFILL

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

REMOVE SHEETPILES AFTER THE INSTALLATION OF SCOUR PROTECTION (TYP)

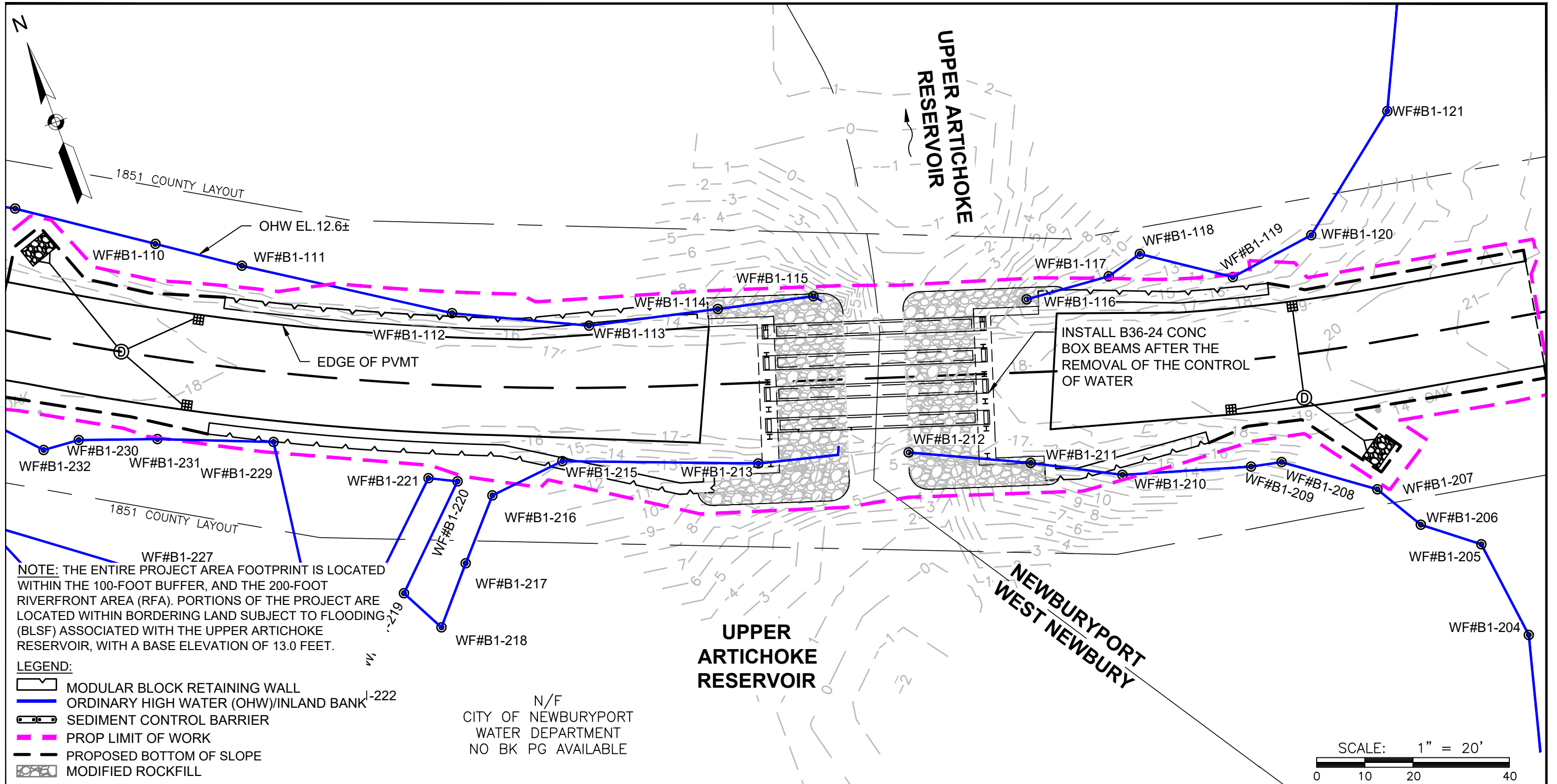
PROP ABUT & WINGWALL (TYP.)
 HP12X84 (TYP)

PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 13 OF 15

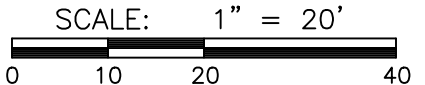
BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

CONTROL OF WATER - PHASE 3 - PLAN

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: 05/07/2021
Description: COW Figure: 14 OF 15

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
West Newbury, and Newburyport, Massachusetts

Notice of Intent

City of Newburyport
Conservation Commission
January 2021

Prepared for:
City of Newburyport
16C Perry Way
Newburyport, MA 01950

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

January 11, 2021

City of Newburyport
Conservation Commission
60 Pleasant Street
Newburyport, MA 01950

**RE: Bridge Replacement Project
Plummer Spring Road over Upper Artichoke Reservoir
Newburyport, Massachusetts
Notice of Intent**

Dear Members of the Newburyport Conservation Commission:

BSC Group Inc., on behalf of The City of Newburyport (“the Applicant”), is pleased to submit this Notice of Intent (NOI) to the Newburyport Conservation Commission for project activities associated with the replacement of the structurally deficient bridge (Bridge No. N-11-007) which carries Plummer Spring Road in Newburyport, MA over the Upper Artichoke Reservoir (hereby referred to as “the bridge”). The Applicant is seeking an Order of Conditions to authorize the replacement. The bridge is in poor condition and the road is currently closed due to structural deficiencies. Therefore, the applicant proposes to replace the bridge structure with a new structure on a similar horizontal and vertical alignment. The proposed bridge will expand the hydraulic opening of this stream crossing while also improving roadway safety.

This NOI has been prepared in accordance with the Massachusetts Wetland Protection Act, M.G.L. c.131 s. 40 (the Act) and implementing regulations (310 CMR 10.00), as well as the City of Newburyport Wetlands Protection Ordinance (Article II). Additionally, this project is being proposed as a Limited Project, per 310 CMR 10.53(3)(i) which allows for (in part) maintenance, repair and improvement of bridges, 310 CMR 10.53(3)(l) which allows for the construction, reconstruction, operation or maintenance of water dependent uses, and 310 CMR 10.53(8) which allows for the replacement of an existing stream crossing while avoiding impacts where possible and minimizing / mitigating impacts when not. Because the bridge lies within both the City of Newburyport and the Town of West Newbury, an NOI is being concurrently filed in West Newbury for this bridge replacement project.

Notification to abutters within 100 feet of the project site has been made by certified mail. A copy of the abutter notification, affidavit of service, and a list of abutters are provided in the NOI. As a municipal project, the City is exempt from filing fees.

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



We respectfully request that you place this project on the next regularly scheduled Conservation Commission public hearing. Please do not hesitate to contact me at 617-896-4579, or skreisel@bscgroup.com with any inquiries you may have.

Sincerely,
BSC Group, Inc.

Sara Kreisel, PWS
Ecological Project Manager

cc: Jon-Eric White, City of Newburyport
MassDEP Northeast Regional Office
Similar version to West Newbury Conservation Commission for adjacent work

Table of Contents

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

WPA FORM 3

WETLAND FEE TRANSMITTAL FORM

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WETLANDS PROTECTION ORDINANCE
VARIANCE REQUEST

ATTACHMENT B

SITE FIGURES
FEMA FIRM MAP
PHOTOGRAPHS
USGS STREAM STATS

ATTACHMENT C

ALTERNATIVES ANALYSIS

ATTACHMENT D

AFFIDAVIT OF SERVICE
ABUTTER NOTIFICATION LETTER
CERTIFIED LIST OF ABUTTERS

ATTACHMENT E

STREAMLINED STORMWATER MANAGEMENT REPORT

ATTACHMENT F

CONSTRUCTION SPECIFICATIONS

ATTACHMENT G

PROJECT PLANS
CONSTRUCTION DETAILS



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Newburyport
City/Town

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Plummer Spring Road over Upper Artichoke Reservoir
Latitude and Longitude:
N/A - Town Roadway Layout
f. Assessors Map/Plat Number

Newburyport
b. City/Town
42.802999
d. Latitude
N/A
g. Parcel /Lot Number

01950
c. Zip Code
-70.931053
e. Longitude

2. Applicant:

Jon-Eric
a. First Name
City Engineer, City of Newburyport
c. Organization
16 C Perry Way
d. Street Address
Newburyport
e. City/Town
978-465-4464
x1710
i. Fax Number

White
b. Last Name
MA
f. State
01950
g. Zip Code
jewhite@cityofnewburyport.com
j. Email Address

3. Property owner (required if different from applicant): Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Sara
a. First Name
BSC Group, Inc.
c. Company
803 Summer Street
d. Street Address
Boston
e. City/Town
617-896-4579
h. Phone Number

Kreisel
b. Last Name
MA
f. State
02127
g. Zip Code
skreisel@bscgroup.com
j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

Fee Exempt
a. Total Fee Paid

Fee Exempt
b. State Fee Paid

Fee Exempt
c. City/Town Fee Paid



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Newburyport
City/Town

A. General Information (continued)

6. General Project Description:

The project proposes the replacement of the bridge carrying Middle Street, West Newbury / Plummer Spring Road, Newburyport over the Upper Artichoke Reservoir in a similar horizontal and vertical alignment. Please refer to the Project Narrative for additional details.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

- 1. Single Family Home
- 2. Residential Subdivision
- 3. Commercial/Industrial
- 4. Dock/Pier
- 5. Utilities
- 6. Coastal engineering Structure
- 7. Agriculture (e.g., cranberries, forestry)
- 8. Transportation
- 9. Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

- 1. Yes No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)
- 310 CMR 10.53(3)(i):...improvement...bridges...existed prior to 4/1/83; 10.53(3)(l):...construction...of water dependent uses & 10.53(8)(a): Replace...existing stream crossing in a non-tidal crossing.

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
N/A Town Roadway Layout	
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

- 1. Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
- 2. Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Newburyport

City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
 Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	_____	_____
	1. square feet	2. cubic yards dune nourishment
	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	

	1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	
	1. square feet	
4. <input type="checkbox"/> Restoration/Enhancement	If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.	
	_____	_____
	a. square feet of BVW	b. square feet of Salt Marsh
5. <input checked="" type="checkbox"/> Project Involves Stream Crossings		
	0	1
	a. number of new stream crossings	b. number of replacement stream crossings



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Newburyport
City/Town

C. Other Applicable Standards and Requirements

- This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

- a. Yes No **If yes, include proof of mailing or hand delivery of NOI to:**

**Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581**

MassGIS 2020

b. Date of map

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

- c. Submit Supplemental Information for Endangered Species Review*

1. Percentage/acreage of property to be altered:

(a) within wetland Resource Area

percentage/acreage

(b) outside Resource Area

percentage/acreage

2. Assessor's Map or right-of-way plan of site

2. Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

- (a) Project description (including description of impacts outside of wetland resource area & buffer zone)
- (b) Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <https://www.mass.gov/endangered-species-act-mesa-regulatory-review>).

Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Newburyport
City/Town

C. Other Applicable Standards and Requirements (cont'd)

Online Users:

Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
- a. Yes No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
- b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
- a. Yes No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
- a. Yes No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
- a. Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
1. Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 2. A portion of the site constitutes redevelopment
 3. Proprietary BMPs are included in the Stormwater Management System.
- b. No. Check why the project is exempt:
1. Single-family house
 2. Emergency road repair
 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

- This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Newburyport
City/Town

D. Additional Information (cont'd)

3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. List the titles and dates for all plans and other materials submitted with this NOI.

Project Site Plans

a. Plan Title

BSC Group, Inc

b. Prepared By

December 2020

d. Final Revision Date

c. Signed and Stamped by

Varies

e. Scale

Environmental Resource Map

f. Additional Plan or Document Title

October 2020

g. Date

5. If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. Attach NOI Wetland Fee Transmittal Form

9. Attach Stormwater Report, if needed.

E. Fees

1. Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Provided by MassDEP:

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File Number

Document Transaction Number

Newburyport

City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant

2. Date

1-7-21

3. Signature of Property Owner (if different)

4. Date

1/7/2021

5. Signature of Representative (if any)

6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

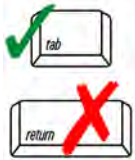
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

Plummer Spring Road over Upper Artichoke Reservoir Newburyport
 b. City/Town
 N/A - Fee Exempt Fee Exempt
 c. Check number d. Fee amount

2. Applicant Mailing Address:

Jon-Eric White
 a. First Name b. Last Name
 City Engineer, City of Newburyport
 c. Organization
 16 C Perry Way
 d. Mailing Address
 Newburyport MA 01950
 e. City/Town f. State g. Zip Code
 978-465-4464 x1710 jewhite@cityofnewburyport.com
 h. Phone Number i. Fax Number j. Email Address

3. Property Owner (if different):

a. First Name b. Last Name
 c. Organization
 d. Mailing Address
 e. City/Town f. State g. Zip Code
 h. Phone Number i. Fax Number j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

B. Fees

Fee should be calculated using the following process & worksheet. **Please see Instructions before filling out worksheet.**

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.



Massachusetts Department of Environmental Protection
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NOI Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
N/A - Fee Exempt			

Step 5/Total Project Fee: 0

Step 6/Fee Payments:

Total Project Fee:	0
	a. Total Fee from Step 5
State share of filing Fee:	0
	b. 1/2 Total Fee less \$12.50
City/Town share of filing Fee:	0
	c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

- a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

- b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Attachment A

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

PROJECT NARRATIVE
WETLANDS PROTECTION ORDINANCE VARIANCE REQUEST

1.0 Introduction

The BSC Group Inc., on behalf of The City of Newburyport (“the Applicant”) is seeking an Order of Conditions from the Newburyport Conservation Commission to authorize project activities associated with the replacement of the structurally deficient, undersized bridge (Bridge No. N-11-007) over the Artichoke River / Upper Artichoke Reservoir (hereby referred to as “the bridge”) located on Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA (See Attachment B for Site Location Maps and Photos). The bridge is structurally deficient due to undermining of the existing roadway foundation. The Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness.

This Notice of Intent has been prepared in accordance with the Massachusetts Wetlands Protection Act (WPA), M.G.L. c.131 S.40 (the Act), its implementing regulations (310 CMR 10.00). Additionally, this project is being proposed as a Limited Project, per 310 CMR 10.53(3)(i) which allows for maintenance, repair and improvement (but not substantial enlargement) of (in part) bridges and culverts which existed prior to April 1, 1983, 310 CMR 10.53(3)(l) which allows for the construction, reconstruction, operation or maintenance of water dependent uses, and 310 CMR 10.53(8) which allows for the replacement of an existing stream crossing while avoiding impacts where possible, and minimizing / mitigating impacts when not. A Notice of Intent is also being filed concurrently in West Newbury for bridge replacement activities occurring within the Town limits.

This Notice of Intent has also been prepared in accordance with the City of Newburyport Wetlands Protection Ordinance (Chapter 6.5, Article II) which provides performance standards for the Wetland Buffer Zone. Due to the nature of the proposed project, the design is unable to meet the regulatory requirements under the City Ordinance for a 25-foot No Disturbance Buffer Zone, and work within the Buffer Zone to the Upper Artichoke Reservoir. As such, while impacts to the Buffer Zone will be minimized to the extent practicable, the Applicant requests a waiver for working in this locally regulated resource area.

Due to the nature of the bridge replacement activities, impacts are proposed to Bank, Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area (RFA), and the locally regulated 100-foot Buffer Zone / 25-foot No Disturbance Zone to Bank. However, mitigation measures will be implemented to minimize disturbances to the surrounding environment during construction. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment G) for additional detail. The project has been designed to be in compliance with the Massachusetts Stream Crossing Standards to the maximum extent practicable and improves openness and habitat connectivity.

2.0 Existing Conditions

West Newbury is located on the northwestern side of the bridge, and Newburyport is on the eastern side. Plummer Spring Road, Newburyport turns into Middle Street upon entering West Newbury. The project site is approximately 2,000 feet west of the intersection with Turkey Hill Road, Newburyport and approximately 0.7 mile east of the intersection with Garden Street, West Newbury. The crossing occurs within the Upper Artichoke Reservoir, a public water supply. The surrounding area is comprised of Article 97 lands, reserved for water supply protection. Beyond that, the area is generally characterized by low-density residential development. The bridge predates and divides the existing Upper Artichoke Reservoir, through which the Artichoke River flows. The Reservoir was originally

formed by damming the Artichoke River which flows north to the Merrimack River. While the majority of the surrounding area consists of residential development and forested land, the project area is limited to previously disturbed Riverfront Area and other resource areas encumbered by the existing bridge.

The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. The road and stone arch bridge were constructed in 1891 before the Upper Artichoke Reservoir was built. The low chord on the existing arch is set at an elevation of 16.20 feet. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10-feet for a total roadway width of approximately 17-feet to 20-feet. There are no sidewalks on the bridge. The bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. The project area consists of country drainage, whereby runoff travels to the approach roadway and informally runs off down the side slopes. Plummer Spring Road / Middle Street is functionally classified as a Rural Local road.

2.1 Wetland Resource Areas

BSC wetland scientists delineated the boundary of existing wetland resource areas within and in the immediate vicinity of the bridge in December 2019. Wetlands were delineated in accordance with the methods developed by the Massachusetts Department of Environmental Protection's (MassDEP) Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act, dated 1995, as well as definitions set forth in the Wetlands Regulations 310 CMR 10.00 (Wetlands Protection Act Regulations). Existing conditions, wetland resource areas, and buffer zones in relation to the proposed activities are shown in the figures and photos in Attachment B.

The wetland resource areas at the site include the Bank, Land Under Waterbodies and Waterways (LUW), Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area (RFA), and the 100-foot Buffer Zone to Bank.

Watershed

The Artichoke River generally flows in a south-to-north orientation in the Upper Artichoke Reservoirs before discharging into the Merrimack River, 1.3 miles north of the project area. The Artichoke River connects the Upper Artichoke Reservoir, the Lower Artichoke Reservoir, and the Merrimack River, by two dams. According to the USGS Stream Stats Report for this area, the drainage area at the Plummer Spring Road / bridge crossing is approximately 5.48 square miles.

Bank

As defined in the WPA regulations 310 CMR 10.54 (2), Bank is a portion of land surface that normally abuts and confines a water body. The upper boundary of Bank is the first observable break in slope. The natural banks of the Reservoir have gradual slopes vegetated mainly by deciduous and occasionally coniferous trees. The banks are littered with leaf detritus as a result. The roadway is steeply sloped, and the banks are vegetated with shrubs and trees growing over a riprap substrate. A 100-foot buffer zone extends from the delineated Bank.

Bordering Vegetated Wetlands

As defined in the WPA regulations 310 CMR 10.55 (2)(a): Bordering Vegetated Wetlands (BVW) are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes where soils are saturated or inundated as a result of a specific hydrology (M.G.L. c. 131, § 40), which results in the predominance of hydrophytic vegetation. No vegetated wetlands were identified within the project site.

Land Under Waterbodies and Waterways

As defined in the WPA regulations 310 CMR 10.56 (2)(a): Land under Water Bodies and Waterways (LUW) is the land beneath any creek, river, stream, pond or lake, which may be composed of organic muck or peat, fine sediments, rocks or bedrock; the boundary of which is the mean annual low water level. The entire bed of the Reservoir upstream and downstream of the existing crossing, and within the existing bridge crossing constitutes LUW. The streambed near the crossing is characterized by sand and cobbles with trace amounts of silt and gravel.

Bordering Land Subject to Flooding

As defined in the WPA regulations 310 CMR 10.57 (2)(a): Bordering Land Subject to Flooding (BLSF) is an area with low, flat topography adjacent to and inundated by flood waters, which extends from the banks of waterways and waterbodies. BLSF is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. According to the FEMA Flood Insurance Rate Maps for Newburyport / West Newbury (Community Panel Number 25009C0116F dated July 2012), the project occurs within the 100-year floodplain (Zone AE). The bridge is located within Zone AE for the 100-year storm event at, and below the 13-foot base flood elevation.

Riverfront Area

As defined in the WPA regulations 310 CMR 10.58 (2)(a): Riverfront Area (RFA) is the area of land between a river's mean annual high water (MAHW) line and a parallel line measured [200-feet] horizontally. The RFA consists of the approximately 14-foot wide paved Middle Street / Plummer Spring Road. Relatively steep slopes extend down towards the water on either side of the road. The slopes consist mainly of rip rap and trees and shrubs with minimal detrital ground cover beneath. All upland portions of the project area occur within the first 100 feet of the RFA.

Buffer Zone

A 100-foot Buffer Zone extends outward from the limit of Bank into the project site. All upland project areas and activities are located within the Buffer Zone associated with the Bank of the Upper Artichoke Reservoir.

2.2 NHESP Mapped Habitat

According to the most-recently published (2017-2020) information using MassGIS data layers, there are no Natural Heritage Endangered Species Program (NHESP) Priority Habitats of Rare Species, Estimated Habitats of Rare Wildlife, potential or certified vernal pools within the vicinity of the proposed project.

2.3 Other Environmental Resources

According to MassGIS data layers and classifications provided in 314 CMR 4.00, the entire project area occurs within an Outstanding Resource Water (ORW) and Surface Water Protection Zone associated with the Upper Artichoke Reservoir, which is an Article 97, municipal land, and a public water supply watershed. According to MassGIS data layers and classifications provided in 301 CMR 12.00, the project area does not fall within an Area of Critical Environmental Concern (ACEC). According to MassGIS data layers, neither the Upper Artichoke Reservoir nor the river are EPA impaired waterways, nor Coldwater Fisheries (CFR).

3.0 Alternative Analysis

The existing bridge over the Upper Artichoke Reservoir has already partially collapsed which has resulted in the road being permanently closed to traffic in its current state. In order to reduce the risk of injury from any further collapse, and to reopen the roadway, it is necessary to replace the bridge. The design of the bridge has been analyzed by engineers with four possible alternatives: a No-build, a Three-sided Open Bottom Bridge with a precast concrete rigid frame (Alternative 1), an Open Bottom Arch Bridge with precast concrete arch (Alternative 2), and a Three-sided Open Bottom Bridge with a precast concrete beam (Alternative 3, preferred alternative). Please refer to Attachment C for a detailed analysis of the different stream crossing alternatives and their abilities to meet Stream Crossing Standards.

4.0 Proposed Project

The purpose of the project is to replace a structurally deficient, undersized bridge with a new bridge along a similar horizontal and vertical alignment. The project activities include the replacement of the bridge over the Upper Artichoke Reservoir in its entirety. The full sequence of project construction activities will take approximately twelve months to complete. The project involves mitigation measures intended to address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The roadway width will increase by approximately 4 feet to include safety improvements to the existing alignment. A safety sidewalk will be added to the south side of the bridge. Roadway reconstruction of Middle Street will occur 160-feet to the west of the bridge and 115-feet to the east on Plummer Spring Road for improved roadway approaches. The total length of the project is approximately 320-feet. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment E) for additional details.

- **Proposed Bridge** – The proposed bridge is a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The proposed span length will increase from the 14-feet to 45-feet. The overall width of the bridge will be 32.5-feet to accommodate safety improvements, including the sidewalk. In addition to substantially increasing the openness ratio, the increased span eliminates the need for the bridge’s substructure to be located in the deep portion of the reservoir. In accordance with the MassDOT Bridge Manual for a Rural Local road, the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing condition.
- **Riprap Scour Protection** –With the increased span, to achieve a 1:1.5 vertical: horizontal ratio from the elevation of the existing streambed to the elevation at the new bridge abutments, slope stabilization is required. The slope stabilization will consist of 36-inches of variable sized riprap (10- to 22-inch stones) placed below the natural streambed material. In addition, 6-inches of natural streambed material is proposed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.
- **Roadway Reconstruction** – At the approaches of the existing bridge the roadway is narrow and the slopes adjacent to the roadway are steep making the existing guardrail ineffective. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced

and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable. However, in areas where slopes with a 1:1.5 vertical: horizontal ratio or less exist, they will be regraded (without impacting the reservoir),

- **Installation of Guardrail and Repaving Activity** – Bridge replacement activities provide an opportunity to make safety improvements to existing conditions surrounding the bridge. The existing functional roadway width will expand from approximately 20-feet to 24-feet wide over the bridge. The widened roadway will meet the existing roadway width at the limits of the project. The approaches to the bridge will be repaved following the completion of project activities. Extended steel guardrail is proposed along the approaches to the bridge to replace existing non-functioning guardrail posts. While these activities will occur within the limits of RFA and BLSF, these areas are currently disturbed and the work within these areas will not adversely affect the resource areas.

Work in Wetland Resource Areas

The bridge replacement project is considered a redevelopment project. As previously stated, portions of the project qualify as a Limited Project. Impacts to wetland resource areas are unavoidable, however upon completion of the project, slopes will be stabilized and the streambed will be restored to match the natural stream channel. The outcome will result in an improvement over existing conditions. Impacts to Bank, Land Under Water, Bordering Land Subject to Flooding, Riverfront Area and buffer zones are anticipated. There will be no BVW impacts as a result of this project.

Impacts denoted below are represented as those occurring within the City of Newburyport, and then the project as a whole within the City of Newburyport and the Town of West Newbury. Table 1 provides an overview of impacts with regard to each WPA wetland resource area.

Bank

The existing Bank along all four quadrants of the bridge will be impacted to some extent as a result of the proposed project. Retaining walls have been proposed in order to better stabilize the proposed bridge structure. Approximately 14 linear feet (lf) (61 lf project-wide) of temporary Bank impacts are proposed in Newburyport to allow for access to the structures through the dewatering structure installation. Approximately 54 lf (182 lf project-wide) of permanent impacts to Bank are proposed in Newburyport as a result of the placement of the retaining walls and riprap for scour protection to the bridge abutments. Additional bank will be created where it previously did not exist, within the crossing itself. Some smaller trees along the roadway are proposed to be removed as a result of this work (<0.1 acres). Upon completion of the bridge and retaining wall construction, the embankment will be installed to tie into elevations and contours to the extent practicable. Bank above Ordinary High Water (OHW) will be restored where appropriate by installing 12-inches of compost mulch and seeded with a native seed mix. Please refer to Project Specs and Project Site Plans (Attachments F and G) for additional detail.

Land Under Waterbodies and Waterways

Approximately 431 square feet (sf) of permanent impacts (984 sf project-wide) to LUW will occur within the Reservoir and stream channel with the installation of riprap, retaining walls, and the new bridge wingwalls and abutments. The majority of LUW within the existing crossing will not be disturbed. Steel plates will be inserted in the channel abutting the existing structure to allow for its safe removal and to allow water to continue to flow. No other impacts are proposed within the channel itself. In order to protect the new bridge structure, riprap will be installed at the crossing inlet/outlet which will also constitute a permanent impact. A total of 449 sf of new LUW (885 sf project-wide) will be created with the increased openness of the expanded crossing. The new crossing will have a natural streambed installed, similar to what occurs within the existing crossing (Attachments F & G). Additionally, approximately 198 sf of temporary impacts (641 sf project-wide) at the inlet and outlet of the bridge

will occur as a result of dewatering the channel for construction. All temporary impacts will be restored to preconstruction conditions. Please refer to Project Site Plans (Attachment G) for additional detail.

Bordering Vegetated Wetlands

No impacts to Bordering Vegetated Wetlands are proposed.

Riverfront Area

As the project is situated directly over the Upper Artichoke Reservoir, and given that the project area is relatively small, all upland portions of the project area are within the 200-foot RFA. A majority of work within the RFA constitutes a redevelopment project. Nearly all of the work will be within existing roadway, shoulders, or side slopes. Approximately 2,669 sf (5,872 sf project-wide) of RFA impacts constitutes redevelopment and will occur within the previously paved / degraded existing roadway. Approximately 1,217 sf (3,203 sf project-wide) of RFA permanent impacts will result from the construction of the new bridge. These include the installation of the bridge footings and abutments, riprap for scour protection, pavement milling mulch for the shoulders, and drainage structures. Approximately 548 sf (1,118 sf project-wide) of temporary impacts are anticipated during the construction phase of the project as a result of the installation of erosion and sedimentation controls and water diversion.

Upland areas adjacent to the Upper Artichoke Reservoir that are temporarily disturbed by construction activities will be restored through a combination of grading, stabilization, and seeding activities. Some smaller trees along the roadway are proposed to be removed as a result of this work (< 0.1 acres). Any fill introduced to the site for the purposes of re-establishing vegetation will be clean fill, and disturbed areas will be stabilized and restored through the planting of native species as soon as practicable to reduce the likelihood that invasive species become established at the site.

Bordering Land Subject to Flooding

All upland within the project area is also Bordering Land Subject to Flooding (BLSF). Generally, all of the work proposed within BLSF will be temporary in nature. However, there will be some permanent impacts to BLSF as a result of the proposed retaining walls. This work will be compensated for, with the opening-up of the bridge crossing.

Approximately 44 sf (211 sf project-wide) of BLSF will be altered within the project area; however, approximately 344 sf (655 sf project-wide) will be replaced as additional storage capacity. A total of 132 cf (525 cf project-wide) of storage will be lost; however, approximately 1,857 cf (3,295 cf project-wide) will be replaced. Additional work along the roadway is entirely above the 13-foot flood elevation, and remaining work within this resource area will be restored in-kind.

Table 2 provides an overview of cut and fill in BLSF by foot of elevation.

Work within Buffer Zone

The majority of the project site and proposed activities will be located within the 100-foot Buffer Zone to Bank. Vegetation will be maintained whenever possible within the project vicinity, and the area will be returned to preconstruction conditions whenever possible.

Table 1 below provides an overview of impacts with regard to each WPA wetland resource area:

Table 1 – Summary of Wetland Resource Area Impacts

Resource Area	Impact Type	West Newbury	Newburyport	TOTAL
Land Under Water (LUW)	Permanent	553 sf	431 sf	984 sf
	Permanent Dredge / Fill	39 cy / 17 cy	9 cy / 2 cy	48 cy / 19 cy
	Temporary	443 sf	198 sf	641 sf
	Temporary Dredge / Fill	28 cy / 0 cy	22 cy / 0 cy	50 cy / 0 cy
Bank	Permanent	128 lf	54 lf	182 lf
	Temporary	47 lf	14 lf	61 lf
200-foot Riverfront Area (RFA)	Redevelopment	3,203 sf	2,669 sf	5,872 sf
	Permanent	1,986 sf	1,217 sf	3,203 sf
	Temporary	570 sf	548 sf	1,118 sf
Bordering Land Subject to Flooding (BLSF)	Proposed Alteration (sf)	167 sf	44 sf	211 sf
	Proposed Replacement	311 sf	344 sf	655 sf
	Flood Storage Lost (cf)	393 cf	132 cf	525 cf
	Flood Storage Replaced	1,438 cf	1,857 cf	3,295 cf

Table 2 – Summary of Cut and Fill in BLSF By Foot of Elevation

Elevation (ft)	Floodplain Impact (cf)		Floodplain Mitigation (cf)		Floodplain Net (cf)		
	West Newbury	Newburyport	West Newbury	Newburyport	West Newbury	Newburyport	Total
3-4	-	-	-	10.1	No Change	+10.1	+10
4-5	-	-	6.1	46.5	+6.1	+46.5	+53
5-6	-	-	40.4	84.3	+40.4	+84.3	+125
6-7	-	-	78.3	122.2	+78.3	+122.2	+201
7-8	-	-	116.2	160.1	+116.2	+160.1	+276
8-9	0.8	-	154.0	198.0	+153.3	+198.0	+351
9-10	-	24.5	192.9	236.8	+192.9	+212.4	+405
10-11	165.5	43.0	234.3	278.3	+68.8	+235.3	+304
11-12	140.6	38.6	279.8	354.5	+139.2	+315.9	+455
12-13	85.6	25.5	334.3	365.6	+248.7	+340.1	+589
TOTAL	392	131	1,436	1,856	+1,044	+1,725	+2,769

5.0 Stormwater Management

The Project area currently exhibits country drainage whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and while the widened roadway will increase impervious area at the site, mitigation measures are not feasible to reduce runoff rates due to site limitations. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable. As such, a formal Stormwater Management Report has not been prepared for this project, but a streamlined one is included in Attachment E.

To provide stormwater drainage improvements, it's proposed that runoff will be captured at the low points on either side of the roadway via two deep sump catch basins. The deep sump catch basins flow to a manhole on the north side of the roadway. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends. Like the existing conditions, all other runoff within the project limits will continue

to flow via country drainage. Please refer to Attachment E for Stormwater Report.

6.0 Construction Considerations and Sequencing

Installation of the recommended foundation system will require control of water during construction and the use of a temporary excavation support system. Control of water during construction, which typically includes water diversion and dewatering operations to maintain dry conditions during foundation placement, is the responsibility of the Contractor. Typical systems for water diversion primarily include cofferdams, which can incorporate steel sheet piling, large sandbags, or other proprietary systems. Based on site constraints, actual flowrates during construction and specific project permitting requirements, cofferdams can be combined with temporary diversion pipes to completely redirect flows around the work area. Final means and methods are up to the contractor.

The temporary excavation support system will be selected by the Contractor, but typical installations for use with the existing subsurface conditions include cantilevered, or braced steel sheet piling systems. The Contractor will select the support of excavation based on site constraints, traffic control plan and other methods of construction.

Following the excavation, proper subgrade preparation must be completed prior to installation of the recommended foundation system. Proper treatment includes the installation of an approved geotextile fabric over the subgrade, followed by the placement and compaction of crushed stone.

The construction is generally proposed as outlined below:

- Additional signage to fully close existing roadway (closed for pedestrian traffic, already closed to vehicles).
- Installation of erosion controls.
- Water handling and dewatering.
- Removal of existing bridge
- Excavation of soils.
- Installation of new bridge structure.
- Placement of riprap for scour protection / placement natural substrate in streambed.
- Construction and pavement of roadway approaches and related work.
- Open new bridge to traffic.
- Site restoration including stabilization and seeding.
- Remove erosion and sedimentation controls.

7.0 Mitigation Measures

The proposed project will occur within the jurisdictional limits of Bank, Land Under Water, BLSF, the 100-foot buffer area and the 200-foot Riverfront Area. The project has therefore been designed to incorporate construction Best Management Practices (BMPs) to ensure adequate protection to wetland resource areas within proximity of the project location.

Disturbed areas within affected resources will be stabilized and restored following the completion of project activities. This will be achieved specifically by limiting alteration within resource areas to the maximum extent practicable. This will also be accomplished through project phasing activities that minimize work within resources to the maximum extent practicable.

Erosion and Sedimentation Controls

Siltation barriers composed of compost filter tubes will be installed at the downgradient limits of work. Sedimentation barriers will be checked on a weekly basis and following significant storm events. Sediment controls will remain in-place during all phases of the project and will be removed once the area is sufficiently stabilized. Please refer to Attachment G (Site Plans) for erosion and sedimentation control details and the proposed locations of controls.

Construction Stockpiling Locations and Staging Areas

All stockpile locations and staging areas will be located within the existing roadway; and while locations are to be determined by the Contractor, they will need to be approved by the City prior to use. In the event stockpiled materials must be left on site overnight, the piles will be covered with tarps and surrounded by erosion control measures (e.g. compost filter tubes). Stockpiled streambed material will be stored at a location within the existing roadway. Staging and storage areas will be outside of all jurisdictional environmental resource areas where feasible and practicable.

Water Control Measures and Dewatering

Prior to in-water work, cofferdams will be installed for construction activities to occur in dry conditions. As such, work will require dewatering. The contractor will be required to develop and maintain a Construction Water Management Plan that is prepared in accordance with the contract design documents, and generally, the means and methods will be determined by the contractor. Flow will be maintained within the existing channel; the dewatered construction area can be maintained by pumping the water out of the work areas.

All discharge resulting from dewatering activities shall be directed to temporary sedimentation/retention basins as specified by the contractor to control turbidity. At no time shall the discharge be directly released into adjacent resource areas, nor will any settling tank/basin be located within a wetland resource area. If stone or other erosion control is utilized at the outlet of the settling tank/basin, this material will be removed, and the area will be restored to existing conditions prior to the completion of the project. Please refer to Attachment G, Project Site Plans for additional detail on proposed water control measures.

8.0 Regulatory Compliance

The project has been designed to comply with the General Performance Standards listed in 310 CMR 10.00. As previously stated, portions of the project qualify as a Limited Project. A comparison of the alternatives considered for this bridge replacement project is in Attachment C – Alternatives Analysis. Table 1 provides an analysis of proposed wetland resource area impacts. The proposed project includes measures to maximize compliance with the applicable performance standards with the WPA and the City of Newburyport Wetlands Protection Ordinance (Chapter 6.5 Article II) for each jurisdictional wetland resource area as discussed below.

According to the Wetlands Protection Act and City of Newburyport Wetlands Protection Ordinance, wetland resource areas are presumed significant in varying capacities to flood control, storm damage prevention, prevention of pollution, wildlife habitat, fisheries habitat, protection of public water supply, and protection of groundwater supply. The City Ordinance also provides performance standards for the Wetland Buffer Zone. Due to the nature of the proposed project, the design is unable to meet the regulatory requirements under the City Ordinance for a 25-foot No Disturbance Buffer Zone, and work within the Buffer Zone to the Upper Artichoke Reservoir. As such, the Applicant requests a waiver for working in this locally regulated resource area per Chapter 6.5 Article II Section 9A of the Ordinance since the intent has been met, and that avoidance, minimization, and mitigation have been employed to the maximum extent feasible.

The following section describes how the project will minimize and mitigate wetland resource area impacts to the maximum extent practicable by complying with the general performance standards established for each area:

General Performance Standards

Bank, 310 CMR 10.54 (4)(a)

Work impacting approximately 68 linear feet (243 lf project-wide) of Bank is associated with the Upper Artichoke Reservoir. As indicated in the Wetlands Protection Act 310 CMR 10.54 (4)(a), the proposed work shall not impair the following:

1. *the physical stability of the Bank*

The proposed work will improve the stability of the Bank by replacing the deteriorating bridge structure and the partially collapsed roadway side-slopes. This, in turn, will reduce scouring and erosion along the adjacent slopes and sedimentation in the waterway. At the completion of construction, the restored Bank will be stabilized by loaming and seeding.

2. *the water carrying capacity of the existing channel within the Bank*

The project will replace a structurally deficient and hydraulically restricted bridge. The proposed design will expand the existing hydraulic opening of the bridge, thereby improving flow conditions and reducing bridge scour and erosion issues. Hydraulic modeling has confirmed that widening the bridge span will not significantly increase upstream or downstream flooding.

3. *ground water and surface water quality*

The proposed project consists of rebuilding the existing bridge structure in the dry and will not result in discharge of sediment to the waterway. Therefore, it will not result in the degradation of groundwater and surface water quality.

4. *the capacity of the Bank to provide breeding habitat, escape cover and food for fisheries.*

The replacement of the existing bridge, with a new, wider bridge structure, will improve fish and wildlife habitat within the vicinity of the bridge as well as up and downgradient of the bridge. The project will minimize disturbance to the vegetation to the maximum extent practical and utilize erosion controls throughout the duration of construction to prevent sedimentation into the waterway.

5. *the capacity of the Bank to provide important wildlife habitat functions.*

The project site is not located within rare species habitat. There will be no permanent adverse effects as a result of the proposed work. The proposed work along the Bank will improve its physical stability which in turn, will improve habitat.

6. *Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.54(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards.... Notwithstanding the requirement of 310 CMR 10.54(4)(a)5., the impact on bank caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures contained in 310 CMR 10.60.*

The project site is not located within rare species habitat. There will be no permanent adverse effects as a

result of the proposed work. However, the proposed bridge replacement project will improve the site habitat connectivity. The project meets the Stream Crossing Standards to the maximum extent practicable.

Land Under Water Bodies and Waterways, 310 CMR 10.56 (4)(a)

Work impacting approximately 629 square feet (1,625 sf project-wide) of LUW is associated with the Upper Artichoke Reservoir. Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within the Land Under Water Bodies and Waterways shall not impair the following:

1. *The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;*

Temporary and permanent impacts to LUW are required to remove and replace the existing bridge, and to apply the proposed scour protection measures at the proposed bridge footings. Local scour effects at the inlet and outlet of the existing crossing were evident, and as such, it is important to protect the new bridge installation. The proposed bridge will have an increased hydraulic opening, thereby improving flow conditions, reducing bridge scour/erosive conditions, and improving water quality. Unabated channel flow and a phased construction approach will allow stream flow to be maintained throughout the duration of project activities. The surface area of LUW provided by the existing bridge will be replaced and expanded (885 sf of LUW will be created) over natural substrate. The project falls within the 100-year FEMA floodplain (Zone AE); however, the project will not adversely affect the floodplain as there will be a net-gain of storage capacity.

2. *Ground and surface water quality;*

Construction will be performed using appropriate erosion and sedimentation controls as previously stated, as well as general BMPs designed to prevent spills, turbidity, or debris generation. Upon completion of this work, flow will function more appropriately at this crossing. Therefore, it will not result in the degradation of groundwater and surface water quality.

3. *The capacity of said land to provide breeding habitat, escape cover and food for fisheries;*

The proposed work will improve the existing habitat by removing the existing bridge and installing a wider span bridge structure with natural streambed material that will better mimic natural conditions.

4. *The capacity of said land to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures established under 310 CMR 10.60.*

As described above, the project involves comparatively minimal new impacts to LUW in order to replace the failing bridge structure. A majority of permanent impacts will occur within the footprint of the existing crossing and as a result of the installation of the new retaining walls to protect the road and proposed bridge structure from scour. Many of the new impacts will be temporary in nature (641 square feet of 1,625 sf project-wide) for construction and dewatering purposes only and will be returned to preconstruction conditions. The new permanent impacts account for 11.8% of the total LUW in the project area. The new bridge will have a wider, natural streambed bottom which will provide environmental benefits such as improved wildlife passage and connectivity. Per 310 CMR 10.56(a)5., this project is exempt from the requirement to perform a wildlife habitat evaluation.

5. *Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.56(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards by consisting of a span or embedded culvert in which, at a minimum, the bottom of a span structure or the upper surface of an embedded culvert is above the elevation of the top of the bank, and the structure spans the channel width by a minimum of 1.2 times the bankfull width. This presumption is rebuttable and may be overcome by the submittal of credible evidence from a competent source. Notwithstanding the requirements of 310 CMR 10.56(4)(a)4., the impact on Land under Water Bodies and Waterways caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures established under 310 CMR 10.60.*

The proposed work is designed to the greatest extent practicable to the Massachusetts Stream Crossing Standards. Please refer to the Stream Crossing Evaluation Worksheet in Attachment C and the Stream Crossing Standards Compliance section below.

Bordering Land Subject to Flooding, 310 CMR 10.57 (4)(a)

Work impacting approximately 388 square feet (866 sf project-wide) of BLSF is associated with the Upper Artichoke Reservoir. Where the presumption set forth in 310 CMR 10.57(3) is not overcome, any proposed work within the Bordering Land Subject to Flooding shall not impair the following:

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

Flood storage will be temporarily altered from the bridge excavation and construction. Riprap is proposed in areas previously unencumbered by the bridge structure and areas with existing riprap, namely, to prevent scour at the openings, but material is also being removed from elevations within, and at the existing bridge opening.

The bridge is located within Zone AE for the 100-year storm event at and below the 13-foot base flood elevation. The retaining walls proposed at each quadrant of the bridge will permanently impact flood storage in these areas. However, a significant amount of roadway will be removed with the replacement of the earth-filled stone arch with a span-bridge which will triple the width of the existing channel, thereby increasing the hydraulic opening and overall flood storage capacity. Slopes will also generally be restored to the extent practicable. The proposed loss will not cause an increase, nor will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows. As a result, compensatory storage mitigation is not proposed.

2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

In accordance with the MassDOT Bridge Manual for a Rural Local road the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing conditions. This will allow for greater volume and flow passage at the crossing, while decreasing peak flow velocity by 30% over current conditions.

Flow will be maintained during construction through the existing channel. While final methodology is up to the contractor, the proposed system meets MassDOT required design standards for a temporary water control system, designed to maintain channel flow.

3. *Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

Generally, impacts to Middle Street / Plummer Spring Road and the adjoining slopes will be temporary in nature and will not impair the capacity of BLSF to provide important wildlife habitat functions. Permanent effects of the project will be to protect the existing bridge structure with retaining walls, and to triple the width of the existing channel width. Widening the span, opening the crossing, and bank restoration efforts, all proposed by this project will promote improvements to wildlife habitat. Additionally, since the proposed project involves a stream crossing, the project is exempt from the requirement to perform a wildlife habitat evaluation.

Riverfront Area (RFA), 310 CMR 10.58(5)

The proposed work is considered a Redevelopment Project in RFA in accordance with 310 CMR 10.58(5), because the project involves the replacement, rehabilitation or expansion of existing bridge structures and the improvement of existing roads, but will preserve undisturbed areas adjacent to the bridge as much as possible in accordance with 310 CMR 10.58 (4)(d)(1)(a). Work impacting approximately 4,434 square feet (10,193 sf project-wide) of RFA is associated with the Upper Artichoke Reservoir. All Redevelopment projects must comply with the following standards cited under 310 CMR 10.58(5).

- a) *At a minimum, the proposed work [must] result in an improvement over existing conditions of the capacity of the riverfront area to protect the interests identified in M.G.L.c.131 Section 40*

The proposed bridge structure will result in an improvement over existing conditions. The existing bridge is undermined and collapsing which has already resulted in the closing of the roadway. The new bridge will widen the opening, thereby providing improved wildlife passage and habitat connectivity.

- b) *Stormwater management is provided according to standards established by the Department*

The Project area currently exhibits country drainage system whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and while the widened roadway will increase impervious area at the site, mitigation measures are not feasible to reduce runoff rates due to site limitations. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable. As such, a formal Stormwater Management Report has not been prepared for this project, but a streamlined one is included in Attachment E.

- c) *Within 200 foot riverfront areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less*

The proposed project involves the redevelopment of an existing crossing. Proposed redevelopment activities are located entirely within previously disturbed RFA to the extent practicable. Due to the water-dependent nature of the project, it is not possible to locate the entire bridge structure further from the Reservoir than is currently proposed. Only minimal encroachment into non-altered areas is required, and only to the extent required for the most practicable and substantially equivalent economical bridge design.

- d) *Proposed work, including expansion of existing structures, shall be located outside the riverfront area or toward the riverfront area boundary and away from the river*

The proposed project involves the redevelopment of an existing stream crossing. Proposed redevelopment activities are located entirely within previously disturbed RFA to the extent practicable. The proposed activities will result in an increase in size relative to the existing overall bridge footprint, but the design proposes to locate the bridge footings at a greater distance from one another than the existing crossing. This will result in a much more open crossing than the existing structure. Due to the water-dependent nature of the project, it is not possible to locate the bridge further from the water than is currently proposed. Additional required work within the RFA includes the bridge scour protection and riprapped slope, which are required to prevent erosion.

- e) *The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the riverfront area*

The proposed project will be located within previously disturbed or degraded areas. The project involves the replacement of an existing bridge. As stated above, all major redevelopment components of the project are located within the limits of previously disturbed or degraded areas. The total RFA on the subject property is equal to approximately 13,158 sf. The total degraded RFA on the roadway site, 5,872 sf is equal to approximately 44.6%. The new scour protection at the bridge footings and the retaining walls will expand approximately 3,203 sf into non-degraded areas of the lot. While this represents an approximate 24.3% increase in proposed new impervious area within the RFA on the small project site, these improvements ensure the stability of the new bridge structure and prevent degradation of the newly improved site. Riprap above OHW will be loam and seeded with a native grass seed mixture.

- f) *When an applicant proposes restoration on-site of degraded riverfront area, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), and (e) at a ratio in square feet of at least 1:1 of restored area to area of alteration not conforming to the criteria*

All disturbed areas will be restored to pre-existing conditions or better. The proposed bridge will increase openness and increase connectivity.

- g) *Riverfront area mitigation.*

The bridge replacement will serve as an improvement to the RFA and will not have no adverse impact on the Riverfront Area. At the completion of construction, and riprap above OHW within the RA will be loam and seeded with a native grass seed mixture.

Stream Crossing General Standards

The proposed project design complies with the Massachusetts Stream Crossing Standards to the extent practicable, as required for a limited project under the WPA. The proposed project meets all Stream Crossing Standards. The proposed design mitigates for the existing scouring, flow contraction, outlet perching, and inlet drops and will not act as a physical barrier to fish and wildlife passage.

The following outlines compliance with the Stream Crossing General Standards:

1. *Spans (bridges, 3-sided box culverts, open-bottom culverts or arches) that preserve the natural stream channel are strongly preferred.*

Meets standard. The width of the existing span earth filled stone arch is 14.3 feet, while the width of the proposed bridge is 23.4 feet. The replacement structure will mimic natural stream channel conditions.

2. *If a culvert, then it should be embedded:*

- *a minimum of 2 feet for all culverts,*
- *a minimum of 2 feet and at least 25 percent for round pipe culverts*
- *When embedment material includes elements > 15 inches in diameter, embedment depths should be at least twice the D84 (particle width larger than 84 % of particles) of the embedment material.*

Meets Standard. Span bridge proposed with a natural stream bottom.

3. *Spans channel width (a minimum of 1.2 times the bankfull width).*

Meets Standard. According to Stream Stats, the bankfull width is 28.4 feet. To meet the Standard, the minimum bankfull width would need to be 34.0 feet wide. The structure opening is proposed to be 41.5 feet wide.

4. *Natural bottom substrate within the structure.*

Meets Standard. Natural material will remain within the existing channel, and stream material removed during construction will be reused on top of bank scour protection.

5. *Designed with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows.*

Meets Standard. Hydraulic Report prepared for the project indicates the post-construction water depth is approximately the same as existing conditions.

6. *Openness > 0.82 feet (0.25 meters).*

Meets Standard. The proposed openness ratio is 11.7.

7. *Banks should be present on each side of the stream matching the horizontal profile of the existing stream and banks.*

Meets Standard. The proposed design will match the horizontal profile of the existing stream and associated banks.

***If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems.*

- *Inlet drops*
- *Outlet drops*
- *Flow contraction that produces significant turbulence*
- *Tailwater armoring*
- *Tailwater scour pools*
- *Physical barriers to fish and wildlife passage*

Please refer to Attachment C – Alternative Analysis for further stream crossing alternate analysis and compliance with Stream Crossing Standards.

9.0 Summary

The Applicant, the City of Newburyport, has filed this Notice of Intent under the Massachusetts Wetlands Protection Act and the City of Newburyport’s Wetlands Protection Ordinance for the replacement of the existing bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir in Newburyport, MA. The information contained in this Notice of Intent application sufficiently describes the site, proposed work, and the effect of said work on the interests identified in the Wetlands Protection Act. Further, as both a limited project, and a project proposed in the public interest, consistent with the intent and purpose of the Ordinance, the bridge replacement is eligible for permitting under the City of Newburyport’s Wetlands Protection Ordinance with waiver and approval by the Conservation Commission. The design approach taken was to first avoid wetland resources impacts where feasible, and where unavoidable, to minimize the impacts to the extent practicable and mitigate where applicable. The application further demonstrates that the project can be constructed in accordance with the applicable general performance standards for the affected resource areas, or as a limited project where applicable. The Applicant therefore respectfully requests that the Newburyport Conservation Commission issue an Order of Conditions and waiver with appropriate conditions for work to proceed as described in this narrative and as shown on the project plans.

January 8, 2021

City of Newburyport
Conservation Commission
60 Pleasant Street
Newburyport, MA 01950

**RE: Bridge Replacement Project
Plummer Spring Road over Upper Artichoke Reservoir
Newburyport, Massachusetts
Request for a Variance, Newburyport Wetlands Protection Ordinance**

Dear Members of the Newburyport Conservation Commission:

BSC Group Inc., on behalf of The City of Newburyport (“the Applicant”), is pleased to submit this request for a variance to the Newburyport Conservation Commission for project activities associated with the replacement of the structurally deficient bridge (Bridge No. N-11-007) which carries Plummer Spring Road in Newburyport, MA over the Upper Artichoke Reservoir (hereby referred to as “the bridge”). The bridge is in poor condition and the road is currently closed due to structural deficiencies. Therefore, the City/Applicant proposes to replace the bridge structure with a new structure on a similar horizontal and vertical alignment. The proposed bridge will expand the hydraulic opening of the crossing while also improving roadway safety. The Project will be funded by grants and public funds.

Section X of the Newburyport Code of Ordinances, Chapter 6.5, Article II, § 9 (the “Ordinance”), denotes that applicants may request a variance from the requirements of the Ordinance or the Commission’s Wetlands Protection Regulations (the “Regulations”). The Commission may grant a variance if it finds after hearing that: 1) there are no reasonable conditions or alternatives that would allow the project to proceed in compliance with the Ordinance or Regulations; 2) mitigating measures are proposed that will allow the project to be conditioned so as to contribute to the protection of the wetland values protected by the Ordinance; and 3) the project is necessary to accommodate an overriding public interest or that it is necessary to avoid a decision that so restricts the use of the property as to constitute an unconstitutional taking without compensation. The Applicant requests a Variance to Section 8.A.4. as follows:

A. The Buffer Zone

The Regulations under §6.5-8.A.4. prohibit disturbance in the 25-foot No-Disturbance zone and limit impacts in the Buffer Zone. While the Ordinance provides exemptions in § 6.5-3.4.B.2.(b). for existing roads, it excludes existing bridges. The proposed project purpose is for the replacement of a deteriorating, existing bridge within the roadway layout.

The Project has been designed to avoid, minimize, and mitigate project-related impacts to the maximum extent practicable. Due to the water-dependent nature of the project, it is not possible

Engineers
Environmental
Scientists
Custom Software
Developers
Landscape
Architects
Planners
Surveyors



to locate the bridge structure further from the Reservoir than is currently proposed. Additionally, since the existing, narrow roadway abuts the Upper Artichoke Reservoir to the north and south, all work is proposed to occur within the Buffer Zone and 25-foot No-Disturbance Zone. Given that this proposed project is for the redevelopment of an existing, deteriorating bridge, most of the work will occur within the footprint of the existing crossing and all work will occur within the existing roadway layout. Only minimal encroachment into non-altered areas is required, and only to the extent required for the most practicable and substantially equivalent economical bridge design.

1. Public Interest

The public roadway was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. The road closure forces emergency vehicles to detour to roads around the Reservoir rather than be able to cross through. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10-feet, there is no pedestrian sidewalk, and due to various site conditions, the existing guardrail is ineffective.

The proposed replacement bridge will re-open this public roadway, continue to carry two lanes of traffic, and will add safety improvements such as a safety sidewalk on the south side of the bridge so Pedestrians may enjoy viewing the Reservoir as well. To meet current roadway geometric and safety requirements, portions of the road will be widened to meet the existing roadway width at the limits of the project, and the side-slopes will either be reduced and/or retaining walls will be installed to limit impacts to the reservoir where applicable.

2. Project Alternatives

The design of the bridge has been analyzed by engineers with four possible alternatives: a No-build, a Three-sided Open Bottom Bridge with a precast concrete rigid frame (Alternative 1), an Open Bottom Arch Bridge with precast concrete arch (Alternative 2), and a Three-sided Open Bottom Bridge with a precast concrete beam (Alternative 3, preferred alternative).

Again, due to the water-dependent nature of the project, it is not possible to locate the bridge structure further from the Reservoir than is currently proposed. Either the Applicant must pursue a No-Build to not impact the Buffer Zone, nor realize any benefits from this project, or work must occur within the Buffer Zone, including the 25-foot No-Disturbance Zone. In order to reduce the risk of injury from any further collapse, halt further erosion, and to reopen the roadway, it is necessary to replace the bridge.

All replacement options will include a wider span, greater openness, increased habitat connectivity and improved wildlife passage, all seen as typically beneficial outcomes for stream crossing replacements. To address the replacement of the existing bridge, project impacts to wetland resource areas cannot be avoided. However, proposed project activities and associated mitigation measures have been designed to avoid and minimize adverse impacts for work within wetland resource areas, and meet the MA Stream Crossing Standards to the extent practicable.

No-Build Alternative

The No Build Alternative assumes that the proposed bridge replacement project would not be constructed, and the existing bridge would remain in place. Due to the deteriorating nature of the existing structure that has resulted in the closing of the roadway, this alternative is not considered feasible.



Alternative 1: Three-sided Open Bottom Bridge, Precast Frame

This alternative proposes a three-sided open bottom bridge with a precast concrete 22-foot clear span rigid frame. The structure would include a 24-foot roadway with no sidewalks and continuous guardrail. It would have an overall width of 27'-3", have spread footing, and the preliminary estimate is \$2.4M.

Advantages

- Prefabricated
- Low maintenance cost

Disadvantages

- Higher Cost
- No pedestrian access
- Deep excavation required
- Wetland resource area impact

Alternative 2: Open Bottom Arch Bridge, Precast Concrete Arch

This alternative proposes an open bottom arch bridge with precast concrete 30'-8" span arch. The structure would include a 24-foot roadway with no sidewalks and S3-TL4 bridge rail. It would have an overall width of 27'-3", have pile footings, and the preliminary estimate is \$2.3M.

Advantages

- Prefabricated
- Continues arch style

Disadvantages

- Higher Cost
- No pedestrian access
- Higher construction duration
- High wetland resource area impact

Alternative 3 (Preferred Alternative): Three-sided Open Bottom Bridge, Precast Beam

This alternative proposes a three-sided open bottom bridge with a precast concrete 45-foot span spread box beam. The structure would include a 24-foot roadway with one sidewalk and S3-TL4 bridge rail. It would have an overall width of 32'-6", there would be integral abutments on piles, and the preliminary estimate is \$2.6M.

Advantages

- Pedestrian Access / Safety
- Low maintenance cost

Disadvantages

- Higher Cost
- Construction duration
- Increased permitting requirements
- Greater wetland resource area impact

3. Impact Minimization

The Project was designed with mitigation measures intended to address existing structural deficiencies, with construction Best Management Practices (BMPs) incorporated, and while also minimizing disturbances to the surrounding environment and improving openness. The proposed bridge is a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. In addition to substantially increasing the openness ratio and increasing the hydraulic opening by a factor of two, the increased span (from the 14-foot to 45-foot) eliminates the need for the bridge's substructure to be located in the deep portion of the reservoir.

To meet current roadway geometric and safety requirements, portions of the road will be widened to meet the existing roadway width at the limits of the project, and the side-slopes will either be reduced and/or retaining walls will be installed to limit impacts to the reservoir.



The proposed construction methodology will not only allow flow to continue in the channel during construction, but the majority of Land Under Water (LUW) within the existing channel crossing will not be disturbed. Proposed disturbances to LUW have been minimized to the extent practicable for safe construction and infrastructure protection, and the proposed design will create a nearly 1:1 replacement of altered LUW across the Project¹ (> 1:1 in Newburyport²) with the increased openness of the expanded crossing.

Vegetation along the bank will be maintained whenever possible. Disturbed areas within affected resources will be stabilized and restored where appropriate by installing 12-inches of compost mulch and seeded with a native seed mix following the completion of project activities. Additionally, all temporary impacts will be restored to preconstruction conditions.

a. Erosion and Sedimentation Controls

Siltation barriers composed of compost filter tubes will be installed at the downgradient limits of work and will be checked weekly and following significant storm events. Sediment controls will remain in-place during all phases of the project and removed once the area is sufficiently stabilized.

b. Construction Stockpiling Locations

All stockpile locations and staging areas will be located within the existing roadway; and while locations are to be determined by the Contractor, they will need to be approved by the City prior to use. In the event stockpiled materials must be left on site overnight, the piles will be covered with tarps and surrounded by erosion control measures (e.g. compost filter tubes). Stockpiled streambed material will be stored at a location within the existing roadway. Staging and storage areas will be outside of all jurisdictional environmental resource areas where feasible and practicable.

c. Water Control Measures and Dewatering

Prior to work, cofferdams will be installed for construction activities to occur in dry conditions. As such, work will require dewatering. The contractor will be required to develop and maintain a Construction Water Management Plan that is prepared in accordance with the contract design documents, and generally, the means and methods will be determined by the contractor. Flow will be maintained within the existing channel; the dewatered construction area will be maintained by pumping the water out of the work areas.

All discharge resulting from dewatering activities shall be directed to temporary sedimentation/retention basins to control turbidity. At no time shall the discharge be directly released into adjacent resource areas, nor will any settling tank/basin be located within a wetland resource area. If stone or other erosion control is utilized at the outlet of the settling tank/basin, this material will be removed, and the area will be restored to existing conditions prior to the completion of the project.

B. Conclusion

The proposed redevelopment of the public roadway and bridge is in the public's interest for both vehicles and pedestrians and includes safety measures not in the existing configuration. The proposed work will both improve and enhance the natural capacities of the resource area to achieve the values and interests protected by the Ordinance.

¹ A total of 984 sf of permanent impacts to LUW are proposed Project-wide, as is a gain of 885 sf in the channel.

² A total of 431 sf of permanent impacts to LUW are proposed in Newburyport, as is a gain of 449 sf of LUW.



The design approach taken was to first avoid wetland resources impacts where feasible, and where unavoidable, to minimize the impacts to the extent practicable and mitigate where applicable. The Applicant therefore respectfully requests that the Newburyport Conservation Commission issue a Variance under the City of Newburyport's Wetlands Protection Ordinance with appropriate conditions for work to proceed as described in the narrative and as shown on the project plans.

Attachment B

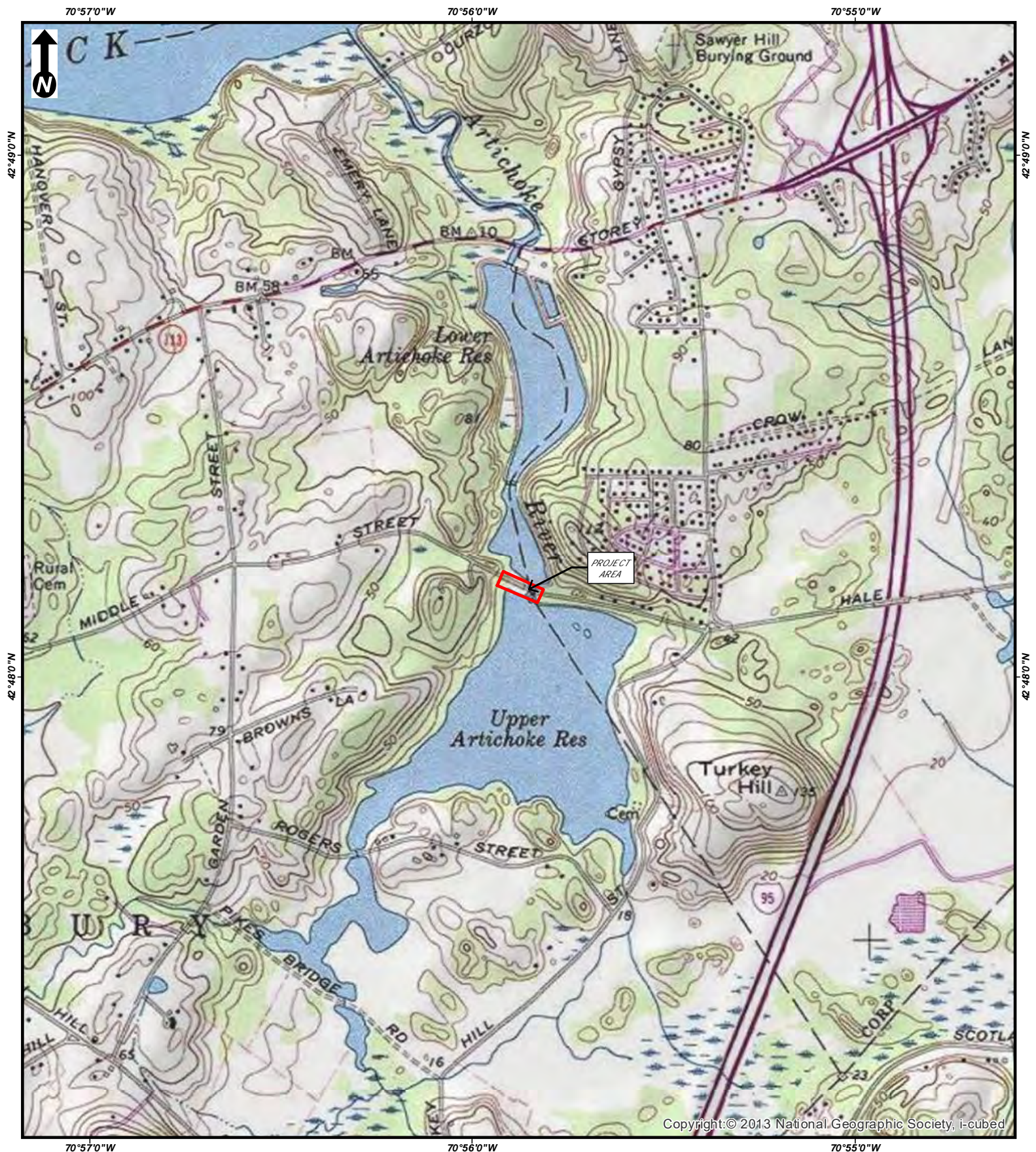
Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

SITE FIGURES

USGS Locus Map
Environmental Resources Map
FEMA FIRM Map

PHOTOGRAPHS

USGS STREAM STATS



Copyright:© 2013 National Geographic Society, i-cubed

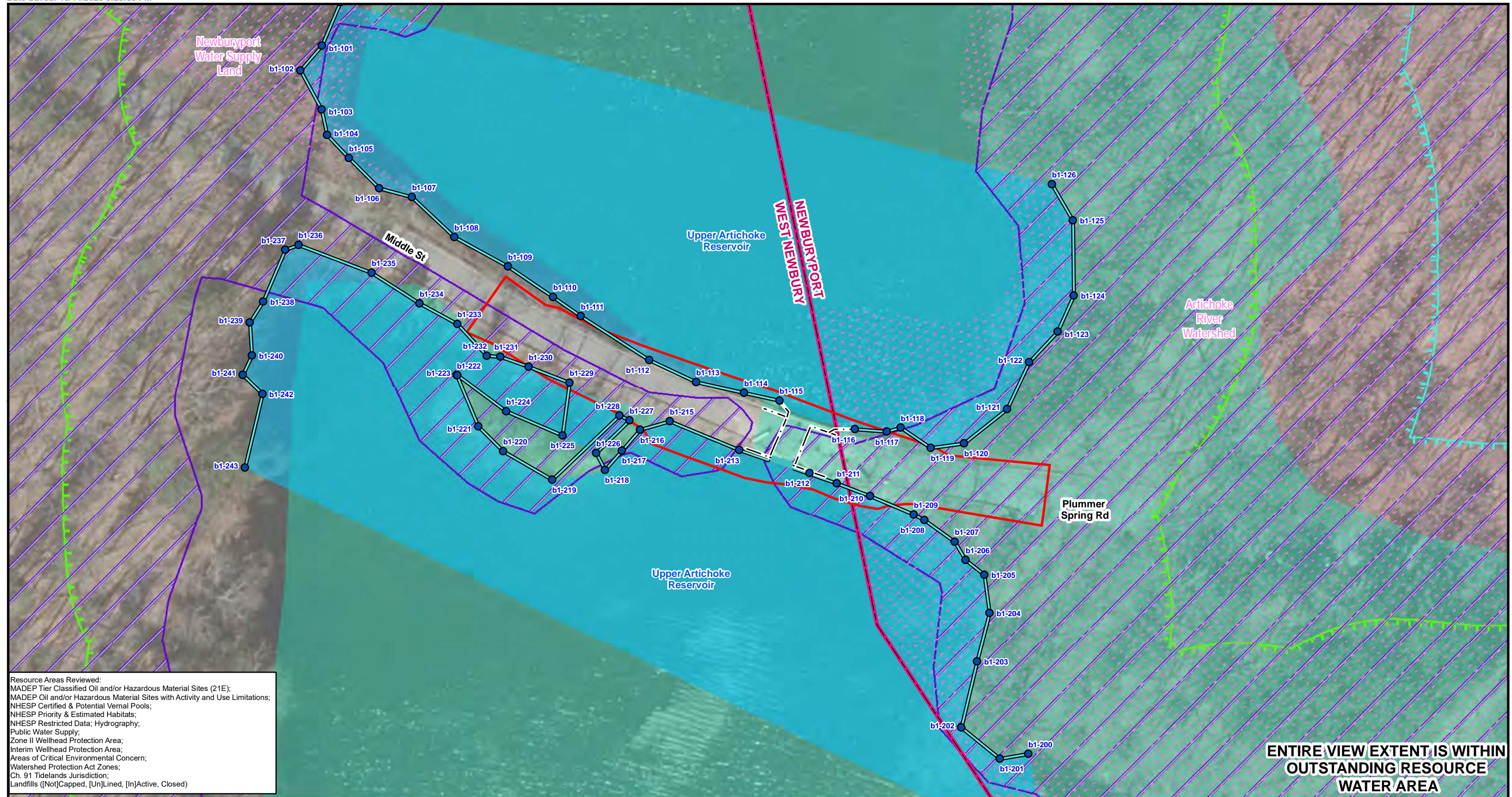
Scale:
1 inch = 2,000 feet
(page size: 8.5 X 11)
0 1,000 2,000
Feet

**MIDDLE ST / PLUMMER SPRING RD OVER UPPER ARTICHOKE RESERVOIR
BRIDGE REPLACEMENT PROJECT**

**USGS Site Location Map
West Newbury & Newburyport, MA**

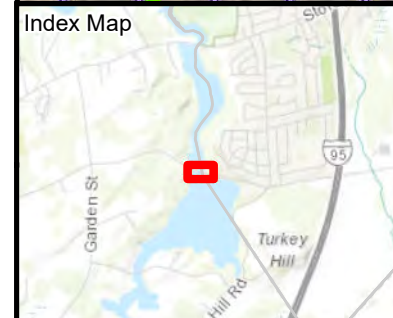
Source: 2013
National Geographic
Society, i-cubed





Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;
 NHESP Certified & Potential Vernal Pools;
 NHESP Priority & Estimated Habitats;
 NHESP Restricted Data; Hydrography;
 Public Water Supply;
 Zone II Wellhead Protection Area;
 Interim Wellhead Protection Area;
 Areas of Critical Environmental Concern;
 Watershed Protection Act Zones;
 Ch. 91 Tidelands Jurisdiction;
 Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)

**ENTIRE VIEW EXTENT IS WITHIN
 OUTSTANDING RESOURCE
 WATER AREA**



Legend

Project Area	100ft Buffer to Wetlands & Streams	Article 97 Lands
Existing Bridge Structure	200ft Riverfront Area	Municipal
Field Delineated Bank Flags	FEMA 100yr Floodplain (Zone AE)*	Surface Water Protection Zone
Field Delineated Edge of Bank	Town Boundary	
Field Delineated Waterbody		
MADEP Hydrologic Connections		

1 inch = 50 feet
 0 25 50
 Feet
 *Indicates Layers Set to Transparency

**MIDDLE STREET / PLUMMER SPRING ROAD
 OVER THE UPPER ARTICHOKE RESERVOIR
 BRIDGE REPLACEMENT PROJECT**

Environmental Resources Map

West Newbury & Newburyport, MA

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

National Flood Hazard Layer FIRMMette



70°56'9"W 42°48'23"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway	

OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee. See Notes. Zone X
	Area with Flood Risk due to Levee Zone D

OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard Zone X
	Effective LOMRs
	Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall

OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature

MAP PANELS	Digital Data Available
	No Digital Data Available
	Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/9/2020 at 5:01 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



Photo #1: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #2: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #3: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. View of the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #4: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir.. Up close view of the bridge in disrepair.



Photo #5: View southeast of Middle St, West Newbury facing Plummer Spring Rd, Newburyport over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #6: View southwest of the northern side of the roadway and bridge over the Upper Artichoke Reservoir.

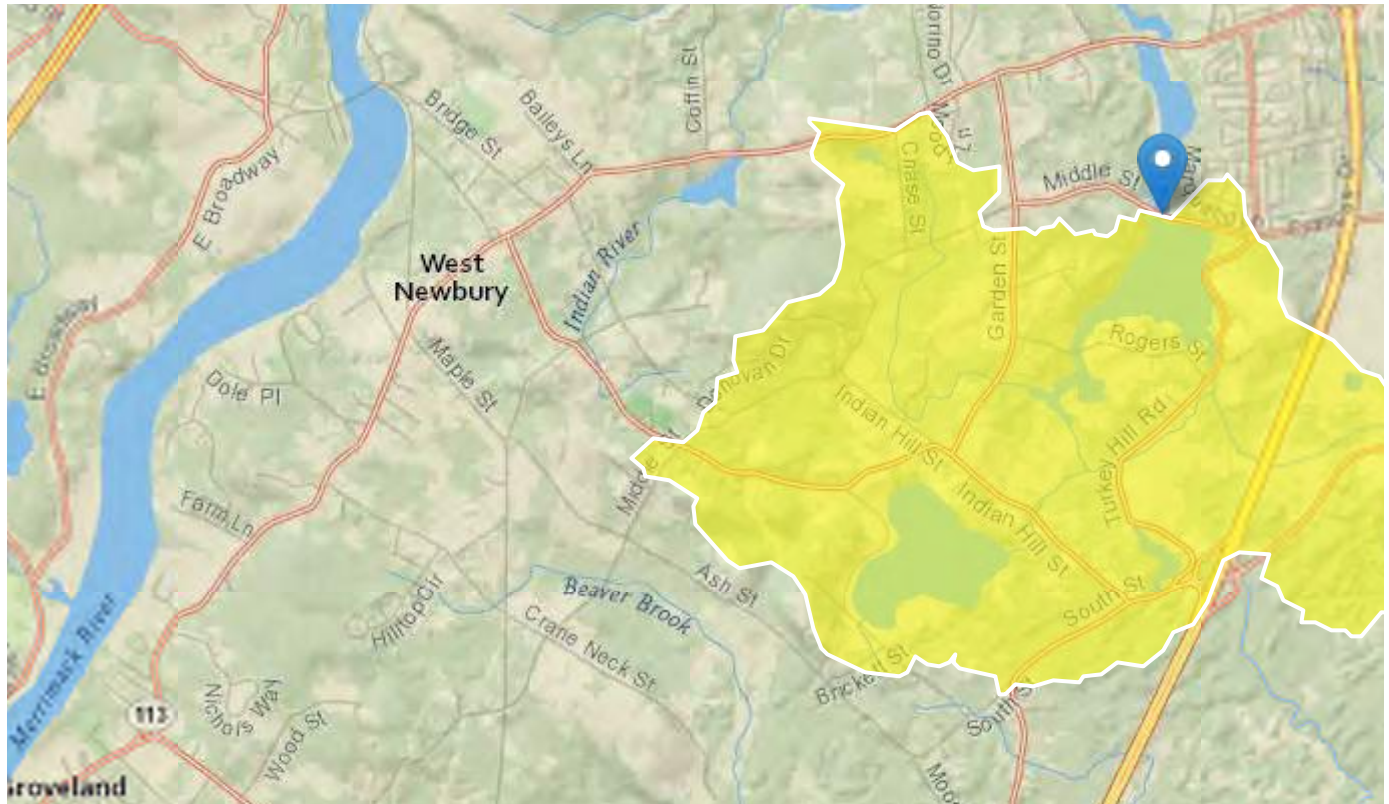
Upper Artichoke Reservoir

Region ID: MA

Workspace ID: MA20181113205234897000

Clicked Point (Latitude, Longitude): 42.80304, -70.93112

Time: 2018-11-13 15:52:50 -0500



Middle Street - West Newbury/Plummer Spring Road - Newburyport

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5.48	square miles
ELEV	Mean Basin Elevation	62.2	feet
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	26.59	percent
BSLDEM10M	Mean basin slope computed from 10 m DEM	5.845	percent

Peak-Flow Statistics Parameters [Peak Statewide 2016 5156]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.48	square miles	0.16	512
ELEV	Mean Basin Elevation	62.2	feet	80.6	1948
LC06STOR	Percent Storage from NLCD2006	26.59	percent	0	32.3

Peak-Flow Statistics Disclaimers [Peak Statewide 2016 5156]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Peak-Flow Statistics Flow Report [Peak Statewide 2016 5156]

Statistic	Value	Unit
2 Year Peak Flood	85.4	ft ³ /s
5 Year Peak Flood	140	ft ³ /s
10 Year Peak Flood	182	ft ³ /s
25 Year Peak Flood	242	ft ³ /s
50 Year Peak Flood	291	ft ³ /s
100 Year Peak Flood	343	ft ³ /s
200 Year Peak Flood	398	ft ³ /s
500 Year Peak Flood	476	ft ³ /s

Peak-Flow Statistics Citations

Zarriello, P.J.,2017, Magnitude of flood flows at selected annual exceedance probabilities for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2016–5156, 99 p. (<https://dx.doi.org/10.3133/sir20165156>)

Bankfull Statistics Parameters [Bankfull Statewide SIR2013 5155]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
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Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.48	square miles	0.6	329
BSLDEM10M	Mean Basin Slope from 10m DEM	5.845	percent	2.2	23.9

Bankfull Statistics Flow Report [Bankfull Statewide SIR2013 5155]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SEp
Bankfull Width	28.4	ft	21.3
Bankfull Depth	1.51	ft	19.8
Bankfull Area	42.5	ft ²	29
Bankfull Streamflow	115	ft ³ /s	55

Bankfull Statistics Citations

Bent, G.C., and Waite, A.M., 2013, Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013–5155, 62 p., (<http://pubs.usgs.gov/sir/2013/5155/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.2.1

Attachment C

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

ALTERNATIVES ANALYSIS

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Bridge Replacement Project –Plummer Spring Road/Middle Street over Artichoke Reservoir– Alternatives Analysis

Due to existing site conditions, the proposed project was not able to reach full compliance with the Massachusetts Stream Crossing Standards. However, the project is considered a Limited Project under 310 CMR 10.53(3)(i): the maintenance, repair, and improvement...bridges which existed prior to April 1, 1983, 310 CMR 10.53(3)(l): construction, reconstruction...or maintenance of water dependent uses, and 10.53(8)(a): Replace...existing stream crossing in a non-tidal crossing.

Therefore, it has been designed to meet the Stream Crossing Standards to the maximum extent practicable per the provisions at 310 CMR 10.53(8). The following description provides an overview of the bridge design and is followed by an Alternatives Analysis and an evaluation of compliance with the Stream Crossing Standards.

Table 1.0 – Existing Crossing Data

Stream Crossing Standard	Existing Conditions
Type of Crossing	Single span earth filled stone arch
Size	Width: 14.3-feet Height: 13.2-feet Crossing Length: 24.2-feet Cross Sectional Area: 138 sq. ft.
Bankfull Width (Reported by StreamStats)	28.4-feet (Reported by StreamStats, drainage area = 5.48 square miles). The existing stone arch bridge was built in 1891 before the Upper Artichoke dam was installed to create the Upper Artichoke Reservoir
Openness Ratio	5.7
Water Level	Observed Water Elevation (10/1/2018): 12.5± OHW Elevation 12.6 ± Streambed Elevation 3.0±

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Table 2.0 – Proposed Crossing Conditions

Alternative 1		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete 3-Sided Rigid Frame (open bottom)	Yes	Proposed Concrete Rigid Frame (open bottom) Width: 22-feet Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 27.25-feet Cross Sectional Area: 241 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 22-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 241 sq. ft. Proposed Openness Ratio: 8.8
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 2		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Arch Bridge (open bottom)	Yes	Proposed Precast Concrete Arch Bridge with Pile Supported Footings (open bottom) Width: 30.7-feet Height: 13.2-feet (Measured from top of proposed streambed to center of arch) Crossing Length: 27.3-feet Cross Sectional Area: 246 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have a maximum of 13.2-feet clearance throughout the length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 30.7-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 246 sq. ft. Proposed Openness Ratio: 9.0
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 3 (Proposed Bridge Replacement)		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Beams 3-Sided Bridge (open bottom)	Yes	Proposed Precast Concrete Beam Bridge with Pile Supported Abutments (open bottom) Width: 41.5-feet (Measured between inside faces of bridge sidewalls) Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 32.5-feet Cross Sectional Area: 380 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	Yes	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 41.5-feet.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 380 sq. ft. Proposed Openness Ratio: 11.7
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative: Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Alternative 1: Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Alternative 2: Meet General Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Alternative 3: Stream Crossing Standards 1.2 x bankfull width ² (Proposed Alternative) Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
1) potential for downstream flooding	No change	No change	No change	No change
2) upstream and downstream habitat	No improvement.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.
3) potential for erosion and head-cutting	No change	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.
4) stream stability	No change	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.
5) habitat fragmentation caused by the crossing	No change	Increased openness	Increased openness	Increased openness
6) amount of stream mileage made accessible	No change	Improved stream continuity.	Improved stream continuity.	Improved stream continuity

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative:	Alternative 1:	Alternative 2: Meet General	Alternative 3: Stream Crossing Standards 1.2 x bankfull width²
	Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
7) storm flow conveyance	100-year event water Cross Sectional Area: 111 sq. ft.	100-year event water Cross Sectional Area: 171 sq. ft.	100-year event water Cross Sectional Area: 201 sq. ft.	100-year event water Cross Sectional Area: 242 sq. ft.
8) engineering design constraints	No change, no improvements. Bridge remains closed and roadway width remains inadequate.	The poor soil conditions require large deep footings to distribute the bridge loads. Due to the depth of water and relatively short span extensive retaining walls are required to replace the existing failed stone retaining walls.	The weight of the soil over the arch requires an extensive amount of piles. Installation of heavy arch units would likely require temporary fill to provide a stable work platform for a large crane.	The addition of a sidewalk on the bridge requires widening and retaining of the road at the approaches.
9) hydrologic constraints	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)
10) impacts to wetlands that would occur	No construction impacts to adjacent wetland resource areas.	Permanent impacts to adjacent wetland resource areas due extensive retaining walls and deep excavation for footings.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.
11) potential to affect property and infrastructure	Bridge has failed. Emergency evacuation route remains closed.	None	None	None
12) cost of replacement	N/A	Proposed Replacement Cost: \$2,400,000	Proposed Replacement Cost: \$2,300,000	Proposed Replacement Cost: \$2,600,000

¹ Bank Standards at 310 CMR 10.54 and LUWW Standards at 310 CMR 10.56 (LUWW = Land Under Water Bodies & Waterways)² Per the *Massachusetts River &*

²*Stream Crossing Standards* (March 1, 2011, Revised March 8, 2012), Page 18, Item #2 - If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems: (1) Inlet drops; (2) Outlet drops; (3) Flow contraction that produces significant turbulence; (4) Tailwater armoring; (5) Tailwater scour pools; (6) Physical barriers to fish and wildlife passage.

Attachment D

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

AFFIDAVIT OF SERVICE
ABUTTER NOTIFICATION LETTER
LIST OF ABUTTERS

AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

(to be submitted to the Massachusetts Department of Environmental Protection and the Conservation Commission when filing a Notice of Intent)

I, Sara Kreisel, hereby certify under the pains and penalties of perjury that on January 11, 2021 I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the **DEP Guide to Abutter Notification** dated April 8, 1994, in connection with the following matter:

A Notice of Intent filed under the Massachusetts Wetlands Protection Act and the Newburyport Wetlands Ordinance by City of Newburyport with the City of Newburyport on January 11, 2021 for property located at Plummer Spring Road over Upper Artichoke Reservoir (42.802999, -70.931053)

The form of the notification, and a list of the abutters to whom it was given and their addresses are attached to this Affidavit of Service.



Signature

January 11, 2021

Date

**Notification to Abutters Under the
Massachusetts Wetlands Protection Act and the
Newburyport Wetlands Ordinance**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40 and the City of Newburyport's Wetlands Ordinance, you are hereby notified of the following.

- A. The name of the applicant is City of Newburyport
- B. The applicant has filed a Notice of Intent with the Conservation Commission for the City of Newburyport seeking permission to remove, fill, dredge, or alter an Area subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, Section 40) and the City of Newburyport's Wetlands Ordinance.
- C. The address of the lot where the activity is proposed is:
Plummer Spring Road over Upper Artichoke Reservoir (42.802999, -70.931053).
- D. The Public Hearing will be held on February 2, 2021 at 7 pm. Said hearing shall be located either in the Senior/Community Center or online via remote participation with confirmation and access information to be posted on the City Website meetings calendar at www.cityofnewburyport.com/calendar. All interested parties should look to the meetings calendar on the City website as the hearing date approaches.
- E. Copies of the Notice of Intent may be examined by visiting www.cityofnewburyport.com/conservation-commission and selecting the meeting agenda.
- F. Copies of the Notice of Intent may be obtained from either (check one) the applicant _____ or the applicant's representative X, by calling this telephone number (617) 896 - 4579 between the hours of 9am and 4pm, on the following days of the week: Monday- Friday.

NOTE: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in the Newburyport Daily News.

NOTE: Notice of the public hearing, including its date, time, and place, will be posted in Newburyport City Hall not less than forty-eight (48) hours in advance.

NOTE: You also may contact the Newburyport Conservation Commission or the Department of Environmental Protection Northeast Regional Office for more information about this application or the Wetlands Protection Act. To contact the Newburyport Conservation Commission, please email jgodtfredsen@cityofnewburyport.com.



City of Newburyport
Office of the Assessor
60 Pleasant Street / P.O. Box 550
Newburyport, MA 01950
Ph 978-465-4403 / Fax 978-462-8495

September 29, 2020

To: Newburyport Conservation Commission
From: Newburyport Board of Assessors
Re: Abutters List: Plummer Spring Road (42.802999,-70.931053)
100' from project area marked on attached map

Newburyport Map: n/a Lot: n/a

The following are the abutters of the above mentioned property:

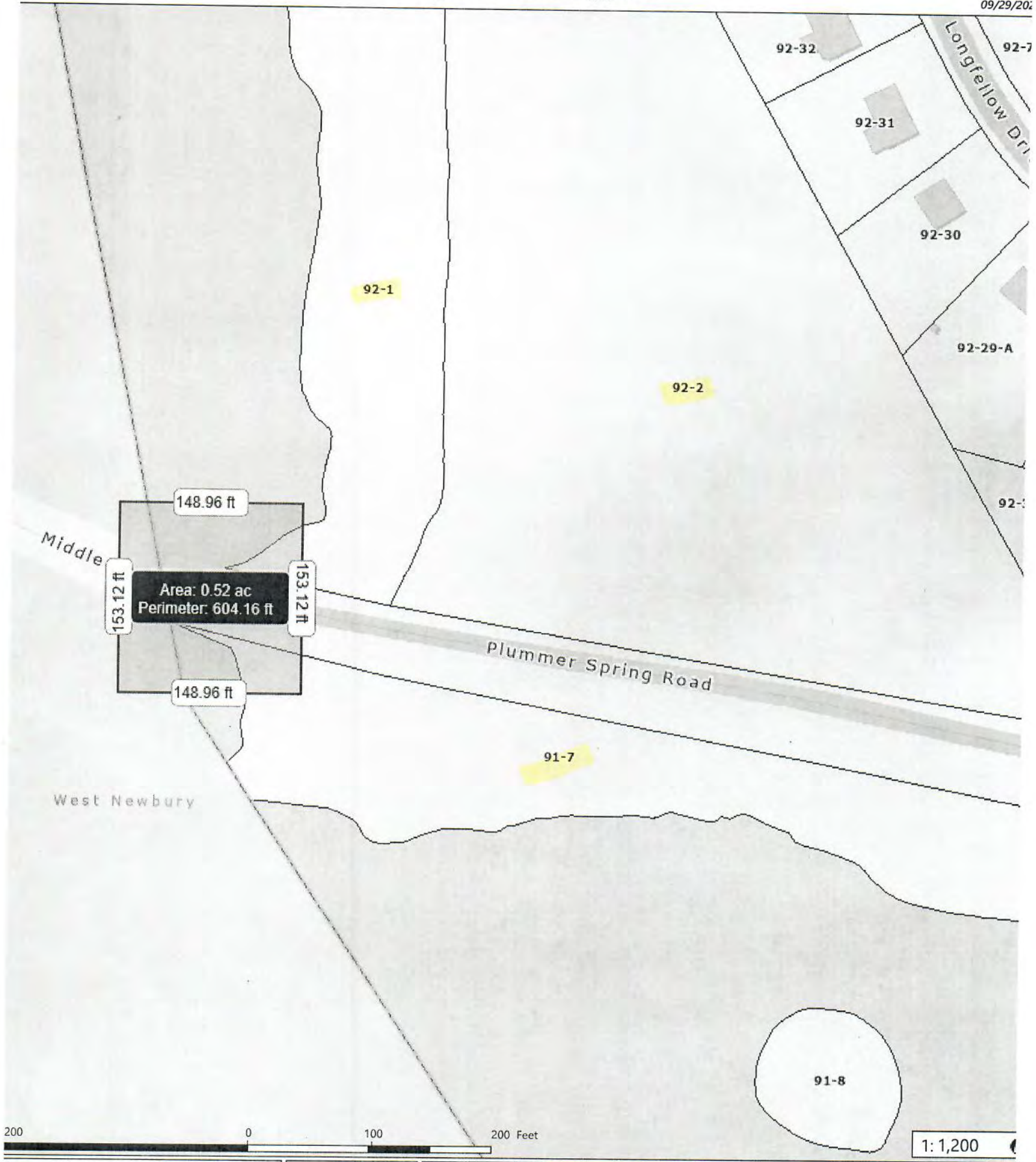
Board of Assessors

Gill Brennan

The Assessors Office is certifying that the persons listed in the foregoing list of abutters are the owners of record of the foregoing properties as of January 1st, 2020. The city Assessor is not certifying that the persons so listed are the persons who are required to receive notification under applicable law.

City of Newburyport

09/29/2021



1:1,200

Data Sources: Produced by Merrimack Valley Planning Commission (MVPC) using data provided by the City of Newburyport & MassGIS. MVPC AND THE CITY OF NEWBURYPORT MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE ACCURACY, COMPLETENESS, RELIABILITY, OR SUITABILITY OF THESE DATA. THE CITY OF NEWBURYPORT AND MVPC DOES NOT ASSUME ANY LIABILITY ASSOCIATED WITH THE USE OR MISUSE OF THIS INFORMATION.



Legend

Municipal Boundary	Road Right of Way	Intermittent Stream	Intrastate	Major Road	Local Road	Parcels
Stream	Paved	Unpaved	Hydrographic Features	Streams		

91/ 7/ / /
CITY OF NEWBURYPORT
WATER DEPARTMENT
16C PERRY WAY
NEWBURYPORT, MA 01950

92/ 1/ / /
CITY OF NEWBURYPORT
WATER DEPARTMENT
16C PERRY WAY
NEWBURYPORT, MA 01950

92/ 2/ / /
CITY OF NEWBURYPORT
WATER DEPARTMENT
16C PERRY WAY
NEWBURYPORT, MA 01950

Attachment E

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

STREAMLINED STORMWATER MANAGEMENT REPORT

Streamlined Stormwater Management Report

According to the Massachusetts Department of Environmental Protection Stormwater Management Regulations, the project is considered a redevelopment project. As such, the project has been designed to meet all applicable standards of the MassDEP Stormwater Management Handbook to the maximum extent practicable. In accordance with the DEP Stormwater Management Handbook, Standards 1, 8, 9, and 10 must be met fully, while the remaining standards must be met to the maximum extent practicable.

Standard 1: New Stormwater Conveyances

Per Massachusetts Stormwater Management Standard #1, no new outfalls may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. To capture runoff at the low point in the road, two deep sump catch basins, on either side of the roadway, are proposed. The deep sump catch basins flow to a manhole on the north side of the roadway. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends. Like the existing conditions, all other runoff within the project limits will continue to flow via country drainage.

Standard 2: Stormwater Runoff Rates

The proposed widening of the roadway over the new bridge will result in an increase in impervious area over existing conditions. Due to site limitations, mitigation measures are not feasible to reduce runoff rates. As a redevelopment project, this standard is not applicable, however, the proposed design meets this standard to the maximum extent practicable.

Standard 3: Groundwater Recharge

As a redevelopment project, this standard is not applicable. Due to site limitations, implementing groundwater recharge measures are not feasible. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 4: Water Quality

As a redevelopment project, this standard is not applicable. Due to site limitations, implementing improved water quality measures are not feasible. As a redevelopment project, this standard has been met to the maximum extent practicable.

Standard 5: Land Uses with Higher Pollutant Loads (LUHPPL)

The Project is not a land use with higher potential pollutant loads.

Standard 6: Stormwater Discharges to a Critical Area

The project is not located within a Critical Area.

Standard 7: Redevelopment Projects

This project is a redevelopment project. In accordance with the DEP Stormwater Management Handbook, standards 1, 8, 9 and 10 have been fully met. In addition, the project has met all other standards (Standards 2, 3, 4, 5, 6, and 7) to the maximum extent practicable.

Standard 8: Sedimentation and Erosion Control Plan

Erosion control measures, including compost filter tubes and sediment control barriers will be placed at the bottom of proposed slopes and limits of work.

Standard 9: Long Term Operations and Maintenance Plan

Temporarily impacted areas associated with project construction activities will be restored following the completion of project work and will result in an overall improvement over existing conditions. Proposed project activities will not be considered complete until the areas disturbed as part of project activities are considered adequately stabilized, as determined by the Winchendon Conservation Commission.

Standard 10: Illicit Discharges to the Stormwater Management System are Prohibited

There are no known illicit discharges to the proposed Stormwater Management System.



Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Kath Eagan

12/29/20

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): _____

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
- Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Attachment F

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

CONSTRUCTION SPECIFICATIONS

ITEM 765.3**SEED FOR EROSION CONTROL****ACRE**

The work under this item shall conform to the relevant provisions of Section 765 and M6.03.0 of the Standard Specifications and the following:

The work shall consist of planting and establishing a stand of grass in the areas shown on the plans or as required by the Engineer or listed in this document.

For the purposes of these specifications, the term “grass” shall apply to all the forbs, grasses, sedges, and rushes included in the materials.

All seeding shall be done by a company having a minimum of five years of experience with native grass establishment. Prior to beginning work, the applicator shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications includes providing documentation to demonstrate knowledge and expertise with native seeding and proof of having completed successful native seeding projects.

SEEDING SEASON

Seeding seasons shall be April 1 through May 15 and October 1 through November 15 for dormant seeding. For seeding that occurs outside of these periods, the seed rate shall be increased by 50%.

MATERIALS**Samples and Submittals**

- 1) Certificate of Materials. Prior to ordering, the Contractor shall submit to the Engineer the manufacturer or supplier’s notarized Certificate of Materials. This document shall not be used as proof of purchase, proof of material delivered, or proof of material seeded, but simply to verify supplier availability of seed listed on the date certified. The species listed shall match those specified on the plans or herein, however, cultivars may vary due to availability.
- 2) Seed Tag Certification. All seed lots have a seed analysis tag as required by State and Federal law. The contractor shall submit seed tags for each bag of seed used on the project site or ensure that each tag is photo documented by the Engineer. Number of tags shall match number of bags sent by the supplier to meet rate of Pure Live Seed specified on the plans. Tag must include: kind and variety of seed; lot number; origin of seed; net weight; % purity; germination; dormant seed; germination test date; inert matter; weed, noxious and other crop seed; and name and address of company responsible for the analysis. Seeding may be considered unacceptable for payment if no tags are submitted.
- 3) Certificate of Compliance. Prior to payment, contractor shall submit a signed, dated and notarized Certificate of Compliance from the Supplier that serves as proof of purchase or bill of lading. This document shall include kind and variety of seed, lot

number, net weight shipped, date of sale, invoice number under which seed was purchased, and name and address of Supplier or Manufacturer. All information must be included on the notarized form, including lot number and net weight shipped for specified job. This information shall match Seed Tag Certification and quantity of seed applied on the job. Seeding may be considered unacceptable for payment if information is incomplete.

- 4) Seed Sample. Contractor may be asked, prior to seeding, to submit a seed sample for testing. Testing shall be incidental to this item.

Quantities specified are Pure Live Seed (PLS). Greater quantities of ordered seed may be required to achieve actual specified seeding rates. Pure Live Seed is defined as the fraction of pure seed species within the mix that, by standard seed testing practices, will germinate. This is determined by multiplying the percent of seed purity by the percent of seed germination.

Seed mix shall be a custom blend as shown on the plans or shall be as specified below. Seed cultivars shall be those that are as regional to New England or the local ecotype as possible.

Any species substitutions shall be with a species having similar characteristics and native to New England.

Seed Mix

	<u>Botanical Name</u>	<u>Common Name</u>	<u>% PLS By Weight</u>
Grass	Festuca rubra	Creeping Red Fescue	69.5%
	Panicum virgatum 'Shelter'	Switchgrass 'Shelter'	5.0%
	Panicum clandestinum 'Tioga'	Deer Tongue 'Tioga'	5.0%
	Elymus virginicus	Virginia Wild Rye	4.0%
	Elymus canadensis	Canada Wild Rye	4.0%
	Schizachyrium scoparium	Little Bluestem 'Albany	4.0%
	'Albany Pine'	Pine'	
	Agrostis perennans	Upland Bentgrass	4.0%
		<u>Subtotal</u>	<u>95.5%</u>
Herb/Forb	Chamaecrista fasciculata	Partridge Pea	1.5%
	Rudbeckia hirta	Black-eyed Susan	1.2%
	Aster laevis	Smooth Aster	0.8%
	Solidago bicolor	White Goldenrod	0.4%
	Monarda fistulosa	Wild Bergamot	0.4%
	Asclepias syriaca	Common Milkweed	0.2%
		<u>Subtotal</u>	<u>4.5%</u>
		<u>Total</u>	<u>100.00%</u>

Seeding Rate:

Apply this mix at **50 lbs PLS/acre** on areas of less than 3:1 slope and 150 lbs PLS on areas of greater than 3:1 slope. Add 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 July) or grain rye (1 Aug to 31 Dec). Cover crop shall be incidental to seeding item.

Fertilizer

No fertilizers shall be applied.

Water

Water, including hose and all other watering equipment required for the work, shall be furnished by the Contractor to the site at no additional cost. Water shall be suitable for irrigation and free from ingredients harmful to plant life. All plants injured or work damaged due to the lack of water or the use of too much water shall be the Contractor's responsibility to correct.

Mulch

Seed areas shall be separately mulched with hydromulch, straw or as specified below when incorporated with compost topsoil.

Photo Documentation

Contractor shall submit photo documentation to the Engineer
Each photo shall be date stamped. Photos shall be submitted after the following stages of construction:

- Soil preparation
- Seed and hydromulch/Compost topsoil and seed
- Germination
- Grass establishment after one full growing season (June-September)

CONSTRUCTION

Surface Preparation

Soil preparation and seeding shall occur only when the bed is in a friable condition, not muddy or hard. Bare soils shall be raked to remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. All ruts and any depressions caused by settlement, erosion or rolling shall be filled with additional loam or compost and the soil shall be re-graded to a smooth and even finish corresponding to the required grades. No tracking or rolling shall be done on wet soil.

Prior to seeding, site preparation shall be approved by the Engineer.

Seeding Methods

Seeding on Loam

Seeding application shall be by broadcast methods followed by hydromulching. Seed may be broadcast by using a cyclone or whirlwind seeder, or by hand.

If spread by hand, small or light-seeded species such as bluestem may be mixed with approved filler (e.g., sawdust, rice, kitty litter, or clean damp sand) to achieve an even distribution. Broadcast seeding shall be undertaken in two separate passes at ninety degrees to each other. One-half the seeding rate shall be applied in each direction. Seed shall be incorporated 1/8 to 1/4-inch deep by raking or dragging, culti-packing, or tracking with heavy machinery. Raked areas shall be rolled with a weighted roller to provide good seed to soil contact. Do not roll or track the seed if the soil is wet.

Immediately following completion of broadcast seeding and packing, area shall be hydromulched. Hydromulch shall be per the Standard Specifications and per the manufacturer's directions. Mulch for hydroseeding shall be wood fiber only.

Seeding in Combination with Compost Topsoil

If proposed in the contract, compost topsoil shall be as specified under Item 751.7 Compost Topsoil.

Seeding shall be done as a second operation after placement of compost has been approved by the Engineer. Seeding shall be broadcast followed by hydro-mulching.

Contractor shall notify Engineer prior to seeding operation to obtain written approval of site preparation and compost topsoil application.

Irrigation

After seeding and mulching, water seeded areas to moisten soil to a depth of at least 2 inches.

No seeding shall be done if soils are muddy or dry and compacted.

Care during Seed Germination

Contractor shall care for seeded areas as required. Care shall include irrigation and weed removal as necessary for germination and healthy growth.

Over-seeding

If there are numerous areas of bare ground greater than 10-12 inches, these areas shall be over-seeded. Areas where seed fails to germinate and that become invaded by weeds shall be mowed as low as possible and over-seeded. Soil that is compacted shall be raked or roughened prior to seeding to ensure seed to soil contact.

Over-seeding application rates and methods shall be the same as those listed above. After seeding, areas shall be mulched with straw mulch or 1/4 - 1/2 inch compost topsoil and watered with a fine mist to moisten soil to a depth of at least 2 inches.

Over-seeding shall be incidental and shall not be paid for separately.

Care during Grass Establishment

Following germination of seeded species, the contractor shall maintain the stand of grasses to ensure healthy growth.

Work shall include mowing or weed-whacking for weed control, irrigation if necessary, and monitoring for invasive plants. Watering shall provide uniform coverage without eroding soil or grassed surfaces. Treatment of invasive plants shall be per the requirements of the Engineer.

The Contractor shall provide all labor, equipment, materials, and water required for establishment. Contractor shall water all seeded areas as necessary to a depth of 2 inches or greater.

EXPECTATIONS OF ESTABLISHMENT

Native upland grasses and forbs will not look like turf grass. Many of the native grasses are bunch type grasses and will not form a uniform growth or have a sod-type appearance. However, seeded area shall show general uniform growth of the seeded species throughout the area. Areas with gaps of bare soil greater than 10-12 inches will be considered unacceptable and shall be over-seeded.

A well-established stand of grasses at the end of one full growing season (June-September), as determined by the Engineer, will be required for acceptance. At least 80-90 percent of the grass established shall be the seeded species and any invasive or aggressive weeds (mugwort, ragweed, or knapweed) shall have been cut or otherwise managed.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Measurement for Item 765.3 shall be by the ACRE of material installed, approved, and maintained in place as listed. Payment shall be the bid price and shall be compensation for all labor and materials necessary to complete the work specified above and under item 765.3 in the Standard Specifications.

This price shall include surface preparation prior to seeding as specified under Surface Preparation, and as required by the Engineer, seeding, reseeding, irrigation, care during germination and establishment, labor materials, equipment, photo documentation, and all incidental costs required to complete the work to spread the seed mix.

ITEM 983.12**RIPRAP WITH GRAVEL PACKED VOIDS****CUBIC YARD****DESCRIPTION**

The cost of the following items is incidental to the unit price of Riprap with Gravel Packed Voids: Excavation to install Riprap including any chipping and removal of bedrock or boulders, Geotextile Fabric, Crushed Stone, Riprap, Gravel to pack Riprap voids and Natural Streambed Material excavated during the installation of the Riprap shall be stockpiled for reuse as a 6" layer of material on top of the Riprap. Any remaining streambed material shall be removed from the site and become the property of the contractor unless otherwise directed by the Town. If any excavated material is unsuitable natural streambed material as determined by the town, natural streambed material shall be pre-blended outside the project area. The cost of the pre-blended natural streambed, if necessary shall be considered incidental to this item.

The work under this Item shall conform to the relevant provisions of Section 983 and the following:

The work under this item includes furnishing and placing new Riprap to the location and limits as shown on the Plans, and as directed in the field by the Engineer. The Riprap shall be placed to stabilize and protect the embankments and armor the streambed against scour.

Stone for Riprap shall be placed on the prepared slopes or areas in a manner that will produce a well-graded mass of stone with the minimum practicable percentage of voids and thickness as depicted on the contract drawings. Riprap protection shall be placed to its full thickness in one operation in such a manner to avoid displacing the underlying material. Placing of Riprap in layers or by dumping into chutes or by placing by similar methods that are likely to cause segregation will not be permitted.

Riprap shall consist of stones that conform to M2.02.0 as described in Section M2 of the Standard Specifications "*Riprap shall be sound, durable rock which is angular in shape. Rounded stones, boulders, sandstone or similar soft stone or relatively thin slabs will not be acceptable. Each stone shall weigh not less than 50 pounds and at least 75% of the volume shall consist of stones weighing not less than 500 pounds each. The remainder of the stones shall be so graded that when placed with the larger stones the entire mass will be compact.*" All material going into the Riprap protection shall be so placed and distributed that there will be no large accumulations of either the larger or smaller sizes of stone.

It is the intent of this specification to produce compact Riprap aprons and slopes in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual stones by mechanical equipment shall be required to the extent necessary to secure the specified results.

Unless otherwise authorized by the Engineer, the Riprap protection shall be placed in conjunction with the reconstruction of the embankment slopes. The lag time between the placement of the Riprap protection and the reconstruction of the embankment slope shall be minimized to prevent mixture of the embankment and Riprap material.

A geotextile fabric shall be placed under the crushed stone bedding M2.01.4 prior to placement of the Riprap. The geotextile fabric shall meet the requirements of Section M9.50.0 of the relevant provisions and AASHTO M288, Class 2.

DESCRIPTION – GEOTEXTILE

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days. If laid under water, the covering crushed stone or Riprap shall be placed on the same day as the geotextile fabric.

For seams that are sewn in the field, the contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density.

The geotextile shall be placed in intimate contact with the soils without wrinkles or folds, and it shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials, when applicable, will not excessively stretch or tear the geotextile.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. Overlapped seams at roll ends shall be overlapped a minimum of 18 inches, except when placed under water. In such instances, the overlap shall be a minimum of 3 feet. Overlaps of adjacent rolls shall be a minimum of 18 inches in all instances.

Care shall be taken during installation so as to avoid damage to the geotextile as a result of the installation process. Should the geotextile be damaged during installation, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

When stone or Riprap is placed over Geotextile Fabric for Separation, the stone placement shall begin at the toe of slope and proceed up the slope. Placement shall take place so as to avoid stretching and subsequent tearing of the geotextile. Stone shall not be dropped from a height exceeding 12 inches.

Field monitoring shall be performed to verify that the crushed stone or Riprap placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as directed by the Engineer, at the Contractor's expense.

DESCRIPTION – GRAVEL

The finished surface shall be free of voids and shall be approved by the Engineer as it will serve as bedding for natural streambed material. Gravel shall conform to MassDOT Standard Specification Item 151 [Gravel Borrow M1.03.0].

STOCKPILE NATURAL STREAMBED MATERIAL

Natural streambed material is to be stockpiled on site. It shall be contained within an area approved of by the Town with containment methods acceptable to the Town. The excavated streambed material will be placed on a tarp or impervious surface. The stockpiled material will be covered with a tarp and surrounded by sediment barriers until its reuse. Any stone excavated from the existing streambed can be stockpiled and reused for streambed restoration, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area. Any material not reused shall become the property of the Contractor.

PRE-BLENDED NATURAL STREAMBED MATERIAL (IF NECESSARY)

The streambed material shall be comprised of two primary components.

1. Stone 4 inches and under shall meet the following gradation:

<u>Sieve opening</u>	<u>Percent by Mass Passing Through</u>
4"	95
2"	55 – 65
¾"	30 – 45
#4	0 – 5

2. Stone 6 inches to 2.5 foot in diameter:

<u>Stone Size</u>	<u>Percent Passing</u>
2.0'	80
1.5'	25
0.5'	0

The streambed/bank stone for all two components shall be native cobbles and boulders similar in shape and size of streambed/bank stone adjacent to the work area. Partially angular rock is preferred over round and shall be able to lock together to prevent movement during high flows. Crushed Stone will not be accepted for any of the two components. Any stone excavated from the existing streambed can be stockpiled and reused for natural streambed, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area, or meets the above criteria. The elevations and conditions of the existing streambed shall be maintained to the maximum extent practicable.

Components one and two shall be pre-blended outside the project area at a volume ratio of 30% and 70% respectively. The pre-blending shall be done in a way that will prevent the mass from being contaminated by work-place soils. The pre-blended mass shall be placed over areas of proposed Riprap as shown on the plans.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Riprap with Gravel Packed voids will be measured and paid for per cubic yard completed in place. Crushed stone, gravel, geotextile fabric, excavation, and all work related natural streambed material shall be included in the bid price for Riprap with Gravel Packed Voids. Said price shall be considered full compensation for all labor, tools, equipment and materials necessary for the completion of the work.

ITEM 991.1 CONTROL OF WATER-STRUCTURE NO. N-11-007= LUMP SUM

W-20-001

The cost for all excavation (except for within the limits of Bridge Excavation shown on the contract drawings) to install the control of water system shall be included in the bid price for Item 991.1. The environmental permits contained in the contract documents depict a suggested control of water system. Any modification of existing or new permits are at the contractor's expense and the contract completion date will not be altered.

The contractor is alerted to the requirements imposed by the environmental permits contained in the contract documents.

DESCRIPTION

The work to be performed under this Item shall include all pumping, sandbagging, sheeting, for sufficient water control to accomplish the removal of the existing bridge, construction of the proposed bridge and Riprap installation "*in the dry*". Work under this Item shall consist of dewatering within the work limits as shown on the plans. Water within the work area shall be discharged as specified in the contract documents, environmental permits obtained for this project and as directed by the Municipalities. No direct discharge will be allowed into waterways, or the adjacent wetlands during the dewatering operations.

Dewatering shall be conducted to ensure that all bridge components are placed and cured in the dry. For demolition purposes, dewatering shall be conducted for demolition of the existing bridge. Proposed methods of dewatering for the bridge are included in the contract documents. However, it is the responsibility of the Contractor to determine the need and extent of additional dewatering required, sedimentation and dewatering techniques and controls and submit method and materials he/she proposes to use for approval by the Engineer.

Plans and calculations for all the sandbagging, sheeting and other water control measures shall be developed by the Contractor. These plans and calculations shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts and shall be submitted for review prior to the start of construction.

All dewatering and related earthwork shall be conducted in such a manner as to prevent siltation or contamination of the waterway and wetlands. The pumping discharge shall not be allowed to enter the Artichoke Reservoir or the wetland resource areas. The water from the work areas shall be pumped either to a filter bag, temporary settling tank, forebay basin, or other approved containment structure conforming to MassDOT's "*Guidelines for Soil Erosion & Sediment Control*". The containment structure shall be constructed so as to allow for the pumped water to pass through the structure with sediments settling out before outletting to an area enclosed by a concrete barrier siltation basin with a clean layer of crushed stone. Water filtering thorough the containment structure shall not cause erosion of the surrounding area.

An approved method of controlling erosion, such as an erosion control blanket, stone, etc. shall be used at the outlet.

The control of water containment structure shall be maintained as follows:

1. Inspect at least twice daily during dewatering operations.
2. Repair any damage immediately.
3. Clean containment structure daily. Remove any debris immediately.
4. Remove sediments as needed.

The Contractor shall inspect compost filter tubes and sedimentation fence that surround the outlet daily and shall immediately replace any that are damaged.

Placement of the dewatering containment structure will be as approved by the Municipalities and the Engineer based on specific site conditions and staging operations of the Contractor.

The Contractor shall investigate and verify existing conditions and evaluate the need for protection and the type of facilities required. Before commencing construction, the Contractor shall furnish the Engineer with details of the plan and methods he/she proposes to use for handling water including details for material, equipment and pumping based on actual needs to accomplish the work. The Contractor may use barriers, sandbags, sheeting, portadams or other types of protective facilities as approved by the Engineer. The furnishings of such plans and methods shall not relieve the Contractor of his responsibility for the safety of the work and for the successful completion of the project.

All such temporary structures or facilities shall be safely designed, extended to sufficient depth and be of such dimensions and water-tightness so as to assure construction of the permanent work in the dry. Water control structures shall not interfere with the proper performance of the work. Their construction shall be such as to permit excavation for the permanent work and any conflicts shall be corrected at the sole expense of the Contractor.

Any pumping from within the areas of construction shall be done in such a manner as to prevent the possibility of movement of water through any fresh concrete.

Unless otherwise provided or directed by the Engineer, all such temporary protective work shall be removed and disposed of in an approved manner when no longer required.

The Engineer/Municipalities have the right to order the Contractor to stop all work when in his judgment the Contractor's water control operations are failing to produce adequate results or are posing a threat to the environment.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for work under this Item shall be paid at the lump sum contract bid price, complete.

Payment for all water control work, including design for the dewatering operations used to maintain a water free excavation, shall include all labor, tools and equipment materials and installation, piping, pumping, stone ends for pipes, maintenance, subsequent removal of all related materials and equipment all as outlined above; and restoration of site shall be included in the lump sum contract price bid under this Item.

Eighty-five (85%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system. The final fifteen (15%) percent of the Lump Sum Price Bid for this Item will be paid upon the complete removal of the water control system from the project site at the completion of the work.

Compost filter tubes and sedimentation fence provided specifically for the outlet from the sedimentation containment structure shall be included in the lump sum bid price for this Item.

Attachment G

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Notice of Intent Application

PROJECT PLANS
CONSTRUCTION DETAILS

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10-15	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF
200-FOOT RIVERFRONT AREA (RFA)	REDEVELOPMENT	3,203	2,669	5,872	SF
	PERMANENT IMPACT	1,986	1,217	3,203	SF
	TEMPORARY IMPACT	570	548	1,118	SF
BORDERING LAND SUBJECT TO FLOODING (BLSF)	PROPOSED ALTERATION	167	44	211	SF
	PROPOSED REPLACEMENT	311	344	655	SF
	FLOOD STORAGE LOST	393	132	525	CF
	FLOOD STORAGE REPLACED	1,438	1,857	3,295	CF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

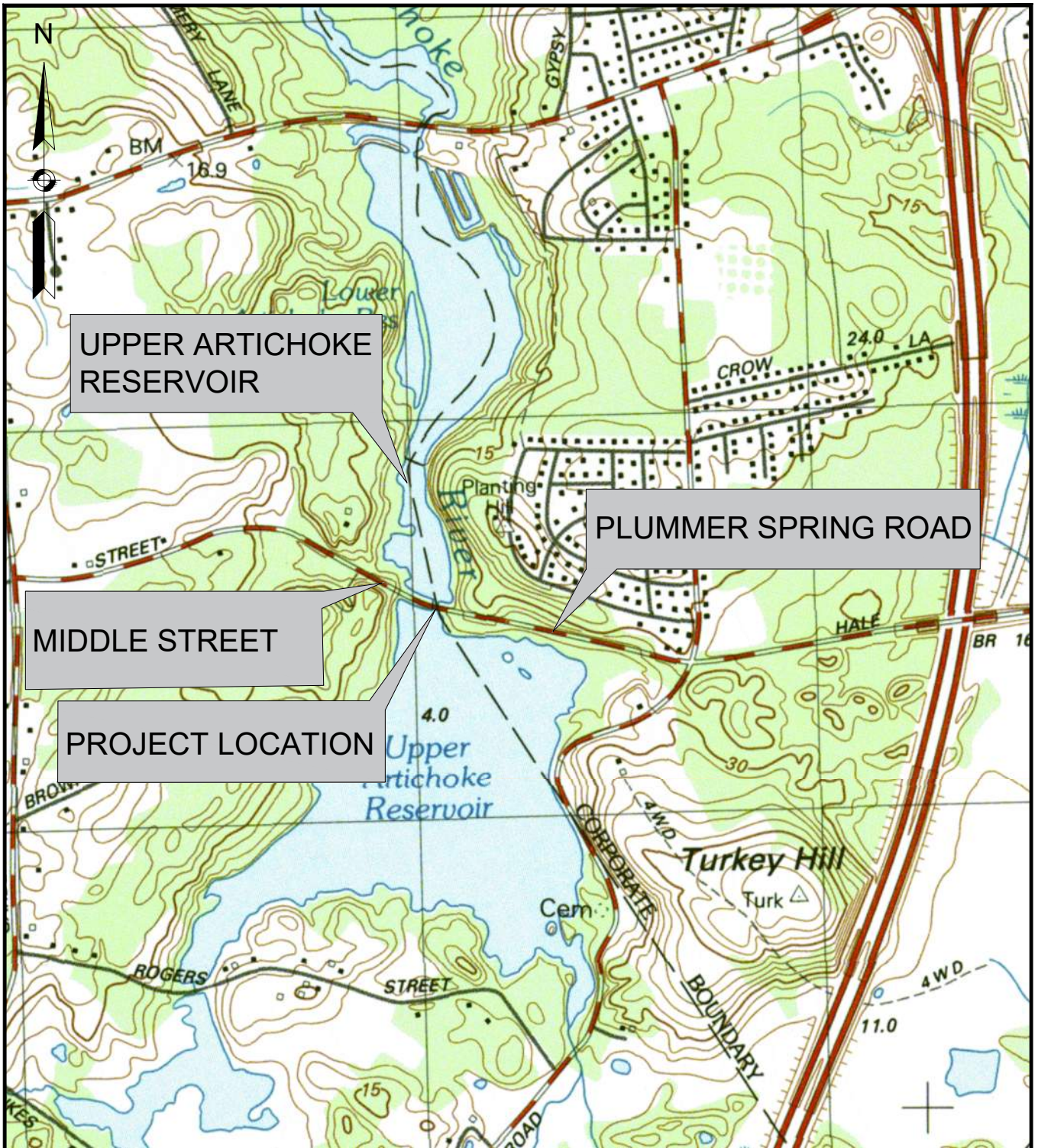
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 15

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 Boston, Massachusetts
 02127
 617 896 4300



UPPER ARTICHOKE RESERVOIR

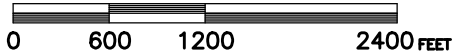
PLUMMER SPRING ROAD

MIDDLE STREET

PROJECT LOCATION

LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'

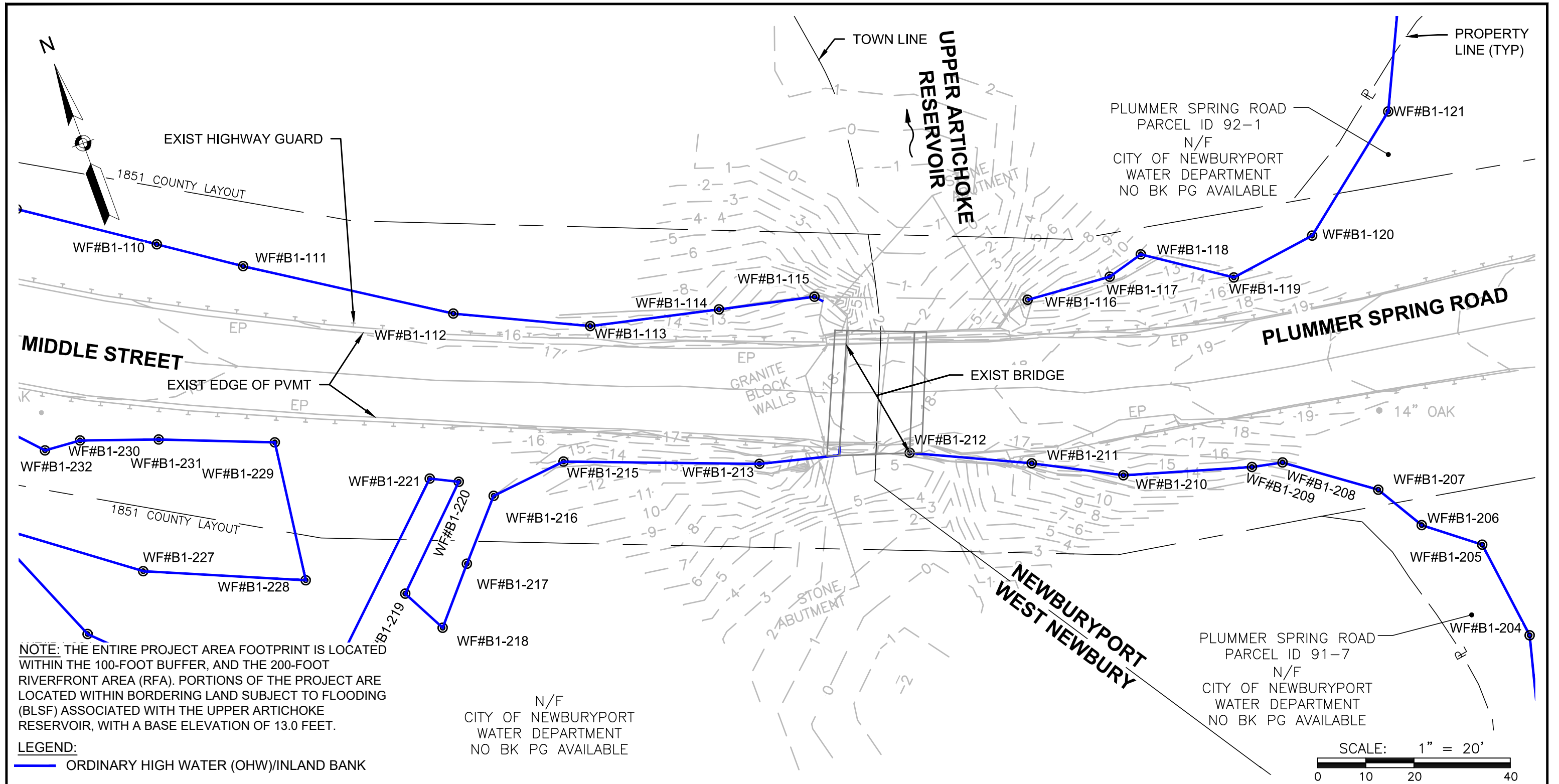


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 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST
 NEWBURY, MA 01985

LOCUS MAP
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING
 ROAD OVER UPPER ARTICHOKE
 RESERVOIR, WEST NEWBURY/
 NEWBURYPORT, MA, ESSEX COUNTY

BSC GROUP
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Job No.:	28395.00	Date:	12/21/2020
Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 15



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

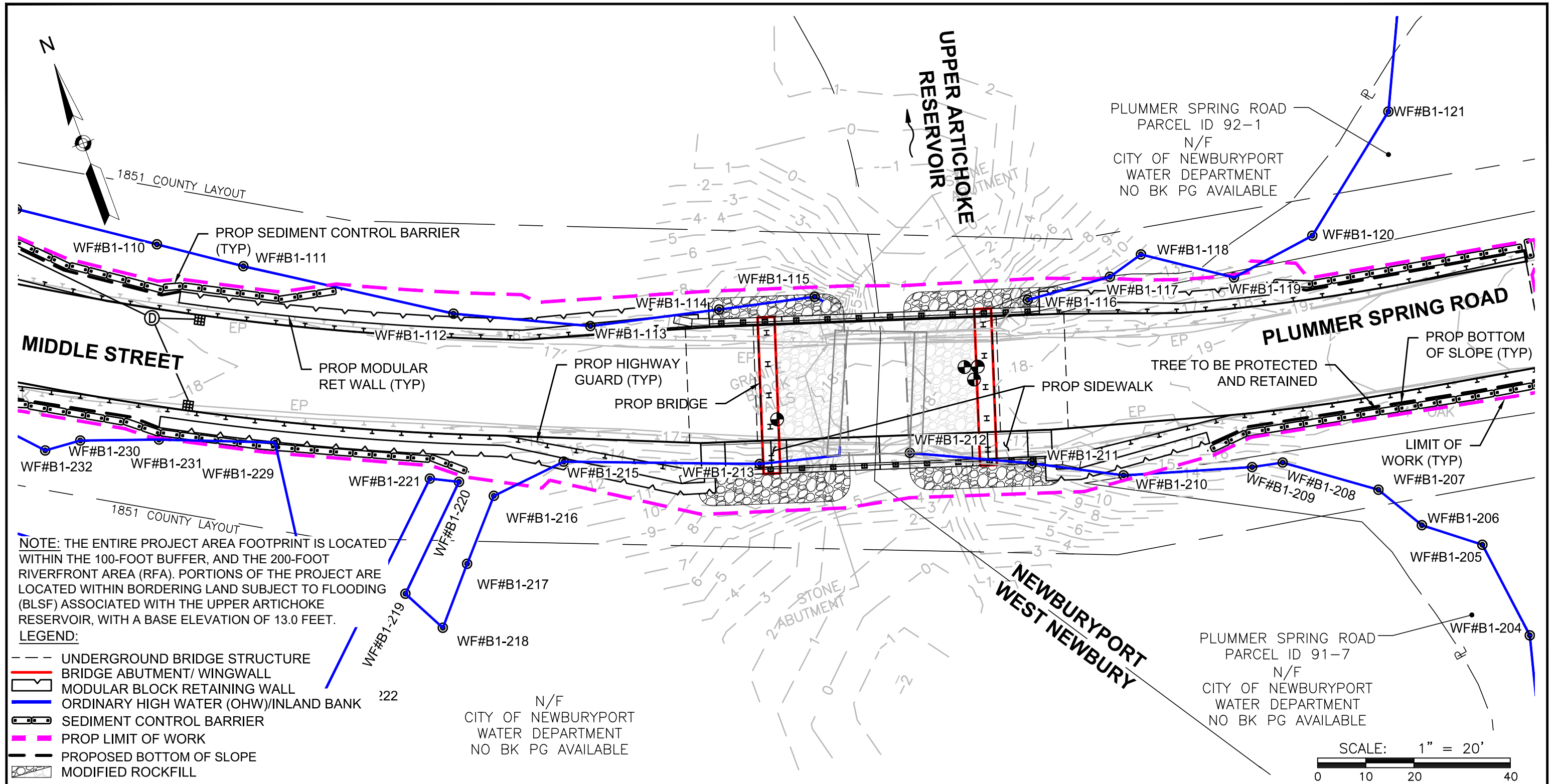
PLUMMER SPRING ROAD
 PARCEL ID 91-7
 N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
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Source:
EXISTING CONDITIONS
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: EX COND Figure: 3 OF 15

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 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

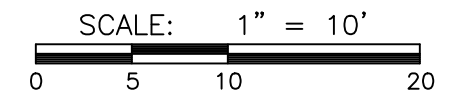
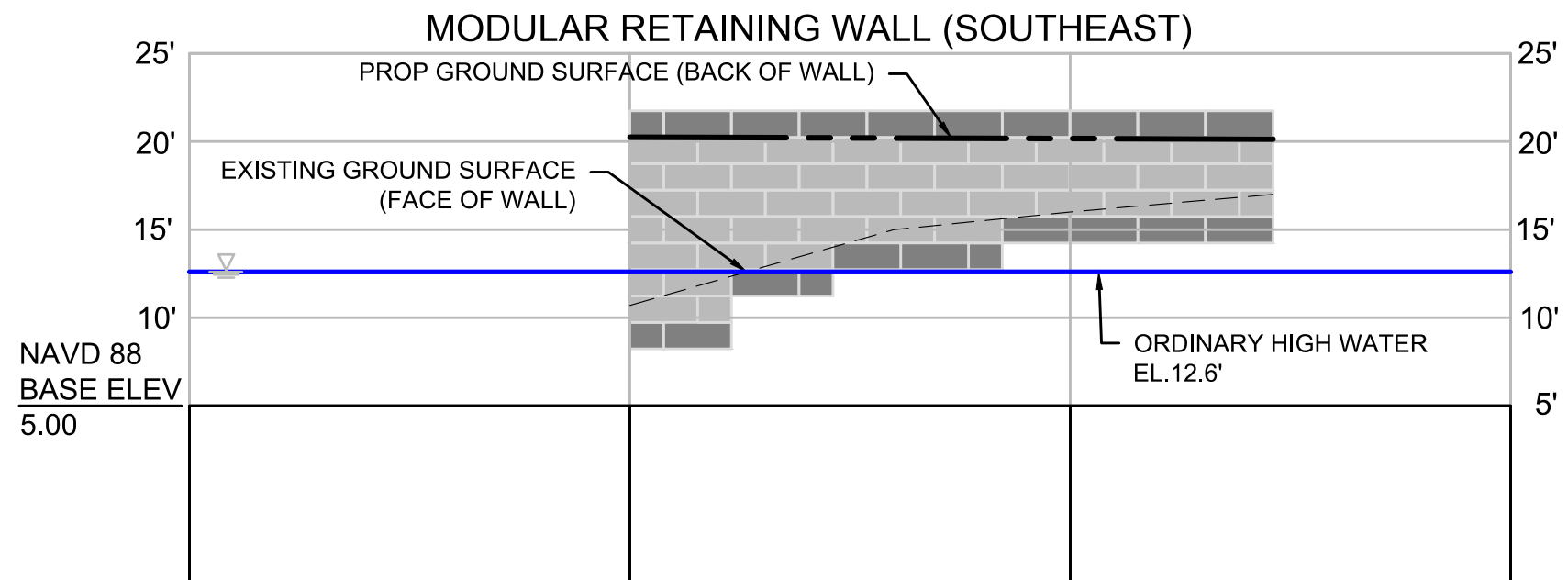
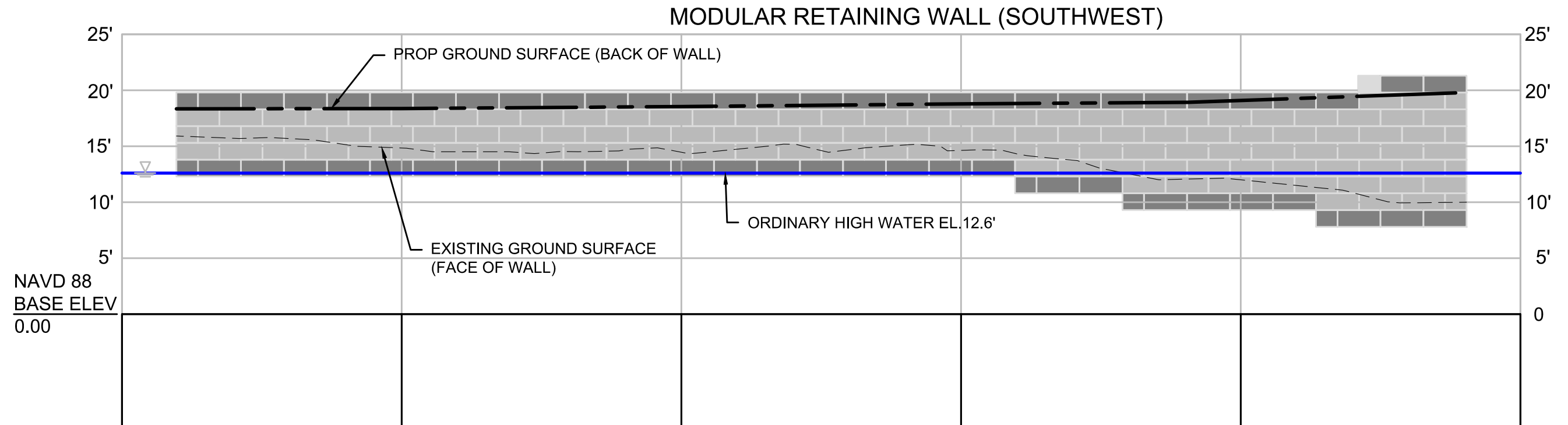
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: PROP COND Figure: 4 OF 15

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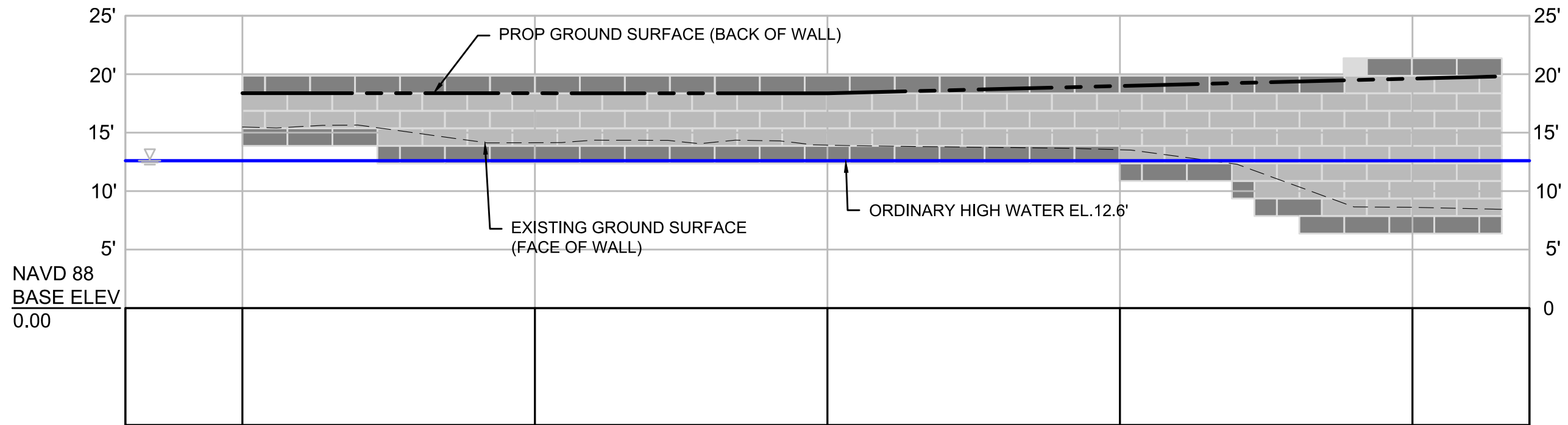
PROPOSED WALL PROFILE

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

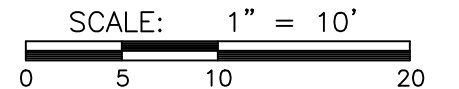
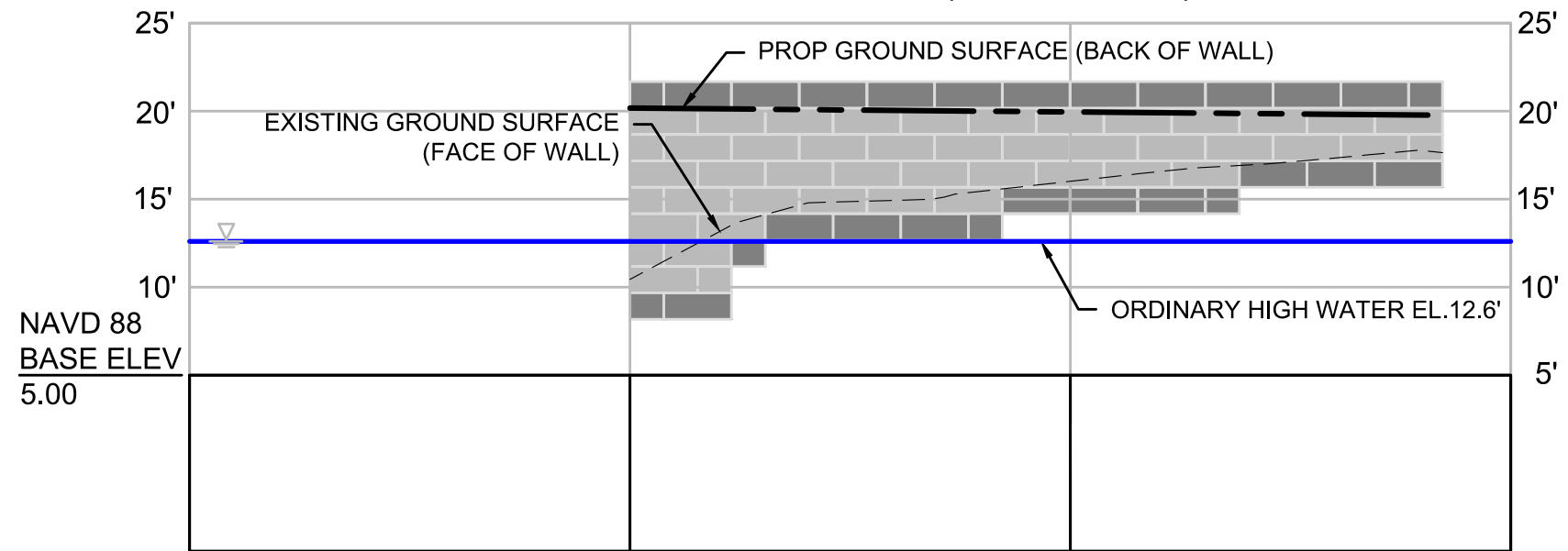
Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10' Revised: _____
 Description: PR WALL Figure: 5 OF 15

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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)



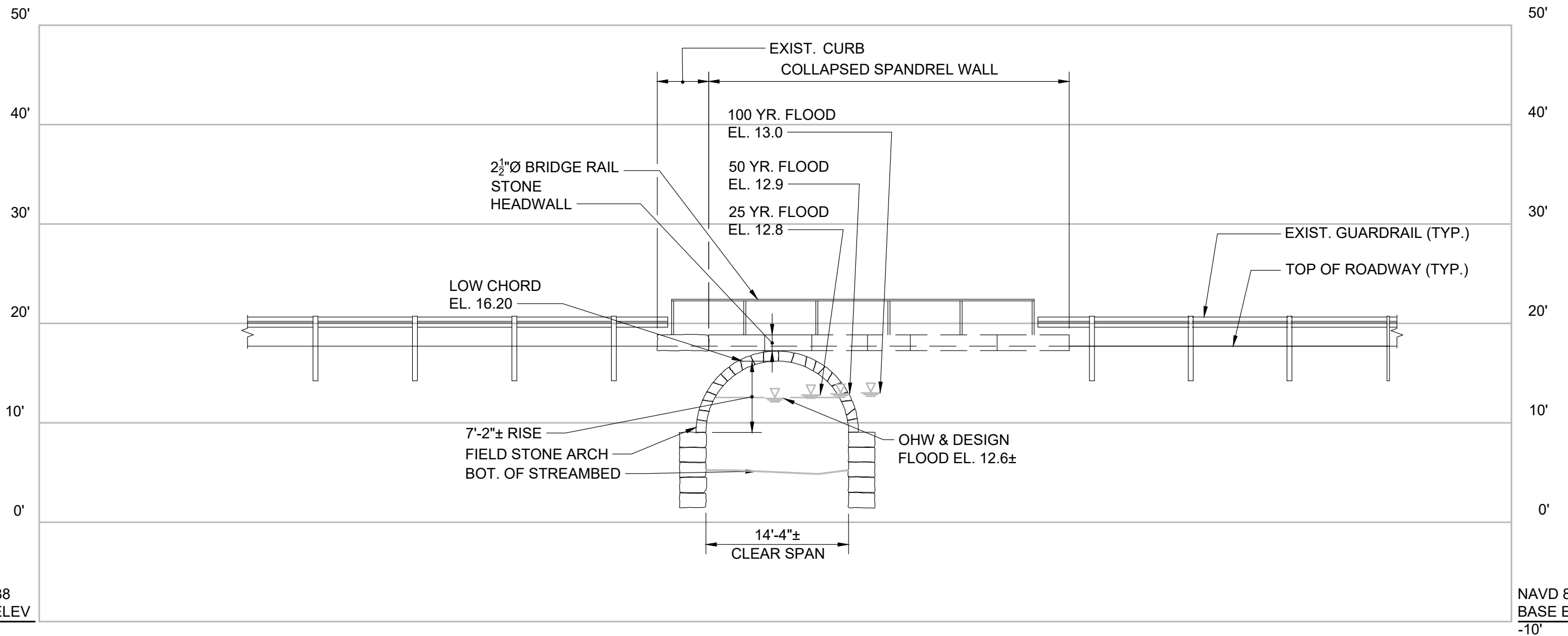
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TOWN OF WEST NEWBURY
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MA 01985

PROPOSED WALL PROFILE

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: _____
Description: PR WALL Figure: 6 OF 15
PROF

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617 896 4300



EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source:

EXISTING - SOUTH ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

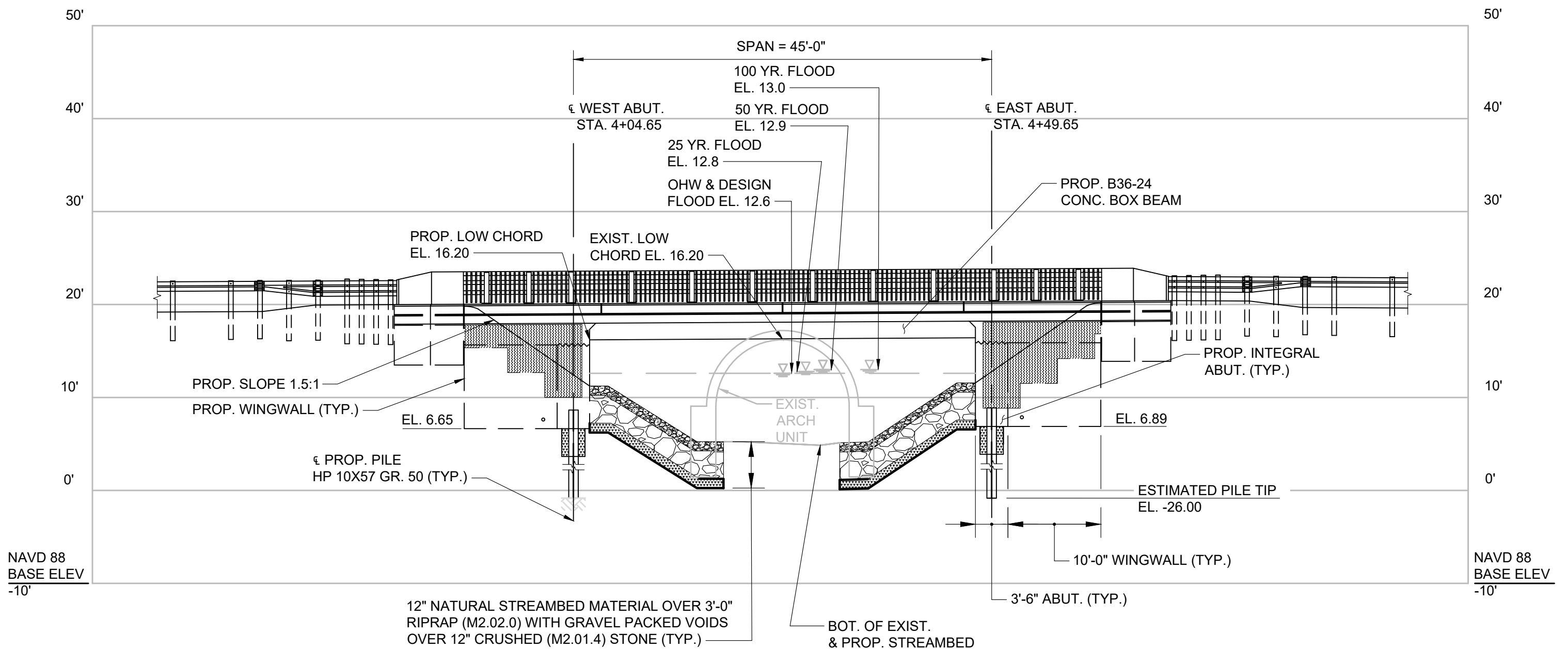
Job No.: 28395.00 Date: 12/21/2020

Scale: 3/32" = 1'-0" Revised: _____

Description: EXIST. EL. Figure: 7 OF 15

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NAVD 88 BASE ELEV -10'

NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

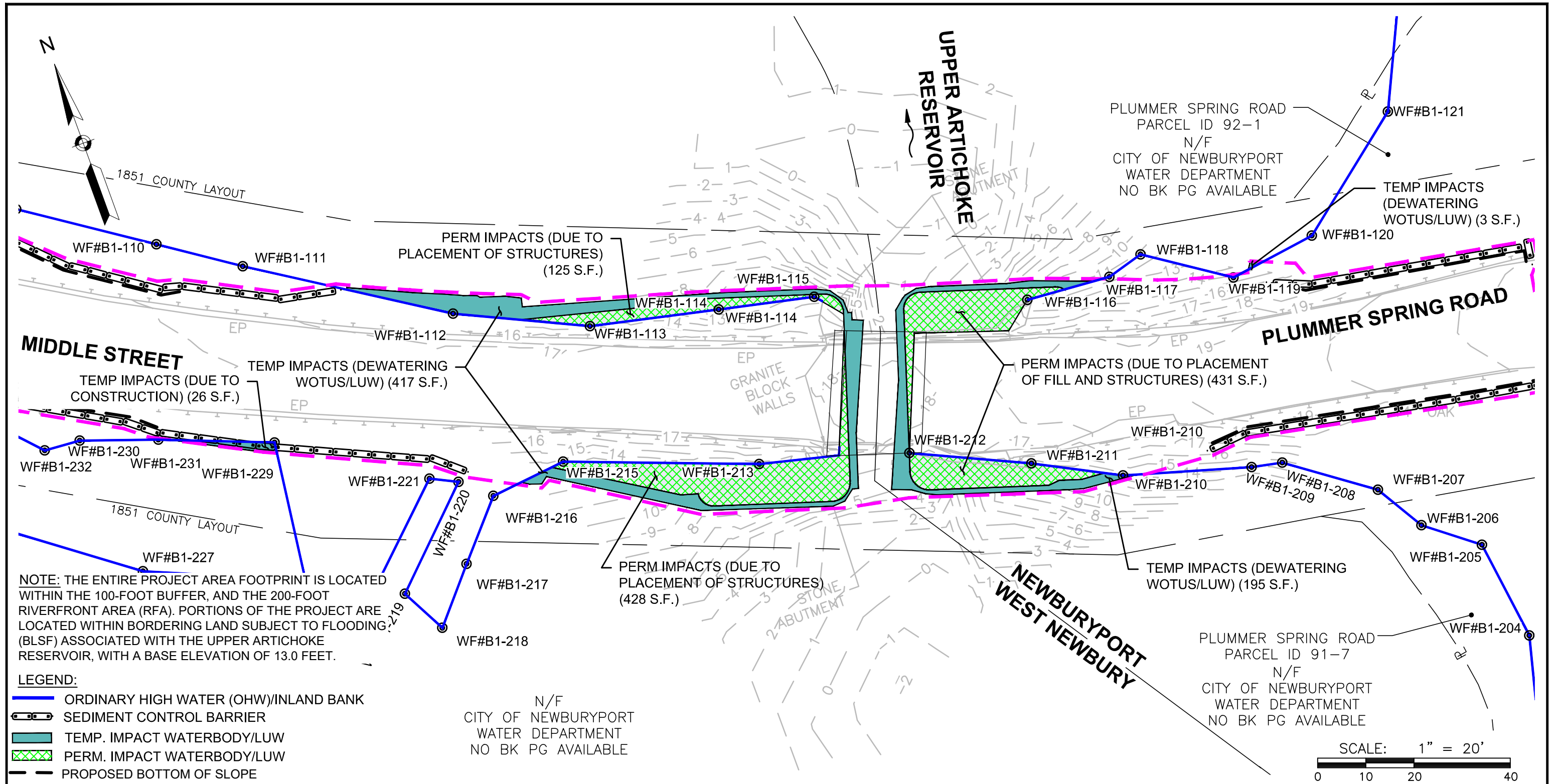
PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source: **PROPOSED - SOUTH ELEVATION**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: PROP. EL. Figure: 8 OF 15

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02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

IMPACTS

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: IMPACTS Figure: 9 OF 15

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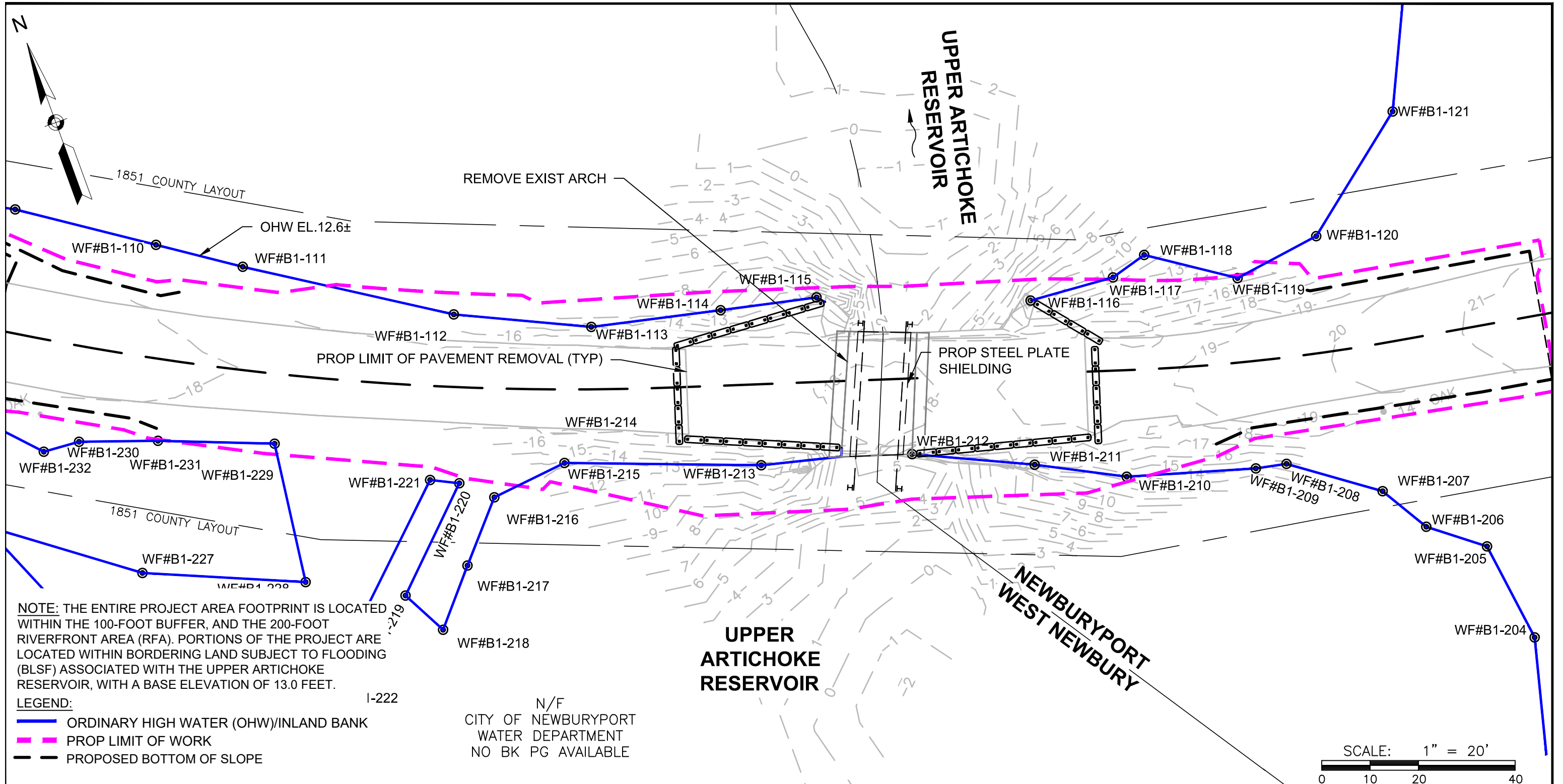
FLOODPLAIN IMPACT AND MITIGATION SUMMARY							
ELEVATION (FT)	FLOODPLAIN IMPACT (CF)		FLOODPLAIN MITIGATION (CF)		FLOODPLAIN NET (CF)		
	WEST NEWBURY	NEWBURYPORT	WEST NEWBURY	NEWBURYPORT	WEST NEWBURY	NEWBURYPORT	TOTAL
3-4	-	-	-	10.1	NO CHANGE	+10.1	+10
4-5	-	-	6.1	46.5	+6.1	+46.5	+53
5-6	-	-	40.4	84.3	+40.4	+84.3	+125
6-7	-	-	78.3	122.2	+78.3	+122.2	+201
7-8	-	-	116.2	160.1	+116.2	+160.1	+276
8-9	0.8	-	154.0	198.0	+153.3	+198.0	+351
9-10	-	24.5	192.9	236.8	+192.9	+212.4	+405
10-11	165.5	43.0	234.3	278.3	+68.8	+235.3	+304
11-12	140.6	38.6	279.8	354.5	+139.2	+315.9	+455
12-13	85.6	25.5	334.3	365.6	+248.7	+340.1	+589
TOTAL	392	131	1,436	1,856	1,044	1,725	<u>2,769</u>

PREPARED FOR:
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 60 PLEASANT ST NEWBURYPORT,
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 381 MAIN ST, WEST NEWBURY,
 MA 01985

FLOODPLAIN IMPACT AND MITIGATION SUMMARY
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: BLSF TABLE Figure: 10 OF 15

 **BSC GROUP**
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 — PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

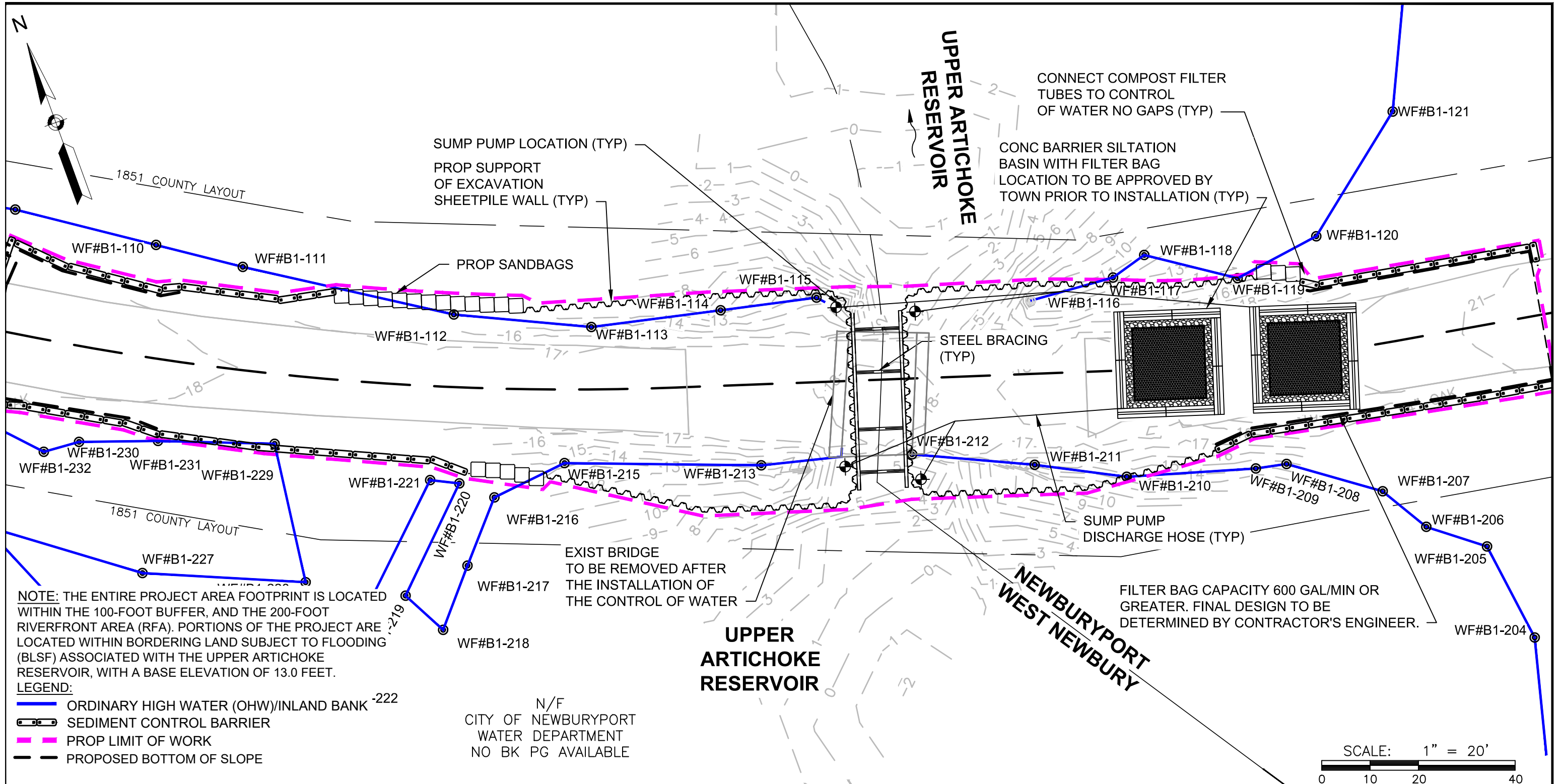
SCALE: 1" = 20'
 0 10 20 40

PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 11 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

CONTROL OF WATER - PHASE 1 - PLAN

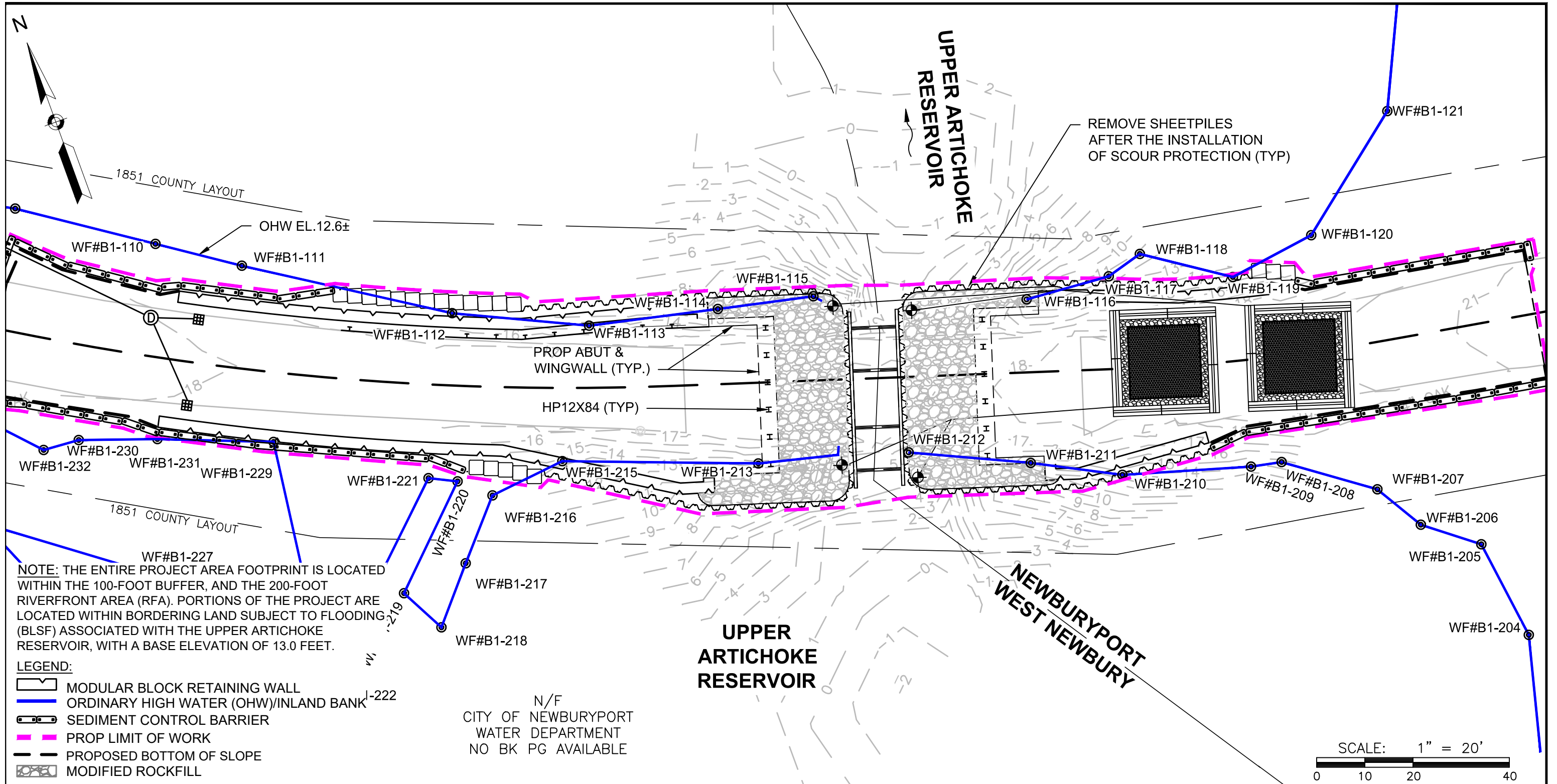
Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 12 OF 15

BSC GROUP

803 Summer Street
Boston, Massachusetts
02127
617 896 4300

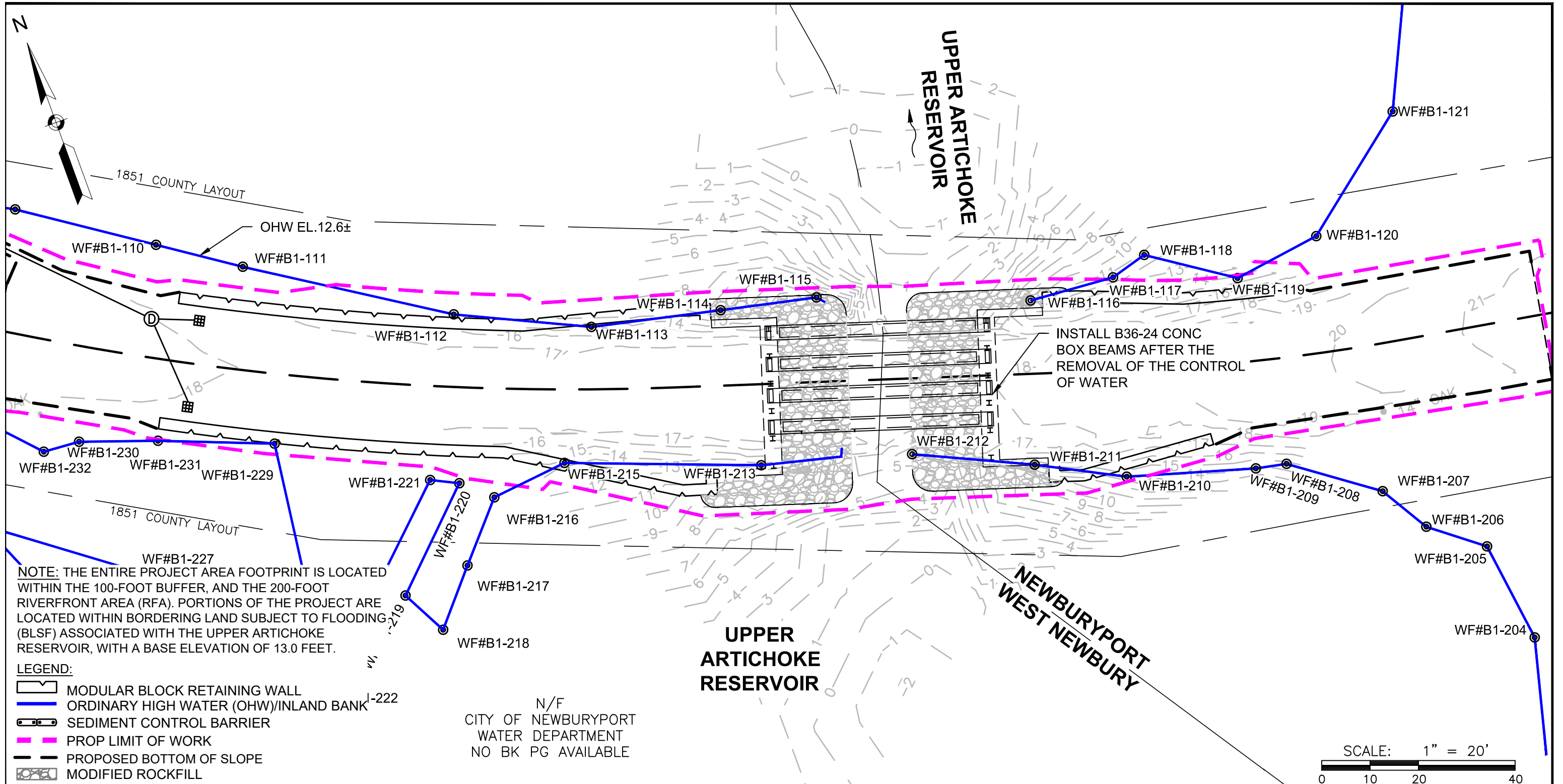


PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 13 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

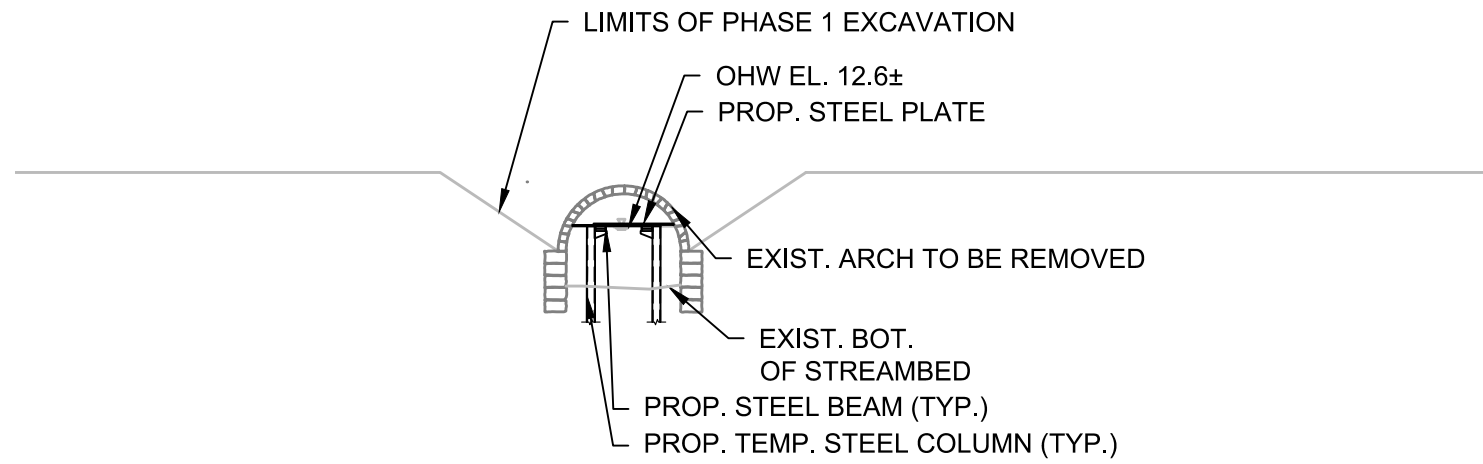
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

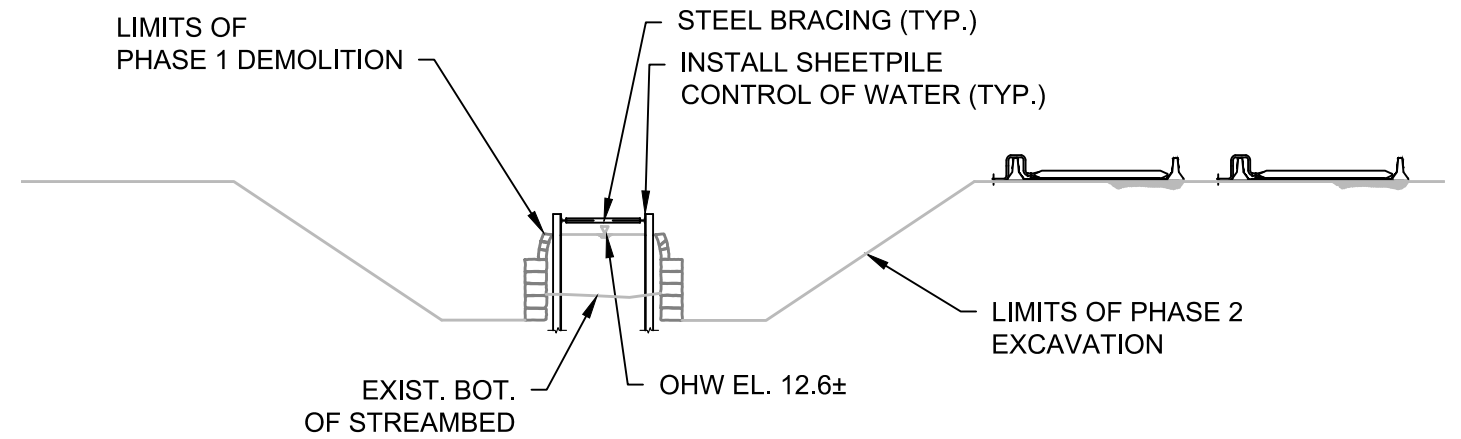
Source: **CONTROL OF WATER - PHASE 3 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 14 OF 15

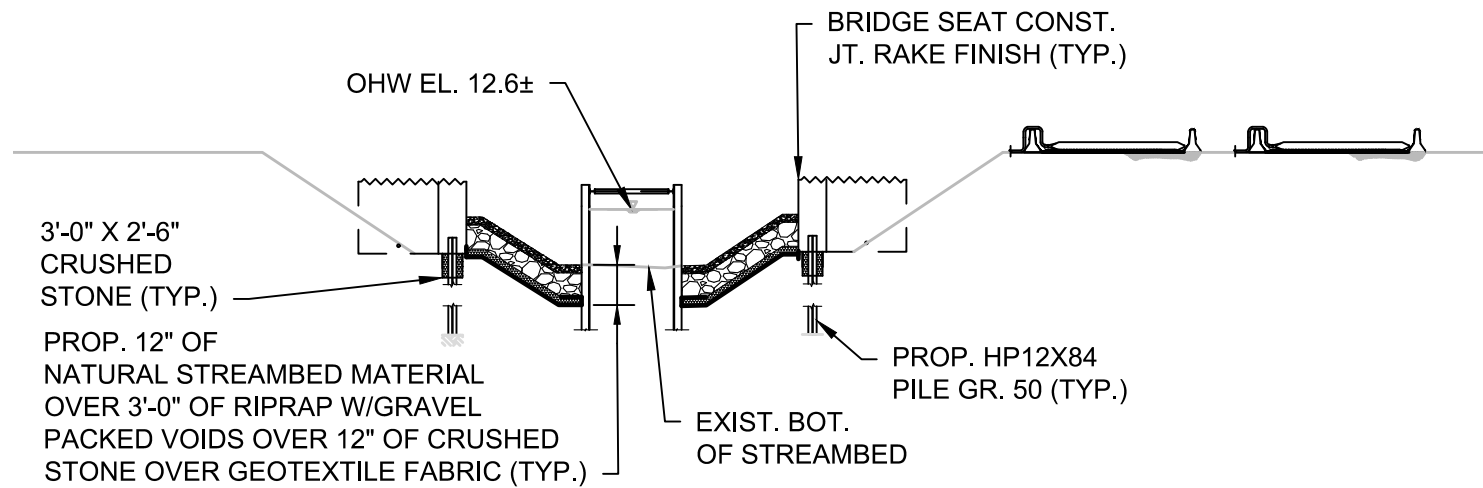
BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



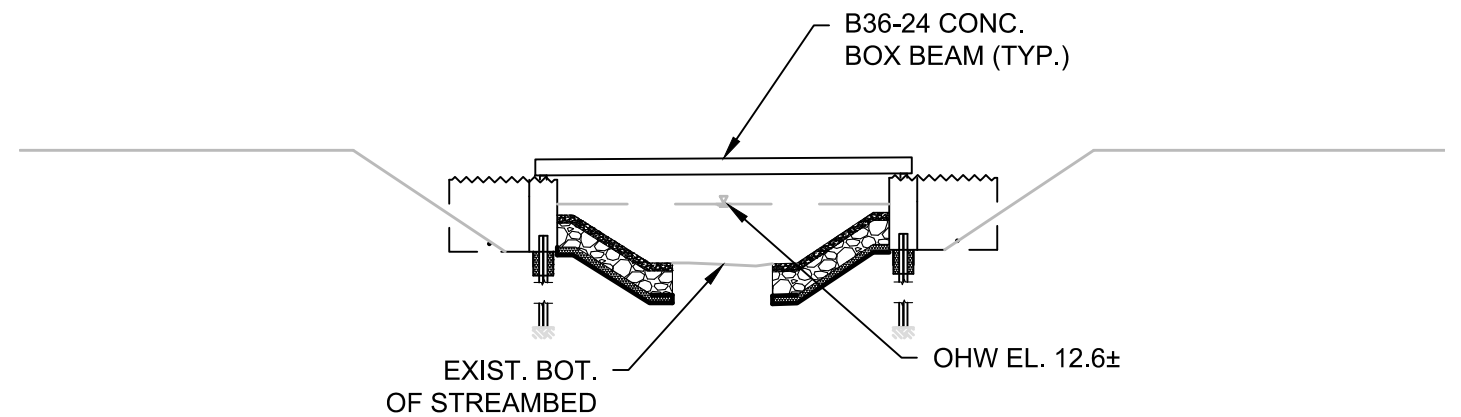
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 15 OF 15

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

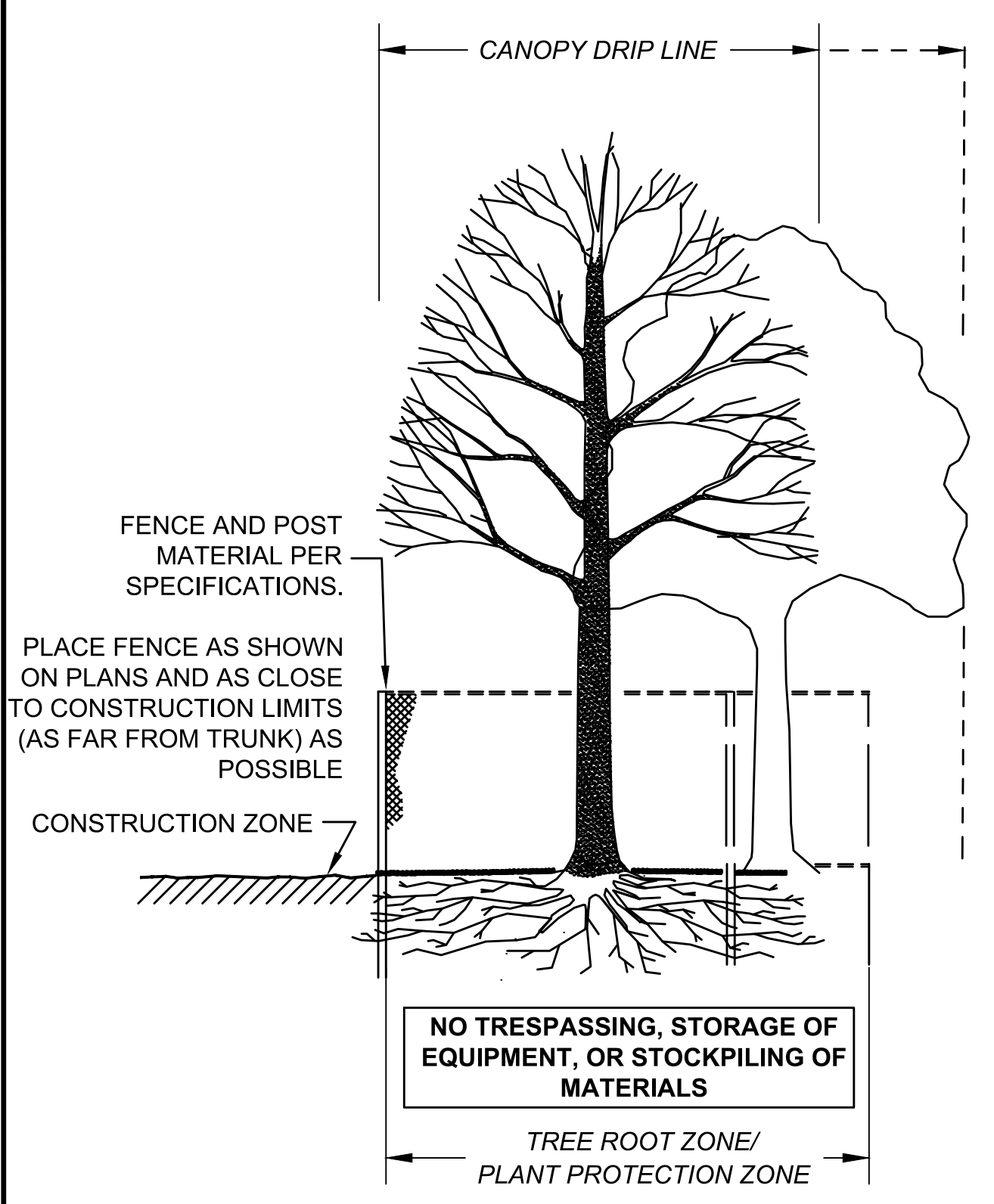
**SHEFFIELD
LIME KILN ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	25
PROJECT FILE NO.		-	

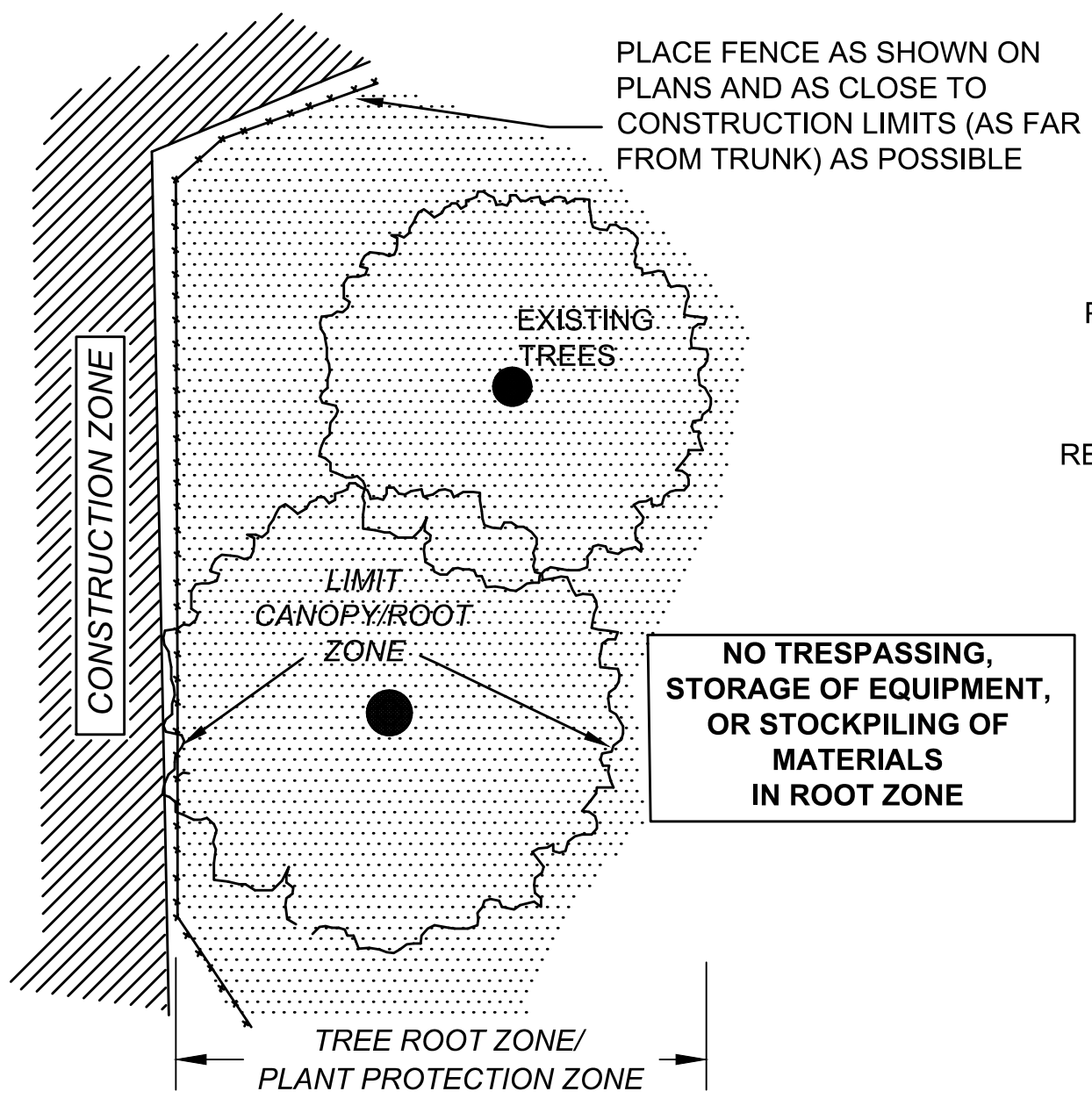
CONSTRUCTION DETAILS

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.



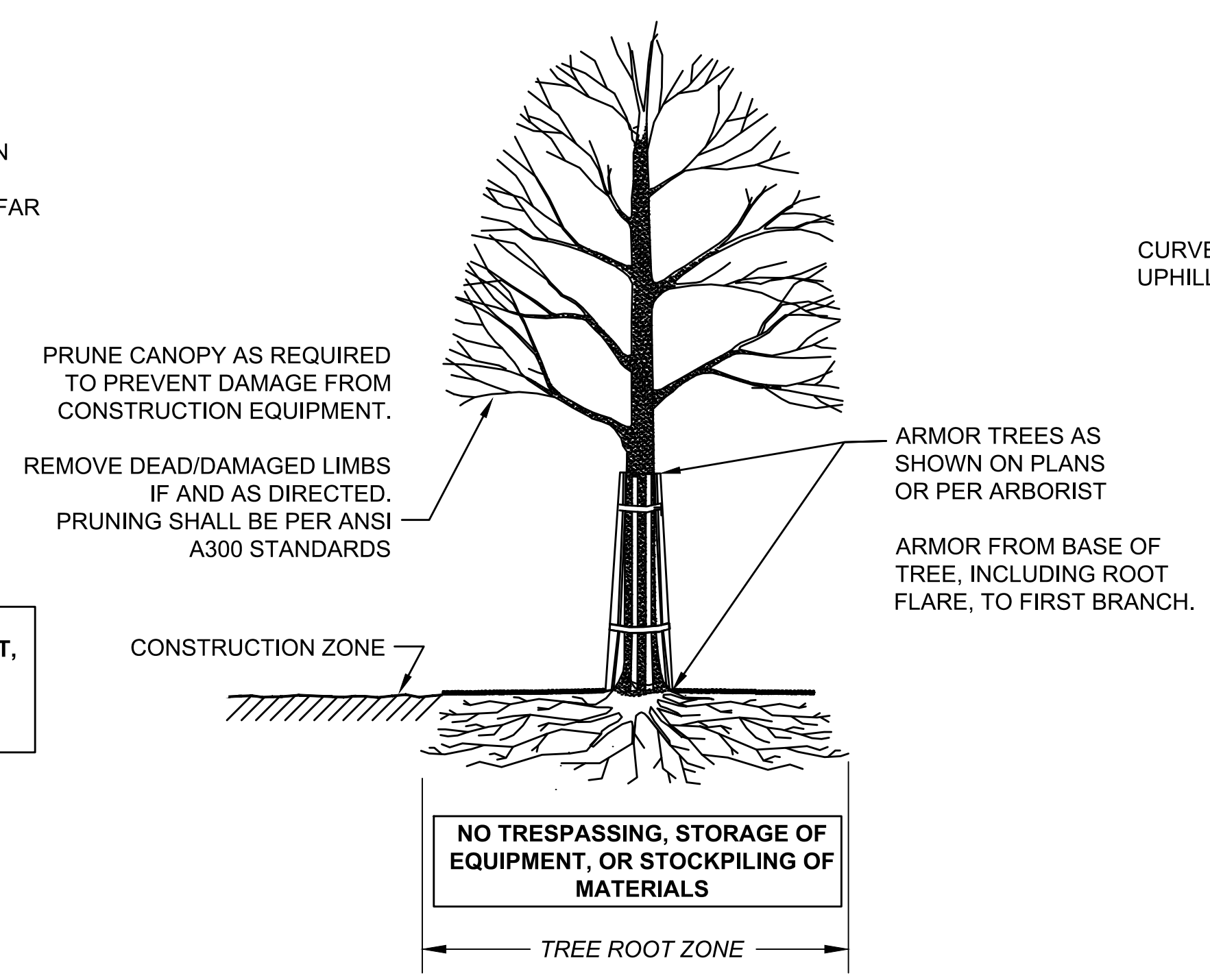
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

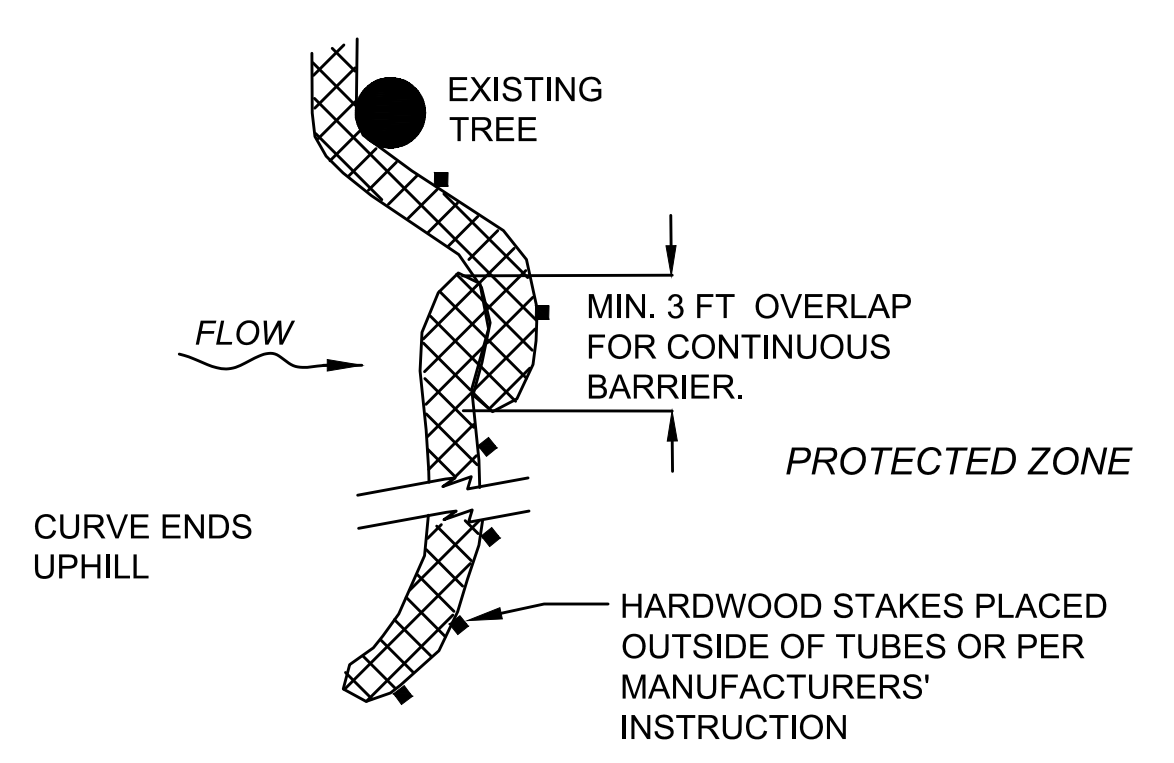
TREE PROTECTION - ROOT ZONE

NOT TO SCALE

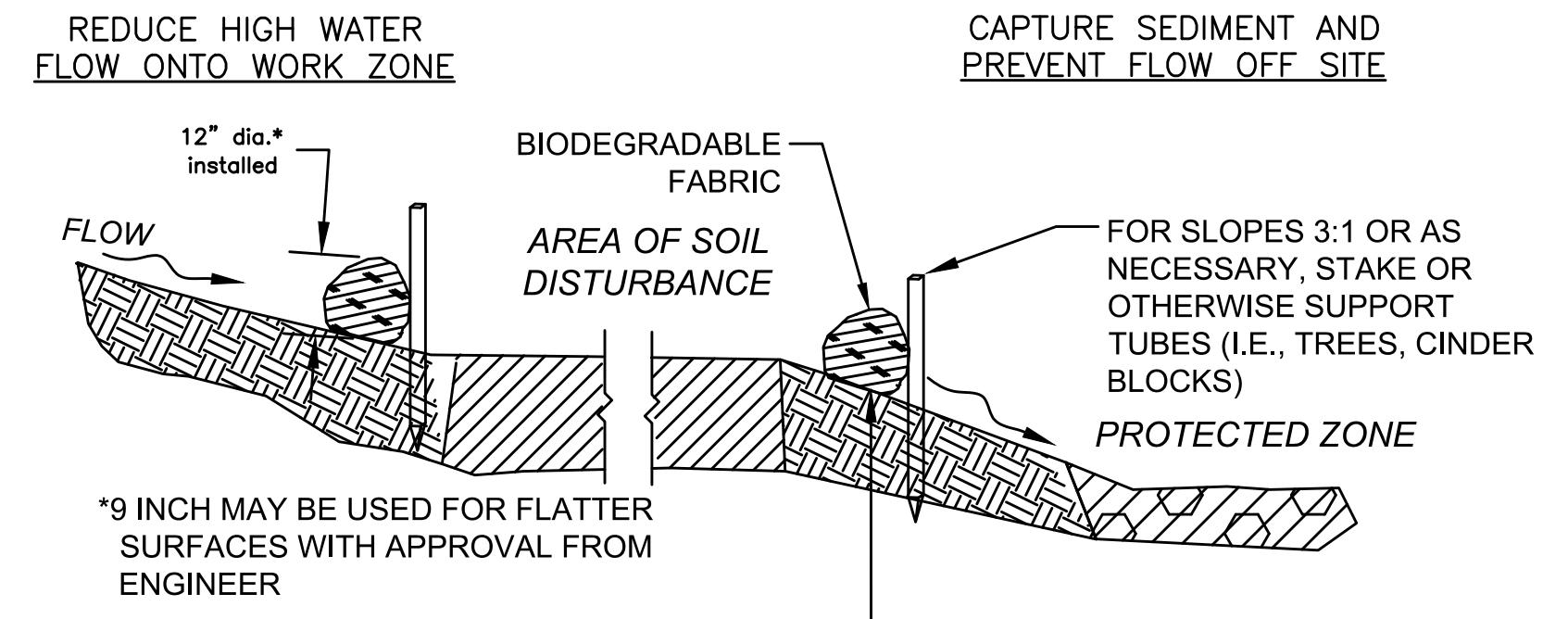


SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK



PLAN VIEW

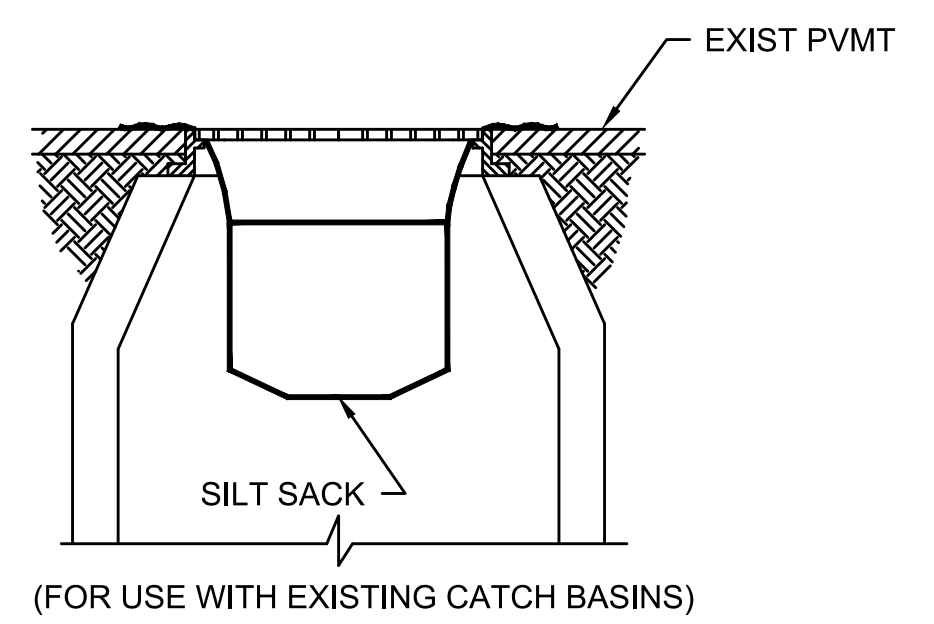


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

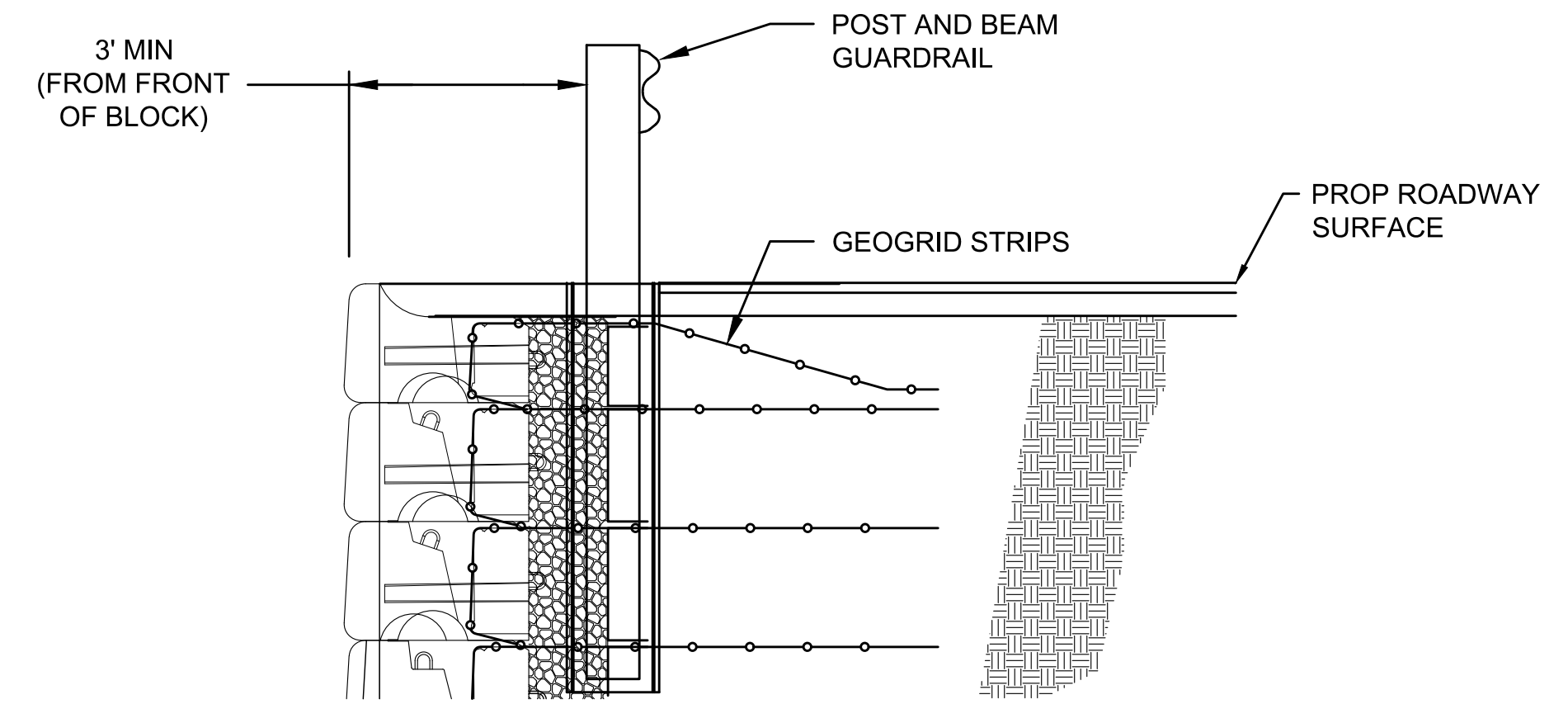
NOT TO SCALE

NOTES:
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



SILT SACK INLET PROTECTION

NOT TO SCALE



POST AND BEAM GUARDRAIL - SECTION VIEW

NOT TO SCALE

**Massachusetts Department of Environmental
Protection**

401 WATER QUALITY CERTIFICATION

Reissuance and Original



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 150 Presidential Way Woburn, MA 01801 • 978-694-3200

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

April 5, 2024

Town of West Newbury
381 Main Street
West Newbury, MA 01985

City of Newburyport
16C Perry Way
Newburyport, MA 01950

re: **WATER QUALITY CERTIFICATION**

Application for: **BRP WW 10**, Water Quality Certification
Major Project – Upper Artichoke Reservoir

at: Middle Street/Plummer Spring Road over Upper Artichoke Reservoir
DEP Transmittal # **X287261**
DEP WETLANDS FILE # **078-0724 & 051-1047**
USACE # **NAE-2021-00177**
EEA # **16412**

Dear Mr. White and Mr. Jennings:

The Northeast Regional Office of the Massachusetts Department of Environmental Protection, Wetlands Program (MassDEP), has reviewed your application for Water Quality Certification (WQC), as referenced above. In accordance with the provisions of MGL c.21, §§ 26-53 and Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards.

Note that this is a reissuance of a 401 WQC Transmittal No. X287261 which was authorized under the 2018 USACE General Permit that is now expired.

The proposed project consists of the replacement of the structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke reservoir in West Newbury and

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

Newburyport. The bridge is currently in poor condition and the road is closed due to the structural deficiencies. The project will replace the bridge structure with a new structure on a similar horizontal and vertical alignment. The proposed bridge will expand the hydraulic opening of this stream crossing while also improving roadway safety.

The project will result in approximately 984 square feet of permanent impacts to Land Under Water associated with the installation of retaining walls, the bridge abutments, and riprap around the inlet and outlet. The project will net approximately 885 square foot gain of Land Under Water as a result of the expanded openness of the new bridge structure. The project will also result in approximately 641 square feet of temporary impacts to Land Under Water associated with the temporary dewatering of the channel for construction. Temporary impacts will be restored to pre-construction conditions.

MassDEP concurs that given the location of the proposed replacement bridge structure, generally in the same footprint of the existing drainage system and the increasing of the bridge openness, impacts to Land Under Water from the proposed activities have been avoided and minimized while meeting pertinent engineering requirements. The Applicant has explored sufficient alternatives regarding the need for impacts to resource areas as related to the design requirements and arrived at an alternative that minimizes impacts.

Since the project is located within an Outstanding Resource Water associated with the Upper artichoke Reservoir, the work is subject to the provisions of 314 CMR 9.06(3):

(3) Except as otherwise provided in 314 CMR 9.06(3), no discharge of dredged or fill material shall be permitted to Outstanding Resource Waters. The discharge of dredged or fill material to an Outstanding Resource Water in association with an activity listed in 314 CMR 9.06(3)(a) through (k) may be permitted without requiring the applicant to obtain a variance...

9.06(3)(c) Maintenance, repair, replacement, or reconstruction but not substantial enlargement of existing and lawfully located structures or facilities including buildings, roads, railways, utilities, dams, and coastal engineering structures

Because the impacts to Land Under Water are for the purpose of replacing an existing drainage utility, the project is in compliance with 314 CMR 9.06(3)(c).

The Criteria for Evaluating Proposed Discharge to Wetlands at 314 CMR 9.00 of the Regulations requires the submittal of information necessary for MassDEP to determine that the project complies with the Wetlands Protection Act, minimizes individual and cumulative impacts, and complies with the Massachusetts Surface Water Quality Standards. This information has been provided and specific mitigating measures required by MassDEP are itemized below. Therefore, based upon information currently in the record, MassDEP grants a WQC subject to the following conditions to maintain water quality, to minimize impact on the waters and wetlands, and to ensure compliance with the appropriate state law. MassDEP did not receive any public comments on the project within the 21-day public comment period.

All activities shall conform to the following plans:

1. "BRIDGE REPLACEMENT PROJECT" prepared by BSC Group, dated 12/21/2020, signed, and stamped by Kathryn Eagan, P.E., consisting of 14 sheets. **Final, stamped plans shall be sent to MassDEP prior to the beginning of work.**

On File with: MassDEP, the Newburyport, and West Newbury Conservation Commissions, and the US. Army Corps of Engineers.

2. MassDEP shall be notified of all changes in plans affecting waters or wetlands. MassDEP will determine whether the changes require a revision to this certification. This condition, pursuant to 314 CMR 9.06(1) and 314 CMR 9.09(2), is necessary to protect the public health and restore and maintain the chemical, physical, and biological integrity of the water resources of the Commonwealth.
3. All activities shall conform to the requirements set forth in the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. Any violation of this permit shall be considered a violation of the 401 Water Quality Certification. This condition is necessary to assure that any discharge from the project complies with the Massachusetts Surface Water Quality Standards, as provided in 314 CMR 9.00, to protect the public health and restore and maintain the chemical, physical, and biological integrity of the water resources of the Commonwealth.
4. Pursuant to 314 CMR 9.06(2), areas required to facilitate construction access shall be limited to those shown on the referenced plans. In the event that other access areas are required by the applicant or by the contractors, MassDEP shall be notified. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters
5. Pursuant to 314 CMR 9.06(6)(a)(8), to prevent erosion and sedimentation from disturbed areas from entering the waterways, the following erosion and sedimentation control measures will be taken:
 - a. An erosion control plan shall be deployed as shown on the referenced plans and described in the Notice of Intents and application for 401 Certification. Any further erosion control plan or site-specific Stormwater Pollution Prevention Plan (SWPPP) developed for this project shall be supplied to the MassDEP and Conservation Commission prior to construction activities. Noncompliance with the SWPPP shall constitute non-compliance with the requirements of this Certification.
 - b. Siltation devices shall be installed before the commencement of any site work. These devices shall be inspected regularly, and entrapped silt shall be removed and disposed of in an upland location greater than 100 feet from wetland resource areas. Siltation devices shall be maintained or replaced when clogged with sediment or deteriorated.

This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.

6. Pursuant to 314 CMR 9.06(2), pre-construction photographs of areas of Land Under Water where impacts are anticipated shall be submitted to MassDEP prior to the start of work. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.
7. **The effective time period for the WQC runs with the overlying USACE PGP which expires on June 1, 2028. Time allowed for completion of the project allowed herein is the same as that allowed under the PGP; specifically, those activities that commence before the PGP's expiration date will have until June 1, 2028, to complete the activity under the terms and general conditions of the current PGP. Work within jurisdiction that is not completed by June 1, 2028, will be able to proceed only in accordance with any reissued or new PGP [314 CMR 9.09 (1)(d)].**
8. Pursuant to 314 CMR 9.06(2), all temporary construction fill shall be completely removed after the construction phase of this project is complete. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters
9. Pursuant to 314 CMR 9.05(4), MassDEP and Newburyport and West Newbury Conservation Commission personnel shall be allowed on site to inspect construction activities for compliance with the terms and conditions of this certification. This condition ensures notification from the applicant for MassDEP or Conservation Commission personnel to access the project site to monitor project progress and to verify that the project is implemented in compliance with requirements of 401 WQC to protect water quality.
10. Pursuant to 314 CMR 9.05(4), this Office, attention Kyle Lally, Wetlands Program (kyle.lally@mass.gov) and the Newburyport Conservation Commission shall be notified 48 hours in advance of construction activity for this project. The 48 hours shall not include weekends or holidays. This condition assures that MassDEP is notified in reasonable time to plan a site visit, if needed, to observe the work and conduct site inspection for compliance with 401 WQC to ensure that water quality is protected

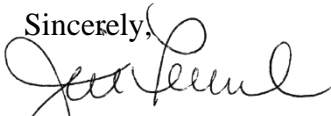
Section 61 Findings: Pursuant to MGL Chapter 30, Sections 61 to 62H (MEPA), this project was reviewed as EEA # 16412 and the Secretary's Certificate, issued August 23, 2021, found that the Environmental Notification Form (ENF) adequately and properly complies with MEPA and its implementing regulations. Pursuant to MGL Chapter 30, Section 61, MassDEP determines that the proposed project as conditioned, will incorporate the appropriate feasible measures to avoid or minimize potential environmental impacts that may result from construction and operation of the project.

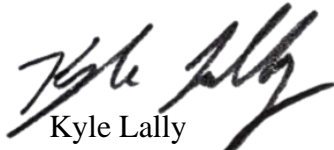
No activity may begin prior to the expiration of the appeal period or until a final decision is issued by MassDEP if an appeal is filed.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, MGL c.21A §16, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

This Certification does not relieve the applicant of the obligation to comply with other appropriate state or federal statutes or regulations. This includes, but is not limited to, conditions of the Order of Conditions.

If you have any questions regarding this decision, please contact Kyle Lally at kyle.lally@mass.gov.

Sincerely,

Jill Provencal
Section Chief
Wetlands Program – NERO


Kyle Lally
Section 401 Coordinator
Wetlands Program - NERO

cc: Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950
West Newbury Conservation Commission, 381 Main Street, 2nd Floor, West Newbury,
MA 01985

Notice of Appeal Rights

Appeal Rights and Time Limits

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required: (a) the applicant or property owner; (b) any person aggrieved by the decision who has submitted written comments during the public comment period; any ten (10) persons of the Commonwealth pursuant to M.G.L. c. 30A where a group member has submitted written comments during the public comment period; or (c) any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period. Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. chapter 30A section 10, a Notice of Claim must be made in writing provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Docket Clerk
Office of Administrative Appeals
Department of Environmental Protection
One Winter Street, 3rd Floor
Boston, MA 02108

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection, Northeast Regional Office
One Winter Street; 5th Floor
Boston, MA 02108

A) Contents of Hearing Request

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01 (6), and shall contain the following information pursuant to 314 CMR 9.10(3):

- (a) the 401 Certification Transmittal Number and DEP Wetlands Protection Act File Number;
- (b) the complete name of the applicant and address of the project;

- (c) the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax, and telephone number of the attorney;
- (d) if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of “aggrieved person” found at 314 CMR 9.02;
- (e) a clear and concise statement that an adjudicatory hearing is being requested;
- (f) a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to the Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department’s Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification, and
- (g) a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

B) Filing Fee and Address

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the applicant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06 (2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 150 Presidential Way Woburn, MA 01801 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Bethany A. Card
Secretary

Martin Suuberg
Commissioner

January 5, 2023

Town of West Newbury
381 Main Street
West Newbury, MA 01985

City of Newburyport
16C Perry Way
Newburyport, MA 01950

re: **WATER QUALITY CERTIFICATION**
Application for: **BRP WW 10**, Water Quality Certification
Major Project – Upper Artichoke Reservoir

at: Middle Street/Plummer Spring Road over Upper Artichoke Reservoir
DEP Transmittal # **X287261**
DEP WETLANDS FILE # **078-0724 & 051-1047**
USACE # **NAE-2021-00177**
EEA # **16412**

Dear Mr. White and Mr. Jennings:

The Northeast Regional Office of the Massachusetts Department of Environmental Protection, Wetlands Program (MassDEP), has reviewed your application for Water Quality Certification (WQC), as referenced above. In accordance with the provisions of MGL c.21, §§ 26-53 and Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), it has been determined there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards.

The proposed project consists of the replacement of the structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke reservoir in West Newbury and Newburyport. The bridge is currently in poor condition and the road is closed due to the structural deficiencies. The project will replace the bridge structure with a new structure on a

similar horizontal and vertical alignment. The proposed bridge will expand the hydraulic opening of this stream crossing while also improving roadway safety.

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MassDEP concurs that given the location of the proposed replacement bridge structure, generally in the same footprint of the existing drainage system and the increasing of the bridge openness, impacts to Land Under Water from the proposed activities have been avoided and minimized while meeting pertinent engineering requirements. The Applicant has explored sufficient alternatives regarding the need for impacts to resource areas as related to the design requirements and arrived at an alternative that minimizes impacts.

Since the project is located within an Outstanding Resource Water associated with the Upper artichoke Reservoir, the work is subject to the provisions of 314 CMR 9.06(3):

(3) Except as otherwise provided in 314 CMR 9.06(3), no discharge of dredged or fill material shall be permitted to Outstanding Resource Waters. The discharge of dredged or fill material to an Outstanding Resource Water in association with an activity listed in 314 CMR 9.06(3)(a) through (k) may be permitted without requiring the applicant to obtain a variance...

9.06(3)(c) Maintenance, repair, replacement, or reconstruction but not substantial enlargement of existing and lawfully located structures or facilities including buildings, roads, railways, utilities, dams, and coastal engineering structures

Because the impacts to Land Under Water are for the purpose of replacing an existing drainage utility, the project is in compliance with 314 CMR 9.06(3)(c).

The Criteria for Evaluating Proposed Discharge to Wetlands at 314 CMR 9.00 of the Regulations requires the submittal of information necessary for MassDEP to determine that the project complies with the Wetlands Protection Act, minimizes individual and cumulative impacts, and complies with the Massachusetts Surface Water Quality Standards. This information has been provided and specific mitigating measures required by MassDEP are itemized below. Therefore, based upon information currently in the record, MassDEP grants a WQC subject to the following conditions to maintain water quality, to minimize impact on the waters and wetlands, and to ensure compliance with the appropriate state law. MassDEP did not receive any public comments on the project within the 21-day public comment period.

All activities shall conform to the following plans:

1. "BRIDGE REPLACEMENT PROJECT" prepared by BSC Group, dated 12/21/2020, signed, and stamped by Kathryn Eagan, P.E., consisting of 14 sheets. **Final, stamped plans shall be sent to MassDEP prior to the beginning of work.**

On File with: MassDEP, the Newburyport, and West Newbury Conservation Commissions, and the US. Army Corps of Engineers.

2. MassDEP shall be notified of all changes in plans affecting waters or wetlands. MassDEP will determine whether the changes require a revision to this certification. This condition, pursuant to 314 CMR 9.06(1) and 314 CMR 9.09(2), is necessary to protect the public health and restore and maintain the chemical, physical, and biological integrity of the water resources of the Commonwealth.
3. All activities shall conform to the requirements set forth in the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. Any violation of this permit shall be considered a violation of the 401 Water Quality Certification. This condition is necessary to assure that any discharge from the project complies with the Massachusetts Surface Water Quality Standards, as provided in 314 CMR 9.00, to protect the public health and restore and maintain the chemical, physical, and biological integrity of the water resources of the Commonwealth.
4. Pursuant to 314 CMR 9.06(2), areas required to facilitate construction access shall be limited to those shown on the referenced plans. In the event that other access areas are required by the applicant or by the contractors, MassDEP shall be notified. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters
5. Pursuant to 314 CMR 9.06(6)(a)(8), to prevent erosion and sedimentation from disturbed areas from entering the waterways, the following erosion and sedimentation control measures will be taken:
 - a. An erosion control plan shall be deployed as shown on the referenced plans and described in the Notice of Intents and application for 401 Certification. Any further erosion control plan or site-specific Stormwater Pollution Prevention Plan (SWPPP) developed for this project shall be supplied to the MassDEP and Conservation Commission prior to construction activities. Noncompliance with the SWPPP shall constitute non-compliance with the requirements of this Certification.
 - b. Siltation devices shall be installed before the commencement of any site work. These devices shall be inspected regularly, and entrapped silt shall be removed and disposed of in an upland location greater than 100 feet from wetland resource areas. Siltation devices shall be maintained or replaced when clogged with sediment or deteriorated.

This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.

6. Pursuant to 314 CMR 9.06(2), pre-construction photographs of areas of Land Under Water where impacts are anticipated shall be submitted to MassDEP prior to the start of work. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters.
7. Pursuant to 314 CMR 9.09 (1), the effective time period for the WQC runs with the overlying USACE PGP which expires on April 5, 2023. Time allowed for completion of the project allowed herein is the same as that allowed under the PGP; specifically, those activities that commence before the PGP's expiration date will have until April 5, 2023, to complete the activity under the terms and general conditions of the current PGP. Work within jurisdiction that is not completed by April 5, 2023, will be able to proceed only in accordance with any reissued or new PGP. This condition is necessary to ensure that the project is completed in a timely manner that is consistent with timing of related permits and if extension of the permit is needed, that the status of the project can be inspected to ensure that water quality is protected, and the project is in compliance with this permit.
8. Pursuant to 314 CMR 9.06(2), all temporary construction fill shall be completely removed after the construction phase of this project is complete. This condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters
9. Pursuant to 314 CMR 9.05(4), MassDEP and Newburyport and West Newbury Conservation Commission personnel shall be allowed on site to inspect construction activities for compliance with the terms and conditions of this certification. This condition ensures notification from the applicant for MassDEP or Conservation Commission personnel to access the project site to monitor project progress and to verify that the project is implemented in compliance with requirements of 401 WQC to protect water quality.
10. Pursuant to 314 CMR 9.05(4), this Office, attention Kyle Lally, Wetlands Program (kyle.lally@mass.gov) and the Newburyport Conservation Commission shall be notified 48 hours in advance of construction activity for this project. The 48 hours shall not include weekends or holidays. This condition assures that MassDEP is notified in reasonable time to plan a site visit, if needed, to observe the work and conduct site inspection for compliance with 401 WQC to ensure that water quality is protected

Section 61 Findings: Pursuant to MGL Chapter 30, Sections 61 to 62H (MEPA), this project was reviewed as EEA # 16412 and the Secretary's Certificate, issued August 23, 2021, found that the Environmental Notification Form (ENF) adequately and properly complies with MEPA and its implementing regulations. Pursuant to MGL Chapter 30, Section 61, MassDEP determines that the proposed project as conditioned, will incorporate the appropriate feasible measures to avoid or minimize potential environmental impacts that may result from construction and operation of the project.

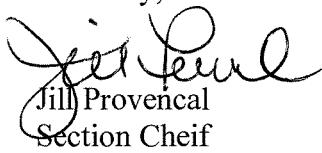
No activity may begin prior to the expiration of the appeal period or until a final decision is issued by MassDEP if an appeal is filed.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, MGL c.21A §16, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

This Certification does not relieve the applicant of the obligation to comply with other appropriate state or federal statutes or regulations. This includes, but is not limited to, conditions of the Order of Conditions.

If you have any questions regarding this decision, please contact Kyle Lally at kyle.lally@mass.gov.

Sincerely,



Jill Provencal
Section Chief

Wetlands Program - NERO

cc: Newburyport Conservation Commission, 60 Pleasant Street, Newburyport, MA 01950

West Newbury Conservation Commission, 381 Main Street, 2nd Floor, West Newbury,
MA 01985

Notice of Appeal Rights

Appeal Rights and Time Limits

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required: (a) the applicant or property owner; (b) any person aggrieved by the decision who has submitted written comments during the public comment period; any ten (10) persons of the Commonwealth pursuant to M.G.L. c. 30A where a group member has submitted written comments during the public comment period; or (c) any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period. Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. chapter 30A section 10, a Notice of Claim must be made in writing provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Docket Clerk
Office of Administrative Appeals
Department of Environmental Protection
One Winter Street, 3rd Floor
Boston, MA 02108

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection, Northeast Regional Office
One Winter Street; 5th Floor
Boston, MA 02108

A) Contents of Hearing Request

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01 (6), and shall contain the following information pursuant to 314 CMR 9.10(3):

- (a) the 401 Certification Transmittal Number and DEP Wetlands Protection Act File Number;
- (b) the complete name of the applicant and address of the project;

- (c) the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax, and telephone number of the attorney;
- (d) if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of “aggrieved person” found at 314 CMR 9.02;
- (e) a clear and concise statement that an adjudicatory hearing is being requested;
- (f) a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to the Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department’s Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification, and
- (g) a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

B) Filing Fee and Address

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the applicant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06 (2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

**Massachusetts Department of Environmental
Protection**

401 WATER QUALITY CERTIFICATION

APPLICATION

Middle Street / Plummer Spring Road
Over the Upper Artichoke Reservoir
Bridge Replacement Project

Section 401 Water Quality Certification – Addendum Submittal

BRP WW10 Major Fill and Excavation

West Newbury & Newburyport, MA

Massachusetts Department of Environmental Protection
May 2021

Prepared for:

Town of West Newbury
381 Main Street
West Newbury, MA 01985

City of Newburyport
16 C Perry Way
Newburyport, MA 01950

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

May 20, 2021

Massachusetts Department of Environmental Protection
Division of Wetlands – 401 WQC
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

**RE: Application for 401 Water Quality Certification – Addendum Submittal
Middle Street / Plummer Spring Road over Upper Artichoke Reservoir
Bridge No. N-11-007
West Newbury & Newburyport, Massachusetts
DEP Transmittal Number: X287261**

Dear Reviewer:

BSC Group Inc., on behalf of the Town of West Newbury and the City of Newburyport (“the Applicants”), is submitting this Addendum to its application for Massachusetts 401 Water Quality Certification (BRP WW 10 – Major Project Certification) under the Federal Water Pollution Control Act (33 U.S.C. 1341 et seq., S.401); Massachusetts Clean Water Act, (M.G.L. c.21 ss26-53); Surface Water Quality Standards (314 CMR 4.00); and 401 Water Quality Certification (314 CMR 9.00), which was previously submitted on January 21, 2021.

The Applicants are proposing to replace the structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir (Bridge No. N-11-007) in West Newbury & Newburyport, Massachusetts. The bridge is in poor condition and the road is currently closed due to structural deficiencies. Therefore, the Applicant proposes to replace the bridge structure with a new structure on a similar horizontal and vertical alignment. The proposed bridge will expand the hydraulic opening of this stream crossing while also improving roadway safety.

NOI applications were submitted concurrently with this application to each of the respective Conservation Commissions. Once Orders of Condition have been completed, they will be forwarded to the DEP. Authorization from the U.S. Army Corps of Engineers under Massachusetts General Permits was granted in April 2021 after a similar submission, and a copy of that authorization is attached to this addendum. The project was previously advertised on January 22, 2021 within the Environmental Monitor (<https://eeaonline.eea.state.ma.us/EEA/emepa/mepadocs/2021/012221em/pn/DEP%20-%20401%20WQC%20Newbury-W%20Newbury%20and%20Newburyport.pdf>) and the Newburyport Daily News. A copy of the tear sheets are included in this addendum for your reference.

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



The bridge replacement project is subject to 33 U.S.C. 1251 et seq. as an activity that will result in a discharge of fill material to Waters of the US/Land Under Water (LUW). *There have been no changes to proposed impacts to LUW nor Bank since the January 21, 2021 submittal.* The project requires a permit for authorization of 984 square feet of permanent LUW impacts and 641 square feet of temporary LUW impacts. The project will net 885 square foot gain in LUW from increased openness of the expanded crossing. No vegetated wetlands will be impacted as a result of this project as there are none in the vicinity.

Despite being below the impact thresholds where a valid Order of Conditions under the Massachusetts Wetlands Protection Act typically serves as a 401 WQC, this individual application is required per 314 CMR 9.04 (2) for discharge of fill to an Outstanding Resource Water. The Upper Artichoke Reservoir is considered a Class A water in the MassGIS Surface Water Supply Protection Areas datalayer / 314 CMR 4.06 Table 20. A Chapter 91 application is not required, nor being submitted for this project as the Upper Artichoke Reservoir, interrupted by two dams, is not navigable and falls under the exemption within 310 CMR 9.05.(3)(c) for an existing public services project.

This addendum addresses additional steps to treat stormwater along the roadway. No other changes to the 401 WQC application are proposed. Proposed work and updates are as follows:

West Newbury. The lowest point of the project occurs within the roadway on the West Newbury side of the project area. Currently the drawings show two deep sump catch basins at the low point of the project on either side of the roadway that flow to a drain manhole and discharge to a stone splash pad. It is now proposed that the deep sump catch basins flow to a 900-gallon water quality treatment unit. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir onto stone at the end of the pipe. The project limits will generally stay the same, no additional berm/curbing will be included.

Newburyport. Existing conditions in Newburyport utilize country drainage, and the NOI submittal from January 2021 proposed no additional treatment. The Municipalities now propose the addition of two deep sump catch basins on either side of the roadway just before the ends of the retaining walls. The deep sump catch basins will flow to a 900-gallon water quality unit. From there runoff is directed south to a flared end section that discharges towards the reservoir onto a stone splash pad. These additions will ensure the treatment of some of the stormwater entering the Reservoir by reducing the amount entering by country drainage. The project limits will generally stay the same, no additional berm/curbing will be included.

Between the deep sump catch basins and the water quality units, more than 80% of TSS will be removed from runoff captured by the catch basins across the entire project area.

To facilitate your review, we have included water quality unit specifications, an updated version of the proposed plans, and an additional typical detail.



If you have any questions regarding this application, please do not hesitate to contact me at 617-896-4579 or skreisel@bscgroup.com.

Sincerely,
BSC Group, Inc.

Sara Kreisel
Ecological Project Manager

Enclosed: Addendum WQC Application

cc: Jon-Eric White, City Engineer, Newburyport
Angus Jennings, West Newbury
Commission Agents for Town of West Newbury and City of Newburyport
Micah Morrison, BSC Group

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	<i>ORIGINAL TRANSMITTAL FORM</i> <i>ORIGINAL BRP WW10 APPLICATION FORM</i>
ATTACHMENT A	PUBLIC NOTICE – AS POSTED IN THE ENVIRONMENTAL MONITOR JANUARY 22, 2021 PUBLIC NOTICE TEAR SHEET – NEWBURYPORT DAILY NEWS JANUARY 22, 2021
ATTACHMENT B	USACE MA GENERAL PERMIT AUTHORIZATION
ATTACHMENT C	WATER QUALITY UNIT SPECIFICATIONS <i>UPDATED SITE PLANS</i>



Enter your transmittal number

X287261

Transmittal Number

Your unique Transmittal Number can be accessed online:

<http://www.mass.gov/eea/agencies/massdep/service/approvals/transmittal-form-for-payment.html>

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: MassDEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. Copy 2 must accompany your fee payment. Copy 3 should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

* Note: For BWSC Permits, enter the LSP.

A. Permit Information

BRP WW 10

1. Permit Code: 4 to 7 character code from permit instructions

Bridge Replacement Project

3. Type of Project or Activity

Major Fill Project

2. Name of Permit Category

B. Applicant Information - Firm or Individual

Town of West Newbury (W.N.) / City of Newburyport (Nbpt)

1. Name of Firm - Or, if party needing this approval is an individual enter name below:

Jennings (W.N.) / White (Nbpt)

Angus (W.N.) / Jon-Eric (Nbpt)

2. Last Name of Individual

3. First Name of Individual

4. MI

381 Main Street, West Newbury / 16 C Perry Way, Newburyport

5. Street Address

West Newbury / Newburyport

MA

01950/01985

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

Angus Jennings (W.N.) / Jon-Eric White (Nbpt)

townmanager@wnewbury.org (W.N.)

11. Contact Person

jewwhite@cityofnewburyport.com (Nbpt)

C. Facility, Site or Individual Requiring Approval

Middle Street / Plummer Spring Road over Upper Artichoke Reservoir

1. Name of Facility, Site Or Individual

Middle Street / Plummer Spring Road

2. Street Address

West Newbury / Newburyport

MA

01950/01985

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

BSC Group, Inc.

1. Name of Firm Or Individual

803 Summer Street

2. Address

Boston

MA

02127

617-896-4579

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

Sara Kreisel (skreisel@bscgroup.com)

8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? [] yes [X] no
If yes, enter the project's EOE file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

- 1. [X] Fee Exempt (city, town or municipal housing authority)(state agency if fee is \$100 or less). There are no fee exemptions for BWSC permits, regardless of applicant status.
2. [] Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. [] Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. [] Homeowner (according to 310 CMR 4.02).

Check Number

Dollar Amount

Date



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Wetlands and Waterways
BRP WW 10 Major Project Certification
BRP WW 11 Minor Project Certification
 401 water Quality Certification for Fill and excavation
 Projects in waters and Wetlands

X287261
 Transmittal Number #

A. Applicant Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Which permit category are you applying for?

BRP WW 10 BRP WW 11

2. Applicant/Owner:

The Town of West Newbury & The City of Newburyport
 Name

381 Main Street West Newbury; 16 C Perry Way, Newburyport
 Address

West Newbury & Newburyport
 City/Town

MA
 State

01985; 01950
 Zip Code

Angus Jennings - West Newbury; Jon-Eric White, City Engineer - Newburyport
 Contact Person

(978) 363-1100 x111 (West Newbury)
 Telephone (home)

978-465-4464 x1710 (Newburyport)
 (work)

3. Authorized Agent

BSC Group, Inc
 Name

803 Summer Street
 Address

Boston
 City/Town

MA
 State

02127
 Zip Code

Sara Kreisel
 Contact Person

Telephone (home)

617-896-4579
 (work)



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Wetlands and Waterways
BRP WW 10 Major Project Certification
BRP WW 11 Minor Project Certification
 401 water Quality Certification for Fill and excavation
 Projects in waters and Wetlands

X287261
 Transmittal Number #

B. Project Information

1. Project Location:

Middle Street / Plummer Spring Road over Upper Artichoke Reservoir
 Address
 West Newbury / Newburyport MA 01985; 01950
 City/Town State Zip Code
 Upper Artichoke Reservoir
 Nearest or Adjacent Waterbody

2. Project Name (if any):

Middle Street / Plummer Spring Road over Upper Artichoke Reservoir, Bridge Replacement Project

3. a. Describe project purpose:

The purpose of the project is to replace a structurally deficient, undersized bridge on a public roadway. Please refer to the Project Narrative for additional details.

b. Is the project

water-dependent non water-dependent

4. a. provide a brief description of the proposed project (See Application Instructions and include a copy of the Notice of intent, if any.):

Bridge replacement project, Bridge No. N-11-007, Middle Street, West Newbury / Plummer Spring Road, Newburyport, MA over the Upper Artichoke Reservoir. Existing structure closed in 2018 to vehicular traffic due to collapse of portions of foundation. Refer to Narrative for additional details.

b. Notice of Intent File number (if any): WestNewbury: 078-0724; Newburyport: TBD

5. Identify the loss in square feet of each type of resource area (see Application Instructions for additional information.):

a. Bordering vegetated wetland:	<u>0</u> square feet
b. Isolated vegetated wetland:	<u>0</u> square feet
c. Land under water:	<u>984</u> square feet
d. Total cumulative loss of a. + b. + c.:	<u>984</u> square feet
e. Salt marsh:	<u>0</u> square feet



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Wetlands and Waterways
BRP WW 10 Major Project Certification
BRP WW 11 Minor Project Certification
 401 water Quality Certification for Fill and excavation
 Projects in waters and Wetlands

X287261
 Transmittal Number #

B. Project information (cont.)

6. a. Will the proposed project occur in any wetlands or waters designated as "Outstanding Resource Waters"?

Yes No

If yes has public notice been published in the Environmental Monitor?

Yes No

January 22, 2021

Date of Publication

b. Is this project a subdivision or any part of a subdivision? Yes No

c. Is the project categorically subject to MEPA? Yes No

If yes, has final action been taken? Yes No

If yes, please include copy of MEPA certificate.

7. Alternatives Analysis:

As related to the project purpose, attach a detailed description of alternatives to the proposed project that were considered and why none are available that avoid adverse impacts to wetlands and waters.

If no alternatives are available, describe how the activity will minimize or mitigate the adverse impacts to wetlands and waters.

See application instructions for information required. Attach required documentation.

C. Additional Information

1. Is any of your proposed work exempt from the Massachusetts Wetlands Protection Act or taking place in a federal non-state wetland?

Yes No If yes, see Application Instructions for additional information needed.


2. Public notice to a newspaper of general circulation within the area of the proposed activity must be published within 10 days of the date of this application. Is proof of public notice submitted?

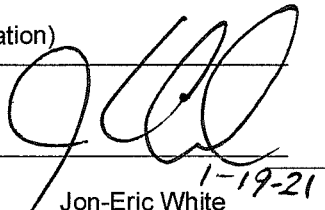
Yes No (See Application Instructions for additional information)

D. Certification

Application is hereby made for water quality certification.

"I certify that I am familiar with the work proposed and that to the best of my knowledge and belief the information contained in this application is true, complete, and accurate."


 Applicant's Signature
 Angus Jennings
 Print name


 Jon-Eric White
 1-19-21


 Agent's Signature
 Sara Kreisel
 Print Name
 January 19, 2021
 Date

Attachment A

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Addendum to Section 401 Water Quality Certification

PUBLIC NOTICE
AS POSTED IN THE ENVIRONMENTAL MONITOR
JANUARY 22, 2021

PUBLIC NOTICE TEAR SHEET
NEWBURYPORT DAILY NEWS
JANUARY 22, 2021

Massachusetts Department of Environmental Protection
Division of Wetlands and Waterways
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887
Telephone: 978-694-3200

PUBLIC NOTICE

Pursuant to 33 U.S.C. 1341 and M.G.L c. 21 §§ 26-53, notice is given of a 401 Water Quality Certification (WQC) application filed by the Town of West Newbury (381 Main Street, West Newbury, MA 01985) and the City of Newburyport (16C Perry Way, Newburyport, MA 01950) for a bridge replacement project on Middle Street, West Newbury / Plummer Spring Road, Newburyport over the Upper Artichoke Reservoir (Bridge No. N-11-007). The bridge is structurally deficient due to undermining of the existing roadway foundation and is proposed to be replaced in a similar horizontal and vertical alignment that will address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The Upper Artichoke Reservoir is classified as an Outstanding Resource Water. Additional information may be obtained from Sara Kreisel, BSC Group, Inc., 803 Summer Street, Boston MA 02127, (617) 896-4579, skreisel@bscgroup.com.

Written comments on the 401 WQC must be sent within twenty-one (21) days of this notice to:

Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

Any group of ten persons, any aggrieved person, or any governmental body or private organization with a mandate to protect the environment who submits written comments may appeal the Department's Certification. Failure to submit written comments before the end of the public comment period may result in the waiver of any right to an adjudicatory hearing.

classified marketplace

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 Sunday paper.....5pm Friday
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PUBLIC NOTICES

PUBLIC NOTICES

NEWBURYPORT HOUSING AUTHORITY

Notice is hereby given of a PUBLIC HEARING to be held on MARCH 9, 2021 @ 9:00 a.m. virtually. The purpose of this hearing is for the public to review and comment on The Newburyport Housing Authority's 2021 PHA Plan and CFP. The plan is available for public review in the lobby of 25 Temple Street, Newburyport, MA as well as at <https://www.cityofnewburyport.com/housing-authority-0>

Written comments must be received by close of business on March 8, 2021.

Due to the Covid 19 pandemic and social distancing guidelines this hearing will be held virtually.

NHA Public Hearing PHA 2021
 Tue, Mar 9, 2021 9:00 AM - 10:00 AM (EST)

You can dial in using your phone. United States (Toll Free): 1 866 899 4679

Access Code: 565-312-533
 NT - 1/22/21

INFORMAL PROBATE PUBLICATION NOTICE

Docket No. ES21P0072EA
 Commonwealth of Massachusetts
 The Trial Court
 Probate and Family Court
 Essex Division

Estate of: Margaret Eileen Maloney

Also Known As: Margaret E. Maloney
 Date of Death: November 20, 2020

To all persons interested in the above captioned estate, by Petition of Petitioner **Caroline T. Maloney of Newburyport MA** a Will has been admitted to informal probate.

Caroline T. Maloney of Newburyport MA has been informally appointed as the Personal Representative of the estate to serve without surety on the bond.

The estate is being administered under informal procedure by the Personal Representative under the Massachusetts Uniform Probate Code without supervision by the Court. Inventory and accounts are not required to be filed with the Court, but interested parties are entitled to notice regarding the administration and can petition the Court in any matter relating to the estate, including distribution of assets and expenses of administration. Interested parties are entitled to petition the Court to institute formal proceedings and to obtain orders terminating or restricting the powers of Personal Representatives appointed under informal procedure. A copy of the Petition and Will, if any, can be obtained from the Petitioner.
 NT - 1/22/21

PUBLIC NOTICE

Massachusetts Department of Environmental Protection
 Northeast Regional Office
 (978-694-3200)
 Division of Wetlands and Waterways

Pursuant to 33 U.S.C. 1341 and M.G.L.c. 21 § 26-53, notice is given of a 401 Water Quality Certification (WQC) application filed by the Town of West Newbury (381 Main Street, West Newbury, MA 01985) and the City of Newburyport (16C Perry Way, Newburyport, MA 01950) for a bridge replacement project on Middle Street, West Newbury / Plummer Spring Road, Newburyport over the Upper Artichoke Reservoir (Bridge No. N-11-007). The bridge is structurally deficient due to undermining of the existing roadway foundation and is proposed to be replaced in a similar horizontal and vertical alignment that will address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. Additional information may be obtained from Sara Kreisel, BSC Group, Inc., 803 Summer Street, Boston MA 02127, (617) 896-4579, skreisel@bscgroup.com.

Written comments on the 401 WQC

Employment

DRIVERS

CDL Truck Driver Class 2
 Roll off truck experience
 Please call 978-465-3649 for pay and benefits.

GENERAL HELP WANTED

Beth Israel Lahey Health
Anna Jaques Hospital

Anna Jaques Hospital is looking for additional heroes to join our team.

We do not provide capes, but we do provide masks, competitive salary and a generous benefits package.

Part of our mission is to provide the highest quality medical care and improve the health of our community and to make that happen the first step is to make our facility shine. In this role you will be part of our efforts to providing a clean, safe and attractive environment

SUPERPOWERS REQUIRED FOR THE ROLE OF HOUSEKEEPER ARE:
Lift, push and pull 50 pounds and stand for 90% of shift
Push, pull, bend, kneel and squat.
Operate cleaning equipment (mops, vacuum etc.)
Can demonstrate consistency, strong work ethic and reliable Working in fast paced, physically demanding positions
High Diploma preferred but not required
We will conduct education verification, drug and nicotine screening and CORI.

Starting pay is \$15 but may be higher depending on years of experience.
Benefits include:
Medical, Dental, Vision, FSA, Disability, Life and more.

We have a wide range of open positions so check out our website at www.ajh.org/careers

WM WASTE MANAGEMENT

NOW HIRING!

Diesel Technician Mechanic in Londonderry, NH!

\$2500 Sign-on bonus!

Competitive Pay, Great Benefits!

Requirements:
Must be 18 Years or Older
Technical schooling or Diesel and/or Auto exp required.

Call or apply online for immediate consideration!

1-877-220-5627
careers.wm.com

Equal Opportunity Employer
Minority/Female/Disability/Veteran

WM WASTE MANAGEMENT

NOW HIRING!

PLANT MAINTENANCE TECHNICIANS in Billerica, MA!

\$4000 Sign-on Bonus!

Competitive Pay, Great Benefits!

Requirements:
 18 Years or Older
 2+ Years of Related Work Experience.
 3rd Shift position, 10pm-6:30am

Call or apply online for immediate consideration!

1-877-220-5627
careers.wm.com

Equal Opportunity Employer

CROWNINSHIELD MANAGEMENT CORPORATION

PROFESSIONAL SENIOR CARE COORDINATOR Full Time

Position includes assessing the needs of the elders in an independent living community on the North Shore, and to work with them to establish links to needed supportive services to maintain resident's independent living status.

Care professional maintains regular contact with residents, monitoring the delivery of supportive services desired or required by the residents. Works with residents and housing management staff to develop, support, and implement activities, functions and/or programs that promote a positive social climate.

Please send a cover letter and resume to: susanjacneil@yahoo.com

PROFESSIONAL

First Run PT Federal Public Housing Coordinator

BHA seeks part-time, detail-oriented, energetic, self-motivated individual to perform rent recertifications for 118 elderly & disabled and 50 family tenants in Federal Public housing. Experience with Federal Public Housing preferred. Applicant must have excellent communication, analytical and organizational skills. Proficient using Word and Excel; familiar with MRI software a plus.

Duties include interacting with tenants; performing annual & interim rent recertifications; enforcing tenant compliance with all lease provisions; other duties as assigned. College degree in related field required, however a minimum 2 years' experience in Public Housing, Social Service, Property Management, or related experience may substitute. Bilingual (English/Spanish) a plus.

Submit resumes to Debra Roy, Deputy Director, Beverly Housing Authority, 137 Rear Bridge Street, Beverly, MA 01915. Salary commensurate with experience and education. Resumes accepted until position filled. EOE/AA

TRADES/INDUSTRIAL

HVAC Installation Help

Retirement Plan, Paid Vacations, Health Insurance, Paid Holidays, Competitive Wages.

Experience Necessary

Send resume to positionhvac@gmail.com or call 978-374-4590

Merchandise

FIREWOOD FOR SALE

ADS in this category
 If the ad shows a price it must show it by cu. ft. Half a cord is 64 cu. ft. and a cord is 128 cu. ft.

ALL HARDWOOD SEASONED
 1 year or 2 year, 16" cut & split
 Call M.Kovalchuk 978-204-9483

"BUGLESS" FIREWOOD
 Green or Seasoned. Delivery & Stacking Avail. Partial Cords. 603-437-0940
www.firewoodguy.com

PATRICK & SONS QUALITY FIREWOOD
 100% hardwood, Seasoned.
 Call 603-898-4770.

FUEL

ATTENTION FUEL CONSUMERS:

All ads in this classification run in our 10 paper "Classified Connection" that covers the North Shore, Merrimack Valley and Southern New Hampshire.

Ads appearing in this section may or may not deliver to this entire market. Prices may reflect a "Local" delivery area only and may be higher for an extended delivery area.

WANTED FOR CASH

Baseball, Football, Hockey, Basketball Cards.
 Call Rick 603-494-1327

MISC MERCHANDISE

New Englander Pellet Stove New Englander heats 1500 sq. ft. Complete with video & installation.

Business & Service DIRECTORY

Services

ADULT CARE

A PCA/CNA needed immediately for 79 year old female in Beverly. Nice surroundings. 40 hours/week. Call 860-899-5213

BUSY LADY SERVICES-

Are you in need of a ride to AIRPORT, doctor, shopping, or where ever you need to go? Call 978-423-0754

EXPERIENCED dependable strong PCA/CNA needed nights and weekends to assist women with MS. Hoya lift experience necessary, drivers license, dependable car & references. \$15.75/hr. Must be Covid free. 978-977-0910, email fondinib@aol.com

HAVERHILL man needs PCA for Weekends. Must be reliable & have references. \$15.00/hr. Call 978-641-3946 or 978-332-0638

DISPOSAL SERVICES

ANYTHING & EVERYTHING JUNK REMOVAL Estate Clean-outs, Basement, Garage, Yard Debris, Dump runs. Call Jack 978-521-0445

BEST RATES - CALL MIKE

remove junk anything from A-Z. Also land clearing & mulching. 978-973-2009

JUNK REMOVAL

Taking campers & hot tubs
 Call 978-682-2040

DOG WASTE REMOVAL

LOW RATES
 CALL 781-718-2364

PAINTING & PAPERING

BALDASSARI - Painting Interior/Exterior. Wallpapering & removal. Free estimates
 Call 781-953-6890; 978-688-0161

PLASTERING

HL PLASTERING
 40 yrs experience. Free estimates. No Job to Big or Small
 Merrimack Valley area (978) 390-6423

PLUMBING/HEATING

MASTER PLUMBER-Retired looking for small jobs. MA, NH & Maine. #9563 MA, #1653 NH
 Master gas fitter NH. Call Bill 978-476-9827

PETS & FREE PETS

ATTENTION! ATTENTION!

Beware of anyone replying to your ad offering to send you a check for shipping and you sending them back the difference. Also beware when responding to classified ads that ask you to send shipping cost. Possible scam!

CHORKIE: Male very active 4.5 mo old. (12-14 lbs. when adult) vet checked, very healthy, \$500 Call (978) 810-9659 between 8am-4pm.

ENGLISH BULLDOG PUPPIES - Taking deposits for 3 females. Ready February 1st. 2 rounds of shots, 2 dewormings & health certificate. Asking \$3000 each. AKC papers + \$
 Call or text 978-288-9233

LABADOR PUPPIES AKC Champion Breed 6 females, (5 chocolate & 1 black) 3 males, (2 black & 1 chocolate) 1st shots & dewormed Ready 1st week of February \$1800/\$300 deposit Call (978) 290-9147

MISC ITEMS WANTED

CASH FOR RECORD ALBUMS

33LPS & 45s WANTED. Call George (617) 633-2682

CASH PAID FOR

COINS, REAL & COSTUME JEWELRY, POCKET & WRIST WATCHES, ANTIQUES, COMIC BOOKS, MUSICAL INSTRUMENTS, BASEBALL CARDS. DAN (603) 505-0380

WANTED FOR CASH

Eisenhower Dollar Coins(collection of) Best Offer Antique Large & Small currency notes Call (978) 208-8944

ELECTRICAL

DAN STEVENS
 ELECTRIC, HEATING & COOLING
 Lic & Insured. Commercial - Residential, A+ rating on BBB! 781-775-7431 or danstevenselectric@yahoo.com

QUALITY SERVICE & PRICE
 That Won't Shock You! Insured. MA#31525E NH#12831M. Call Mike 978-423-8510

R. A. Vitale Electric

Master Electrician, Low Rates. Fully Insured For all your electrical needs. Lic. #A20829. 978-979-0858

GUTTERS

BEST CHOICE CONSTRUCTION

Gutters, seamless aluminum, cleanings, leaf guard. 37 yrs. experience. 978-973-5410

HOUSE PAINTING

BALDASSARI - Painting Interior/Exterior. Wallpapering & removal. Free estimates
 Call 781-953-6890; 978-688-0161

OTHER BUSINESS SERVICES

DOG WASTE REMOVAL

LOW RATES
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MASTER PLUMBER-Retired looking for small jobs. MA, NH & Maine. #9563 MA, #1653 NH
 Master gas fitter NH. Call Bill 978-476-9827

PRESSURE WASHING

Full service power washing company for residential, commercial, driveways, walkways, awnings. Complete graffiti removal also complete cleanouts. Insured. Free estimates. The Leonard Co. 617-512-7849

REMODELING

MD's HOME REPAIR - Remodeling, Painting, Repairs. Small jobs to Big jobs. Insured. Free estimates. References Call Mike 603-890-1122

ROOFING & SIDING

BEST CHOICE CONSTRUCTION

Roofing, siding, gutters. Quality work, reasonable costs. 37 yrs exp. Fully ins. 978-973-5410

MOST AFFORDABLE - Roofing, Windows, Siding, Financing Avail. GAF Master Elite Installer Lic/Ins. BBB. 978-265-6843; 603-260-5062

ROOF REPAIRS

WE STOP LEAKS - Guaranteed! Lic/Insured. 978-902-7644

SNOW PLOWING/REMOVAL

SNOW REMOVAL AND DOG WASTE REMOVAL AND TREE REMOVAL

LOW RATES
 CALL 781-718-2364

TREE REMOVAL

LIVINGSTON Tree & Stump Removal Fantastic Deals! Fast/Quality Service 978-689-8373 livingstonfamilytree.com

TREE REMOVAL

LOW RATES
 CALL 781-718-2364

classified marketplace

Be included in this section by calling 800.927.9200 fax: 978.685.1588

FUEL

BEST PRICE \$1.59
 (Price subject to change)
 978-631-3044 www.ordercleanoil.com

GARAGE SALE

LOOK

BRENTWOOD, 9 Shannon Way Estate Sale, Jan. 22-24, 9-3 p.m. daily, 2003 Mini Cooper, furniture, motorcycle helmets, garage-items, garden, linens, lighting, shelving, books, and so much more. VSM/C. Cash, no early birds, watch for signage. Face masks a must! Pictures www.lifetimeliquidations.com

MISC ITEMS WANTED

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33LPS & 45s WANTED. Call George (617) 633-2682

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 Access Code: 565-312-533
 NT - 1/22/21

INFORMAL PROBATE PUBLICATION NOTICE
 Docket No. ES21P0072EA
Commonwealth of Massachusetts The Trial Court Probate and Family Court Essex Division
 Estate of: Margaret Eileen Maloney

Also Known As: Margaret E. Maloney
Date of Death: November 20, 2020

To all persons interested in the above captioned estate, by Petition of Petitioner **Caroline T. Maloney of Newburyport MA**

a Will has been admitted to informal probate.

Caroline T. Maloney of Newburyport MA has been informally appointed as the Personal Representative of the estate to serve without surety on the bond.

The estate is being administered under informal procedure by the Personal Representative under the Massachusetts Uniform Probate Code without supervision by the Court. Inventory and accounts are not required to be filed with the Court, but interested parties are entitled to notice regarding the administration from the Personal Representative and can petition the Court in any matter relating to the estate, including distribution of assets and expenses of administration. Interested parties are entitled to petition the Court to institute formal proceedings and to obtain orders terminating or restricting the powers of Personal Representatives appointed under informal procedure. A copy of the Petition and Will, if any, can be obtained from the Petitioner.
 NT - 1/22/21

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 Northeast Regional Office
 (978-694-3200)
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Written comments on the 401 WQC must be sent within twenty-one (21) days of this notice to: MassDEP Protection

Northeast Regional Office
 205B Lowell Street
 Wilmington, MA 01887

Any group of ten persons, any aggrieved person, or any governmental body or private organization with a mandate to protect the environment who submits written comments may appeal the Department's Certification. Failure to submit written comments before the end of the public comment period may result in the waiver of any right to an adjudicatory hearing.
 NT - 1/22/2021

Part of our mission is to provide the highest quality medical care and improve the health of our community and to make that happen the first step is to make our facility shine. In this role you will be part of our efforts to providing a clean, safe and attractive environment

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We have a wide range of open positions so check out our website at www.aih.org/careers

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NOW HIRING!

Diesel Technician Mechanic in Londonderry, NH!
\$2500 Sign-on bonus!

Competitive Pay, Great Benefits!

Requirements:
Must be 18 Years or Older
Technical schooling or Diesel and/or Auto exp required.

Call or apply online for immediate consideration!

1-877-220-5627
careers.wm.com

Equal Opportunity Employer
Minority/Female/Disability/Veteran

WM WASTE MANAGEMENT

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PLANT MAINTENANCE TECHNICIANS in Billerica, MA!
\$4000 Sign-on Bonus!

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 2+ Years of Related Work Experience.
 3rd Shift position, 10pm-6:30am

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Minority/Female/Disability/Veteran

JOB WANTED

Ads In This Classification Are WORK WANTED NOT HELP WANTED

MEDICAL

ATTENTION CAREGIVERS!
 If you are a PCA, CNA, Nurse or offer personal care services please go to the business and service directory and check out the category for Adult Care. Your services are needed!

PROFESSIONAL

First Run
PT Federal Public Housing Coordinator

BHA seeks part-time, detail-oriented, energetic, self-motivated individual to perform rent recertifications for 118 elderly & disabled and 50 family tenants in Federal Public housing. Experience with Federal Public Housing preferred. Applicant must have excellent communication, analytical and organizational skills. Proficient using Word and Excel; familiar with MRI software a plus.

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Submit resumes to Debra Roy, Deputy Director, Beverly Housing Authority, 137 Rear Bridge Street, Beverly, MA 01915. Salary commensurate with experience and education. Resumes accepted until position filled. EOE/AA

TRADES/INDUSTRIAL

HVAC Installation Help

Retirement Plan, Paid Vacations, Health Insurance, Paid Holidays, Competitive Wages.

Experience Necessary

Send resume to positionhvac@gmail.com or call 978-374-4590

Merchandise

FIREWOOD FOR SALE

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ALL HARDWOOD SEASONED 1 year or 2 year, 16" cut & split Call M.Kovalchuk 978-204-9483

"BUGLESS" FIREWOOD
 Green or Seasoned. Delivery & Stacking Avail. Partial Cords, 603-437-0940. www.firewoodguy.com

PATRICK & SONS QUALITY FIREWOOD
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John's Oil
 Home heating oil. Dyed Red Off Road Diesel available. Fuel Assistance Welcome www.johnsoil.com 978-777-4205

\$1.58
 Senior Citizen Price **PAYLESS OIL**
 All Cities and Towns
 No minimum. Senior & Veteran discounts
877-688-7667
 Price subject to change

Jobs-Sales

HAVERHILL man needs PCA for Weekends. Must be reliable & have references. \$15.00/hr. Call 978-641-3946 or 978-332-0638

SEEK Reliable compassionate personnel care assistant for lucid senior female with neurological disorder. Compensation package includes: wages & live in quarters in country setting near beach. Full time position with some weekend/evening/oncall time to be negotiated. Duties include: transfer, housekeeping, medication management, meal prep, toilet support, participation in therapies, companionship. In Gloucester. Own transportation necessary. Email name, brief statement of qualifications & contact information to: care8123@gmail.com

DISPOSAL SERVICES
 ANYTHING & EVERYTHING JUNK REMOVAL Estate Clean-outs, Basement, Garage, Yard Debris, Dump runs. Call Jack 978-521-0445

BEST RATES - CALL MIKE
 remove junk anything from A-Z. Also land clearing & mulching. 978-973-2009

JUNK REMOVAL
 Taking campers & hot tubs
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FUEL

BEST PRICE \$1.59
 (Price subject to change)
 978-831-3044 www.ordercleanoil.com

GARAGE SALE

LOOK
 BRENTWOOD, 9 Shannon Way Estate Sale, Jan. 22-24, 9-3 p.m. daily, 2003 Mini Cooper, furniture, motorcycle helmets, garage items, garden, linens, lighting, shelving, books, and so much more. VS/MC. Cash, no early birds, watch for signage. Face masks a must! Pictures www.lifetimeliqduations.com

MISC ITEMS WANTED

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 33LPS & 45s WANTED. Call George (617) 633-2682

CASH PAID FOR COINS, REAL & COSTUME JEWELRY, POCKET & WRIST WATCHES, ANTIQUES, COMIC BOOKS, MUSICAL INSTRUMENTS, BASEBALL CARDS. DAN (603) 505-0380

WANTED FOR CASH
 Baseball, Football, Hockey, Basketball Cards.
 Call Rick 603-494-1327

MISC MERCHANDISE

Eisenhower Dollar Coins (collection of) Best Offer Antique Large & Small currency notes Call (978) 208-8944

New Englander Pellet Stove New Englander heats 1500 sf. Complete with video & installation instructions. Paid \$1800 asking \$235.00 best offer Call (978) 828-1220

PLOW 7.5 ft Fisher Minute Mount One.
 Needs work. \$300 or best reasonable offer. Call 508-932-0990

WARNING
 If you get an email or cashiers check for more than the asking price for your pet, vehicle or merchandise asking you to refund the difference it is likely a scam. Seller Beware!

PETS & FREE PETS

Absolutely Adorable Cockapoo Puppies!
 Beautiful cockapoo mix puppies! 2 males, 1 female, ready to go January 7, first vet visit & shots. Hypoallergenic. Foamly raised. Approx 20 lbs. When full grown. Adoption fee \$2900. Pics available. Text: 336-588-3774

HONDA CIVIC LX
 2012 Coupe
 Automatic with front wheel drive. Gray beauty. 131K. Cloth interior. Sporty and powerful. \$5699. Text for photos 978 697 4369

COCKAPOO PUPPIES Hypoallergenic, non shedding. Family farm raised in Huntington MA. Come with first shots, vet check and 6 month Health guarantee. Adoption fee \$3750. Call today! 413-320-0889

BALDASSARI - Painting Interior/Exterior
 Wallpapering & removal. Free estimates
 Call 781-953-6890; 978-688-0161

OTHER BUSINESS SERVICES

DOG WASTE REMOVAL
LOW RATES
CALL 781-718-2364

PAINTING & PAPERING

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 Wallpapering & removal. Free estimates
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HL PLASTERING
 40 yrs experience. Free estimates. No Job to Big or Small
 Merrimack Valley area (978) 390-6423

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MASTER PLUMBER-Retired looking for small jobs. MA, NH & Maine. #9563 MA, #1653 NH Master gas fitter NH. Call 811 978-476-9827

SNOW PLOWING/REMOVAL
SNOW REMOVAL AND DOG WASTE REMOVAL AND TREE REMOVAL
LOW RATES
CALL 781-718-2364

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CALL 781-718-2364

TREE REMOVAL
 LIVINGSTON Tree & Stump Removal
 Fantastic Deals! Fast/Quality Service
 978-689-8373 livingstonfamilytree.com

TREE REMOVAL
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LABADOR PUPPIES AKC Champion Breed 6 females, (5 chocolate & 1 black) 3 males, (2 black & 1 chocolate) 1st shots & dewormed Ready 1st week of February \$1800/\$300 deposit Call (978) 290-9147

TRANSPORTATION

4 RIMS AND TIRES
 off a 2020 Ford Edge with 200 miles on them. 245/60R18 Michelin tires/10 spoke wheels/TPM's. Mounted & balanced. \$1800. Call 978-902-0036

AUTOMOBILE PARTS & ACCESSORIES

LEXUS RX 350 2011
 Black exterior & interior. Fully loaded. No navigation. 6 cylinder. Good tires & brakes. 128,000 miles. Runs & drives great! \$10,900 or best offer. Call 603-770-5735

TRUCKS
2008 Ford F250
 for Project/Parts. 5.4L V8 engine, w/bad cylinder, some rust, minor dents, needs tires. Best offer over \$800. Send offer by mail to: Blue Truck, P.O. Box 751, Haverhill, MA 01831 or fax to 978-373-1104 Offer must be in by: 02/19/21

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 Beware of anyone replying to your ad offering to send you a check for shipping and you sending them back the difference. Also beware when responding to classified ads that ask you to send shipping cost! Possible scam!

BUICK Regal 2015 Turbo All wheel drive 39-MPG dual exhaust 1-owner non smoker. Black/black leather. Navigation backup camera. Full power, power sunroof, 18" Michelins 10 spoke alloy wheels 39K, AM/FM 6 Disk CD. Every option available. \$13,900. 603-400-4638

HONDA Accord EX 1998 125k. 4 cyl. V-Tech 4 door, Burgundy ext./ Gray leather interior, factory Mags, recent NH inspection. New exhaust. LOADED! Overall very good condition \$2650. Call (508) 451-0515

JUNK CARS, TRUCKS & HEAVY EQUIPMENT
 WANTED. Picked up within 24 hrs. Up to \$300 CASH PAID. Call (603) 303-2866

\$250-\$700 CASH
 For Junk Cars & Trucks
INSTANT ONLINE OFFER:
www.salisburysalvage.com
 978-462-8262 - Free Towing

\$\$\$ WE PAY THE MOST \$\$\$
CARS - TRUCKS
 INSTANT ONLINE OFFER:
www.salisburysalvage.com
 978-462-8262 - Free towing

Jobs-Sales

North of Boston Media Group has a great opportunity for an advertising sales consultant. North of Boston Media Group
 100 Turnpike Street
NOW HIRING A: North Andover, MA 01845

SALES CONSULTANT

Potential to earn \$50k+ per year selling trusted and effective advertising platforms. Prior sales experience preferred but not required. Training provided. The most important attributes include a positive attitude and willingness to learn. Comprehensive benefits package (health benefits, 401K, paid time off), and opportunities for advancement.

Send resume to: Mzappala@NorthOfBoston.com

NORTH of BOSTON
www.NOBMG.com

Jobs-Sales



WANTED JUNK CARS/PARTS

\$ WANTED \$

CASH PAID FOR CLEAN AUTOS, TRUCKS & SUVs
Inspection Ready Vehicles
 Call Joe 978-852-5008

JUNK CARS, TRUCKS & HEAVY EQUIPMENT
 WANTED. Picked up within 24 hrs. Up to \$300 CASH PAID. Call (603) 303-2866

\$250-\$700 CASH
 For Junk Cars & Trucks
INSTANT ONLINE OFFER:
www.salisburysalvage.com
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CARS - TRUCKS
 INSTANT ONLINE OFFER:
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 978-462-8262 - Free towing

PUBLIC NOTICE

Massachusetts Department of Environmental Protection
Northeast Regional Office
(978-694-3200)

Division of Wetlands and Waterways

Pursuant to 33 U.S.C. 1341 and M.G.L.c. 21 §§ 26-53, notice is given of a 401 Water Quality Certification (WQC) application filed by the Town of West Newbury (381 Main Street, West Newbury, MA 01985) and the City of Newburyport (16C Perry Way, Newburyport, MA 01950) for a bridge replacement project on Middle Street, West Newbury / Plummer Spring Road, Newburyport over the Upper Artichoke Reservoir (Bridge No. N-11-007). The bridge is structurally deficient due to undermining of the existing roadway foundation and is proposed to be replaced in a similar horizontal and vertical alignment that will address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. Additional information may be obtained from Sara Kreisel, BSC Group, Inc., 803 Summer Street, Boston MA 02127, (617) 896-4579, skreisel@bscgroup.com. Written comments on the 401 WQC must be sent within twenty-one (21) days of this notice to:

MassDEP Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

Any group of ten persons, any aggrieved person, or any governmental body or private organization with a mandate to protect the environment who submits written comments may appeal the Department's Certification. Failure to submit written comments before the end of the public comment period may result in the waiver of any right to an adjudicatory hearing.
NT - 1/22/2021

Jobs-Sales



NOW HIRING!

PLANT MAINTENANCE TECHNICIANS in Billerica, MA!
\$4000 Sign-on Bonus!

Competitive Pay, Great Benefits!

Requirements:

18 Years or Older
2+ Years of Related Work Experience.
3rd Shift position, 10pm-6:30am

Call or apply online for immediate consideration!

1-877-220-5627
careers.wm.com

Equal Opportunity Employer
Minority/Female/Disability/Veteran

JOB WANTED

Ads In This Classification Are
WORK WANTED
NOT HELP WANTED

MEDICAL

ATTENTION CAREGIVERS!

If you are a PCA, CNA, Nurse or offer personal care services please go to the business and service directory and check out the category for Adult Care. Your services are needed!

Jobs-Sales

ADS in this category
If the ad shows a price it must show it by cu. ft. Half a cord is 64 cu. ft. and a cord is 128 cu. ft.

ALL HARDWOOD SEASONED
1 year or 2 year, 16" cut & split
Call M.Kovalchuk 978-204-9483

"BUGLESS" FIREWOOD
Green or Seasoned. Delivery & Stacking Avail.
Partial Cords, 603-437-0940.
www.firewoodguy.com

PATRICK & SONS QUALITY FIREWOOD
100% hardwood. Seasoned.
Call 603-898-4770.

FUEL

↓↓↓↓↓↓
ATTENTION FUEL CONSUMERS:

All ads in this classification run in our 10 paper "Classified Connection" that covers the North Shore, Merrimack Valley and Southern New Hampshire.

Ads appearing in this section may or may not deliver to this entire market. Prices may reflect a "Local" delivery area only and may be higher for an extended delivery area.

↑↑↑↑↑

John's Oil

Home heating oil. Oyed Red Off Road Diesel available. Fuel Assistance Welcome
www.johnsoil.com
978-777-4205

\$1.58

Senior Citizen Price
PAYLESS OIL
All Cities and Towns

No minimum. Senior & Veteran discounts

877-688-7667

Price subject to change

Jobs-Sales

MISC ITEMS WANTED

CASH FOR RECORD ALBUMS
33LPS & 45s WANTED. Call George
(617) 633-2682

CASH PAID FOR COINS, REAL & COSTUME JEWELRY, POCKET & WRIST WATCHES, ANTIQUES, COMIC BOOKS, MUSICAL INSTRUMENTS, BASEBALL CARDS. DAN (603) 505-0380

WANTED FOR CASH

Baseball, Football, Hockey, Basketball Cards.
Call Rick 603-494-1327

MISC MERCHANDISE

Eisenhower Dollar Coins (collection of) Best Offer
Antique Large & Small currency notes
Call (978) 208-8944

New Englander Pellet Stove New Englander heats 1500 sf. Complete with video & installation instructions. Paid \$1800 asking \$235.00 best offer Call (978) 828-1220

PLOW 7.5 ft Fisher Minute Mount One. Needs work. \$300 or best reasonable offer. Call 508-932-0990

WARNING

If you get an email or cashiers check for more than the asking price for your pet, vehicle or merchandise asking you to refund the difference it is likely a scam. Seller Beware!

PETS & FREE PETS



Absolutely Adorable Cockapoo Puppies!

Beautiful cockapoo mix puppies! 2 males, 1 female, ready to go January 7, first vet visit & shots. Hypoallergenic. Family raised. Approx 20 lbs. When full grown. Adoption fee \$2900. Pics available. Text 336-588-3774



ENGLISH BULLDOG PUPPIES - Taking deposits for 3 females. Ready February 1st. 2 rounds of shots, 2 dewormings & health certificate. Asking \$3000 each. AKC papers + \$
Call or text 978-288-9233

LABADOR PUPPIES AKC Champion Breed
6 females, (5 chocolate & 1 black) 3 males. (2 black & 1 chocolate) 1st shots & dewormed
Ready 1st week of February
\$1800/\$300 deposit Call (978) 290-9147



Transportation

AUTOMOBILE PARTS & ACCESSORIES



4 RIMS AND TIRES

off a 2020 Ford Edge with 200 miles on them.
245/60R18 Michelin tires/10 spoke wheels/TPM's. Mounted & balanced. \$1800.
Call 978-902-0036

AUTOS

ATTENTION!

Beware of anyone replying to your ad offering to send you a check for shipping and you sending them back the difference. Also beware when responding to classified ads that ask you to send shipping cost! Possible scam!



BUICK Regal 2015 Turbo All wheel drive
39-MPG dual exhaust 1-owner non smoker. Black/black leather. Navigation backup camera. Full power, power sunroof, 18" Michelines 10 spoke alloy wheels 39K, AM/FM 6 Disk CD. Every option available. \$13,900. 603-400-4638



Honda Accord EX 1998 125k, 4 cyl. V-Tech 4 door, Burgundy ext./ Gray leather interior, factory Mags, recent NH inspection. New exhaust. **LOADED!** Overall very good condition \$2650... Call (508) 451-0515



Want a car guaranteed to be what you see? Serving New England area for 45 years



SUBARU, Legacy 2013 152000 miles.
Great in snow. Reliable 4-door with heated cloth seats. \$4900.
508-523-1729

WARNING

If you get an email or cashiers check for more than the asking price for your pet, vehicle or merchandise asking you to refund the difference it is likely a scam. Seller Beware!

SUV

JEEP, Grand Cherokee 2005. 96,200 miles. Clean and well cared for. Remote start, moon roof, 4wd. Power windows, locks, bluetooth. \$5000. 781-820-7916



LEXUS RX 350 2011

Black exterior & interior. Fully loaded. No navigation. 6 cylinder. Good tires & brakes. 128,000 miles. Runs & drives great! \$10,900 or best offer. Call 603-770-5735

TRUCKS

2008 Ford F250

for Project/Parts. 5.4L V8 engine, w/bad cylinder, some rust, minor dents, needs tires. Best offer over \$800. Send offer by mail to: Blue Truck, P.O. Box 751, Haverhill, MA 01831 or fax to 978-373-1104
Offer must be in by: 02/19/21

WANTED JUNK CARS/PARTS

\$ WANTED \$

CASH PAID FOR CLEAN AUTOS, TRUCKS & SUVs
Inspection Ready Vehicles
Call Joe 978-852-5008

JUNK CARS, TRUCKS & HEAVY EQUIPMENT WANTED. Picked up within 24 hrs. Up to \$300 CASH PAID. Call (603) 303-2866

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SALES CONSULTANT

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Attachment B

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Addendum to Section 401 Water Quality Certification

USACE MA GENERAL PERMIT AUTHORIZATION



DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

April 9, 2021

Regulatory Division
File No. NAE-2021-00177

John White
City Engineer, City of Newburyport
16C Perry Way
Newburyport, Massachusetts 01950
(via email: jewwhite@cityofnewburyport.com)

Dear Mr. White:

We have reviewed your application to place fill below the ordinary high water line of Artichoke Reservoir in association with the replacement of a bridge. Specifically, you propose to permanently impact 984 square feet of waters of the U.S. related to riprap installation and work on retaining walls, wing walls, and abutments. You also propose to temporarily impact 641 square feet of waters related to dewatering of the site for construction work. This project is located at the confluence of Plummer Spring Road in Newburyport and Middle Street in West Newbury, Massachusetts. The work is shown on the enclosed plans titled "BRIDGE REPLACEMENT PROJECT MIDDLE STREET/PLUMMER SPRING ROAD OVER UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA ESSEX COUNTY", on 14 sheets, and dated "12/21/2020."

Based on the information that you have provided, we verify that the activity is authorized under General Permit # 10 and 14 of the enclosed April 16, 2018 Federal permit known as the Massachusetts General Permits (GPs).

Please review the enclosed GPs carefully, including the general conditions beginning on page 19, to be sure that you and whoever does the work understand its requirements. A copy of the GPs and this verification letter shall be available at the project site throughout the time the work is underway. Performing work within our jurisdiction that is not specifically authorized by this determination or failing to comply with any special condition(s) provided below or all of the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations. You must perform this work in compliance with the terms and conditions of the GPs and also in compliance with the following special conditions:

1. The permittee is authorized to utilize cofferdams on each side of the channel to work on the bridge abutments year-round. However a minimum of 50% of the channel must be free to flow at all times and safe, timely, and effective downstream fish passage must be maintained.
2. Six inches of natural streambed material shall be placed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use

during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.

3. You shall complete and return the enclosed Work Start Notification Form to this office at least two weeks before the anticipated starting date.

4. You shall complete and return the enclosed Compliance Certification Form to this office within one month of project completion.

This authorization expires on April 5, 2023. You must commence or be under contract to commence the work authorized herein by April 5, 2023, and complete the work by April 5, 2024. If not, you must contact this office to determine the need for further authorization before beginning or continuing the activity. We recommend that you contact us *before* this authorization expires to discuss reissuance. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction. We must approve any changes before you undertake them.

This authorization does not obviate the need to obtain other Federal, State, or local authorizations required by law.

This authorization becomes valid only after the Massachusetts Department of Environmental Protection (MassDEP) issues or waives Water Quality Certification (WQC) as required under Section 401 of the Clean Water Act. In the event the MassDEP denies the 401 WQC, this determination becomes null and void. The address of the MassDEP regional office for your area is provided on page 47 of the enclosed MA GPs.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Please contact Ruthann Brien of my staff at ruthann.a.brien@usace.army.mil or by phone at (978) 318-8054 or (978) 318-8338 if you have any questions.

Sincerely,

Paul M. Maniccia

Paul Maniccia
Chief, Permits & Enforcement Branch
Regulatory Division

Enclosures

cc:

Sara Kreisel, BSC Group, Inc. skreisel@BSCGroup.com

Ed Reiner, U.S. EPA, Region 1, Boston, Massachusetts, reiner.ed@epa.gov

Rachel Croy, U.S. EPA, Region 1, Boston, Massachusetts, croy.rachel@epa.gov

David Simmons, USFWS; david_simmons@fws.gov

Jill Provencal, DEP NERO, Wilmington, MA; jill.provencal@mass.gov

Philip DiPietro, DEP NERO, Wilmington, MA; philip.dipietro@mass.gov

Newburyport Conservation Commission, jgodtfredsen@cityofnewburyport.com

West Newbury Conservation Commission, conservation@wnewbury.org

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10	FLOODPLAIN IMPACT AND MITIGATION SUMMARY
11-14	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

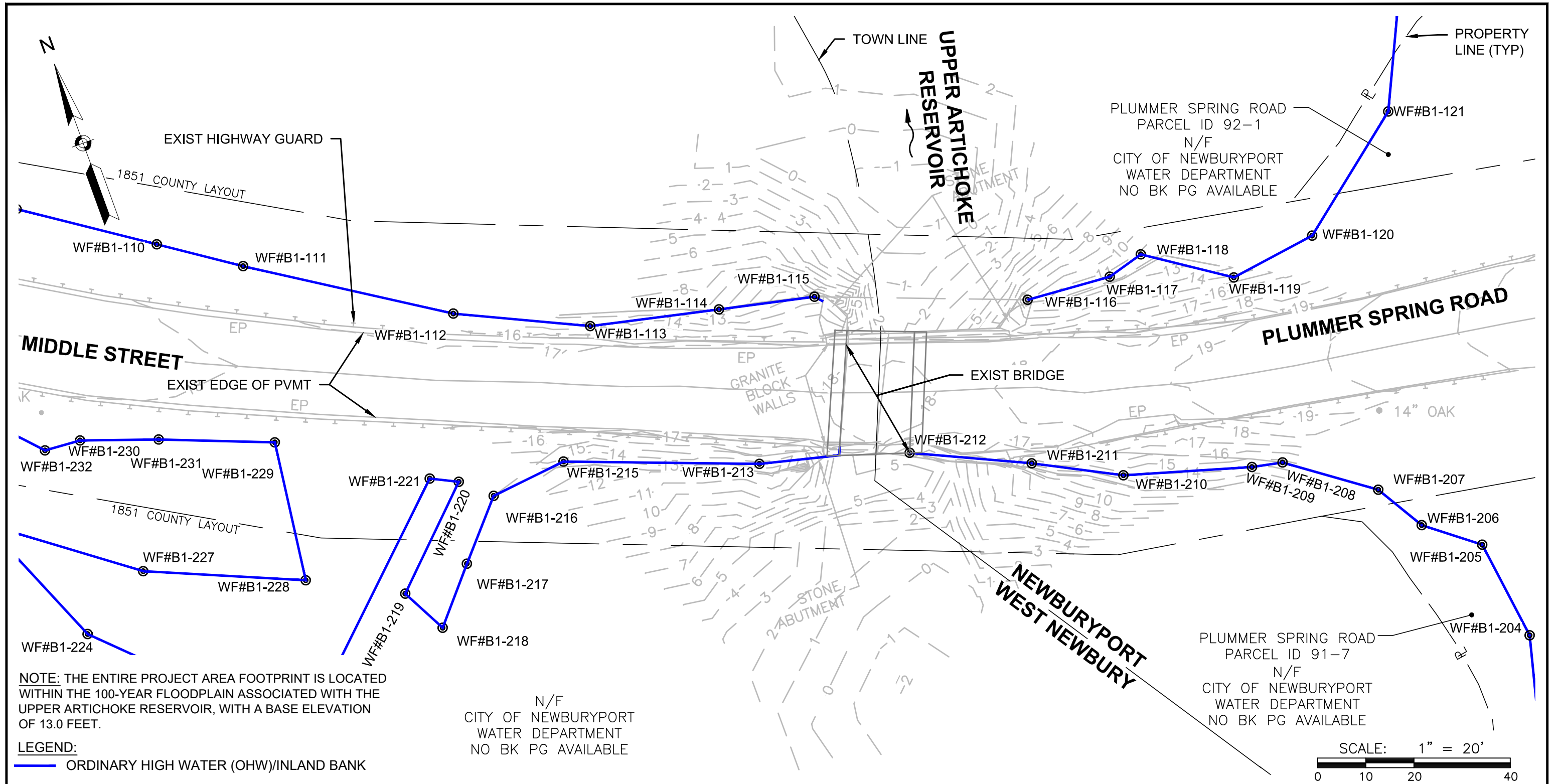
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 14

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 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



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 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source:

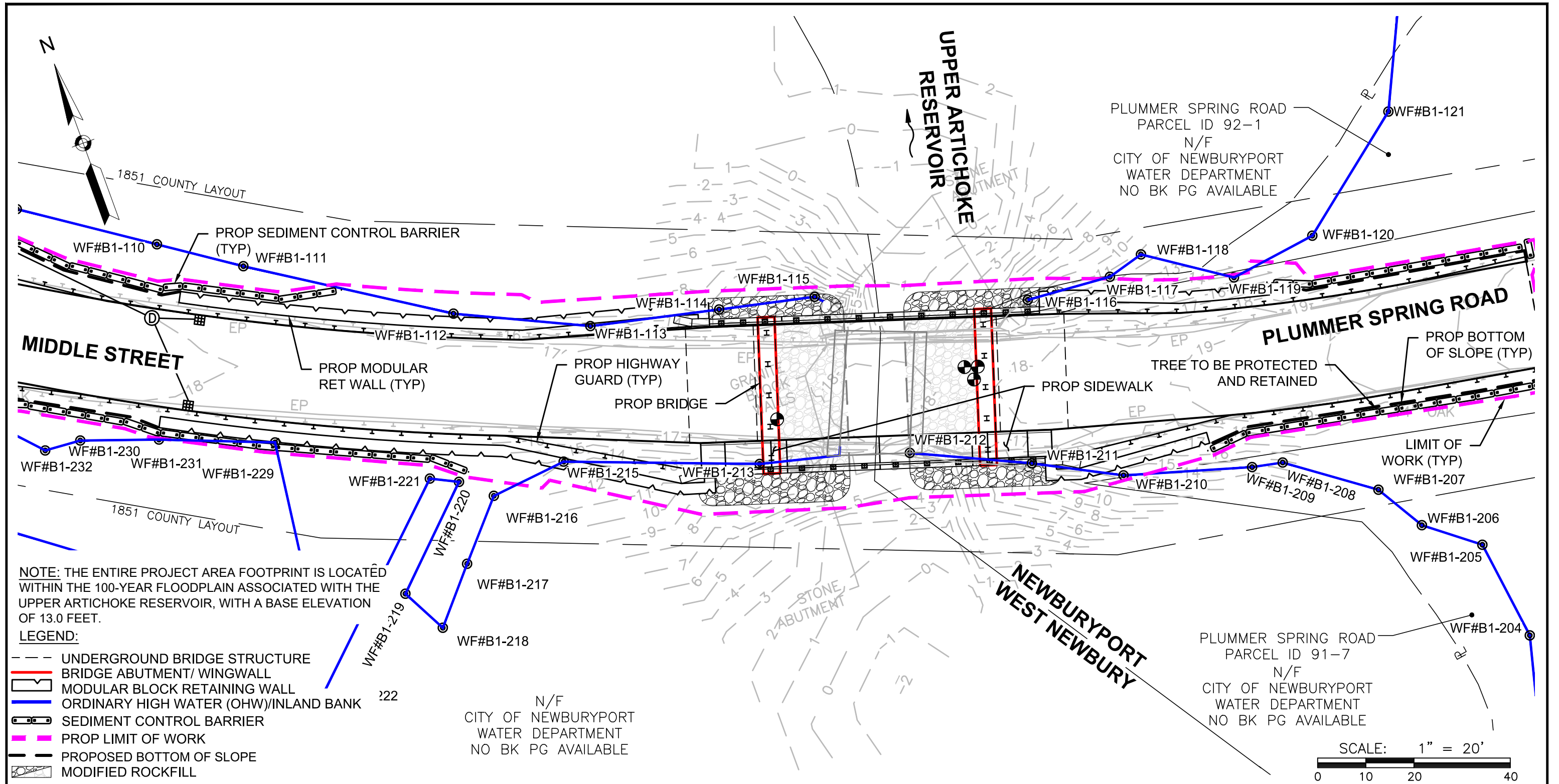
EXISTING CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: EX COND Figure: 3 OF 14



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Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

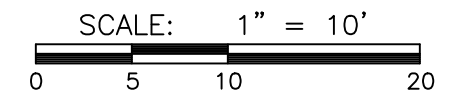
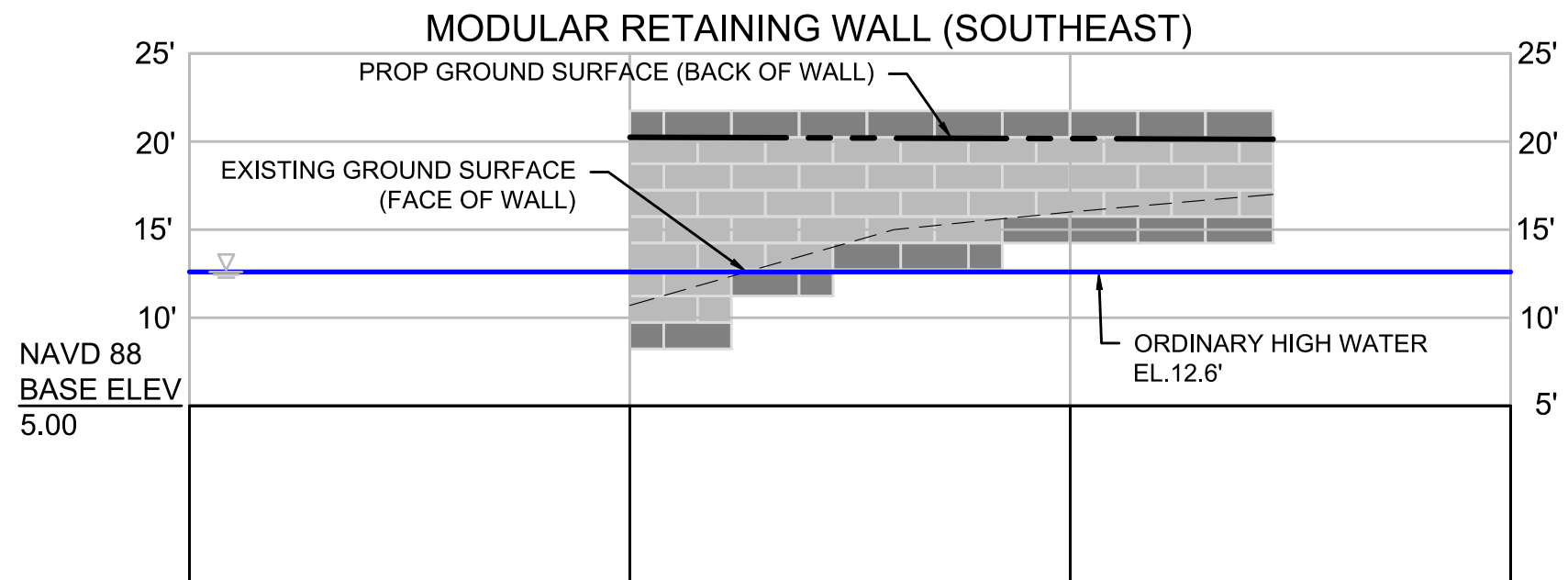
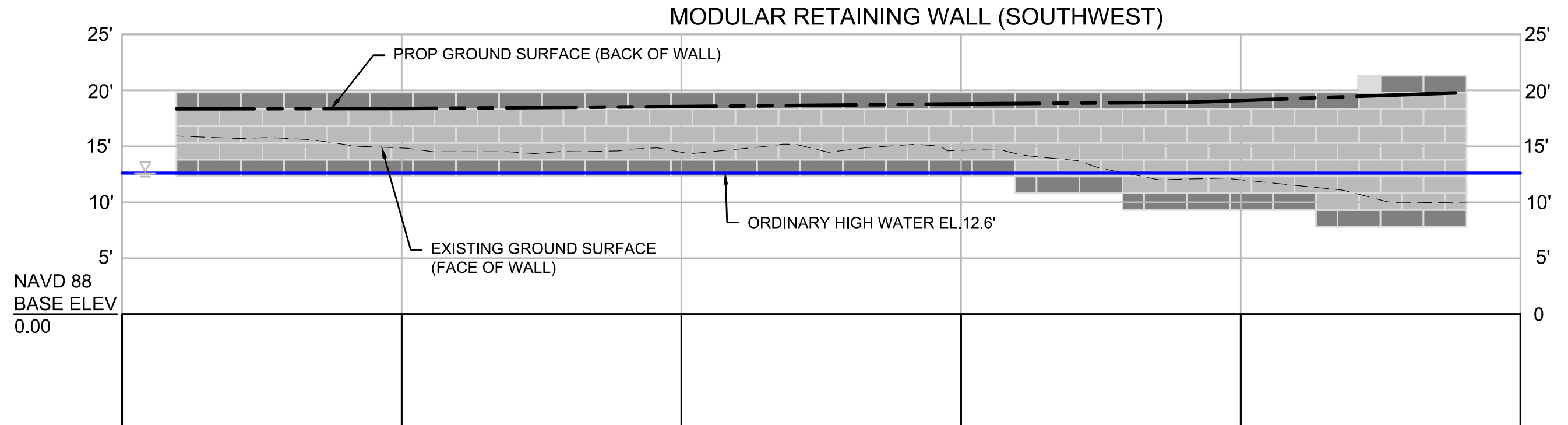
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: PROP COND Figure: 4 OF 14

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TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

PROPOSED WALL PROFILE

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

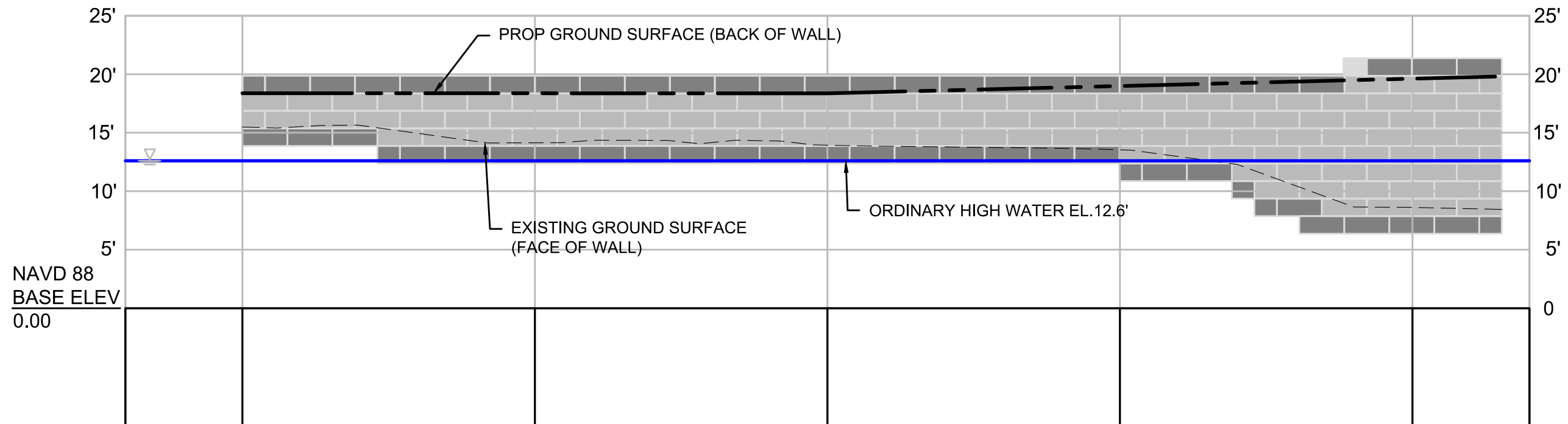
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Description: PR WALL Figure: 5 OF 14

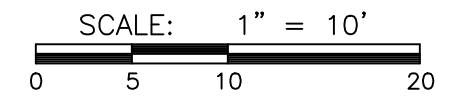
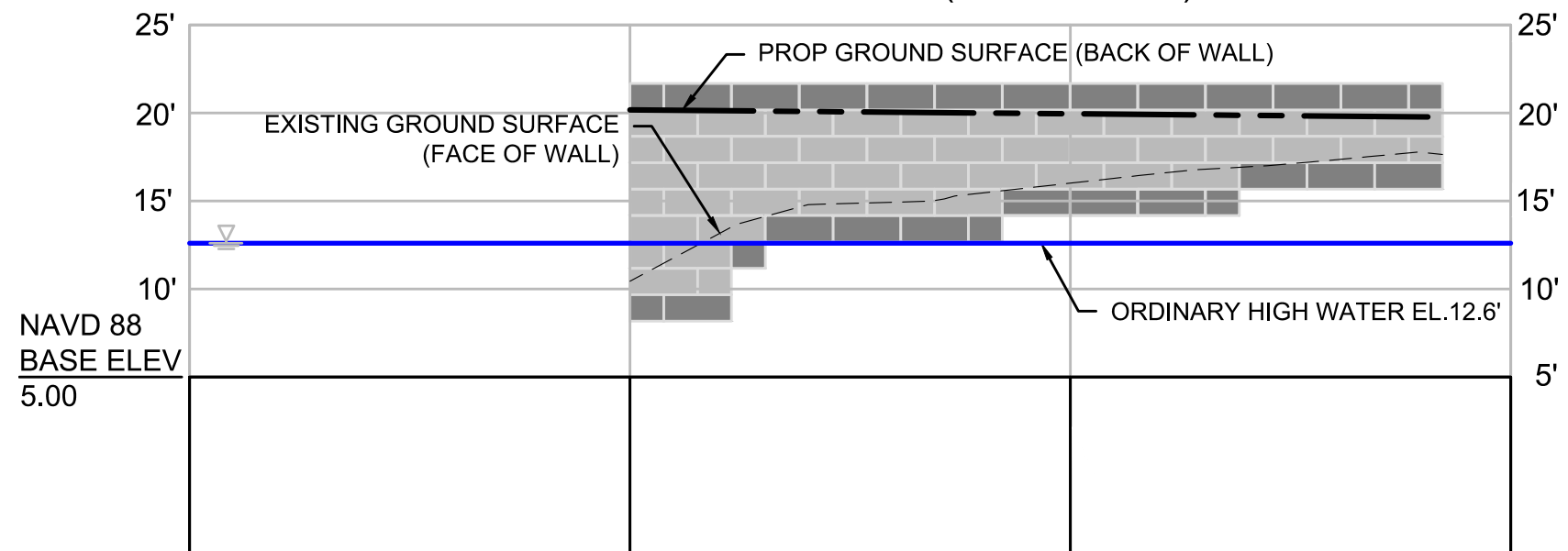
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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

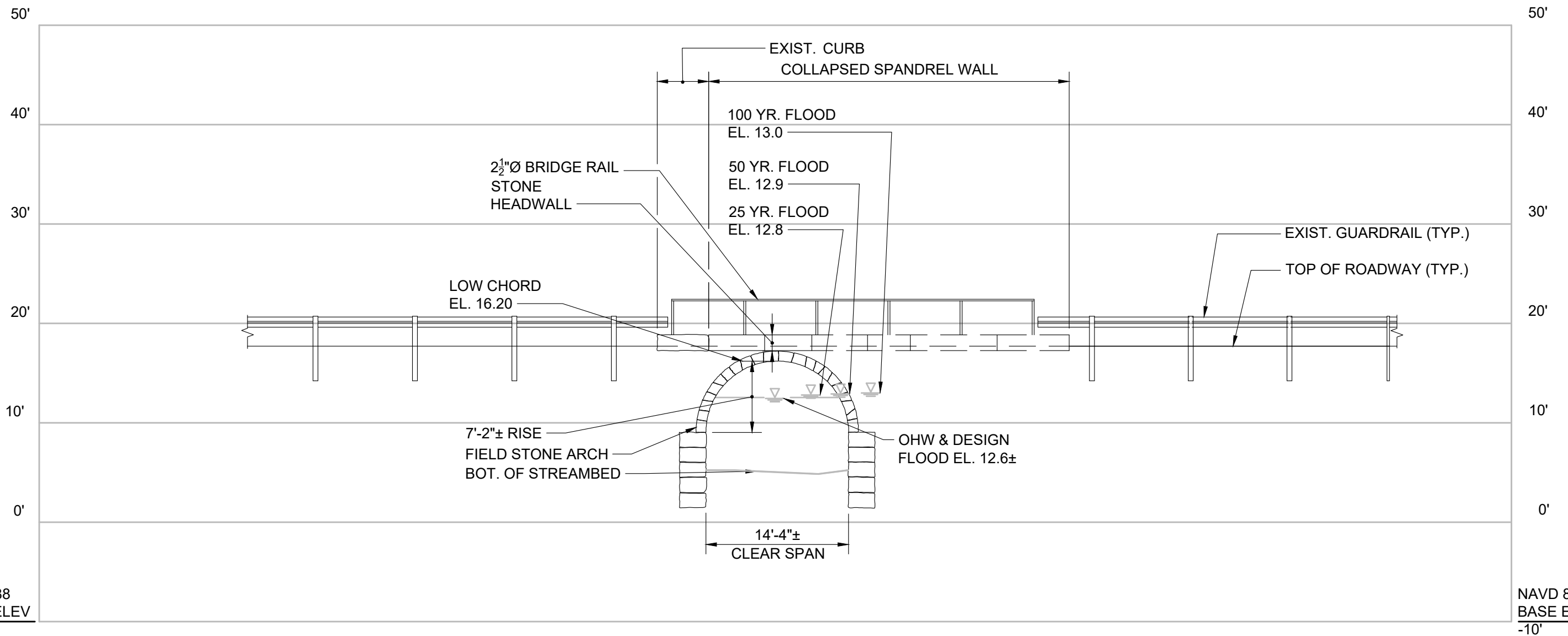


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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

PROPOSED WALL PROFILE
Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: _____
Description: PR WALL Figure: 6 OF 14
PROF

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617 896 4300



EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

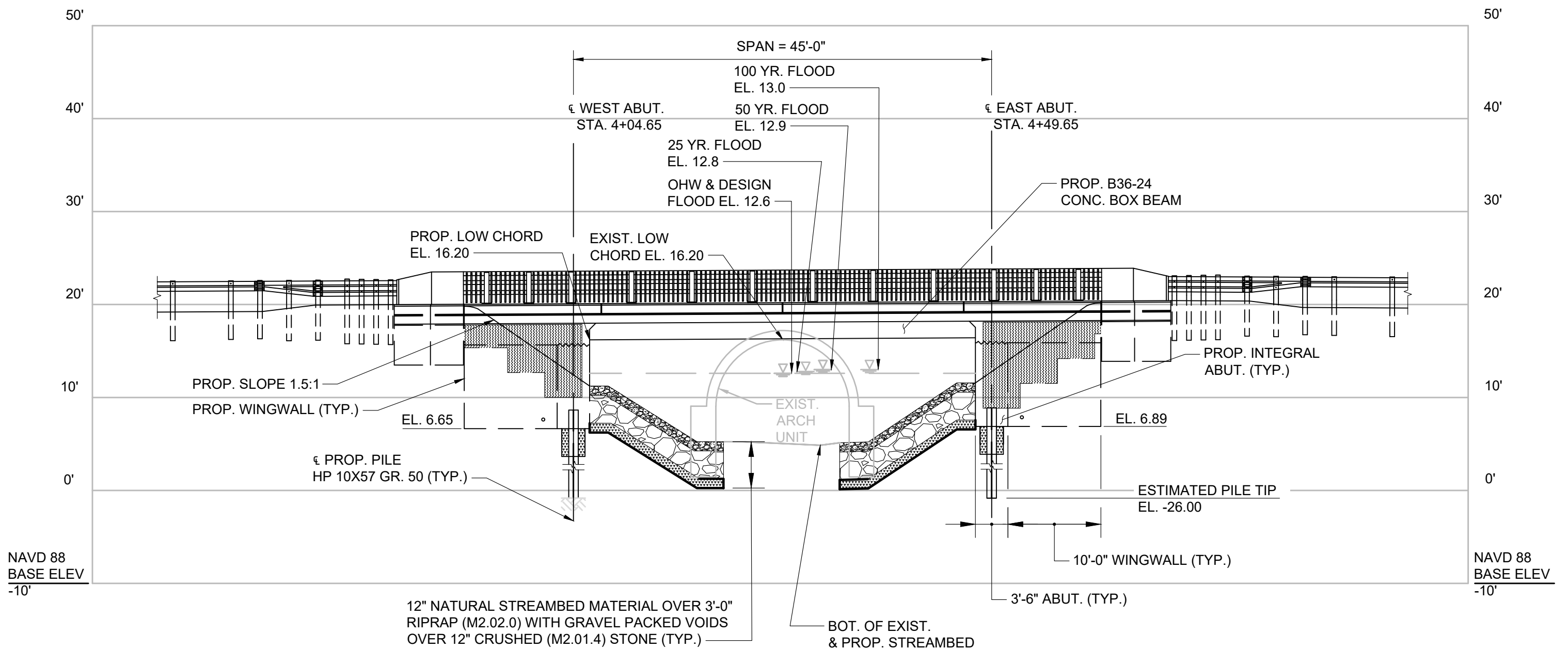
Source:

EXISTING - SOUTH ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: EXIST. EL. Figure: 7 OF 14

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02127
617 896 4300



PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

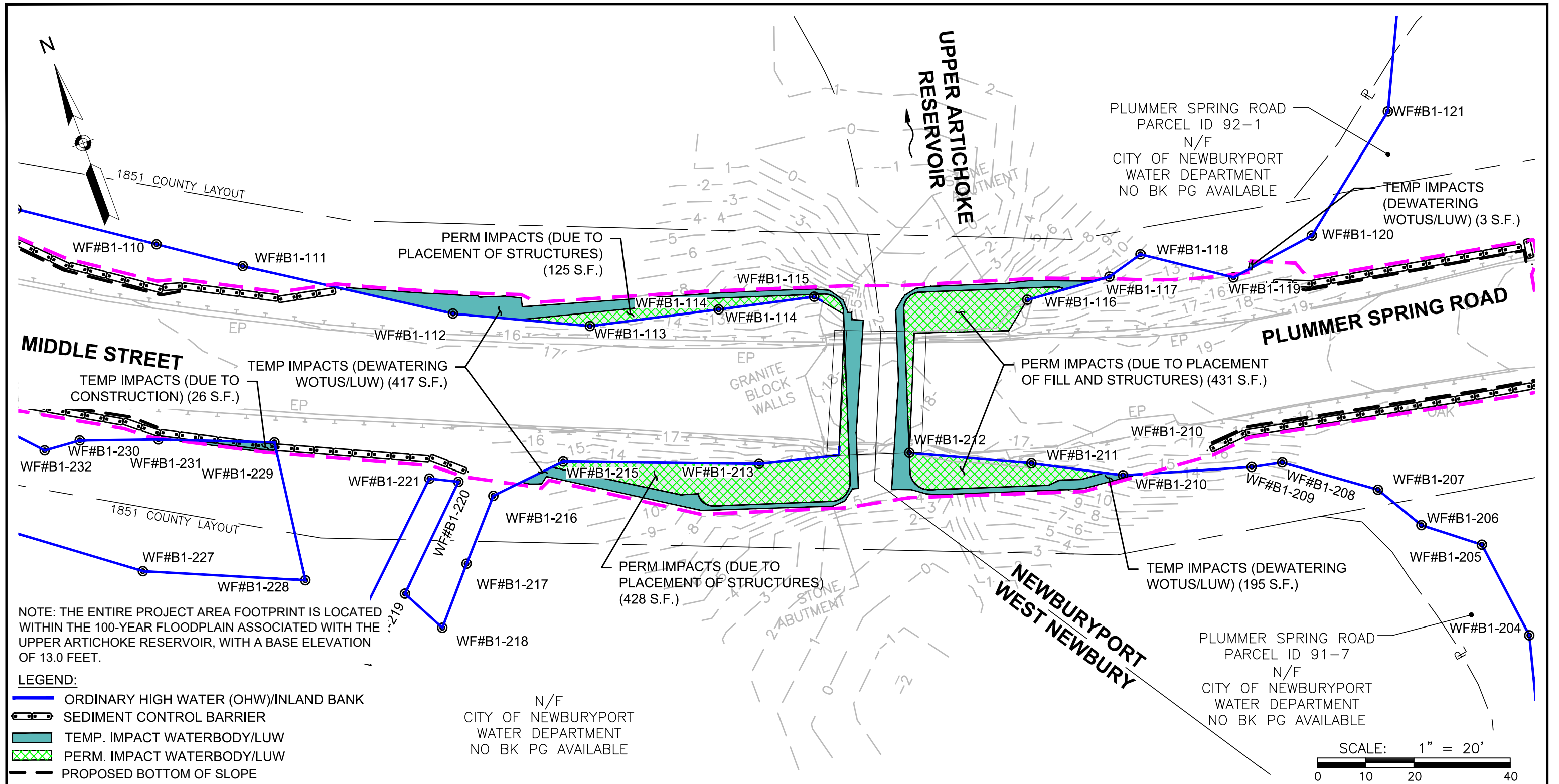
PREPARED FOR:
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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

PROPOSED - SOUTH ELEVATION

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: PROP. EL. Figure: 8 OF 14

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803 Summer Street
Boston, Massachusetts
02127
617 896 4300



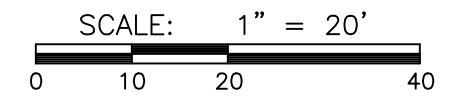
NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PLUMMER SPRING ROAD
PARCEL ID 91-7
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

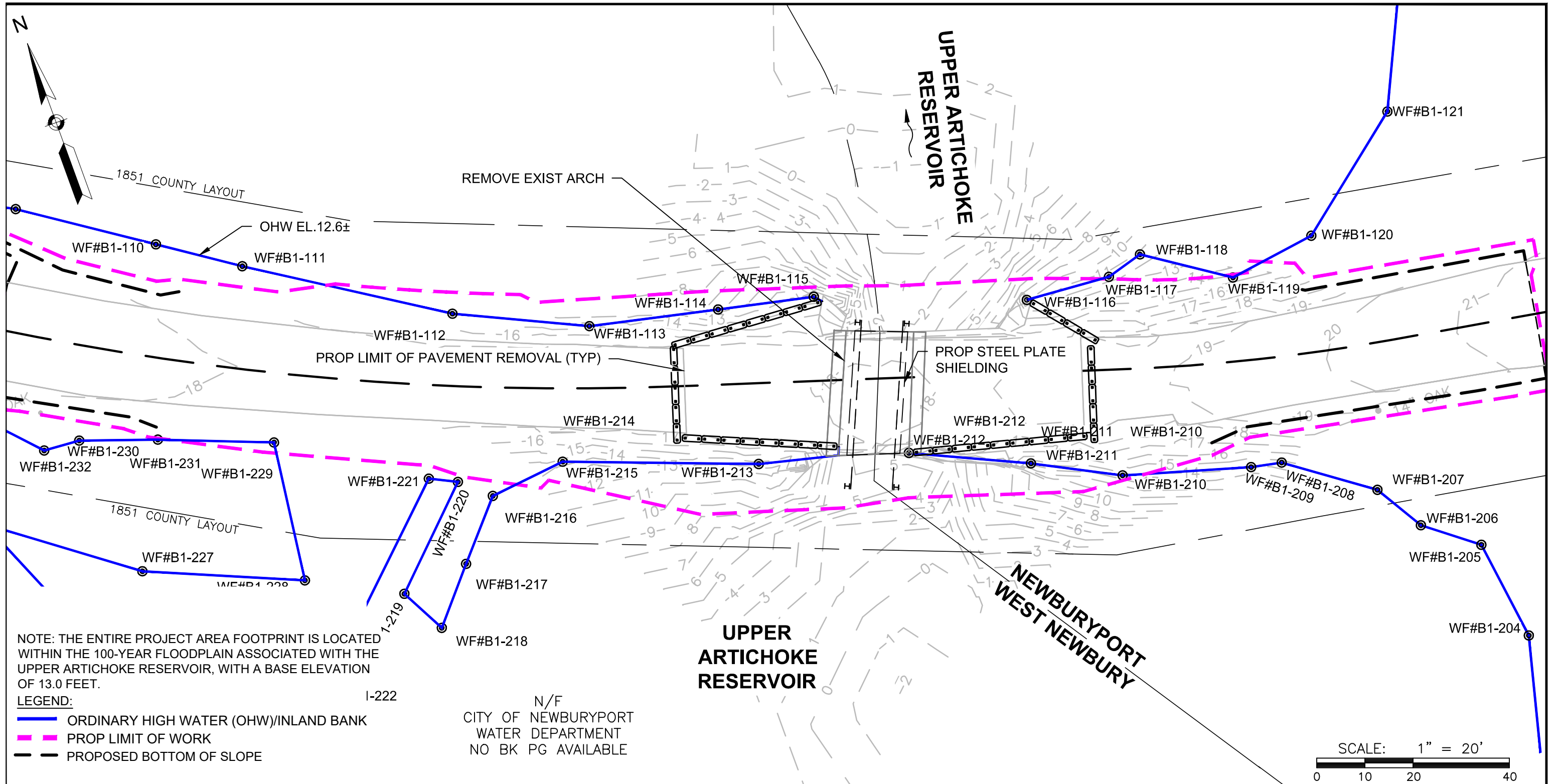
IMPACTS

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: IMPACTS Figure: 9 OF 14

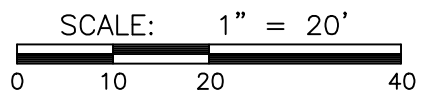
BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 - - - PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

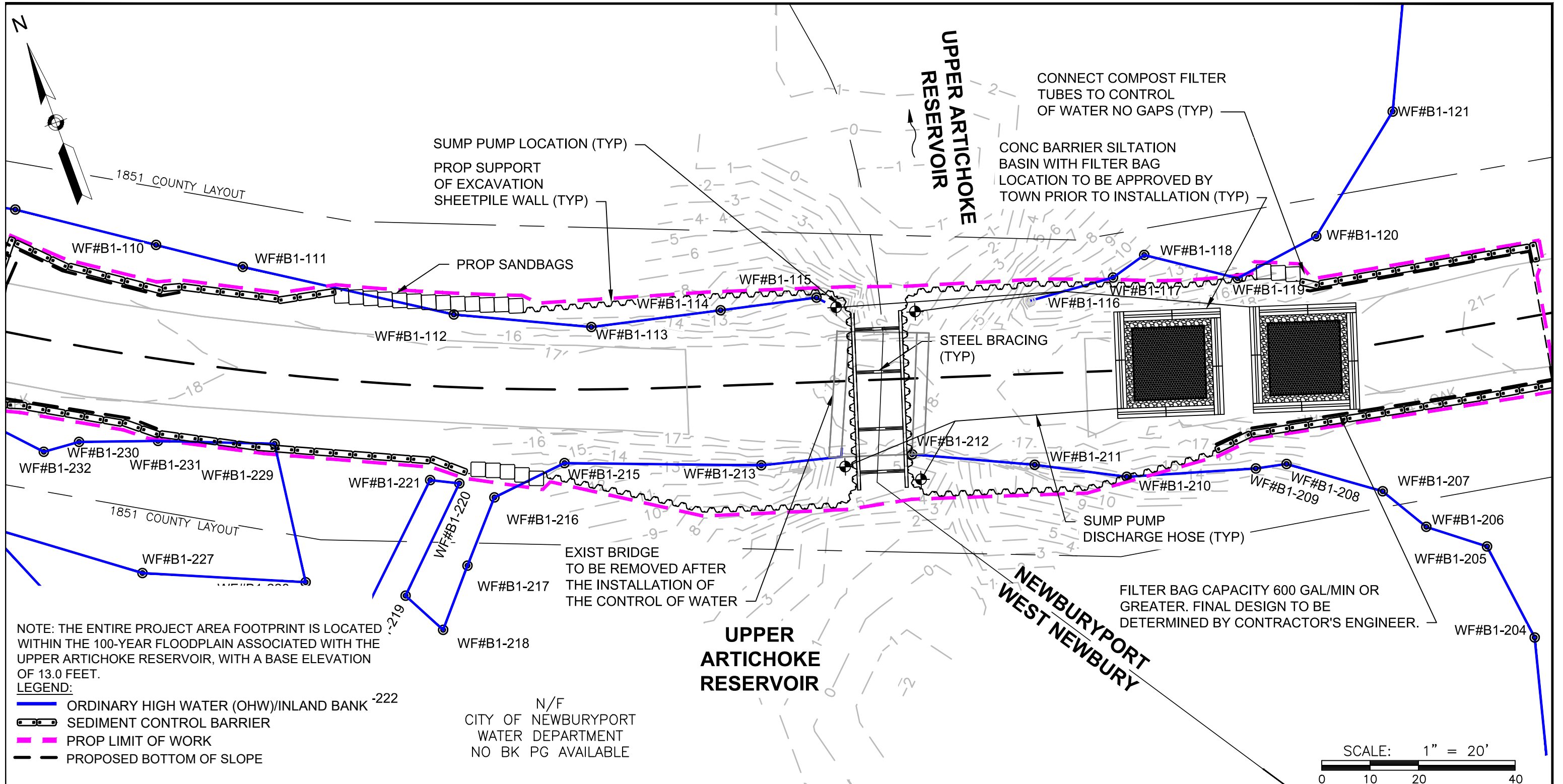


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 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
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SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 10 OF 14

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE

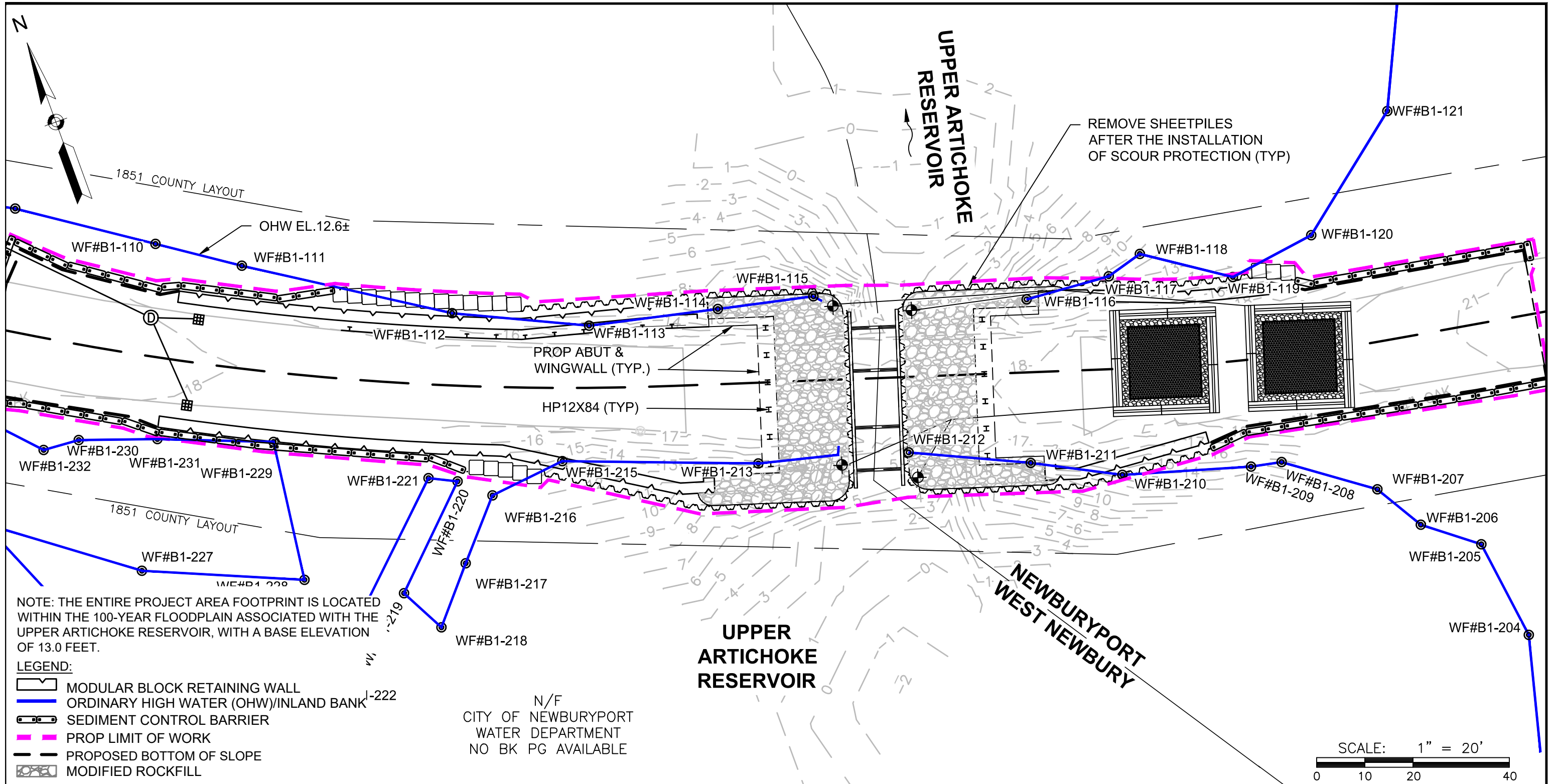
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

CONTROL OF WATER - PHASE 1 - PLAN

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 11 OF 14

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1851 COUNTY LAYOUT

OHW EL. 12.6±

REMOVE SHEETPILES
AFTER THE INSTALLATION
OF SCOUR PROTECTION (TYP)

PROP ABUT &
WINGWALL (TYP.)
HP12X84 (TYP)

NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED
WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE
UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION
OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

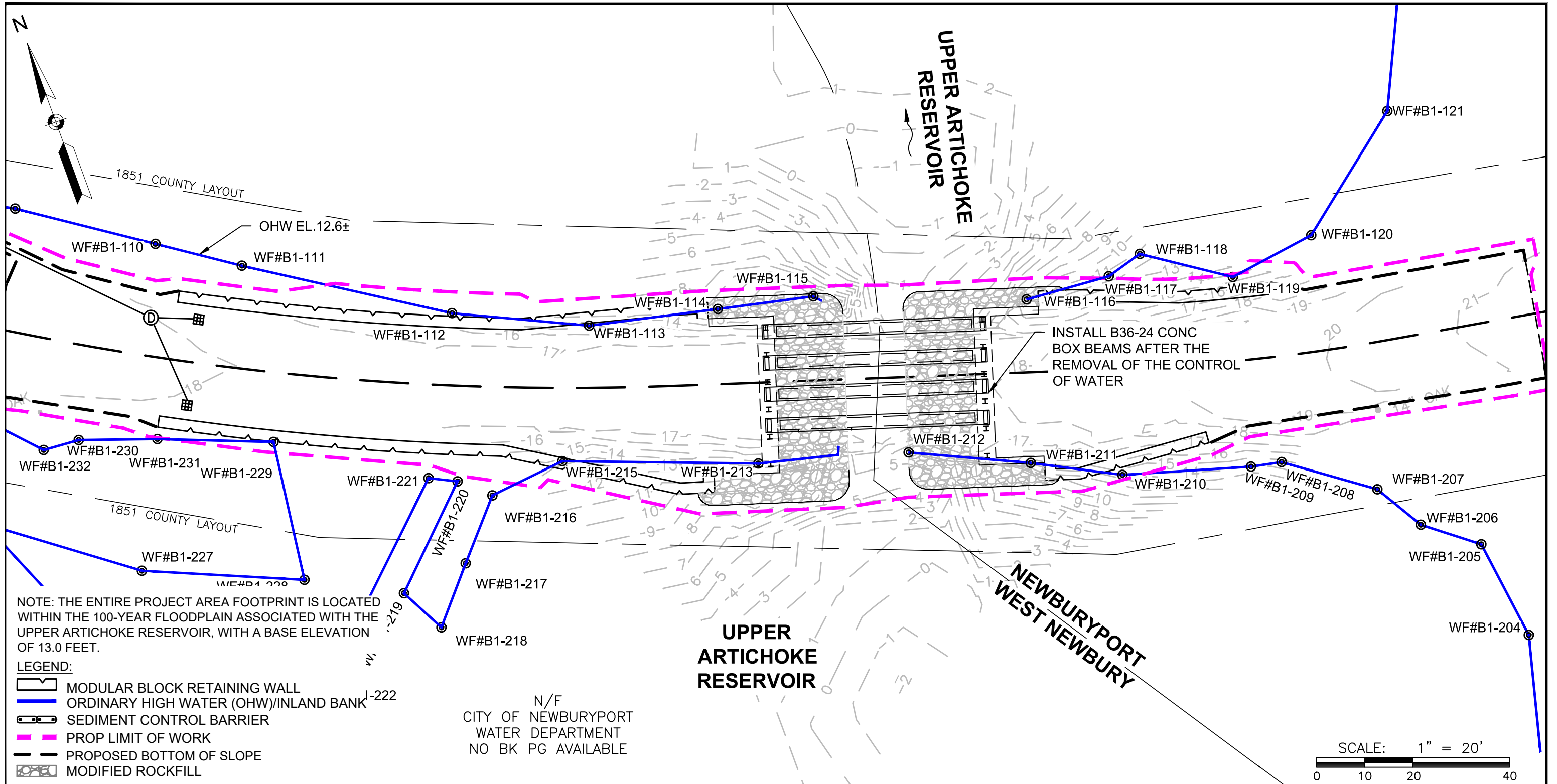
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0 10 20 40

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60 PLEASANT ST NEWBURYPORT,
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TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 12 OF 14

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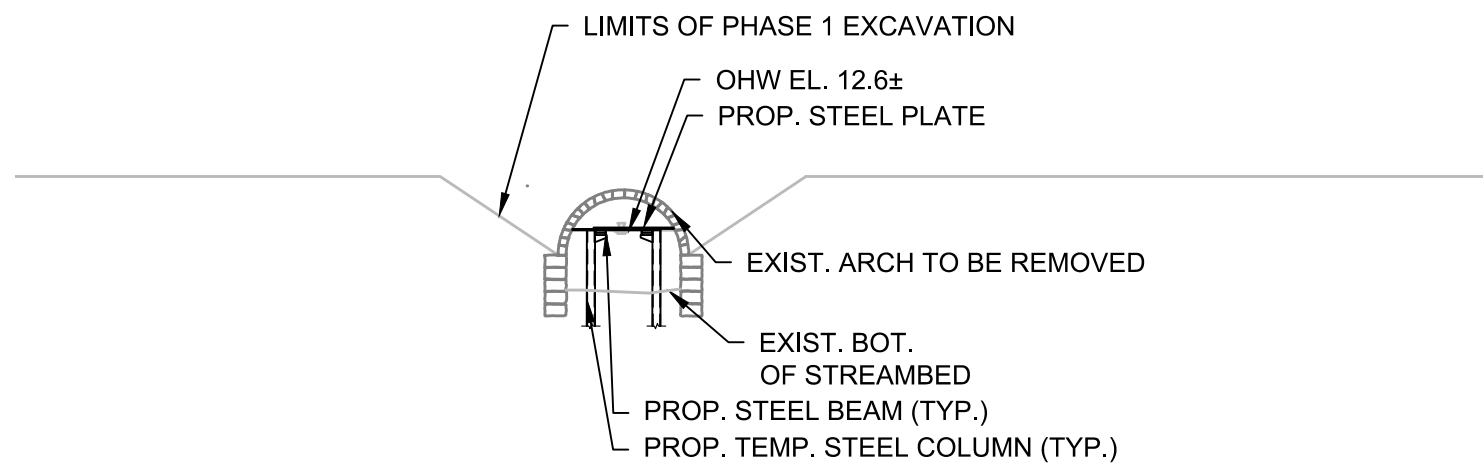
PREPARED FOR:
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 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

CONTROL OF WATER - PHASE 3 - PLAN

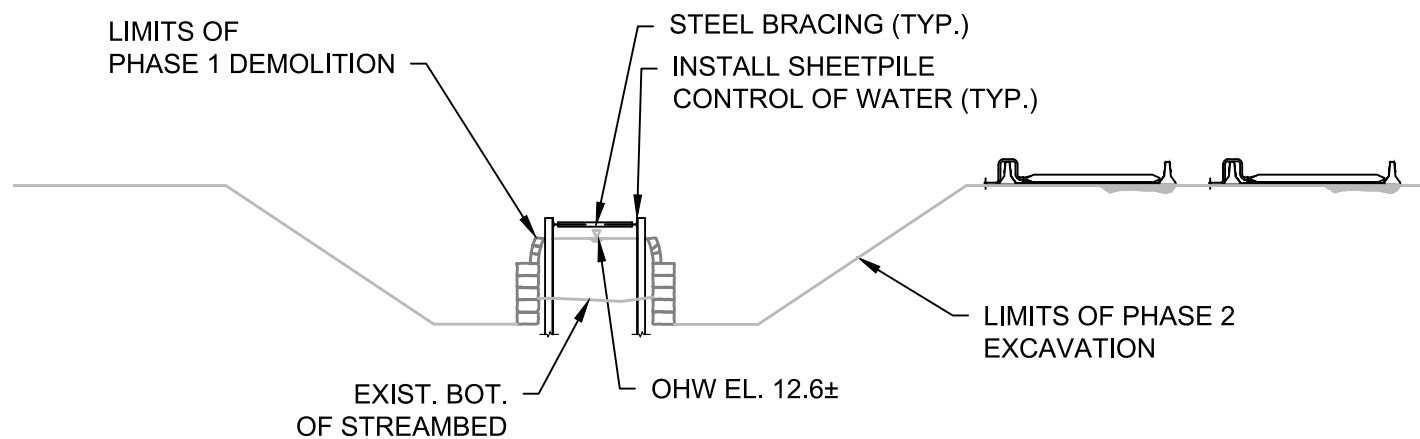
BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 13 OF 14

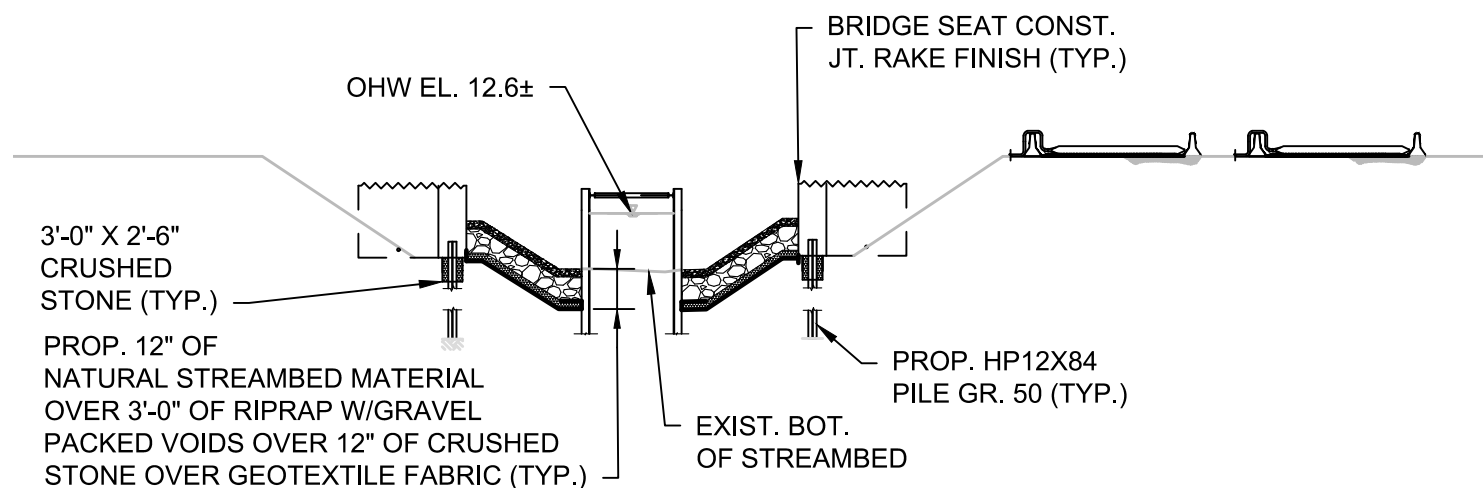
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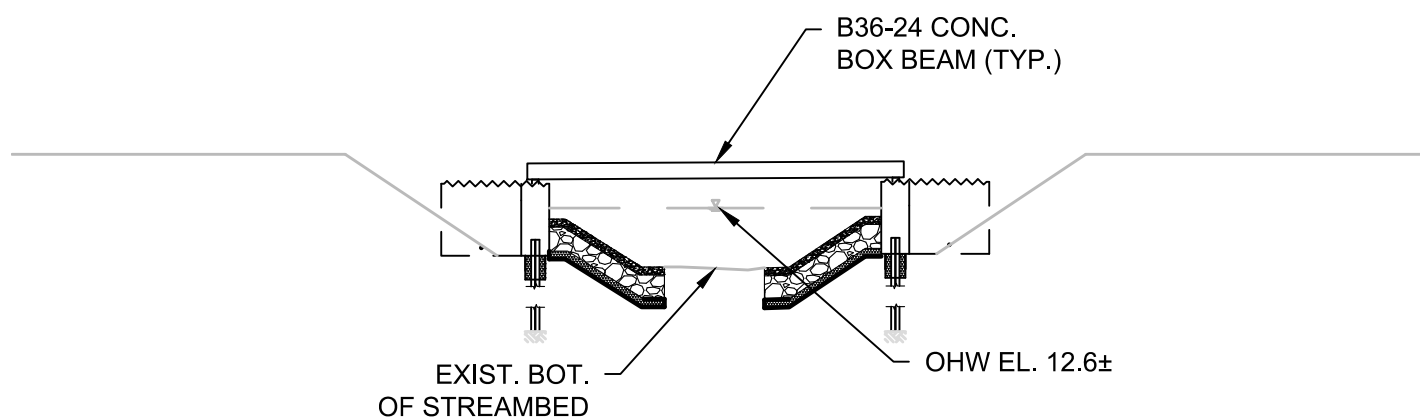
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

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60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 14 OF 14

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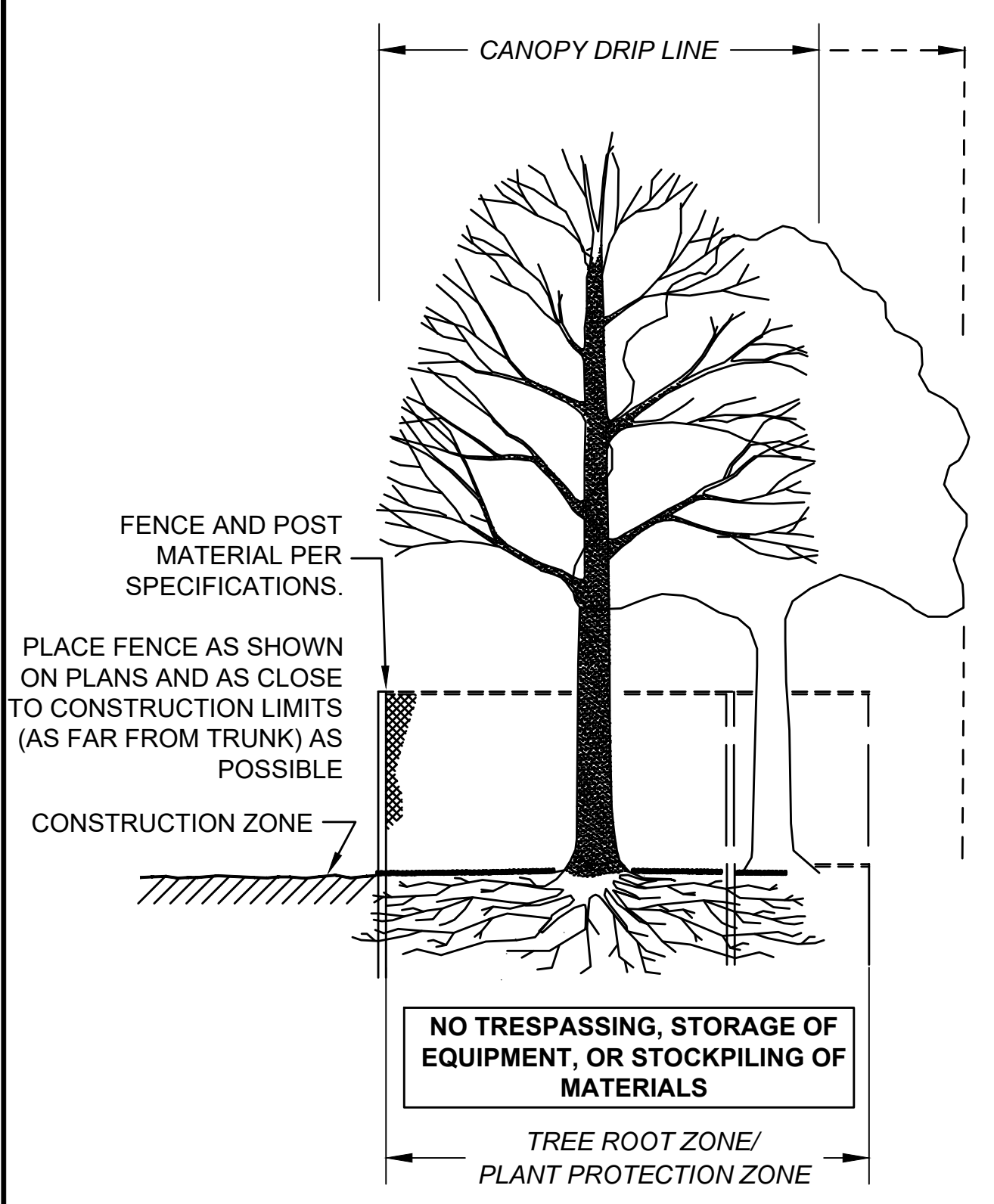
**NEWBURYPORT
PLUMMER SPRING ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	1
PROJECT FILE NO. XXXXXX			

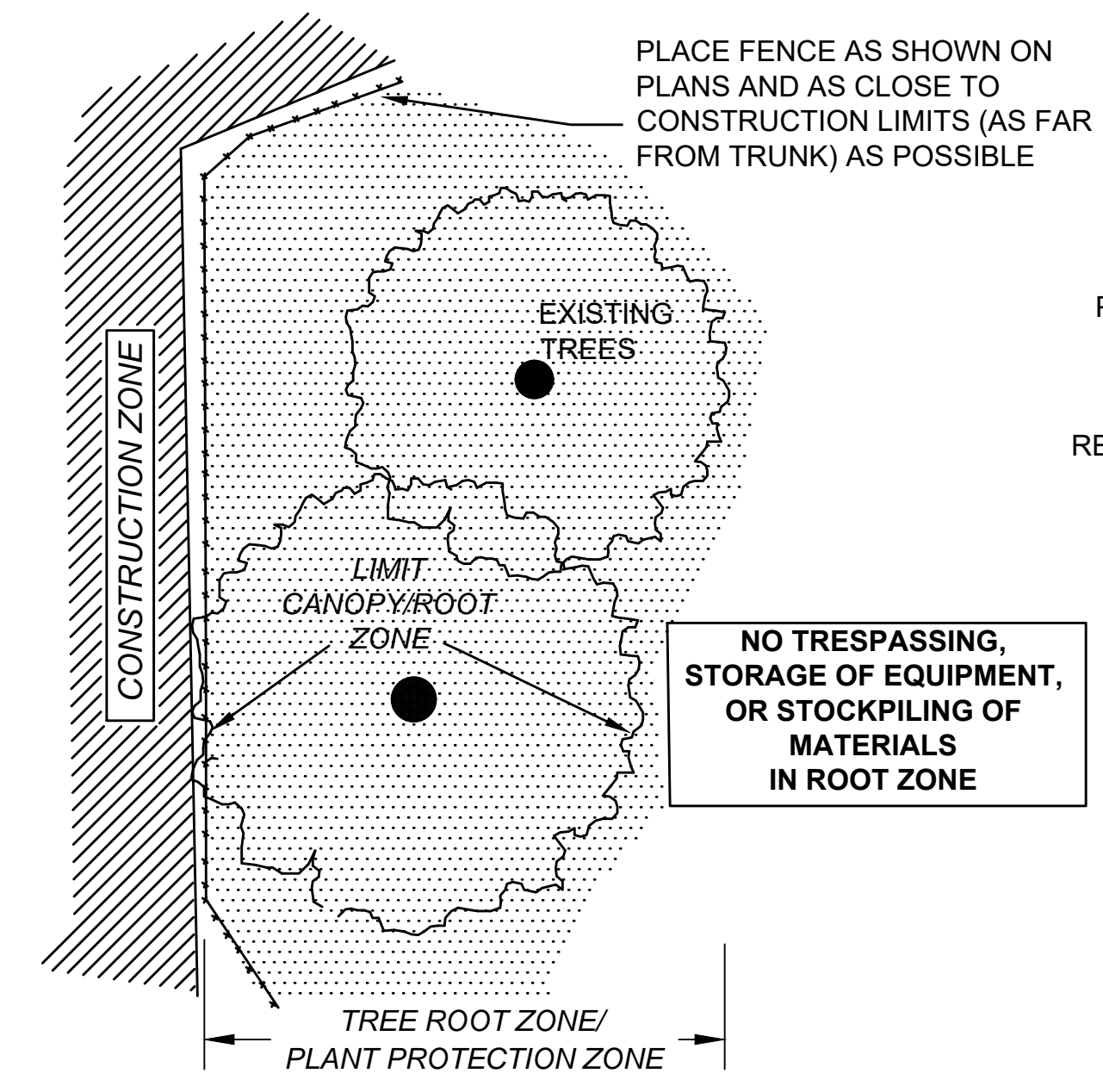
CONSTRUCTION DETAILS

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.



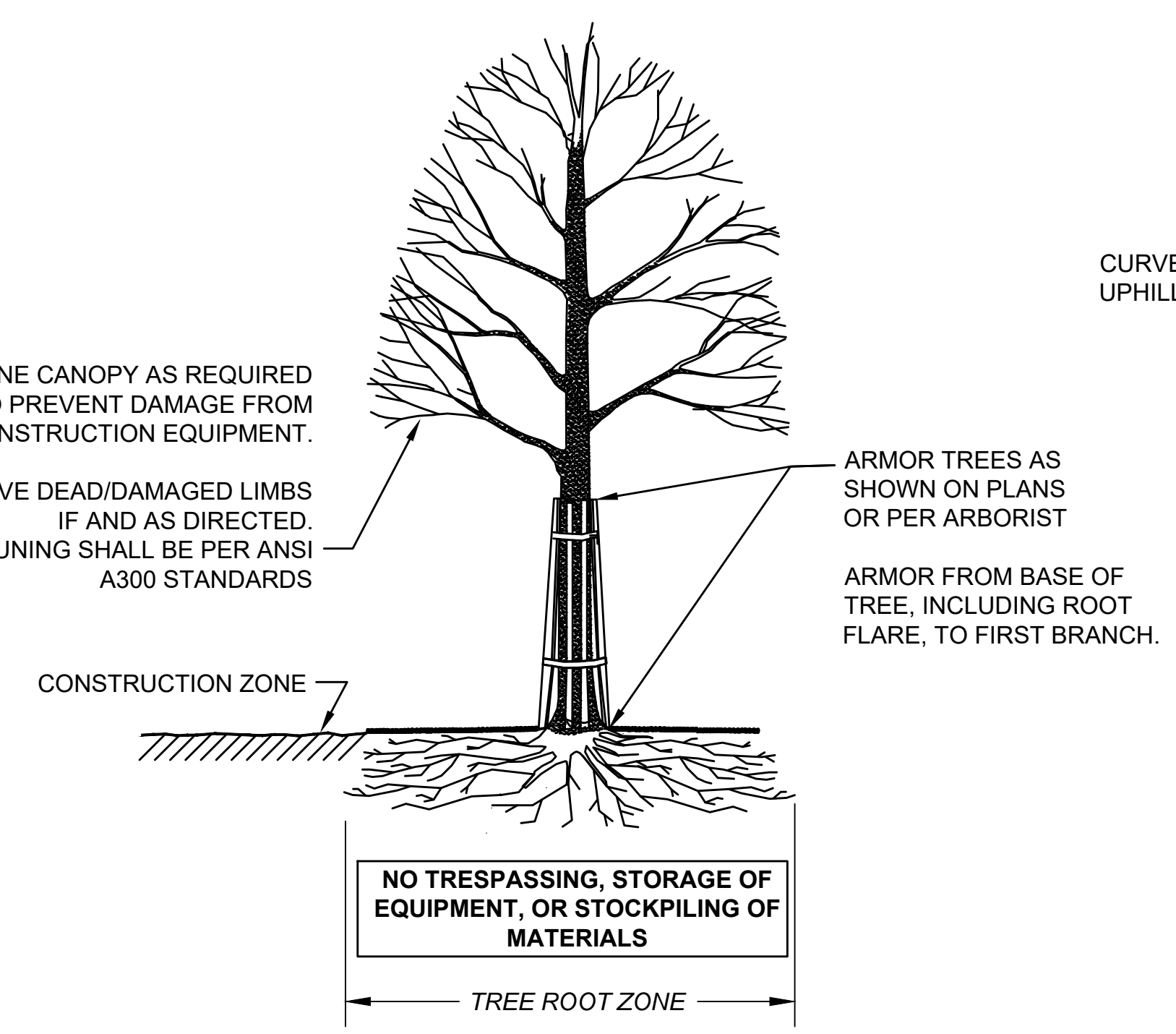
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

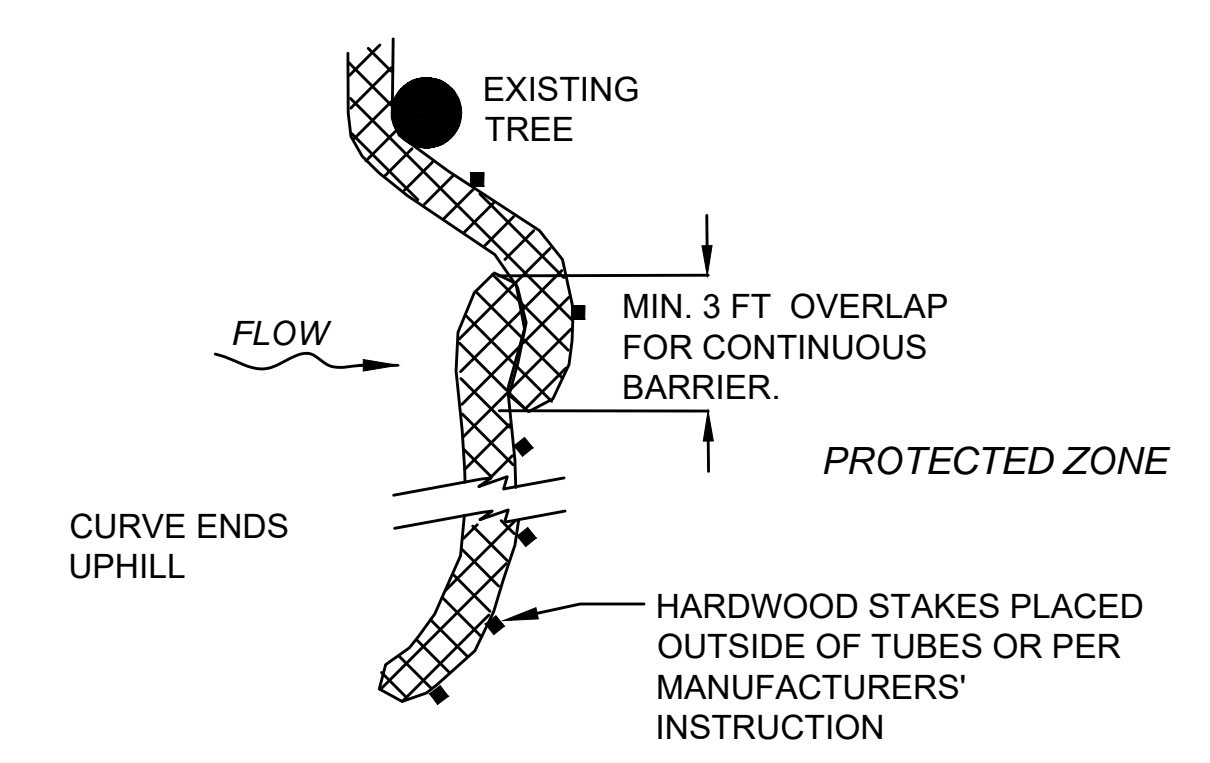
NOT TO SCALE



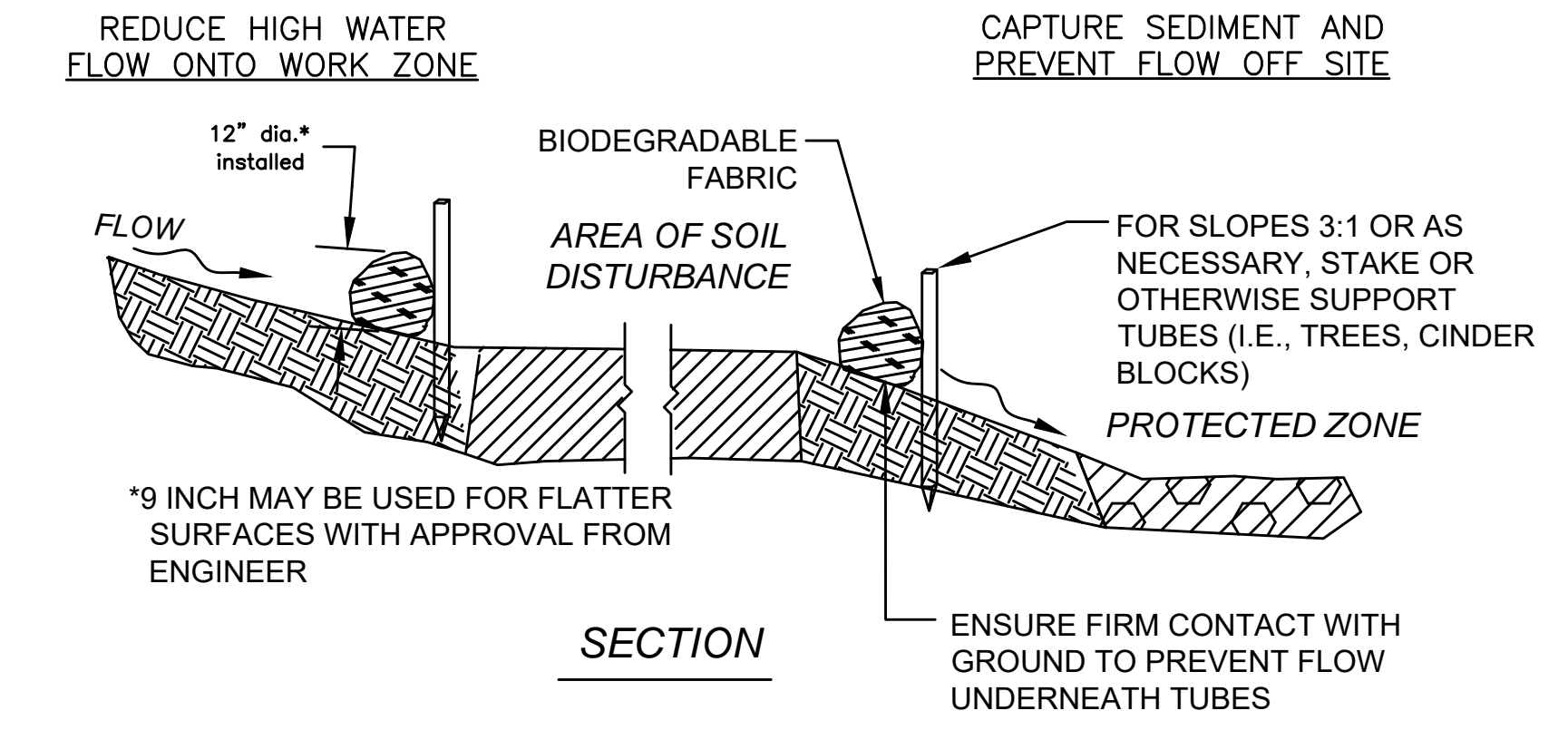
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK

NO TRESPASSING, STORAGE OF EQUIPMENT, OR STOCKPILING OF MATERIALS



PLAN VIEW

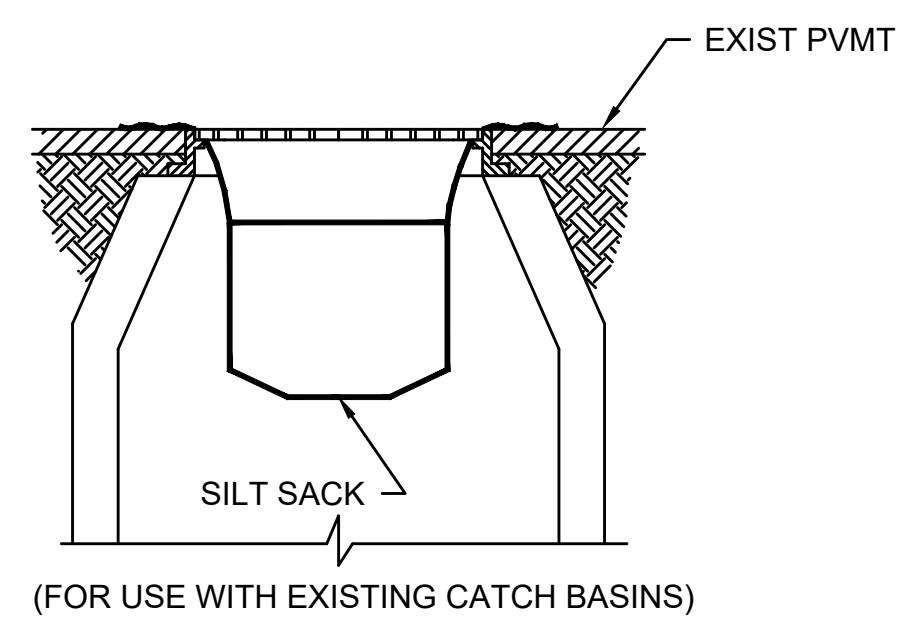


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

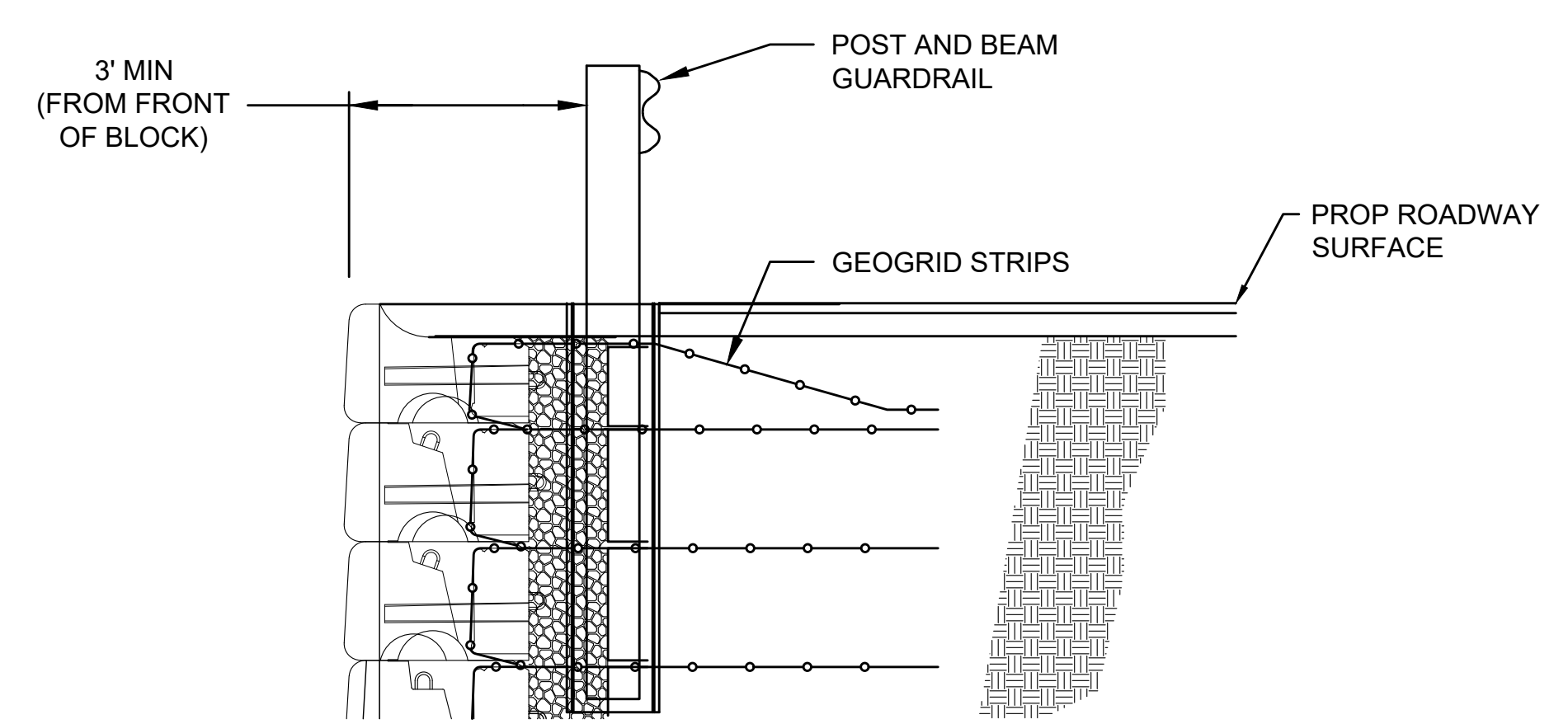
NOT TO SCALE

NOTES:
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



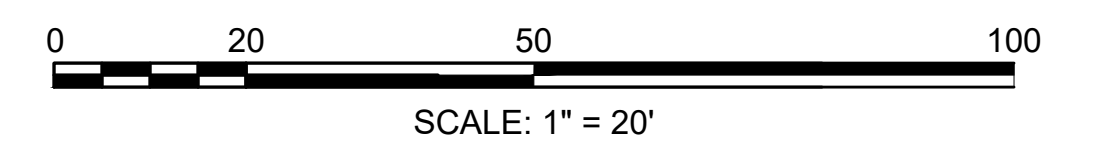
SILT SACK INLET PROTECTION

NOT TO SCALE



POST AND BEAM GUARDRAIL - SECTION VIEW

NOT TO SCALE





US Army Corps of Engineers®
New England District

WORK-START NOTIFICATION FORM
(Minimum Notice: Two weeks before work begins)

EMAIL TO: ruthann.a.brien@usace.army.mil and cenae-r@usace.army.mil; or

MAIL TO: Ruthann Brien
Regulatory Division
U.S. Army Corps of Engineers, New England District
696 Virginia Road
Concord, Massachusetts 01742-2751

Also, if the work is in the Massachusetts Coastal Zone (<https://www.mass.gov/service-details/czm-regions-coastal-communities-and-coastal-zone-boundary>), email this form to robert.boeri@mass.gov or mail it to: The Massachusetts Office of Coastal Zone Management, Project Review Coordinator, Suite 800, 251 Causeway Street, Boston, MA 02114.

Corps of Engineers Permit No. NAE-2021-00177 was issued to the City of Newburyport. This work is located in the Upper Artichoke Reservoir and authorized fill associated with bridge replacement.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

Business Address: _____

Phone & email: () _____ () _____

Proposed Work Dates: Start: _____ Finish: _____

Permittee/Agent Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Date Permit Issued: April 9, 2021 **Date Permit Expires:** April 5, 2023

FOR USE BY THE CORPS OF ENGINEERS

PM: Ruthann Brien **Submittals Required:** _____

Inspection Recommendation: _____



**US Army Corps
of Engineers**®
New England District

COMPLIANCE CERTIFICATION FORM
(Minimum Notice: Permittee must sign and return notification
within one month of the completion of work.)

Permit Number: NAE-2021-00177

Project Manager: Ruthann Brien

Name of Permittee: City of Newburyport

Permit Issuance Date: April 9, 2021

Please sign this certification and return it to our office upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

```

*****
* E-MAIL TO: cenae-r@usace.army.mil; or *
* *
* MAIL TO: Permits and Enforcement Branch A *
* U.S. Army Corps of Engineers, New England District *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *
*****

```

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

Printed Name

Date of Work Completion

() _____
Telephone Number

() _____
Telephone Number

Attachment C

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Addendum to Section 401 Water Quality Certification

WATER QUALITY UNIT SPECIFICATIONS
UPDATED SITE PLANS

ITEM 202.5**WATER QUALITY UNIT****EACH****DESCRIPTION**

The work under these items shall conform to the relevant provisions of Section 200 of the Standard Specifications and the following:

The work shall consist of furnishing and installing hydrodynamic separators as water quality units in conformance with the construction details, and at locations shown on the plans.

The water quality unit shall be Stormceptor Model STC-900 as manufactured by Rinker Materials or approved equal. Other acceptable water quality units include, but are not limited to, appropriately sized models of Vortechs and CDS as manufactured by Contech and Downstream Defender as manufactured by Hydro International. Any substitutions must demonstrate that they are capable of providing equivalent total suspended solids (TSS) removal with equivalent scour protection and internal high flow bypass ability.

The water quality units shall be sized to treat runoff from 1/2-inch rainfall intensity and provide 80% TSS removal for the impervious areas indicated below.

The impervious area contributing to each unit is as follows:

Location 1: West Newbury (West of Bridge) – 0.17 acres

Location 2: Newburyport (East of Bridge) – 0.03 acres

The Contractor is advised that the proposed locations of the separator units under this item are shown on the drawings in their approximate locations. The Contractor is responsible to coordinate the exact locations and exact elevations of the separator units in the field, and as required by the Engineer, to ensure the proper functional operation of all elements of the proposed stormwater drainage system(s) constructed as part of this project. All separator units under these items and their components shall be installed in accordance with the manufacturer requirements and as required by the Engineer.

The separators shall be capable of trapping silt and clay sized particles, in addition to large particles, and shall be installed underground as part of the stormwater drainage system(s). The separators shall be structurally designed for HS-20 (minimum) traffic loading at the surface, with the storage in the separator vertically oriented. The separator should be maintained from the surface via one access point.

The separator should be equipped with an internal high flow bypass that regulates the flow rate into the treatment chamber and conveys high flows directly to the outlet so the scour and/or resuspension of material previously collected in the separator does not occur. External bypasses are not acceptable. The bypass area must be physically separated from the separation area to prevent mixing with the separator circular and constructed from either fiberglass or precast concrete risers. The concrete separator shall be designed and manufactured in accordance with ASTM C-478.

The concrete joints shall be oil resistant, watertight and meet the design criteria according to ASTM C-443. A minimum of 12 inches of oil storage should be lined with fiberglass to provide secondary containment of any hydrocarbon materials.

The difference between the separator inlet pipe elevation and the separator outlet pipe elevation must be 1 inch. For configurations consisting of multiple inlet pipes, a 3 inch difference between horizontal inlet pipe inverts and the outlet pipe invert shall occur. The separators shall be capable of being used as a bend structure in the stormwater drainage system(s).

The separator shall be capable of handling floatable substance spills including free oil and shall not be compromised by temporary backwater conditions (i.e. trapped pollutants should not be resuspended and scoured from the separator during backwater conditions). The capabilities of the selected separator shall be documented with scientific studies and reports. Preference will be given to devices that have been verified by a state or federal storm water verification program.

The frame and cover shall include an indented top design with lettering of the unit's name cast into the cover to allow for easy identification in the field.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 202.5 shall be measured and paid for at the contract unit price per Each, complete in place. This price shall include all compensation for labor, materials, and equipment necessary to complete the work. Excavation and appurtenances for the units as shown on the details including the frame and cover shall be considered incidental to this item.

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10-15	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF
200-FOOT RIVERFRONT AREA (RFA)	REDEVELOPMENT	3,203	2,669	5,872	SF
	PERMANENT IMPACT	2,060	1,333	3,393	SF
	TEMPORARY IMPACT	552	702	1,254	SF
BORDERING LAND SUBJECT TO FLOODING (BLSF)	PROPOSED ALTERATION	167	44	211	SF
	PROPOSED REPLACEMENT	311	344	655	SF
	FLOOD STORAGE LOST	393	132	525	CF
	FLOOD STORAGE REPLACED	1,438	1,857	3,295	CF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

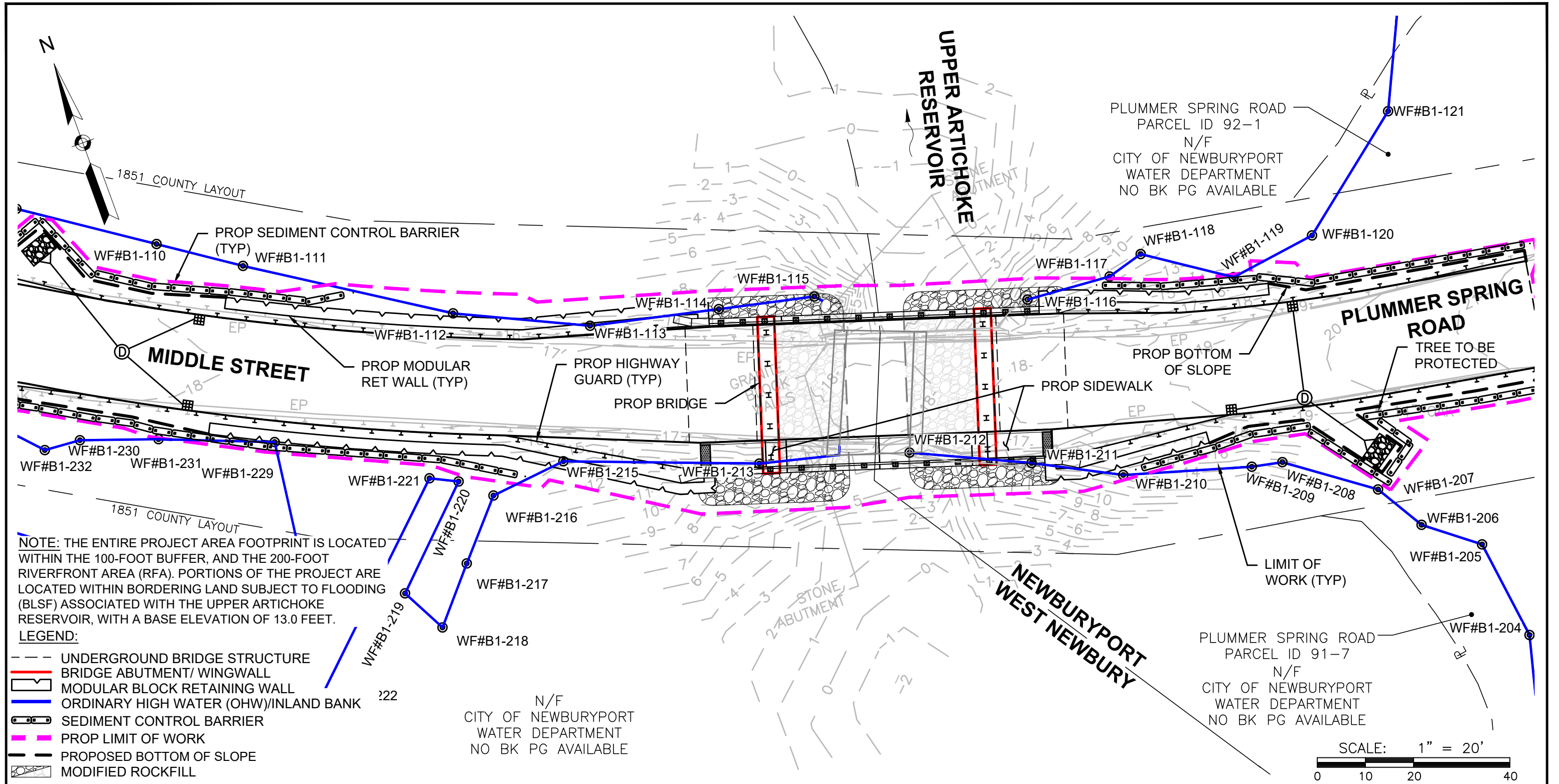
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: 05/07/2021
 Description: INDEX Figure: 1 OF 15

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 381 MAIN ST, WEST NEWBURY,
 MA 01985

PROPOSED CONDITIONS

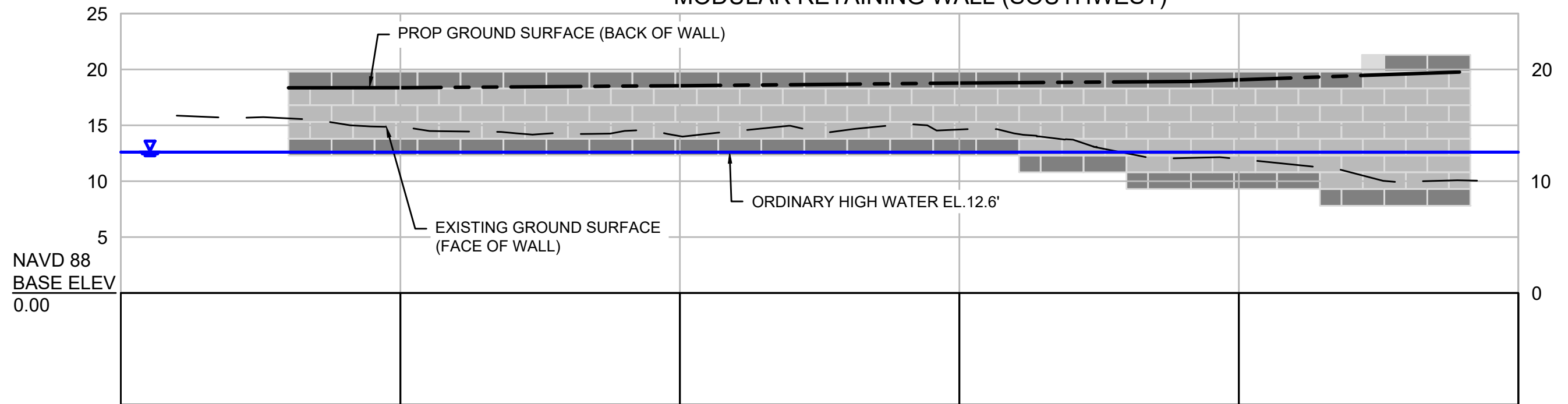
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BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

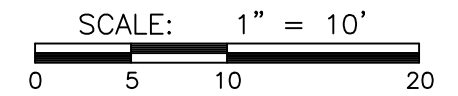
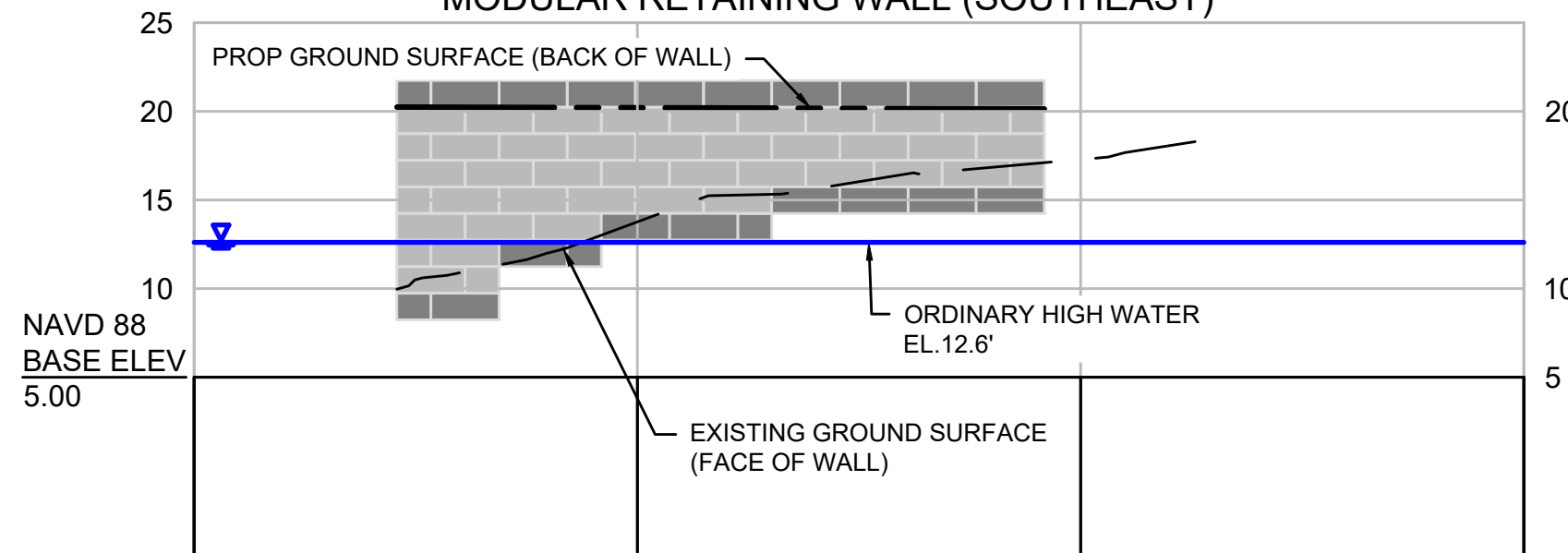
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 Scale: 1" = 20' Revised: 05/07/2021
 Description: PROP COND Figure: 4 OF 15

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MODULAR RETAINING WALL (SOUTHWEST)



MODULAR RETAINING WALL (SOUTHEAST)



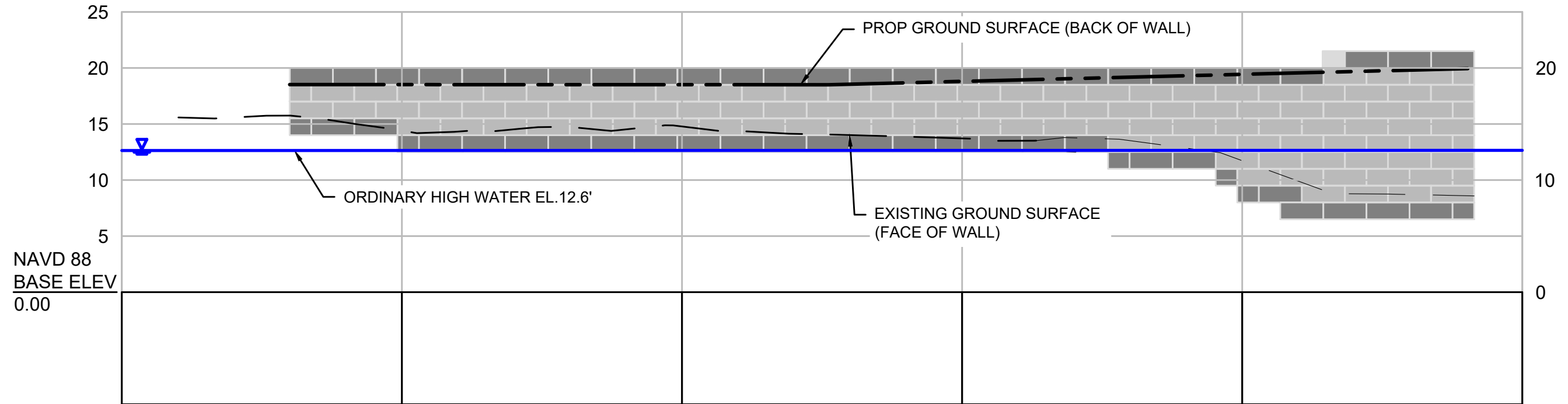
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 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

PROPOSED WALL PROFILE
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

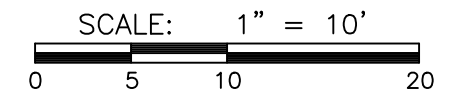
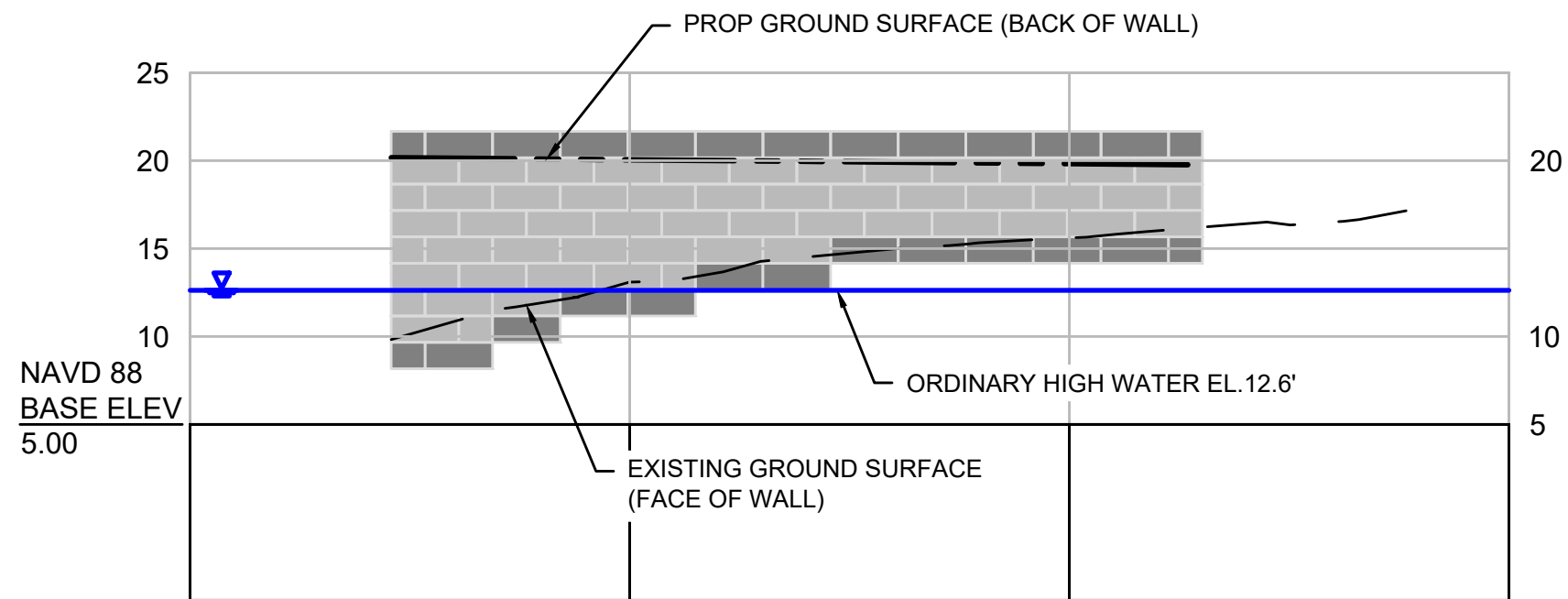
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 Scale: 1" = 10' Revised: 05/07/2021
 Description: PR WALL Figure: 5 OF 15

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 02127
 617 896 4300

MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

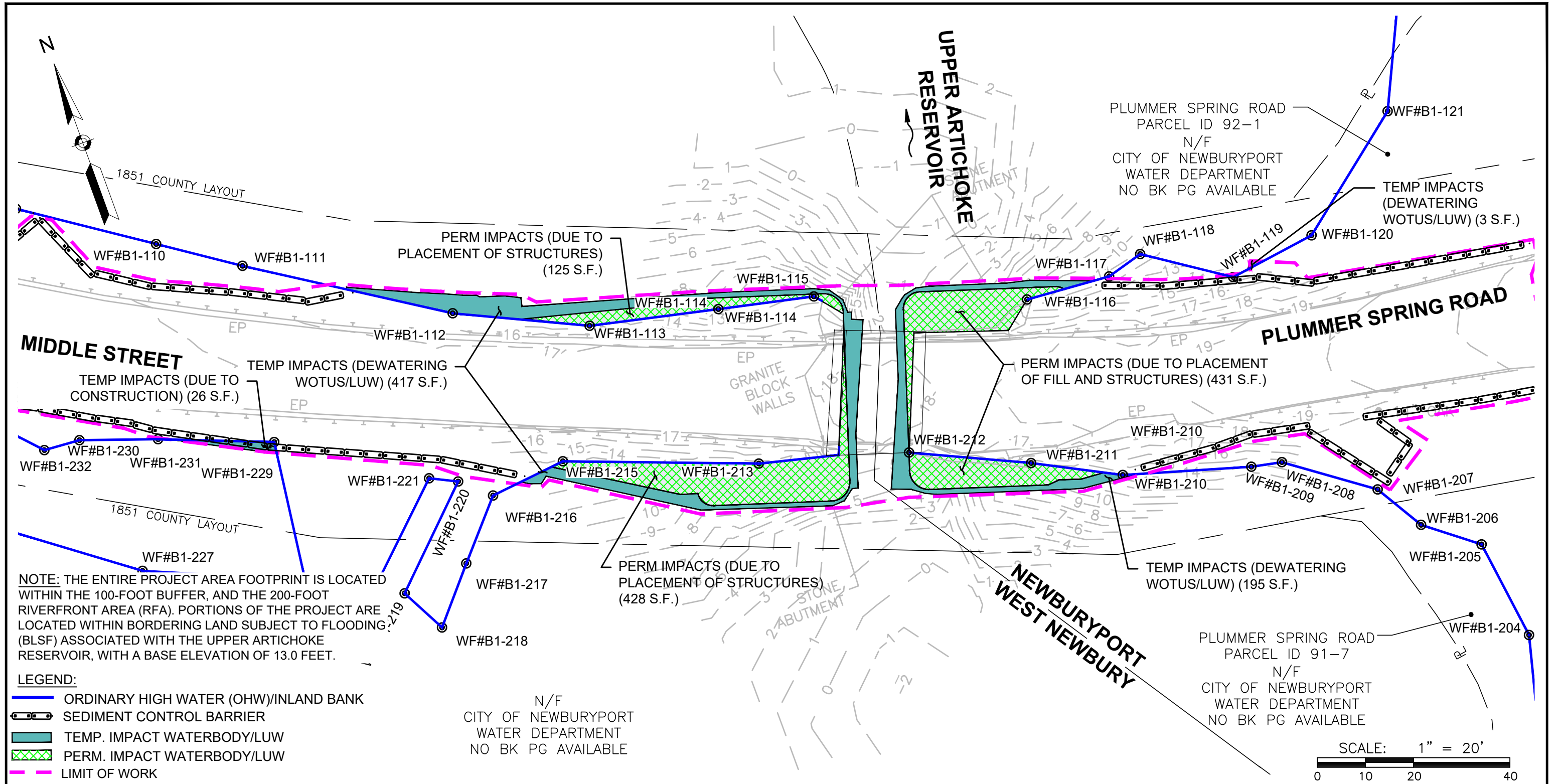


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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

PROPOSED WALL PROFILE
Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: 05/07/2021
Description: PR WALL Figure: 6 OF 15

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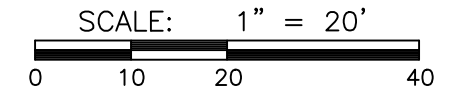
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LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- LIMIT OF WORK

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PLUMMER SPRING ROAD
PARCEL ID 91-7
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



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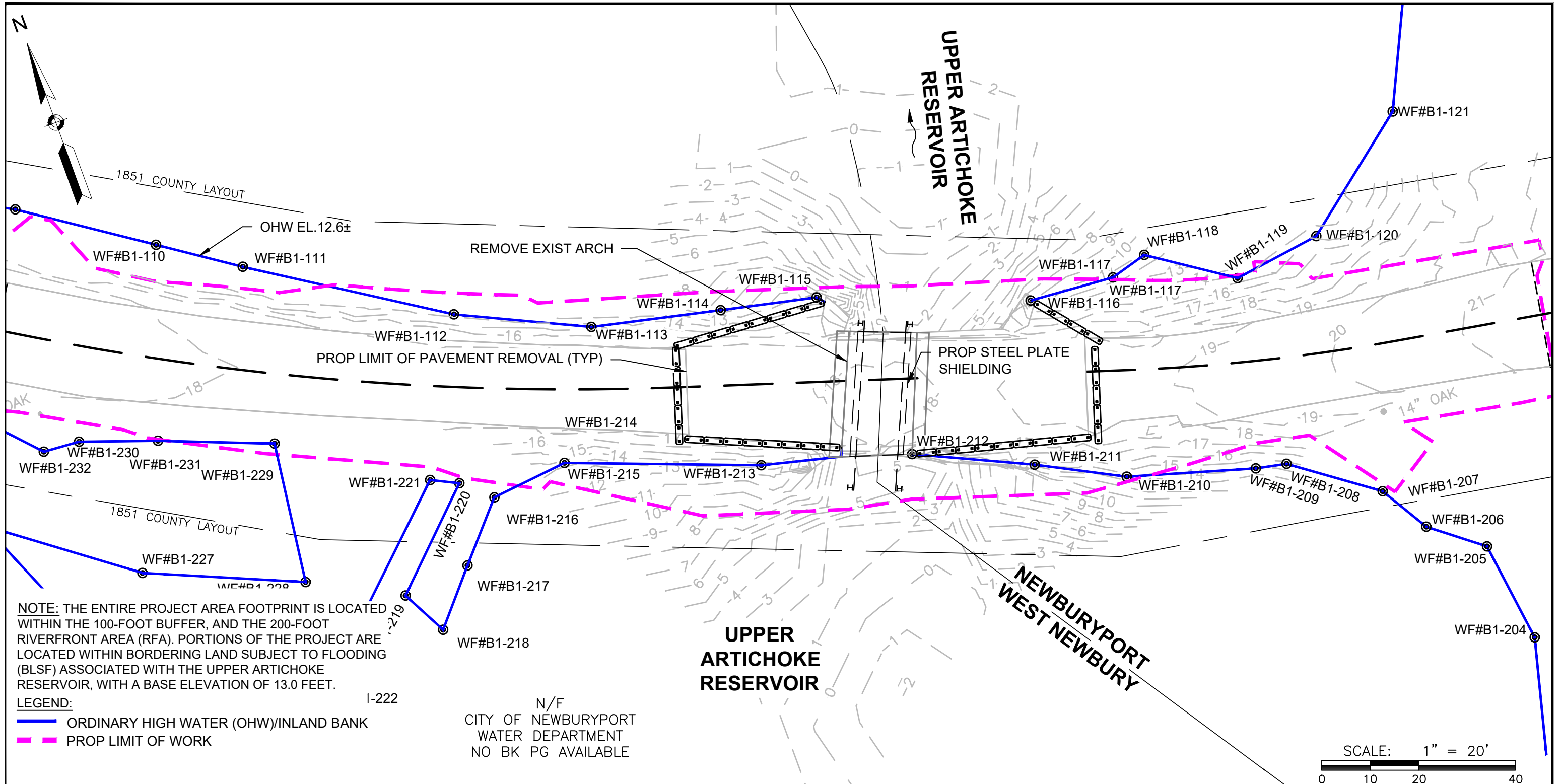
IMPACTS

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: 05/07/2021
Description: IMPACTS Figure: 9 OF 15

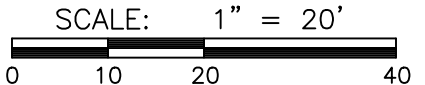
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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 - - - PROP LIMIT OF WORK

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

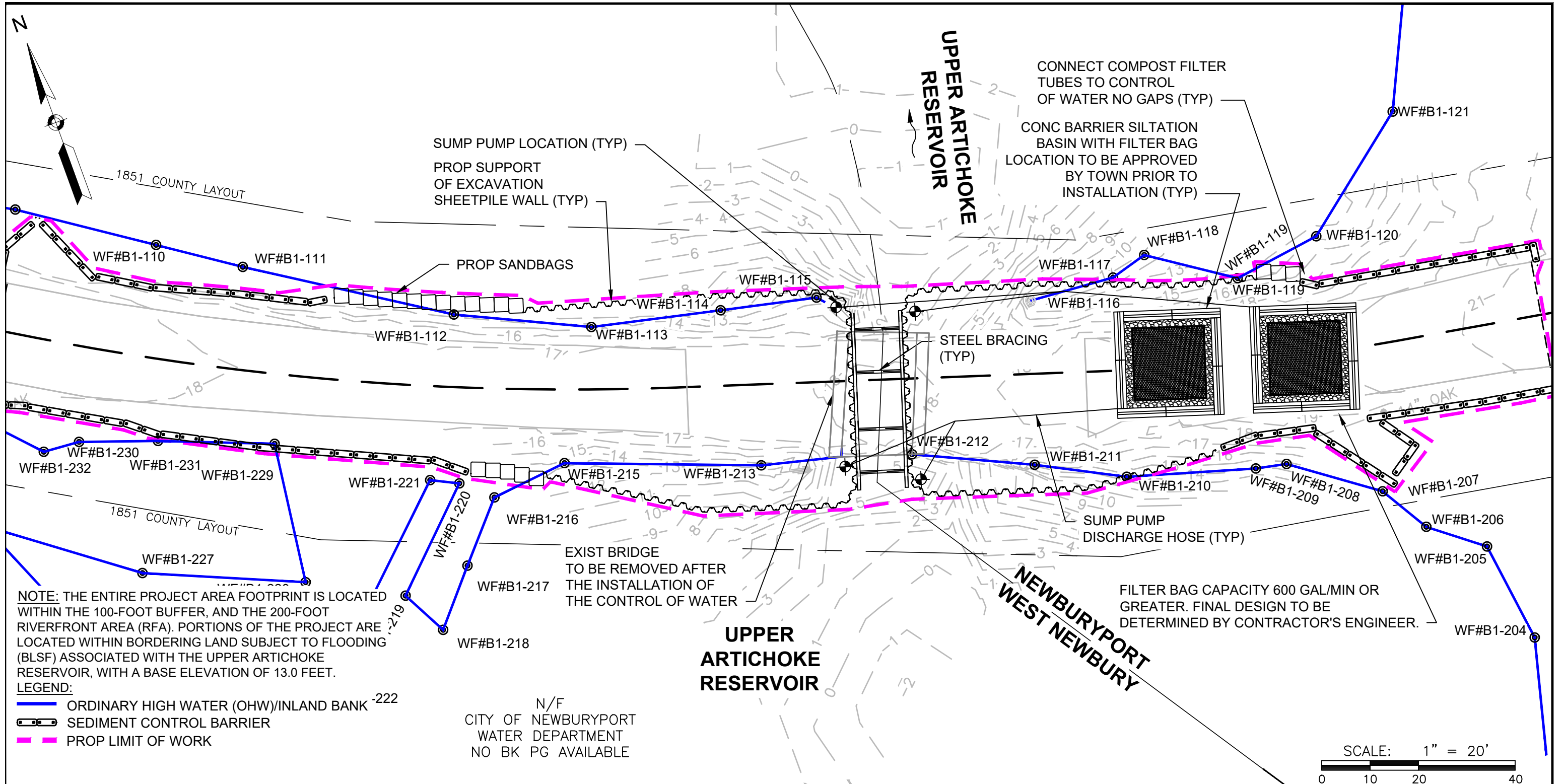


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SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 11 OF 15

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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 — SEDIMENT CONTROL BARRIER
 — PROP LIMIT OF WORK

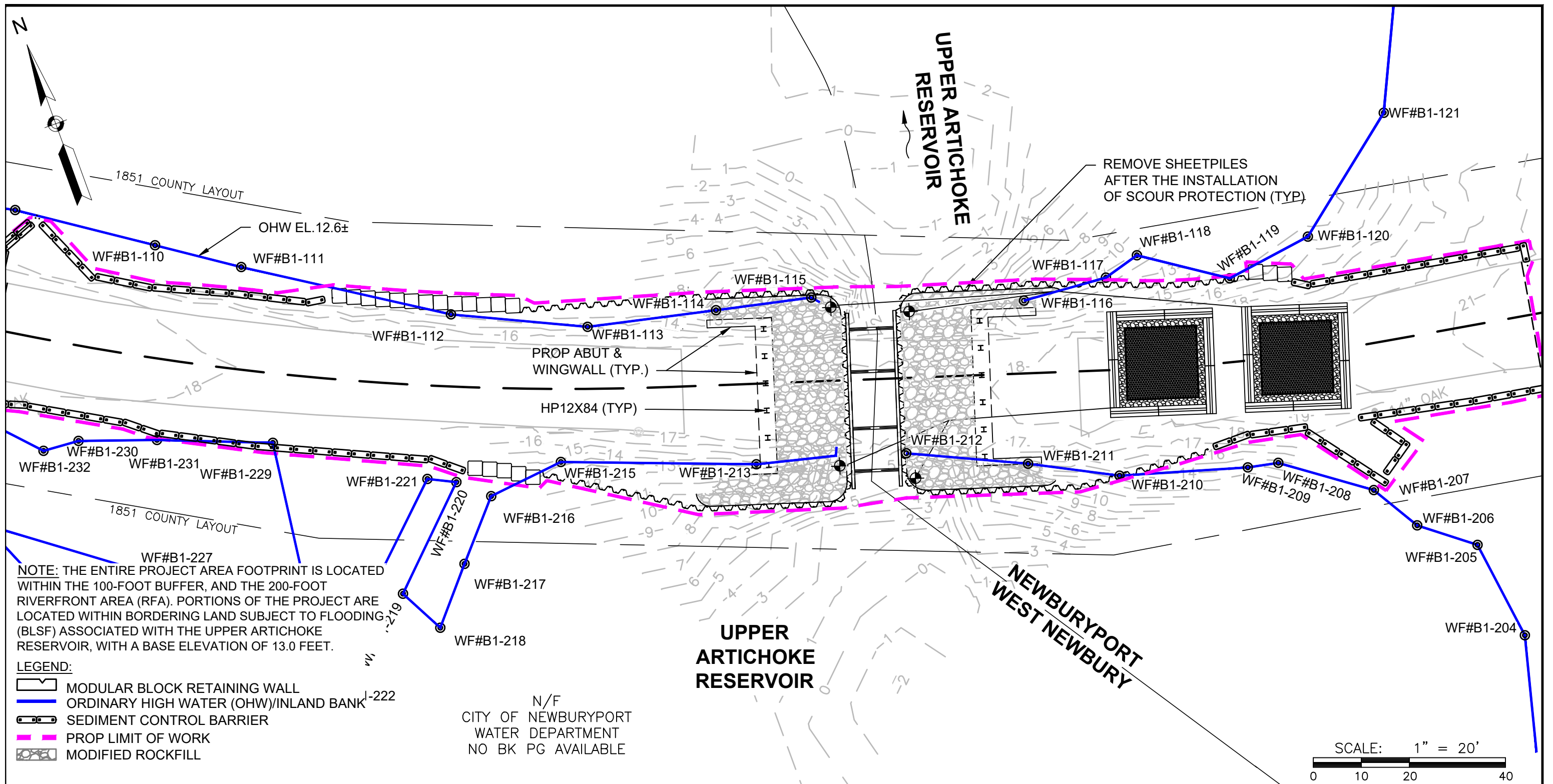
N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

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Source: **CONTROL OF WATER - PHASE 1 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
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 Scale: 1" = 20' Revised: 05/07/2021
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 02127
 617 896 4300

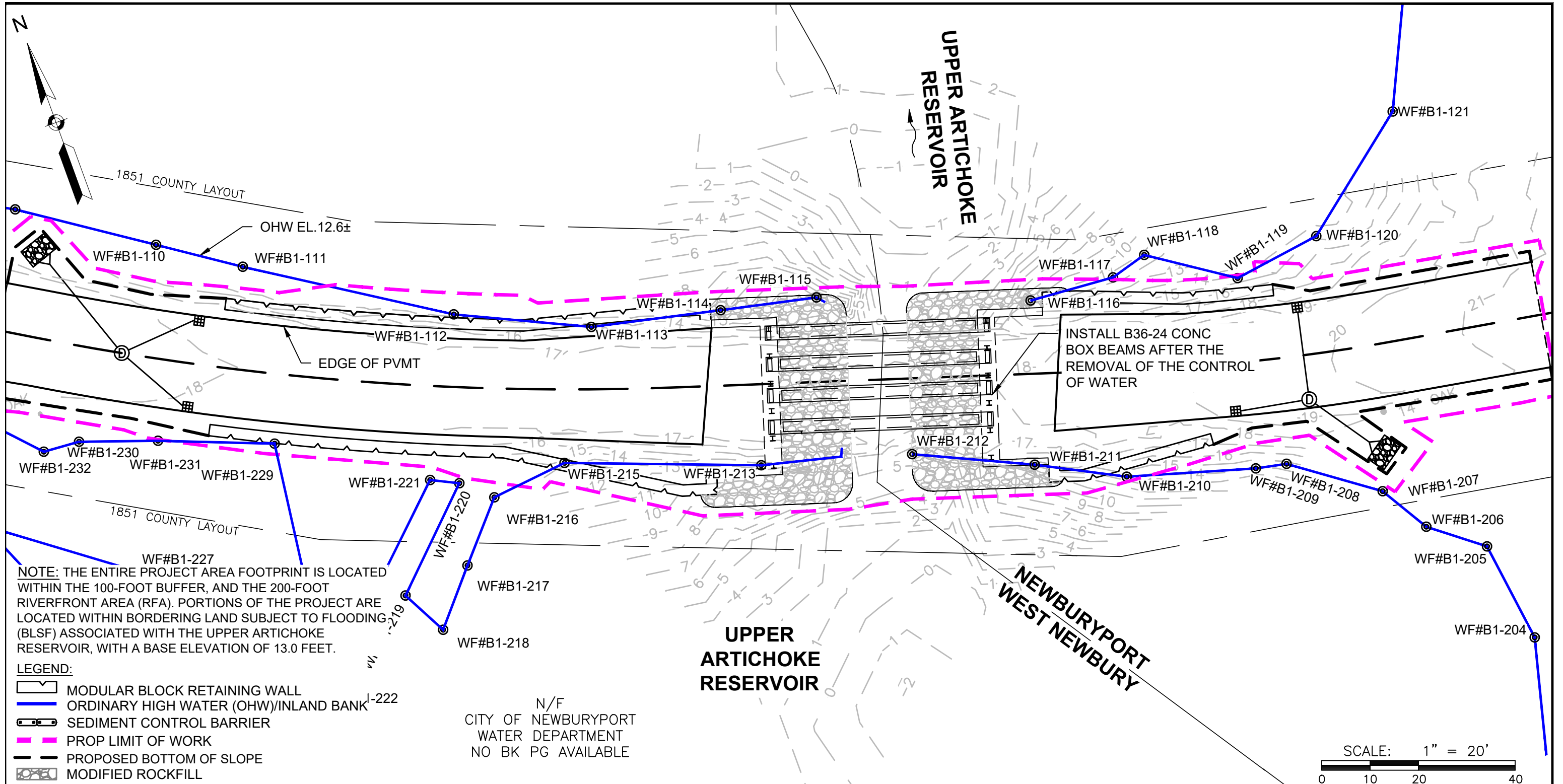


PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: 05/07/2021
 Description: COW Figure: 13 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source: **CONTROL OF WATER - PHASE 3 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: 05/07/2021
Description: COW Figure: 14 OF 15

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

Middle Street / Plummer Spring Road
Over the Upper Artichoke Reservoir
Bridge Replacement Project

Section 401 Water Quality Certification

BRP WW10 Major Fill and Excavation

West Newbury & Newburyport, MA

Massachusetts Department of Environmental Protection
January 2021

Prepared for:

Town of West Newbury
381 Main Street
West Newbury, MA 01985

City of Newburyport
16 C Perry Way
Newburyport, MA 01950

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

January 21, 2021

Massachusetts Department of Environmental Protection
Division of Wetlands – 401 WQC
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

**RE: Application for 401 Water Quality Certification
Middle Street / Plummer Spring Road over Upper Artichoke Reservoir
Bridge No. N-11-007
West Newbury & Newburyport, Massachusetts
DEP Transmittal Number: X287261**

Dear Reviewer:

BSC Group Inc., on behalf of the Town of West Newbury and the City of Newburyport (“the Applicants”), is submitting this application for Massachusetts 401 Water Quality Certification (BRP WW 10 – Major Project Certification) under the Federal Water Pollution Control Act (33 U.S.C. 1341 et seq., S.401); Massachusetts Clean Water Act, (M.G.L. c.21 ss26-53); Surface Water Quality Standards (314 CMR 4.00); and 401 Water Quality Certification (314 CMR 9.00).

The Applicants are proposing to replace the structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir (Bridge No. N-11-007) in West Newbury & Newburyport, Massachusetts. The bridge is in poor condition and the road is currently closed due to structural deficiencies. Therefore, the Applicant proposes to replace the bridge structure with a new structure on a similar horizontal and vertical alignment. The proposed bridge will expand the hydraulic opening of this stream crossing while also improving roadway safety. An NOI application is being submitted concurrently with this application to each of the respective Conservation Commissions. Once Orders of Condition have been completed, they will be forwarded to the DEP. Similarly, a PCN application is being submitted concurrently with this application to the U.S. Army Corps of Engineers. The project is being advertised on January 22, 2021 within the Environmental Monitor and the Newburyport Daily News.

The bridge replacement project is subject to 33 U.S.C. 1251 et seq. as an activity that will result in a discharge of fill material to Waters of the US/Land Under Water (LUW). The project requires a permit for authorization of 984 square feet of permanent LUW impacts and 641 square feet of temporary LUW impacts. The project will net 885 square foot gain in LUW from increased openness of the expanded crossing. No vegetated wetlands will be impacted as a result of this project.

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



Despite being below the impact thresholds where a valid Order of Conditions under the Massachusetts Wetlands Protection Act typically serves as a 401 WQC, this individual application is required per 314 CMR 9.04 (2) for discharge of fill to an Outstanding Resource Water. The Upper Artichoke Reservoir is considered a Class A water in the MassGIS Surface Water Supply Protection Areas datalayer / 314 CMR 4.06 Table 20. A Chapter 91 application is not required, nor being submitted for this project as the Upper Artichoke Reservoir, interrupted by two dams, is not navigable and falls under the exemption within 310 CMR 9.05.(3)(c) for an existing public services project.

If you have any questions regarding this application, please do not hesitate to contact me at 617-896-4579 or skreisel@bscgroup.com.

Sincerely,
BSC Group, Inc.

A handwritten signature in blue ink, appearing to read "Sara Kreisel".

Sara Kreisel
Ecological Project Manager

Enclosed: WQC Application

cc: Jon-Eric White, City Engineer, Newburyport
Angus Jennings, West Newbury

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West Newbury & Newburyport, Massachusetts
Section 401 Water Quality Certification

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ATTACHMENT B	SITE FIGURES SITE PHOTOGRAPHS
ATTACHMENT C	ALTERNATIVES ANALYSIS
ATTACHMENT D	PUBLIC NOTICE – SUBMITTED TO THE ENVIRONMENTAL MONITOR FOR JANUARY 22, 2021 PUBLICATION PUBLIC NOTICE – SUBMITTED TO THE LOCAL NEWBURYPORT DAILY NEWS FOR JANUARY 22, 2021 PUBLICATION
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ATTACHMENT F	SITE PLANS CONSTRUCTION DETAILS



Enter your transmittal number

X287261

Transmittal Number

Your unique Transmittal Number can be accessed online:

<http://www.mass.gov/eea/agencies/massdep/service/approvals/transmittal-form-for-payment.html>

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: MassDEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

* **Note:**
For BWSC Permits, enter the LSP.

A. Permit Information

BRP WW 10

1. Permit Code: 4 to 7 character code from permit instructions

Bridge Replacement Project

3. Type of Project or Activity

Major Fill Project

2. Name of Permit Category

B. Applicant Information – Firm or Individual

Town of West Newbury (W.N.) / City of Newburyport (Nbpt)

1. Name of Firm - Or, if party needing this approval is an individual enter name below:

Jennings (W.N.) / White (Nbpt)

Angus (W.N.) / Jon-Eric (Nbpt)

2. Last Name of Individual

3. First Name of Individual

4. MI

381 Main Street, West Newbury / 16 C Perry Way, Newburyport

5. Street Address

West Newbury / Newburyport

MA

01950/01985

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

Angus Jennings (W.N.) / Jon-Eric White (Nbpt)

townmanager@wnewbury.org (W.N.)

11. Contact Person

jewwhite@cityofnewburyport.com (Nbpt)

C. Facility, Site or Individual Requiring Approval

Middle Street / Plummer Spring Road over Upper Artichoke Reservoir

1. Name of Facility, Site Or Individual

Middle Street / Plummer Spring Road

2. Street Address

West Newbury / Newburyport

MA

01950/01985

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

BSC Group, Inc.

1. Name of Firm Or Individual

803 Summer Street

2. Address

Boston

MA

02127

617-896-4579

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

Sara Kreisel (skreisel@bscgroup.com)

8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? yes no
If yes, enter the project's EOE file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

1. Fee Exempt (city, town or municipal housing authority)(state agency if fee is \$100 or less).
There are no fee exemptions for BWSC permits, regardless of applicant status.
2. Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. Homeowner (according to 310 CMR 4.02).

Check Number

Dollar Amount

Date



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Wetlands and Waterways
BRP WW 10 Major Project Certification
BRP WW 11 Minor Project Certification
 401 water Quality Certification for Fill and excavation
 Projects in waters and Wetlands

X287261
 Transmittal Number #

A. Applicant Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Which permit category are you applying for?

BRP WW 10 BRP WW 11

2. Applicant/Owner:

The Town of West Newbury & The City of Newburyport
 Name

381 Main Street West Newbury; 16 C Perry Way, Newburyport
 Address

West Newbury & Newburyport
 City/Town

MA
 State

01985; 01950
 Zip Code

Angus Jennings - West Newbury; Jon-Eric White, City Engineer - Newburyport
 Contact Person

(978) 363-1100 x111 (West Newbury)
 Telephone (home)

978-465-4464 x1710 (Newburyport)
 (work)

3. Authorized Agent

BSC Group, Inc
 Name

803 Summer Street
 Address

Boston
 City/Town

MA
 State

02127
 Zip Code

Sara Kreisel
 Contact Person

Telephone (home)

617-896-4579
 (work)



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Wetlands and Waterways
BRP WW 10 Major Project Certification
BRP WW 11 Minor Project Certification
 401 water Quality Certification for Fill and excavation
 Projects in waters and Wetlands

X287261
 Transmittal Number #

B. Project Information

1. Project Location:

Middle Street / Plummer Spring Road over Upper Artichoke Reservoir
 Address
 West Newbury / Newburyport MA 01985; 01950
 City/Town State Zip Code
 Upper Artichoke Reservoir
 Nearest or Adjacent Waterbody

2. Project Name (if any):

Middle Street / Plummer Spring Road over Upper Artichoke Reservoir, Bridge Replacement Project

3. a. Describe project purpose:

The purpose of the project is to replace a structurally deficient, undersized bridge on a public roadway. Please refer to the Project Narrative for additional details.

b. Is the project

water-dependent non water-dependent

4. a. provide a brief description of the proposed project (See Application Instructions and include a copy of the Notice of intent, if any.):

Bridge replacement project, Bridge No. N-11-007, Middle Street, West Newbury / Plummer Spring Road, Newburyport, MA over the Upper Artichoke Reservoir. Existing structure closed in 2018 to vehicular traffic due to collapse of portions of foundation. Refer to Narrative for additional details.

b. Notice of Intent File number (if any): WestNewbury: 078-0724; Newburyport: TBD

5. Identify the loss in square feet of each type of resource area (see Application Instructions for additional information.):

a. Bordering vegetated wetland:	<u>0</u> square feet
b. Isolated vegetated wetland:	<u>0</u> square feet
c. Land under water:	<u>984</u> square feet
d. Total cumulative loss of a. + b. + c.:	<u>984</u> square feet
e. Salt marsh:	<u>0</u> square feet



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection – Wetlands and Waterways
BRP WW 10 Major Project Certification
BRP WW 11 Minor Project Certification
 401 water Quality Certification for Fill and excavation
 Projects in waters and Wetlands

X287261
 Transmittal Number #

B. Project information (cont.)

6. a. Will the proposed project occur in any wetlands or waters designated as "Outstanding Resource Waters"?

Yes No

If yes has public notice been published in the Environmental Monitor?

Yes No

January 22, 2021

Date of Publication

b. Is this project a subdivision or any part of a subdivision? Yes No

c. Is the project categorically subject to MEPA? Yes No

If yes, has final action been taken? Yes No

If yes, please include copy of MEPA certificate.

7. Alternatives Analysis:

As related to the project purpose, attach a detailed description of alternatives to the proposed project that were considered and why none are available that avoid adverse impacts to wetlands and waters.

If no alternatives are available, describe how the activity will minimize or mitigate the adverse impacts to wetlands and waters.

See application instructions for information required. Attach required documentation.

C. Additional Information

1. Is any of your proposed work exempt from the Massachusetts Wetlands Protection Act or taking place in a federal non-state wetland?

Yes No If yes, see Application Instructions for additional information needed.

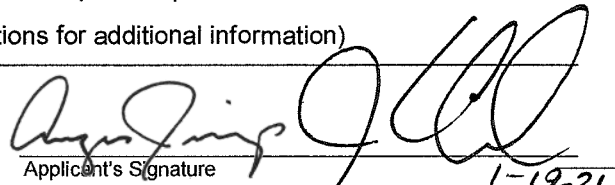
2. Public notice to a newspaper of general circulation within the area of the proposed activity must be published within 10 days of the date of this application. Is proof of public notice submitted?

Yes No (See Application Instructions for additional information)

D. Certification

Application is hereby made for water quality certification.

"I certify that I am familiar with the work proposed and that to the best of my knowledge and belief the information contained in this application is true, complete, and accurate."


 Applicant's Signature
 Angus Jennings
 Print name
 Jon-Eric White
 1-19-21

 Agent's Signature
 Sara Kreisel
 Print Name
 January 19, 2021
 Date

Attachment A

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Section 401 Water Quality Certification

PROJECT NARRATIVE

1.0 Introduction

The BSC Group Inc., on behalf of both the Town of West Newbury and the City of Newburyport (“the Applicant”) is submitting this application for Massachusetts 401 Water Quality Certification (BRP WW 10 – Major Project Certification) under the Federal Water Pollution Control Act (33 U.S.C. 1341 et seq., S.401); Massachusetts Clean Water Act, (M.G.L. c.21 ss26-53); Surface Water Quality Standards (314 CMR 4.00); and 401 Water Quality Certification (314 CMR 9.00).

The Applicant proposes to replace the structurally deficient, undersized bridge (Bridge No. N-11-007) over the Artichoke River / Upper Artichoke Reservoir (hereby referred to as “the bridge”) located on Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA (See Attachment B for Site Location Maps and Photos). The bridge is structurally deficient due to undermining of the existing roadway foundation and will be replaced with a new bridge with a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness.

Project activities will require authorization under Section 401 of the Federal Clean Water Act (33 U.S.C. 1251 et seq.) as it requires work within Waters of the United States (WOTUS) within the Commonwealth. Despite being below the impact thresholds where a valid Order of Conditions under the Massachusetts Wetlands Protection Act (WPA) typically serves as a 401 WQC, this individual application is required per 314 CMR 9.04 (2) for discharge of fill to an Outstanding Resource Water (ORW). According to MassGIS data layers, the entire project area occurs within an Outstanding Resource Water (ORW) and Surface Water Protection Zone associated with the Upper Artichoke Reservoir, which is an Article 97, municipal land, and a public water supply watershed. While the proposed work may involve “*the discharge of dredged or fill material into wetlands or waters of the Commonwealth within 400 feet of the high water mark of a Class A surface water (exclusive of tributaries),*” a variance will not be required from the Department as the work is “*associated with an activity conducted by a ...public agency or authority for the maintenance or repair of existing public roads...*” per 314 CMR 9.06 (4). Specifically, work is proposed jointly by the Town of West Newbury and the City of Newburyport.

The project will replace the existing 14.3-foot stone arch bridge with a 45-foot span bridge which will address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The bridge structure will be protected by retaining walls and riprap, which will be overlaid with natural streambed material. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The roadway width will increase by approximately 4 feet to include safety improvements (sidewalk) to the existing alignment; however, this does not constitute a substantial enlargement compared to existing conditions since enlargement is not the intent. Please refer to the Environmental Resource Map in Attachment B and Site Plans in Attachment F for details.

The project will have approximately 984 square feet (sf) of new permanent impacts to Land Under Water (LUW) / land below Ordinary High Water (OHW), associated with the installation of retaining walls, the bridge abutments, and riprap around the inlet and outlet; however, a total of 885 sf of new LUW will be created with the increased openness of the expanded crossing. An additional 641 sf of temporary waterbody impact will be incurred due to the construction and dewatering activities. All temporary impacts will be restored to pre-construction conditions.

Since the Reservoir is classified as an ORW, the Project will require a Major Project Certification (BRP WW 10). A Notice of Intent (NOI) is being concurrently submitted to the Newburyport and West Newbury Conservation

Commissions for review under the Massachusetts WPA and implementing regulations of 310 CMR 10.00. A Pre-Construction Notification is also being submitted to the US Army Corps of Engineers pursuant to Section 404 of the United States Clean Water Act (33 U.S.C.1251), under the General Permits for Massachusetts (GPs). The project has been designed to be in compliance with the Massachusetts Stream Crossing Standards to the maximum extent practicable and improves openness and habitat connectivity. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment F) for additional details.

2.0 Existing Conditions

West Newbury is located on the northwestern side of the bridge, and Newburyport is on the eastern side. Plummer Spring Road in Newburyport turns into Middle Street upon entering West Newbury. The project site is approximately 2,000 feet west of the intersection with Turkey Hill Road in Newburyport and approximately 0.7 mile east of the intersection with Garden Street in West Newbury. The crossing occurs within the Upper Artichoke Reservoir, a public water supply. The surrounding area is comprised of Article 97 lands, reserved for water supply protection. Beyond that, the area is generally characterized by low-density residential development. The bridge predates and divides the existing Upper Artichoke Reservoir, through which the Artichoke River flows. The Reservoir was originally formed by damming the Artichoke River which flows north to the Merrimack River. While the majority of the surrounding area consists of residential development and forested land, the project area is limited to previously disturbed Riverfront Area and other resource areas encumbered by the existing bridge.

The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. The road and stone arch bridge were constructed in 1891 before the Upper Artichoke Reservoir was built. The low chord on the existing arch is set at an elevation of 16.20 feet. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10-feet for a total roadway width of approximately 17-feet to 20-feet. There are no sidewalks on the bridge. The bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. The project area consists of country drainage, whereby runoff travels to the approach roadway and informally runs off down the side slopes. Plummer Spring Road / Middle Street is functionally classified as a Rural Local road.

2.1 Wetland Resource Areas

BSC wetland scientists delineated the boundary of existing wetland resource areas within and in the immediate vicinity of the bridge in December 2019. Wetlands were delineated in accordance with the methods developed by the Massachusetts Department of Environmental Protection's (MassDEP) Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act, dated 1995, as well as definitions set forth in the Wetlands Regulations 310 CMR 10.00 (Wetlands Protection Act Regulations). Existing conditions, wetland resource areas, and buffer zones in relation to the proposed activities are shown in the figures and photos in Attachment B.

Watershed

The Artichoke River generally flows in a south-to-north orientation in the Upper Artichoke Reservoirs before discharging into the Merrimack River, 1.3 miles north of the project area. The Artichoke River connects the Upper Artichoke Reservoir, the Lower Artichoke Reservoir, and the Merrimack River, by two dams. According to the USGS Stream Stats Report for this area, the drainage area at the Plummer Spring Road / bridge crossing is approximately 5.48 square miles.

Bank

The natural banks of the Reservoir have gradual slopes vegetated mainly by deciduous and occasionally coniferous trees. The banks are littered with leaf detritus as a result. The roadway is steeply sloped, and the banks are vegetated with shrubs and trees growing over a riprap substrate.

Bordering Vegetated Wetlands

No Bordering Vegetated Wetlands were identified within the project site.

Land Under Waterbodies and Waterways

The entire bed of the Reservoir upstream and downstream of the existing crossing, and within the existing bridge crossing constitutes LUW. The streambed near the crossing is characterized by sand and cobbles with trace amounts of silt and gravel.

2.2 FEMA Floodplain

According to the FEMA Flood Insurance Rate Maps for Newburyport / West Newbury (Community Panel Number 25009C0116F dated July 2012), the project occurs within the 100-year floodplain (Zone AE). The bridge is located within Zone AE for the 100-year storm event at, and below the 13-foot base flood elevation.

2.3 Rare, Threatened, and Endangered Mapped Habitat

According to the most-recently published (2017-2020) information using MassGIS data layers, there are no Natural Heritage Endangered Species Program (NHESP) Priority Habitats of Rare Species, Estimated Habitats of Rare Wildlife, potential or certified vernal pools within the vicinity of the proposed project.

Additionally, according to the US Fish and Wildlife Service (USFWS) Information for Planning and Consulting (IPaC) tool, the northern long eared bat (*Myotis septentrionalis*) is listed within the limits of the project area. However, NHESP has no records of winter hibernacula within ¼ mile of the project site, nor known maternity roost trees within 150 feet. Therefore, due diligence complies with the 4(d) rule. The project will minimize disturbance to the vegetation to the maximum extent practicable. Some smaller trees along the roadway are proposed to be removed as a result of this work (< 0.1 acres).

2.4 Other Environmental Resources

According to MassGIS data layers, the entire project area occurs within an Outstanding Resource Water (ORW) and Surface Water Protection Zone associated with the Upper Artichoke Reservoir, which is an Article 97, municipal land, and a public water supply watershed. According to MassGIS data layers, the project area does not fall within an Area of Critical Environmental Concern (ACEC), neither the Upper Artichoke Reservoir nor the river are EPA impaired waterways, nor Coldwater Fisheries (CFR).

3.0 Alternative Analysis

The Project has been designed to avoid, minimize, and mitigate project-related impacts to the maximum extent practicable. Due to the water-dependent nature of the project, it is not possible to locate the bridge structure further from the Reservoir than is currently proposed. Given that this proposed project is for the redevelopment of an existing bridge a majority of the work will occur within the footprint of the existing crossing. Only minimal encroachment into non-altered areas is required, and only to the extent required for the most practicable and substantially equivalent economical bridge design.

The design of the bridge has been analyzed by engineers with four possible alternatives: a No-build, a Three-sided Open Bottom Bridge with a precast concrete rigid frame (Alternative 1), an Open Bottom Arch Bridge with precast concrete arch (Alternative 2), and a Three-sided Open Bottom Bridge with a precast concrete beam (Alternative 3, preferred alternative).

All replacement options will include a wider span, greater openness, increased habitat connectivity and improved wildlife passage, all seen as typically beneficial outcomes for stream crossing replacements. To address the replacement of the existing bridge, project impacts to wetland resource areas cannot be avoided. However, proposed project activities and associated mitigation measures have been designed to avoid and minimize adverse impacts for work within wetland resource areas.

The existing bridge over the Upper Artichoke Reservoir has already partially collapsed which has resulted in the road being permanently closed to traffic in its current state. In order to reduce the risk of injury from any further collapse, and to reopen the roadway, it is necessary to replace the bridge. The selected Alternative has been designed to incur the least amount of impacts to wetland resource areas, and meet the Massachusetts Stream Crossing Standards. Please refer to Attachment C for a detailed analysis of the different stream crossing alternatives and their abilities to meet Stream Crossing Standards.

No-Build Alternative

The No Build Alternative assumes that the proposed bridge replacement project would not be constructed, and the existing bridge would remain in-place. While there would be no impacts as a result of construction, there would also not be any of the benefits realized that replacing the bridge would provide. Due to the deteriorating nature of the existing structure that has resulted in the closing of the roadway, this alternative is not considered feasible.

Alternative 1: Three-sided Open Bottom Bridge, Precast Frame

This alternative proposes a three-sided open bottom bridge with a precast concrete 22-foot clear span rigid frame. The structure would include a 24-foot roadway with no sidewalks and continuous guardrail. It would have an overall width of 27'-3", have spread footing, and the preliminary estimate is \$2.4M.

Advantages

- Prefabricated
- Low maintenance cost

Disadvantages

- Higher Cost
- No pedestrian access
- Deep excavation required
- Wetland resource area impact

Alternative 2: Open Bottom Arch Bridge, Precast Concrete Arch

This alternative proposes an open bottom arch bridge with precast concrete 30'-8" span arch. The structure would include a 24-foot roadway with no sidewalks and S3-TL4 bridge rail. It would have an overall width of 27'-3", have pile footings, and the preliminary estimate is \$2.3M.

Advantages

- Prefabricated
- Continues arch style

Disadvantages

- Higher Cost
- No pedestrian access
- Higher construction duration
- High wetland resource area impact

Alternative 3 (Preferred Alternative): Three-sided Open Bottom Bridge, Precast Beam

This alternative proposes a three-sided open bottom bridge with a precast concrete 45-foot span spread box beam. The structure would include a 24-foot roadway with one sidewalk and S3-TL4 bridge rail. It would have an overall width of 32'-6", there would be integral abutments on piles, and the preliminary estimate is \$2.6M.

Advantages

- Pedestrian Access / Safety
- Low maintenance cost

Disadvantages

- Higher Cost
- Construction duration
- Increased permitting requirements
- Greater wetland resource area impact

4.0 Proposed Project

The purpose of the project is to replace a structurally deficient, undersized bridge with a new bridge along a similar horizontal and vertical alignment. The project activities include the replacement of the bridge over the Upper Artichoke Reservoir in its entirety. The full sequence of project construction activities will take approximately twelve months to construct. The project involves mitigation measures intended to address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The roadway width will increase by approximately 4 feet to include safety improvements to the existing alignment. A 5-foot sidewalk will be added to the south side of the bridge. Roadway reconstruction of Middle Street will occur 160-feet to the west of the bridge and 115-feet to the east on Plummer Spring Road for improved roadway approaches. The total length of the project is approximately 320-feet. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment F) for additional details.

- **Proposed Bridge** – The proposed bridge is a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The proposed span length will increase from the 14-feet to 45-feet. The overall width of the bridge will be 32.5-feet to accommodate safety improvements, including the sidewalk. In addition to substantially increasing the openness ratio, the increased span eliminates the need for the bridge's substructure to be located in the deep portion of the reservoir. In accordance with the MassDOT Bridge Manual for a Rural Local road, the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing condition.

- **Riprap Scour Protection** –With the increased span, to achieve a 1:1.5 vertical: horizontal ratio from the elevation of the existing streambed to the elevation at the new bridge abutments, slope stabilization is required. The slope stabilization will consist of 36-inches of variable sized riprap (10- to 22-inch stones) placed below the natural streambed material. In addition, 6-inches of natural streambed material is proposed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.
- **Roadway Reconstruction** – At the approaches of the existing bridge the roadway is narrow and the slopes adjacent to the roadway are steep making the existing guardrail ineffective. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable. However, in areas where slopes with a 1:1.5 vertical: horizontal ratio or less exist, they will be regraded (without impacting the reservoir),
- **Installation of Guardrail and Repaving Activity** – Bridge replacement activities provide an opportunity to make safety improvements to existing conditions surrounding the bridge. The existing functional roadway width will expand from approximately 20-feet to 24-feet wide over the bridge. The widened roadway will meet the existing roadway width at the limits of the project. The approaches to the bridge will be repaved following the completion of project activities. Extended steel guardrail is proposed along the approaches to the bridge to replace existing non-functioning guardrail posts.

Work in Wetland Resource Areas

The bridge replacement project is considered a redevelopment project. Impacts to wetland resource areas are unavoidable, however upon completion of the project, slopes will be stabilized and the streambed will be restored to match the natural stream channel. The outcome will result in an improvement over existing conditions. Table 1 provides an overview of impacts with regard to each resource area.

Bank

The existing bank along all four quadrants of the bridge will be impacted to some extent as a result of the proposed project. Retaining walls have been proposed in order to better stabilize the proposed bridge structure. Approximately 61 linear feet (lf) of temporary impacts are proposed to allow for access to the structures through the dewatering structure installation. Approximately 182 lf project-wide of permanent impacts to the bank are proposed as a result of the placement of the retaining walls and riprap for scour protection to the bridge abutments. Additional bank will be created where it previously did not exist, within the crossing itself. Some smaller trees along the roadway are proposed to be removed as a result of this work (< 0.1 acres). Upon completion of the bridge and retaining wall construction, the embankment will be installed to tie into elevations and contours to the extent practicable. Bank above Ordinary High Water (OHW) will be restored where appropriate by installing 12-inches of compost mulch and seeded with a native seed mix. Please refer to Project Specs and Project Site Plans (Attachments E and F) for additional detail.

Land Under Waterbodies and Waterways

Approximately 984 square feet (sf) of permanent impacts to LUW will occur within the Reservoir and stream channel with the installation of riprap, retaining walls, and the new bridge wingwalls and abutments. The majority of LUW within the existing crossing will not be disturbed. Steel plates will be inserted in the channel abutting the existing structure to allow for its safe removal and to allow water to continue to flow. No other impacts are proposed within the channel itself. In order to protect the new bridge structure, riprap will be installed at the crossing

inlet/outlet which will also constitute a permanent impact. A total of 885 sf of new LUW will be created with the increased openness of the expanded crossing. The new crossing will have a natural streambed installed, similar to what occurs within the existing crossing (Attachments E & F). Additionally, approximately 641 sf of temporary impacts at the inlet and outlet of the bridge will occur as a result of dewatering the channel for construction. All temporary impacts will be restored to pre-construction conditions. Please refer to Project Site Plans (Attachment F) for additional detail.

Bordering Vegetated Wetlands

No impacts to Bordering Vegetated Wetlands are proposed.

Table 1 below provides an overview of impacts with regard to each WPA wetland resource area:

Table 1 – Summary of Wetland Resource Area Impacts

Resource Area	Impact Type	West Newbury	Newburyport	TOTAL
Land Under Water (LUW)	Permanent Permanent Dredge / Fill	553 sf	431 sf	984 sf
		39 cy / 17 cy	9 cy / 2 cy	48 cy / 19 cy
	Temporary Temporary Dredge / Fill	443 sf	198 sf	641 sf
		28 cy / 0 cy	22 cy / 0 cy	50 cy / 0 cy
Bank	Permanent	128 lf	54 lf	182 lf
	Temporary	47 lf	14 lf	61 lf

5.0 Stormwater Management

The Project area currently exhibits country drainage whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and while the widened roadway will increase impervious area at the site, mitigation measures are not feasible to reduce runoff rates due to site limitations. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable.

To provide stormwater drainage improvements, it's proposed that runoff will be captured at the low points on either side of the roadway via two deep sump catch basins. The deep sump catch basins flow to a manhole on the north side of the roadway. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends. Like the existing conditions, all other runoff within the project limits will continue to flow via country drainage.

6.0 Construction Considerations and Sequencing

Installation of the recommended foundation system will require control of water during construction and the use of a temporary excavation support system. Control of water during construction, which typically includes water diversion and dewatering operations to maintain dry conditions during foundation placement, is the responsibility of the Contractor. Typical systems for water diversion primarily include cofferdams, which can incorporate steel sheet piling, large sandbags, or other proprietary systems. Based on site constraints, actual flowrates during construction and specific project permitting requirements, cofferdams can be combined with temporary diversion pipes to completely redirect flows around the work area. Final means and methods are up to the contractor.

The temporary excavation support system will be selected by the Contractor, but typical installations for use with the existing subsurface conditions include cantilevered, or braced steel sheet piling systems. The Contractor will select the support of excavation based on site constraints, traffic control plan and other methods of construction.

Following the excavation, proper subgrade preparation must be completed prior to installation of the recommended foundation system. Proper treatment includes the installation of an approved geotextile fabric over the subgrade, followed by the placement and compaction of crushed stone.

The construction is generally proposed as outlined below:

- Additional signage to fully close existing roadway (closed for pedestrian traffic, already closed to vehicles).
- Installation of erosion controls.
- Water handling and dewatering.
- Removal of existing bridge
- Excavation of soils.
- Installation of new bridge structure.
- Placement of riprap for scour protection / placement natural substrate in streambed.
- Construction and pavement of roadway approaches and related work.
- Open new bridge to traffic.
- Site restoration including stabilization and seeding.
- Remove erosion and sedimentation controls.

7.0 Mitigation Measures

The proposed project will occur within the jurisdictional limits of the streambed (LUW) and bank. The project has been designed to incorporate construction Best Management Practices (BMPs) to ensure adequate protection to wetland resource areas within proximity of the project location.

Disturbed areas within affected resources will be stabilized and restored following the completion of project activities. This will be achieved specifically by limiting alteration within resource areas to the maximum extent practicable. The proposed work is considered a Redevelopment Project but will preserve undisturbed areas adjacent to the bridge as much as possible. This will also be accomplished through project phasing activities that minimize work within resources to the maximum extent practicable.

Erosion and Sedimentation Controls

Siltation barriers composed of compost filter tubes will be installed at the downgradient limits of work. Sedimentation barriers will be checked on a weekly basis and following significant storm events. Sediment controls will remain in-place during all phases of the project and will be removed once the area is sufficiently stabilized. Please refer to Attachment F (Site Plans) for erosion and sedimentation control details and the proposed locations of controls.

Construction Stockpiling Locations

All stockpile locations and staging areas will be located within the existing roadway; and while locations are to be determined by the Contractor, they will need to be approved by the respective Municipality prior to use. In the event stockpiled materials must be left on site overnight, the piles will be covered with tarps and surrounded by erosion control measures (e.g. compost filter tubes). Stockpiled streambed material will be stored at a location within the existing roadway. Staging and storage areas will be outside of all jurisdictional environmental resource areas where

feasible and practicable.

Water Control Measures and Dewatering

Prior to work, cofferdams will be installed for construction activities to occur in dry conditions. As such, work will require dewatering. The contractor will be required to develop and maintain a Construction Water Management Plan that is prepared in accordance with the contract design documents, and generally, the means and methods will be determined by the contractor. Flow will be maintained within the existing channel; while the dewatered construction area can be maintained by pumping the water out of the work areas.

All discharge resulting from dewatering activities shall be directed to temporary sedimentation/retention basins as specified by the contractor to control turbidity. At no time shall the discharge be directly released into adjacent resource areas, nor will any settling tank/basin be located within a wetland/waterway. If stone or other erosion control is utilized at the outlet of the settling tank/basin, this material will be removed, and the area will be restored to existing conditions prior to the completion of the project. Please refer to Attachment F, Project Site Plans for additional details on proposed water control measures.

8.0 Regulatory Compliance

In accordance with 314 9.06 (1 through 7) the proposed activities conform with Water Quality Certification as follows:

[314 CMR 9.06(1)] (in part) – No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem as long as the alternative does not have other significant adverse environmental consequences...

A project Alternatives Analysis is provided in Section 3 of this Narrative, and an even more detailed analysis of the different stream crossing alternatives and their abilities to meet Stream Crossing Standards is in Attachment C. The preferred alternative has been selected because it will successfully replace the bridge with a similar horizontal and vertical alignment, and it involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The project meets stream crossing standards while working within existing site constraints.

[314 CMR 9.06(2)] – No discharge of dredged or fill material shall be permitted unless appropriate or practicable steps have been taken which will avoid and minimize adverse impacts to bordering or isolated vegetated wetlands, land under water or ocean, or the intertidal zone. For discharges to bordering or isolated wetlands, such steps shall include a minimum of 1:1 restoration or replication. The Department may waive the 1:1 requirement for restoration or replication for projects which will restore or otherwise improve the natural capacity of any wetland or other water of the Commonwealth pursuant to 314 CMR 9.06(8). However, no such project shall be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species as specified in 310 CMR 10.00.

There are no Bordering nor Isolated Vegetated Wetlands within the project area. Impacts to Land Under Water have been minimized to the extent practicable within the project area. The proposed construction methodology avoids impacts to the existing channel to the extent practicable, and the completed design will include an increase in LUW / surface area below OHW by approximately 885 sf, with an increased opening and a span over three-times the length of existing conditions (45 feet versus 14.3 feet). There is no NHESP rare or estimated habitat within the project area. Overall, the Project will result in improvements in improves openness and habitat connectivity of the Reservoir, through improved flow regime, an improved, naturalized stream bottom substrate, and reduced erosion and scour.

[314 CMR 9.06(3)] (in part) – No discharges of dredged or fill material shall be permitted to Outstanding Resource Waters, except for the activities specified in 314 CMR 9.06(3)(a - k)...

The proposed Project may be permitted in accordance with 314 CMR 9.06(3)(c) - *Maintenance, repair, replacement or reconstruction but not substantial enlargement of existing and lawfully located structures or facilities including buildings, roads, railways, utilities, dams, and coastal engineering structures.* While the replacement bridge will increase by approximately 4 feet to include a safety sidewalk on the south side of the bridge, and retaining walls will be added to protect the proposed and existing structures, the project has been designed result in improved openness, habitat connectivity, and will result in an increase to waterbody area.

[314 CMR 9.06(4)] – The discharge of dredged or fill material into wetlands or waters of the Commonwealth within 400 feet of the high water mark of a Class A surface water (exclusive of tributaries) requires a variance issued by the Department pursuant to 314 CMR 9.08 unless the discharge of dredged or fill material is associated with an activity conducted by a public water system under 310 CMR 22.00: Drinking Water or by a public agency or authority for the maintenance or repair of existing public roads or railways.

According to MassGIS data layers, the entire project area occurs within an Outstanding Resource Water (ORW) and Surface Water Protection Zone associated with the Upper Artichoke Reservoir, which is an Article 97, municipal land, and a public water supply watershed. While the proposed work may involve “*the discharge of dredged or fill material into wetlands or waters of the Commonwealth within 400 feet of the high water mark of a Class A surface water (exclusive of tributaries),*” a variance will not be required from the Department as the work is “*associated with an activity conducted by a ...public agency or authority for the maintenance or repair of existing public roads...*” per 314 CMR 9.06 (4). Specifically, work is being carried out by the Town of West Newbury and the City of Newburyport.

[314 CMR 9.06(5)] – No discharge of dredged or fill material is permitted for the impoundment or detention of stormwater for the purposes of controlling sedimentation or other pollutant attenuation. Discharge of dredged or fill material may be permitted to manage stormwater for flood control purposes only where there is no practicable alternative and provided that best management practices are implemented to prevent sedimentation or other pollution. No discharge of dredged or fill material is permitted for the impoundment or detention of stormwater in Outstanding Resource Waters for any purpose.

The proposed project is not for the impoundment or detention of stormwater for the purposes of controlling sedimentation or other pollutant attenuation. The replacement of the bridge will improve the hydraulic capacity and stability of Reservoir. Additionally, water quality improvements will be provided through the installation of retaining walls and riprap to help reduce erosion and scour.

[314 CMR 9.06(6)] – Stormwater discharges shall be provided with best management practices to attenuate pollutants and to provide a set back from the receiving water or wetlands in accordance with standards established in the Department’s Stormwater Management Policy. Stormwater discharges to Outstanding Resource Waters and Special Aquatic Sites shall be removed or set back from the receiving water or wetland, and provide the highest and best practicable method of treatment. All discharges of stormwater, which meet the definition of “stormwater discharge”, as defined at 314 CMR 3.04(a)(1) or (b), into Outstanding Resource Waters shall comply with 314 CMR 3.00 and 4.00.

The preferred project alternative is considered in compliance with the Massachusetts Department of Environmental Protection's Stormwater Management Policy. As described above in Section 5, Stormwater Management, the Project area currently exhibits country drainage whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and while the widened roadway will increase impervious area at the site, mitigation measures are not feasible to reduce runoff rates due to site limitations. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable. Erosion and sedimentation control measures have been incorporated into the proposed plans and will be implemented during construction to avoid discharge to the adjacent Reservoir.

[314 CMR 9.06(7)] – No discharge of dredged or fill material shall be permitted in the rare circumstances where the activity meets the criteria for evaluation but will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters of the Commonwealth.

The preferred project alternative will improve the physical, chemical, or biological integrity of surface waters of the Commonwealth. This will be accomplished by improving the hydraulic capacity and openness of the water that passes beneath the bridge providing scour and erosion control with natural streambed cover material in adjacent areas to improve water quality. Careful sediment control will be employed during construction to protect the Reservoir.

8.0 Stream Crossing General Standards Compliance

The proposed project design complies with the Massachusetts Stream Crossing Standards to the extent practicable, as required for a limited project under the WPA. The proposed project meets all Stream Crossing Standards. The proposed design mitigates for the existing scouring, flow contraction, outlet perching, and inlet drops and will not act as a physical barrier to fish and wildlife passage.

The following outlines compliance with the Stream Crossing General Standards:

1. *Spans (bridges, 3-sided box culverts, open-bottom culverts or arches) that preserve the natural stream channel are strongly preferred.*

Meets standard. The width of the existing span earth filled stone arch is 14.3 feet, while the width of the proposed bridge is 23.4 feet. The replacement structure will mimic natural stream channel conditions.

2. *If a culvert, then it should be embedded:*
 - *a minimum of 2 feet for all culverts,*
 - *a minimum of 2 feet and at least 25 percent for round pipe culverts*
 - *When embedment material includes elements > 15 inches in diameter, embedment depths should be at least twice the D84 (particle width larger than 84 % of particles) of the embedment material.*

Meets Standard. Span bridge proposed with a natural stream bottom.

3. *Spans channel width (a minimum of 1.2 times the bankfull width).*

Meets Standard. According to Stream Stats, the bankfull width is 28.4 feet. To meet the Standard, the minimum bankfull width would need to be 34.0 feet wide. The structure opening is proposed to be 41.5 feet wide.

4. *Natural bottom substrate within the structure.*

Meets Standard. Natural material will remain within the existing channel, and stream material removed during construction will be reused on top of bank scour protection.

5. *Designed with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows.*

Meets Standard. Hydraulic Report prepared for the project indicates the post-construction water depth is approximately the same as existing conditions.

6. *Openness > 0.82 feet (0.25 meters).*

Meets Standard. The proposed openness ratio is 11.7.

7. *Banks should be present on each side of the stream matching the horizontal profile of the existing stream and banks.*

Meets Standard. The proposed design will match the horizontal profile of the existing stream and associated banks.

***If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems.*

- *Inlet drops*
- *Outlet drops*
- *Flow contraction that produces significant turbulence*
- *Tailwater armoring*
- *Tailwater scour pools*
- *Physical barriers to fish and wildlife passage*

Please refer to Attachment C – Alternative Analysis for further stream crossing alternate analysis and compliance with Stream Crossing Standards.

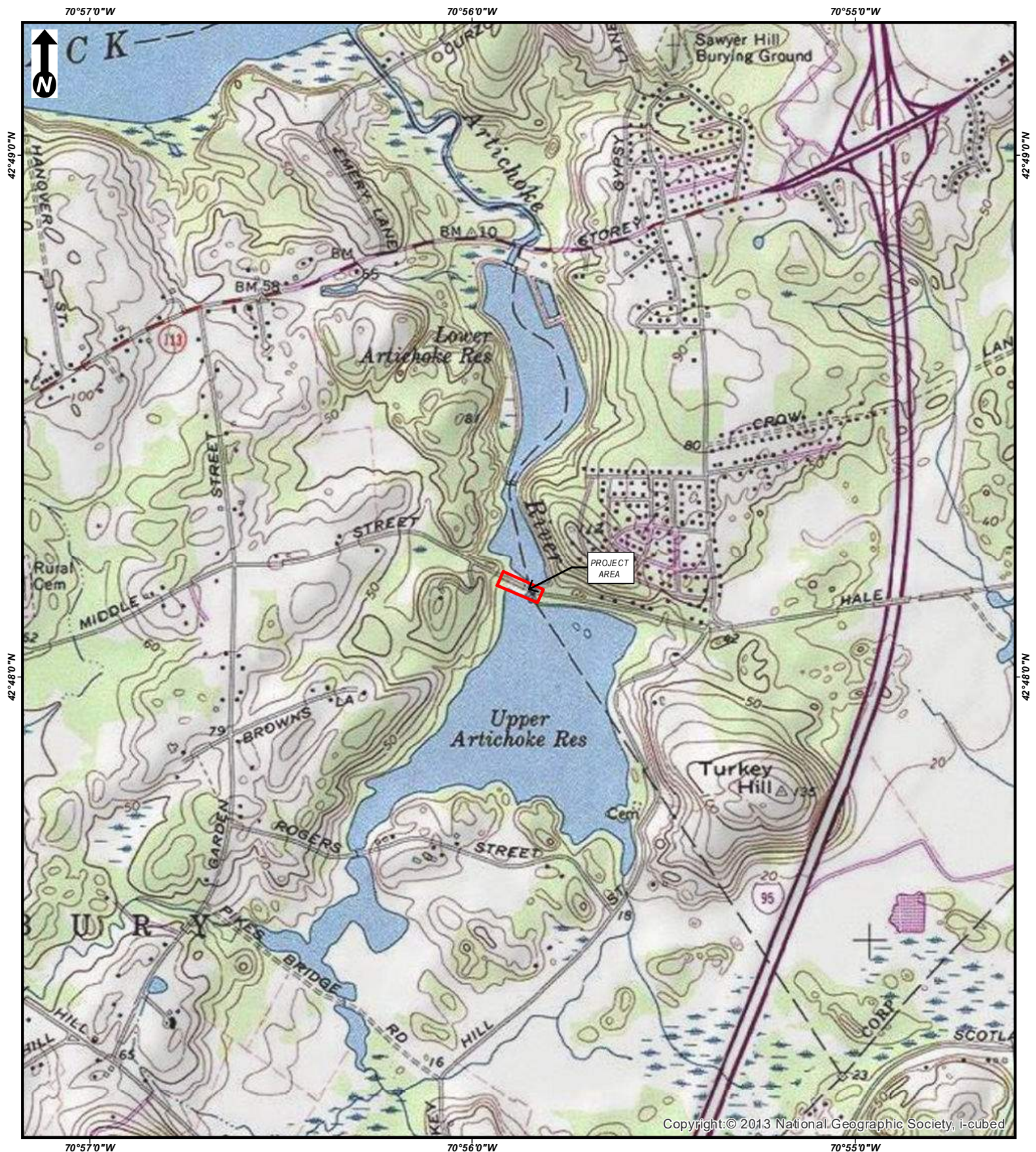
9.0 Summary

The Applicants, the Town of West Newbury and the City of Newburyport, are proposing to replace a structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir. The design approach taken was to first avoid impacts to wetland resources where feasible, and where unavoidable, to minimize the impacts to the extent practicable and mitigate where applicable. The application further demonstrates that the project can be constructed in accordance with the Massachusetts Stream Crossing Standards. Throughout the project design process, the project team has carefully considered various development alternatives, and has moved forward with the alternative that has the least impact to wetland resources while satisfying the project goals. Reasonable measures have been taken to avoid, minimize, and mitigate potential adverse impacts, and the project conforms with the applicable water quality criteria. As such, the applicant requests project certification as described in this narrative and as shown on the project plans.

Attachment B

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Section 401 Water Quality Certification

SITE FIGURES
USGS LOCUS MAP
ENVIRONMENTAL RESOURCES MAP
FEMA MAP
SITE PHOTOGRAPHS



Scale:
1 inch = 2,000 feet
(page size: 8.5 X 11)

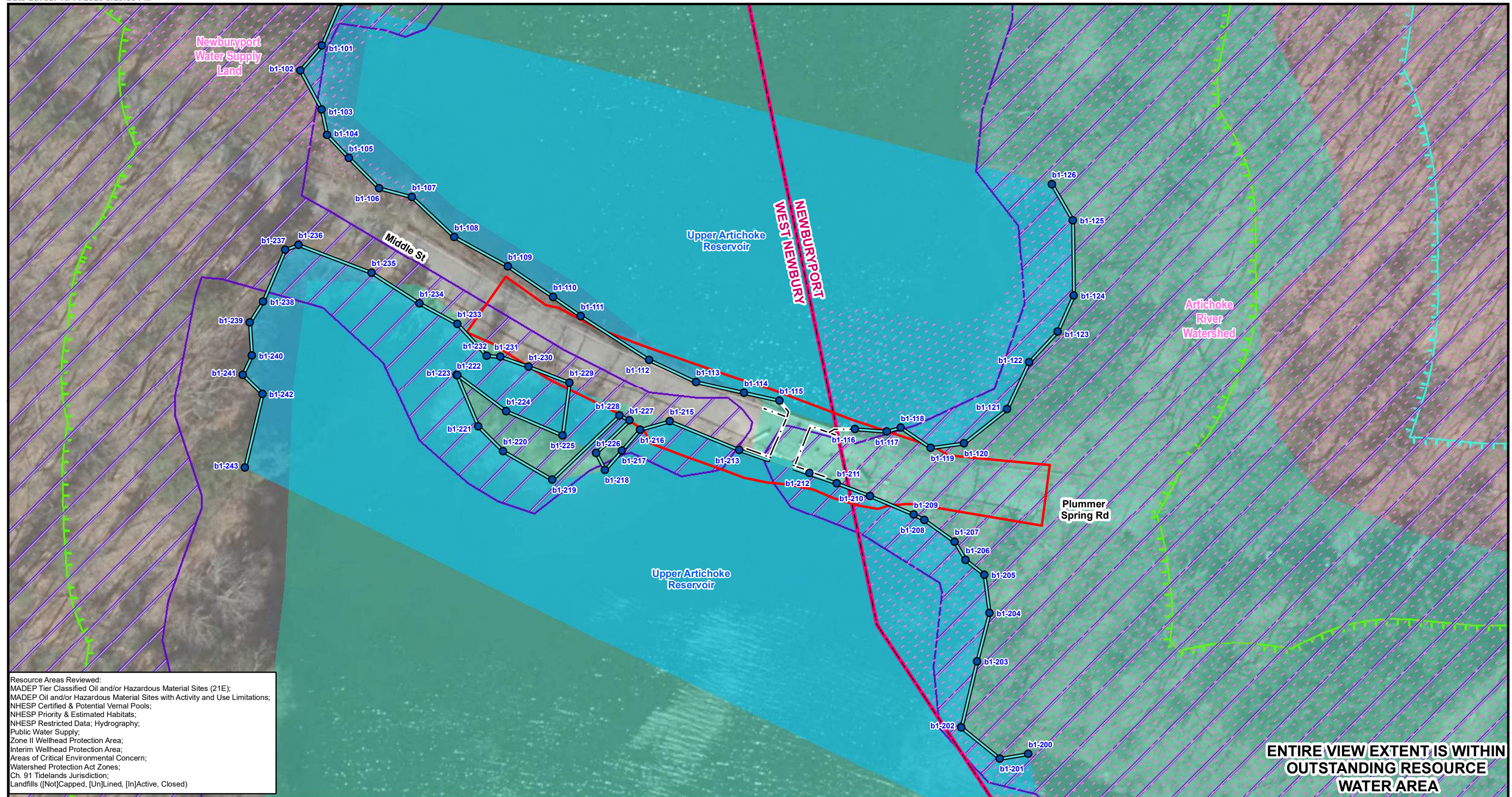
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Feet

**MIDDLE ST / PLUMMER SPRING RD OVER UPPER ARTICHOKE RESERVOIR
BRIDGE REPLACEMENT PROJECT**

**USGS Site Location Map
West Newbury & Newburyport, MA**

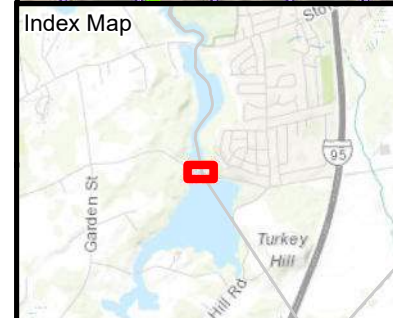
Source: 2013
National Geographic
Society, i-cubed





Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;
 NHESP Certified & Potential Vernal Pools;
 NHESP Priority & Estimated Habitats;
 NHESP Restricted Data; Hydrography;
 Public Water Supply;
 Zone II Wellhead Protection Area;
 Interim Wellhead Protection Area;
 Areas of Critical Environmental Concern;
 Watershed Protection Act Zones;
 Ch. 91 Tidelands Jurisdiction;
 Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)

**ENTIRE VIEW EXTENT IS WITHIN
 OUTSTANDING RESOURCE
 WATER AREA**



Legend

Project Area	100ft Buffer to Wetlands & Streams	Article 97 Lands
Existing Bridge Structure	200ft Riverfront Area	Municipal
Field Delineated Bank Flags	FEMA 100yr Floodplain (Zone AE)*	Surface Water Protection Zone
Field Delineated Edge of Bank	Town Boundary	
Field Delineated Waterbody		
MADEP Hydrologic Connections		

1 inch = 50 feet
 0 25 50
 Feet
 *Indicates Layers Set to Transparency

**MIDDLE STREET / PLUMMER SPRING ROAD
 OVER THE UPPER ARTICHOKE RESERVOIR
 BRIDGE REPLACEMENT PROJECT**

Environmental Resources Map

West Newbury & Newburyport, MA

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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FIGURE 1

REGULATORY BOUNDARIES

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USGS The National Map: Digital Data, Updated April 2020

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Photo #1: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #2: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #3: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. View of the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #4: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir.. Up close view of the bridge in disrepair.



Photo #5: View southeast of Middle St, West Newbury facing Plummer Spring Rd, Newburyport over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #6: View southwest of the northern side of the roadway and bridge over the Upper Artichoke Reservoir.

Attachment C

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Section 401 Water Quality Certification

ALTERNATIVES ANALYSIS

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Bridge Replacement Project –Plummer Spring Road/Middle Street over Artichoke Reservoir– Alternatives Analysis

Due to existing site conditions, the proposed project was not able to reach full compliance with the Massachusetts Stream Crossing Standards. However, the project is considered a Limited Project under 310 CMR 10.53(3)(i): the maintenance, repair, and improvement...bridges which existed prior to April 1, 1983, 310 CMR 10.53(3)(l): construction, reconstruction...or maintenance of water dependent uses, and 10.53(8)(a): Replace...existing stream crossing in a non-tidal crossing.

Therefore, it has been designed to meet the Stream Crossing Standards to the maximum extent practicable per the provisions at 310 CMR 10.53(8). The following description provides an overview of the bridge design and is followed by an Alternatives Analysis and an evaluation of compliance with the Stream Crossing Standards.

Table 1.0 – Existing Crossing Data

Stream Crossing Standard	Existing Conditions
Type of Crossing	Single span earth filled stone arch
Size	Width: 14.3-feet Height: 13.2-feet Crossing Length: 24.2-feet Cross Sectional Area: 138 sq. ft.
Bankfull Width (Reported by StreamStats)	28.4-feet (Reported by StreamStats, drainage area = 5.48 square miles). The existing stone arch bridge was built in 1891 before the Upper Artichoke dam was installed to create the Upper Artichoke Reservoir
Openness Ratio	5.7
Water Level	Observed Water Elevation (10/1/2018): 12.5± OHW Elevation 12.6 ± Streambed Elevation 3.0±

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Table 2.0 – Proposed Crossing Conditions

Alternative 1		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete 3-Sided Rigid Frame (open bottom)	Yes	Proposed Concrete Rigid Frame (open bottom) Width: 22-feet Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 27.25-feet Cross Sectional Area: 241 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 22-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 241 sq. ft. Proposed Openness Ratio: 8.8
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 2		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Arch Bridge (open bottom)	Yes	Proposed Precast Concrete Arch Bridge with Pile Supported Footings (open bottom) Width: 30.7-feet Height: 13.2-feet (Measured from top of proposed streambed to center of arch) Crossing Length: 27.3-feet Cross Sectional Area: 246 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have a maximum of 13.2-feet clearance throughout the length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 30.7-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 246 sq. ft. Proposed Openness Ratio: 9.0
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 3 (Proposed Bridge Replacement)		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Beams 3-Sided Bridge (open bottom)	Yes	Proposed Precast Concrete Beam Bridge with Pile Supported Abutments (open bottom) Width: 41.5-feet (Measured between inside faces of bridge sidewalls) Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 32.5-feet Cross Sectional Area: 380 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	Yes	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 41.5-feet.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 380 sq. ft. Proposed Openness Ratio: 11.7
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative: Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Alternative 1: Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Alternative 2: Meet General Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Alternative 3: Stream Crossing Standards 1.2 x bankfull width ² (Proposed Alternative) Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
1) potential for downstream flooding	No change	No change	No change	No change
2) upstream and downstream habitat	No improvement.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.
3) potential for erosion and head-cutting	No change	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.
4) stream stability	No change	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.
5) habitat fragmentation caused by the crossing	No change	Increased openness	Increased openness	Increased openness
6) amount of stream mileage made accessible	No change	Improved stream continuity.	Improved stream continuity.	Improved stream continuity

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative:	Alternative 1:	Alternative 2: Meet General	Alternative 3: Stream Crossing Standards 1.2 x bankfull width²
	Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
7) storm flow conveyance	100-year event water Cross Sectional Area: 111 sq. ft.	100-year event water Cross Sectional Area: 171 sq. ft.	100-year event water Cross Sectional Area: 201 sq. ft.	100-year event water Cross Sectional Area: 242 sq. ft.
8) engineering design constraints	No change, no improvements. Bridge remains closed and roadway width remains inadequate.	The poor soil conditions require large deep footings to distribute the bridge loads. Due to the depth of water and relatively short span extensive retaining walls are required to replace the existing failed stone retaining walls.	The weight of the soil over the arch requires an extensive amount of piles. Installation of heavy arch units would likely require temporary fill to provide a stable work platform for a large crane.	The addition of a sidewalk on the bridge requires widening and retaining of the road at the approaches.
9) hydrologic constraints	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)
10) impacts to wetlands that would occur	No construction impacts to adjacent wetland resource areas.	Permanent impacts to adjacent wetland resource areas due extensive retaining walls and deep excavation for footings.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.
11) potential to affect property and infrastructure	Bridge has failed. Emergency evacuation route remains closed.	None	None	None
12) cost of replacement	N/A	Proposed Replacement Cost: \$2,400,000	Proposed Replacement Cost: \$2,300,000	Proposed Replacement Cost: \$2,600,000

¹ Bank Standards at 310 CMR 10.54 and LUWW Standards at 310 CMR 10.56 (LUWW = Land Under Water Bodies & Waterways)² Per the *Massachusetts River &*

²*Stream Crossing Standards* (March 1, 2011, Revised March 8, 2012), Page 18, Item #2 - If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems: (1) Inlet drops; (2) Outlet drops; (3) Flow contraction that produces significant turbulence; (4) Tailwater armoring; (5) Tailwater scour pools; (6) Physical barriers to fish and wildlife passage.

Attachment D

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Section 401 Water Quality Certification

PUBLIC NOTICE
SUBMITTED TO THE ENVIRONMENTAL MONITOR
FOR JANUARY 22, 2021 PUBLICATION

PUBLIC NOTICE
SUBMITTED TO THE LOCAL NEWBURYPORT DAILY NEWS
FOR JANUARY 22, 2021 PUBLICATION

Massachusetts Department of Environmental Protection
Division of Wetlands and Waterways
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887
Telephone: 978-694-3200

PUBLIC NOTICE

Pursuant to 33 U.S.C. 1341 and M.G.L c. 21 §§ 26-53, notice is given of a 401 Water Quality Certification (WQC) application filed by Town of West Newbury (381 Main Street, West Newbury, MA 01985) and the City of Newburyport (16 C Perry Way, Newburyport, MA 01950) for a bridge replacement project on Middle Street, West Newbury / Plummer Spring Road, Newburyport over the Upper Artichoke Reservoir (Bridge No. N-11-007). The bridge is structurally deficient due to undermining of the existing roadway foundation and is proposed to be replaced in a similar horizontal and vertical alignment that will address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The Upper Artichoke Reservoir is classified as an Outstanding Resource Water. Additional information may be obtained from Sara Kreisel, BSC Group, Inc., 803 Summer Street, Boston MA 02127, (617) 896-4579, skreisel@bscgroup.com.

Written comments on the 401 WQC must be sent within twenty-one (21) days of this notice to:
Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

Any group of ten persons, any aggrieved person, or any governmental body or private organization with a mandate to protect the environment who submits written comments may appeal the Department's Certification. Failure to submit written comments before the end of the public comment period may result in the waiver of any right to an adjudicatory hearing.

PUBLIC NOTICE

Massachusetts Department of Environmental Protection
Northeast Regional Office (978-694-3200)
Division of Wetlands and Waterways

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Attachment E

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Section 401 Water Quality Certification

CONSTRUCTION SPECIFICATIONS

ITEM 765.3**SEED FOR EROSION CONTROL****ACRE**

The work under this item shall conform to the relevant provisions of Section 765 and M6.03.0 of the Standard Specifications and the following:

The work shall consist of planting and establishing a stand of grass in the areas shown on the plans or as required by the Engineer or listed in this document.

For the purposes of these specifications, the term “grass” shall apply to all the forbs, grasses, sedges, and rushes included in the materials.

All seeding shall be done by a company having a minimum of five years of experience with native grass establishment. Prior to beginning work, the applicator shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications includes providing documentation to demonstrate knowledge and expertise with native seeding and proof of having completed successful native seeding projects.

SEEDING SEASON

Seeding seasons shall be April 1 through May 15 and October 1 through November 15 for dormant seeding. For seeding that occurs outside of these periods, the seed rate shall be increased by 50%.

MATERIALS**Samples and Submittals**

- 1) Certificate of Materials. Prior to ordering, the Contractor shall submit to the Engineer the manufacturer or supplier’s notarized Certificate of Materials. This document shall not be used as proof of purchase, proof of material delivered, or proof of material seeded, but simply to verify supplier availability of seed listed on the date certified. The species listed shall match those specified on the plans or herein, however, cultivars may vary due to availability.
- 2) Seed Tag Certification. All seed lots have a seed analysis tag as required by State and Federal law. The contractor shall submit seed tags for each bag of seed used on the project site or ensure that each tag is photo documented by the Engineer. Number of tags shall match number of bags sent by the supplier to meet rate of Pure Live Seed specified on the plans. Tag must include: kind and variety of seed; lot number; origin of seed; net weight; % purity; germination; dormant seed; germination test date; inert matter; weed, noxious and other crop seed; and name and address of company responsible for the analysis. Seeding may be considered unacceptable for payment if no tags are submitted.
- 3) Certificate of Compliance. Prior to payment, contractor shall submit a signed, dated and notarized Certificate of Compliance from the Supplier that serves as proof of purchase or bill of lading. This document shall include kind and variety of seed, lot

number, net weight shipped, date of sale, invoice number under which seed was purchased, and name and address of Supplier or Manufacturer. All information must be included on the notarized form, including lot number and net weight shipped for specified job. This information shall match Seed Tag Certification and quantity of seed applied on the job. Seeding may be considered unacceptable for payment if information is incomplete.

- 4) Seed Sample. Contractor may be asked, prior to seeding, to submit a seed sample for testing. Testing shall be incidental to this item.

Quantities specified are Pure Live Seed (PLS). Greater quantities of ordered seed may be required to achieve actual specified seeding rates. Pure Live Seed is defined as the fraction of pure seed species within the mix that, by standard seed testing practices, will germinate. This is determined by multiplying the percent of seed purity by the percent of seed germination.

Seed mix shall be a custom blend as shown on the plans or shall be as specified below. Seed cultivars shall be those that are as regional to New England or the local ecotype as possible.

Any species substitutions shall be with a species having similar characteristics and native to New England.

Seed Mix

	<u>Botanical Name</u>	<u>Common Name</u>	<u>% PLS By Weight</u>
Grass	Festuca rubra	Creeping Red Fescue	69.5%
	Panicum virgatum 'Shelter'	Switchgrass 'Shelter'	5.0%
	Panicum clandestinum 'Tioga'	Deer Tongue 'Tioga'	5.0%
	Elymus virginicus	Virginia Wild Rye	4.0%
	Elymus canadensis	Canada Wild Rye	4.0%
	Schizachyrium scoparium	Little Bluestem 'Albany	4.0%
	'Albany Pine'	Pine'	
	Agrostis perennans	Upland Bentgrass	4.0%
		<u>Subtotal</u>	<hr/> 95.5%
Herb/Forb	Chamaecrista fasciculata	Partridge Pea	1.5%
	Rudbeckia hirta	Black-eyed Susan	1.2%
	Aster laevis	Smooth Aster	0.8%
	Solidago bicolor	White Goldenrod	0.4%
	Monarda fistulosa	Wild Bergamot	0.4%
	Asclepias syriaca	Common Milkweed	0.2%
		<u>Subtotal</u>	<hr/> 4.5%
		<u>Total</u>	<hr/> 100.00%

Seeding Rate:

Apply this mix at **50 lbs PLS/acre** on areas of less than 3:1 slope and 150 lbs PLS on areas of greater than 3:1 slope. Add 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 July) or grain rye (1 Aug to 31 Dec). Cover crop shall be incidental to seeding item.

Fertilizer

No fertilizers shall be applied.

Water

Water, including hose and all other watering equipment required for the work, shall be furnished by the Contractor to the site at no additional cost. Water shall be suitable for irrigation and free from ingredients harmful to plant life. All plants injured or work damaged due to the lack of water or the use of too much water shall be the Contractor's responsibility to correct.

Mulch

Seed areas shall be separately mulched with hydromulch, straw or as specified below when incorporated with compost topsoil.

Photo Documentation

Contractor shall submit photo documentation to the Engineer
Each photo shall be date stamped. Photos shall be submitted after the following stages of construction:

- Soil preparation
- Seed and hydromulch/Compost topsoil and seed
- Germination
- Grass establishment after one full growing season (June-September)

CONSTRUCTION

Surface Preparation

Soil preparation and seeding shall occur only when the bed is in a friable condition, not muddy or hard. Bare soils shall be raked to remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. All ruts and any depressions caused by settlement, erosion or rolling shall be filled with additional loam or compost and the soil shall be re-graded to a smooth and even finish corresponding to the required grades. No tracking or rolling shall be done on wet soil.

Prior to seeding, site preparation shall be approved by the Engineer.

Seeding Methods

Seeding on Loam

Seeding application shall be by broadcast methods followed by hydromulching. Seed may be broadcast by using a cyclone or whirlwind seeder, or by hand.

If spread by hand, small or light-seeded species such as bluestem may be mixed with approved filler (e.g., sawdust, rice, kitty litter, or clean damp sand) to achieve an even distribution. Broadcast seeding shall be undertaken in two separate passes at ninety degrees to each other. One-half the seeding rate shall be applied in each direction. Seed shall be incorporated 1/8 to 1/4-inch deep by raking or dragging, culti-packing, or tracking with heavy machinery. Raked areas shall be rolled with a weighted roller to provide good seed to soil contact. Do not roll or track the seed if the soil is wet.

Immediately following completion of broadcast seeding and packing, area shall be hydromulched. Hydromulch shall be per the Standard Specifications and per the manufacturer's directions. Mulch for hydroseeding shall be wood fiber only.

Seeding in Combination with Compost Topsoil

If proposed in the contract, compost topsoil shall be as specified under Item 751.7 Compost Topsoil.

Seeding shall be done as a second operation after placement of compost has been approved by the Engineer. Seeding shall be broadcast followed by hydro-mulching.

Contractor shall notify Engineer prior to seeding operation to obtain written approval of site preparation and compost topsoil application.

Irrigation

After seeding and mulching, water seeded areas to moisten soil to a depth of at least 2 inches.

No seeding shall be done if soils are muddy or dry and compacted.

Care during Seed Germination

Contractor shall care for seeded areas as required. Care shall include irrigation and weed removal as necessary for germination and healthy growth.

Over-seeding

If there are numerous areas of bare ground greater than 10-12 inches, these areas shall be over-seeded. Areas where seed fails to germinate and that become invaded by weeds shall be mowed as low as possible and over-seeded. Soil that is compacted shall be raked or roughened prior to seeding to ensure seed to soil contact.

Over-seeding application rates and methods shall be the same as those listed above. After seeding, areas shall be mulched with straw mulch or 1/4 - 1/2 inch compost topsoil and watered with a fine mist to moisten soil to a depth of at least 2 inches.

Over-seeding shall be incidental and shall not be paid for separately.

Care during Grass Establishment

Following germination of seeded species, the contractor shall maintain the stand of grasses to ensure healthy growth.

Work shall include mowing or weed-whacking for weed control, irrigation if necessary, and monitoring for invasive plants. Watering shall provide uniform coverage without eroding soil or grassed surfaces. Treatment of invasive plants shall be per the requirements of the Engineer.

The Contractor shall provide all labor, equipment, materials, and water required for establishment. Contractor shall water all seeded areas as necessary to a depth of 2 inches or greater.

EXPECTATIONS OF ESTABLISHMENT

Native upland grasses and forbs will not look like turf grass. Many of the native grasses are bunch type grasses and will not form a uniform growth or have a sod-type appearance. However, seeded area shall show general uniform growth of the seeded species throughout the area. Areas with gaps of bare soil greater than 10-12 inches will be considered unacceptable and shall be over-seeded.

A well-established stand of grasses at the end of one full growing season (June-September), as determined by the Engineer, will be required for acceptance. At least 80-90 percent of the grass established shall be the seeded species and any invasive or aggressive weeds (mugwort, ragweed, or knapweed) shall have been cut or otherwise managed.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Measurement for Item 765.3 shall be by the ACRE of material installed, approved, and maintained in place as listed. Payment shall be the bid price and shall be compensation for all labor and materials necessary to complete the work specified above and under item 765.3 in the Standard Specifications.

This price shall include surface preparation prior to seeding as specified under Surface Preparation, and as required by the Engineer, seeding, reseeding, irrigation, care during germination and establishment, labor materials, equipment, photo documentation, and all incidental costs required to complete the work to spread the seed mix.

ITEM 983.12**RIPRAP WITH GRAVEL PACKED VOIDS****CUBIC YARD****DESCRIPTION**

The cost of the following items is incidental to the unit price of Riprap with Gravel Packed Voids: Excavation to install Riprap including any chipping and removal of bedrock or boulders, Geotextile Fabric, Crushed Stone, Riprap, Gravel to pack Riprap voids and Natural Streambed Material excavated during the installation of the Riprap shall be stockpiled for reuse as a 6" layer of material on top of the Riprap. Any remaining streambed material shall be removed from the site and become the property of the contractor unless otherwise directed by the Town. If any excavated material is unsuitable natural streambed material as determined by the town, natural streambed material shall be pre-blended outside the project area. The cost of the pre-blended natural streambed, if necessary shall be considered incidental to this item.

The work under this Item shall conform to the relevant provisions of Section 983 and the following:

The work under this item includes furnishing and placing new Riprap to the location and limits as shown on the Plans, and as directed in the field by the Engineer. The Riprap shall be placed to stabilize and protect the embankments and armor the streambed against scour.

Stone for Riprap shall be placed on the prepared slopes or areas in a manner that will produce a well-graded mass of stone with the minimum practicable percentage of voids and thickness as depicted on the contract drawings. Riprap protection shall be placed to its full thickness in one operation in such a manner to avoid displacing the underlying material. Placing of Riprap in layers or by dumping into chutes or by placing by similar methods that are likely to cause segregation will not be permitted.

Riprap shall consist of stones that conform to M2.02.0 as described in Section M2 of the Standard Specifications "*Riprap shall be sound, durable rock which is angular in shape. Rounded stones, boulders, sandstone or similar soft stone or relatively thin slabs will not be acceptable. Each stone shall weigh not less than 50 pounds and at least 75% of the volume shall consist of stones weighing not less than 500 pounds each. The remainder of the stones shall be so graded that when placed with the larger stones the entire mass will be compact.*" All material going into the Riprap protection shall be so placed and distributed that there will be no large accumulations of either the larger or smaller sizes of stone.

It is the intent of this specification to produce compact Riprap aprons and slopes in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual stones by mechanical equipment shall be required to the extent necessary to secure the specified results.

Unless otherwise authorized by the Engineer, the Riprap protection shall be placed in conjunction with the reconstruction of the embankment slopes. The lag time between the placement of the Riprap protection and the reconstruction of the embankment slope shall be minimized to prevent mixture of the embankment and Riprap material.

A geotextile fabric shall be placed under the crushed stone bedding M2.01.4 prior to placement of the Riprap. The geotextile fabric shall meet the requirements of Section M9.50.0 of the relevant provisions and AASHTO M288, Class 2.

DESCRIPTION – GEOTEXTILE

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days. If laid under water, the covering crushed stone or Riprap shall be placed on the same day as the geotextile fabric.

For seams that are sewn in the field, the contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density.

The geotextile shall be placed in intimate contact with the soils without wrinkles or folds, and it shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials, when applicable, will not excessively stretch or tear the geotextile.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. Overlapped seams at roll ends shall be overlapped a minimum of 18 inches, except when placed under water. In such instances, the overlap shall be a minimum of 3 feet. Overlaps of adjacent rolls shall be a minimum of 18 inches in all instances.

Care shall be taken during installation so as to avoid damage to the geotextile as a result of the installation process. Should the geotextile be damaged during installation, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

When stone or Riprap is placed over Geotextile Fabric for Separation, the stone placement shall begin at the toe of slope and proceed up the slope. Placement shall take place so as to avoid stretching and subsequent tearing of the geotextile. Stone shall not be dropped from a height exceeding 12 inches.

Field monitoring shall be performed to verify that the crushed stone or Riprap placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as directed by the Engineer, at the Contractor's expense.

DESCRIPTION – GRAVEL

The finished surface shall be free of voids and shall be approved by the Engineer as it will serve as bedding for natural streambed material. Gravel shall conform to MassDOT Standard Specification Item 151 [Gravel Borrow M1.03.0].

STOCKPILE NATURAL STREAMBED MATERIAL

Natural streambed material is to be stockpiled on site. It shall be contained within an area approved of by the Town with containment methods acceptable to the Town. The excavated streambed material will be placed on a tarp or impervious surface. The stockpiled material will be covered with a tarp and surrounded by sediment barriers until its reuse. Any stone excavated from the existing streambed can be stockpiled and reused for streambed restoration, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area. Any material not reused shall become the property of the Contractor.

PRE-BLENDED NATURAL STREAMBED MATERIAL (IF NECESSARY)

The streambed material shall be comprised of two primary components.

1. Stone 4 inches and under shall meet the following gradation:

<u>Sieve opening</u>	<u>Percent by Mass Passing Through</u>
4"	95
2"	55 – 65
¾"	30 – 45
#4	0 – 5

2. Stone 6 inches to 2.5 foot in diameter:

<u>Stone Size</u>	<u>Percent Passing</u>
2.0'	80
1.5'	25
0.5'	0

The streambed/bank stone for all two components shall be native cobbles and boulders similar in shape and size of streambed/bank stone adjacent to the work area. Partially angular rock is preferred over round and shall be able to lock together to prevent movement during high flows. Crushed Stone will not be accepted for any of the two components. Any stone excavated from the existing streambed can be stockpiled and reused for natural streambed, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area, or meets the above criteria. The elevations and conditions of the existing streambed shall be maintained to the maximum extent practicable.

Components one and two shall be pre-blended outside the project area at a volume ratio of 30% and 70% respectively. The pre-blending shall be done in a way that will prevent the mass from being contaminated by work-place soils. The pre-blended mass shall be placed over areas of proposed Riprap as shown on the plans.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Riprap with Gravel Packed voids will be measured and paid for per cubic yard completed in place. Crushed stone, gravel, geotextile fabric, excavation, and all work related natural streambed material shall be included in the bid price for Riprap with Gravel Packed Voids. Said price shall be considered full compensation for all labor, tools, equipment and materials necessary for the completion of the work.

ITEM 991.1 CONTROL OF WATER-STRUCTURE NO. N-11-007= LUMP SUM

W-20-001

The cost for all excavation (except for within the limits of Bridge Excavation shown on the contract drawings) to install the control of water system shall be included in the bid price for Item 991.1. The environmental permits contained in the contract documents depict a suggested control of water system. Any modification of existing or new permits are at the contractor's expense and the contract completion date will not be altered.

The contractor is alerted to the requirements imposed by the environmental permits contained in the contract documents.

DESCRIPTION

The work to be performed under this Item shall include all pumping, sandbagging, sheeting, for sufficient water control to accomplish the removal of the existing bridge, construction of the proposed bridge and Riprap installation "*in the dry*". Work under this Item shall consist of dewatering within the work limits as shown on the plans. Water within the work area shall be discharged as specified in the contract documents, environmental permits obtained for this project and as directed by the Municipalities. No direct discharge will be allowed into waterways, or the adjacent wetlands during the dewatering operations.

Dewatering shall be conducted to ensure that all bridge components are placed and cured in the dry. For demolition purposes, dewatering shall be conducted for demolition of the existing bridge. Proposed methods of dewatering for the bridge are included in the contract documents. However, it is the responsibility of the Contractor to determine the need and extent of additional dewatering required, sedimentation and dewatering techniques and controls and submit method and materials he/she proposes to use for approval by the Engineer.

Plans and calculations for all the sandbagging, sheeting and other water control measures shall be developed by the Contractor. These plans and calculations shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts and shall be submitted for review prior to the start of construction.

All dewatering and related earthwork shall be conducted in such a manner as to prevent siltation or contamination of the waterway and wetlands. The pumping discharge shall not be allowed to enter the Artichoke Reservoir or the wetland resource areas. The water from the work areas shall be pumped either to a filter bag, temporary settling tank, forebay basin, or other approved containment structure conforming to MassDOT's "*Guidelines for Soil Erosion & Sediment Control*". The containment structure shall be constructed so as to allow for the pumped water to pass through the structure with sediments settling out before outletting to an area enclosed by a concrete barrier siltation basin with a clean layer of crushed stone. Water filtering thorough the containment structure shall not cause erosion of the surrounding area.

An approved method of controlling erosion, such as an erosion control blanket, stone, etc. shall be used at the outlet.

The control of water containment structure shall be maintained as follows:

1. Inspect at least twice daily during dewatering operations.
2. Repair any damage immediately.
3. Clean containment structure daily. Remove any debris immediately.
4. Remove sediments as needed.

The Contractor shall inspect compost filter tubes and sedimentation fence that surround the outlet daily and shall immediately replace any that are damaged.

Placement of the dewatering containment structure will be as approved by the Municipalities and the Engineer based on specific site conditions and staging operations of the Contractor.

The Contractor shall investigate and verify existing conditions and evaluate the need for protection and the type of facilities required. Before commencing construction, the Contractor shall furnish the Engineer with details of the plan and methods he/she proposes to use for handling water including details for material, equipment and pumping based on actual needs to accomplish the work. The Contractor may use barriers, sandbags, sheeting, portadams or other types of protective facilities as approved by the Engineer. The furnishings of such plans and methods shall not relieve the Contractor of his responsibility for the safety of the work and for the successful completion of the project.

All such temporary structures or facilities shall be safely designed, extended to sufficient depth and be of such dimensions and water-tightness so as to assure construction of the permanent work in the dry. Water control structures shall not interfere with the proper performance of the work. Their construction shall be such as to permit excavation for the permanent work and any conflicts shall be corrected at the sole expense of the Contractor.

Any pumping from within the areas of construction shall be done in such a manner as to prevent the possibility of movement of water through any fresh concrete.

Unless otherwise provided or directed by the Engineer, all such temporary protective work shall be removed and disposed of in an approved manner when no longer required.

The Engineer/Municipalities have the right to order the Contractor to stop all work when in his judgment the Contractor's water control operations are failing to produce adequate results or are posing a threat to the environment.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for work under this Item shall be paid at the lump sum contract bid price, complete.

Payment for all water control work, including design for the dewatering operations used to maintain a water free excavation, shall include all labor, tools and equipment materials and installation, piping, pumping, stone ends for pipes, maintenance, subsequent removal of all related materials and equipment all as outlined above; and restoration of site shall be included in the lump sum contract price bid under this Item.

Eighty-five (85%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system. The final fifteen (15%) percent of the Lump Sum Price Bid for this Item will be paid upon the complete removal of the water control system from the project site at the completion of the work.

Compost filter tubes and sedimentation fence provided specifically for the outlet from the sedimentation containment structure shall be included in the lump sum bid price for this Item.

Attachment F

Middle Street / Plummer Spring Road Over the Upper Artichoke Reservoir
Bridge Replacement Project
West Newbury & Newburyport, Massachusetts
Section 401 Water Quality Certification

SITE PLANS
CONSTRUCTION DETAILS

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10	FLOODPLAIN IMPACT AND MITIGATION SUMMARY
11-14	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

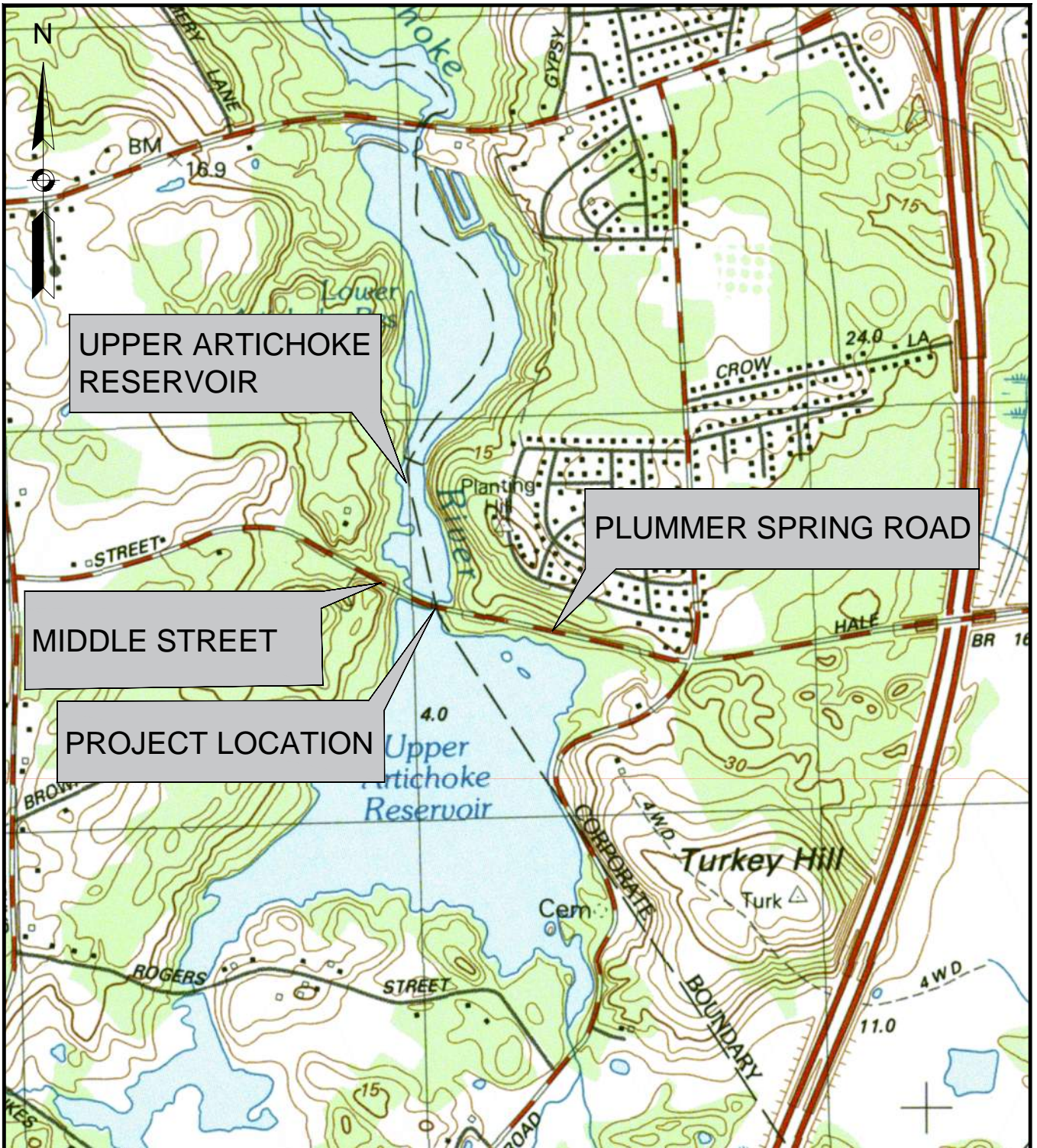
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

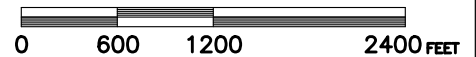
Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 14

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 803 Summer Street
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 02127
 617 896 4300



LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'



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 NEWBURYPORT, MA 01950
 TOWN OF
 WEST NEWBURY
 381 MAIN ST, WEST
 NEWBURY, MA 01985

LOCUS MAP

Source:

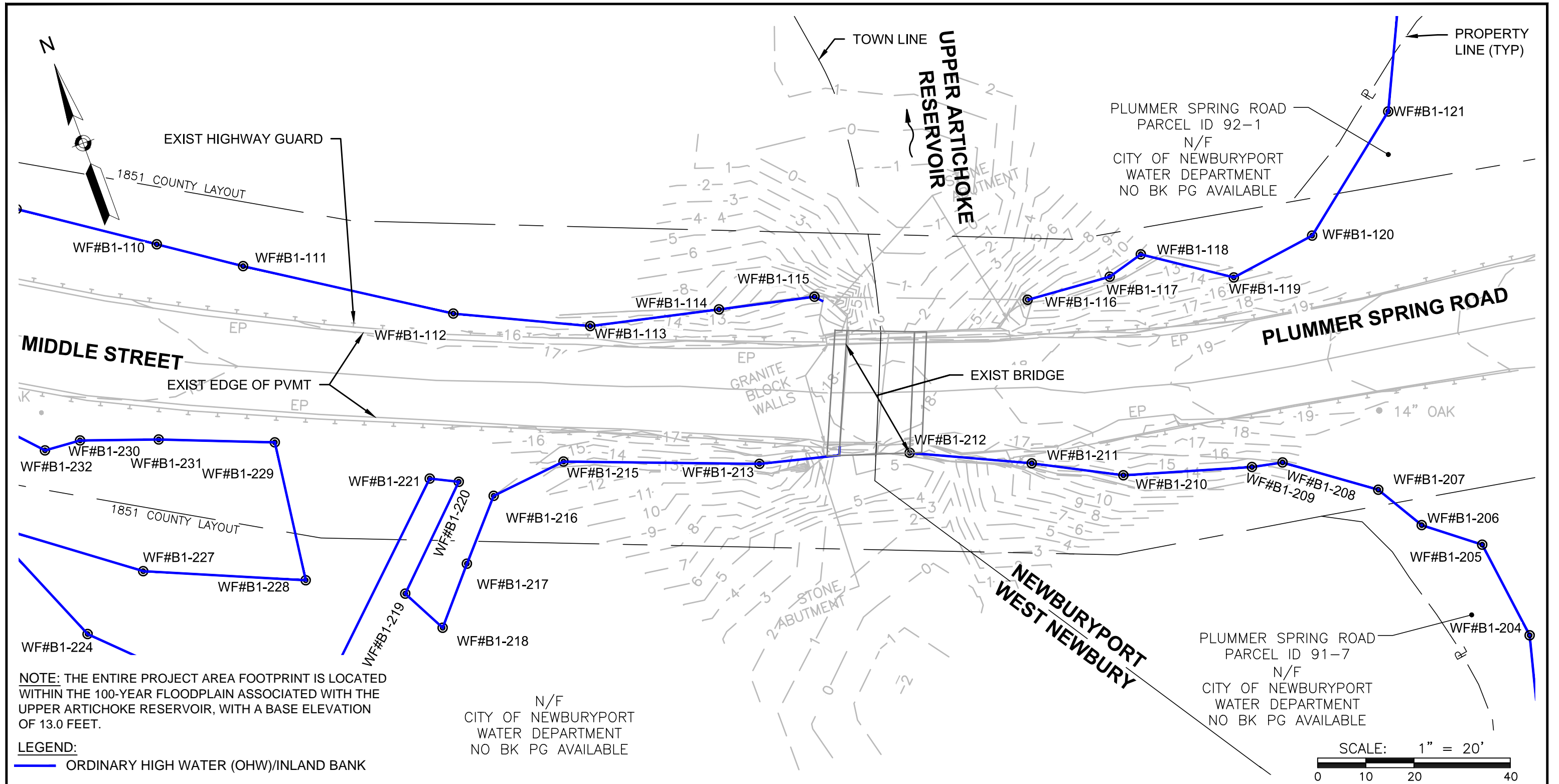
BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING
 ROAD OVER UPPER ARTICHOKE
 RESERVOIR, WEST NEWBURY/
 NEWBURYPORT, MA, ESSEX COUNTY



803 Summer Street
 Boston, Massachusetts
 02127

617 896 4300

Job No.:	28395.00	Date:	12/21/2020
Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 14

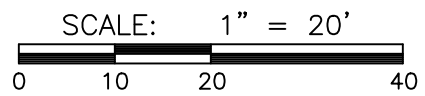


NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

PLUMMER SPRING ROAD
 PARCEL ID 91-7
 N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

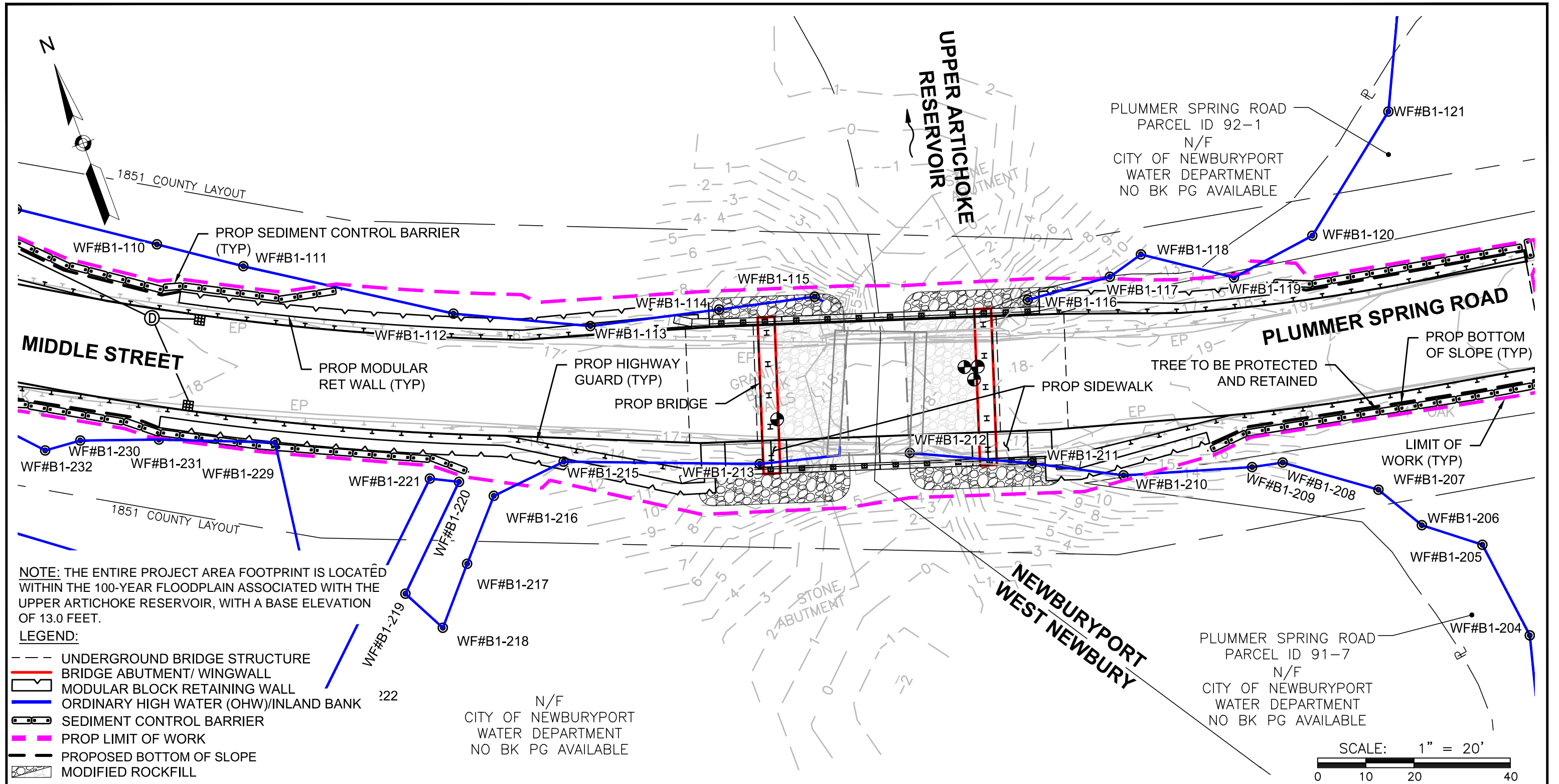


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EXISTING CONDITIONS
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: EX COND Figure: 3 OF 14

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Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

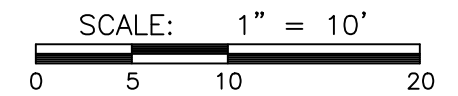
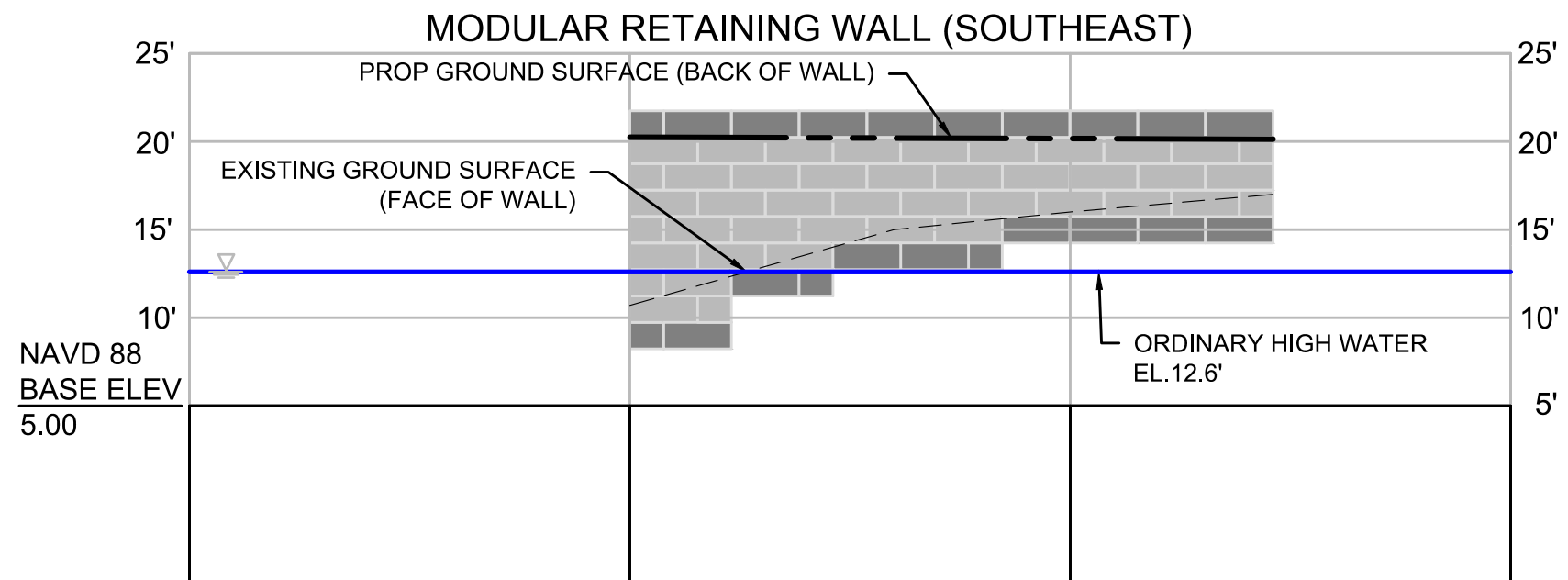
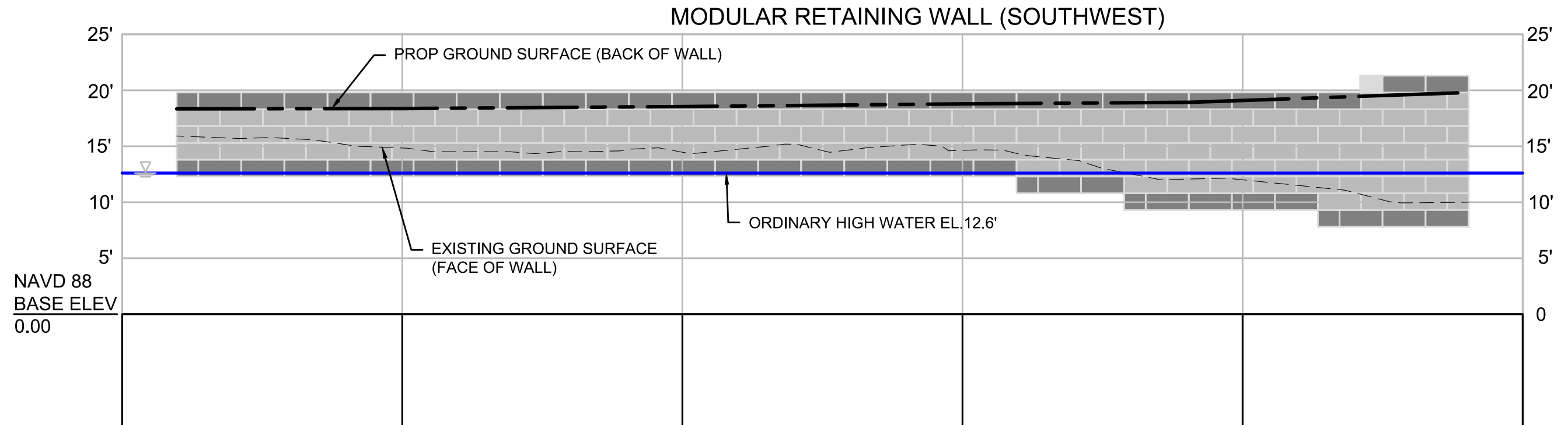
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Scale: 1" = 20' Revised: _____

Description: PROP COND Figure: 4 OF 14

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PROPOSED WALL PROFILE

Source:

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

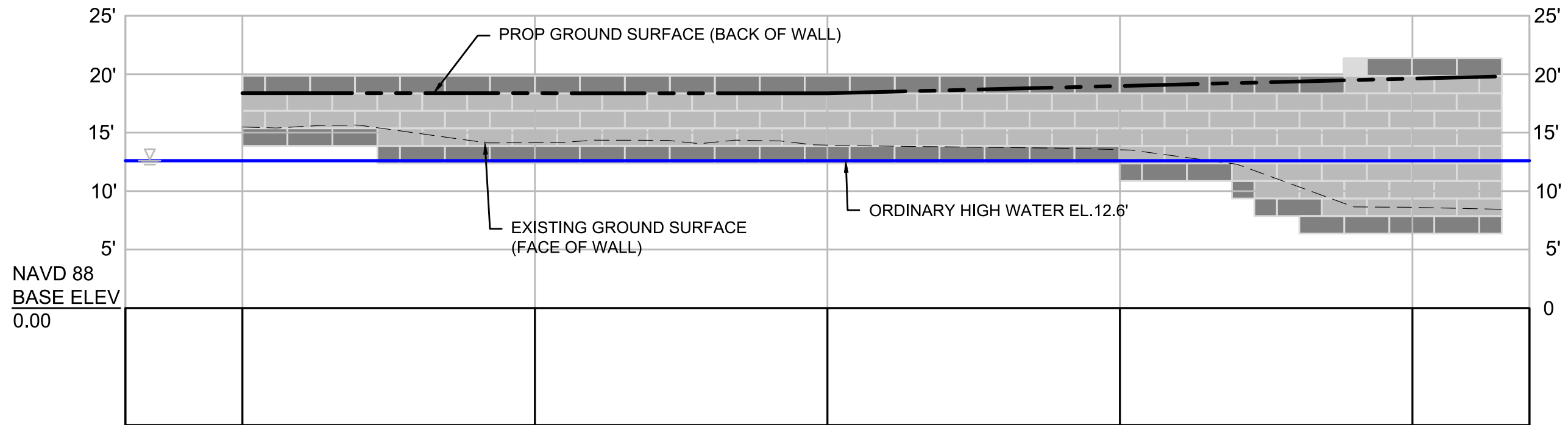
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Description: PR WALL Figure: 5 OF 14

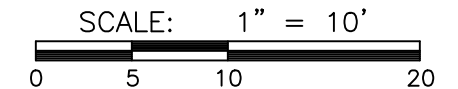
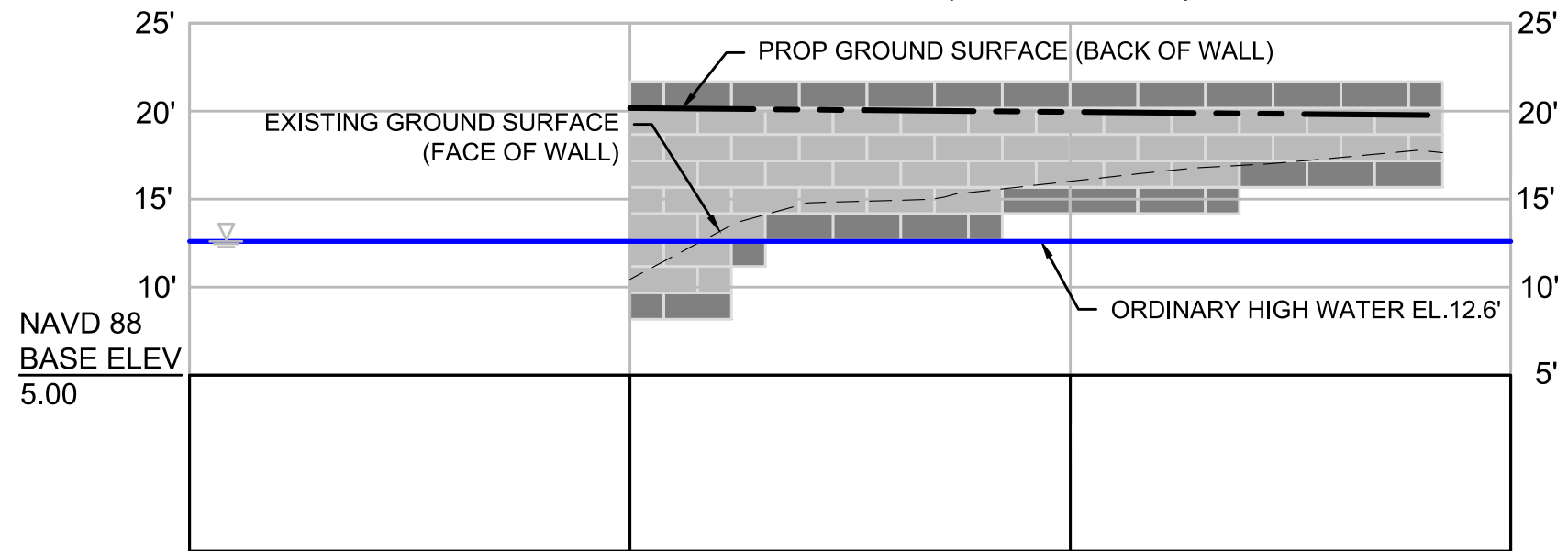
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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)



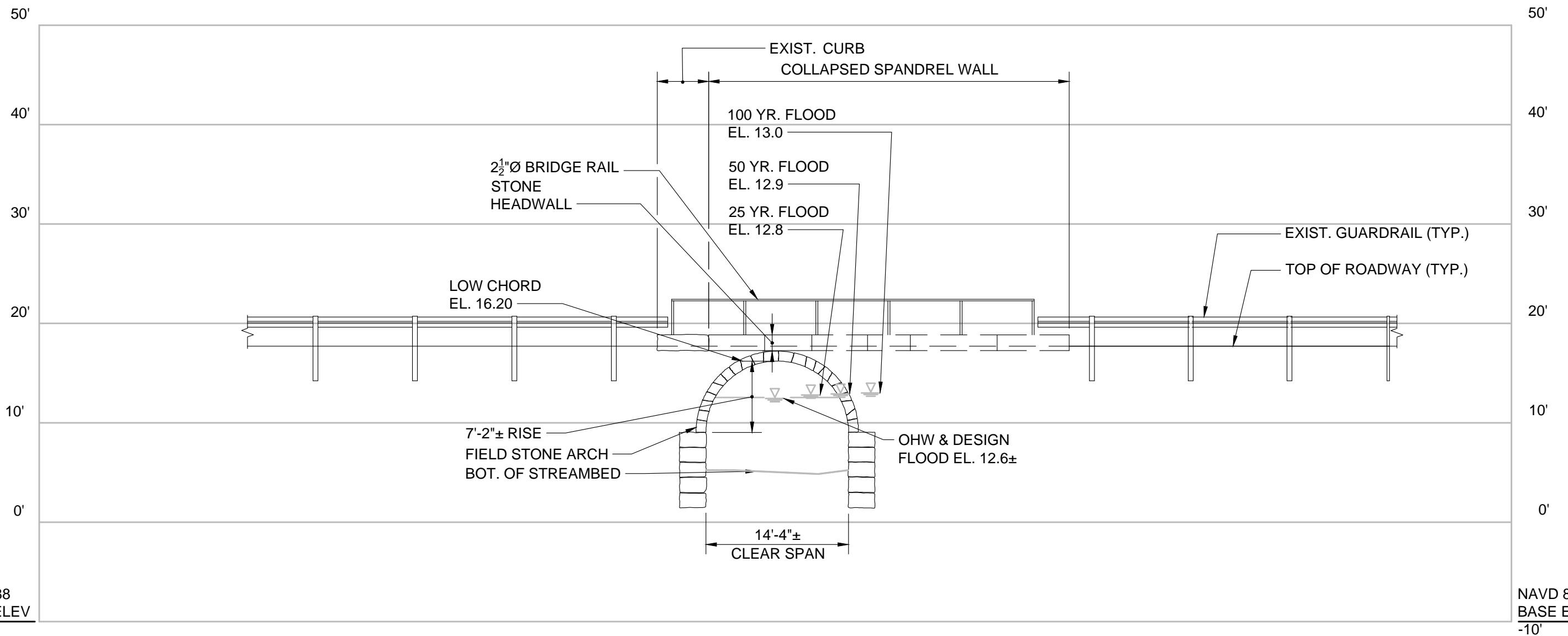
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MA 01950
TOWN OF WEST NEWBURY
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MA 01985

PROPOSED WALL PROFILE

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: _____
Description: PR WALL Figure: 6 OF 14
PROF

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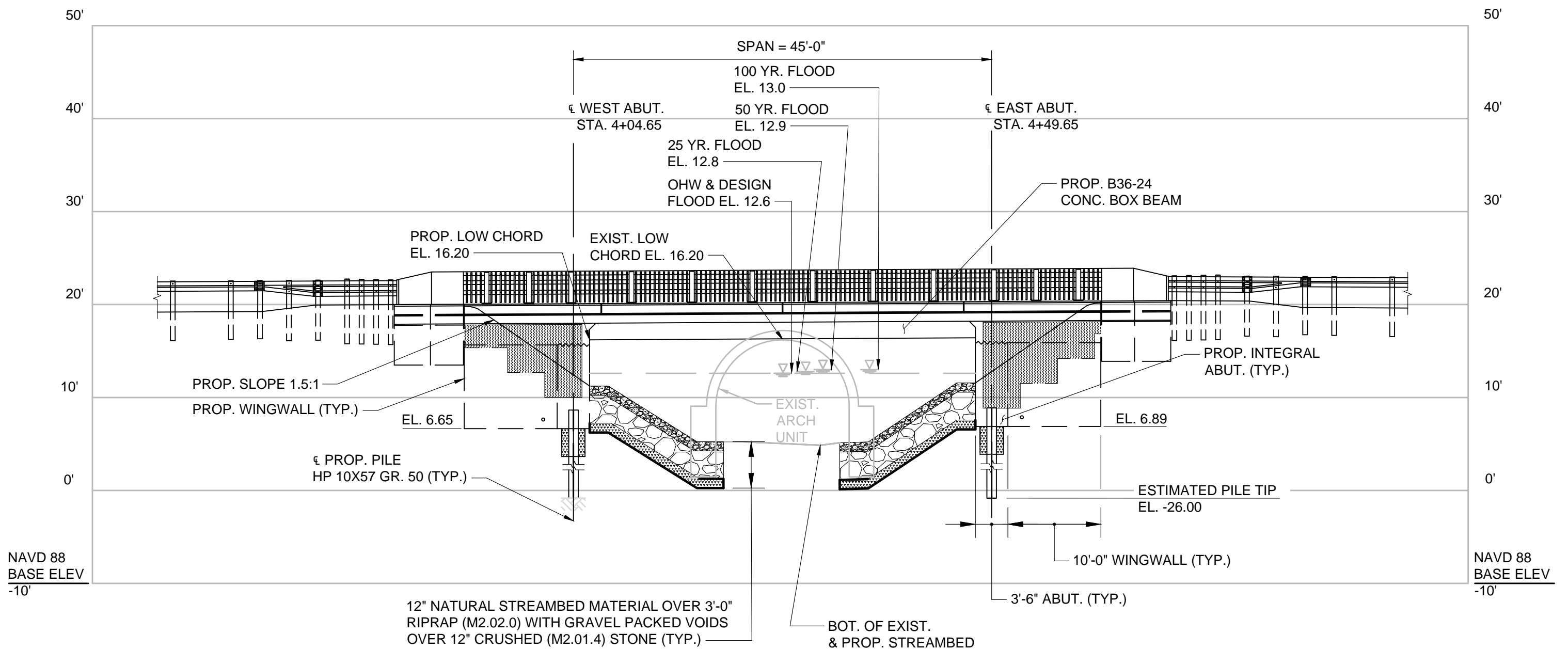
EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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60 PLEASANT ST NEWBURYPORT,
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TOWN OF WEST NEWBURY
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Source: **EXISTING - SOUTH ELEVATION**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: EXIST. EL. Figure: 7 OF 14

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NAVD 88 BASE ELEV -10'

NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

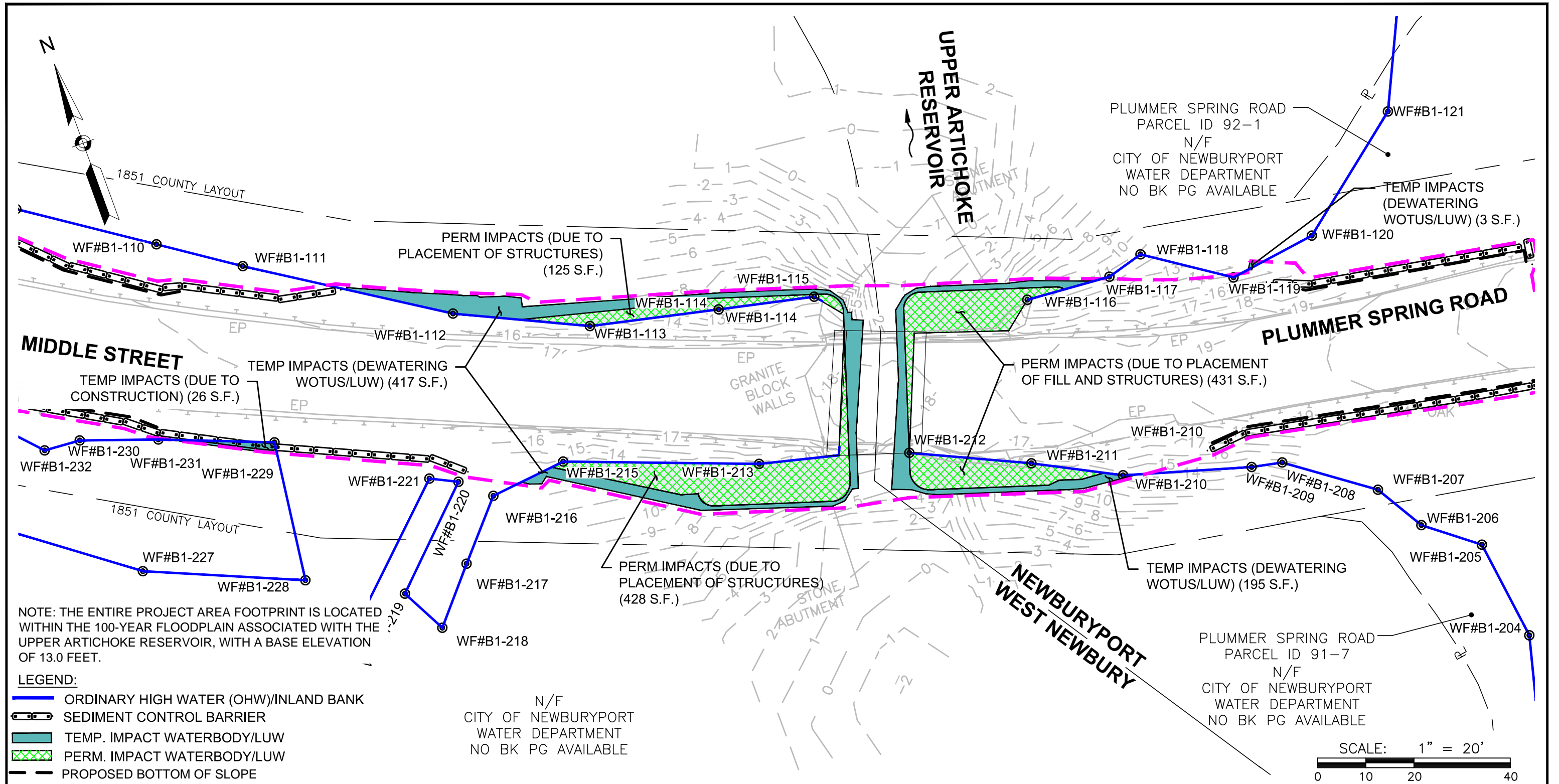
PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

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60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
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Source: **PROPOSED - SOUTH ELEVATION**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
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Description: PROP. EL. Figure: 8 OF 14

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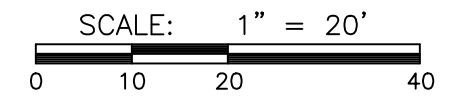
NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PLUMMER SPRING ROAD
PARCEL ID 91-7
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



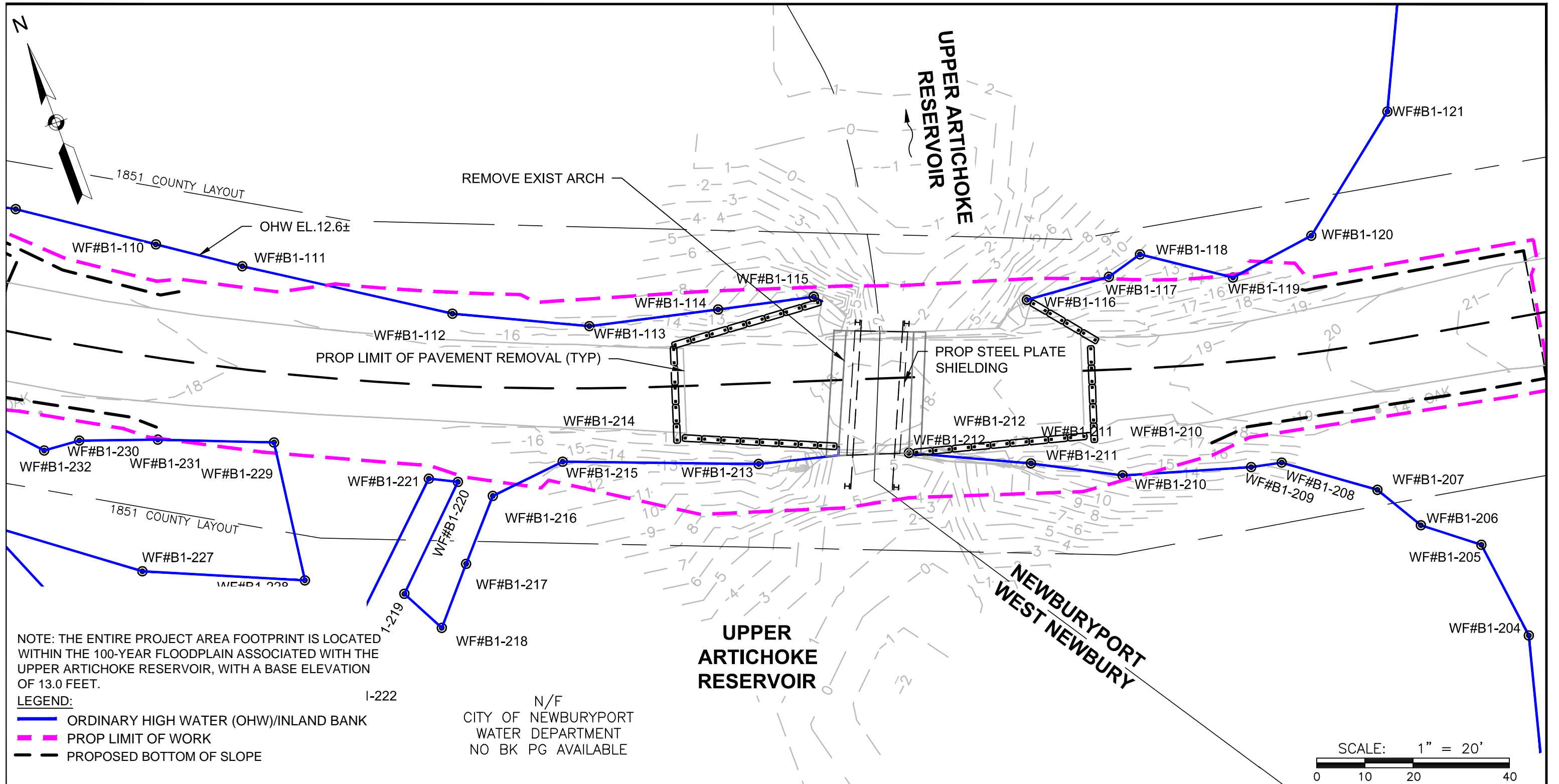
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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

IMPACTS

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: IMPACTS Figure: 9 OF 14

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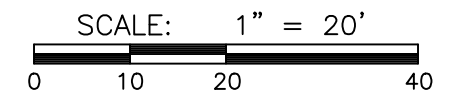


NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- - - PROP LIMIT OF WORK
- - - PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

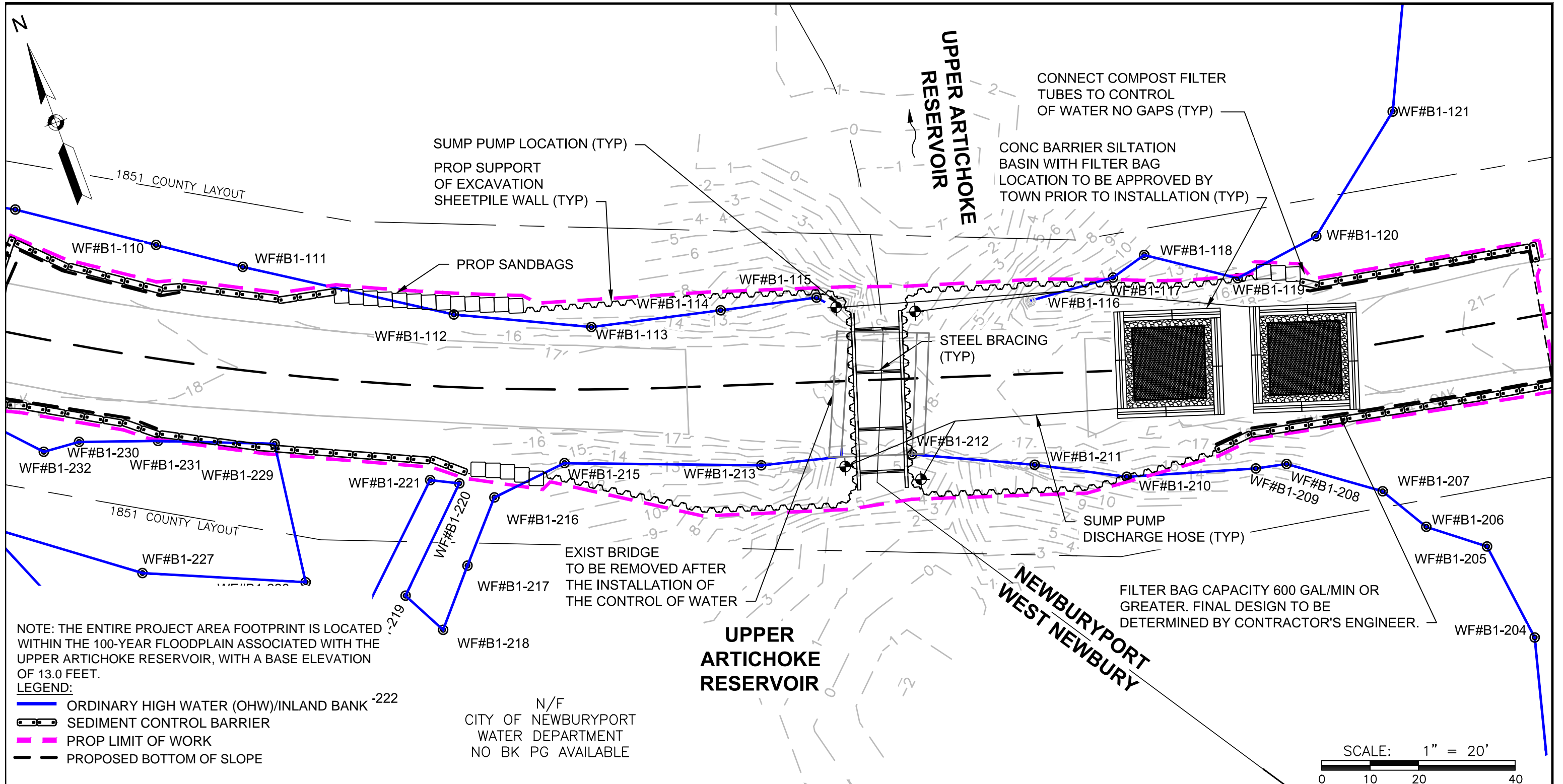


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SHIELDING PLAN - UPPER ARCH REMOVAL
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 10 OF 14

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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 --- SEDIMENT CONTROL BARRIER
 --- PROP LIMIT OF WORK
 --- PROPOSED BOTTOM OF SLOPE

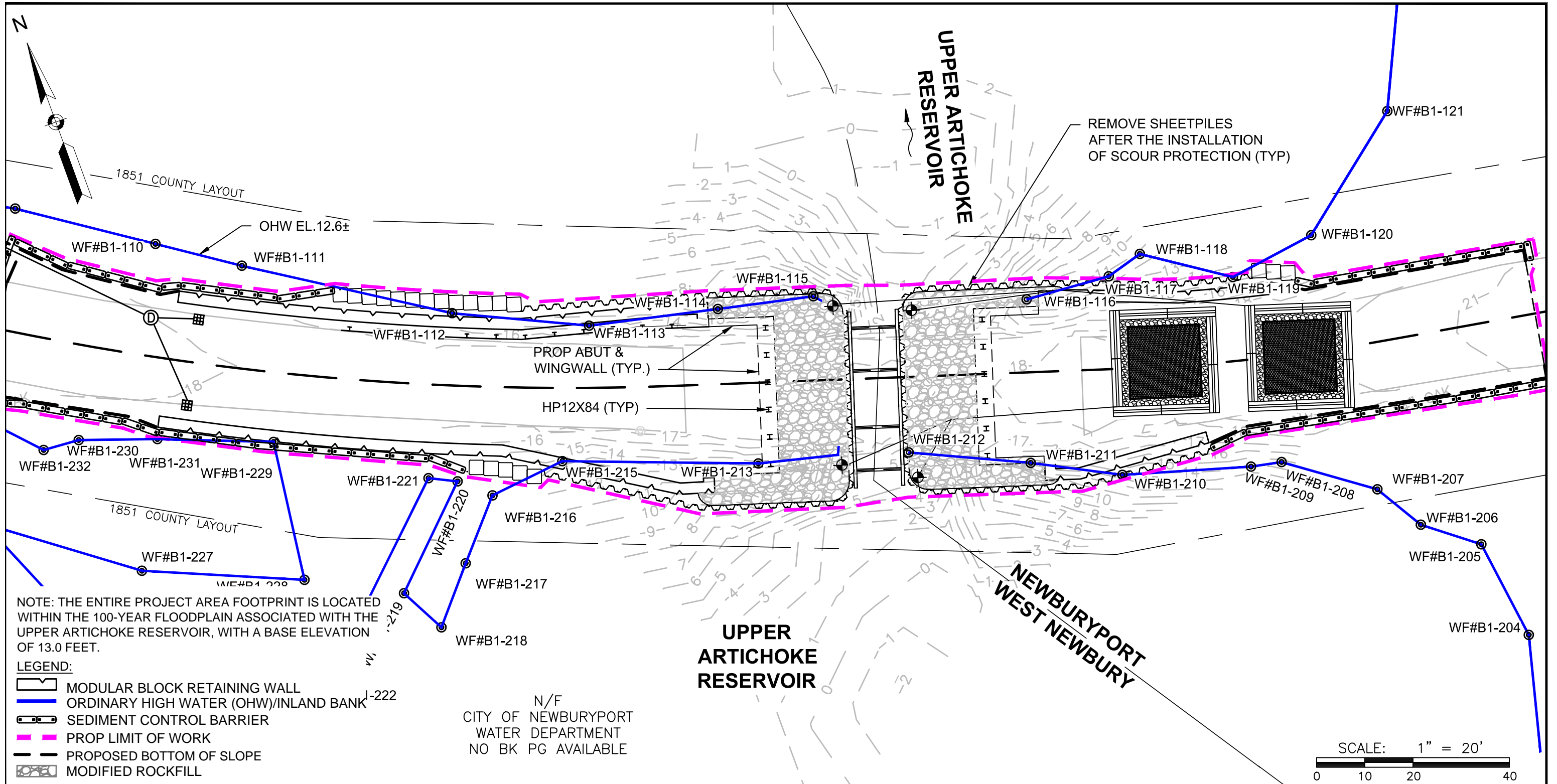
N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

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 TOWN OF WEST NEWBURY
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Source: **CONTROL OF WATER - PHASE 1 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 11 OF 14

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 MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

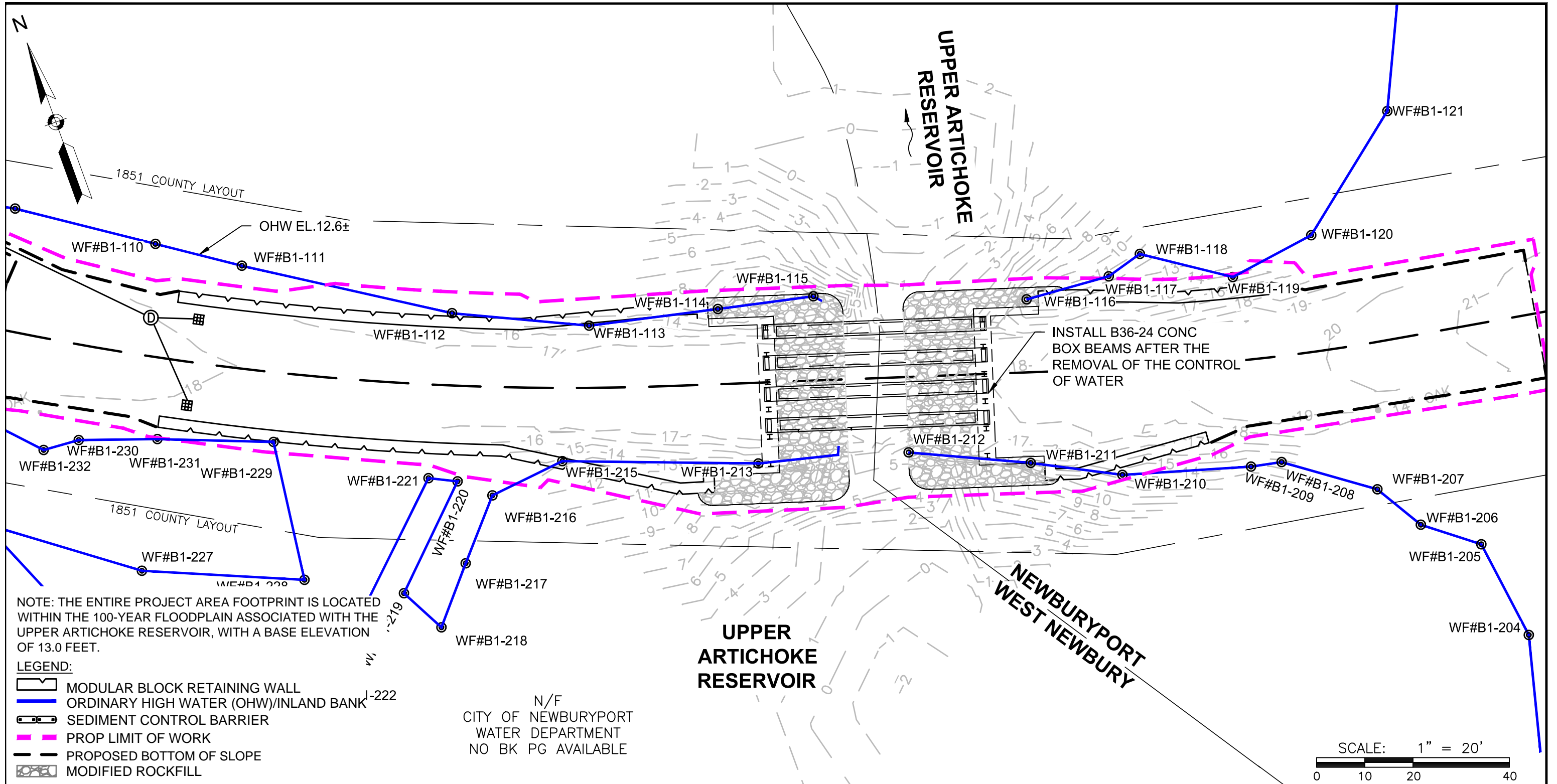
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: COW Figure: 12 OF 14

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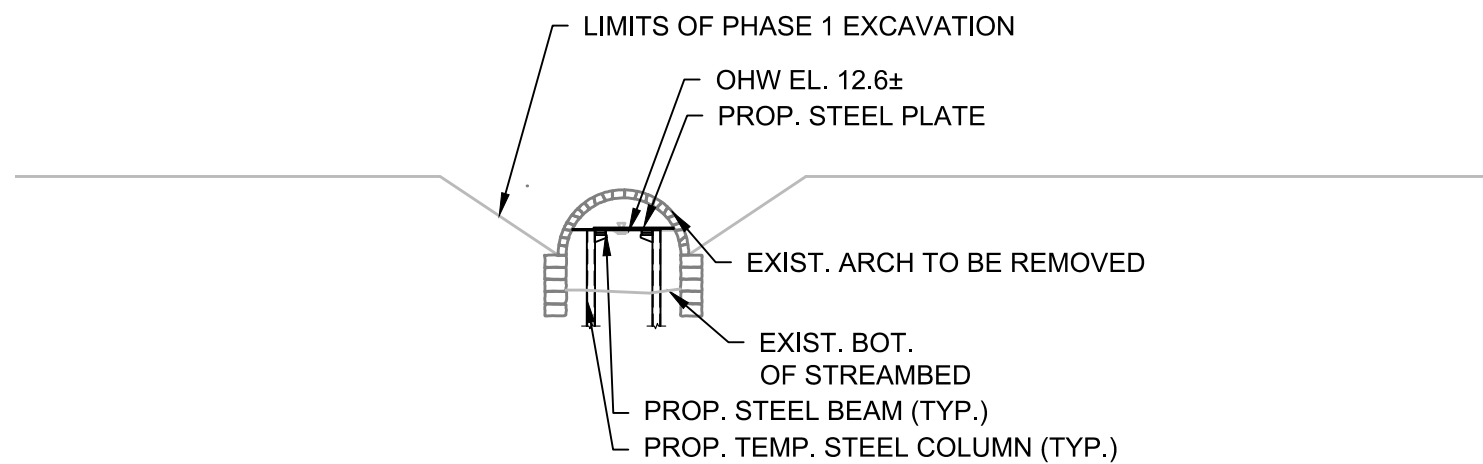


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 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

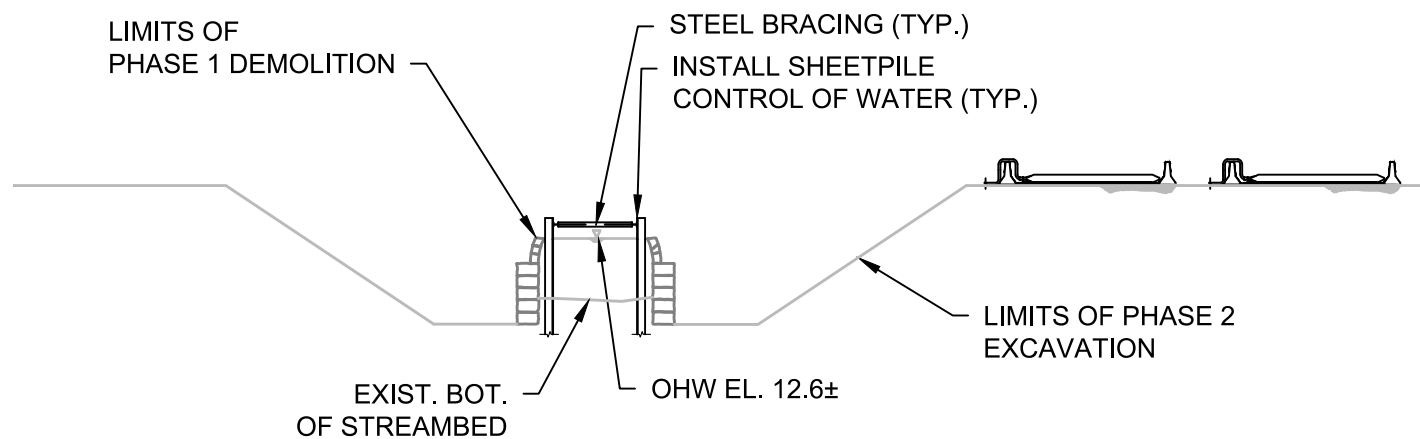
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 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
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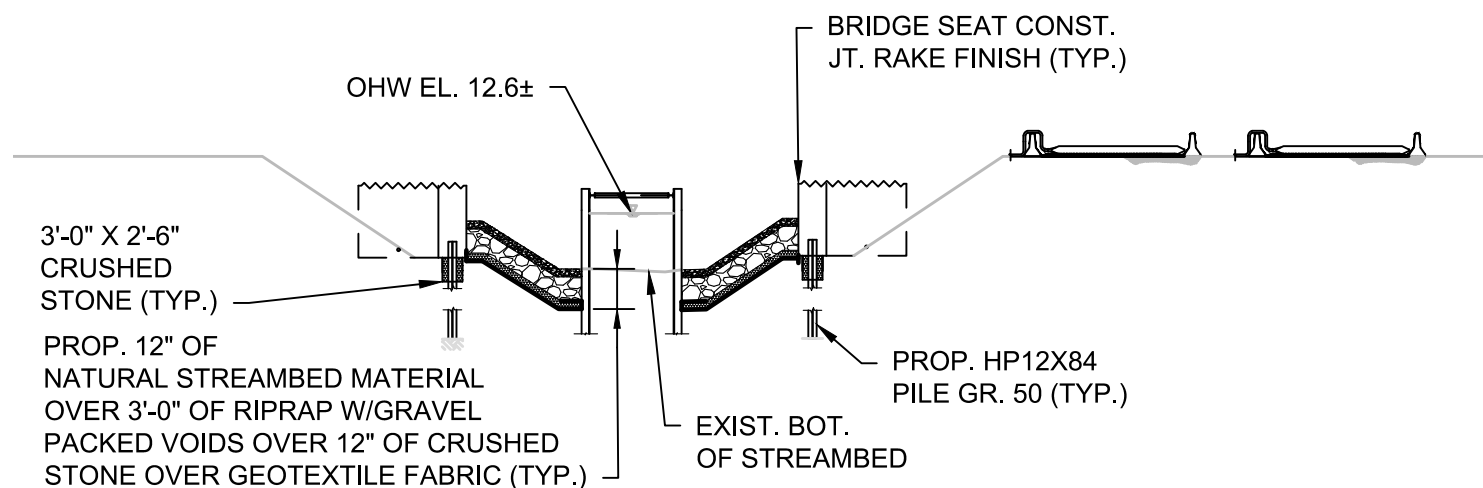
BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



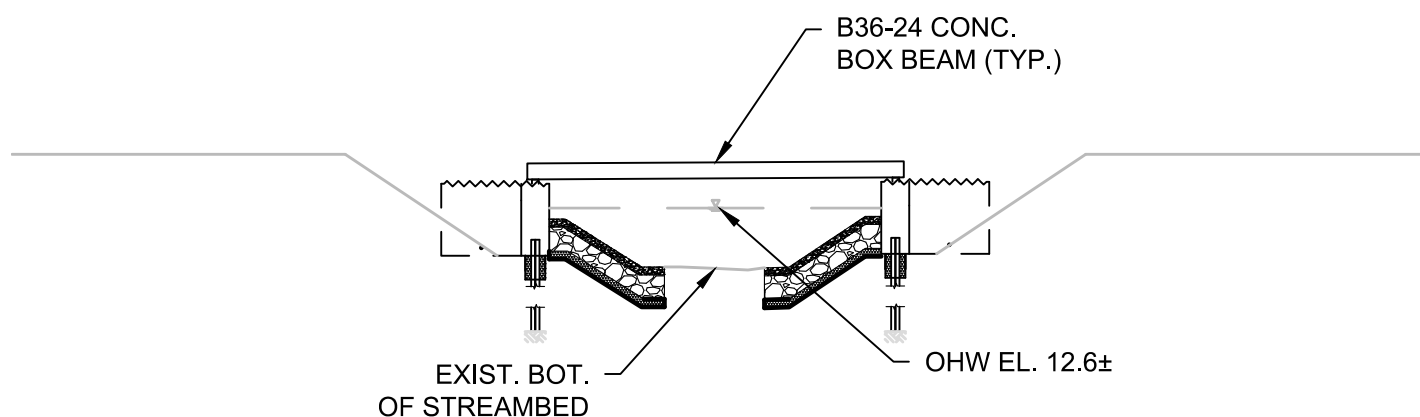
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
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SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 14 OF 14

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803 Summer Street
Boston, Massachusetts
02127
617 896 4300

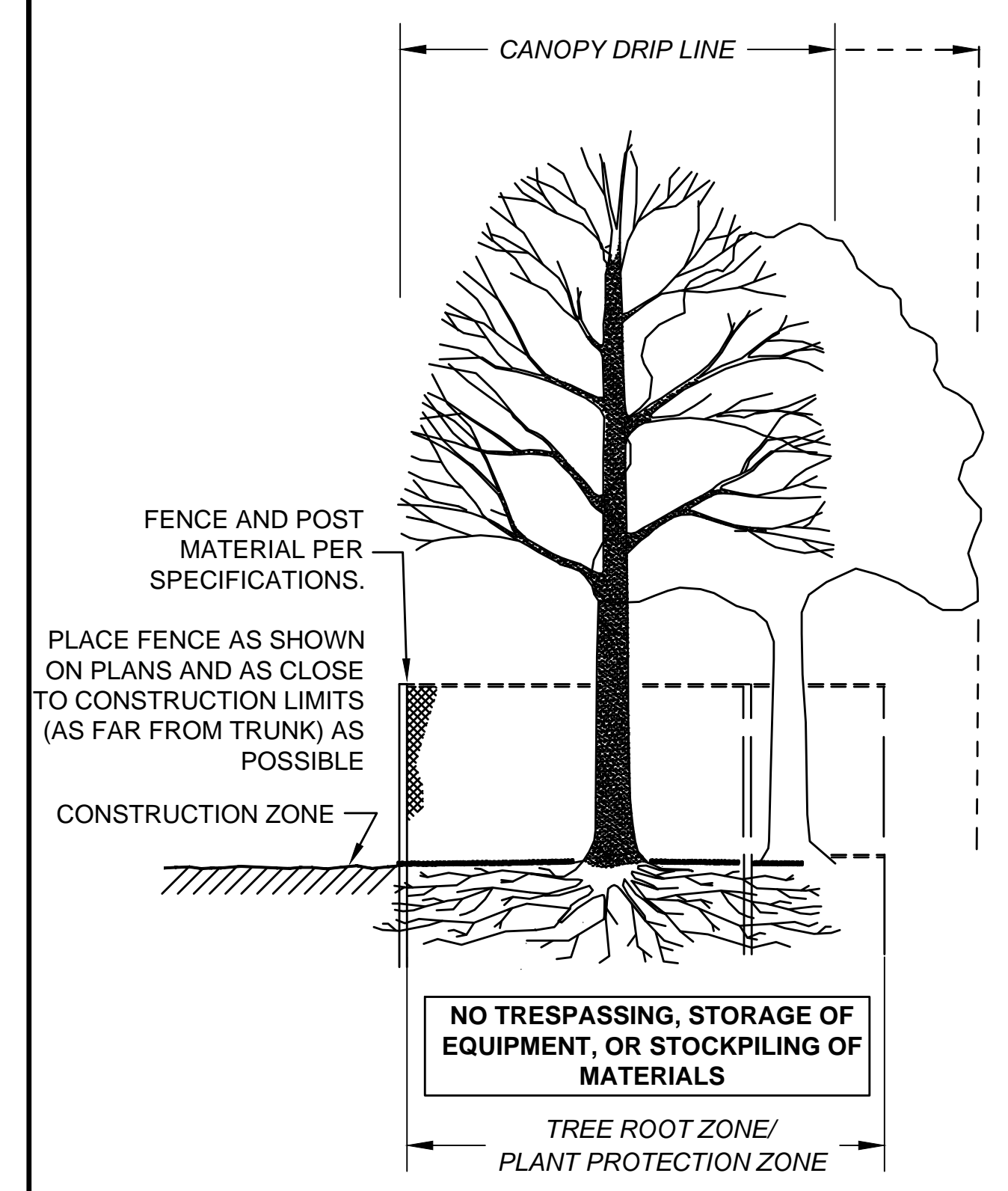
**NEWBURYPORT
PLUMMER SPRING ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	1
PROJECT FILE NO. XXXXXX			

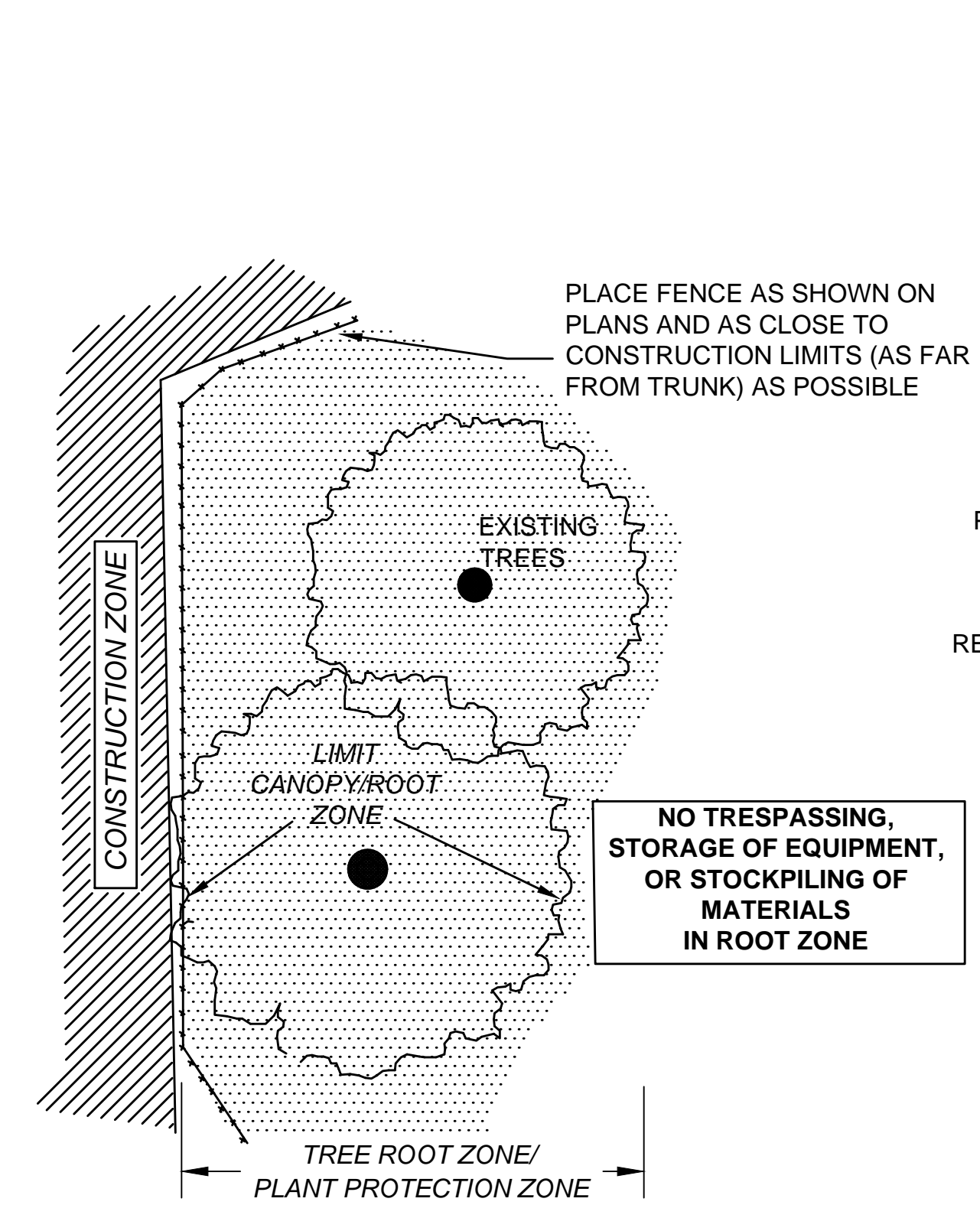
CONSTRUCTION DETAILS

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.



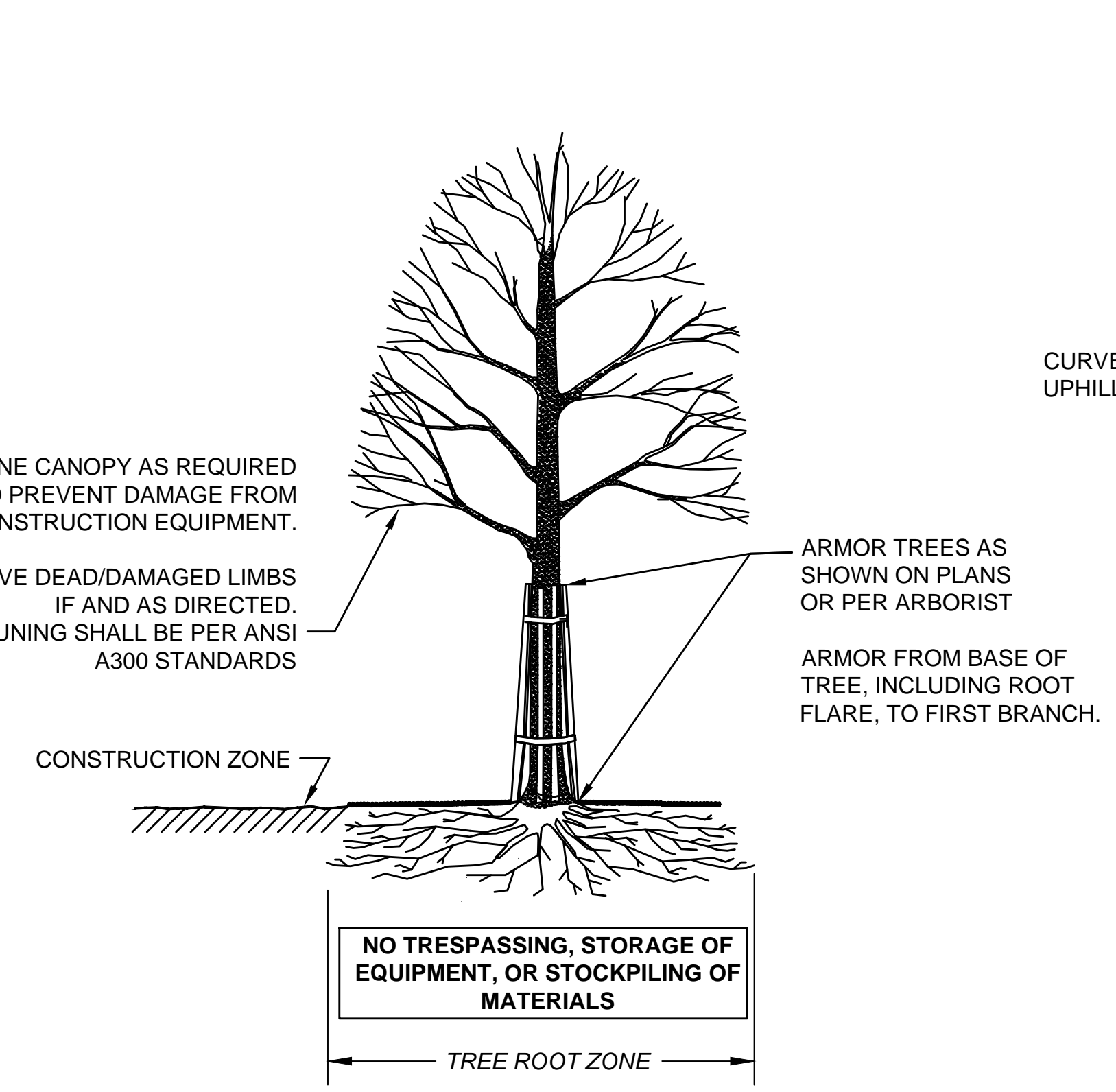
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

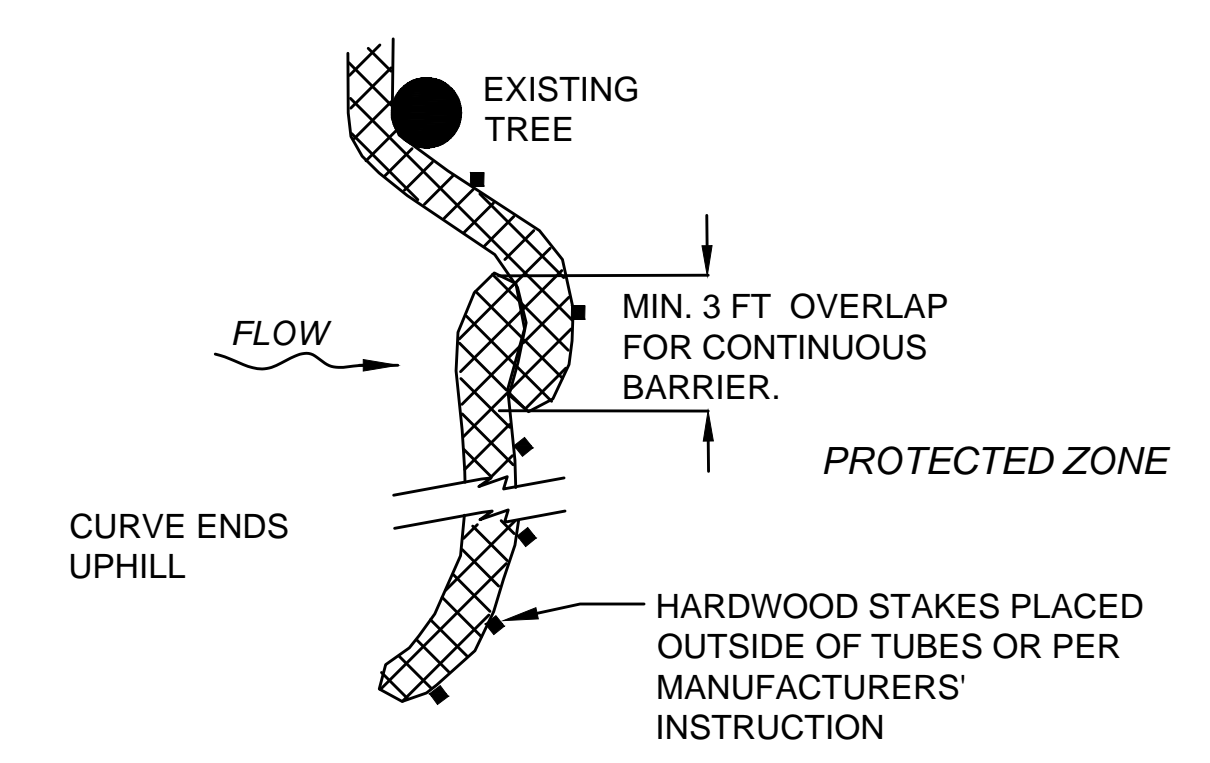
TREE PROTECTION - ROOT ZONE

NOT TO SCALE

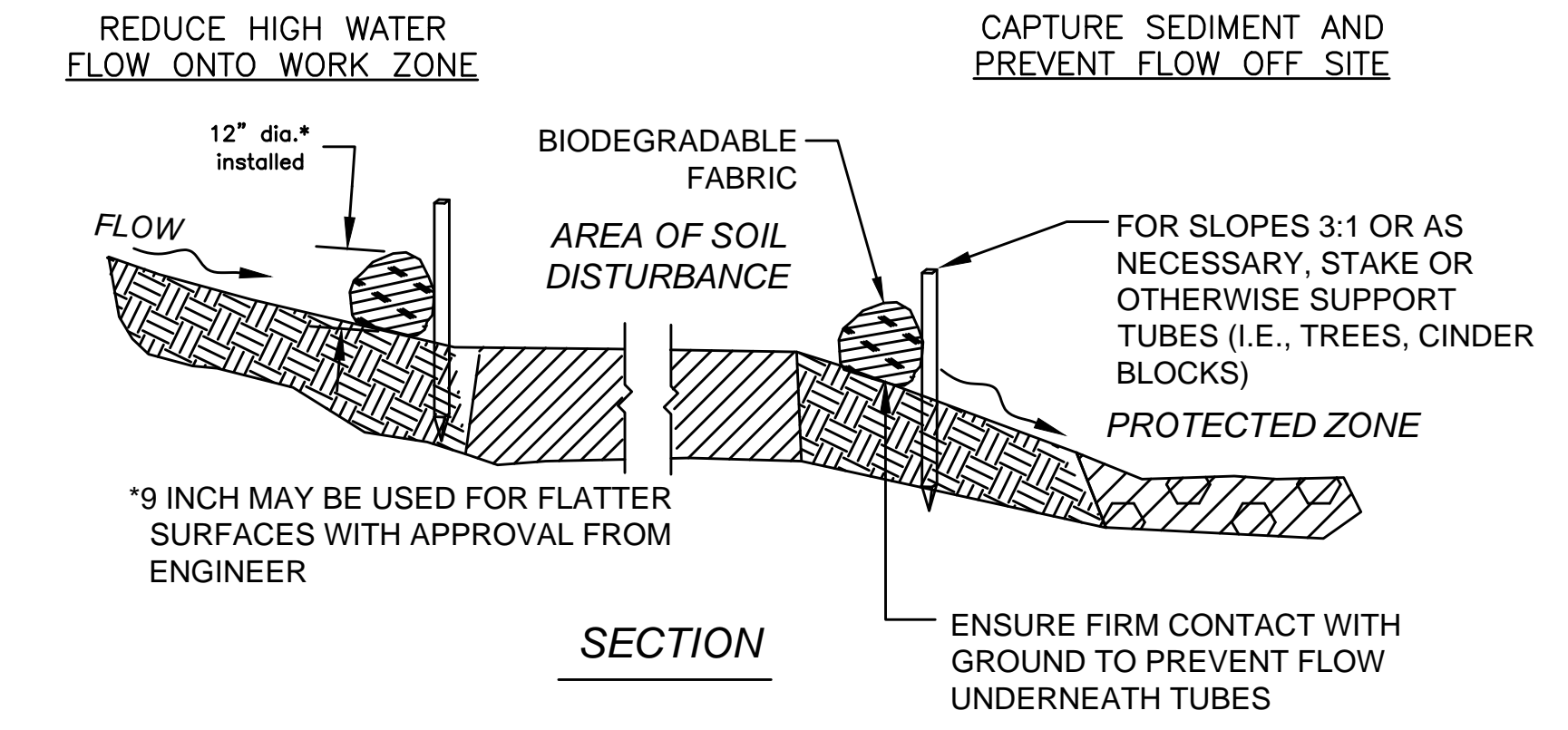


SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK



PLAN VIEW

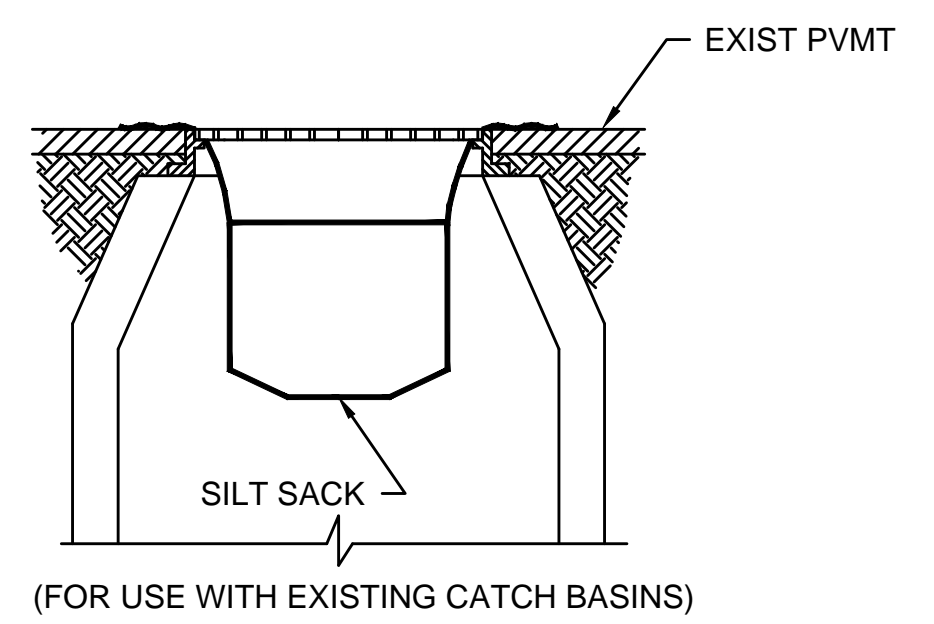


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

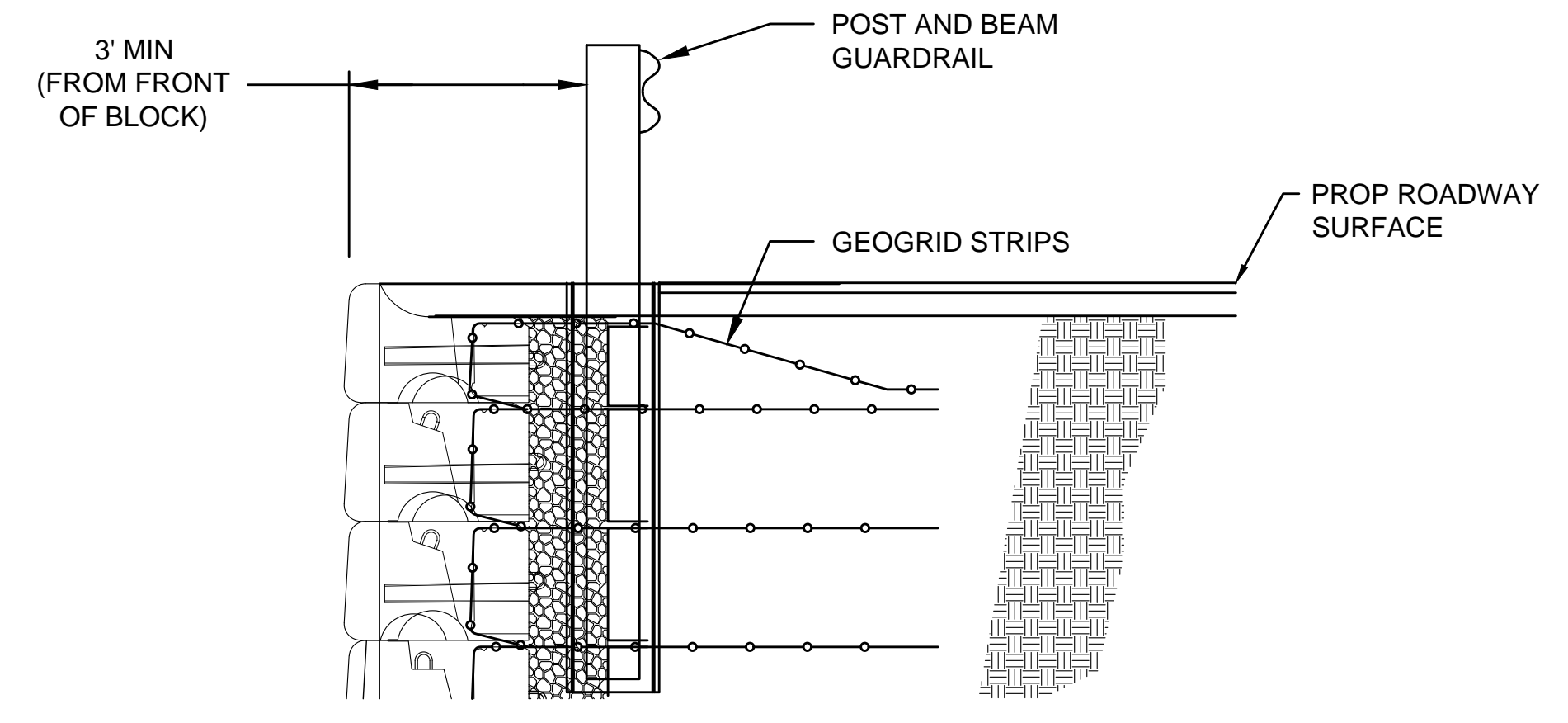
NOT TO SCALE

NOTES:
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



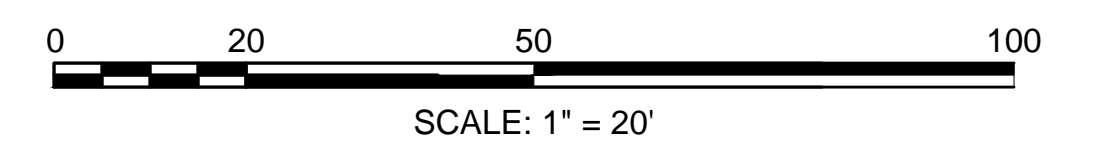
SILT SACK INLET PROTECTION

NOT TO SCALE



POST AND BEAM GUARDRAIL - SECTION VIEW

NOT TO SCALE



**Massachusetts Department of Environmental
Protection**

CHAPTER 91 LICENSE AND PLANS

6/16/23
JCS

11 & PLAN^s

The Commonwealth of Massachusetts

No. WW01-0000187



SO. ESSEX #114 Bk:41603 Pg:350
06/08/2023 11:44 LICN Pg 1/6

Whereas, Town of West Newbury and City of Newburyport

of -- West Newbury and Newburyport -- in the County of -- Essex -- and Commonwealth aforesaid, has applied to the Department of Environmental Protection for license/permit to -- perform improvement dredging; replace an existing arch bridge with a concrete span bridge; install retaining blockwalls; and place stone riprap; as further detailed below -----

and has submitted plans of the same; and whereas due notice of said application, ~~and of the time and place fixed for a hearing thereon~~, has been given, as required by law, to the -- Municipal Officials -- of the -- Town of West Newbury and City of Newburyport; -----

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, ~~hereby subject to the approval of the Governor~~, authorizes and licenses the said ---

Town of West Newbury and City of Newburyport -- subject to the provisions of the ninety first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to -- perform improvement dredging of ±824 square feet of aquatic sediments, 98 cubic yards in-situ (not to exceed 100 cubic yards in situ); replace an existing 14 foot single span earth-filled stone arch bridge with a 45 foot span high strength precast concrete bridge with associated guardrails, road widening and repaving, and temporary sheetpile walls; installation of ±175 square feet of modular blockwalls; placement of stone riprap below the natural streambed consisting of ±649 square feet of a 36-inch thick 10- to 22-inch stone layer with gravel packed voids atop a 6-inch crushed stone bedding placed at a 1.5H:1V slope -----

-- in and over waters of -- the Artichoke River (a.k.a. Artichoke Upper Reservoir) -- at Middle Street and Plummer Spring Road rights-of-way -- in the -- Town of West Newbury and City of Newburyport -- and in accordance with the locations shown and details indicated on the accompanying License Plans No. WW01-0000187 (11 Sheets) prepared by BSC Group, Inc., dated April 5 2023, and signed and sealed by Kathryn L. Eagan, P.E. Civil No. 54123 on April 19, 2023.

No specific Licenses and/or Legislative Authorizations were identified for the existing fill or structures on the project site.

The structures and/or fill authorized hereby shall be limited to the following uses: water-dependent infrastructure crossing facility and bank stabilization.

The structures and fill authorized pursuant to this License are valid for an unlimited term, pursuant to 310 CMR 9.15(1)(c).

The Dredging Permit incorporated within this License is valid for a term of five (5) years from to the date of issuance.

This License/Permit is subject to the following Special Conditions and Standard Conditions.

SPECIAL WATERWAYS LICENSE CONDITIONS

1. The Licensee shall maintain all structures/fill authorized herein in accordance with the terms and conditions specified herein or this License may expire, pursuant to 310 CMR 9.25(1).
2. The Licensee shall construct and maintain the bridge in such a manner as to avoid and/or minimize impacts to navigation in the waterway. Reasonable efforts shall be made to maintain navigability of the waterway, through the project site, during all stages of construction. Short-term or intermittent closures to facilitate the movement of equipment, and/or demolition and removal or installation of significant structural elements not to exceed 48 hours is allowed without advance notice.
 - a) In the event of any temporary construction impacts to the waterway that will preclude navigation by vessels exceeding 48 hours, the Licensee is required to provide a minimum of 14 days advance notice to the Department by contacting dep.waterways@mass.gov. The notice shall include the project location and the approximate time frame that navigation will be impacted. Signage with information on the location and timeframe for limited access at the project site shall be posted at portage locations both upstream and downstream of the project site.
 - b) The Licensee shall also publish the notice of any planned closure (in excess of 48 hours) of the waterway as described in Special Condition 2a. through publication of the notice in print, electronic media, and/or other appropriate formats and shall provide said notice to the West Newbury Conservation Commission, West Newbury Town Clerk, Newburyport Conservation Commission, Newburyport City Clerk a minimum of 14 days prior to closure of the waterway.
3. Any structural alteration, change in use, or and other modifications to that explicitly authorized herein and contained on the License Plans, shall require the prior review of the Department to determine whether additional licensing is required pursuant to M.G.L. Chapter 91 and the Waterways Regulations at 310 CMR 9.00.
4. All structures and fill authorized herein shall be constructed to meet the Engineering and Construction Standards pursuant to 310 CMR 9.37.

5. The Licensee shall allow agents of the Department to enter the project site to verify compliance with the conditions of this License.
6. All work authorized herein shall be completed within five (5) years of the date of license issuance. The construction period may be extended by the Department for one (1) or more one (1) year periods without public notice, provided that the Applicant submits to the Department thirty (30) days prior to the end of the construction period, a written request to extend the period and provides adequate justification for said extension.
7. Within sixty (60) days of completion of the licensed project, the Licensee shall request in writing that the Department issue a Certificate of Compliance in accordance with 310 CMR 9.19. The request shall be accompanied by a certification by a registered professional engineer licensed to do business in the Commonwealth that the project was completed in accordance with the plans, specifications, and conditions of this License.

SPECIAL WATERWAYS DREDGE CONDITIONS

1. The Permittee shall inform the Department in writing at least three (3) days before commencing any authorized dredging activities.
2. Dredging may be performed by hydraulic or mechanical means and conducted in a manner that will cause no unnecessary obstruction with vessel navigation in the Artichoke River (Artichoke Upper Reservoir).
3. After completion of the dredging authorized herein, no maintenance dredging beyond the time authorized herein is permitted under this Permit.

Please see Page 4 and 5 for additional conditions to this License/Permit

Duplicate of said plan, License/Permit No. W01-0000187 on file in the office of said Department, and original of said plan accompanies this License/Permit and is to be referred to as a part hereof.

STANDARD WATERWAYS LICENSE CONDITIONS

1. Acceptance of this Waterways License shall constitute an agreement by the Licensee to conform with all terms and conditions stated herein.
2. This License is granted upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Licensee prior to the commencement of any activity or use authorized pursuant to this License.
3. Any change in use or any substantial structural alteration of any structure or fill authorized herein shall require the issuance by the Department of a new Waterways License in accordance with the provisions and procedures established in Chapter 91 of the Massachusetts General Laws. Any unauthorized substantial change in use or unauthorized substantial structural alteration of any structure or fill authorized herein shall render this License void.
4. This License shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This License may be revoked after the Department has given written notice of the alleged noncompliance to the Licensee and those persons who have filed a written request for such notice with the Department and afforded them a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this License void and the Commonwealth may proceed to remove or cause removal of any structure or fill authorized herein at the expense of the Licensee, its successors and assigns as an unauthorized and unlawful structure and/or fill.
5. The structures and/or fill authorized herein shall be maintained in good repair and in accordance with the terms and conditions stated herein and the details indicated on the accompanying License Plans.
6. Nothing in this License shall be construed as authorizing encroachment in, on or over property not owned or controlled by the Licensee, except with the written consent of the owner or owners thereof. The Licensee stated that the Town of West Newbury and the City of Newburyport were the property owners at the time the application was submitted.
7. This License is granted subject to all applicable Federal, State, County, and Municipal laws, ordinances, and regulations including but not limited to a valid final Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131 §40.
8. This License is granted upon the express condition that the use of the structures and/or fill authorized hereby shall be in strict conformance with all applicable requirements and authorizations of the MassDEP.
9. This License authorizes structure(s) and/or fill on:

Private Tidelands - In accordance with the public easement that exists by law on Private Tidelands, the Licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

Commonwealth Tidelands - The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.

Great Pond of the Commonwealth - The Licensee shall not restrict the public's right to use and to pass freely upon lands lying seaward of the high water mark for any lawful purpose.

Navigable River or Stream - The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, in the waterway.

No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this License.

10. Unless otherwise expressly provided by this License, the Licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

STANDARD WATERWAYS DREDGING CONDITIONS

1. Acceptance of this Waterways Permit shall constitute an agreement by the Permittee to conform to all terms and conditions stated herein.
2. Any modification from that explicitly authorized herein and contained on the Waterways Permit Plans shall require prior review of the Department to determine whether additional authorization is required pursuant to M.G.L. Chapter 91, the Public Waterfront Act, and the Waterways Regulations at 310 CMR 9.00.
3. The Permittee shall inform the Department in writing at least three (3) days before commencing any authorized dredging or dredge material disposal.
4. This Waterways Permit is issued upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Permittee prior to the commencement of any activity hereby authorized.
5. This Waterways Permit shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This Permit may be revoked after the Department has given written notice of the alleged noncompliance to the Permittee, or his agent, and those persons who have filed a written request, with the Department, for such notice and have afforded the Permittee a reasonable opportunity to correct said noncompliance. Failure to correct noncompliance after the issuance of a written notice by the Department shall render this Permit void.
6. This Waterways Permit is issued subject to all applicable federal, state, county, and municipal laws, ordinances, by-laws, and regulations, including but not limited to, a valid Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, §40 and a valid Water Quality Certification issued pursuant 314 CMR 9.00.
7. This Waterways Permit is issued upon the express condition that dredging, transportation, and disposal of dredge material shall be in strict conformance with all applicable requirements and authorizations of the Department. Any subsequent maintenance dredging and transportation and disposal of dredge material during the term of this Waterways Permit shall be in strict conformance with all applicable requirements and authorizations of the Department.
8. Unless otherwise authorized in accordance with a Special Condition of this Waterways Permit, no maintenance dredging beyond the time authorized herein is permitted.
9. The dredging under this Permit shall be conducted as to cause no unnecessary obstruction of the free passage of vessels.
10. In conducting the dredging authorized, care shall be taken to cause no shoaling. If, however, any shoaling is caused, the Permittee shall, at his expense, remove the shoal areas. The Permittee shall pay all costs of supervision, and if at any time the Department deems necessary a survey or surveys of the area dredged, the Permittee shall pay all costs associated with such work.
11. Nothing in this Permit shall be construed as to impair the legal rights of any persons or authorize dredging on land not owned by the Permittee without consent of the owner(s) of such property.
12. The Permittee shall assume and pay all claims and demands arising in any manner from the work authorized herein and shall save harmless and indemnify the Commonwealth of Massachusetts, its officers, employees, and agents from all claims, audits, damages, costs and expenses incurred by reason thereof.
13. Whosoever violates any provisions of this Permit shall be subject to a fine of twenty-five thousand dollars and zero cents (\$25,000.00) per day for each day such violation occurs or continues, or by imprisonment for not more than one year, or both such fine and imprisonment; or shall be subject to civil penalty not to exceed twenty-five thousand dollars and zero cents (\$25,000.00) for each day such violation occurs or continues.
14. In the event of any conflict between the Special Conditions and the Standard Conditions, the Special Conditions shall prevail.

The amount of tidewater displaced by the work hereby authorized has been ascertained by said Department, and compensation thereof has been made by the said -- Town of West Newbury and City of Newburyport -- by paying into the treasury of the Commonwealth -- (N/A) -- for each cubic yard so displaced, being the amount hereby assessed by said Department (N/A).

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying Mylar Plan are recorded within the chain of title of the affected property within sixty (60) days from the date hereof, in the Registry of Deeds for the -- Southern District -- County of -- Essex.

In witness whereas, said Department of Environmental Protection have hereunto set their

hands this 5th day of MAY in the year 2023.

Program Chief  Department of Environmental Protection

THE COMMONWEALTH OF MASSACHUSETTS

~~This License is approved in consideration of the payment into the treasury of the Commonwealth by the said -- Town of West Newbury and City of Newburyport -- the further sum of -- N/A -- the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in the land of the Commonwealth.~~

BOSTON,

~~Approved by the Governor.~~

Governor

41603-356 11-Plms

SO ESSEX #115 Bk: 41603 Pg: 356
06/08/2023 11:44 PLAN Pg 1/11

#115
BK: 41603 PG: 356
06/08/2023
(11-Plms)

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

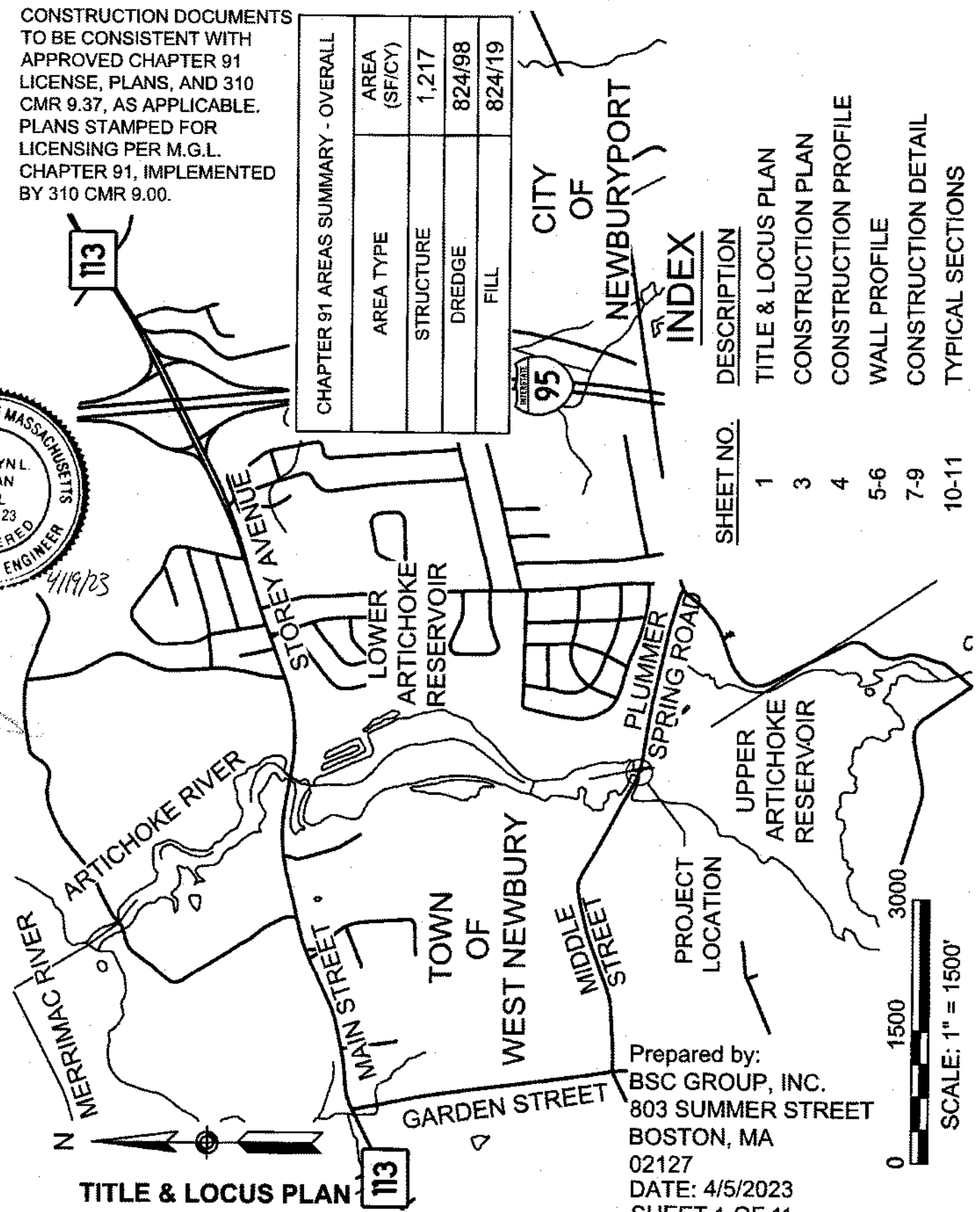
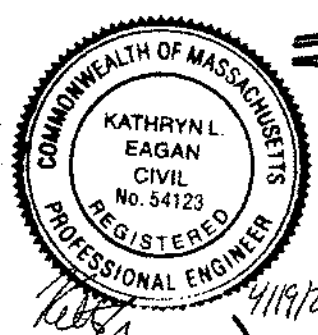
FOR REGISTRY USE ONLY

[Signature] PE 4/19/23 DATE

CONSTRUCTION DOCUMENTS TO BE CONSISTENT WITH APPROVED CHAPTER 91 LICENSE, PLANS, AND 310 CMR 9.37, AS APPLICABLE. PLANS STAMPED FOR LICENSING PER M.G.L. CHAPTER 91, IMPLEMENTED BY 310 CMR 9.00.

CHAPTER 91 AREAS SUMMARY - OVERALL	
AREA TYPE	AREA (SF/CY)
STRUCTURE	1,217
DREDGE	824/98
FILL	824/19

SHEET NO.	DESCRIPTION
1	TITLE & LOCUS PLAN
3	CONSTRUCTION PLAN
4	CONSTRUCTION PROFILE
5-6	WALL PROFILE
7-9	CONSTRUCTION DETAIL
10-11	TYPICAL SECTIONS



TITLE & LOCUS PLAN
PLAN ACCOMPANYING PETITION OF CITY OF NEWBURYPORT TOWN OF WEST NEWBURY TO CONSTRUCT AND MAINTAIN A CONCRETE SPAN BRIDGE, UPPER ARTICHOKE RESERVOIR, NEWBURYPORT AND WEST NEWBURY, MIDDLESEX COUNTY

Prepared by:
BSC GROUP, INC.
803 SUMMER STREET
BOSTON, MA
02127
DATE: 4/5/2023
SHEET 1 OF 11



LICENSE PLAN NO. WW01-000187
Approved by Department of Environmental Protection of Massachusetts
4/5, 2023
[Signature]

41603-356 11-Plans

SO. ESSEX #115 Bk:41603 Pg:356
06/08/2023 11:44 PLAN Pg 2/11

#115

BK:41603 PG:356

06/08/2023

(11-Plans)

I CERTIFY THAT THIS PLAN CONFORMS TO
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REGISTERS OF DEEDS

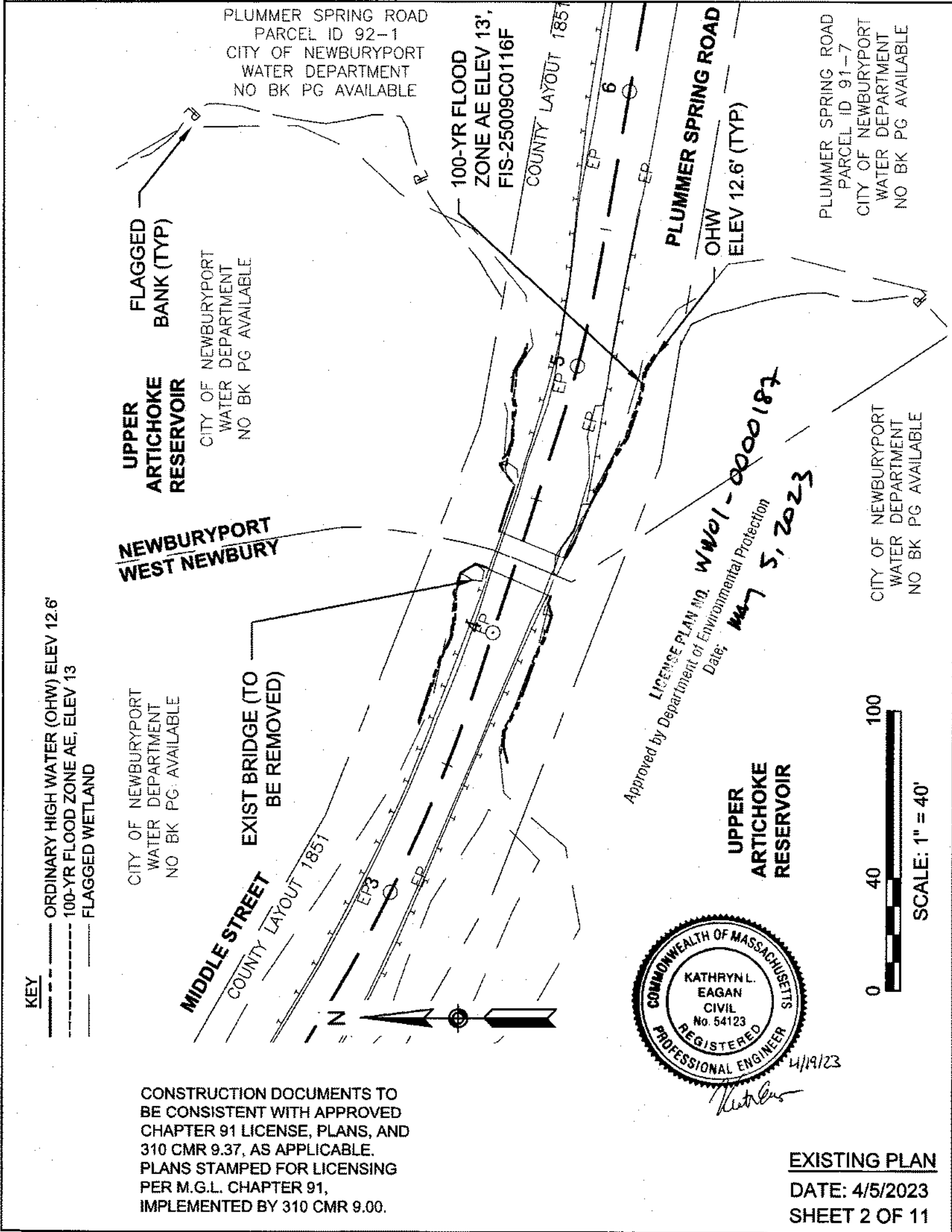
Kathryn Eagan

4/19/23

FOR REGISTRY USE ONLY

PE

DATE



41603-356 11-Plans

SO. ESSEX #115 Bk:41603 Pg:356
06/08/2023 11:44 PLAN Pg 3/11

#115

BK:41603 PG:356

06/08/2023

11-Plans

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

FOR REGISTRY USE ONLY

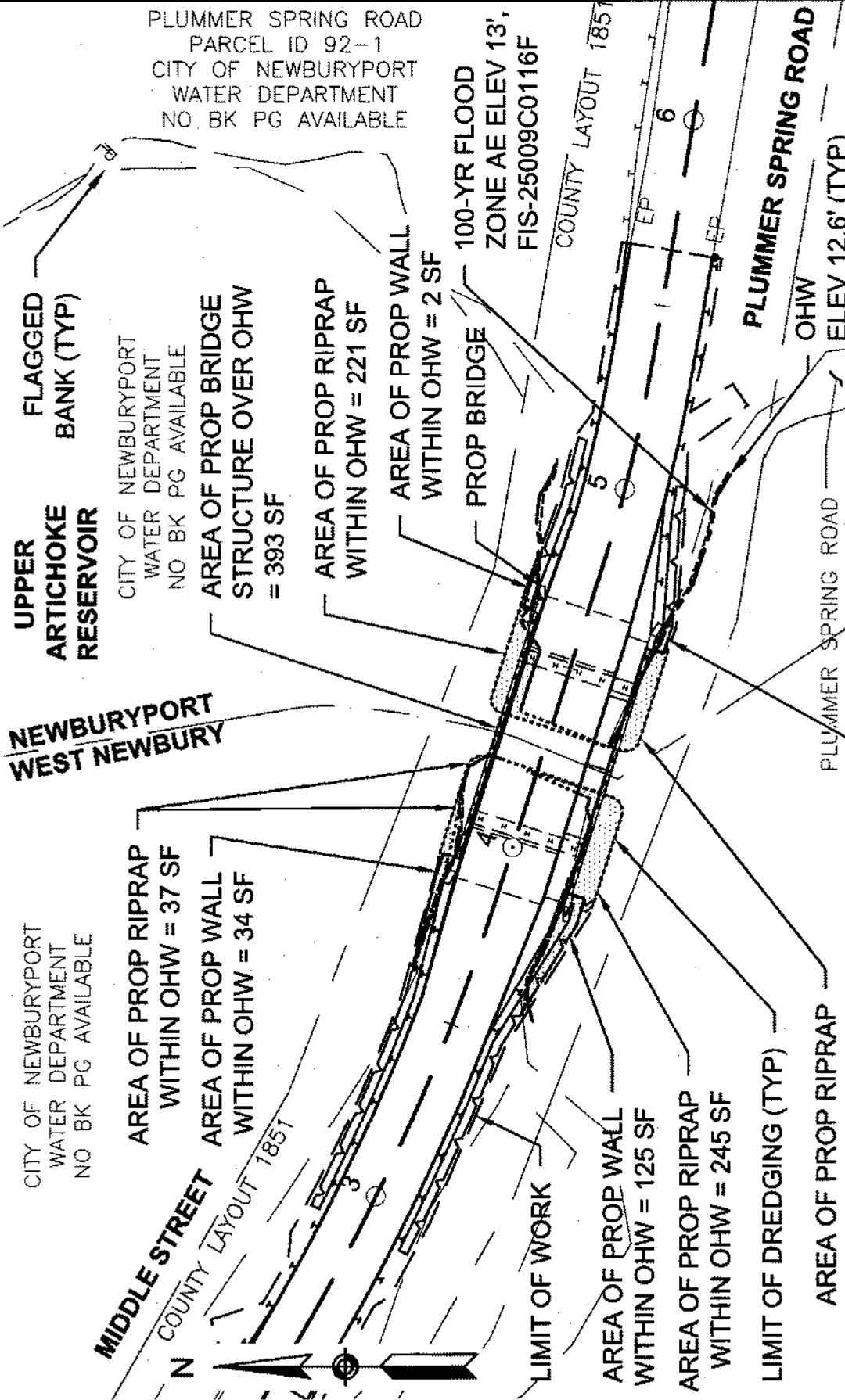
PE

DATE

Keth

4/19/23

LICENSE PLAN NO. **WW01-0000187**
Approved by Department of Environmental Protection
Date: **MAY 5, 2023**



CHAPTER 91 SUMMARY - SHEET 3

AREA TYPE	AREA (SF/CY)
STRUCTURE	1,217
DREDGE	824/98
FILL	824/19

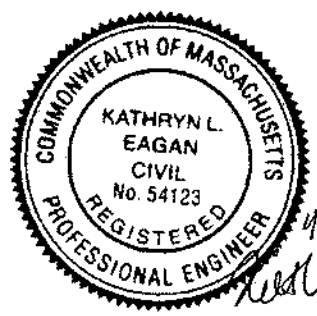
KEY

--- ORDINARY HIGH WATER (OHW) ELEV 12.6'

--- 100-YR FLOOD ZONE AE, ELEV 13

--- FLAGGED WETLAND

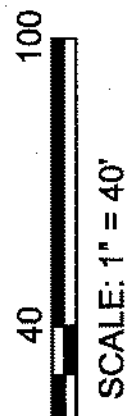
CONSTRUCTION DOCUMENTS TO BE CONSISTENT WITH APPROVED CHAPTER 91 LICENSE, PLANS, AND 310 CMR 9.37, AS APPLICABLE. PLANS STAMPED FOR LICENSING PER M.G.L. CHAPTER 91, IMPLEMENTED BY 310 CMR 9.00.



4/19/23

CONSTRUCTION PLAN

DATE: 4/5/2023
SHEET 3 OF 11



41603-356 11-Plms

SO. ESSEX #115 Bk:41603 Pg:356
06/08/2023 11:44 PLAN Pg 4/11

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

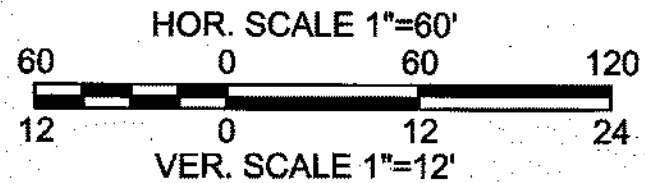
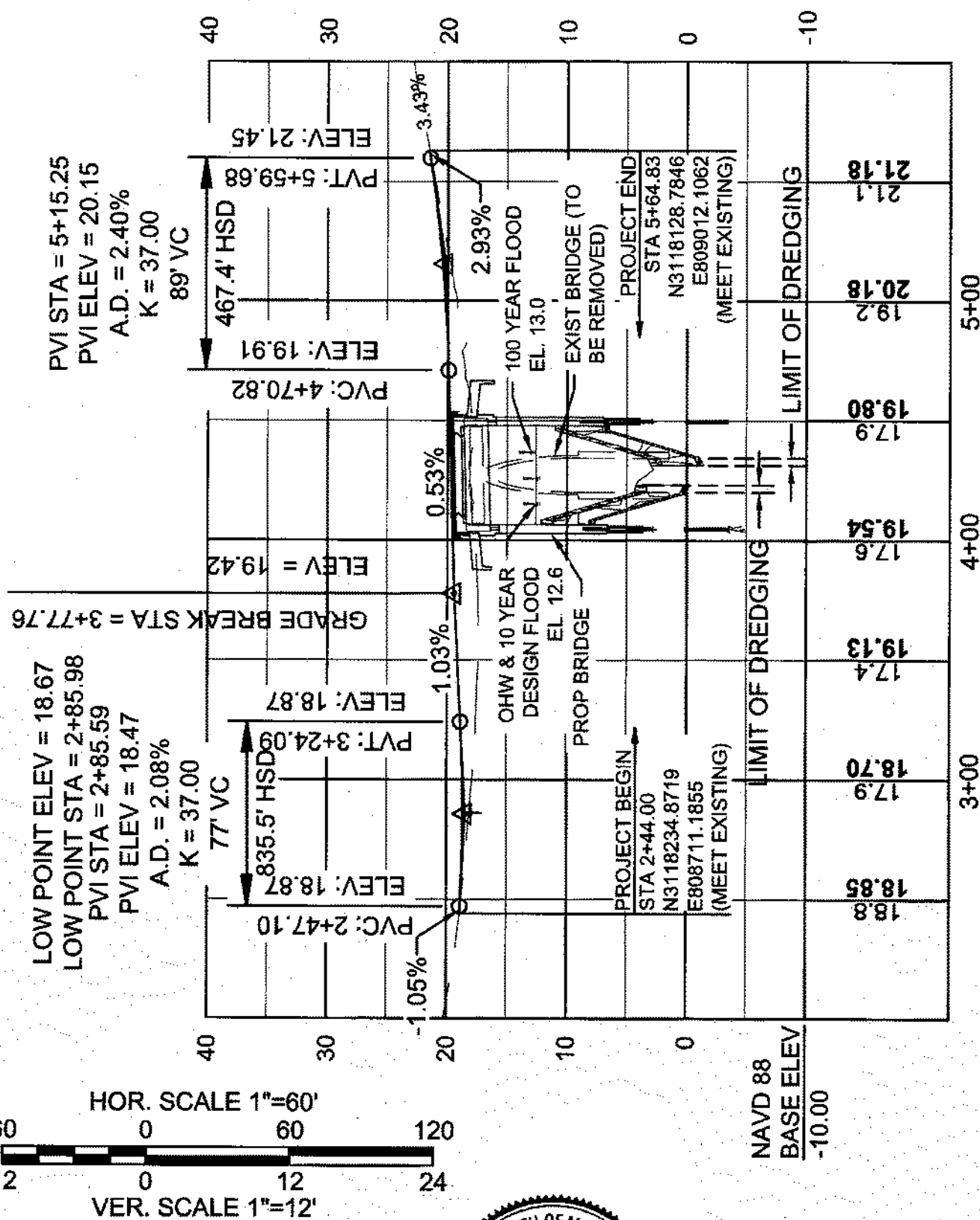
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BK:41603 PG:356

06/08/2023
(11-Plms)

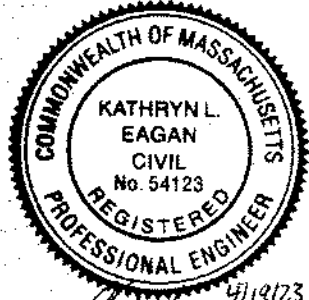
FOR REGISTRY USE ONLY

Kathryn Eagan
PE DATE 4/19/23

LICENSE PLAN NO. WW01-0000 187
Approved by Department of Environmental Protection
Date: MAY 5, 2023



CONSTRUCTION DOCUMENTS TO BE CONSISTENT WITH APPROVED CHAPTER 91 LICENSE, PLANS, AND 310 CMR 9.37, AS APPLICABLE. PLANS STAMPED FOR LICENSING PER M.G.L. CHAPTER 91, IMPLEMENTED BY 310 CMR 9.00.



CONSTRUCTION PROFILE
DATE: 4/5/2023
SHEET 4 OF 11

41603-356 11-Plans

SO. ESSEX #115 Bk:41603 Pg:356
06/08/2023 11:44 PLAN Pg 5/11

I CERTIFY THAT THIS PLAN CONFORMS TO
THE RULES AND REGULATIONS OF THE
REGISTERS OF DEEDS

#115

BK:41603 PG:356

06/08/2023

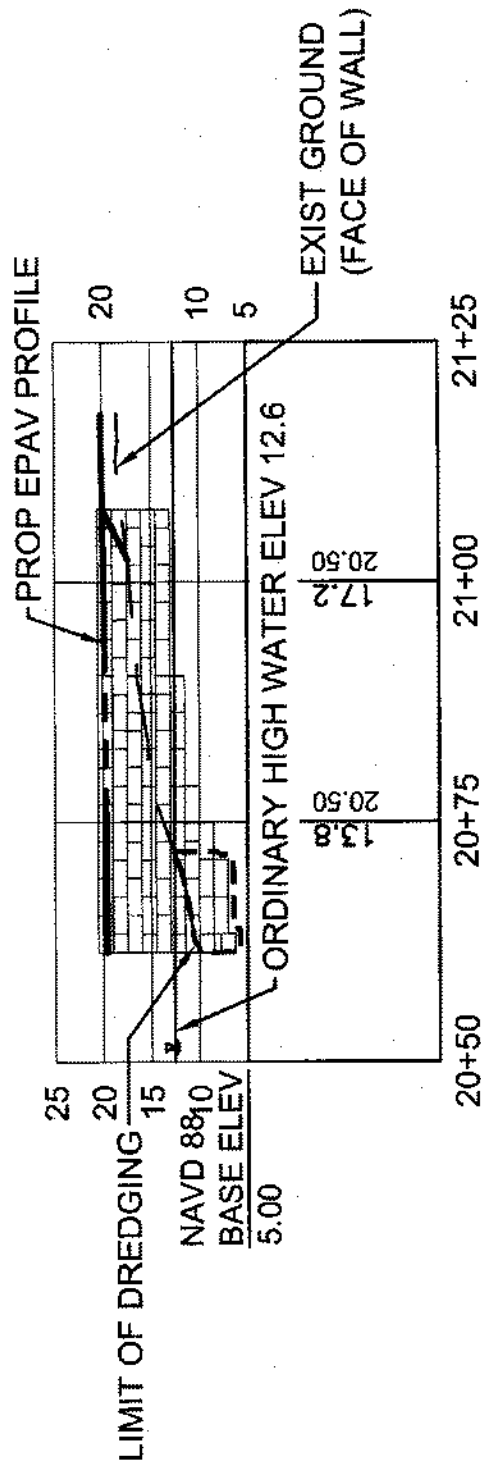
(11-Plans)

FOR REGISTRY USE ONLY

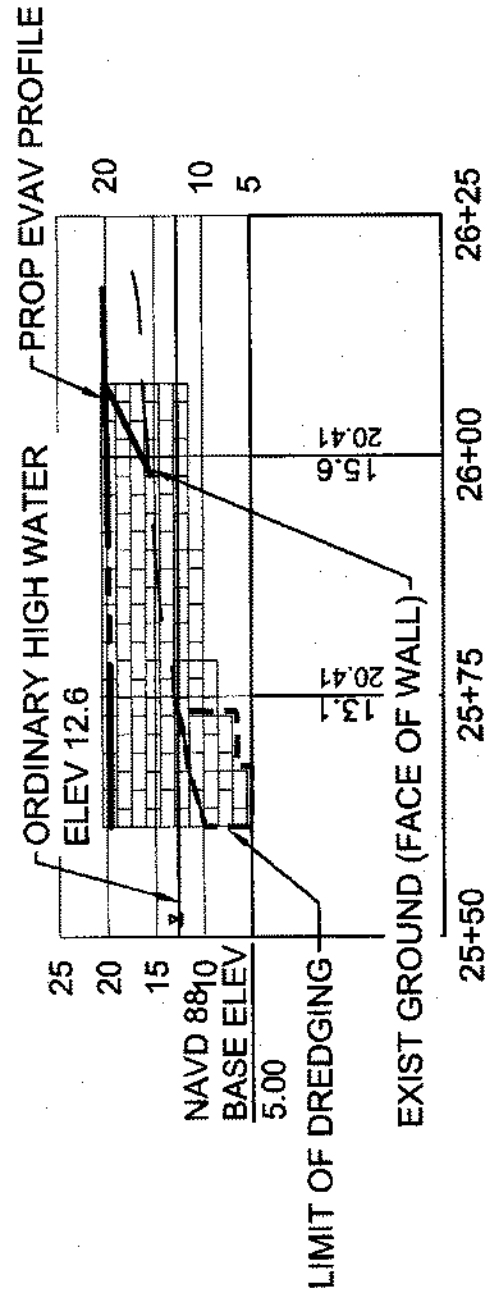
Kath
PE

4/19/23
DATE

LICENSE PLAN NO. WW21-0000187
Approved by Department of Environmental Protection
Date: 4/15/2023



SOUTHEAST MODULAR BLOCK WALL - ELEVATION VIEW
SCALE: 1" = 20' HORIZ.
SCALE: 1" = 20' VERT.

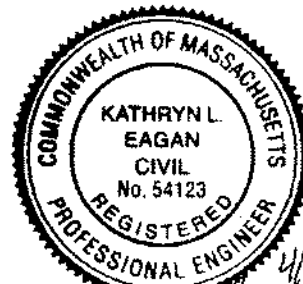


NORTHEAST MODULAR BLOCK WALL - ELEVATION VIEW
SCALE: 1" = 20' HORIZ.
SCALE: 1" = 20' VERT.



SCALE: 1" = 20'

CONSTRUCTION DOCUMENTS TO
BE CONSISTENT WITH APPROVED
CHAPTER 91 LICENSE, PLANS, AND
310 CMR 9.37, AS APPLICABLE.
PLANS STAMPED FOR LICENSING
PER M.G.L. CHAPTER 91,
IMPLEMENTED BY 310 CMR 9.00.



WALL PROFILE
DATE: 4/5/2023
SHEET 5 OF 11

41603-356 11-PIMS

SO. ESSEX #115 Bk:41603 Pg:356
06/08/2023 11:44 PLAN Pg 6/11

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

115

BK:41603 PG:356

06/08/2023

(11-PIMS)

FOR REGISTRY USE ONLY

PE

DATE

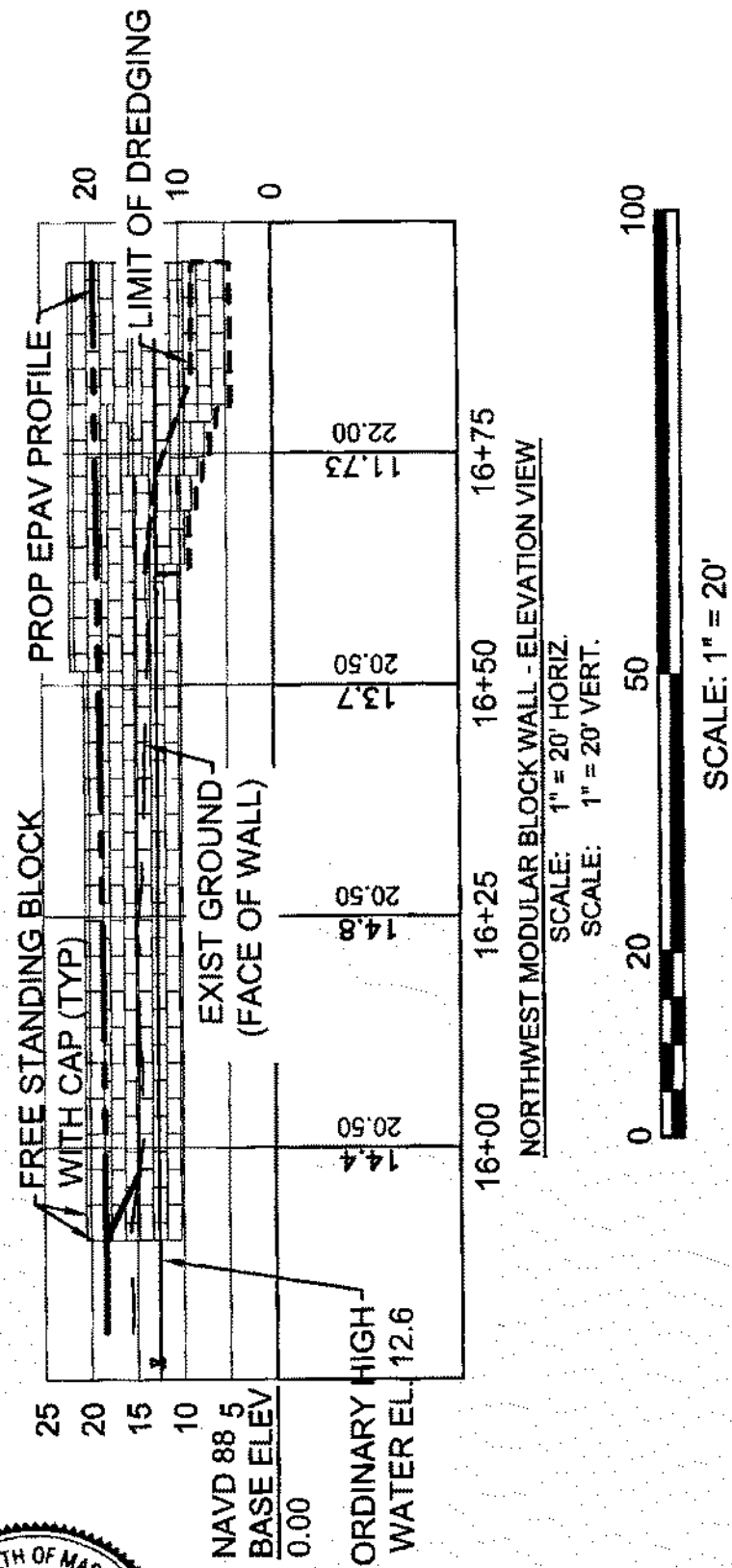
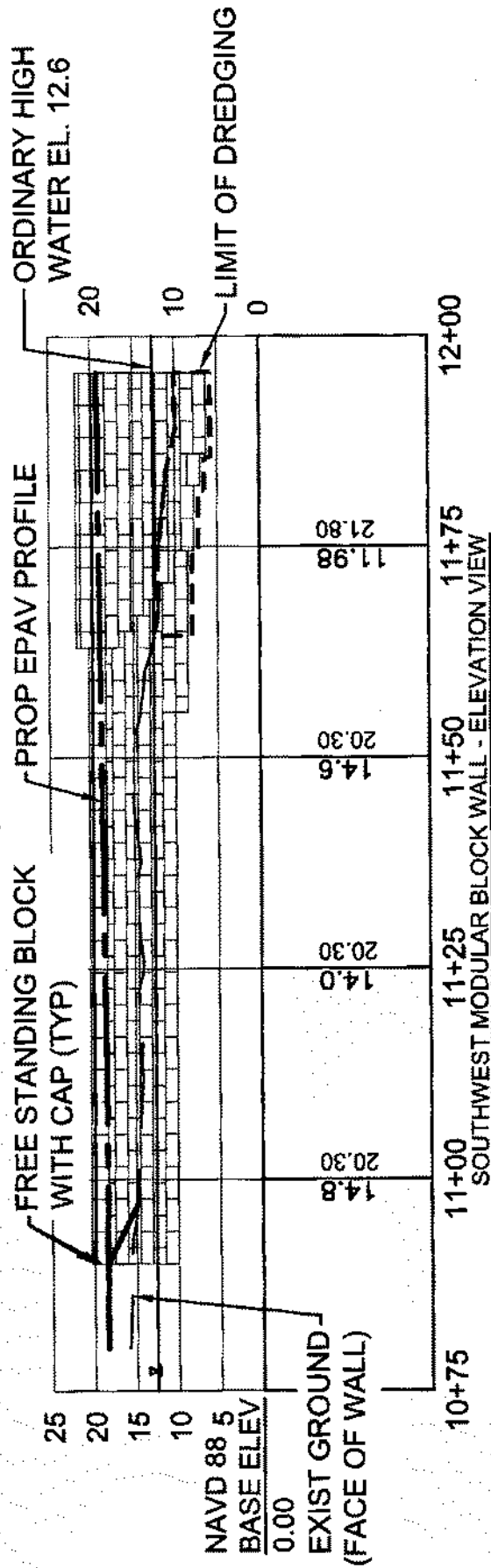
Kath

4/19/23

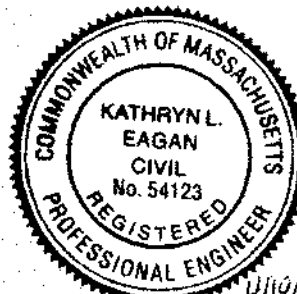
Approved by Department of Environmental Protection
Date: 04/15/2023

Project No. WW01-0000187

Approved by Department of Environmental Protection
Date: 04/15/2023



CONSTRUCTION DOCUMENTS TO BE CONSISTENT WITH APPROVED CHAPTER 91 LICENSE, PLANS, AND 310 CMR 9.37, AS APPLICABLE. PLANS STAMPED FOR LICENSING PER M.G.L. CHAPTER 91, IMPLEMENTED BY 310 CMR 9.00.



Kath
4/19/23

WALL PROFILE
DATE: 4/5/2023
SHEET 6 OF 11



SCALE: 1" = 20'

41603-356 11-plans

SO. ESSEX #115 Bk:41603 Pg:356
06/08/2023 11:44 PLAN Pg 7/11

BK 41603 PG 356

115

06/08/2023

(11-plans)

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

FOR REGISTRY USE ONLY

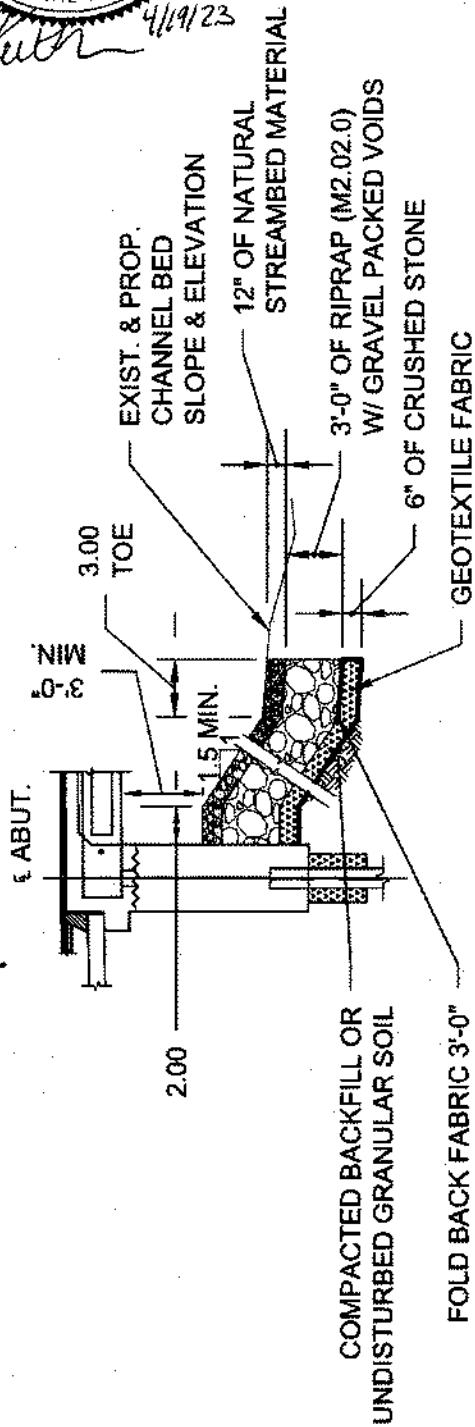
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DATE

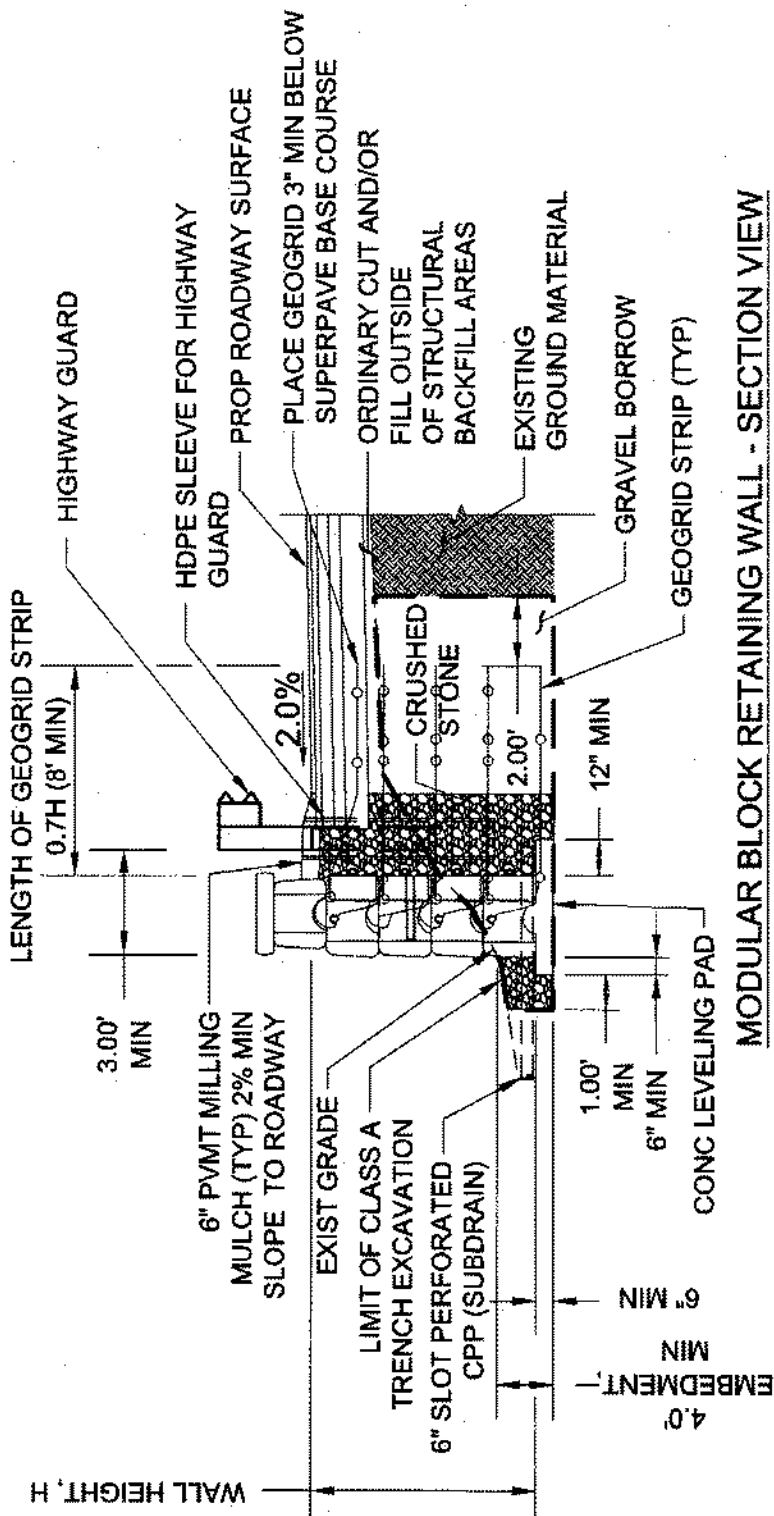
Kath 4/19/23



License Plate No. **WV01-0000187**
Approved by Department of Environmental Protection
Date, **MAY 5, 2023**



SCOUR PROTECTION DETAIL
1" = 10'
SCALE: 1" = 10'



MODULAR BLOCK RETAINING WALL - SECTION VIEW
NOT TO SCALE

CONSTRUCTION DOCUMENTS TO BE CONSISTENT WITH APPROVED CHAPTER 91 LICENSE, PLANS, AND 310 CMR 9.37, AS APPLICABLE. PLANS STAMPED FOR LICENSING PER M.G.L. CHAPTER 91, IMPLEMENTED BY 310 CMR 9.00.

CONSTRUCTION DETAIL

DATE: 4/5/2023
SHEET 7 OF 11

41603-356 11-plms

SO. ESSEX #115 Bk: 41603 Pg: 356
06/08/2023 11:44 PLAN Pg 8/11

I CERTIFY THAT THIS PLAN CONFORMS TO
THE RULES AND REGULATIONS OF THE
REGISTERS OF DEEDS

#115

BK: 41603 PG: 356

06/08/2023

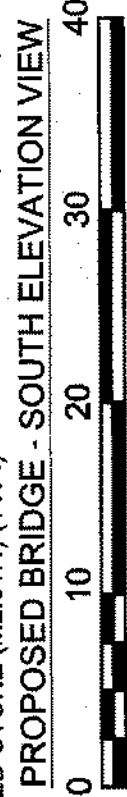
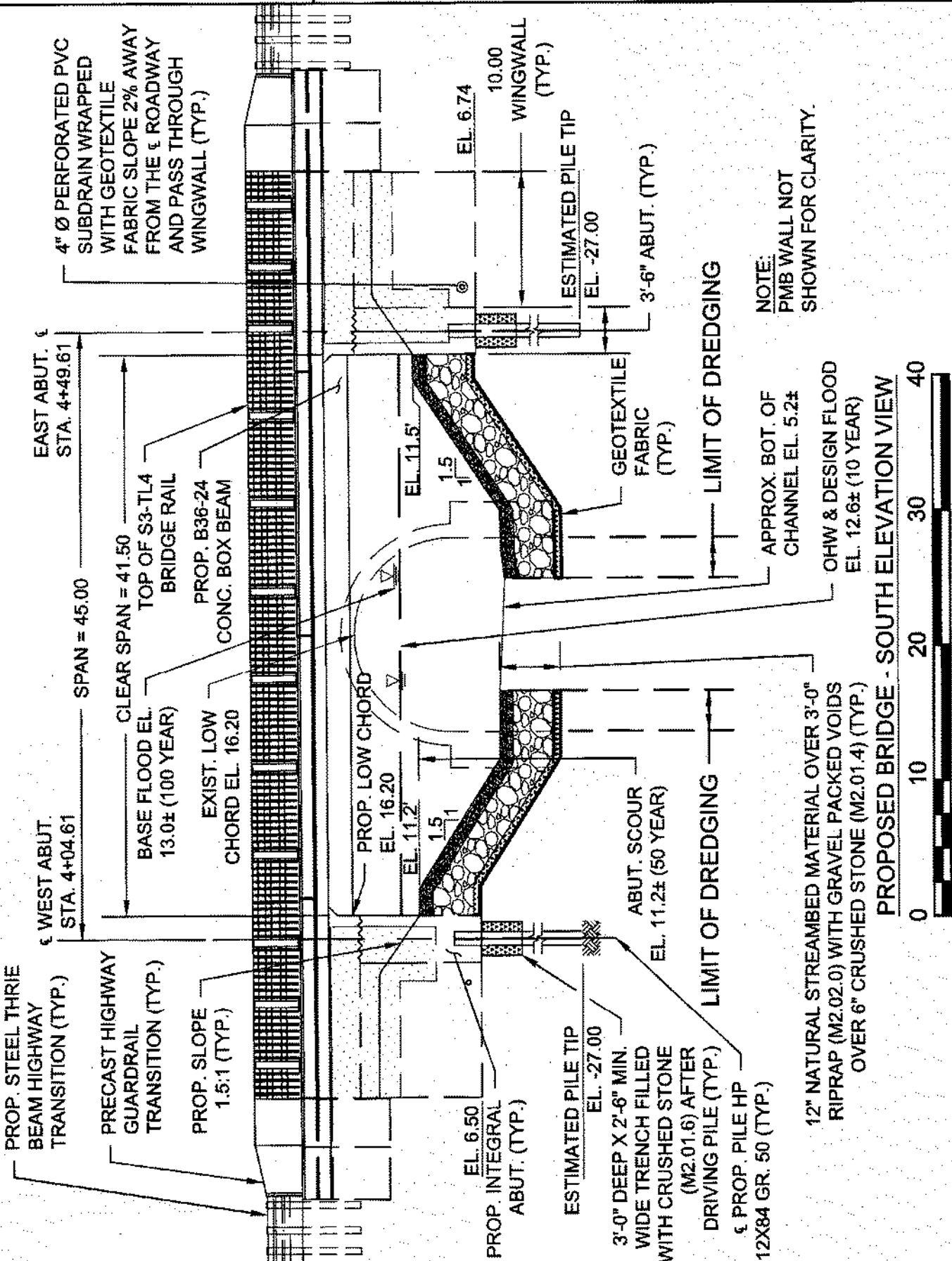
(11-plms)

Keth
PE

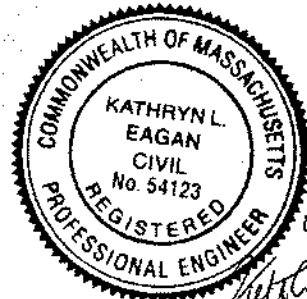
4/19/23
DATE

FOR REGISTRY USE ONLY

Approved by Department of Environmental Protection
Date: **4/5/2023**
Project No. **WW01-0000187**



CONSTRUCTION DOCUMENTS TO BE CONSISTENT WITH APPROVED CHAPTER 91 LICENSE, PLANS, AND 310 CMR 9.37, AS APPLICABLE. PLANS STAMPED FOR LICENSING PER M.G.L. CHAPTER 91, IMPLEMENTED BY 310 CMR 9.00.



CONSTRUCTION DETAIL
DATE: 4/5/2023
SHEET 8 OF 11

41603-356 11-plans

SO. ESSEX #115 Bk: 41603 Pg: 356
06/08/2023 11:44 PLAN Pg 9/11

I CERTIFY THAT THIS PLAN CONFORMS TO
THE RULES AND REGULATIONS OF THE
REGISTERS OF DEEDS

#115

BK: 41603 PG: 356

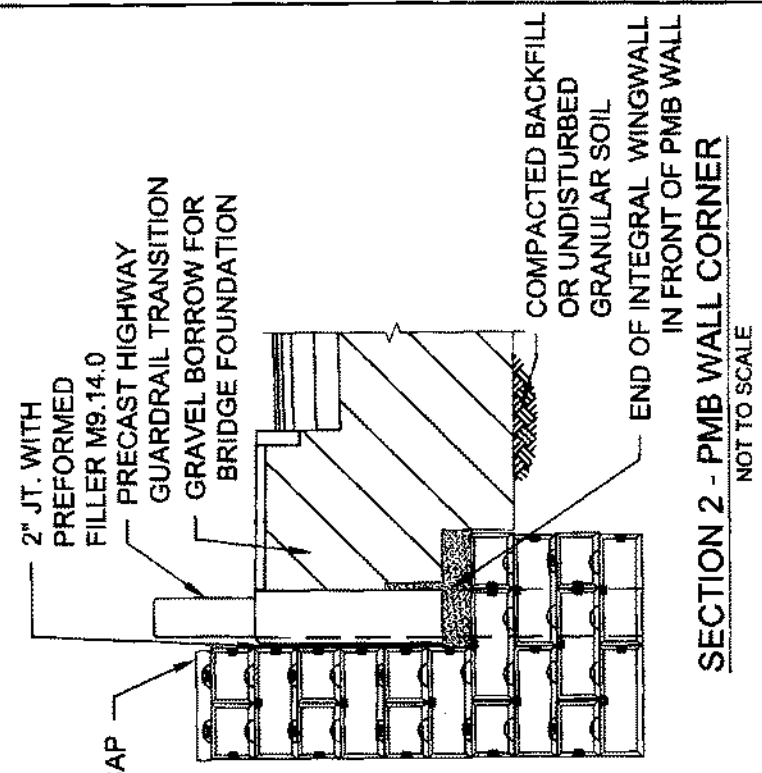
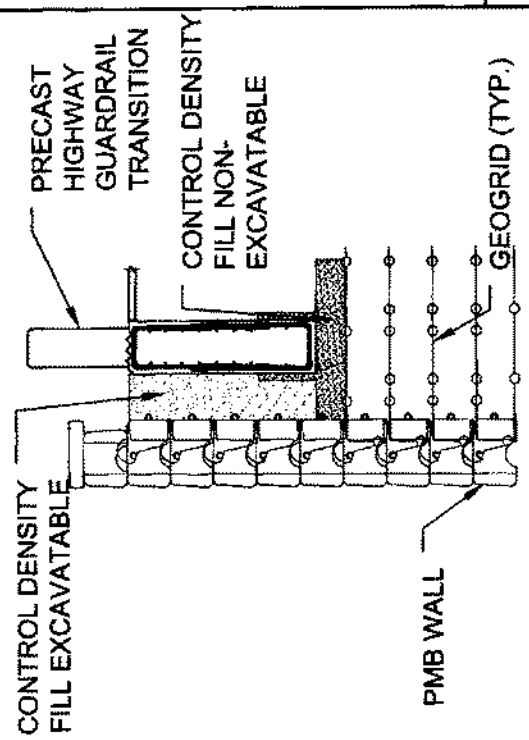
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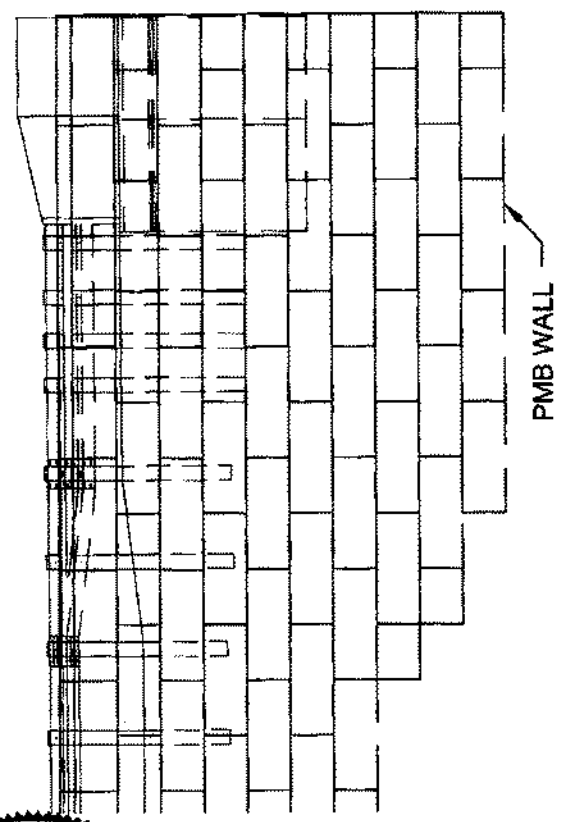
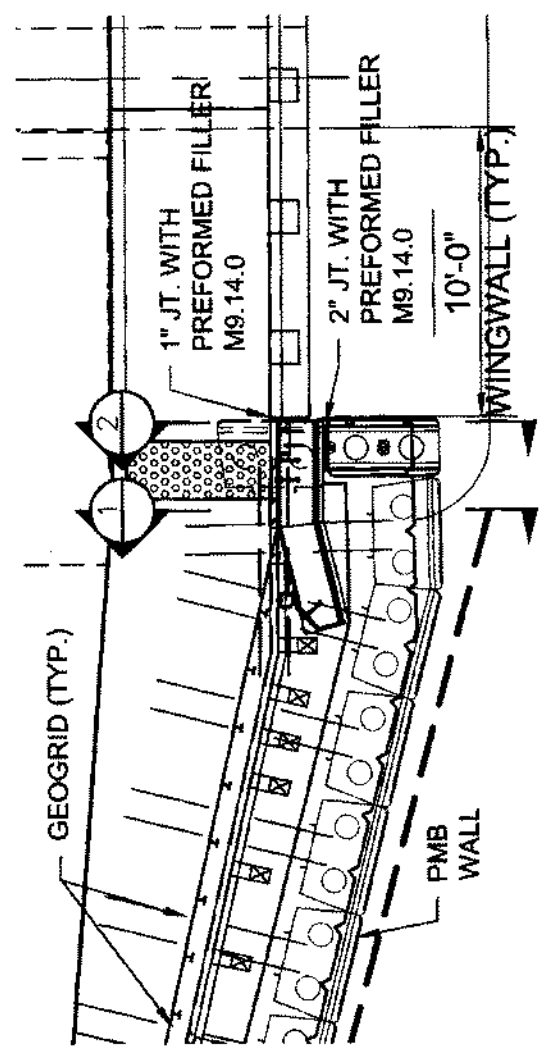
FOR REGISTRY USE ONLY

Kath
PE

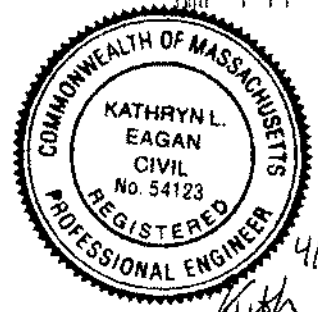
4/19/23
DATE



LICENSE PLAN NO. WW01-0000187
Approved by Department of Environmental Protection
Date: MAY 5, 2023



CONSTRUCTION DOCUMENTS TO
BE CONSISTENT WITH APPROVED
CHAPTER 91 LICENSE, PLANS, AND
310 CMR 9.37, AS APPLICABLE.
PLANS STAMPED FOR LICENSING
PER M.G.L. CHAPTER 91,
IMPLEMENTED BY 310 CMR 9.00.



CONSTRUCTION DETAIL
DATE: 4/5/2023
SHEET 9 OF 11

41603-356 11-Plans

SO. ESSEX #115 Bk:41603 Pg:356
06/08/2023 11:44 PLAN Pg 10/11

I CERTIFY THAT THIS PLAN CONFORMS TO
THE RULES AND REGULATIONS OF THE
REGISTERS OF DEEDS

#115

BK:41603 PG:356

06/08/2023

(11-Plans)

FOR REGISTRY USE ONLY

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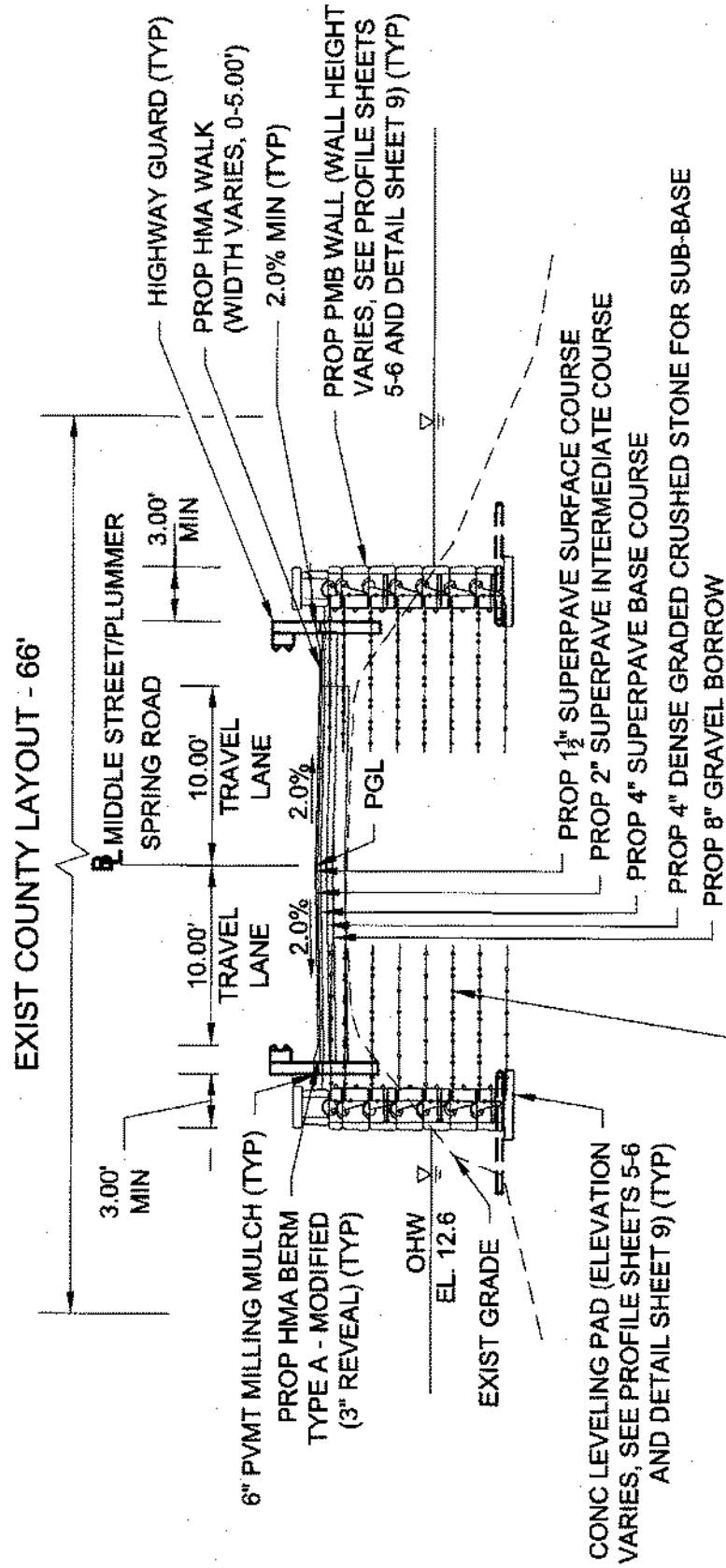
DATE

Kathryn L. Eagan

4/19/23



Kathryn L. Eagan 4/19/23



NOTE: DREDGE LIMITS VARY, SEE
CONSTRUCTION PLAN, SHEET 3

STA 3+50 TO STA 3+85



SCALE: 1" = 10'

CONSTRUCTION DOCUMENTS TO
BE CONSISTENT WITH APPROVED
CHAPTER 91 LICENSE, PLANS, AND
310 CMR 9.37, AS APPLICABLE.
PLANS STAMPED FOR LICENSING
PER M.G.L. CHAPTER 91,
IMPLEMENTED BY 310 CMR 9.00.

LICENSE PLAN NO. **WW01-0000187**
Approved by Department of Environmental Protection

Date: **MAY 5, 2023**

TYPICAL SECTIONS

DATE: 4/5/2023

SHEET 10 OF 11

41603-356 11-plans

SO. ESSEX #115 Bk: 41603 Pg: 356
05/08/2023 11:44 PLAN Pg 11/11

I CERTIFY THAT THIS PLAN CONFORMS TO
THE RULES AND REGULATIONS OF THE
REGISTERS OF DEEDS

115

BK: 41603 PG: 356

06/08/2023

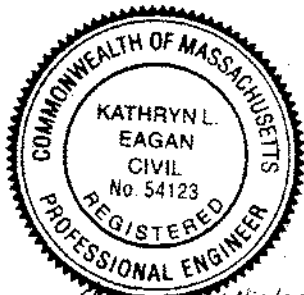
(11-Plans)

FOR REGISTRY USE ONLY

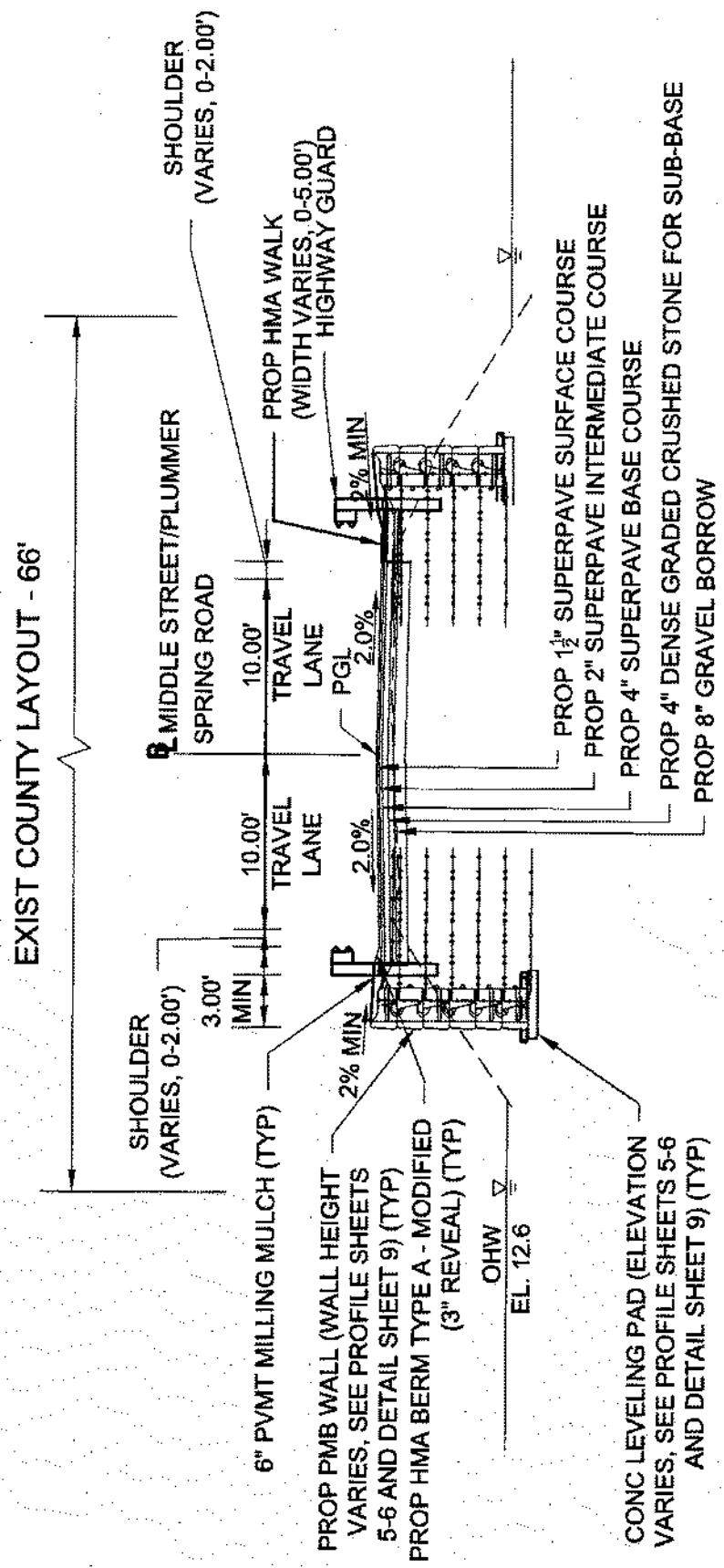
PE

4/19/23

DATE



Kathryn L. Eagan
4/19/23



NOTE: DREDGE LIMITS VARY, SEE
CONSTRUCTION PLAN, SHEET 3

MIDDLE STREET/
PLUMMER SPRING ROAD
SCALE: 1"=10'

STA 4+69 TO STA 5+10



SCALE: 1" = 10'

CONSTRUCTION DOCUMENTS TO
BE CONSISTENT WITH APPROVED
CHAPTER 91 LICENSE, PLANS, AND
310 CMR 9.37, AS APPLICABLE.
PLANS STAMPED FOR LICENSING
PER M.G.L. CHAPTER 91,
IMPLEMENTED BY 310 CMR 9.00.

LICENSE PLAN NO. **WW01-0000187**
Approved by Department of Environmental Protection
Date: **May 5, 2023**

TYPICAL SECTIONS
DATE: 4/5/2023
SHEET 11 OF 11

**Massachusetts Department of Environmental
Protection**

CHAPTER 91 APPLICATION

October 21, 2022

MassDEP Waterways Program
Chapter 91 Reviewer
1 Winter Street – 5th Floor
Boston, MA 02108

RE: Upper Artichoke Reservoir Bridge Replacement Project
West Newbury / Newburyport, Massachusetts
Chapter 91 License Application – BRP WW 01

Dear Chapter 91 Reviewer:

On behalf of the Town of West Newbury and the City of Newburyport, BSC Group, Inc. (BSC) is filing this Application to the Massachusetts Department of Environmental Protection (MassDEP) for a General Water-Dependent Chapter 91 Waterways License pursuant to Massachusetts Public Waterfront Act (M.G.L. c. 91) and implementing Regulations (310 CMR 9.00). The Applicants are proposing to replace the structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir (Bridge No. N-11-007) in West Newbury & Newburyport, Massachusetts. The bridge is structurally deficient due to undermining of the existing roadway foundation and so the road has been closed to vehicular traffic since July 2018. The Applicant proposes to replace the bridge structure with a new structure on a similar horizontal and vertical alignment.

The municipalities are working in collaboration to permit, fund, and rebuild the bridge and are under constraining financial deadlines. The project is partially funded by a MassDOT municipal small bridge grant and a MassWorks Infrastructure grant both of which are time sensitive. The \$1,000,000 MassWorks grant includes construction funding which the grant administrators are considering a request to extend through June 30, 2023. In order to complete the project as designed. While we understand the typical Chapter 91 License review extends to 270 days or beyond, we respectfully request that the Waterways Program take access to funding into consideration. Significant additional time could be very damaging to the prospects of this project as the funds must be spent before the deadline, or they may be forfeited. Additionally, a majority of the project permitting was completed in 2021, and a delay might invalidate existing approvals.

The bridge over the Upper Artichoke Reservoir is a valuable public resource which is highly compatible with the public access interests protected and promoted by the Chapter 91 Waterways Program. While the essential function of the structure remains transportation infrastructure, and re-establishes a vehicular route, the proposed alterations will provide accommodations specifically for pedestrians to safely traverse the area, observe the reservoir, or fish from the sidewalk. This use was not previously available in a formalized way or in accordance with modern safety standards. In order to meet modern needs and standards for safety, the proposed bridge footprint requires minor widening; and in order to minimize expansion impacts to the Reservoir, the proposed design incorporates the use of retaining walls to maximize the required width but minimize footprint impacts.

The bridge has been in existence since 1891 when it was built over the Artichoke River channel, prior to the 1939 statutory change when c.91 jurisdiction was expanded to navigable rivers. As a result, there is no existing historic licensing documentation for the structure. It is likely that the proposed alterations would occur within areas of fill from the bridge construction in locations that were upgradient of the original OHW of the river

channel. The construction of the two dams downstream in the 1920s impounded the river, created the Artichoke Reservoir and changed the current extent of OHW.

Hydraulic studies have concluded the Upper Artichoke Reservoir Dam which impounds the Artichoke River, has a stabilizing effect on the water level with little difference between various storm events. The MHW/OHW is established at elevation 12.6' with top of bank flags placed conservatively and slightly upgradient on embankments. As seen in the attached plans, actual fill and change in elevations below MHW/OHW totals 175 sf across all four bridge quadrants and is attributed to the new retaining walls. The retaining walls are needed to support the replacement bridge at modern requirements for safe roadway widths and were selected to minimize impacts to the reservoir. An additional 649 sf of impacts below MHW/OHW are attributed to the removal of existing material and replacement with scour control rockfill (riprap). Areas will be maintained in-kind without fill or alteration to the existing elevations. The fill needed for the retaining walls, encumbers an area that is approximately 2% of the available area below the OHW elevation in the roadway layout in the project limits.

To date, the project has received its MEPA Certificate (August 2021), NOIs from each municipality (July 2021), and USACE Authorization under GP 10 (April 2021). An individual 401 WQC application was filed for impacts within the Reservoir, an Outstanding Resource Water (ORW), in January 2021, amended in May 2021, a site walk took place in June 2021, and then the application was put on-hold until the MEPA Certificate was completed. BSC Group has reached back out to the Reviewer to complete the application. During the MEPA process, the MassDEP Waterways Program asserted jurisdiction over the proposed project as a water dependent project under 310 CMR 9.04(1)(e) and concluded that the project was ineligible for approval under Minor Project Modification (MPM) under the MassDEP Waterways Program and implementing regulations 310 CMR 9.00; therefore, the Chapter 91 Application is before you now.

Two copies of this application package including the appendices have been enclosed. Each Municipal Conservation Commission has been notified of this application. Please do not hesitate to contact our office for further discussion or any inquiries you may have at skreisel@bscgroup.com. I may also be reached at 617-896-4579.

Sincerely,
BSC Group, Inc.



Sara Kreisel, PWS
Ecological Project Manager

cc: Angus Jennings, Town of West Newbury
Wayne Amaral, DPW Director, Town of West Newbury
Jon-Eric White, City Engineer, City of Newburyport
Micah Morrison, PE, BSC Group
Diana Walden, BSC Group

**Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Bridge Replacement Project**

**Chapter 91 License Application
West Newbury and Newburyport, MA**

**MassDEP Waterways Program
October 2022**

Prepared for:

Town of West Newbury
381 Main Street
West Newbury, MA 01985

City of Newburyport
16C Perry Way
Newburyport, MA 01950

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

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West Newbury and Newburyport, MA

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ATTACHMENT A	PROJECT NARRATIVE
ATTACHMENT B	SITE FIGURES AND PHOTOGRAPHS
ATTACHMENT C	SEDIMENT SAMPLING REPORT
ATTACHMENT D	WEST NEWBURY ORDER OF CONDITIONS (78-724) NEWBURYPORT ORDER OF CONDITIONS (051-1047) NOI PLANS
ATTACHMENT E	401 WATER QUALITY CERTIFICATION NOTICE OF IMMINENT ISSUANCE
ATTACHMENT F	EoEEA CERTIFICATE AGENCY COMMENTS
ATTACHMENT G	CHAPTER 91 LICENSE PLANS

Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir Bridge Replacement Project
 Chapter 91 License Application
 Artichoke River / Upper Artichoke Reservoir
 West Newbury / Newburyport, MA

MassDEP Form BRP WW01 Section C.7
 Abutter Information

Owner Name	Tax Assessor Map/Parcel	Mailing Address	Municipality	State	Zip Code
City Of Newburyport Water Department	92-1 and 92-7	16C Perry Way	Newburyport	MA	01950
Middle Street Realty Trust Robert W Higgins Tr	R27-32	45 Water Street	Newburyport	MA	01950
443 Middle Street Re Trust C/O Bennett & Co	R20-11	45 Water Street	Newburyport	MA	01950
Town Of West Newbury Conservation Commission		381 Main Street	West Newbury	MA	01985

List of Environmental Regulatory Programs

Pursuant to 310 CMR 9.11(3)(b)4., an application shall include a list of state environmental regulatory programs with which the project must comply, in accordance with the applicable provisions of 310 CMR 9.33. Please check all that are applicable and add any additional programs in the "Other" field.

Massachusetts Environmental Policy Act, M.G.L. c. 30, §§ 61 through 62H and 301 CMR 11.00: MEPA Regulations.

Wetlands Protection Act, M.G.L. c. 131, § 40, and 310 CMR 10.00: Wetlands Protection.

Wetlands Restriction Acts, M.G.L. c. 130, § 105 and c. 131, § 40A, and 310 CMR 12.00: Adopting Coastal Wetlands Orders and 310 CMR 13.00: Adopting Inland Wetlands Orders. All projects shall comply with wetland restriction orders recorded pursuant to these statutes.

Areas of Critical Environmental Concern, M.G.L. c. 21A, § 2(7) and St. 1974, c. 806, § 40(E), and 301 CMR 12.00: Areas of Critical Environmental Concern.

Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53, and 314 CMR 3.00: Surface Water Discharge Permit Program, 314 CMR 5.00: Ground Water Discharge Permit Program, 314 CMR 7.00: Sewer System Extension and Connection Permit Program, 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, and 310 CMR 15.00: The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage.

Ocean Sanctuaries Act, M.G.L. c. 132A, §§ 13 through 16 and 18, and 302 CMR 5.00: Ocean Sanctuaries. No license or permit shall be issued for any structure or fill that is expressly prohibited in M.G.L. c. 132A, §§ 1 through 16.

Marine Fisheries Laws, M.G.L. c. 130, and 322 CMR 1.00: Enforcement of Rules and Regulations.

Scenic Rivers Act, M.G.L. c. 21, § 17B, and 302 CMR 3.00: Scenic and Recreational Rivers Orders.

Massachusetts Historical Commission Act, M.G.L. c. 9, §§ 26 through 27C, as amended by St. 1982, c. 152 and St. 1988, c. 254, and 950 CMR 71.00: Protection of Properties Included in the State Register of Historic Places. For projects for which a Project Notification Form must be submitted pursuant to 950 CMR 71.07: Review of Projects the applicant shall file said form with the Massachusetts Historical Commission.

Mineral Resources Act, M.G.L. c. 21, §§ 54 through 58.

Massachusetts Drinking Water Act, M.G.L. c. 111, §§ 159 through 174A, and 310 CMR 22.00: Land Application of Sludge and Septage.

Underwater Archeological Resources Act, M.G.L. c. 91 and c. 6, §§ 179 and 180, and 312 CMR 2.00: Massachusetts Underwater Archaeological Resources.

Hazardous Waste Management Act, M.G.L. c. 21C and 310 CMR 30.000: Hazardous Waste.

Solid Waste Disposal Act, M.G.L. c. 16, §§ 18 through 24, and 310 CMR 16.00: Site Assignment Regulations for Solid Waste Facilities.

Air Pollution Act, M.G.L. c. 111, §§ 142A through I and 310 CMR 7.00: Air Pollution Control.

State Highway Curb Cuts, M.G.L. c. 81, § 21.

Energy Restructuring Act, M.G.L. c. 164, §§ 69G through S, and 980 CMR 1.00 through 12.00.

Regional land use control statutes, including the Martha's Vineyard Commission Act, St. 1974, c. 637, c. 831, and the Cape Cod Commission Act, St. 1989, c. 716.

Other

Attachment A

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir,
West Newbury and Newburyport, MA

Chapter 91 License Application

PROJECT NARRATIVE

1.0 Introduction

The BSC Group Inc., on behalf of both the Town of West Newbury and the City of Newburyport (“the Applicants”) is filing this application with the Massachusetts Department of Environmental Protection (MassDEP) Waterways Program requesting a General Water-Dependent Chapter 91 Waterways License Application (BRP WW01b) pursuant to Massachusetts Public Waterfront Act (M.G.L. c. 91) and implementing Regulations (310 CMR 9.00).

The Applicants propose to replace the structurally deficient, undersized bridge (Bridge No. N-11-007) over the Artichoke River / Upper Artichoke Reservoir (hereby referred to as “the bridge”) located on Middle Street, West Newbury / Plummer Spring Road, Newburyport, MA (See **Attachment B** for Site Location Maps and Photos). The bridge is structurally deficient due to undermining of the existing roadway foundation and will be replaced with a new bridge with a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness.

Orders of Conditions have been received by the respective Conservation Commissions in the Town of West Newbury (078-0724) and Newburyport (051-1047). A 401 Water Quality Certification (WQC) (BRP WW10 Major Fill and Excavation) was submitted to MassDEP January 2021, and supplemented May 2021 (DEP Transmittal Number: X287261). Pre-Construction Notification (PCN) authorization from the US Army Corps of Engineers (USACE) pursuant to Section 404 of the United States Clean Water Act (33 U.S.C.1251), under the General Permits for Massachusetts (GP)10 was provided April 2021. A MEPA Certificate was provided August 2021 (16412).

The project had been previously made available for notice and opportunity for public comment on two separate occasions: 401 WQC on Jan 22, 2021, and for the MEPA ENF on July 23, 2021. The Waterways Program’s August 13, 2021 letter in the MEPA public comment period asserted Chapter 91 jurisdiction over the project based on 310 CMR 9.04(1)(e), and on the assumption that the Upper Artichoke Reservoir/River is navigable. Subsequent arguments regarding the navigability of the Upper Artichoke Reservoir and acquiescent requests for approval as a Minor Project Modification were denied. Therefore, this application seeks a Water-Dependent, Chapter 91 Waterways License for the replacement of an existing, unauthorized public service project, the existing bridge on Middle Street / Plummer Spring Road that crosses the Upper Artichoke Reservoir.

The bridge has been in existence since 1891 when it was built over the Artichoke River channel, which was subsequently impounded in the 1920s creating the Artichoke Reservoir, which subsequently changed the current extent of the ordinary high water (OHW) line. The project will replace the existing 14.3-foot stone arch bridge with a 45-foot span bridge which will address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The bridge structure will be protected by retaining walls and riprap, which will be overlaid with natural streambed material. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The overall width of the bridge will increase from 24.2 feet to 32.5 feet to accommodate roadway safety improvements (~4 feet), including a new sidewalk (~4 feet); however, this does not constitute a substantial enlargement compared to existing conditions since enlargement is not the intent. Please refer to the Environmental Resource Map in **Attachment B** and Site Plans in **Attachment G** for details.

The proposed Project consists of the replacement of a bridge over a nontidal waterway that occurs within a manmade impoundment on a currently closed public roadway, by the Town of West Newbury and City of Newburyport, which proposes pedestrian facilities to promote continued public access and enjoyment adjacent to a waterway.

The Department has determined these activities can be classified as “water-dependent” under the Chapter 91 Waterways regulations per their August 13, 2021 comments during the MEPA ENF review process. The following sections describe the Project, the associated activities subject to Chapter 91 jurisdiction, and the Project’s compliance with the provisions of the Chapter 91 licensing regulations.

2.0 General Environmental Setting/Existing Conditions

West Newbury is located on the northwestern side of the bridge, and Newburyport is on the eastern side. Plummer Spring Road in Newburyport turns into Middle Street upon entering West Newbury. The project site is approximately 2,000 feet west of the intersection with Turkey Hill Road in Newburyport and approximately 0.7 mile east of the intersection with Garden Street in West Newbury. The crossing occurs within the Upper Artichoke Reservoir, a public water supply. The surrounding area is comprised of Article 97 lands, reserved for water supply protection. Beyond that, the area is generally characterized by low-density residential development. The bridge predates and divides the existing Upper Artichoke Reservoir, through which the Artichoke River flows. The Reservoir was originally formed by damming the Artichoke River which flows north to the Merrimack River. While the majority of the surrounding area consists of residential development and forested land, the project area is limited to previously disturbed Riverfront Area and other resource areas encumbered by the existing bridge.

The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. The road and stone arch bridge were constructed in 1891 before the Upper Artichoke Reservoir was built. The low chord on the existing arch is set at an elevation of 16.20 feet. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10-feet for a total roadway width of approximately 17-feet to 20-feet. There are no sidewalks on the bridge. The bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. The project area consists of country drainage, whereby runoff travels to the approach roadway and informally runs off down the side slopes. Middle Street / Plummer Spring Road is functionally classified as a Rural Local road. The Artichoke River/ Upper Artichoke Reservoir is nontidal, and no tidelands occur within the project vicinity. License plans included in **Attachment G** depict the applicable elevations in reference to the work. Site Photos for reference are included in **Attachment B**.

2.1 FEMA Floodplain

According to the FEMA Flood Insurance Rate Maps for Newburyport / West Newbury (Community Panel Number 25009C0116F dated July 2012), the project occurs within the 100-year floodplain (Zone AE). The bridge is located within Zone AE for the 100-year storm event at, and below the 13-foot base flood elevation. A FEMA FIRMette is included in **Attachment B**.

2.2 Other Environmental Resources

Waters of the United States and resource areas jurisdictional to the Massachusetts Wetlands Protection Act such as Bank and Land Under Water, are located in areas impacted by the Project. The project area does not occur within Natural Heritage and Endangered Species (NHESP) Priority nor Estimated Habitat, nor Certified nor Potential Vernal Pools (CVP & PVP). According to MassGIS data layers, the entire project area occurs within an Outstanding Resource Water (ORW) and Surface Water Protection Zone associated with the Upper Artichoke Reservoir, which

is an Article 97, municipal land, and a public water supply watershed. According to MassGIS data layers, the project area does not fall within an Area of Critical Environmental Concern (ACEC), neither the Upper Artichoke Reservoir nor the river are EPA impaired waterways, nor Coldwater Fisheries (CFR). Please refer to the Environmental Resource Map in **Attachment B**.

3.0 Proposed Project

The duration of construction for the entire Project is anticipated to be approximately twenty (20) months weather-permitting and to begin Spring 2023.

The purpose of the project is to replace a structurally deficient, undersized bridge with a new bridge along a similar horizontal and vertical alignment. The project activities include the replacement of the bridge over the Upper Artichoke Reservoir in its entirety. The full sequence of project construction activities will take approximately twenty months to construct. The project involves mitigation measures intended to address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The roadway width will increase by approximately 4 feet to include safety improvements to the existing alignment. A 5-foot sidewalk will be added to the south side of the bridge. Roadway reconstruction of Middle Street will occur 160-feet to the west of the bridge and 115-feet to the east on Plummer Spring Road for improved roadway approaches. The total length of the project is approximately 320-feet. The following project components detail the proposed project activities. Please refer to Project Site Plans (**Attachment G**) for additional details.

- **Proposed Bridge** – The proposed bridge is a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The proposed span length will increase from the 14-feet to 45-feet. The overall width of the bridge will be 32.5-feet to accommodate safety improvements, including the sidewalk. In addition to substantially increasing the openness ratio, the increased span eliminates the need for the bridge’s substructure to be located in the deep portion of the reservoir. In accordance with the MassDOT Bridge Manual for a Rural Local road, the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing condition.
- **Riprap Scour Protection** –With the increased span, to achieve a 1:1.5 vertical: horizontal ratio from the elevation of the existing streambed to the elevation at the new bridge abutments, slope stabilization is required. The slope stabilization will consist of 36-inches of variable sized riprap (10- to 22-inch stones) placed below the natural streambed material. In addition, 6-inches of natural streambed material is proposed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.
- **Roadway Reconstruction** – At the approaches of the existing bridge the roadway is narrow and the slopes adjacent to the roadway are steep making the existing guardrail ineffective. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable. However, in areas where slopes with a 1:1.5 vertical: horizontal ratio or less exist, they will be regraded (without impacting the reservoir),

- **Installation of Guardrail and Repaving Activity** – Bridge replacement activities provide an opportunity to make safety improvements to existing conditions surrounding the bridge. The existing functional roadway width will expand from approximately 20-feet to 24-feet wide over the bridge. The widened roadway will meet the existing roadway width at the limits of the project. The approaches to the bridge will be repaved following the completion of project activities. Extended steel guardrail is proposed along the approaches to the bridge to replace existing non-functioning guardrail posts.

Work in Wetland Resource Areas

The bridge replacement project is considered a redevelopment project. Impacts to wetland resource areas are unavoidable, however upon completion of the project, slopes will be stabilized and the streambed will be restored to match the natural stream channel. The outcome will result in an improvement over existing conditions. Table 1 provides an overview of impacts with regard to each resource area.

Area Below the Ordinary High-Water Line

Hydraulic studies have concluded the Upper Artichoke Reservoir Dam which impounds the Artichoke River, has a stabilizing effect on the water level with little difference between various storm events. The MHW/OHW is established at elevation 12.6’ with top of bank flags placed conservatively and slightly upgradient on embankments. The proposed structure is 1,217 sf and will require a total of 824 sf of excavation and fill. As seen in the attached plans, actual fill and change in elevations below MHW/OHW totals 175 sf across all four bridge quadrants and is attributed to the new retaining walls. The retaining walls are needed to support the replacement bridge at modern requirements for safe roadway widths and were selected to minimize impacts to the reservoir. An additional 649 sf of impacts below MHW/OHW are attributed to the removal of existing material and replacement with scour control rockfill (riprap) to protect the new bridge structure. Areas will be maintained in-kind without fill or alteration to the existing elevations. The fill needed for the retaining walls, encumbers an area that is approximately 2% of the available area below the OHW elevation in the roadway layout in the project limits. In total, 98 CY mechanical dredging is required, of this 48 CY will be permanent and 50 CY will be temporary. The project requires 19 CY fill. Please refer to Project Site Plans (**Attachment G**) for additional detail.

Table 1 below summarizes activities and approximate areas of impact subject to the Chapter 91 Program:

Table 1 – Summary of Chapter 91 Waterways Program Areas Under OHW Line

Project Component	Structure/Change in Use Detail	Area (SF)	Dredge / Fill (CY)
Riprap	Installation of riprap to protect the new structure	649 sf	48 CY Dredge (Permanent) 19 CY Fill 50 CY Dredge (Temporary)
Retaining Walls	Installation of retaining wall to minimize extent of roadway	175 sf	
Bridge Span	Area of proposed bridge structure over OHW	393 sf	
Wingwalls and Abutments	Created in upland	---	

4.0 Mitigation Measures

The proposed project will occur below the OHW. The project has been designed to incorporate construction Best Management Practices (BMPs) to ensure adequate protection to wetland resource areas within proximity of the

project location.

Disturbed areas within affected resources will be stabilized and restored following the completion of project activities. This will be achieved specifically by limiting alteration within resource areas to the maximum extent practicable. The proposed work is considered a Redevelopment Project but will preserve undisturbed areas adjacent to the bridge as much as possible. This will also be accomplished through project phasing activities that minimize work within resources to the maximum extent practicable.

Erosion and Sedimentation Controls

Siltation barriers composed of compost filter tubes will be installed at the downgradient limits of work. Sedimentation barriers will be checked on a weekly basis and following significant storm events. Sediment controls will remain in-place during all phases of the project and will be removed once the area is sufficiently stabilized. Please refer to **Attachment G** (Site Plans) for erosion and sedimentation control details and the proposed locations of controls.

Construction Stockpiling Locations

All stockpile locations and staging areas will be located within the existing roadway; and while locations are to be determined by the Contractor, they will need to be approved by the respective Municipality prior to use. In the event stockpiled materials must be left on site overnight, the piles will be covered with tarps and surrounded by erosion control measures (e.g. compost filter tubes). Stockpiled streambed material will be stored at a location within the existing roadway. Staging and storage areas will be outside of all jurisdictional environmental resource areas where feasible and practicable.

Water Control Measures and Dewatering

Prior to work, cofferdams will be installed for construction activities to occur in dry conditions. As such, work will require dewatering. The contractor will be required to develop and maintain a Construction Water Management Plan that is prepared in accordance with the contract design documents, and generally, the means and methods will be determined by the contractor. Flow will be maintained within the existing channel; while the dewatered construction area can be maintained by pumping the water out of the work areas.

All discharge resulting from dewatering activities shall be directed to temporary sedimentation/retention basins as specified by the contractor to control turbidity. At no time shall the discharge be directly released into adjacent resource areas, nor will any settling tank/basin be located within a wetland/waterway. If stone or other erosion control is utilized at the outlet of the settling tank/basin, this material will be removed, and the area will be restored to existing conditions prior to the completion of the project. Please refer to **Attachment G**, Project Site Plans for additional details on proposed water control measures.

5.0 Chapter 91 Licensing Requirements

5.1 Chapter 91 Jurisdiction and Water Dependency

As described, the proposed project occurs over the Artichoke River / Upper Artichoke Reservoir, which the DEP has already asserted jurisdiction over during the MEPA review process Certificate (EEA Number 16412) (August 2021). The Waterways Program's August 13, 2021 letter for the public comment period for the MEPA Certificate (EEA Number 16412) stipulated:

The existing fieldstone arch bridge and approach roadways were constructed in 1891, prior to the 1939 statutory change when c.91 jurisdiction was expanded to navigable rivers. As a result, the proponent did

not include any historic licensing documentation for the structures.

Water Dependency:

MassDEP has determined that this proposal is a water-dependent project, pursuant to 310 CMR 9.12(1)(a) & (2)(d).

Chapter 91 Jurisdiction:

The project is located on the Upper Artichoke River, a nontidal waterway subject to Chapter 91 jurisdiction, pursuant to 310 CMR 9.04(1)(e).

Chapter 91 Comments:

The project, as described, substantively complies with the applicable provisions for water dependent Public Service projects, specifically those enumerated at 310 CMR 9.35-9.37.

5.2 Chapter 91 Compliance

The following section reviews the proposed Project in light of the applicable Chapter 91 regulatory standards:

§9.31 Basic Requirements and Proper Public Purpose

§9.31 of the waterways regulations requires that all projects, other than those consisting of water-dependent projects on private tidelands, serve a proper public purpose that provides greater benefit than detriment to the rights of the public in said lands.

The proposed bridge replacement is presumed by regulation to serve a proper public purpose in that it involves the replacement of a bridge on a public municipal roadway. The roadway has been open to the public since 1891, until its closure to vehicular traffic in 2018 due to the bridge's deteriorated state. The replacement will provide public facilities for pedestrians. The nature of the project is that it is inherently water-dependent [§9.31(2)(a)].

§9.32: Categorical Restrictions on Fill and Structures

§9.32 of the waterways regulations identify the types of fill, structures and projects that are eligible for licensing. All of the proposed uses and activities proposed herein are categorically allowed as listed in §9.32(1)(d): “*fill or structures for uses below the high water mark, as listed for flowed tidelands in 310 CMR 9.32(1)(a).*” This includes:

§9.32(a)2: “fill or structures for water-dependent use located below the high water mark, provided that, in the case of proposed fill, reasonable measures are taken to minimize the amount of fill, including substitution of pile-supported or floating structures and relocation of the use to a position above the high water mark;”

§9.33: Environmental Protection Standards

§9.33 of the waterways regulations states that all projects must comply with applicable environmental regulatory programs of the Commonwealth.

In addition to this Chapter 91 Waterways License, the full Project will require various local, state, and federal permits, approvals and consultation as summarized in the table below:

Table 2: Summary of Compliance with Environmental Protection Standards

Agency	Permit/Approval/Consultation	Jurisdiction
Federal		
U.S. Army Corps of Engineers (USACE)	Section 404 Permit Pre-Construction Notification under the Massachusetts General Permit and National Historic Preservation Act (NHPA) 16 U.S.C. §470, <i>et. seq.</i>	Work in Waters of the U.S., above the Ordinary High Water (OHW) mark for Navigable Waters reviewable under Section 10 of Rivers and Harbors Act of 1899. Authorization was received April 9, 2021.
State		
Massachusetts Executive Office of Energy and Environmental Affairs (EEA)	MEPA Environmental Notification Form (ENF) 301 CMR 11.00	A Final Certificate (No. 16412) finding that the Project did not require the preparation of an Environmental Impact Report was issued by the Secretary on August 23, 2021.
Massachusetts Department of Environmental Protection (MassDEP)	Section 401 of the federal Clean Water Act (Water Quality Certificate); 314 CMR 9.00	Work in waters of the U.S., defined as Outstanding Resource Waters (ORW), The Upper Artichoke Reservoir is defined as an ORW. Approval of the January 2021 application (and subsequent May 2021 supplement) has not yet been received.
Massachusetts Historical Commission (MHC)/ Massachusetts Board of Underwater Archeological Resources (MBUAR)	Determination of effect on historic and archaeological properties (MGL c.9 § 27C)	A PNF and ENF was submitted to MHC/MBUAR for review. The MHC determined, by letter dated February 16, 2021 that the project is “ <i>unlikely to affect significant historic or archaeological resources</i> ” and the MBUAR indicated by letter dated August 12, 2021 that “ <i>the Project is unlikely to adversely impact submerged cultural resources.</i> ”
Local		
Tow of West Newbury Conservation Commission City of Newburyport Conservation Commission	Order of Conditions 310 CMR 10.00 and Local Conservation Ordinance/Bylaw	Work in jurisdictional resource areas under Massachusetts WPA and local Conservation Ordinance/Bylaw. Orders of Conditions (MassDEP File No. 78-724 (West Newbury) and 051-1047 (Newburyport)) approving project were provided in July 2021.

§9.34: Conformance with Municipal Zoning and Harbor Plans

Per §9.34 of the waterways regulations, any project located on private tidelands or filled Commonwealth tidelands must be determined to comply with applicable zoning ordinances and bylaws of the municipality in which such tidelands are located.

The project does not occur within tidelands / Coastal Zone. Therefore, the Project area is not subject to a Municipal Harbor Plan.

§9.35: Standards to Preserve Water-Related Public Rights

In accordance with §9.35, Chapter 91 jurisdictional projects are required to preserve any rights held by the Commonwealth in trust for the public to use tidelands and waterways for lawful purposes, and to preserve any public rights of access that are associated with such use. The consistency of the proposed Project with each of the protected rights is reviewed below.

- **Navigation** §9.35(2)(a). The Project proposes to triple the existing bridge span and the bridges low chord will remain the same. The Project will not reduce or otherwise constrain the channel of the Upper Artichoke Reservoir / Artichoke River, which is also is not accessible to public navigation due to the City of Newburyport Code of Ordinances in a public water supply, stating that “*Wading, swimming, bathing or boating in the municipal water supply or its tributaries*” are prohibited.
- **Free Passage Over and Through Water** §9.35(2)(b). The purpose of the Project is to provide the public free passage over the waterway and will improve the condition of the existing crossing. As noted, boating

is not allowed in the Reservoir; however, the bridge span will increase to three-times its existing span and will not impede passage through the waterway. The replacement of the structure will improve public access to and views of waterfront areas with the creation of pedestrian accommodations on the roadway bridge.

- **Access to Town Landings.** §9.35(2)(c). There are no existing public boat landings within the Project site. The Project, as designed, will not interfere with any landing, public easement or other historic legal form of public access from the land to the water.
- **Fishing and Fowling.** §9.35(3)(a). The Project will not interfere with or further restrict the public's existing rights of fishing and fowling in the Upper Artichoke Reservoir.
- **On-Foot Passage.** §9.35(3)(b). On-foot passage over the Upper Artichoke Reservoir will be enhanced and improved with the bridge replacement. The increased opportunity for public access and passive public recreation is one of the primary benefits of the Project.
- **Compensation for Interference with Public Rights in Commonwealth Tidelands.** §9.35(4). The Project does not involve fill or structures for private use of Commonwealth tidelands, as the proposed project is for public use and does not affect Commonwealth Tidelands.
- **Management of Areas Accessible to the Public** §9.35(5). Both the Town of West Newbury and the City of Newburyport will be responsible for the long-term management of the property and will manage the site to achieve the Project goals of public roadway access and use for pedestrians and vehicles. It will be the municipalities' objective to maintain the property in a safe and attractive condition including the removal of trash, cleaning of stormwater basins, and overall roadway maintenance.

§9.36: Standards to Protect Water-Dependent Uses

As noted above, the bridge has been in existence since 1891, and the project merely proposes to replace this bridge in a manner that increases public safety, access, and accessibility. The bridge will be slightly widened for safe vehicular access, and a sidewalk will be added for safe pedestrian usage. The project occurs entirely on a municipal-owned roadway layout. The Project will not disrupt any water-dependent uses currently in operation at off-site locations.

§9.37: Engineering Construction Standards

§9.37 of the waterways regulations requires all fill and structures be designed and constructed to be structurally sound, and that no residential units be constructed in high hazard flood zones. The proposed bridge has been designed by a Registered Professional Engineer to comply with the strict and thorough standards of MassDOT Bridge Design and will be constructed in a manner that is structurally sound. The Project does not involve any residential uses, and no residential structures within high hazard flood zones are proposed as part of the Project.

§9.54: Consistency with Coastal Zone Management Policies

§9.54 establishes the principle that all nonwater-dependent use projects located in the coastal zone “shall be consistent with all policies of the Massachusetts Coastal Zone Management (CZM) Program.” The proposed project is both outside of the Coastal Zone and is a water-dependent project.

6.0 Summary

The Applicants, the Town of West Newbury and the City of Newburyport, are proposing to replace a structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir in order to re-open a public roadway that has been closed to vehicular traffic since 2018. This type of project exemplifies the intent and purpose of the Massachusetts Public Waterfront Act. The design approach taken was to first avoid impacts to wetland resources where feasible, and where unavoidable, to minimize the impacts to the extent practicable and mitigate where applicable. Throughout the project design process, the project team carefully considered various development alternatives and moved forward with the alternative that has the least impact to wetland resources while satisfying the project goals and providing the most public benefit. Reasonable measures have been taken to avoid, minimize, and mitigate potential adverse impacts. As such, the applicant requests project certification as described in this narrative and as shown on the project plans. The municipal applicants respectfully request that MassDEP issue a Chapter 91 Waterways License for this highly beneficial and program-compatible bridge replacement project, keeping the goal of utilizing time-sensitive funding in mind.

Attachment B

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir,
West Newbury and Newburyport, MA

Chapter 91 License Application

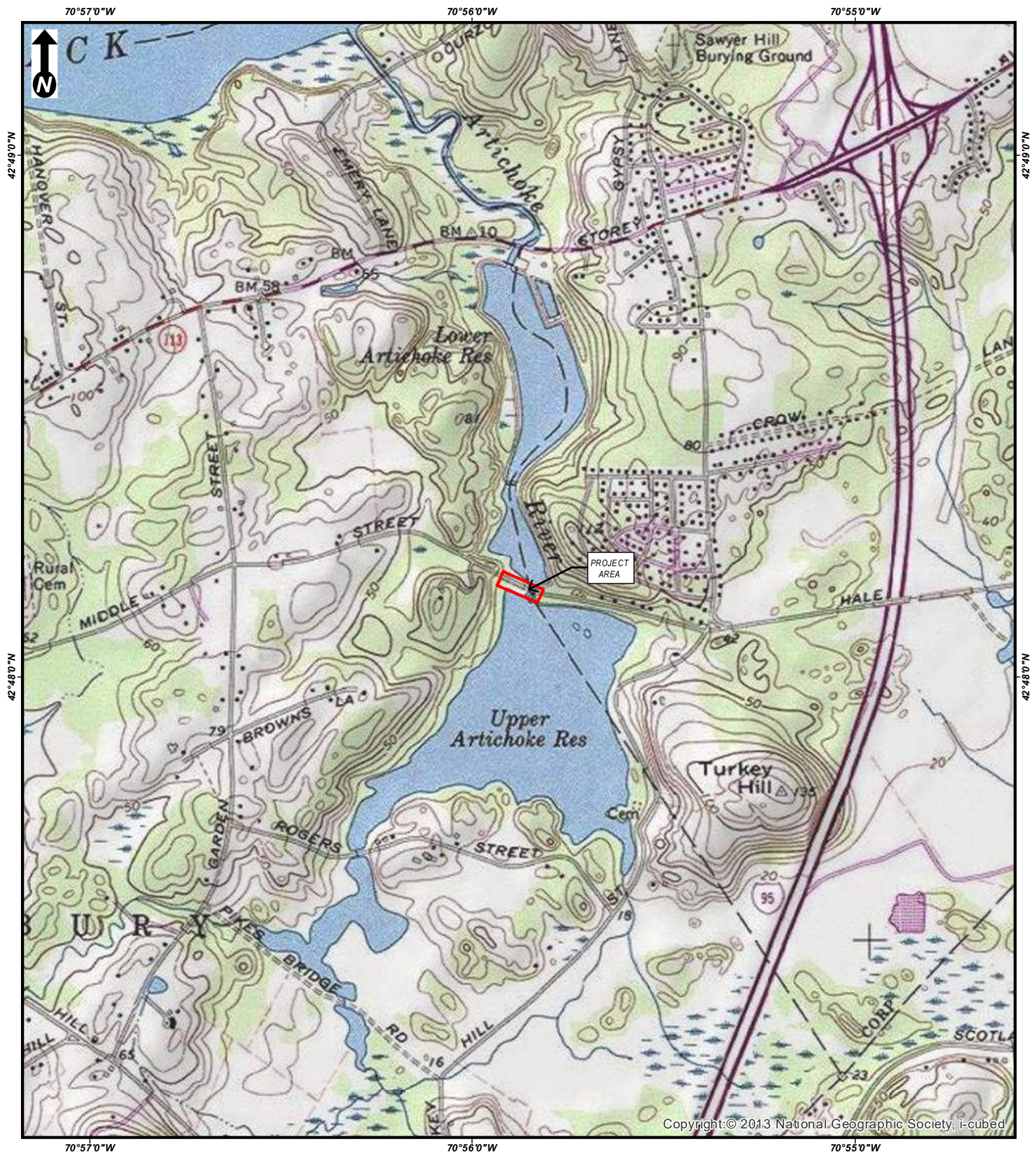
SITE FIGURES

USGS LOCUS

AERIAL ENVIRONMENTAL RESOURCES MAP

FEMA FIRMETTE

PHOTOGRAPHS



Scale:
1 inch = 2,000 feet
(page size: 8.5 X 11)

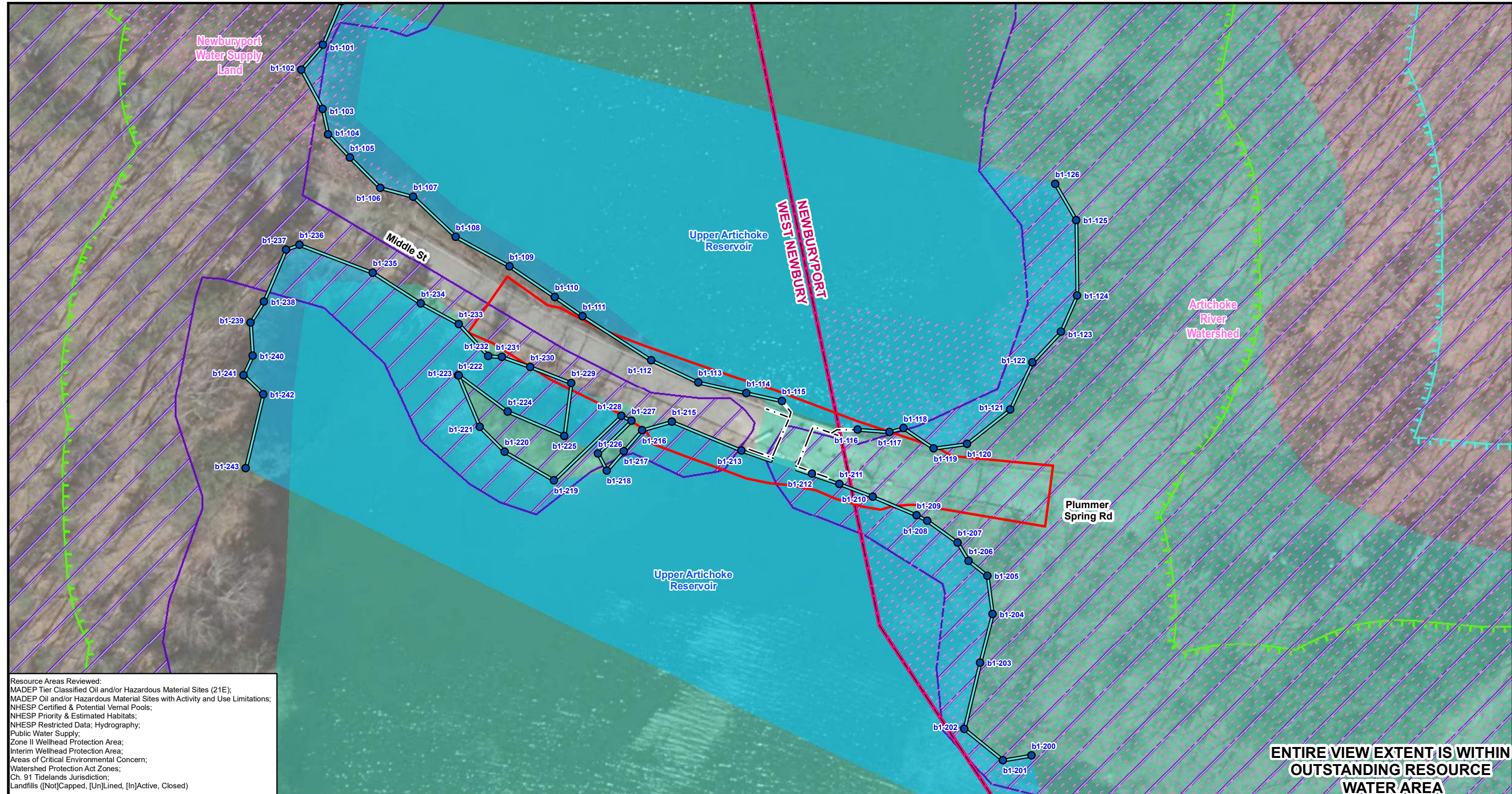
0 1,000 2,000
Feet

**MIDDLE ST / PLUMMER SPRING RD OVER UPPER ARTICHOKE RESERVOIR
BRIDGE REPLACEMENT PROJECT**

**USGS Site Location Map
West Newbury & Newburyport, MA**

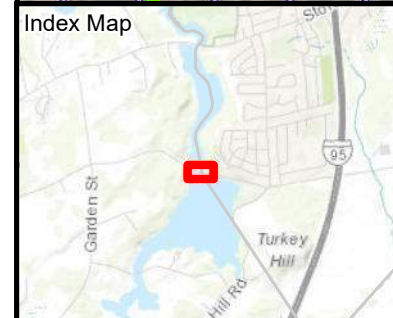
Source: 2013
National Geographic
Society, i-cubed





Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;
 NHESP Certified & Potential Vernal Pools;
 NHESP Priority & Estimated Habitats;
 NHESP Restricted Data; Hydrography;
 Public Water Supply;
 Zone II Wellhead Protection Area;
 Interim Wellhead Protection Area;
 Areas of Critical Environmental Concern;
 Watershed Protection Act Zones;
 Ch. 91 Tidelands Jurisdiction;
 Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)

**ENTIRE VIEW EXTENT IS WITHIN
 OUTSTANDING RESOURCE
 WATER AREA**



Legend

Project Area	100ft Buffer to Wetlands & Streams	Article 97 Lands
Existing Bridge Structure	200ft Riverfront Area	Municipal
Field Delineated Bank Flags	FEMA 100yr Floodplain (Zone AE)*	Surface Water Protection Zone
Field Delineated Edge of Bank	Town Boundary	
Field Delineated Waterbody		
MADEP Hydrologic Connections		

1 inch = 50 feet
 0 25 50
 Feet
 *Indicates Layers Set to Transparency

**MIDDLE STREET / PLUMMER SPRING ROAD
 OVER THE UPPER ARTICHOKE RESERVOIR
 BRIDGE REPLACEMENT PROJECT**

Environmental Resources Map
 West Newbury & Newburyport, MA

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



ff1



FIG 1

Legend:

- Zone AE: 13 FEET
- Zone X: AREA OF MINIMAL FLOOD HAZARD
- Zone V: 25009C0116F eff. 7/3/2012
- City of Newburyport 250097
- Town of West Newbury 250108
- Andover River
- Scale: 0 to 100 FEET

74LVBSL... 74LVBSL... 74LVBSL...

74LVBSL... 74LVBSL... 74LVBSL...

74LVBSL... 74LVBSL... 74LVBSL...



Photo #1: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #2: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #3: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. View of the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #4: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir.. Up close view of the bridge in disrepair.



Photo #5: View southeast of Middle St, West Newbury facing Plummer Spring Rd, Newburyport over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #6: View southwest of the northern side of the roadway and bridge over the Upper Artichoke Reservoir.

Attachment C

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir,
West Newbury and Newburyport, MA

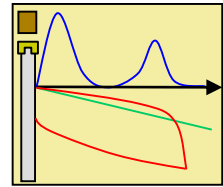
Chapter 91 License Application

SEDIMENT SAMPLING REPORT



GEOSCIENCES TESTING AND RESEARCH, INC.

55 Middlesex Street, Suite 225, N. Chelmsford, MA 01863
Ph: (978)251-9395, Fax: (978)251-9396



December 4, 2019

GTR Project #19.107

Mr. Micah Morrison P.E.
BSC Group
803 Summer Street
Boston, MA 02127

Re: **Streambed Sampling Results**
Plummer Spring Road over Artichoke Reservoir No. N-11-007 = W-20-001
Newburyport/West Newbury, Massachusetts

Dear Micah:

Geosciences Testing and Research, Inc. (GTR) is pleased to present this letter summarizing the results of our Streambed Sampling for Plummer Spring Road over Artichoke Reservoir (No. N-11-007 = W-20-001) Bridge Replacement on the Newburyport/West Newbury, Massachusetts line. See Figure 1 for a site locus plan.

The streambed soil sampling was performed by GTR personnel on February 5, 2019. Boulders and cobbles were observed along the streambed banks. See Appendix A for photographs of the existing conditions of the stream beds. One (1) bulk soil sample was collected from each of the following areas; Right Over Bank (SB-1), Left Over Bank (SB-2) and the middle of the Center (SB-3) for a total of three (3) samples. The samples were collected by using a hand auger/shovel to excavate a shallow test pit approximately 1 to 2 foot below existing grade. Material greater than 4-inches in diameter was not sampled. The SB-1 through SB-3 samples were collected at approximately 35 to 42 feet upstream from the existing bridge. See Figure 2 for the approximate locations of the streambed samples.

Sieve analyses and/or Atterberg Limits were performed in accordance with ASTM D422 and ASTM D4318, respectively, on the soil samples. See Appendix B for the results of the analyses, the Modified Burmister Soil Classification, the D50 particle sizes and plasticity index for the streambed samples.

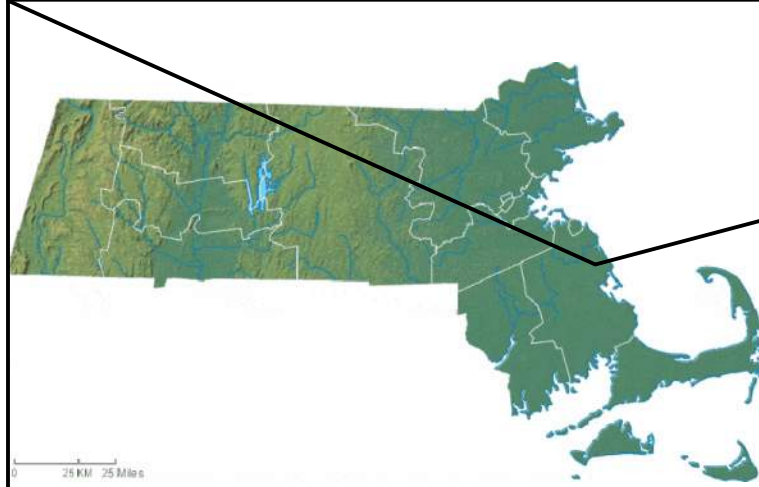
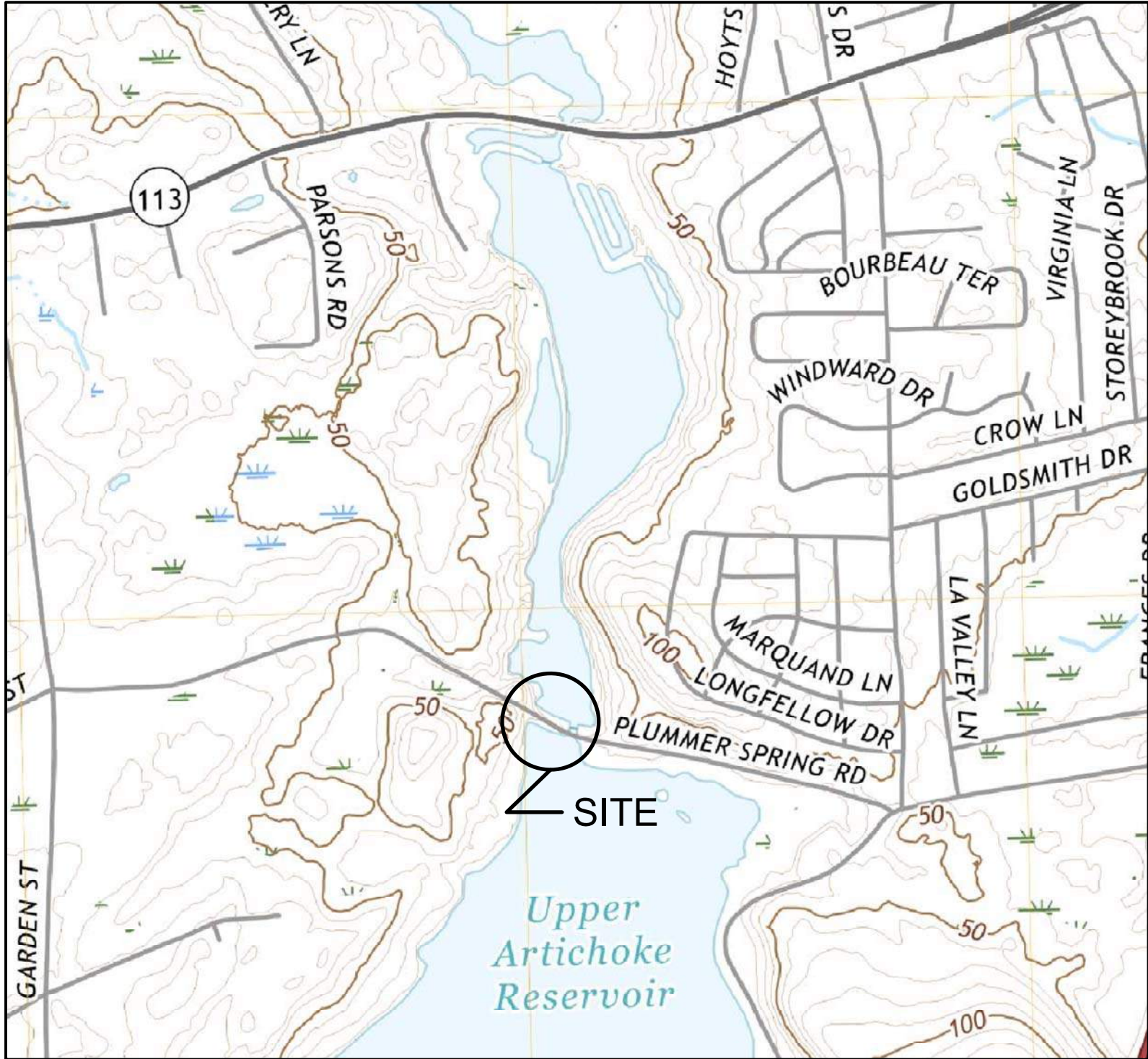
We trust this satisfies your current requirements and have appreciated working with you on this project. Please contact the undersigned if you have any questions.

Sincerely,
Geosciences Testing and Research, Inc.

Curtis A. George, P.E.
Principal

Attachments: Figure 1 and 2, Appendices A- B
19.107 Plummer St Newburyport -West Newbury MA - Streambed Sampling.docx

FIGURES



PLUMMER SPRING ROAD OVER ARTICHOKE RIVER -
 BRIDGE NO. N-11-007=W-20-001
 NEWBURYPORT, MASSACHUSETTS

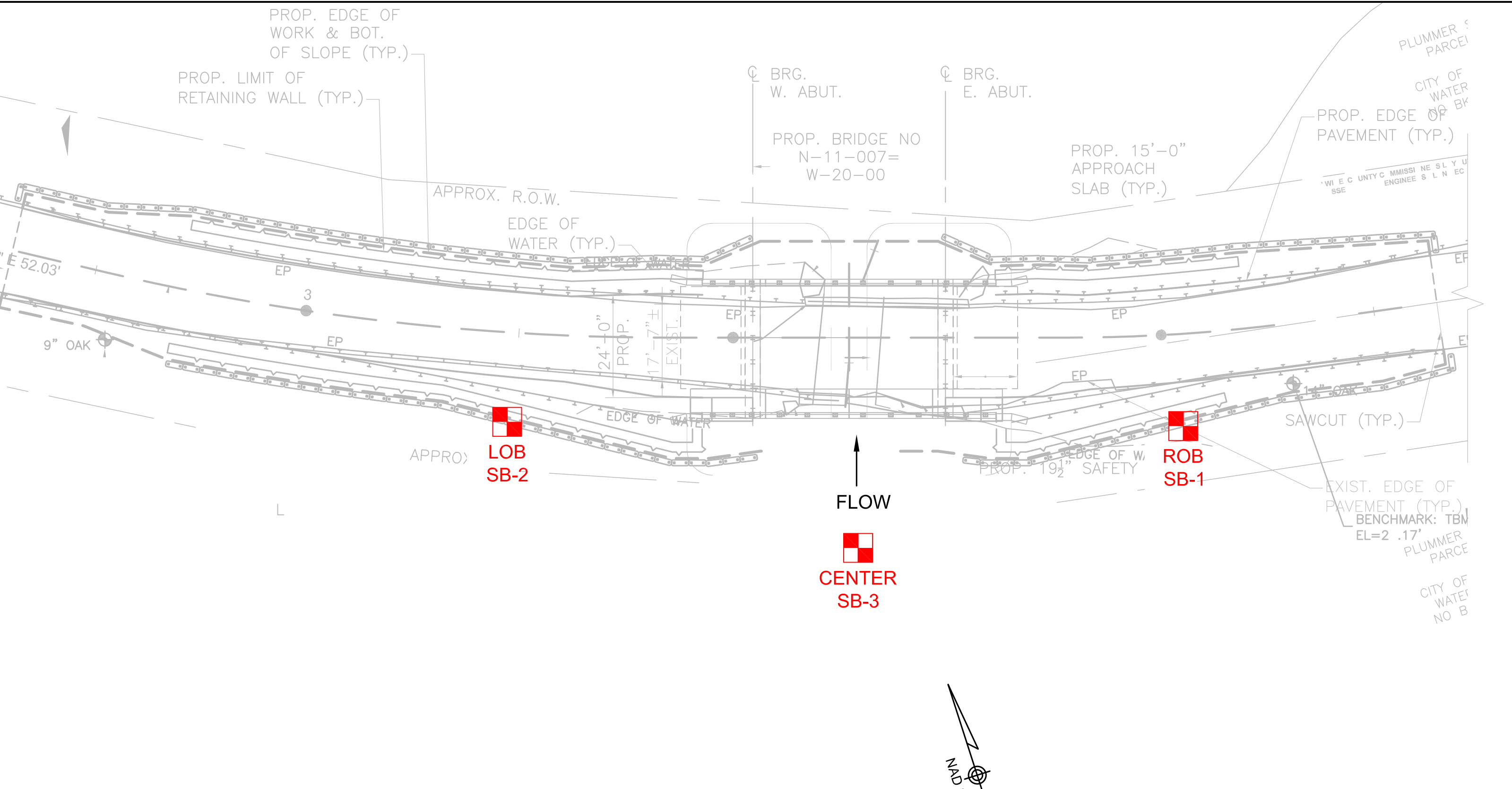
LOCUS PLAN

GEOSCIENCES TESTING AND RESEARCH, INC.


55 MIDDLESEX STREET, SUITE 225 (TEL) 978-251-9395
 NORTH CHELMSFORD, MA, 01863 (FAX) 978-251-9396

DRAWN BY: AJC	SCALE: N/A	DESIGN BY:
CHK BY: CAG	PROJECT NO.: 19.107	
DATE: 12/3/19	SHEET NO.: FIGURE 1	





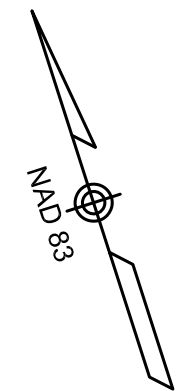
LEGEND:

 Approximate location and designation of streambed samples collected by GTR personnel on February 5, 2019.

ROB

Notes:

- The locations of streambed samples should be considered approximate to the degree implied by the method used to locate them. Location determined by tape and measure from existing site features.



PLUMMER SPRING ROAD OVER ARTICHOKE RIVER - BRIDGE NO. N-11-007=W-20-001 NEWBURYPORT, MASSACHUSETTS		STREAMBED SAMPLING PLAN
GEOSCIENCES TESTING AND RESEARCH, INC.		
55 MIDDLESEX STREET, SUITE 225 NORTH CHELMSFORD, MA. 01863		(TEL) 978-251-9395 (FAX) 978-251-9396
DRAWN BY: AJC	SCALE: N/A	DESIGN BY:
CHK BY: CAG	PROJECT NO.: 19.107	
DATE: 12/3/19	SHEET NO.: FIGURE 2	

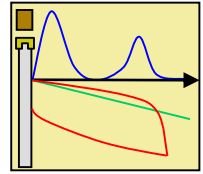


APPENDIX A



GEOSCIENCES TESTING AND RESEARCH, INC.

55 Middlesex Street, Suite 225, N. Chelmsford, MA 01863
Ph: (978)251-9395, Fx: (978)251-9396



Project: Plummer Spring St Over Water Artichoke River
Project No: 19.107
Drawn By: C. George
Date: 2/11/19

APPENDIX B



GEOSCIENCE TESTING & RESEARCH, INC.

55 MIDDLESEX ST., SUITE 225, NORTH CHELMSFORD, MA 01863

Phone: (978) 251-9395 Fax: (978) 251-9396

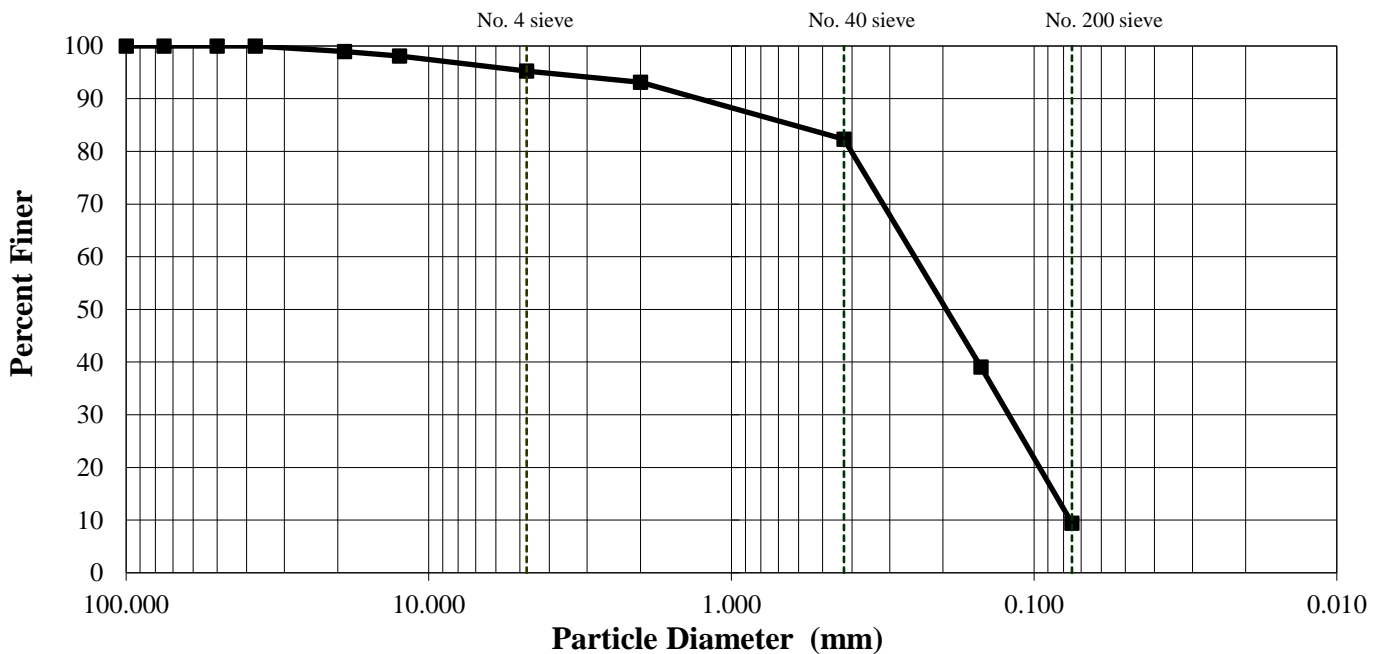
Sieve Analysis Data and Computation Sheet

Project Name: Plummer Street Sample No: ROB SB-1
 Project No.: 19.107 Depth: 0-1 ft
 Test by: Domenic Valeri
 Date: 5/6/2019

Soil Description: Brown, fine to medium SAND, trace Silt, trace Gravel, trace Roots.
Cobbles were not sampled.

Testing done in accordance with ASTM D-422

	Sieve Size	Sieve Opening (mm)	Cum. % Finer
Cobbles	4.0"	100.000	100.0
Coarse Gravel	3.0"	75.000	100.0
	2.0"	50.000	100.0
	1.5"	37.500	100.0
Medium Gravel	0.75"	19.000	98.9
Fine Gravel	0.5"	12.500	98.1
	4	4.750	95.3
Coarse Sand	10	2.000	93.1
Medium Sand	40	0.425	82.3
Fine Sand	100	0.150	39.1
	200	0.075	9.4
Silts & Clays			



Soil Parameters:

D₁₀: 0.078 mm

D₃₀: 0.13 mm

D₅₀: 0.20 mm



GEOSCIENCE TESTING & RESEARCH, INC.

55 MIDDLESEX ST., SUITE 225, NORTH CHELMSFORD, MA 01863

Phone: (978) 251-9395 Fax: (978) 251-9396

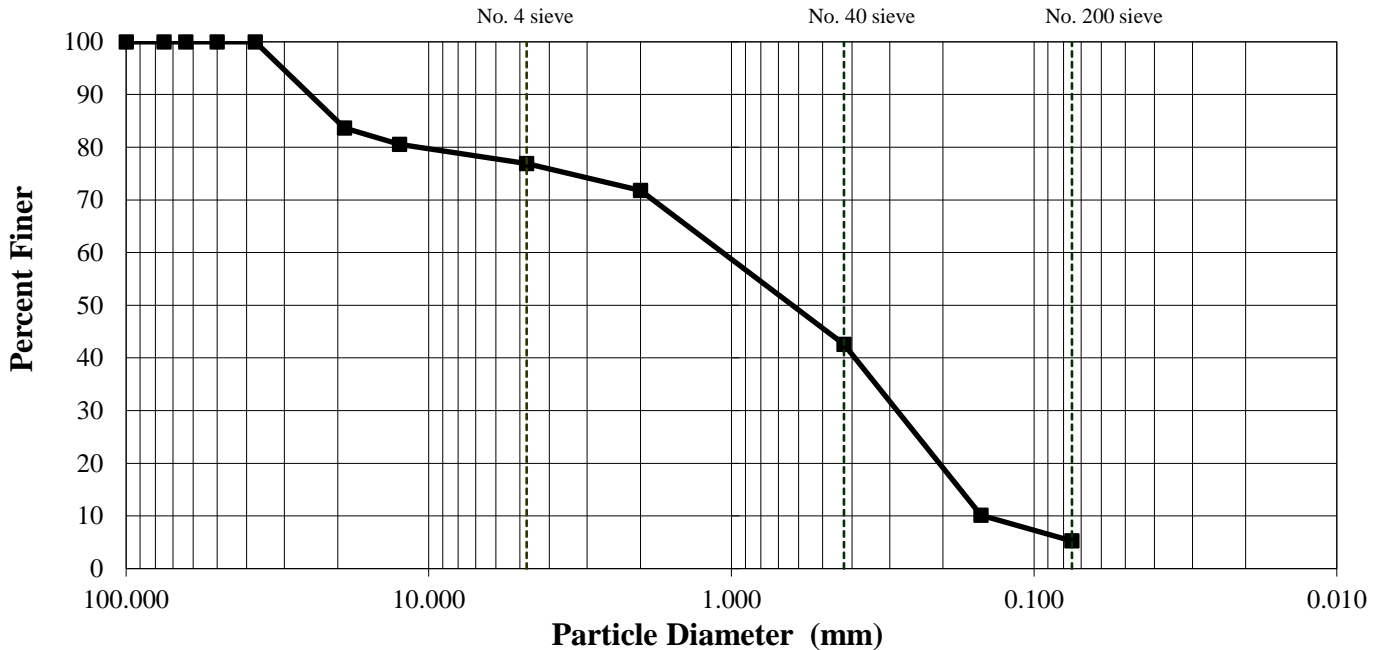
Sieve Analysis Data and Computation Sheet

Project Name: Plummer Street **Sample No.:** LOB SB-2
Project No.: 19.107 **Depth:** 0-1 ft
Test by: Domenic Valeri
Date: 5/6/2019

Soil Description: Brown, fine to medium SAND, some Gravel, trace Silt, trace Roots.
Cobbles were not sampled.

Testing done in accordance with ASTM D-422

	Sieve Size	Sieve Opening (mm)	Cum. % Finer
Cobbles	4.0"	100.000	100.0
Coarse Gravel	3"	75.000	100.0
	2.5"	63.500	100.0
	2.0"	50.000	100.0
	1.5"	37.500	100.0
	Medium Gravel	0.75"	19.000
Fine Gravel	0.5"	12.500	80.5
	4	4.750	76.9
Coarse Sand	10	2.000	71.8
Medium Sand	40	0.425	42.6
Fine Sand	100	0.150	10.1
	200	0.075	5.3
Silts & Clays			



Soil Parameters:

D₁₀: 0.15 mm

D₃₀: 0.28 mm

D₅₀: 0.63 mm



Client:	Geosciences Testing & Research		
Project:	Plummer St Bridge Replace		
Location:	Newburyport, MA	Project No:	GTX-309526
Boring ID:	---	Sample Type:	jar
Sample ID:	Center SB-3	Test Date:	02/13/19
Depth :	0-1	Test Id:	493103
Test Comment:	---		
Visual Description:	Wet, very dark gray sand with silt		
Sample Comment:	---		

Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content, %
---	Center SB- 3	0-1	Wet, very dark gray sand with silt	144.8

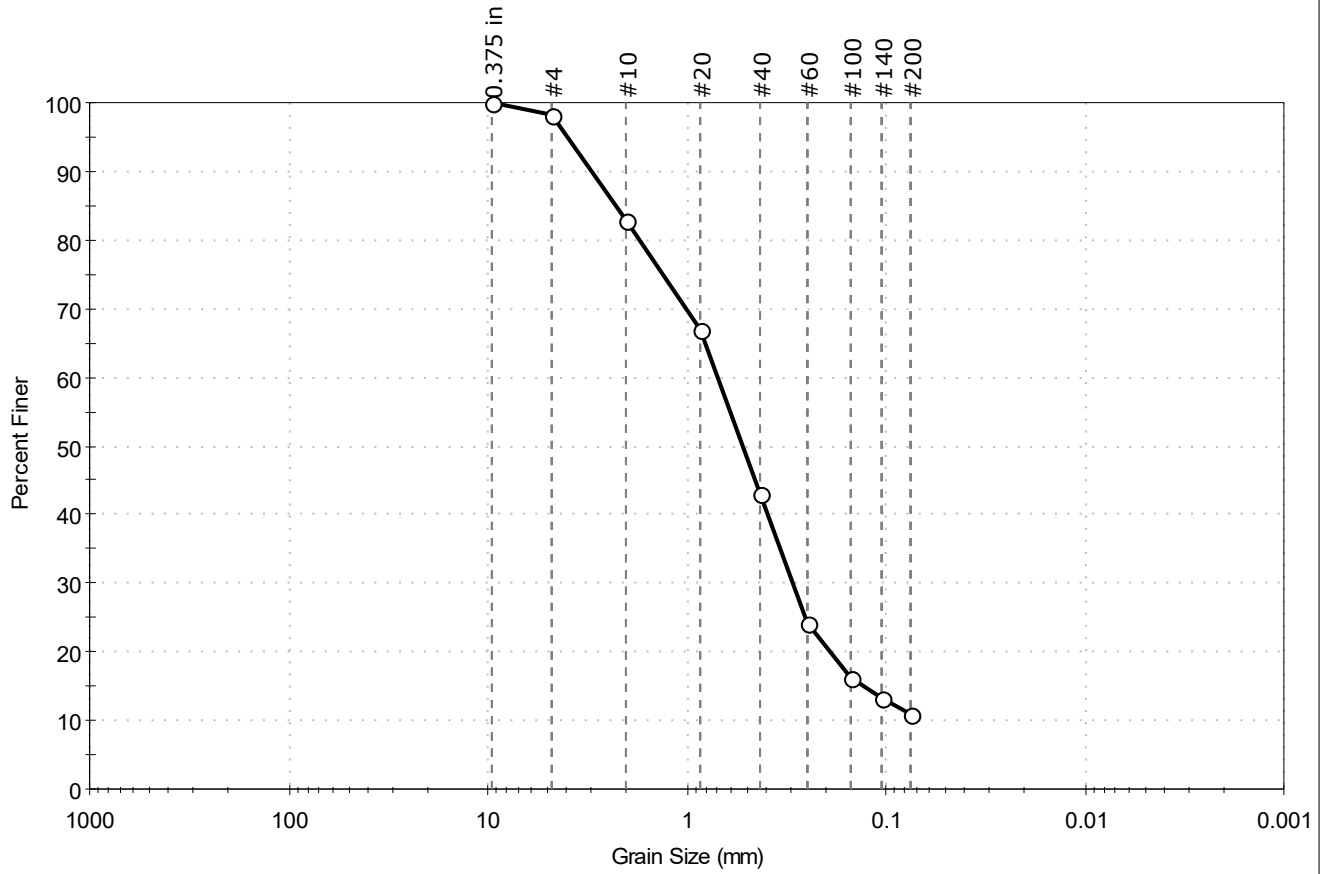
Organic Silt

Notes: Temperature of Drying : 110° Celsius



Client: Geosciences Testing & Research	Project No: GTX-309526
Project: Plummer St Bridge Replace	
Location: Newburyport, MA	
Boring ID: ---	Sample Type: jar
Sample ID: Center SB-3	Test Date: 02/18/19
Depth: 0-1	Test Id: 493102
Test Comment: ---	Tested By: ckg
Visual Description: Wet, very dark gray sand with silt	Checked By: emm
Sample Comment: ---	

Particle Size Analysis - ASTM D6913



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.7	87.3	11.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	98		
#10	2.00	83		
#20	0.85	67		
#40	0.42	43		
#60	0.25	24		
#100	0.15	16		
#140	0.11	13		
#200	0.075	11		

<u>Coefficients</u>	
D ₈₅ = 2.2367 mm	D ₃₀ = 0.2944 mm
D ₆₀ = 0.6947 mm	D ₁₅ = 0.1281 mm
D ₅₀ = 0.5209 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

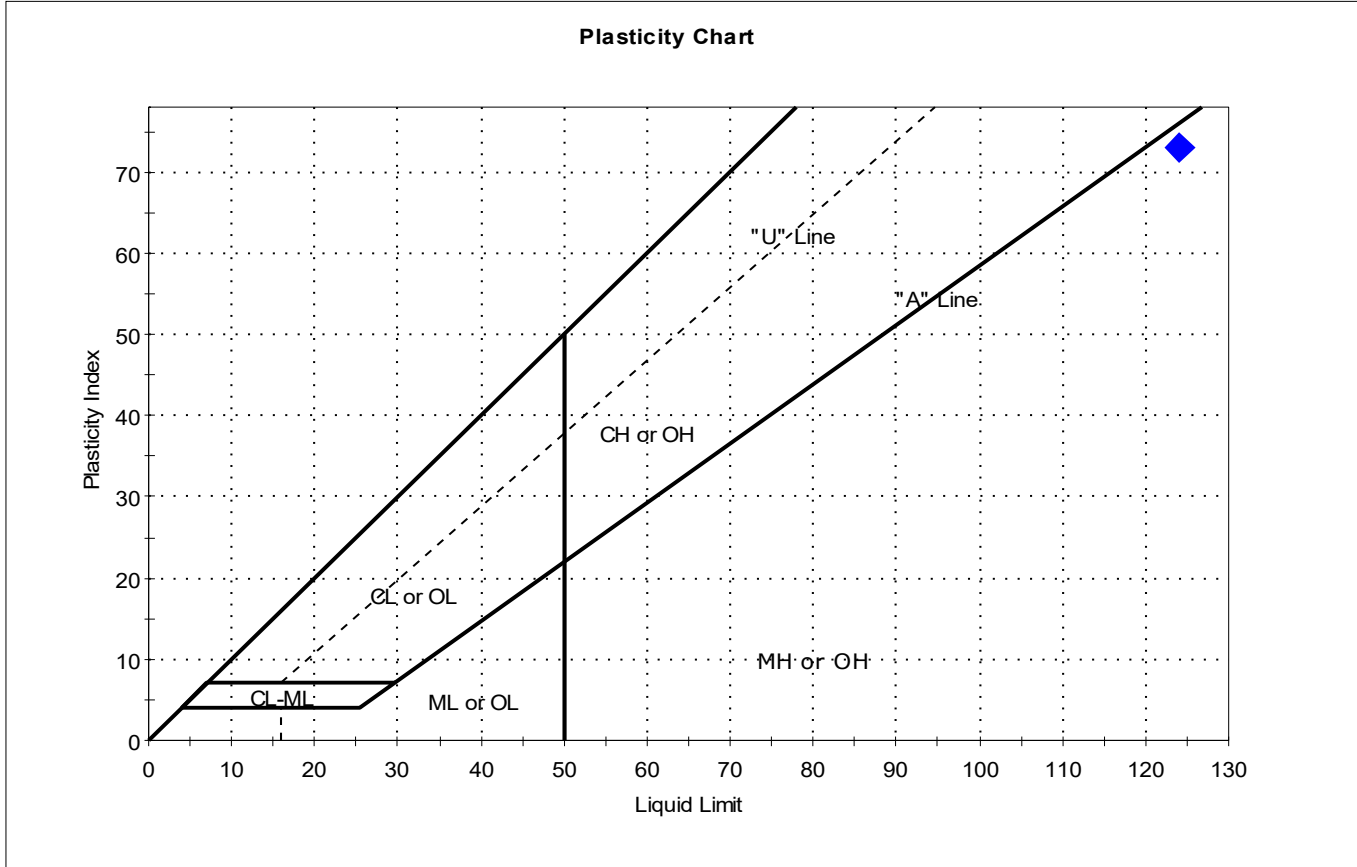
<u>Classification</u>	
ASTM	N/A
AASHTO	Clayey Gravel and Sand (A-2-7 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD



Client:	Geosciences Testing & Research		Project No:	GTX-309526	
Project:	Plummer St Bridge Replace				
Location:	Newburyport, MA				
Boring ID:	---	Sample Type:	jar	Tested By:	cam
Sample ID:	Center SB-3	Test Date:	02/18/19	Checked By:	emm
Depth :	0-1	Test Id:	493101		
Test Comment:	---				
Visual Description:	Wet, very dark gray sand with silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	Center SB-3	---	0-1	145	124	51	73	1.3	

Sample Prepared using the WET method
 57% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Attachment D

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir,
West Newbury and Newburyport, MA

Chapter 91 License Application

WEST NEWBURY ORDER OF CONDITIONS (78-724)
NEWBURYPORT ORDER OF CONDITIONS (051-1047)
NOI PLANS



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 78-724
 MassDEP File #
 eDEP Transaction #
 West Newbury
 City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

a. County	b. Certificate Number (if registered land)
N/A Town roadway Layout	
c. Book	d. Page

7. Dates: 1/21 6/21/21 6/29/21
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Bridge Replacement Project
 a. Plan Title
BSCS Group
 b. Prepared By
5/7/2021
 d. Final Revision Date

c. Signed and Stamped by
varies
 e. Scale

f. Additional Plan or Document Title
 g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- | | | |
|---|--|---|
| a. <input checked="" type="checkbox"/> Public Water Supply | b. <input type="checkbox"/> Land Containing Shellfish | c. <input checked="" type="checkbox"/> Prevention of Pollution |
| d. <input checked="" type="checkbox"/> Private Water Supply | e. <input checked="" type="checkbox"/> Fisheries | f. <input checked="" type="checkbox"/> Protection of Wildlife Habitat |
| g. <input checked="" type="checkbox"/> Groundwater Supply | h. <input checked="" type="checkbox"/> Storm Damage Prevention | i. <input checked="" type="checkbox"/> Flood Control |

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



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B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	175 a. linear feet	175 b. linear feet	47 c. linear feet	47 d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	996 a. square feet 67cf e. c/y dredged	996 b. square feet 67cf f. c/y dredged	443 c. square feet	443 d. square feet
7. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	167 a. square feet 393 e. cubic feet	167 b. square feet 393 f. cubic feet	311 c. square feet 1438 g. cubic feet	311 d. square feet 1438 h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u> </u> a. square feet <u> </u> c. cubic feet	<u> </u> b. square feet <u> </u> d. cubic feet	<u> </u> e. cubic feet	<u> </u> f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	5759 a. total sq. feet 5759 c. square feet	5759 b. total sq. feet 5759 d. square feet	570 e. square feet	570 f. square feet
Sq ft within 100 ft	<u> </u> c. square feet	<u> </u> d. square feet	<u> </u> e. square feet	<u> </u> f. square feet
Sq ft between 100-200 ft	<u> </u> g. square feet	<u> </u> h. square feet	<u> </u> i. square feet	<u> </u> j. square feet



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B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	_____	_____	_____	_____
	a. square feet	b. square feet		
	_____	_____		
	c. c/y dredged	d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	_____	_____	_____ cu yd	_____ cu yd
	a. square feet	b. square feet	c. nourishment	d. nourishment
14. <input type="checkbox"/> Coastal Dunes	_____	_____	_____ cu yd	_____ cu yd
	a. square feet	b. square feet	c. nourishment	d. nourishment
15. <input type="checkbox"/> Coastal Banks	_____	_____		
	a. linear feet	b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	_____	_____		
	a. square feet	b. square feet		
17. <input type="checkbox"/> Salt Marshes	_____	_____	_____	_____
	a. square feet	b. square feet	c. square feet	d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	_____	_____		
	a. square feet	b. square feet		
	_____	_____		
	c. c/y dredged	d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	_____	_____	_____	_____
	a. square feet	b. square feet	c. square feet	d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	_____	_____		
	a. c/y dredged	b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	_____		
	a. square feet	b. square feet		
22. <input type="checkbox"/> Riverfront Area	_____	_____		
	a. total sq. feet	b. total sq. feet		
Sq ft within 100 ft	_____	_____	_____	_____
	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	_____	_____	_____	_____
	g. square feet	h. square feet	i. square feet	j. square feet



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B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. Restoration/Enhancement *:

a. square feet of BVW

b. square feet of salt marsh

24. Stream Crossing(s):

0

1

a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on 6/29/24 unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



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C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
"File Number 78-724 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) is subject to the Massachusetts Stormwater Standards
- (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See attached four pages Standard and two pages Special Conditions

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.

SPECIAL CONDITIONS
MIDDLE STREET OVER THE UPPER ARTICHOKE RESERVOIR BRIDGE
DEP #78-0724

1. All work shall conform to the following approved plans and documents, Bridge Replacement Project. Revised 5/7/21
2. Pesticides, insecticides, herbicides and fertilizers shall not be used on site within 100 feet of a resource area. Any proposed change in this limitation requires the submission of a plan to the WNCC and its approval by the WNCC before implementation of any change.
3. A construction schedule shall be submitted to the WNCC at least one week prior to the commencement of any site work.
4. A detailed plan for dewatering shall be submitted to and approved by the WNCC before the commencement of any dewatering.
5. A qualified wetlands scientist, whose qualifications and contact information shall be provided to the WNCC prior to any work under this Order, shall be on-site during the installation of dewatering structures, removal and replacement of the streambed materials, and other times deemed necessary by the WNCC.
6. Wetland flagging shall be reviewed and refreshed by the qualified wetland scientist prior to the commencement of work under this Order.
7. A pre-construction site meeting to review all documents associated with the work under this Order and the locations of erosion and sedimentation controls shall be held prior to any work under this Order and shall be attended by the contractor, resident engineer, the qualified wetland scientist, any other project supervisors, and the West Newbury Conservation Agent.
8. Erosion and sedimentation control measures, consisting of staked 12" compost filter tubes, shall be installed by the contractor and shall be inspected and approved by the WNCC prior to any other work under this Order. The installation shall be completed according to approved plans and the installation will be reviewed by the Qualified Wetland Scientist. The erosion control line along resource areas, except land under water, indicated on the plan shall be the limit of disturbance on the project.
9. Erosion and sedimentation control shall be maintained in good working order throughout all work under this Order. Built up sediment shall be removed when it reaches one-third the height of the filter tube and shall be disposed of outside the buffer zone of any resource area. The erosion and sedimentation controls shall be checked on a weekly basis and following storm events of more than .5 inch.

Inspection reports shall be submitted to the qualified wetland scientist and the WNCC.

10. Areas for stockpiling construction materials and the natural streambed material removed prior to streambed excavation within any resource area or any buffer zone shall be designated on a plan submitted to and approved by the WNCC prior to any work under this Order. Stockpiled materials shall be covered with tarps and surrounded by erosion control measures.
11. Material from demolition shall be disposed of outside any resource area and any buffer zones
12. All trees with a dbh of 3 inches or greater to be removed shall be marked in the field and reviewed by the WNCC prior to removal. Stumps shall remain in place where removal is not required for construction.
13. Any fill materials shall be free from masonry stumps, wood, tree branches, organic materials (other than topsoil), construction debris, refuse, trash and other similar materials.
14. A plan for the treatment of the bridge and approach road with deicing agents in winter shall be submitted to and approved by the WNCC prior to the conclusion of work.
15. 401 Water Quality Certification by the Massachusetts DEP shall be submitted to the WNCC prior to any work under this Order.
16. Confirmation from DEP that the project has been approved under MEPA or that a MEPA filing is not required shall be submitted to the WNCC prior to any work under this Order.
17. Work shall be done in accordance with the authorization and four special conditions provided by the US Army Corps of Engineers in its April 9, 2021 letter to Jon-Eric White, City engineer, City of Newburyport, a copy of which is attached to this Order
18. No time of year work restrictions are applicable to this project. Special Condition #18 supersedes Standard #19.
19. Condition #2 shall run with the land and shall remain in full force and effect after the issuance of a Certificate of Compliance.

The following Conditions are issued pursuant to Mass. General Laws c. 131 S40 and 301 CMR 10.00 et seq, and regulate those activities conducted in a Resource Area or Buffer Zone thereto.

STANDARD ORDER OF CONDITIONS

PROCEDURES:

1. All work must conform to the plans submitted and to the Notice of Intent unless otherwise stipulated in the Order of Conditions or authorized by the West Newbury Conservation Commission.
2. This Order of Conditions must be recorded at the Registry of Deeds, with the recording information submitted to this Commission, prior to the commencement of site work or construction, or within 60 days of the issuance of this Order if construction is not commenced.
3. If the applicant is not the record owner of the property subject to this Order of Conditions, the applicant must, prior to the recording of this Order, provide to this Commission, a written, notarized statement, executed by the owner of the property approving the recording of the Order of Conditions at said Registry of Deeds.
4. The Conservation Commission shall be notified, in writing, at the time of all transfers of title on this property that occur prior to the issuance of a Certificate of Compliance.
5. In conjunction with the sale of any lot with a resource area under an Order of Conditions, the applicant shall submit to the WNCC a signed statement by the buyer that he is aware of an outstanding Order of Conditions on the property.
6. The applicant or his successor shall notify the WNCC, in writing, and before site work begins, of the name, address, business and home phone numbers of the project supervisor responsible for compliance with this Order.
7. This Order shall be made part of all general and subcontractors' (responsible for site work) written contract.
8. Any modifications or revisions to the referenced plans and/or Notice of Intent shall be submitted to the WNCC for review and to determine if a new Notice of Intent is required. The WNCC reserves the right to require the applicant to file a new Notice of intent for any appropriate plan changes or submittals.
9. No additional new construction or disturbance of a wetland resource area, or the 100ft. buffer zone around a wetland resource area, shall be permitted on this site until the Commission has made a determination.

10. Issuance of this condition does not in any way imply or certify that the site or downstream areas will not be subject to flooding, storm damage, or any other form of damage due to wetness.
11. Upon completion of work, and in order to receive a Certificate of Compliance, the applicant shall submit an as-built plan of all areas within jurisdiction of the Wetlands Protection Act. The professional engineer of record, certifying compliance with this Order of Conditions, shall sign the plan. The plan shall include:
 - a. As-built elevations of all drainage ways constructed within 100 ft. of any wetland resource area.
 - b. As-built elevations and grades of all filled or altered wetland resource areas, buffer zones and replicated wetland areas.
 - c. Distances to all structures within 100ft. of any wetland resource area.
 - d. The original plan can be used and any changes in the elevations or locations be marked in red. Submit the request in writing or use the DEP form (WPA 8A). Make sure all the original Conditions were met.
12. All erosion control shall be removed as soon as disturbed areas have been revegetated and stabilized, but only after consultation with the Agent and a determination by the Agent that disturbed areas have been sufficiently revegetated/stabilized to warrant removal of the erosion control. The erosion control must be removed before a request for Certificate of Compliance is requested.
13. The Order of Conditions is valid for three years. A Certificate of Compliance must be requested before the Order of Conditions expires unless the Order has been extended.

SITE WORK

14. Erosion and siltation prevention measures must be properly installed before construction. Securely installed silt fence backed with doubly staked hay bales, both embedded a minimum of 6" into existing grade, shall be placed between construction areas and wetland areas. Unless otherwise specified. Prior to installation of these devices, the Conservation Agent shall be contacted for instruction as to proper installation. Both hay bales and silt fence shall be maintained throughout the project until all disturbed areas have been mulched, seeded and stabilized to prevent erosion.
15. The erosion control shall indicate the limit of construction on site and there shall be no disturbance between the erosion control and a wetland resource area unless specifically allowed by the Order of Conditions.
16. If during the course of construction, it is found that further erosion or siltation is needed, the WNCC shall direct the applicant upon its placement.

17. Grading shall conform to the plans and data referenced in special condition #1 above. In all cases final grades shall have a minimum of two inches of topsoil (measured in place) over all disturbed areas. In all cases exposed soil areas shall be stabilized with vegetation, e.g., grass or some form of ground cover plant. Pavement milling mulch alone may be used under the guardrail between the edge of the roadway and back of retaining wall.
18. Upon completion of construction and grading, all disturbed areas located outside resource areas shall be stabilized permanently against erosion. This shall be done either by sodding, or by loaming, seeding, and mulching according to Soil Conservation Service standards. If the latter course is chosen, stabilization will be complete when the surface shows complete vegetative cover.
19. Unless otherwise stipulated herein, all work within a resource area, or the 100ft. buffer zone, shall cease on October 15th of any given year, and the site shall be stabilized either with winter rye, mulch hay or other suitable material by November 1st. No work in the above stated areas should recommence until April 15th, of the following year.
20. Before hay bales or silt fences are removed, after the area in question has been stabilized by revegetation or at the completion of a project, all accumulated silt behind the fences shall be carefully removed and placed sufficiently far from the wetland area that it cannot wash into the wetlands.
21. No earthen embankment in any buffer zone area shall have a slope steeper than 2:1.
22. Dust control, if required, shall be limited to water; no salts or other wetting agents shall be used.
23. No dirt stockpiles, construction materials, spoils of construction, or equipment shall be stored, placed or operated in a wetland resource area, unless specifically allowed by the Order of Conditions.
24. Fill stored within 100ft. of the wetland of the must have adequate erosion control measures surrounding it.
25. Only clean fill shall be used on this site, as indicated in General Condition #6.
26. No construction site bury holes shall be located within 100ft. of the wetland.

POLLUTION CONTROL

27. No on-site dumpster shall be located within 100ft. of the wetland.
28. During and after work on this project, there shall be no discharge or spillage of fuel, oil, construction debris, or other pollutants into any wetland resource area.

29. Petroleum products, toxic materials, and construction debris shall be disposed of off-site.
30. Since the underground storage of petroleum products cannot be effectively monitored for loss, and presents a hazard to ground water and wetland resources, such storage is prohibited. This condition shall be included with the Certificate of Compliance so as to run with the land.
31. Equipment must be washed prior to entering the work area to remove leaked petroleum products and avoid introduction of invasive plants.
32. To avoid leaks, equipment must be repaired prior to construction.
33. Applicant must be prepared to use petroleum absorbing "diapers" if necessary.
34. Refueling areas and hazardous material containment areas shall be located away from streams and other sensitive areas. All refueling areas shall be outside of the 100 foot buffer zone and the 200 Riverfront Areas.
35. Appropriate areas for washing concrete mixers must be established outside the 100 foot buffer zone of a wetland resource area and outside the Riverfront Area; in order to prevent concrete wash water from entering rivers and streams.
36. Temporary stockpiles must be covered or surrounded with erosion controls to prevent erosion into resource areas



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No
2. The _____ hereby finds (check one that applies):
Conservation Commission

- a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw

2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):



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E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

6/29/21
1. Date of Issuance

Please indicate the number of members who will sign this form.

four
2. Number of Signers

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

[Signature]
Signature
Thomas M. Atwood
Signature

Katherine T. Federer
Printed Name
Thomas M. Atwood
Printed Name

[Signature]
Signature
Margaret Hawkins
Signature

MARGARET HAWKINS
Printed Name

[Signature]
Signature

JULIA H. MIZNER
Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

by hand delivery on

by certified mail, return receipt requested, on

6/29/21
Date

Date



Massachusetts Department of Environmental Protection
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F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



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G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

West Newbury
 Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

West Newbury
 Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Upper Artichoke Bridge, Middle St. 78-724
 Project Location MassDEP File Number

Has been recorded at the Registry of Deeds of:

_____ _____ _____
 County Book Page

for: Town of West Newbury
 Property Owner

and has been noted in the chain of title of the affected property in:

_____ _____
 Book Page

In accordance with the Order of Conditions issued on:

6/29/2021
 Date

If recorded land, the instrument number identifying this transaction is:

 Instrument Number

If registered land, the document number identifying this transaction is:

 Document Number

 Signature of Applicant



CITY OF NEWBURYPORT
CONSERVATION COMMISSION

60 PLEASANT STREET
NEWBURYPORT, MA 01950
978-465-4400

June 07, 2021

Jon-Eric White
City of Newburyport Department of Public Services
16C Perry Way
Newburyport MA 01950

Re: Order of Conditions File # 051-1047
- Plummer Spring Road

Dear Applicant:

Enclosed is the Order of Conditions for your project at the above referenced property. Before any work may begin, you must wait 10 business days (the appeal period) and then record this Order with the Registry of Deeds. Once the Order is recorded, you must submit proof to me (see page 11) prior to starting any work.

Please read the Order very carefully as it will govern how you may proceed with your project so that any potential impacts to the resource areas are minimized. Failure to adhere to the conditions specified in the Order may result in enforcement action, including fines. In addition, please note the following special conditions that must be met prior to your start of work:

- Prior to the commencement of any activity on the site, the applicant shall complete and submit the enclosed "Permit Compliance Contact Form".
- The applicant shall display the DEP file number for this Order on a sign within the minimum dimensions of two feet by two feet at a location clearly visible from the street. This sign shall remain in place and visible until a Certificate of Compliance is issued for the activity.
- The Conservation Administrator shall be notified at least 48 hours in advance of the commencement of work at the site.

Information may be provided to the Conservation Administrator by phone at (978) 465-4400 xt 1224, by email at: jgodtfredsens@cityofnewburyport.com, or by mail at 60 Pleasant Street, Newburyport, MA 01950.

Best of luck on your project and don't hesitate to contact me if you have questions.

Sincerely,

Julia Godtfredsen
Conservation Administrator



CITY OF NEWBURYPORT
CONSERVATION COMMISSION
60 PLEASANT STREET
NEWBURYPORT, MA 01950
978-465-4462

PERMIT COMPLIANCE CONTACT FORM

INSTRUCTIONS

Please complete the permit compliance contact form on the following page and return to the Conservation Administrator prior to the start of construction.

The purpose of this form is to ensure proper contact information for compliance with the permit (Order of Conditions) and follow-through with application for the Certificate of Compliance at the conclusion of construction.

Please Note:

1. No work shall begin on site until this form has been completed and received by the Conservation Administrator. The form may be hand delivered or mailed, faxed to 978-465-4452, or sent by email to: jgodtfredsen@cityofnewburyport.com.
2. Any changes to the responsible parties and/or their contact information that occur during the course of construction shall be immediately supplied to the Conservation Administrator on an updated form. Forms are downloadable from the Commission's website at: <http://www.cityofnewburyport.com/conservation-commission>
3. The Request for Certificate of Compliance must be submitted by the applicant at the completion of construction and prior to the expiration date of the Order of Conditions. If the Request for Certificate of Compliance is not submitted prior to the expiration date of the Order of Conditions, the applicant will be in violation of permit conditions and may be subject to enforcement action.

Corrected
10/3/2022



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Provided by MassDEP:
051-1047
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A. General Information

Please note:
this form has
been modified
with added
space to
accommodate
the Registry
of Deeds
Requirements

Important:
When filling
out forms on
the
computer,
use only the
tab key to
move your
cursor - do
not use the
return key.



1. From: Newburyport
Conservation Commission

2. This issuance is for (check one):
a. Order of Conditions b. Amended Order of Conditions

3. To: Applicant:
Jon-Eric White
a. First Name b. Last Name

City of Newburyport Department of Public Services
c. Organization

16C Perry Way
d. Mailing Address

Newburyport MA 01950
e. City/Town f. State g. Zip Code

4. Property Owner (if different from applicant):
a. First Name b. Last Name

City of Newburyport
c. Organization

60 Pleasant Street
d. Mailing Address

Newburyport MA 01950
e. City/Town f. State g. Zip Code

5. Project Location:
- Plummer Spring Road Newburyport
a. Street Address b. City/Town

n/a n/a
c. Assessors Map/Plat Number d. Parcel/Lot Number

Latitude and Longitude, if known: d m s d m s
d. Latitude e. Longitude



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A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Essex
 a. County
 b. Certificate Number (if registered land)
 c. Book
 d. Page

7. Dates: 1/12/2021 5/18/2021 6/7/2021
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Project Site Plans, Bridge Replacement Project, Middle Street/Plummer Spring Road
 a. Plan Title
 BSC Group varies
 b. Prepared By c. Signed and Stamped by
 12/21/2020, 5/7/2021 e. Scale
 d. Final Revision Date
 f. Additional Plan or Document Title g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- a. Public Water Supply
- b. Land Containing Shellfish
- c. Prevention of Pollution
- d. Private Water Supply
- e. Fisheries
- f. Protection of Wildlife Habitat
- g. Groundwater Supply
- h. Storm Damage Prevention
- i. Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



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B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) 0
 a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	<u>68</u> a. linear feet	<u>68</u> b. linear feet	<u>14</u> c. linear feet	<u>14</u> d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	<u>43168</u> a. square feet <u> </u> e. c/y dredged	<u>431</u> b. square feet <u> </u> f. c/y dredged	<u>198</u> c. square feet	<u>198</u> d. square feet
7. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	<u>44</u> a. square feet	<u>44</u> b. square feet	<u>344</u> c. square feet	<u>344</u> d. square feet
Cubic Feet Flood Storage	<u>68132</u> e. cubic feet	<u>132</u> f. cubic feet	<u>1857</u> g. cubic feet	<u>1857</u> h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> e. cubic feet	<u> </u> f. cubic feet
Cubic Feet Flood Storage	<u> </u> c. cubic feet	<u> </u> d. cubic feet	<u> </u> e. cubic feet	<u> </u> f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	<u>13158</u> a. total sq. feet	<u>13158</u> b. total sq. feet	<u> </u> c. square feet	<u> </u> d. square feet
Sq ft within 100 ft	<u>1333</u> c. square feet	<u>1333</u> d. square feet	<u>702</u> e. square feet	<u>702</u> f. square feet
Sq ft between 100-200 ft	<u> </u> g. square feet	<u> </u> h. square feet	<u> </u> i. square feet	<u> </u> j. square feet



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B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	_____ a. square feet	_____ b. square feet	_____ cu. yd c. nourishment	_____ cu. yd d. nourishment
14. <input type="checkbox"/> Coastal Dunes	_____ a. square feet	_____ b. square feet	_____ cu. yd c. nourishment	_____ cu. yd d. nourishment
15. <input type="checkbox"/> Coastal Banks	_____ a. linear feet	_____ b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	_____ a. square feet	_____ b. square feet		
17. <input type="checkbox"/> Salt Marshes	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	_____ a. c/y dredged	_____ b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____ a. square feet	_____ b. square feet		
22. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet



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B. Findings (cont.)

- * #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.
23. vv Restoration/Enhancement *:
 0 _____ 0 _____
 a. square feet of BVW b. square feet of salt marsh
24. Stream Crossing(s):
 _____ 1 _____
 a. number of new stream crossings b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on 6/7/2024 unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



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C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
"File Number 051-1047 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
 - (1) is subject to the Massachusetts Stormwater Standards
 - (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
 - i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.
- Special Conditions (if you need more space for additional conditions, please attach a text document):

See Attached

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
051-1047
MassDEP File #
eDEP Transaction #
Newburyport
City/Town

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes
2. The Newburyport Conservation Commission hereby finds (check one that applies):
Conservation Commission
 - a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw	2. Citation
---------------------------------	-------------

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

1. Municipal Ordinance or Bylaw	2. Citation
---------------------------------	-------------
3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):



CITY OF NEWBURYPORT
CONSERVATION COMMISSION
60 PLEASANT STREET
NEWBURYPORT, MA 01950
978-465-4400

Order of Conditions for Plummer Spring Road Bridge

Electronic Signature Page

DEP File Number: 051-1047

Public Hearing Date: May 18, 2021

Applicant: City of Newburyport, DPS

Property Owner: Same

Project Location: Plummer Spring Road

Map: n/a

Lot: n/a

Project Description: Reconstruction and widening of the bridge crossing the Upper Artichoke Reservoir.

E-Signatures:

The name(s) typed below represent the intent to sign the foregoing document:

Joe Teixeira, Chair

Stephen Moore, Vice Chair

Paul Healy, Member

David Vine, Member

Dan Warchol, Member

Ronald DiCola, Member

Carole Wagan, Member

Date Signed: May 18, 2021



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 051-1047
 MassDEP File #
 eDEP Transaction #
 Newburyport
 City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

6/7/2021

1. Date of Issuance

Please indicate the number of members who will sign this form.

7

This Order must be signed by a majority of the Conservation Commission.

2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

 Signature

 Printed Name

by hand delivery on

by certified mail, return receipt requested, on

6/7/2021

 Date

Date



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

051-1047

MassDEP File #

eDEP Transaction #

Newburyport

City/Town

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 051-1047
 MassDEP File #
 eDEP Transaction #
 Newburyport
 City/Town

G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Newburyport

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant



CITY OF NEWBURYPORT
CONSERVATION COMMISSION
60 PLEASANT STREET • P.O. BOX 550
NEWBURYPORT, MA 01950
(978) 465-4400
WWW.CITYOFNEWBURYPORT.COM

Standard and Special Conditions for Plummer Spring Road Bridge

DEP File Number: 051-1047

Date: June 7, 2021

Applicant: City of Newburyport, DPS

Property Owner: Same

Project Location: Plummer Spring Road **Map:** n/a **Lot:** n/a

Project Description: Reconstruction and widening of the bridge crossing the Upper Artichoke Reservoir.

These conditions are in addition to and part of the Order of Conditions (WPA Form 5) for the property located at **Plummer Spring Road Bridge**, Newburyport, MA 01950.

This project shall conform to the following documents and plans unless otherwise specified:

1. WPA Form 3 Notice of Intent, project narrative, and supporting documentation, prepared by BSC Group, dated January 2021.
2. Project Site Plans, Bridge Replacement Project, Middle Street/Plummer Spring Road, prepared by BSC Group, dated 12/21/2020. Revised by Addendum dated 05/07/2021.

A. General Conditions

19. The Conservation Commission shall be informed of all changes that may be made to the Plan(s) of Record by any other Board, Commission or Authority or as a result of changes by the Applicant. All changes shall require additional approvals from the Conservation Commission.
20. A member of the Newburyport Conservation Commission (the Commission) or its administrator may enter and inspect the property and the activity that are the subjects of this Order at all reasonable times, with or without probable cause or prior notice, and until a Certificate of Compliance is issued, for the limited purpose of evaluating compliance with this Order.
21. With respect to all conditions the Conservation Commission designates the Conservation Administrator as its agent with full powers to act on its behalf in administering and enforcing this Order.
22. The term "Applicant" as used in this Order of Conditions shall refer to the owner, any successor in interest or successor in control of the property referenced in the Notice of Intent, supporting documents and this Order of Conditions. The Commission shall be

notified in writing within 30 days of all transfers of title of any portion of property that take place prior to the issuance of the Certificate of Compliance.

23. This document shall be included by reference in all contracts, plans and specifications dealing with the activity that is the subject of this Order, and that are created or modified after the issuance date of this Order, along with a statement that this Order shall supersede any conflicting contractual arrangements, plans or specifications.
24. The applicant shall provide a copy of this Order to the person or persons supervising the activity that is the subject of this Order, and shall be responsible for ensuring that all persons performing the permitted activity are fully aware of the terms and conditions of this Order.
25. Any person performing work on the activity that is the subject of this Order is individually responsible for understanding and complying with the requirements of this Order, the Act, 310 CMR 10.00.
26. The Commission reserves the right to impose additional conditions on this project, including but not limited to, additional or modified erosion/siltation controls during construction, if it deems that site conditions warrant such measures to mitigate potential impacts.
27. If any changes are made in the above-described plan(s) which, in the Commission's opinion, may alter an area subject to protection under the Wetlands Protection Act, 310 CMR 10.00 or the Newburyport Wetlands Ordinance, the applicant shall inquire from this Commission or its agent, prior to implementing the change in the field, whether the change is significant enough to require the filing of a new Notice of Intent. Any errors in the plans or information submitted by the applicant shall be considered changes and the above procedures shall be followed. Approval of changes must be granted by the Conservation Commission before such work may continue.
28. This Order authorizes only the activity described on the approved plan(s) and approved documents referenced in this Order. Any other or additional activity in areas within the jurisdiction of the Commission shall require separate review and approval by the Commission or its agent.
29. The limits of work in the field shall be clearly marked and all workers shall be instructed not to work beyond the specified limits. Resource area flags shall be maintained and replaced as necessary until a final Certificate of Compliance is issued for the project.

B. Pre-Construction

30. Prior to the commencement of any activity on this site, the applicant or owner shall complete and submit the attached "Permit Compliance Contact Form," providing the name(s), address(es), phone number(s) and email address(es) of a contact person or persons responsible for compliance with this Order. Should the responsible parties change during the course of the project, the Commission shall be notified as soon as practical of such change.
31. The applicant shall display the Department of Environmental Protection (DEP) file number for this Order on a sign within the minimum dimensions of two feet by two feet at a location clearly visible from the street. This sign shall remain in place and visible until a Certificate of Compliance is issued for the activity.
32. The applicant shall arrange for a pre-construction meeting with the Conservation Commission or its designated representative(s) no less than 72 hours prior to the

commencement of construction. Commencement of construction includes any site clearing or grading. The purpose of this meeting is to inspect the erosion controls and to review all conditions of this Order of Conditions with the applicant, contractor and sub-contractors as appropriate to ensure they are understood.

33. The Commission shall be notified at least 48 hours in advance of the commencement of work at the site.

C. During Construction

34. A copy of this Order of Conditions and approved Plan(s) of Record shall be on the site upon commencement and during any site work for contractors to view and adhere to.
35. Any material placed in wetland resource areas or outside the Limit of Work by the applicant without express authorization under this Order shall be removed as soon as possible by the applicant upon the request of the Conservation Commission or its administrator.
36. All construction materials, earth stockpiles, landscaping materials, slurry pits, waste products, refuse, debris, stumps, slash, or excavate may only be stockpiled or collected in areas as shown and labeled on the approved plan(s) or in a stockpile location to be submitted on a plan and approved by the Conservation Administrator prior to the start of construction. All such materials must be covered and surrounded by a double-staked row of hay bales or other approved erosion control device to prevent contact with rain water.
37. As soon as possible, all disturbed areas shall be brought to final grade and shall be permanently stabilized within 30 days of that time by measures acceptable to the Commission.
38. The project manager shall be responsible for regular inspections of the erosion controls on at least a weekly basis and after each rain storm. Necessary repairs and maintenance of the erosion control devices shall be made expeditiously.
39. Any and all demo/construction debris resulting from the approved construction shall be placed in an enclosed covered container or removed from the site daily.
40. Trash dumpsters shall be located as far away from the resource areas as possible and shall be emptied at least once a week during construction.
41. No material of any kind may be buried, placed or dispersed in areas within the jurisdiction of the Commission by activities that are the subject of this Order.
42. No fuel, oil, urethanes, or other pollutants shall be stored in any resource area or the buffer zone.

D. Special Conditions

43. Prior to the start of construction, the applicant shall provide to the Commission for review and approval, an inventory, including caliper size, species and photographs, of all trees expected to be removed or damaged as part of the project and a plan to replace them within the project area with similar native species
44. Prior to the start of construction, the project contractor shall submit to the Commission for review and approval a dewatering and stabilization plan, showing the details,

dimensions and location of the dewatering area and shall locate this dewatering area within the already paved roadway to the greatest extent practicable.

45. A qualified wetland scientist shall join the selected contractor on-site during special activities such as a pre-construction kickoff meeting to go-over permits and emergency sheets in case of a release, and to identify locations of Erosion and Sedimentation (E&S) Controls as identified on the approved plans. The Qualified Scientist would then review the installed E&S Controls, ensure wetland resource area flags are in-place and send a report on such by email to the Commission at jgodtfredsen@cityofnewburyport.com.
46. The project's Resident Engineer shall be in-charge of day-to-day oversight during construction and for major storm rainfall events of > 0.5-inch. Reports by the Resident Engineer may then be reviewed by a Qualified Scientist, and the Engineer shall make them available to the Commission upon request.

E. Post Construction

47. Within 90 days after the completion of construction and prior to the expiration date of this Order of Conditions, the applicant shall submit the following to the Conservation Commission:
 - a. A completed Request for a Certificate of Compliance – WPA form 8A.
 - b. A letter from a registered professional engineer certifying compliance of the property with this Order of Conditions and detailing any deviations that exist and their potential effect on the project. A statement that the work is in “substantial compliance” with no detailing of the deviations shall not be accepted.
 - c. Photos of the completed project and an “As-Built” plan showing post-construction conditions, stamped and signed by a professional engineer or land surveyor. This plan shall note any deviations from the original plans/profiles and shall include final lot elevations when grades have been changed.

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10-15	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF
200-FOOT RIVERFRONT AREA (RFA)	REDEVELOPMENT	3,203	2,669	5,872	SF
	PERMANENT IMPACT	1,986	1,217	3,203	SF
	TEMPORARY IMPACT	570	548	1,118	SF
BORDERING LAND SUBJECT TO FLOODING (BLSF)	PROPOSED ALTERATION	167	44	211	SF
	PROPOSED REPLACEMENT	311	344	655	SF
	FLOOD STORAGE LOST	393	132	525	CF
	FLOOD STORAGE REPLACED	1,438	1,857	3,295	CF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

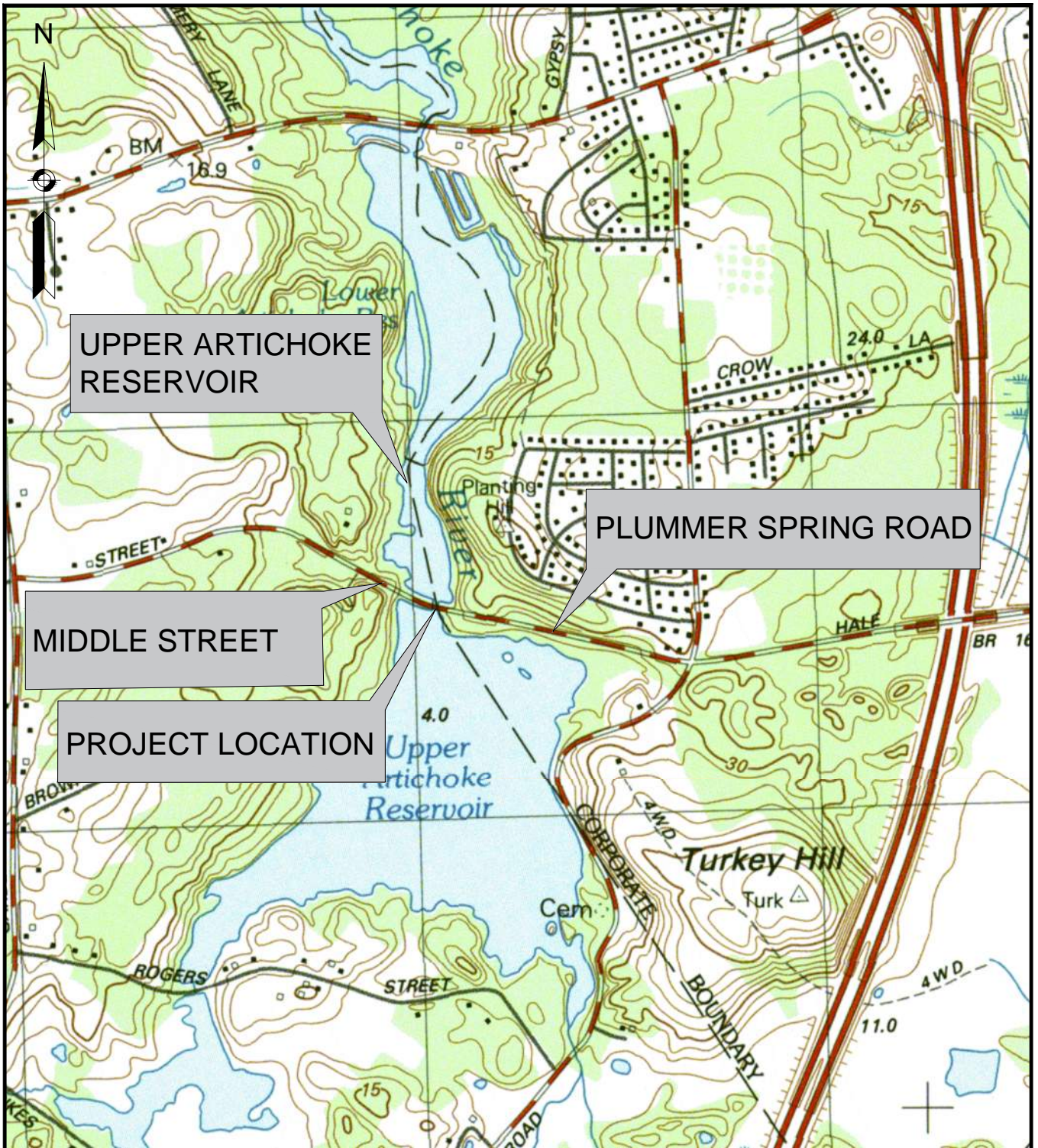
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 15

 **BSC GROUP**
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



UPPER ARTICHOKE RESERVOIR

PLUMMER SPRING ROAD

MIDDLE STREET

PROJECT LOCATION

LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'



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 CITY OF
 NEWBURYPORT
 60 PLEASANT ST
 NEWBURYPORT, MA 01950
 TOWN OF
 WEST NEWBURY
 381 MAIN ST, WEST
 NEWBURY, MA 01985

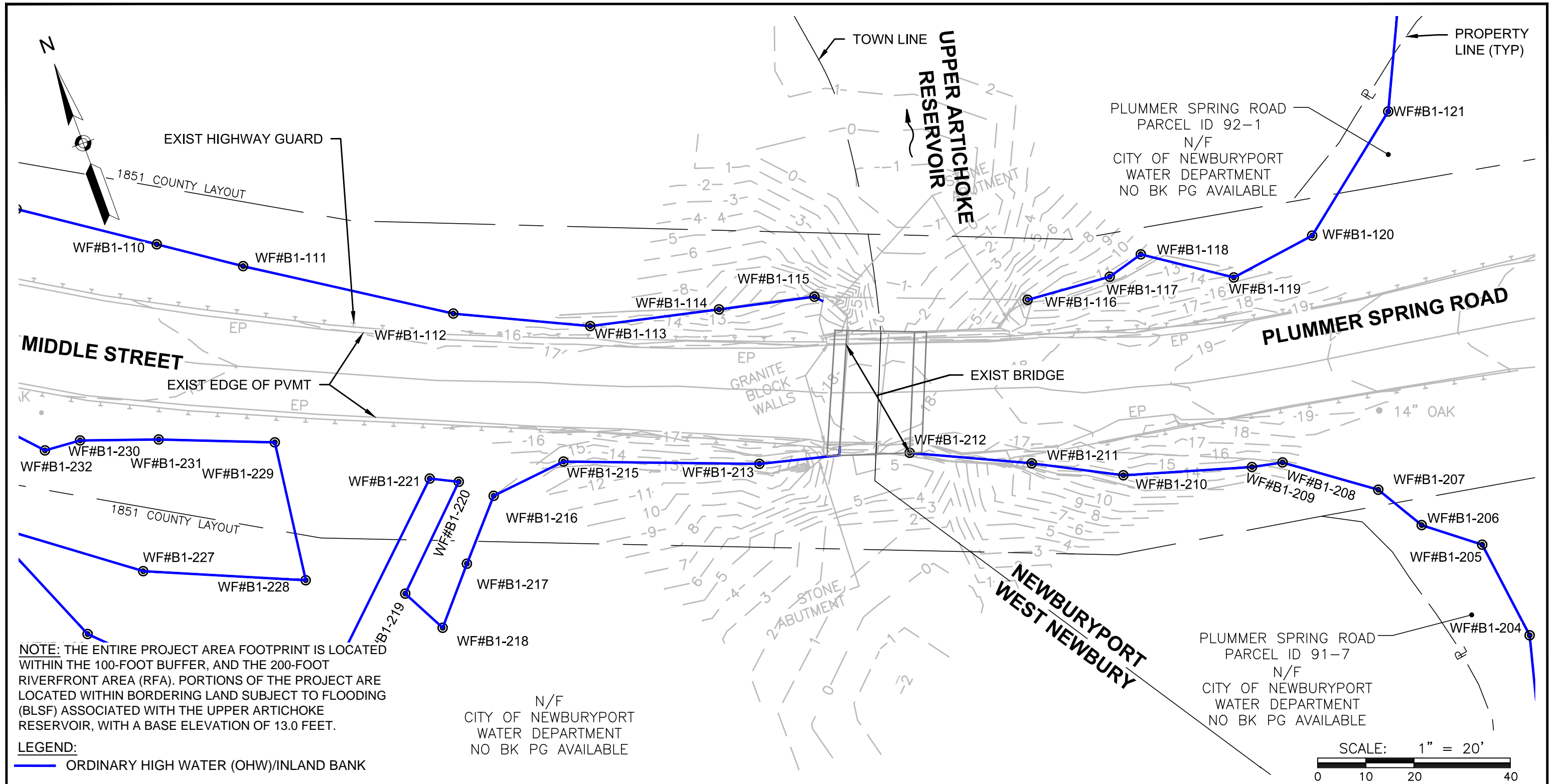
LOCUS MAP
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING
 ROAD OVER UPPER ARTICHOKE
 RESERVOIR, WEST NEWBURY/
 NEWBURYPORT, MA, ESSEX COUNTY

BSC GROUP

803 Summer Street
 Boston, Massachusetts
 02127

617 896 4300

Job No.:	28395.00	Date:	12/21/2020
Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 15



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 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

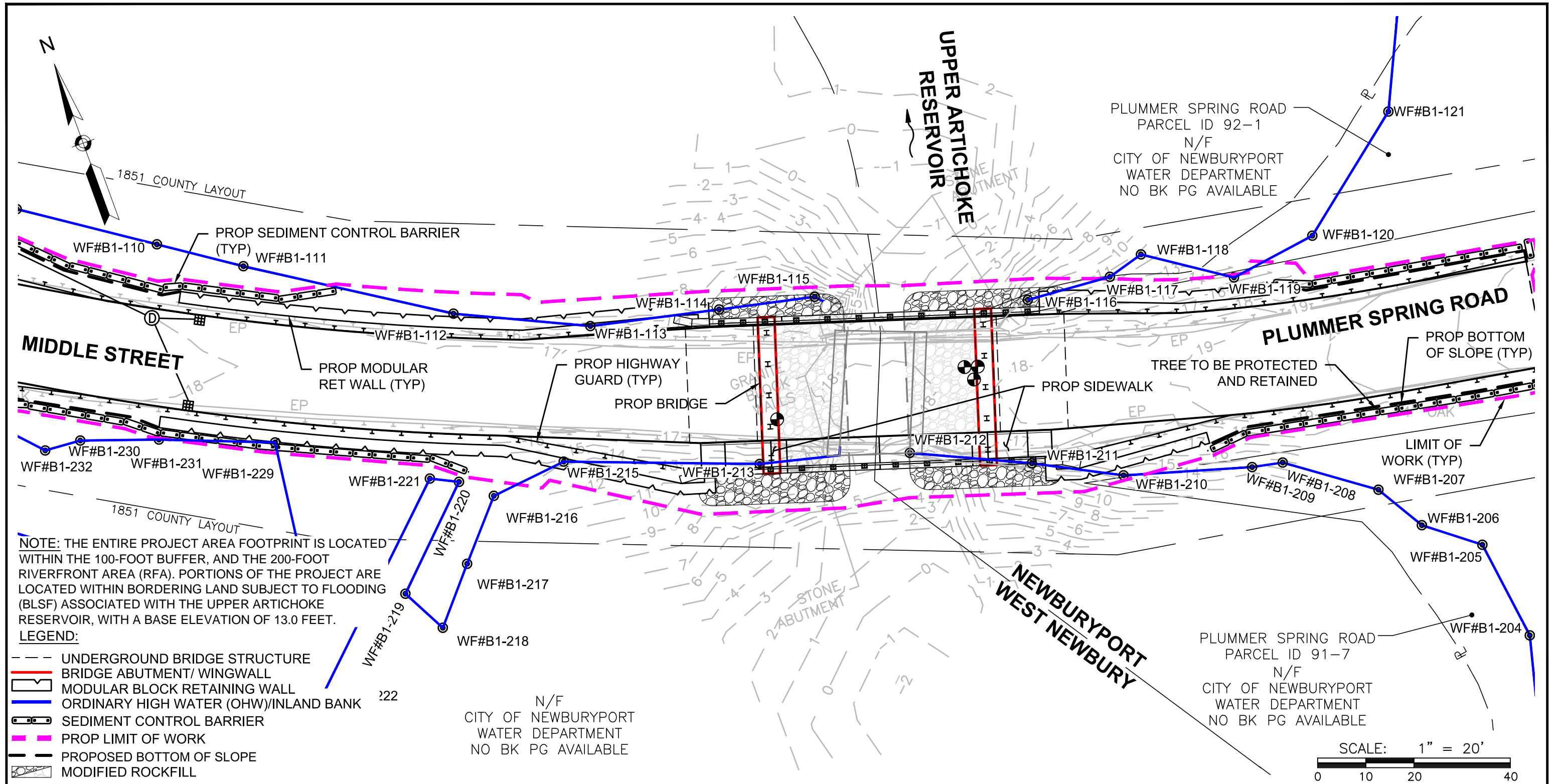
EXISTING CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: EX COND Figure: 3 OF 15



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Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

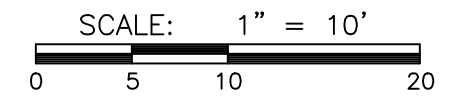
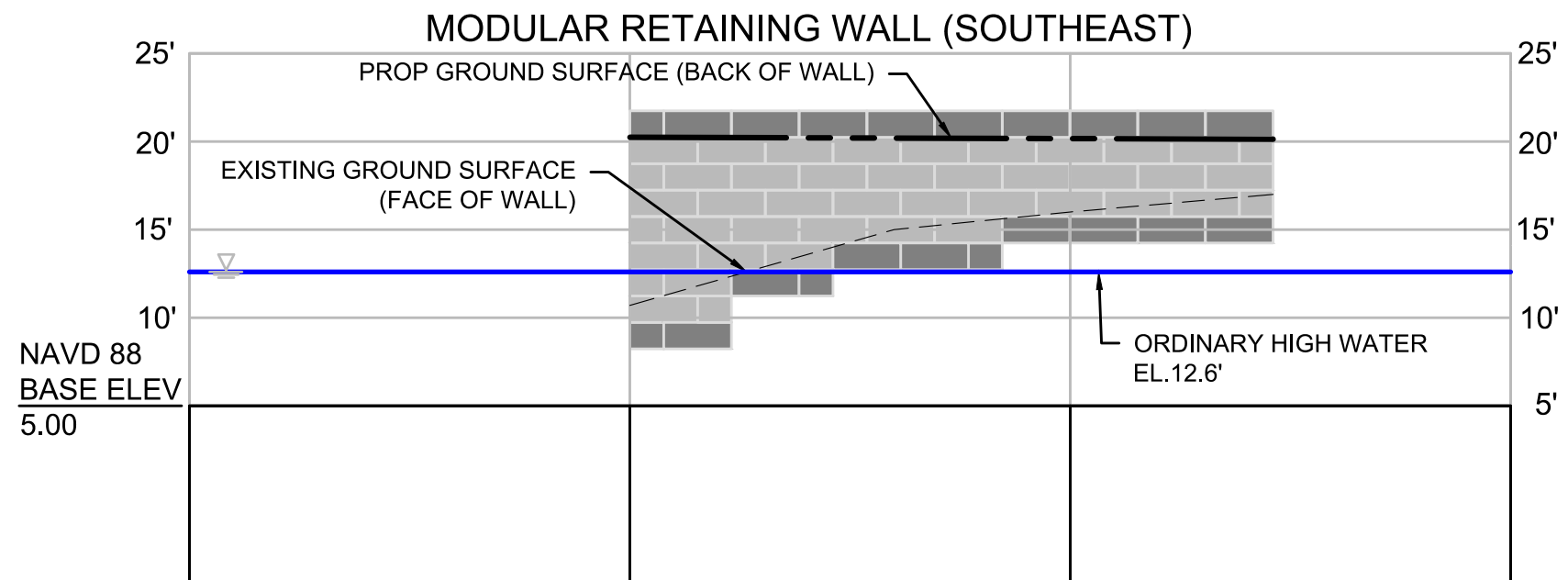
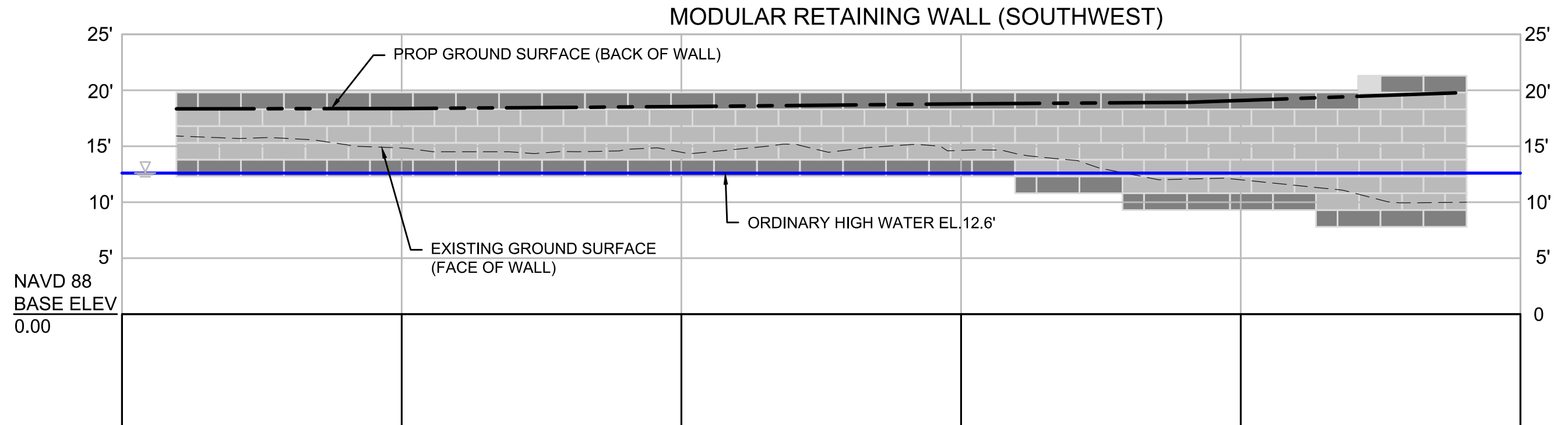
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: PROP COND Figure: 4 OF 15

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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

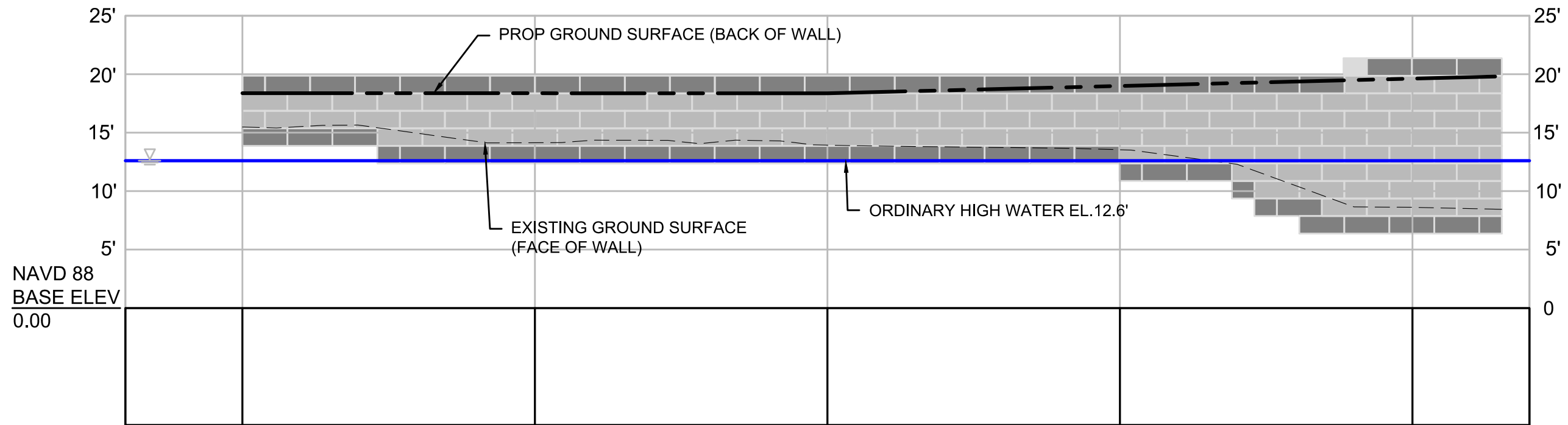
PROPOSED WALL PROFILE

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

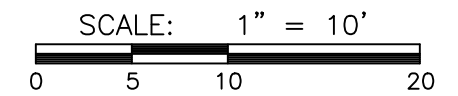
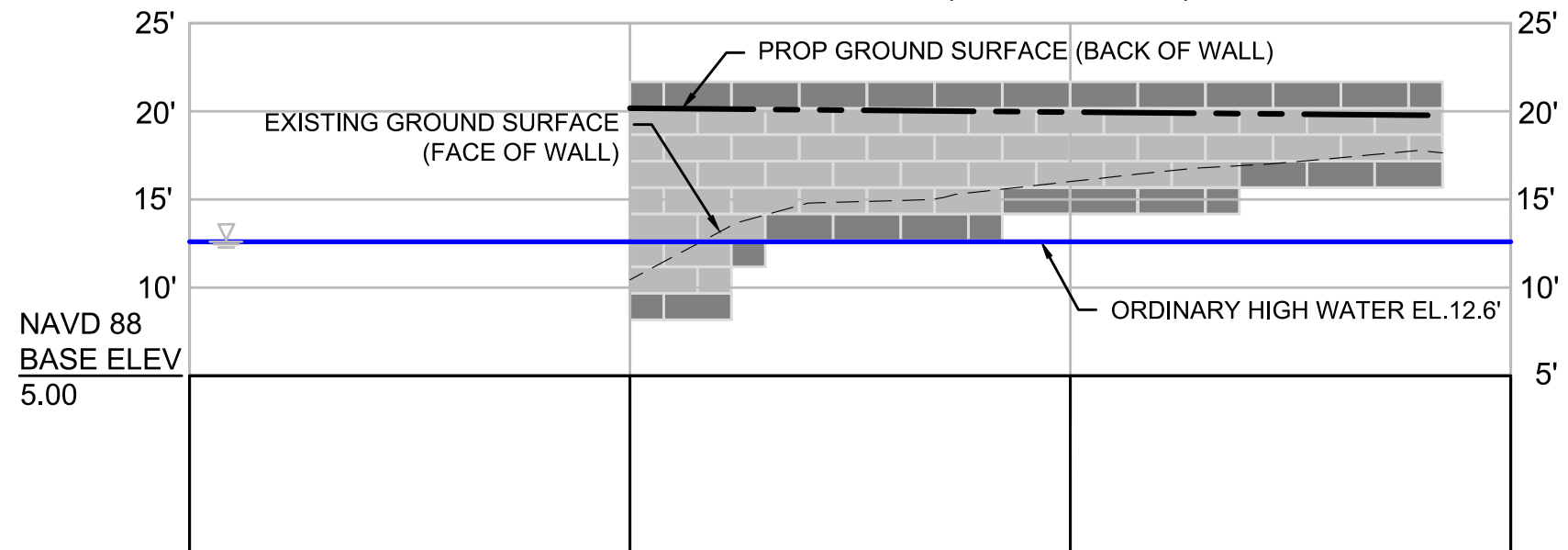
Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: _____
Description: PR WALL Figure: 5 OF 15

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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)



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 MA 01985

PROPOSED WALL PROFILE

Source:

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

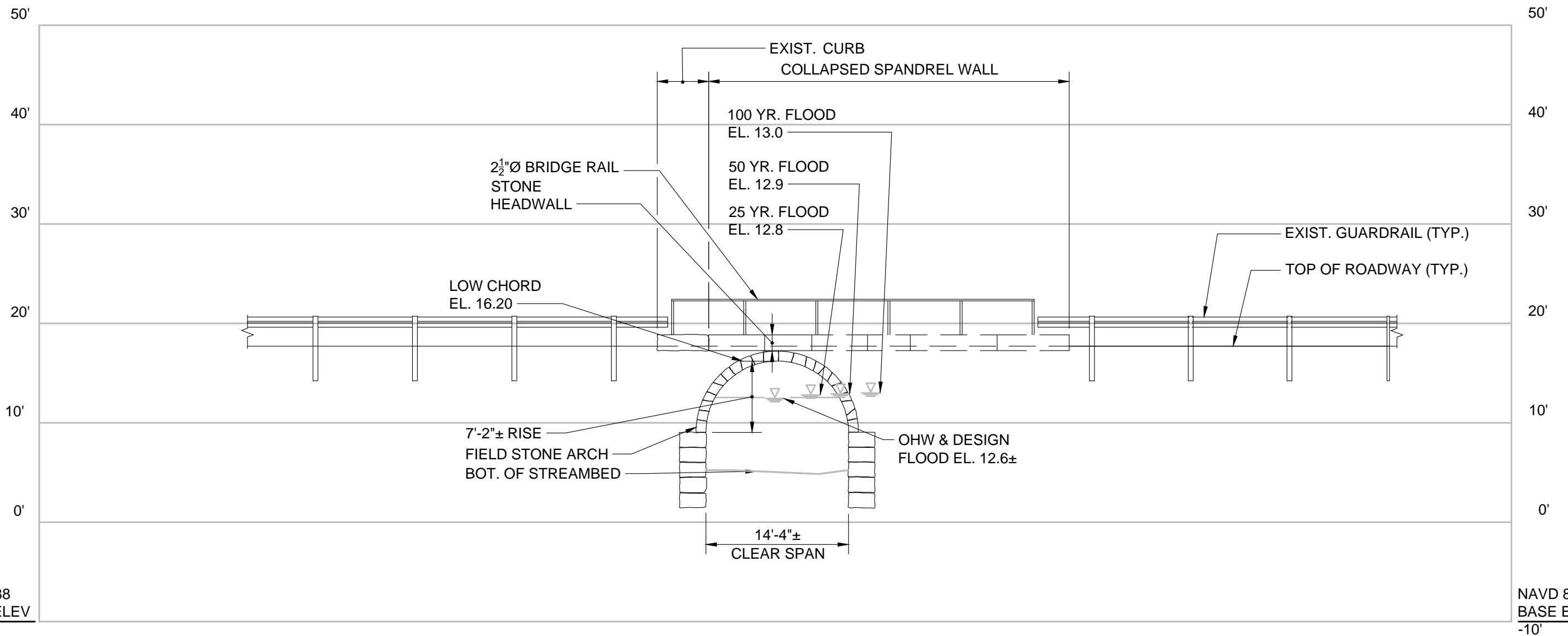
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 10' Revised: _____

Description: PR WALL Figure: 6 OF 15

BSC GROUP

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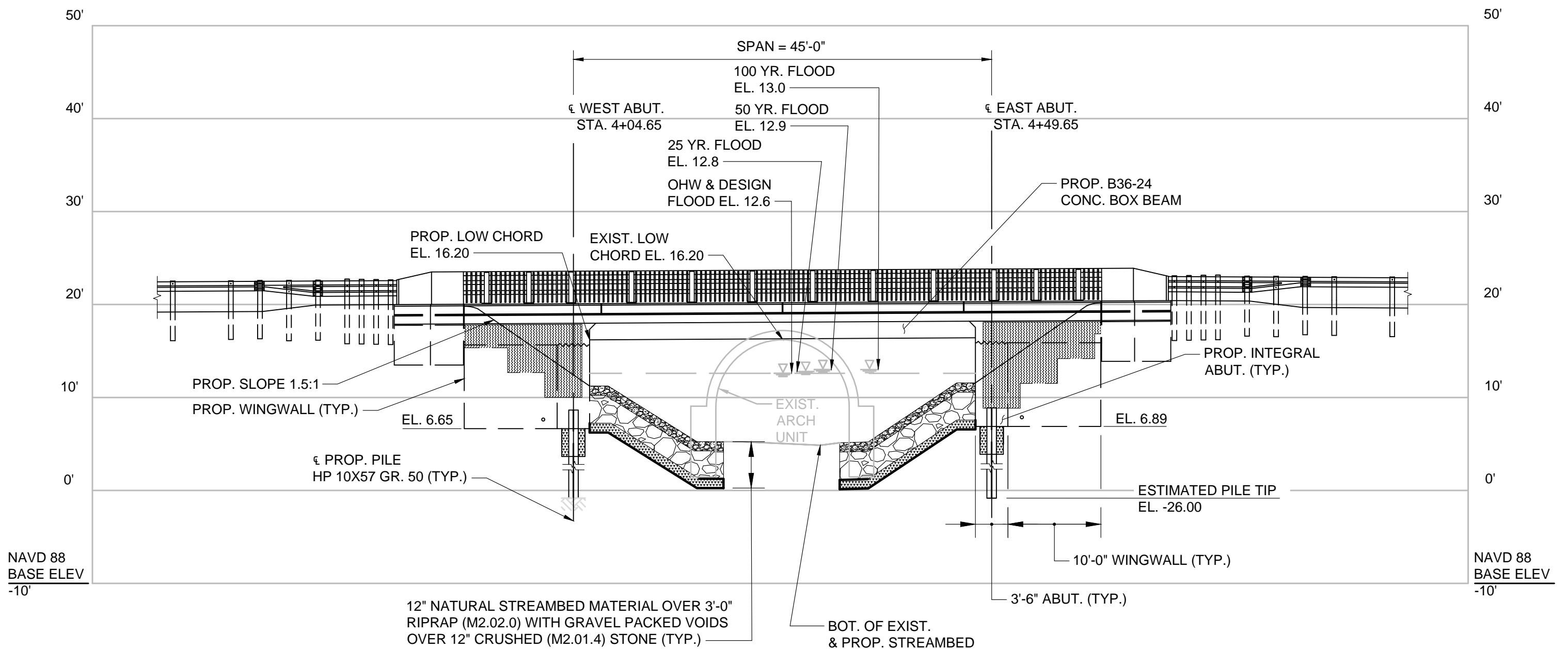
EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source: **EXISTING - SOUTH ELEVATION**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: EXIST. EL. Figure: 7 OF 15

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02127
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NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
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 MA 01985

Source:

PROPOSED - SOUTH ELEVATION

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

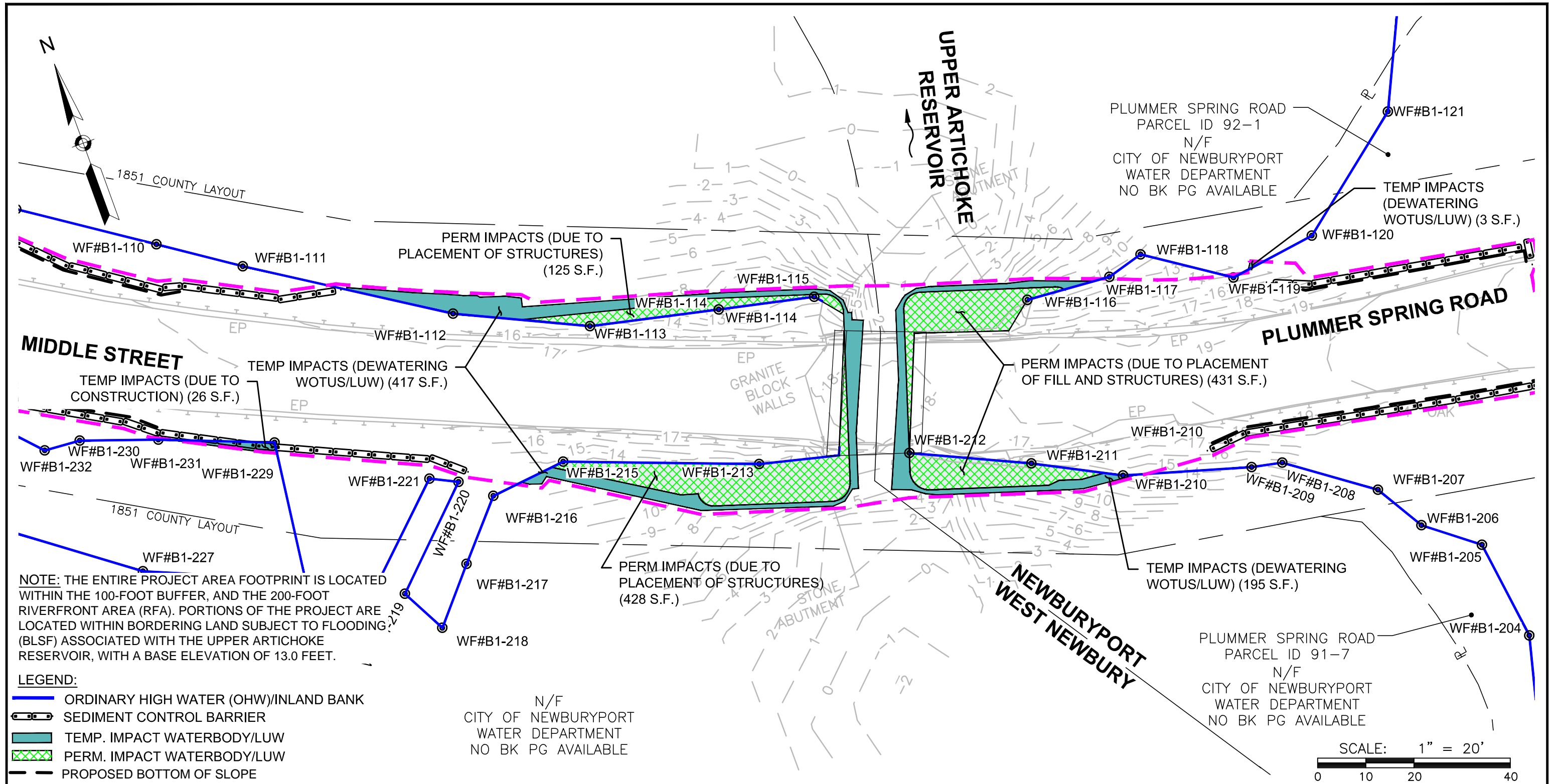
Job No.: 28395.00 Date: 12/21/2020

Scale: 3/32" = 1'-0" Revised: _____

Description: PROP. EL. Figure: 8 OF 15



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 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

IMPACTS

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: IMPACTS Figure: 9 OF 15

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

FLOODPLAIN IMPACT AND MITIGATION SUMMARY							
ELEVATION (FT)	FLOODPLAIN IMPACT (CF)		FLOODPLAIN MITIGATION (CF)		FLOODPLAIN NET (CF)		
	WEST NEWBURY	NEWBURYPORT	WEST NEWBURY	NEWBURYPORT	WEST NEWBURY	NEWBURYPORT	TOTAL
3-4	-	-	-	10.1	NO CHANGE	+10.1	+10
4-5	-	-	6.1	46.5	+6.1	+46.5	+53
5-6	-	-	40.4	84.3	+40.4	+84.3	+125
6-7	-	-	78.3	122.2	+78.3	+122.2	+201
7-8	-	-	116.2	160.1	+116.2	+160.1	+276
8-9	0.8	-	154.0	198.0	+153.3	+198.0	+351
9-10	-	24.5	192.9	236.8	+192.9	+212.4	+405
10-11	165.5	43.0	234.3	278.3	+68.8	+235.3	+304
11-12	140.6	38.6	279.8	354.5	+139.2	+315.9	+455
12-13	85.6	25.5	334.3	365.6	+248.7	+340.1	+589
TOTAL	392	131	1,436	1,856	1,044	1,725	<u>2,769</u>

PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

FLOODPLAIN IMPACT AND MITIGATION SUMMARY

Source:

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

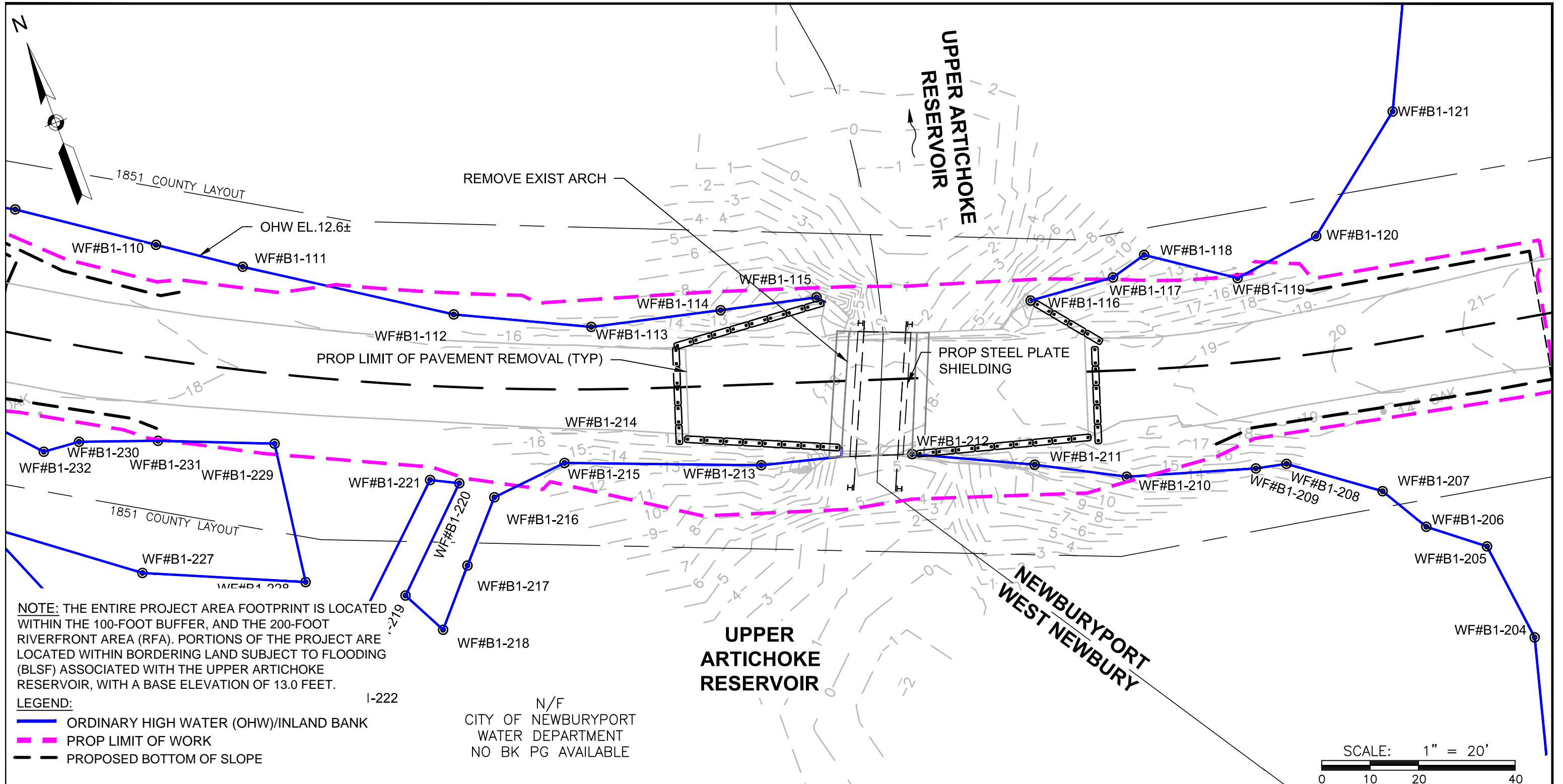
Scale: N/A Revised: _____

Description: BLSF TABLE Figure: 10 OF 15



803 Summer Street
 Boston, Massachusetts
 02127

617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 — PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

I-222
 N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

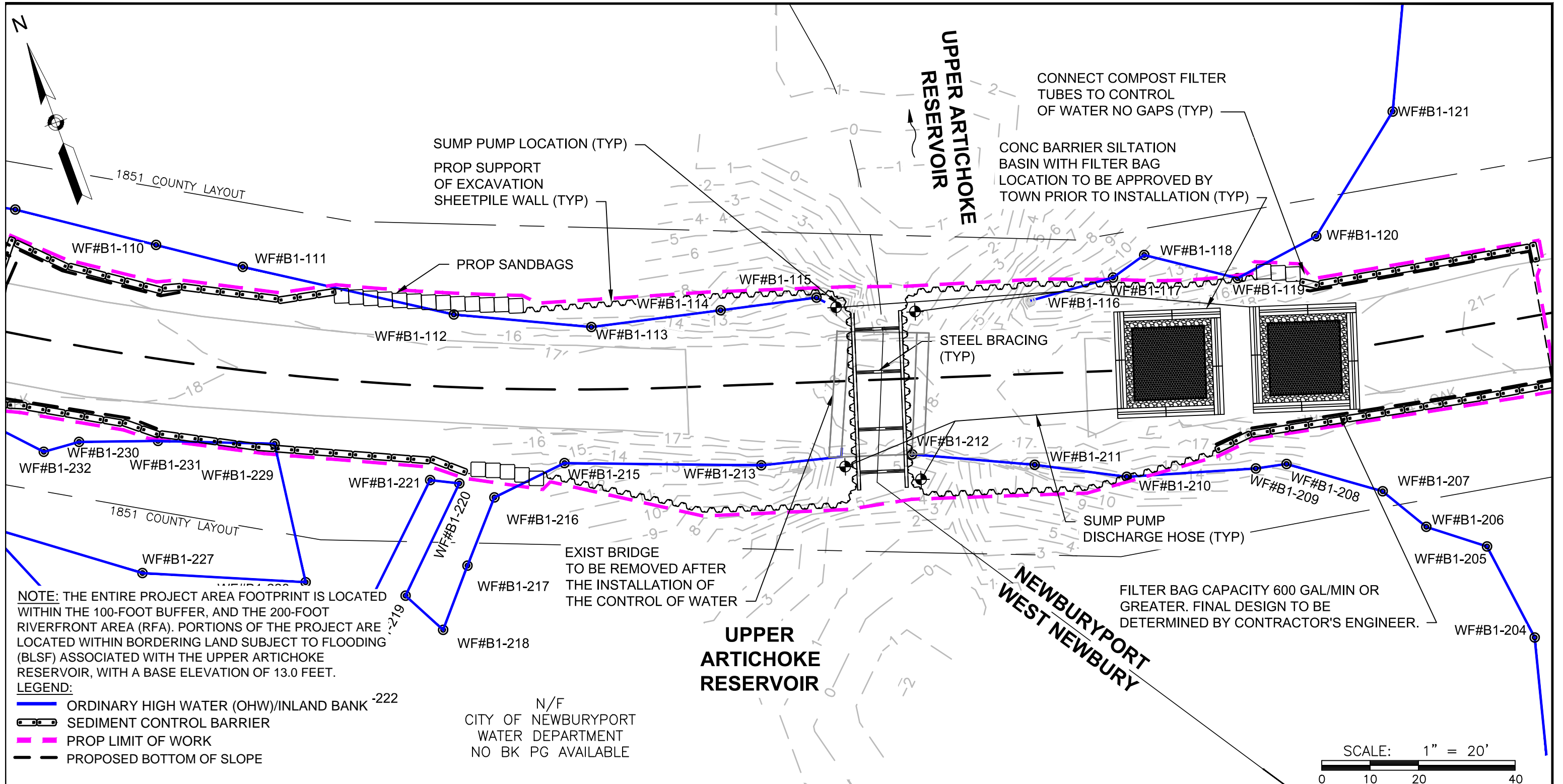
SCALE: 1" = 20'
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PREPARED FOR:
 CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 11 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



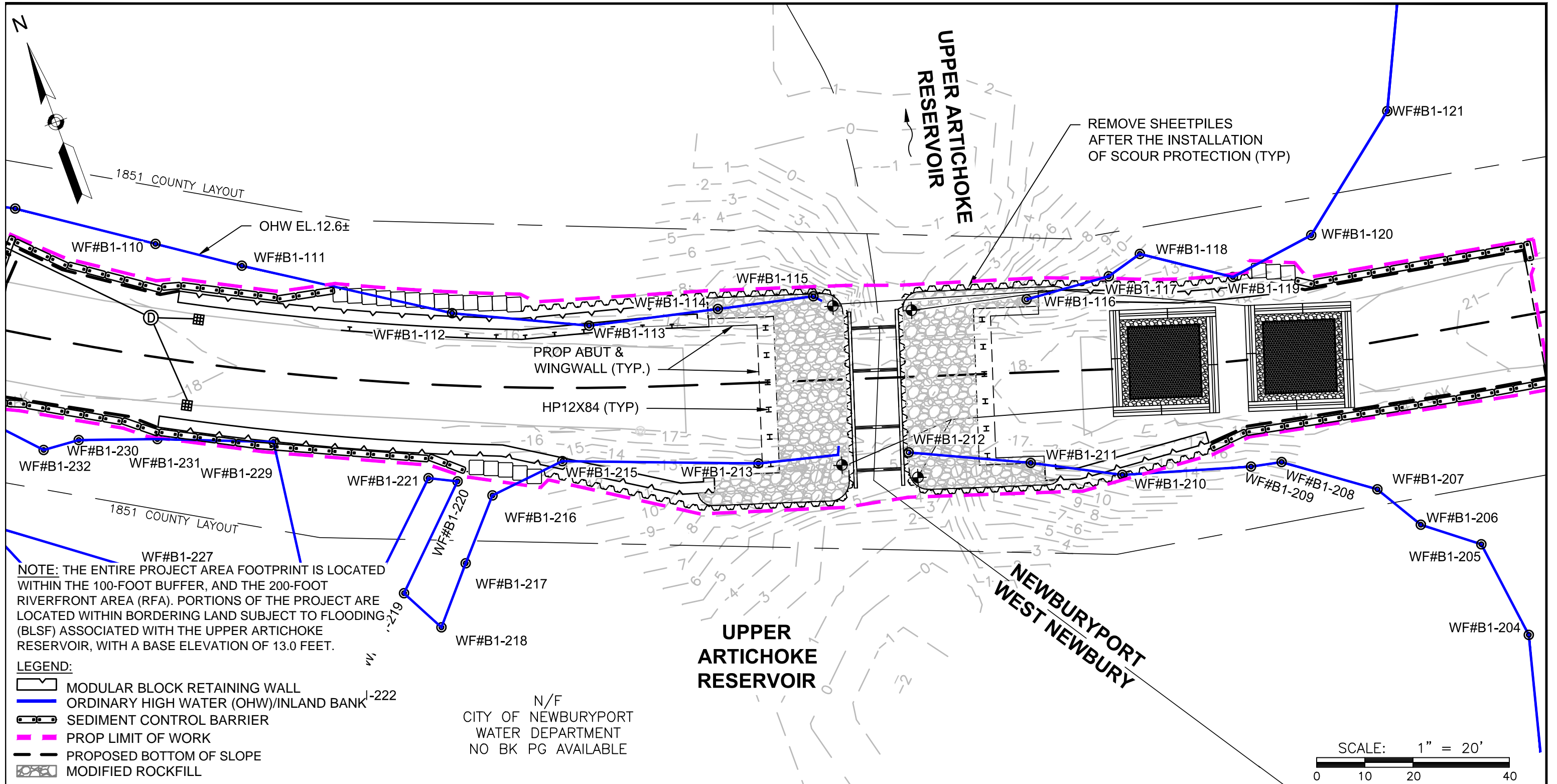
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **CONTROL OF WATER - PHASE 1 - PLAN**

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 12 OF 15

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

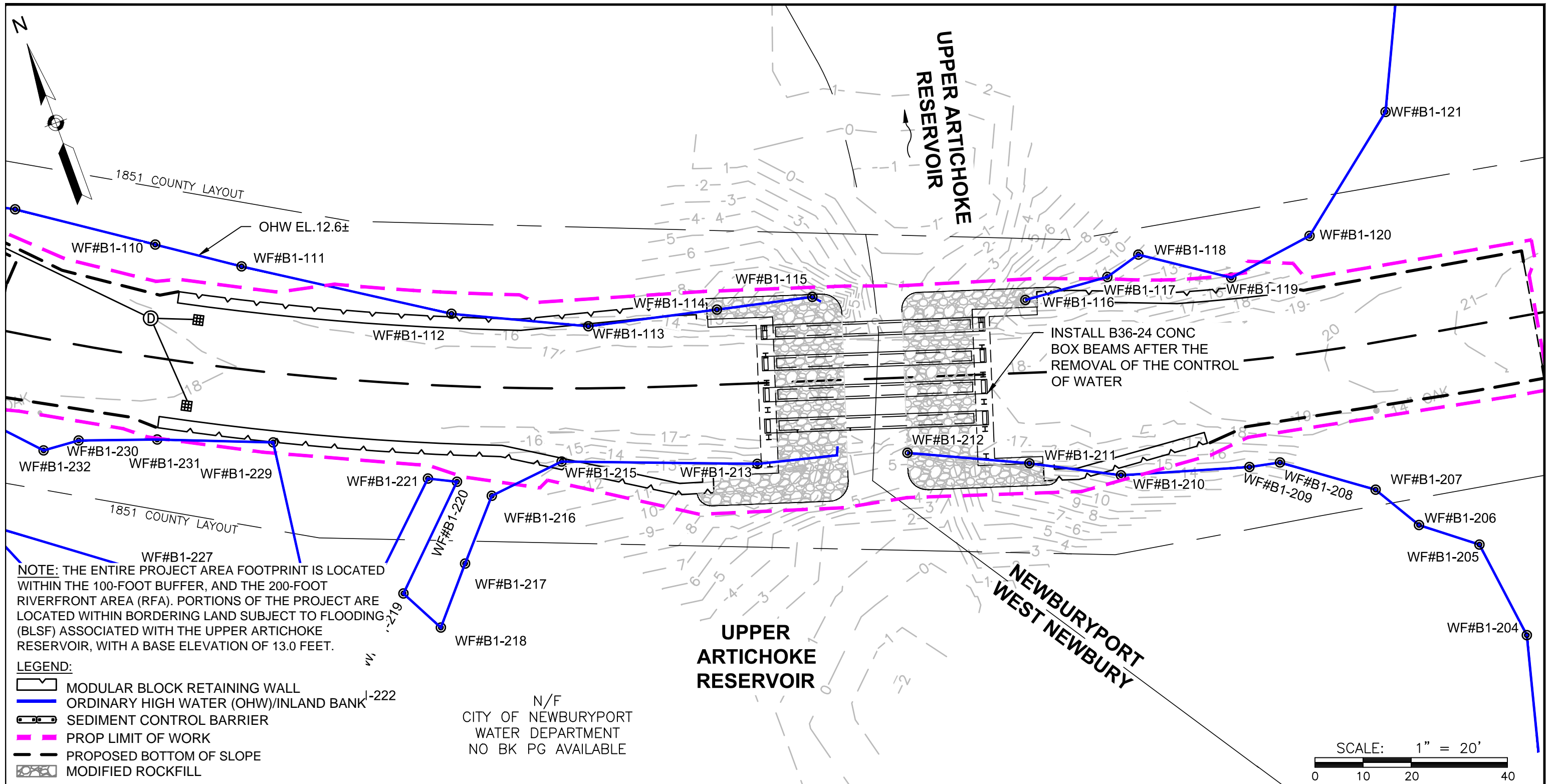
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 13 OF 15

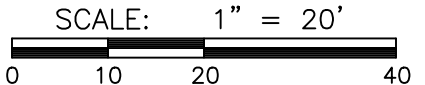
BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-FOOT BUFFER, AND THE 200-FOOT RIVERFRONT AREA (RFA). PORTIONS OF THE PROJECT ARE LOCATED WITHIN BORDERING LAND SUBJECT TO FLOODING (BLSF) ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



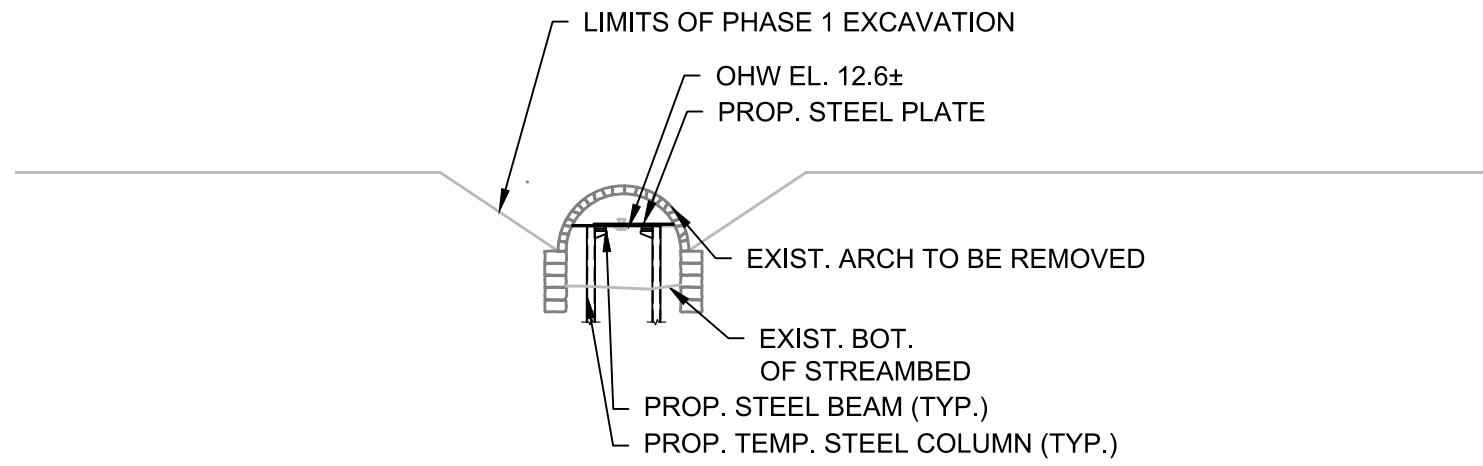
PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

CONTROL OF WATER - PHASE 3 - PLAN

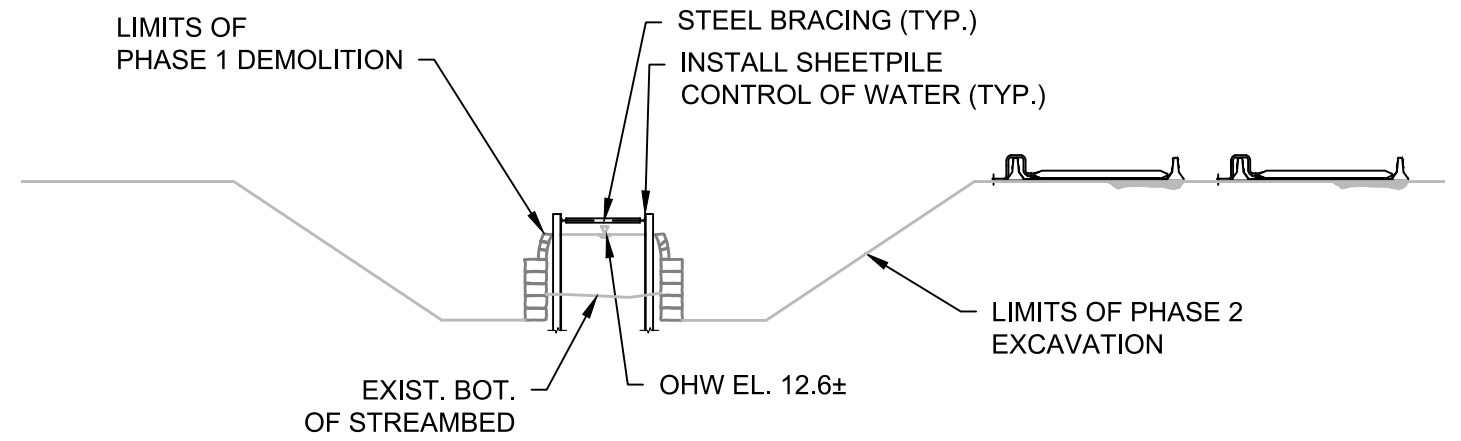
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 14 OF 15

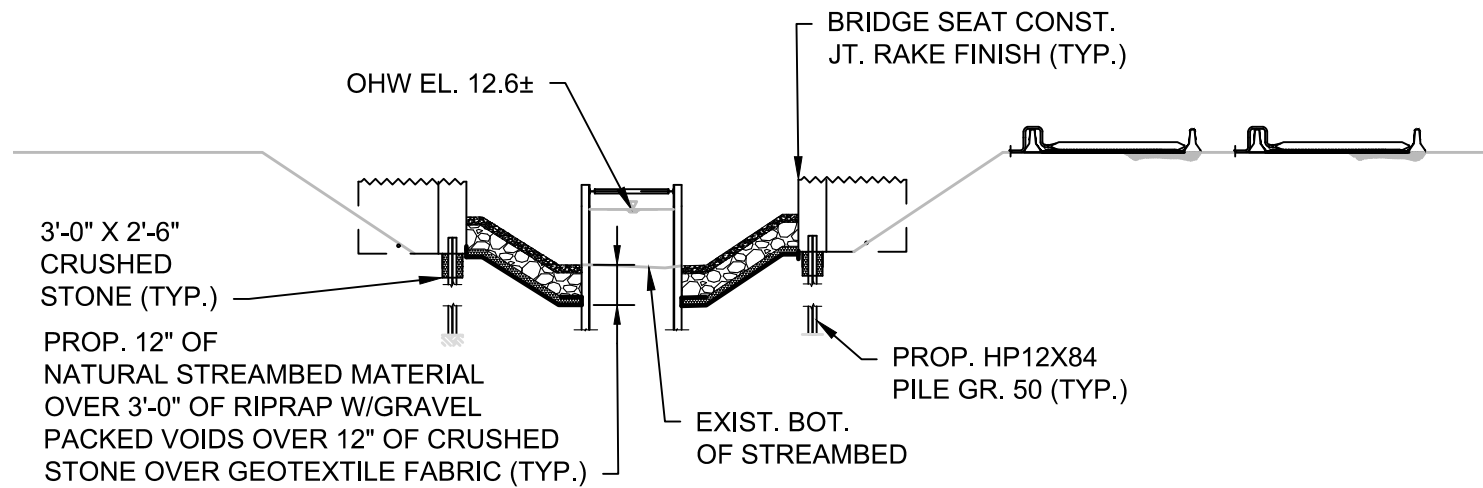
BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



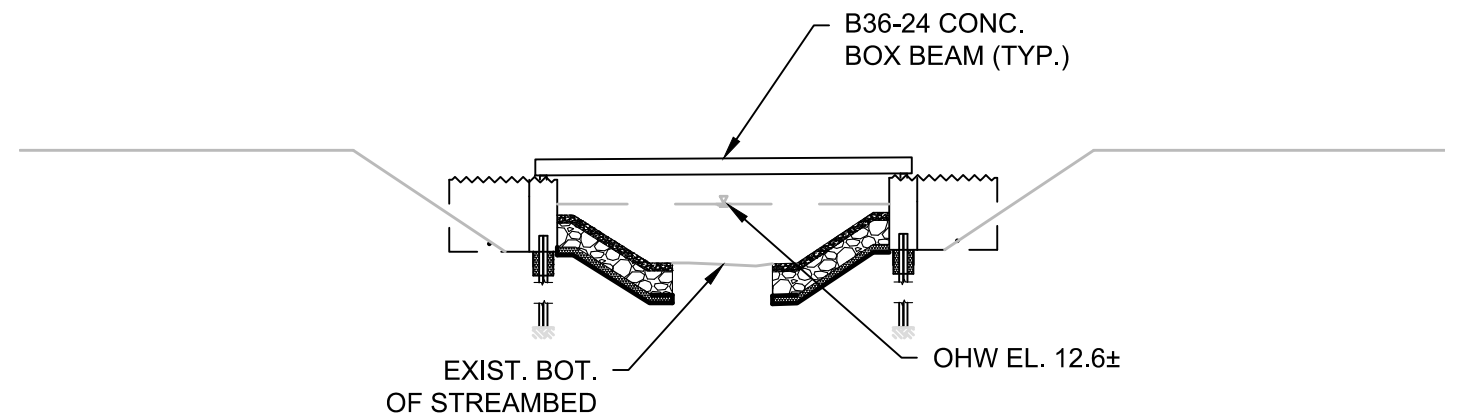
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 15 OF 15

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

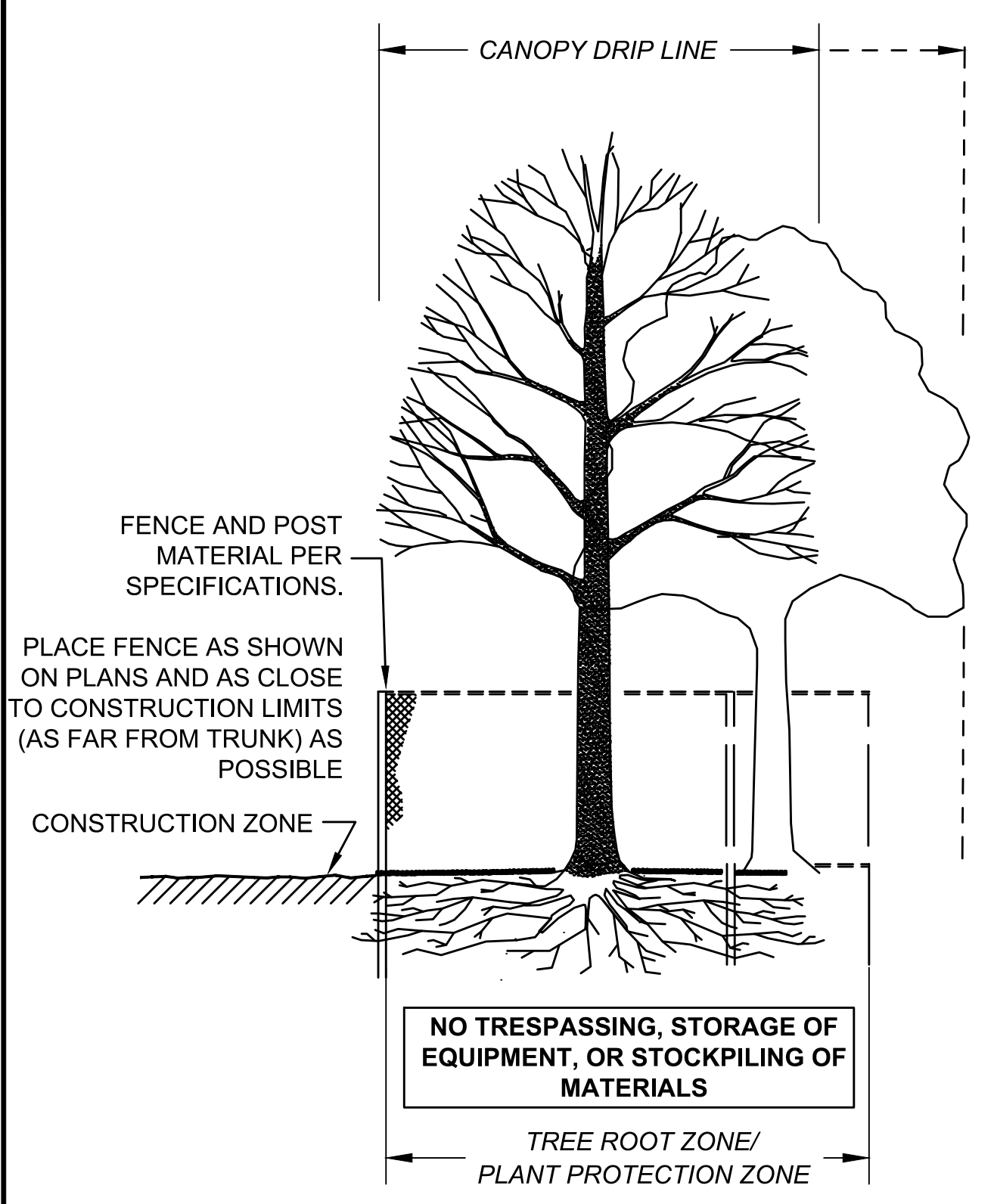
**SHEFFIELD
LIME KILN ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	25
PROJECT FILE NO.		-	

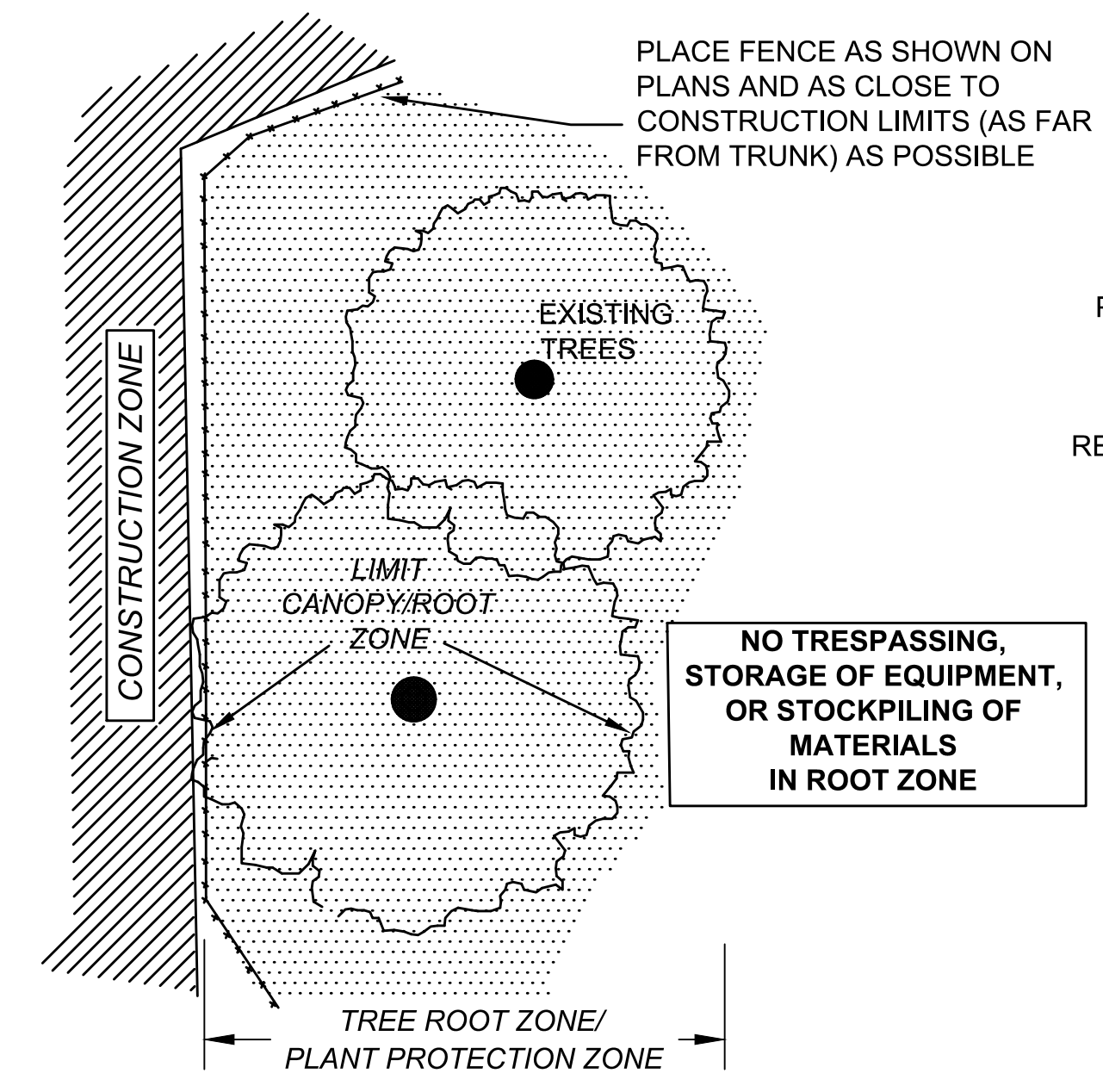
CONSTRUCTION DETAILS

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

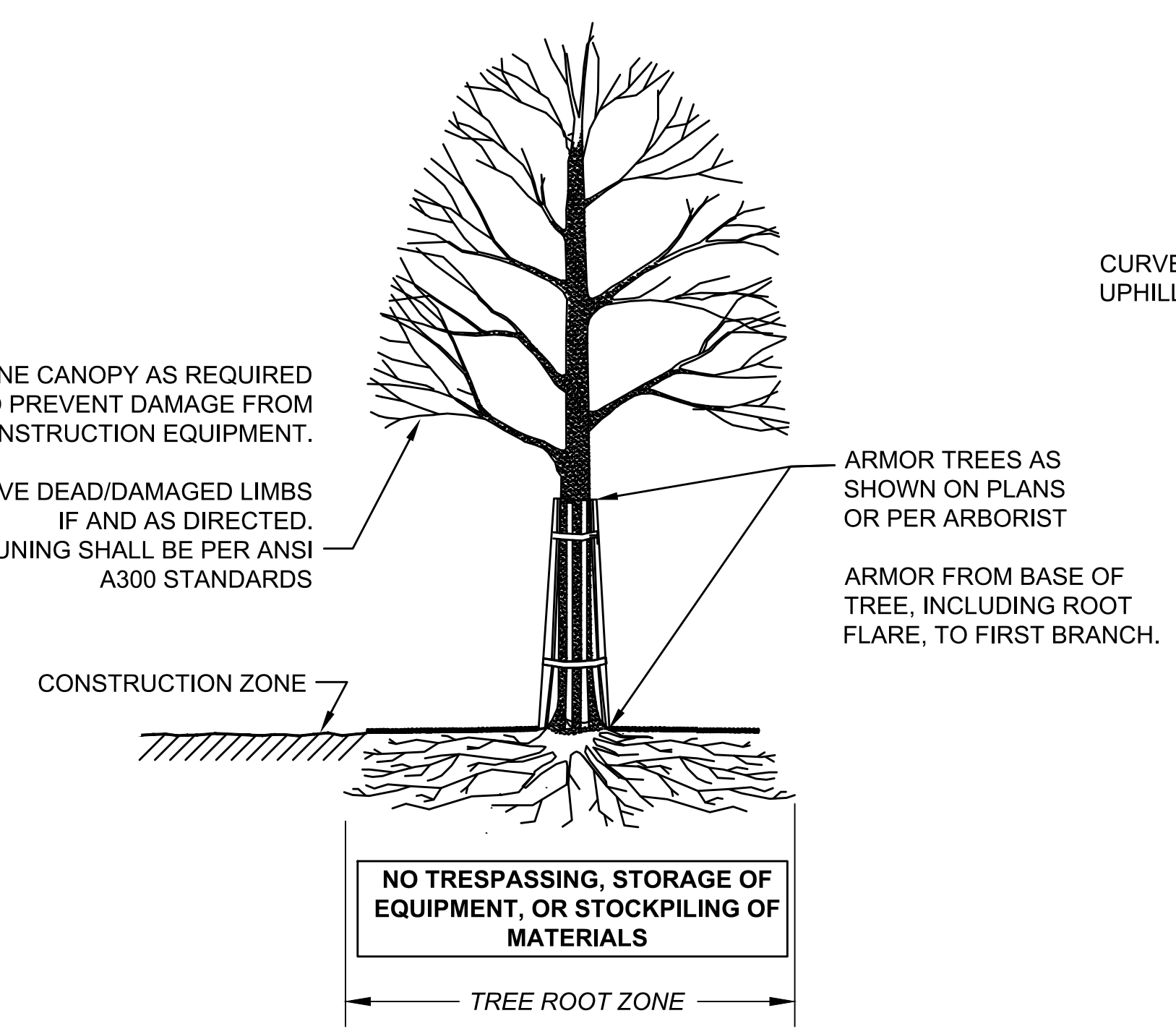
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.



SECTION - FENCE PROTECTION OF ROOT ZONE

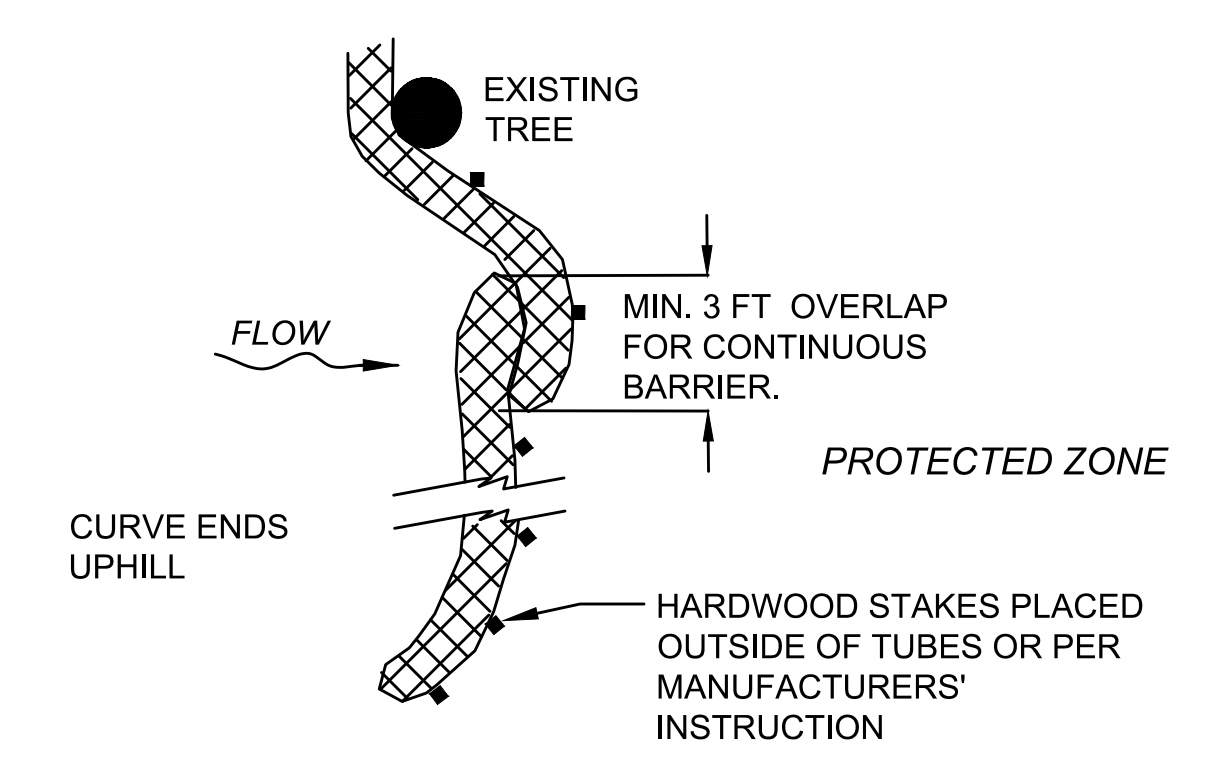


PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

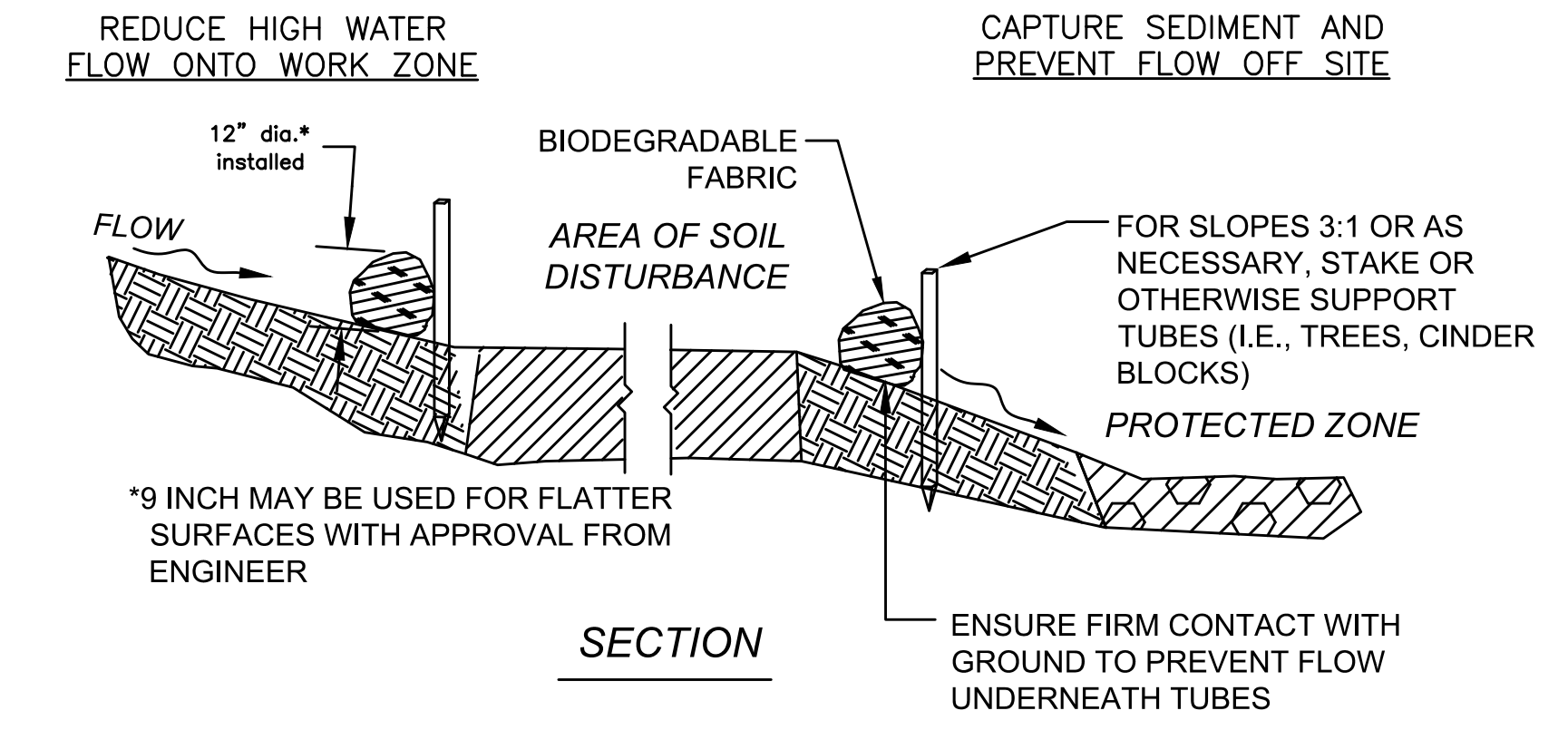


SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK



PLAN VIEW

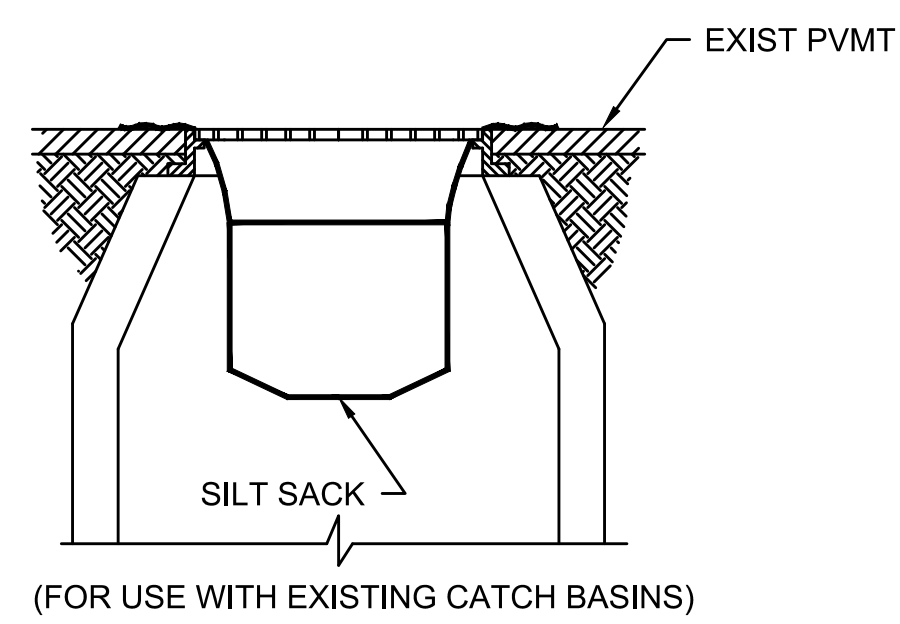


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

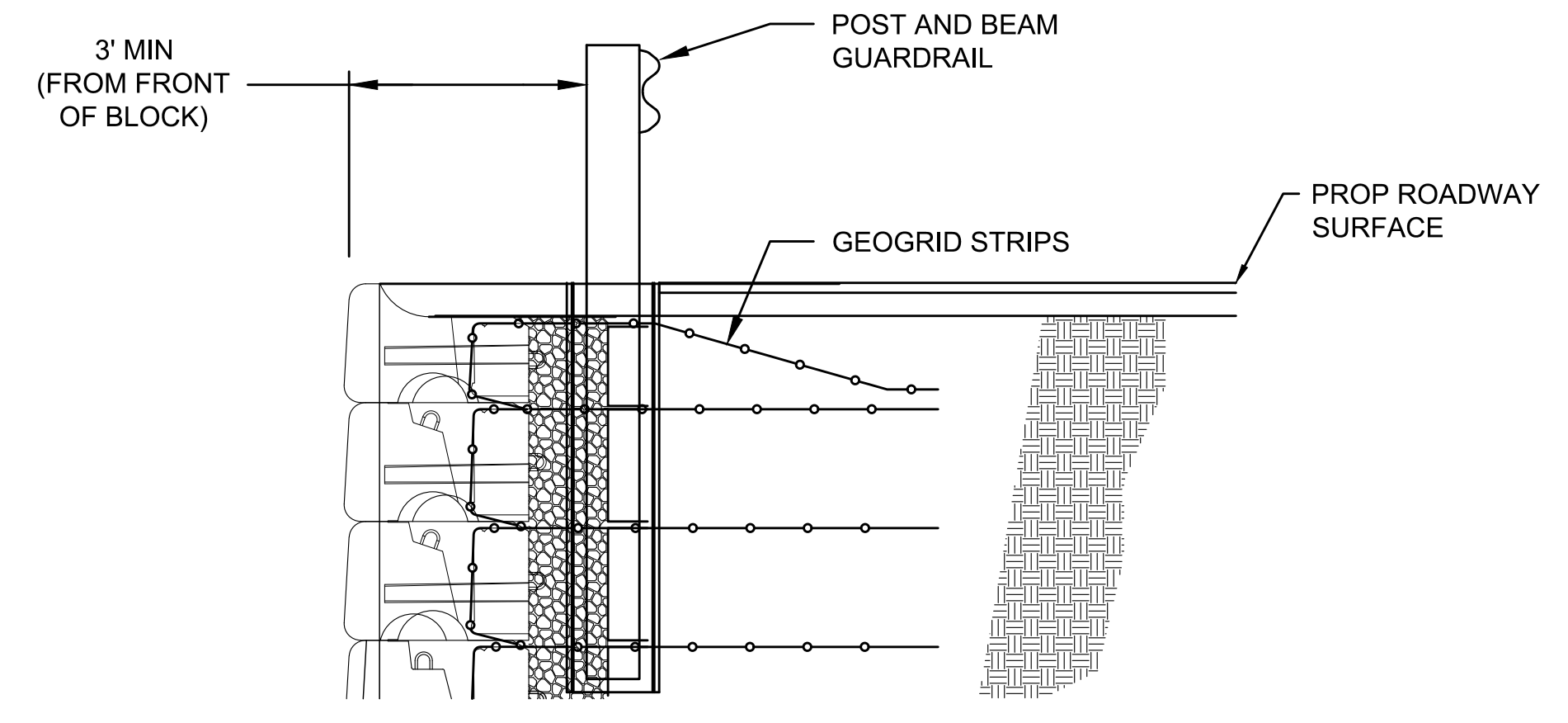
NOT TO SCALE

NOTES:
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



SILT SACK INLET PROTECTION

NOT TO SCALE



POST AND BEAM GUARDRAIL - SECTION VIEW

NOT TO SCALE

Attachment E

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir,
West Newbury and Newburyport, MA

Chapter 91 License Application

401 WATER QUALITY CERTIFICATION
NOTICE OF IMMINENT ISSUANCE

Kreisel, Sara

From: Lally, Kyle (DEP) <kyle.lally@state.ma.us>
Sent: Wednesday, September 14, 2022 10:43 AM
To: Kreisel, Sara
Cc: Morrison, Micah; Walden, Diana L.
Subject: Re: X287261 Section 401 WQC Site Visit - Middle Street, West Newbury / Plummer Spring Road, Newburyport over Upper Artichoke Reservoir, Bridge Replacement Project

Good Morning Sara,

As we spoke about, so far in my review, I have no additional questions, nor do I need any additional information for the issuance of the 401 WQC.

I am anticipating having the 401 ready to go in Mid-October, hopefully sooner.

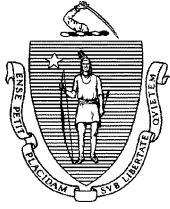
Thank you,
Kyle

Attachment F

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir,
West Newbury and Newburyport, MA

Chapter 91 License Application

EOEEA CERTIFICATE
AGENCY COMMENTS



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Kathleen A. Theoharides
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1081
<http://www.mass.gov/eea>

August 23, 2021

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Bridge Replacement Project-Middle Street and Plummer Spring
Road over the Upper Artichoke Reservoir
PROJECT MUNICIPALITY : Newburyport & West Newbury
PROJECT WATERSHED : Merrimack
EEA NUMBER : 16412
PROJECT PROPONENT : City of Newburyport & Town of West Newbury
DATE NOTICED IN MONITOR : July 23, 2021

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** an Environmental Impact Report (EIR).

Project Description

As described in the Environmental Notification Form (ENF), the project consists of the full replacement of Bridge No. N-11-007, which carries Middle Street/Plummer Spring Road over the Artichoke River/Upper Artichoke Reservoir in the City of Newburyport (City) and the Town of West Newbury (Town). The project is proposed jointly by the City and Town to restore vehicular traffic between Middle Street and Plummer Spring Road, which ceased in 2018 when the existing bridge was closed due to structural deficiencies associated with the undermining of the existing roadway foundation. The proposed bridge will be a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The span of the bridge will increase from an existing 14 feet to a proposed 45 feet in order to eliminate the need for the bridge's substructure to be located in the reservoir and to increase the hydraulic opening, which is currently undersized. The overall width of the bridge will increase from 24.2 feet to 32.5 feet to accommodate safety

improvements, including the addition of a sidewalk. In order to accommodate the new bridge dimensions, slope stabilization/riprap scour protection will be constructed around the new bridge abutments and the approaches to the existing bridge will be widened, slopes reduced, and/or retaining walls constructed.

Project Site

The 0.49-acre project site includes the existing bridge and approaches. The bridge divides West Newbury (located on the northwestern side) and Newburyport (located on the eastern side). Middle Street, which originates in West Newbury, turns into Plummer Spring Road upon entering Newburyport; both roads are functionally classified as Rural Local roads. The bridge crosses over the Upper Artichoke Reservoir, which is classified as a public water supply. The land surrounding the bridge is held for water supply protection purposes in accordance with Article 97 of the amendments to the Constitution of the Commonwealth (Article 97). According to the ENF, the project will not require the conversion or disposition of Article 97 Land. The surrounding area consists of low-density residential development and forested land. As described in the ENF, the existing bridge (and roads) were constructed in 1891, prior to the creation of the Upper Artichoke Reservoir. The existing bridge is described as a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single-span, earth-filled, stone arch bridge set at an approximate slope of 0 percent. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10 feet for a total roadway width of approximately 20 feet. There are no sidewalks on the bridge. As noted above, the bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach, and is currently considered structurally deficient due to undermining of the paved roadway foundation.

There are several wetland resources within or surrounding the project site associated with the Upper Artichoke Reservoir/Artichoke River, including: Land Under Water (LUW), Bank, Riverfront Area, and Bordering Land Subject to Flooding (BLSF). The entirety of the project site is located within or adjacent to an Outstanding Resource Water (ORW). Portions of the project site are mapped as Flood Zone AE (an area inundated during a 100-year storm), with a Base Flood Elevation (BFE) of elevation (el.) 13 ft NAVD88 as delineated on Federal Emergency Management Agency (FEMA) map 25009C0116F (effective date July 3, 2012), although the ENF indicates the flow of water through the bridge is controlled by the downstream dam that impounds the Upper Artichoke Reservoir. The project site does not contain *Estimated and Priority Habitat of Rare Species* as delineated by the Natural Heritage and Endangered Species Program (NHESP) in the 14th Edition of the Massachusetts Natural Heritage Atlas or an Area of Critical Environmental Concern (ACEC). The site does not contain any structures listed in the State Register of Historic Places or the Massachusetts Historical Commission's (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth, although comments received on the project note concern regarding the historic nature of the bridge.

Environmental Impacts and Mitigation

Potential environmental impacts associated with the project include the alteration of 0.05 acres of land, the creation of 0.05 acres of impervious surface (for a total of 0.21 acres within the project site), and the alteration of the following wetland resource areas: 243 linear feet (lf) of Bank, 2,510 sf of LUW (885 sf of which is associated with LUW that will be created by the project), 866 sf of BLSF, and

10,519 sf of Riverfront Area. The project will require dredging of 98 cubic yards (cy) of sediment and will result in 525 cubic feet (cf) of fill within BLSF.

Measures to avoid, minimize, and mitigate environmental impacts include the creation of 3,295 cf compensatory flood storage, stormwater improvements, the incorporation of retaining walls and removal of substructure supports in the reservoir, and the use of construction best management practices (BMPs) such as erosion and sedimentation controls.

Jurisdiction and Permitting

This project is subject to MEPA review and preparation of an ENF pursuant to 301 CMR 11.03(3)(b)(c) because it requires an Agency Action and will result in the alteration of 1,000 or more sf of outstanding resource waters. The project requires a 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP). Comments from the MassDEP Waterways Regulation Program (MassDEP-WRP) indicate the project also requires a Chapter 91 (c.91) License. The project will require review by MHC acting as the State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800).

The project received an Order of Conditions from the Newburyport Conservation Commission on June 7, 2021 and from the West Newbury Conservation Commission on June 29 2021, neither of which were appealed. The project requires Pre-Construction Notification to the U.S. Army Corps of Engineers (USACE) under the General Permits for Massachusetts as well as consultation and review from the U.S. Fish and Wildlife Services (USFWS) in accordance with Section 404 of the Federal Clean Water Act.

Because the project will receive Financial Assistance through the MassWorks Infrastructure Grant and Massachusetts Department of Transportation (MassDOT) Small Bridge Grant Programs, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Review of the ENF

The ENF provided a description of existing and proposed conditions, preliminary project plans, correspondence with the West Newbury and Newburyport Conservation Commissions, stream crossing evaluation, streamlined stormwater report, results of hydrologic and hydraulic (H&H) modeling, correspondence with MHC, tribes, and the Massachusetts Board of Underwater Archaeological Resources (BUAR), and a copy of the 401 WQC application and USACE Authorization. The ENF identified measures to avoid, minimize and mitigate environmental impacts. The Proponent provided additional information to the MEPA Office regarding water control systems during project construction and a Repair/Rehabilitation of Existing Structure Alternative on August 6, 2021. For purposes of clarity, all supplemental materials are referred to herein as the "ENF" unless otherwise referenced.

Alternatives Analysis

The ENF included an alternatives analysis which considered a No-Build (Alternative 1), Three-sided Open Bottom Bridge with a Precast Concrete Rigid Frame (Alternative 2), Open Bottom Arch Bridge with Precast Concrete Arch (Alternative 3), Repair/Rehabilitation of Existing Structure (Alternative 4), and Three-sided Open Bottom Bridge with a Precast Concrete Beam Alternative (the Preferred Alternative). Alternatives were evaluated based on their ability to meet project goals while balancing reliability and cost, and minimizing environmental impacts.

Alternative 1 would leave the existing bridge in its current, deteriorated condition, which would not result in further alteration of environmental resources within the project site but would not restore vehicular connectivity; it would also lead to continued erosion of the surrounding area. For these reasons, it was dismissed. Alternative 4 would involve repairing/rehabilitating the existing bridge. According to the ENF, the viability of this alternative was discussed during a joint public meeting between the City and Town in August 2018, at which time the underlying cause of the wall displacement/collapse and the condition of the buried/submerged portions of the bridge was (and remains) unknown. As described at the MEPA remote consultation meeting for the project held on August 5, 2021, and confirmed in writing by the Proponent, repair/rehabilitation of the existing bridge is anticipated to result in greater and longer lasting impacts to wetland resource areas than the Preferred Alternative. This is because the replacement alternative would require additional dewatered working space/access, exposing wetland resource areas for a longer period of time, and would not remove the bridge substructure in the reservoir or increase the hydraulic opening of the structure (as is proposed in the Preferred Alternative). Additionally, a December 2019 geotechnical investigation found a layer of peat and clay below the bridge foundations. The ENF states that both layers include poor foundational soils and would further hinder the design progression of a repair/rehabilitation. For these reasons, the Repair/Rehabilitation of Existing Structure Alternative was not considered viable.

Alternatives 2 and 3 considered design changes to the Preferred Alternative. Alternative 2 would involve a three-sided open bottom bridge with a precast concrete 22-foot clear span rigid frame. The structure would include a 24-foot roadway with no sidewalks and continuous guardrail. It would have an overall width of 27.25 feet, include spread footing, with an estimated cost of \$2.4 million. Alternative 3 would involve an open bottom arch bridge with a precast concrete ± 30.7 -foot span arch. The structure would include a 24-foot roadway with no sidewalks and a bridge rail. It would have an overall width of 27.25 feet, include pile footings, and would cost an estimated \$2.3 million. The Preferred Alternative (described herein) proposes a three-sided open bottom bridge with a precast concrete 45-foot span, a 24-foot roadway with one sidewalk, and a bridge rail. The proposed bridge will have an overall width of 32.5 feet, involve integral abutments on piles, and is estimated to cost a total of \$2.6 million. As described in the ENF, the Preferred Alternative and Alternative 2 and 3 all provide similar outcomes regarding maintenance and protection of traffic, cross section and roadside safety, utilities and resource area impacts. All three alternatives would be designed to the same storm event, hydraulic opening, water depth and velocity, bank full width and FEMA requirements. The ENF states the Preferred Alternative was selected over Alternative 2 and 3 as it is the only alternative that provides safe pedestrian access and use (as the latter alternatives do not include sidewalks); it also provides the longest span, greater channel openness, and new areas of LUW and compensatory flood storage by removing the portions of the existing bridge embedded in the river and widening the streambed within the bridge opening. As described below, these aspects are expected to improve flow conditions, reduce bridge scour/erosive

conditions, and improve water quality. The ENF further states the Preferred Alternative was selected at the August 5, 2021 joint public meeting held by the Town and City to advance to construction.

Wetlands

The project will result in 243 lf of permanent alteration and 61 lf of temporary alteration to Bank. Approximately 10,519 sf of alteration will occur within Riverfront Area, of which 1,254 sf is described as temporary, 3,393 sf is described as permanent, and 5,872 sf is characterized as redevelopment, located within the existing roadway. Approximately 866 sf of BLSF will be permanently altered, 211 sf of which is associated with the placement of approximately 525 cf of fill and 655 sf of which is associated with the creation of 3,295 cf compensatory flood storage. The project will alter 2,510 sf of LUW, of which: 984 sf is described as permanent, associated with the construction of the new bridge, retaining walls, and riprap; 641 sf is described as temporary, associated with the dewatering and construction activities; and 885 sf is proposed to be created through the removal of existing infrastructure and expansion of the hydraulic opening of the bridge. According to the ENF, erosion and sedimentation controls will be installed prior to construction, and all temporarily impacted wetland resource areas will be restored once construction is complete. As noted above, the Newburyport and West Newbury Conservation Commissions reviewed the project for its consistency with the Wetlands Protections Act (WPA), the Wetland Regulations (310 CMR 10.00), and associated performance standards, including the Stormwater Management Standards (SMS), and issued Order of Conditions which were not appealed.

The project requires a 401 WQC in accordance with 314 CMR 9.04(2) as it will involve dredging within an ORW. Approximately 98 cy of sediment will be dredged from the channel, 50 cy of which is described as temporary. Comments from MassDEP-WRP state the existing bridge and approach roadways were constructed in 1891, prior to the 1939 statutory change when c.91 jurisdiction was expanded to navigable rivers, but that the Upper Artichoke River is at present subject to c.91 jurisdiction; as such, the project requires a c.91 License. MassDEP-WRP further states the project (as described in the ENF) appears to substantively comply with the applicable provisions for water-dependent Public Service projects, specifically those at 310 CMR 9.35-9.37. I refer the Proponent to comments from MassDEP-WRP for more information on required permitting for the project.

As noted above, the span of the bridge is proposed to increase from 14 feet to 45 feet, which will remove the need for substructure within deep areas of the reservoir. The ENF states the increased hydraulic opening will improve flow conditions, reduce bridge scour/erosive conditions, and improve water quality. The removal of the existing bridge infrastructure and increase span of the proposed bridge will result in a wider natural streambed bottom and is expected to improve fish and wildlife habitat within the vicinity of the bridge as well as up and downgradient of the bridge. The increased span will require rip-rap scour protection to be placed in the streambed (LUW) to stabilize the roadway and bridge. The existing streambed material will be removed and stockpiled on-site for use during restoration to ensure appropriate sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be similar to that of the existing streambed, with the riprap proposed to be covered by 6 inches of natural streambed material.

Stormwater and Drinking Water

The ENF described the existing stormwater system within the project site as a country drainage system, whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and will result in an increase of 0.05 acres of impervious surface. Proposed stormwater improvements include the installation of two deep sump catch basins with water quality units on either side of the roadway, on both side of the bridge. The ENF states these improvements are anticipated to result in more than 80 percent of total suspended solids (TSS) removal from runoff.

As noted previously, the entirety of the project site is located within or adjacent to an ORW, and the bridge crosses a drinking water reservoir. The ENF states the demolition of the existing bridge and construction of the proposed bridge and retaining walls are required to be completed in-the-dry, which will be accomplished through the use of cofferdams. All dewatering and related earthwork shall be conducted in such a manner as to prevent siltation or contamination of the waterway and wetlands. No pumping discharge will be allowed to enter the Artichoke Reservoir or the wetland resource areas. As described in the ENF, water from the work areas will be pumped either to a filter bag, temporary settling tank, forebay basin, or other approved containment structure conforming to MassDOT's "*Guidelines for Soil Erosion & Sediment Control*" at a location approved by the respective Conservation Commissions. The filter bags will remove sediment from the water, which will then outflow over land to allow for infiltration. At the limits of the control of water system, compost filter tubes will be installed to prevent sediment from stormwater runoff from reaching the Reservoir. No direct discharge will be allowed into waterways, or the adjacent wetlands during the dewatering operations.

Climate Change, Adaptation, and Resiliency

Governor Baker's Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth (EO 569; the Order) was issued on September 16, 2016. The Order recognizes the serious threat presented by climate change and direct Executive Branch agencies to develop and implement an integrated strategy that leverages state resources to combat climate change and prepare for its impacts. The Order seeks to ensure that Massachusetts will meet GHG emissions reduction limits established under the Global Warming Solution Act of 2008 (GWSA) and will work to prepare state government and cities and towns for the impacts of climate change. I note that the MEPA statute directs all State Agencies to consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise, when issuing permits, licenses and other administrative approvals and decisions. M.G.L. c. 30, § 61.

As noted above, the Artichoke River and the Artichoke Reservoirs are located within the FEMA 100-year floodplain. The ENF states both the ordinary high water and 10-year design flood elevation are at 12.6-foot NAVD88, which is maintained by dams downstream of the project area at all times. According to the ENF, the existing bridge is designed to pass a 10-year storm event. The H&H analysis included in the ENF indicates the proposed bridge (and in wider hydraulic opening) will be able to accommodate the 100-year flood frequency storm event. The H&H analysis did not evaluate impacts from climate change on storm frequency and intensity; however, the ENF states that the impacts from the 10-year, 100-year, and 500-year storm events within the project site are not significantly different due to the stability and regulation of water levels provided by the dams. The ENF further states that the

project will create a more reliable, resilient road crossing, which will be less vulnerable to flooding or further deterioration in a storm event as compared to the existing bridge.

Historic Resources

As stated above, the project site does not contain any structures listed in MHC's Inventory; however, comments received on the ENF note concern with the characterization of the bridge (specifically, the original date of construction) and the lack of a repair/rehabilitate alternative included in the original ENF. The Proponent discussed the Repair/Rehabilitation of Existing Structure Alternative (Alternative 4) and associated increased environmental impacts (as compared to the Preferred Alternative) during the MEPA remote consultation meeting held on August 5, 2021, and provided supplemental information to the MEPA Office on August 6, 2021. As discussed above, repair of the existing bridge was dismissed due to the unknown condition of the substructures, poor foundation soils, narrow hydraulic opening and in turn streambed bottom, and lack of pedestrian accommodations. The ENF states a Project Notification Form (PNF) and request for comment was submitted to relevant tribes, MHC, and BUAR on January 14, 2021, and correspondence received from MHC in response to the PNF indicates the project is unlikely to affect significant historic or archaeological resources.

Construction

The project will take approximately 20 months to construct and is proposed to occur between October 2021 and June 2023. Before beginning construction, the ENF states boundaries of wetland resource areas and work areas will be clearly marked to prevent unauthorized encroachment into wetland resource areas. Proper erosion/sedimentation control devices, such as compost filter tubes will be installed. All construction and demolition activities should be managed in accordance with applicable MassDEP's regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11). I encourage the Proponent to require that its contractors use construction equipment with engines manufactured to Tier 4 federal emission standards, or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance with the Massachusetts Contingency Plan (310 CMR 40.00). All construction activities should be undertaken in compliance with the conditions of all State and local permits. I encourage the Proponent to reuse or recycle construction and demolition (C&D) debris to the maximum extent.

Conclusion

The ENF has adequately described and analyzed the project and its alternatives, and assessed its potential environmental impacts and mitigation measures. Based on review of the ENF and comments received on it, and in consultation with MassDEP, I have determined that an EIR is not required.

K. Theoharides

August 23, 2021

Date

Kathleen A. Theoharides

Comments received:

08/09/2021 Elisa J. Grammer

08/13/2021 Massachusetts Department of Environmental Protection Waterway Regulation Program
(MassDEP-WRP)

KAT/ELM/elm

Elisa J. Grammer
47 Coffin Street
West Newbury, MA 01985
August 9, 2021

Eva Murray, Environmental Analyst
Massachusetts Environmental Policy Act (MEPA) Office
100 Cambridge Street, 9th Floor
Boston, MA 02114
By email delivery Eva.Murry@mass.gov
And via the [MEPA Comment Portal](#)

Re: *Bridge Replacement Project- Middle Street and Plummer Spring Road over the Upper Artichoke Reservoir*,
EEA#/MEPA ID 16412

Dear Ms. Murray:

I write in my individual capacity as an interested West Newbury citizen, but would disclose that I am a member of the West Newbury [Historical Commission](#), which is not scheduled to meet to discuss the above-captioned matter until August 17, 2021. I respectfully request that the MEPA Office consider 1) the adequacy of the historical description of the bridge in the July 15, 2021 Environmental Notification Form and 2) the Form's failure to consider preserving and repairing/improving the existing bridge.

The Bridge's History

Cursory research (provided as Attachment 1) indicates that the Form's description of the bridge's history—"The road and stone arch bridge were constructed in 1891 before the Upper Artichoke Reservoir was built." (*Attachment A: Project Narrative*, at 2)—is neither entirely accurate nor complete. The bridge and road connecting West Newbury's Middle Street to what was once Newbury's Turkey Hill area was first proposed by John Plummer and other nearby property owners in 1850. This petition laid out the proposed route crossing the Artichoke River now in place. In 1853, West Newbury and Newburyport advertised for bids

For making and grading a road leading from Turkey Hill road to Artichoke River in Newburyport, it being about twenty one hundred feet

Also for making and grading a road near the Byfield road in West Newbury to Artichoke River, it being about twenty four hundred feet

Also to build a Stone Bridge fifteen feet span, across Artichoke River, according to profile, plans and specifications at the City Clerk's office, Newburyport

The roads and bridge were built by 1855, and are shown on a map dated 1856.

The stone bridge was the first public work of Jonathan Corliss, a farmer in West Newbury who became a stone mason. Corliss later built other stone bridges in the area.

In 1880, West Newbury's Annual Town Report contained a town meeting warrant article discussing the need to repair or rebuild "the bridge over Artichoke River on the Middle Road." In 1891 Newburyport determined "to expend the sum of \$1000 to build a bridge across the Artichoke river at Plummer's springs

if the town of West Newbury shall bear its part of the expense.” A stone bridge much like the 1850s original was put out to bid in 1891. It was complete by 1892, except for aspects of Newburyport’s adjacent road improvements.

A photo of and story about the bridge are included in Audrey Ladd’s history of West Newbury, *Contentious Citizens*. This is excerpted in Attachment 1 hereto. The Artichoke bridge is not currently in the MACRIS data base; whether it will be included in West Newbury’s upcoming Phase 3 [Historic Sites Survey](#) has not been determined.

Preservation and Repair Alternative

The existing bridge’s history dating to 1850 and its aesthetic appeal beg the question why repair/improvement of the existing bridge was not considered in the Form. The Form states the bridge is an “earth-filled stone arch” (*Attachment A: Project Narrative*, at 2) that is structurally deficient due to undermining of the existing roadway foundation (*Attachment A: Project Narrative*, at 1)

The Form offers no discussion of the alternative of strengthening and repairing the existing bridge’s roadway foundation, taking measures to mitigate erosion and scouring attributed (without elaboration) to the size of the existing bridge opening, and possibly improving the bridge deck to accommodate pedestrians. The Form identifies four alternatives, with precast concrete structures for all three of the construction options:

- a no-build alternative,
- a three-sided open bottom bridge with a precast concrete rigid frame,
- an open bottom arch bridge with precast concrete arch, and
- a three-sided open bottom bridge with a precast concrete beam (the Preferred Alternative / Proposed Project). (*Attachment A: Project Narrative*, at 6-8)

Logically, it would seem that repairing an existing bridge would also avoid a number of environmental impacts associated with demolishing the old one and constructing anew.

Accordingly, I respectfully request that the MEPA office consider the history of the existing bridge and the alternative of repairing/improving that bridge, short of full replacement.

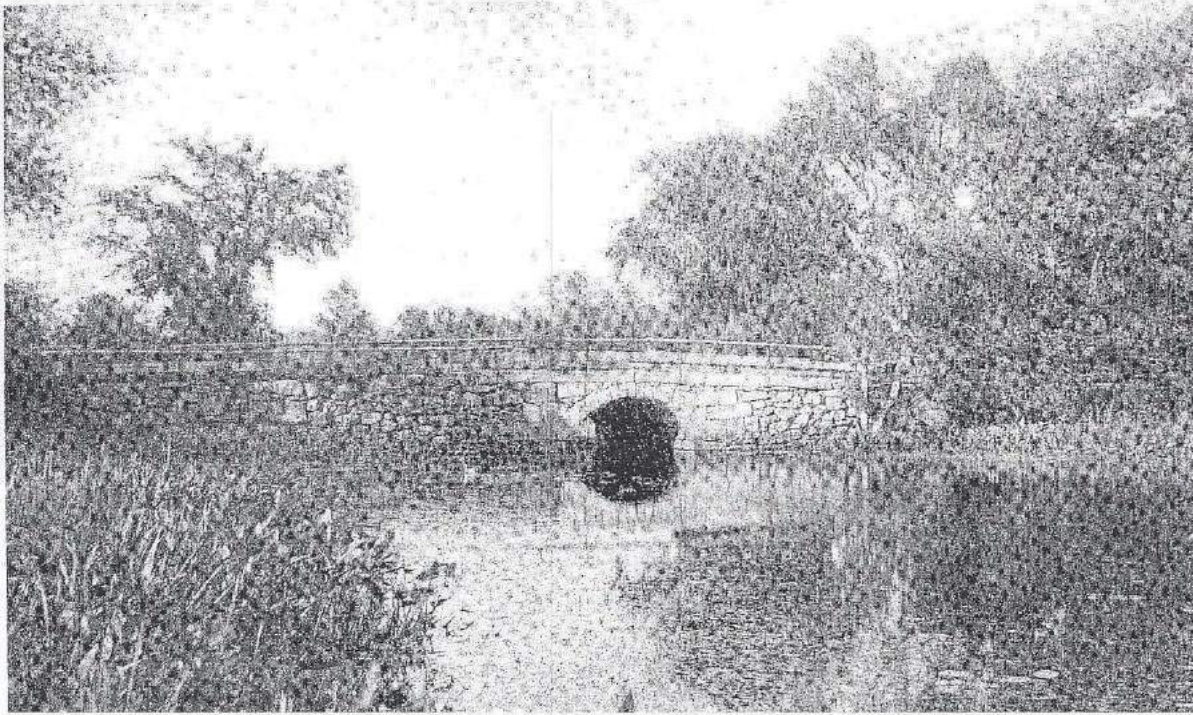
Respectfully submitted,



Elisa J. Grammer

Attachment 1: Initial research—Artichoke Bridge history

Contentious Citizens by Audrey Ladd p 195



ARTICHOKE BRIDGE

Walter Poore's milk team came to grief a few days since as he was starting for town. The horses became frightened when only a short distance from home and while he was out of the team. They ran for about a mile when upon reaching the Artichoke bridge one horse decided to go one side of the heavy railing that divides the bridge, and the other was just as determined to go on the other side. The consequence was though each had their own way the pung was left behind in a damaged condition. Only two cans of milk were spilt however. The horses stopped a little farther on and were driven home to be harnessed into the wagon.

[Map of the original town of Newbury, now divided into Newbury, Newburyport and West Newbury - Norman B. Leventhal Map & Education Center](#) 1830 map—no bridge shown at Middle St

1850: proposal for a new bridge over the Artichoke by Plummer property

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011850-01011860&m=between&ord=k1&fn=daily_herald_usa_massachusetts_newburyport_18500710_english_4&df=1&dt=10&cid=2710

meeting.

Second To act on an Order of Notice from the Hon: County Commissioners, founded on a petition of Moses H. Poor and others, to widen and locate anew a road from Crane-Neck School-House in West Newbury, by the house of Moses H. Poor, to some point near the house of Moses Little, Esq. in Newbury. Also, an Order of Notice on the petition of John L. Plummer and others, to widen and locate anew a road from some point near the house of Stephen C. Thurlow, in West Newbury, by the house of Edmund Knight to the New Road, so called, crossing Artichoke river at or near the new Log.

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011850-01011860&m=between&ord=k1&fn=daily_herald_usa_massachusetts_newburyport_18500620_english

To the Honorable County Commissioners to the
County of Essex

THE undersigned, inhabitants of said county, respectfully represent, That the road, as now travelled, through the central part of West Newbury to Newburyport, is in many places narrow, circuitous and otherwise inconvenient, and public convenience requires that certain alterations and new locations therein should be made, and also that a new road should be made as hereafter described, thereby opening a much shorter and more convenient way of travel, viz

Beginning in the town of West Newbury, where the two roads cross, between the house of Stephen C Thurlow and the house of Thomas Elliott, and widening, straightening and new locating by said Elliott's house, the house of Edmund Knight and others, to some point at or near the house of John L. Plumer, or some suitable place to the eastward thereof, and thence locating anew to the Turkey Hill road in Newbury, at or near the westerly end of the New Road, so called; crossing Artichoke river at or near the new bay, and also to make all such alterations in said new road as may be necessary to make the same conform to said new location

We therefore pray your Honors to view said road and proposed new locations, and after all due proceedings having been had thereon, to cause all such alterations and new locations to be made, as your wisdom may believe the public convenience to require And as in duty bound will ever pray

JOHN L. PLUMMER & others
West Newbury, June 8, 1851

[3&df=1&dt=10&cid=2710](#)

1853—new road & bridge put to bid http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011850-01011860&m=between&ord=k1&fn=newburyport_herald_usa_massachusetts_newburyport_18530531

To Road Makers & Bridge Builders

SEPARATE proposals will be received by the City Clerk of Newburyport, until June 1st, for the making and grading a road leading from Turkey Hill road to Artichoke River in Newburyport, it being about twenty one hundred feet

Also for making and grading a road near the Byfield road in West Newbury to Artichoke River, it being about twenty four hundred feet

Also to build a Stone Bridge fifteen feet span, across Artichoke River, according to profile, plans and specifications at the City Clerk's office, Newburyport

Per order of the Committees of Newburyport and West Newbury

JOHN M COOPER, for Newburyport.

m13 MOSES NEWELL, for West Newbury

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011853-01011856&m=between&ord=k1&fn=daily_herald_usa_massachusetts_newburyport_18550730_english_7&df=1&dt=10&cid=2710 1855-mentions new bridge over the Artichoke River

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011870-01011880&m=between&ord=k1&fn=newburyport_daily_herald_usa_massachusetts_newburyport_18781115_english_3&df=51&dt=59&cid=2710 Jonathan Corliss built a stone arch bridge over the Artichoke River in Newbury—which was before Nbpt took over the Turkey Hill side

the previous afternoon.

SALISBURY.

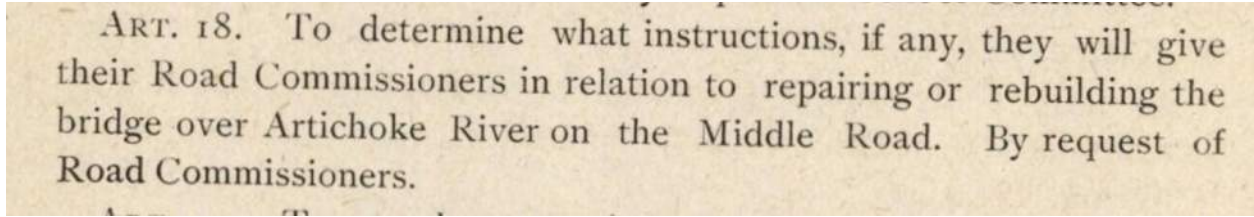
The Rev. Mr. Evans of Shelburne Falls has received a call to the pastorate of the Market street Baptist church in this village, and will enter upon his duties next Sabbath.

One by one the old citizens depart. This week we have to chronicle the death of Mr. Jonathan Corliss at the age of 79 years. Mr. Corliss was a native of Orange N. H., which place he left at the age of 18 years, and went to West Newbury, where he worked as a farmer. Later, he moved and came to Salisbury, living for a few years on the "Webster farm." He moved to the "village" and commenced the work of a stone mason, which business he has followed for upwards of thirty years. His first public work was the building of a stone arch bridge across the Artichoke river in Newbury. He also built the three stone bridges between Amesbury and Salisbury Mills, and has contracted and laid the foundation of two-thirds of all the houses built in this village during his business career. A quiet man of a few words, a good citizen, an honest man. His funeral was conducted by Rev. Mr. Noyes and Rev. Mr. Morton, at his residence on Market street, and attended by many of the prominent citizens of the town, who knew and appreciated the worth of the man. *Villager*

<https://iif.lib.harvard.edu/manifests/view/ids:12909658> 1856 map—Middle St continues over the Artichoke

https://digitalcommons.salemstate.edu/maps_essexcounty/29/ 1871 map—Middle St continues over the Artichoke

1880 Annual Town Report



ART. 18. To determine what instructions, if any, they will give their Road Commissioners in relation to repairing or rebuilding the bridge over Artichoke River on the Middle Road. By request of Road Commissioners.

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011885-12311900&m=between&ord=k1&fn=newburyport_daily_news_usa_machusetts_newburyport_1891_0421_english_1&df=1&dt=10&cid=2710 rebuilding bridge

incea.

Looking at Artichoke Bridge.

The local committee on bridges and culverts will visit the Artichoke bridge this afternoon, in company with a bridge builder, and will there meet the road commissioners of West Newbury and consider the rebuilding of the bridge.

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011885-12311900&m=between&ord=k1&fn=newburyport_daily_news_usa_massachusetts_newburyport_18910505_english_1&df=1&dt=10&cid=2710 Nbpt decides to build bridge at Plummers Springs if WN pays half

A New Bridge.

Councilman Merrill offered an order that the committee on bridges and culverts be authorized to expend the sum of \$1000 to build a bridge across Artichoke river at Plummer's springs if the town of West Newbury shall bear its part of the expense. Adopted,

To Connect With the Sewer

http://newburyport.advantage-preservation.com/viewer/?k=artichoke&i=f&d=01011885-12311900&m=between&ord=k1&fn=newburyport_daily_news_usa_massachusetts_newburyport_18910331_english_1&df=11&dt=20&cid=2710

being improved.

ARTICHOKE BRIDGE.

**West Newbury and Newburyport Inter-
ested In It.**

The committee on bridges and culverts held a meeting last evening. The matter of Artichoke bridge was talked over, and it was finally decided to meet the road commissioners of West Newbury and see what is best to do in regard to rebuilding the bridge over the Artichoke, and whether it would be better to build of iron or stone. The monthly bills were all approved.

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011890-01011895&m=between&ord=k1&fn=newburyport_daily_news_usa_massachusetts_newburyport_1891_0808_english_3&df=11&dt=20&cid=2710 Sealed proposals for replacement stone bridge

Proposals for Building Stone Arch Bridge.



Sealed proposals will be received at the office of the City Clerk of Newburyport until 1 o'clock Saturday, August 13, inst., by the Committee on Bridges and Culverts of the City of Newburyport and the Road Commissioners of the town of West Newbury, to furnish all the material and labor required to construct a stone arch bridge over the Artichoke river, at Plummer's Spring, so-called, in accordance with plans and specifications to be seen at the office of the City Clerk of Newburyport.

The said Committee and Road Commissioners reserve the right to reject any or all proposals that may be offered.

Attest. GEO. H. STEVENS, City Clerk.

Newburyport Aug. 5, 1891. 858111

[http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011890-01011895&m=between&ord=k1&fn=newburyport daily news usa massachusetts newburyport 1891 0822 english 4&df=1&dt=10&cid=2710](http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011890-01011895&m=between&ord=k1&fn=newburyport%20daily%20news%20usa%20massachusetts%20newburyport%201891%200822%20english%204&df=1&dt=10&cid=2710) Notice re traffic and new stone bridge construction

NOTICE.



Notice is hereby given that travel will be discontinued on that portion of Hale street between Turkey Hill street and the Artichoke river in the city of Newburyport on and after Monday the 24th day of August instart, until the completion of the new stone bridge over the Artichoke river at the point between the city of Newburyport and the town of West Newbury.

Per order chairman of committee on bridges and overts, Newburyport Aug 22, 1891. Attest, GEORGE H STEVENS, City Clerk

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge&i=f&d=01011890-01011895&m=between&ord=k1&fn=newburyport_daily_news_usa_machusetts_newburyport_1892_0607_english_4&df=21&dt=30&cid=2710 A Hint to Nbpt's Hwy Dept—replacement Plummer Springs Bridge completed by 1892

known as Ward Hill was called by the same name.	
WEST NEWBURY	
A Hint to Newburyport's Highway Department—Short Notes.	
The superintendent of highways in Newburyport promised a number of farmers some time ago that he would gravel the top of the hill near the Artichoke bridge on Plummer Springs road. It has not yet been done, but still remains in the bad condition left when the new bridge was built. In rainy weather it is especially bad, and as there is considerable travel over this road it should be attended to at once. A few hours work and a few loads of gravel is all that is needed.	
An event looked forward to with much interest by war veterans and others in this town, is the annual reunion of the Nineteenth Massachusetts Regiment which occurs here next August.	
SEABROOK	

http://newburyport.advantage-preservation.com/viewer/?k=artichoke%20bridge%20plummer&i=f&d=01011920-01011940&m=between&ord=k1&fn=newburyport_daily_news_and_newburyport_herald_usa_machusetts_newburyport_19240819_english_1&df=11&dt=13&cid=2710 1924—Nbpt water pumping undermining the bridge

NEW PUMP FOR THE WATER WORKS

Commissioners Last Evening Contract for One With 3,000,000 Per Day Capacity.

The water commissioners last evening awarded a contract for a new pump at the Spring lane pumping station of the water works to the Allis-Chalmers Mfg. Co. of Milwaukee, whose bid was \$29,100. The pump has a capacity of 3,000,000 per day and it is driven by an engine of cross-compound type.

The company will require from six to seven months to install the pump, so it will be well into next year before the new equipment will be available.

There will be quite a little remodeling of the pumping station preparatory to the installation of the pump, which is to be put in a portion of the building used for storage of coal.

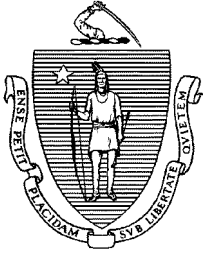
The commissioners considered ways and means to prevent further damage to the embankment at the Plummer

Springs, bridge at the Artichoke river which is being undermined by the action of the waves. It was decided to put in riprap work, which will be done by men regularly employed by the water works.

GARDEN FETE AT FINISTERE.

Finistere, the estate of John Clay, at the tip of Eastern Point, Gloucester, overlooking the ocean and one of the most beautiful places on the North Shore, will be the scene tomorrow of the fund for rebuilding the Chapel street Baptist church destroyed by fire last December.

Dr. Bullard has resumed practice.—
Adv.



The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1014 Fax (617) 626-1240
www.mass.gov/orgs/board-of-underwater-archaeological-resources

August 12, 2021

Kathleen A. Theoharides, Secretary
Executive Office of Energy and Environmental Affairs
Attention: Eva Murray, MEPA Unit (via email attachment)
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Bridge Replacement Project (EEA# 16412) - Middle Street and Plummer Spring Road over the Upper Artichoke Reservoir, West Newbury and Newburyport, MA

Dear Secretary Theoharides,

The staff of the Massachusetts Board of Underwater Archaeological Resources has reviewed the above-referenced proposed project as detailed in the *Environmental Monitor* of July 23, 2021 and offers the following comments.

The Board has conducted a preliminary review of its files and secondary literature sources to identify known and potential underwater archaeological resources within the proposed project area. No record of any underwater archaeological resources was found. Based on the results of this review, the Board considers this project unlikely to adversely impact submerged cultural resources.

Should heretofore-unknown underwater archaeological resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse effects and notify the Board and the Massachusetts Historical Commission, as well as other appropriate agencies, immediately, in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources*.

The Board appreciates the opportunity to provide these comments as part of the MEPA review process. Should you have any questions regarding this letter, please do not hesitate to contact me at the address above or by email at david.s.robinson@mass.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "David S. Robinson".

David S. Robinson
Director

/dsr

Cc: Brona Simon, MHC
Bettina Washington, WTGH/A (via email attachment)
David Weeden, MWT (via email attachment)



Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

Memorandum

To: Eva Murray, MEPA

From: MassDEP/Boston Waterways Regulation Program

Cc: Daniel Padien, MassDEP/Boston Waterways Regulation Program

Re: **Comments from the Chapter 91 Waterways Regulation Program - EEA #16412, ENF, Reconstruction of Bridge; Middle Street and Plummer Spring Road over the Upper Artichoke River, Newburyport and West Newbury, Essex County.**

Date: August 12, 2021

The Department of Environmental Protection Waterways Regulation Program (the “WRP”) has reviewed the above referenced ENF (EEA #16412) submitted by the BSC Group, on behalf of the City of Newburyport and the Town of West Newbury (the “Proponent”) for the proposed reconstruction of the bridge over the Upper Artichoke River on Middle Street and Plummer Spring Road in Newburyport and West Newbury, Essex County.

The project proposes to replace an existing bridge, which is an earth-filled fieldstone arch structure constructed in 1891. The bridge and approach roads have been determined to be structurally deficient due to undermining of the paved roadway foundation. The existing two-lane bridge is approximately 20’-0” in width with no sidewalks, with an earth-filled 24’-0” single span fieldstone arch. The proposed new bridge is a precast concrete structure that will utilize the same roadway horizontal and vertical alignment. The bridge opening will be expanded from 14’-0” to 45’-0”, and the width of the roadway crossing will expand from approximately 24’0’ to 32’-6”, in order to accommodate roadway safety requirements and a pedestrian sidewalk on the southbound side of the bridge. Rip-rap scour protection will be placed in the streambed to stabilize the roadway and bridge. The final elevation of the streambed will be similar to that of the existing streambed. The approach roadways will be widened on both sides of the bridge and stabilized by a combination of retaining walls and sloped rip-rap. In total, the project site encompasses approximately .49 acres and has an approximate horizontal length of 320-’0”.

Reconstruction of Middle Street and Plummer Spring Road Bridge Over the Upper Artichoke River, City of Newburyport and Town of West Newbury, Essex County.
EEA ENF #16414
MassDEP Chapter 91 Waterways Program Comments
August 12, 2021

The existing fieldstone arch bridge and approach roadways were constructed in 1891, prior to the 1939 statutory change when c.91 jurisdiction was expanded to navigable rivers. As a result, the proponent did not include any historic licensing documentation for the structures.

Water Dependency:

The WRP has determined that this proposal is a water-dependent project, pursuant to 310 CMR 9.12(1)(a) & (2)(d).

Chapter 91 Jurisdiction:

The project is located on the Upper Artichoke River, a nontidal waterway subject to Chapter 91 jurisdiction, pursuant to 310 CMR 9.04(1)(e).

Chapter 91 Comments:

The project, as described, appears to substantively comply with the applicable provisions for water-dependent Public Service projects, specifically those enumerated at 310 CMR 9.35-9.37.

The Department awaits the filing of a Waterways License Application which meets the minimum filing standards as set forth in 310 CMR 9.11(3)(a)-(c), and the Secretary's Certificate concluding the MEPA review process.

If you have any questions regarding the WRP's comments, please feel free to contact at DEPwaterways@mass.gov.

Environmental Notification Form

**Middle Street & Plummer Spring Road over the Upper Artichoke Reservoir
Bridge Replacement Project**
West Newbury & Newburyport, Massachusetts

July 2021

Filed in Accordance with the Massachusetts Environmental Policy Act 301 CMR 11.00

Prepared for:
TOWN OF WEST NEWBURY
381 MAIN STREET
WEST NEWBURY, MA 01985

CITY OF NEWBURYPORT
16 C PERRY WAY
NEWBURYPORT, MA 01950

Prepared by:

 **BSC GROUP**
803 SUMMER STREET
BOSTON, MA 02127
BSC PROJECT NUMBER 28395.00

Environmental Notification Form

For office Use Only

EEA#: _____

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document. . electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Bridge Replacement Project - Middle Street and Plummer Spring Road over the Upper Artichoke Reservoir		
Street Address: Middle Street and Plummer Spring Road		
Municipality: West Newbury, and Newburyport	Watershed: Merrimack	
Universal Transverse Mercator Coordinates: 342105.36 m E, 4740743.77 m N	Latitude, Longitude: 42.802972° N, -70.930972° W	
Estimated commencement date: October 2021	Estimated completion date: June 2023	
Project Type: Transportation	Status of project design: 95% complete	
Proponent: Town of West Newbury and City of Newburyport		
Street Address: 16 C Perry Way		
Municipality: Newburyport	State: MA	Zip Code: 01950
Street Address: 381 Main Street		
Municipality: West Newbury	State: MA	Zip Code: 01985
Name of Contact Person: Sara Kreisel, PWS		
Firm/Agency: BSC Group, Inc.	Street Address: 803 Summer Street	
Municipality: Boston	State: MA	Zip Code: 02127
Phone: 617-896-4579	Fax: 617-896-4301	E-mail: skreisel@bscgroup.com
Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting: [N/A]		
a Single EIR? (see 301 CMR 11.06(8))	<input type="checkbox"/> Yes	<input type="checkbox"/> No
a Special Review Procedure? (see 301CMR 11.09)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
a Phase I Waiver? (see 301 CMR 11.11)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<i>(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)</i>		
Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?		
The Project meets or exceeds the following ENF review thresholds:		
<i>301 CMR 11.03 (3)(b)c. c. alteration of 1,000 or more sf of... outstanding resource waters;</i>		
Which State Agency Permits will the project require?		
MassDEP 401 Water Quality Certification		
Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:		
West Newbury has secured a \$1M MassWorks Infrastructure Grant : replacement design/construction		
Newburyport has secured a \$500K MassDOT Small Bridge Grant : replacement design/construction		

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	21,379 sf (0.49 ac)		
New acres of land altered		2,099 sf (0.05ac) 1,895 (0.04)	
Acres of impervious area ¹	6,968 sf (0.16 ac)	2,099 sf (0.05 ac)	9,067 sf (0.21 ac)
Square feet of new bordering vegetated wetlands alteration		0 sf	
Square feet of new other wetland alteration		LUW	984 sf (Perm) 885 sf (Gain) 641 sf (Temp)
		RFA	3,393 sf (Perm) 5,872 (Redev) 1,254 (Temp)
		BLSF	211 sf (Alter) 655 sf (Gain)
Acres of new non-water dependent use of tidelands or waterways		N/A	
STRUCTURES			
Gross square footage	N/A	N/A	N/A
Number of housing units	N/A	N/A	N/A
Maximum height (feet)	N/A	N/A	N/A
TRANSPORTATION			
Vehicle trips per day	920 (per traffic counts, June 2017. Road Closed to Vehicles in 2018)	0	920
Parking spaces	N/A	N/A	N/A
WASTEWATER			
Water Use (Gallons per day)	N/A	N/A	N/A
Water withdrawal (GPD)	N/A	N/A	N/A
Wastewater generation/treatment (GPD)	N/A	N/A	N/A
Length of water mains (miles)	N/A	N/A	N/A
Length of sewer mains (miles)	N/A	N/A	N/A
Has this project been filed with MEPA before? <input type="checkbox"/> Yes (EEA # _____) <input checked="" type="checkbox"/> No			
Has any project on this site been filed with MEPA before? <input type="checkbox"/> Yes (EEA # _____) <input checked="" type="checkbox"/> No			

¹ The existing public roadway is a paved roadway with impervious area around the guardrail. A majority of the project area will be returned to preconstruction conditions. The new sidewalk, retaining walls, and slightly expanded roadway will increase impervious area.

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

The Town of West Newbury and City of Newburyport (the Applicants) are planning to replace the structurally deficient, undersized bridge (Bridge No. N-11-007) which carries Middle Street and Plummer Spring Road, respectively, over the Artichoke River / Upper Artichoke Reservoir (hereby referred to as “the bridge”), in Newburyport and West Newbury, MA. The bridge is structurally deficient due to undermining of the existing roadway foundation. The

Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment with a slight increase in width to safely accommodate pedestrian use. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The project is largely an in-kind replacement with a project footprint increase of just under 10%.

Describe the existing conditions and land uses on the project site:

West Newbury is located on the northwestern side of the bridge, and Newburyport is on the eastern side. Plummer Spring Road, Newburyport turns into Middle Street upon entering West Newbury. The project site is approximately 2,000 feet west of the intersection with Turkey Hill Road, Newburyport and approximately 0.7 mile east of the intersection with Garden Street, West Newbury. The crossing occurs within the Upper Artichoke Reservoir, a public water supply. The surrounding area is comprised of Article 97 lands, reserved for water supply protection. Beyond that, the area is generally characterized by low-density residential development. The bridge predates and divides the existing Upper Artichoke Reservoir, through which the Artichoke River flows. The Reservoir was originally formed by damming the Artichoke River which flows north to the Merrimack River. While the majority of the surrounding area consists of residential development and forested land, the project area is limited to previously disturbed Riverfront Area and other resource areas encumbered by the existing bridge. Please refer to Project Mapping (**Attachment B**) for additional details

Without the impediment of two dams, the Artichoke River generally flows in a south-to-north orientation from the Upper Artichoke Reservoir to the Lower Artichoke Reservoir, before discharging into the Merrimack River, 1.3 miles north of the project area. According to the USGS Stream Stats Report for this area, the drainage area at the bridge crossing is approximately 5.48 square miles.

The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. Please refer to Project Site Plans (**Attachment B**) for additional details. The road and stone arch bridge were constructed in 1891 before the Upper Artichoke Reservoir was built. The low chord on the existing arch is set at an elevation of 16.20 feet. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10-feet for a total roadway width of approximately 20-feet. There are no sidewalks on the bridge. The bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. The project area consists of country drainage, whereby runoff travels to the approach roadway and informally runs off down the side slopes. Middle Street / Plummer Spring Road is functionally classified as a Rural Local road.

Based on a desktop review and preliminary field reconnaissance, the following resource areas, buffer zones, and environmental constraints are located within and in vicinity of the Project area:

- Land Under Water
- Bank
- 100-foot Buffer Zone to Bank
- 200-foot Riverfront Area
- Bordering Land Subject to Flooding
- Outstanding Resource Water

There are no other sensitive resource areas overlapping with the proposed Project area such as Natural Heritage and Endangered Species Program (NHESP) Priority or Estimated Habitat, NHESP Certified or Potential Vernal Pools (C/PVPs), or Areas of Critical Environmental Concern (ACEC). Please see the Project Narrative for further details of resource areas.

Describe the proposed project and its programmatic and physical elements:

The purpose of the project is to replace a structurally deficient, undersized bridge with a new bridge along a similar horizontal and vertical alignment. The project activities include the replacement of the bridge over the Upper Artichoke Reservoir in its entirety. The full sequence of project construction activities will take approximately 20 months to complete. The project involves mitigation measures intended to address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The roadway width will increase by approximately 4 feet to include safety improvements to the existing alignment. A safety sidewalk will be added to the south side of the bridge. Approach roadway reconstruction of Middle Street will extend 160-feet to the west of the bridge and 115-feet to the east on Plummer Spring Road. The total length of the project is approximately 320-feet. The following project components detail the proposed project activities. Please refer to Project Site Plans (**Attachment B**) for additional details.

- **Proposed Bridge** – The proposed bridge is a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The proposed span length will increase from the 14 feet to 45 feet. The overall width of the bridge will increase from 24.2 feet to 32.5 feet to accommodate safety improvements, including the sidewalk. In addition to substantially increasing the openness ratio, the increased span eliminates the need for the bridge’s substructure to be located in the deep portion of the reservoir. In accordance with the MassDOT Bridge Manual for a Rural Local road, the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event since the reservoir dam system regulates the amount of flow in nearly all storms. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing condition.
- **Riprap Scour Protection** –With the increased span, to achieve a 1:1.5 vertical: horizontal ratio from the elevation of the existing streambed to the elevation at the new bridge abutments, slope stabilization is required. The slope stabilization will consist of a 36-inch-deep layer of variable sized riprap (10- to 22-inch stones) placed below the natural streambed material. In addition, 6 inches of natural streambed material is proposed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.
- **Roadway Reconstruction** – At the approaches of the existing bridge the roadway is narrow and the slopes adjacent to the roadway are steep making the existing guardrail ineffective. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable. However, in areas where slopes with a 1:1.5 vertical: horizontal ratio or less exist, they will be regraded (without impacting the reservoir).
- **Installation of Guardrail and Repaving Activity** – Bridge replacement activities provide an opportunity to make safety improvements to existing conditions surrounding the bridge. The existing functional roadway width will expand from approximately 20-feet to 24-feet wide over the bridge. The widened roadway will meet the existing roadway width at the limits of the project. The approaches to the bridge will be repaved following the completion of project activities. Extended steel guardrail is proposed along the approaches to the bridge to replace existing non-functioning guardrail posts. While these activities will occur within the limits of RFA and BLSF, these areas are currently disturbed and the work within these areas will not adversely affect the resource areas.

Please see the **Project Narrative** for full details of the work.

The Project is anticipated to result in wetland resource area impacts as follows. Please refer to the **Project Narrative** for further information / description of the exact nature of these impacts:

Resource Area	Impact Type	West Newbury	Newburyport	TOTAL
Land Under Water (LUW)	Permanent	553 sf	431 sf	984 sf
	Permanent Dredge / Fill	39 cy / 17 cy	9 cy / 2 cy	48 cy / 19 cy
	Temporary	443 sf	198 sf	641 sf
	Temporary Dredge / Fill	28 cy / 0 cy	22 cy / 0 cy	50 cy / 0 cy
Bank	Permanent	128 lf	54 lf	182 lf
	Temporary	47 lf	14 lf	61 lf
200-foot Riverfront Area (RFA)	Redevelopment	3,203 sf	2,669 sf	5,872 sf
	Permanent	2,060 sf	1,333 sf	3,393 sf
	Temporary	552 sf	702 sf	1,254 sf
Bordering Land Subject to Flooding (BLSF)	Proposed Alteration (sf)	167 sf	44 sf	211 sf
	Proposed Replacement	311 sf	344 sf	655 sf
	Flood Storage Lost (cf)	393 cf	132 cf	525 cf
	Flood Storage Replaced	1,438 cf	1,857 cf	3,295 cf

The entire project area, 21,379 sf (0.49 ac), is located within/adjacent to an ORW. Impacts due to construction are temporary in nature. The bridge has been closed to vehicles since the middle of 2018 for safety so there will be no disruption to local traffic as a result of the project; however, some additional indirect impacts in the project area will include erosion/sedimentation, noise during construction, and possibly some fugitive dust. No significant long-term impacts are anticipated. The project will have many long-term benefits by creating a greater -bridge span, safe pedestrian facilities, greater openness, increased habitat connectivity and improved wildlife passage, and serving the public interest by fixing a road with a structurally deficient, undersized bridge that has been closed to public access, while minimizing environmental impacts to the extent practicable.

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

Please refer to **Section 2 Alternatives Analysis** in the **Project Narrative** and a Stream Crossing Evaluation / Alternatives Analysis in **Attachment E**, which includes additional information on the following alternatives:

- Alternative #1 – No-Build Alternative.
- Alternative #2 – Three-sided Open Bottom Bridge with a precast concrete rigid frame
- Alternative #3 – Open Bottom Arch Bridge with precast concrete arch.
- Alternative #4 – Three-sided Open Bottom Bridge with a precast concrete beam, Preferred Alternative

NOTE: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and

alternative site configurations.

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

Mitigation is discussed throughout the **Project Narrative** and presented comprehensively in **Section 6 Mitigation**. This section focuses on addressing the limited constructed-related impacts associated with removal and replacement of the new bridge and required riprap for the protection of the abutments/wingwalls. The proposed design incorporates retaining walls to minimize impacts to the surrounding Reservoir and proposes stormwater treatment for the roadway, as none currently occurs. As the purpose is to replace a failed bridge on a noticed evacuation route, no other viable option for the structure is possible.

BMPs will consistently be implemented and policies for access and construction to ensure that trained personnel work in a manner that minimizes potential impacts to the environment, adheres to permit conditions, and meets industry standards. Throughout the design and permitting process, the applicant will identify work procedures and indicate on Project drawings erosion and sediment control barriers, the dewatering locations, and restoration procedures following construction. Material stockpiling, where required, will only be implemented within the identified project area, and will in occur with industry standard BMPs. Implementation of mitigation measures and Best Management Practices (BMPs) will avoid and minimize potential temporary impacts associated with Project construction.

If the project is proposed to be constructed in phases, please describe each phase:

The construction phases are described in the attached **Project Narrative and Plans (Attachment B)**.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

Yes (Specify _____) No

if yes, does the ACEC have an approved Resource Management Plan? ___ Yes __ No;

If yes, describe how the project complies with this plan.

Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes __ No;

If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

RARE SPECIES:

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see

http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/priority_habitat/priority_habitat_home.htm)

Yes (Specify: _____) No

HISTORICAL /ARCHAEOLOGICAL RESOURCES:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

Yes (Specify: See the **Historical and Archaeological Resources Section** of this ENF form) No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? Yes (Specify: See the **Historical and Archaeological Resources Section** of this ENF form) No

Review of MACRIS identified that there are no historic or cultural resources within the project vicinity, and for over 0.4 miles from the existing bridge crossing. The Walter Drescher Farmhouse is approximately 0.4 miles west of the crossing. There are no proposed impacts to this site. Please see **Section 3 of the Project Narrative** for further details. Please also see **Attachment D** for a copy of the PNF form and cover letter.

WATER RESOURCES:

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? Yes No; if yes, identify the ORW and its location:

The proposed project is for the replacement of a roadway bridge over an existing reservoir; the Upper Artichoke Reservoir is classified as a Class A public water supply.

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? Yes No; if yes, identify the water body and pollutant(s) causing the impairment: N/A

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? Yes No

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

The Project area currently exhibits country drainage whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project and impervious surfaces and run-off volumes will not increase significantly. The proposed design meets the stormwater standard to the maximum extent practicable. As such, a formal Stormwater Management Report has not been prepared for this project, but a streamlined one is included in **Attachment E**.

The lowest point of the project occurs within the roadway on the West Newbury side of the project area. To provide additional treatment, it is proposed that two deep sump catch basins be installed at the low point of the project on either side of the roadway and will flow to a 900-gallon water quality treatment unit. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir onto a stone splash pad at the end of the pipe.

Two deep sump catch basins on either side of the roadway are also proposed in Newburyport, just before the ends of the retaining walls. The deep sump catch basins will flow to a 900-gallon water quality unit. From there runoff is directed south to a flared end section that discharges towards the reservoir onto a stone splash pad.

Roadway berms will direct stormwater to the catch basins, which will increase the amount of stormwater treated on-site before entering the Reservoir and will reduce the amount entering by country drainage. Between the deep sump catch basins and the water quality units, more than 80% of TSS will be removed from runoff captured by the catch basins across the entire project area. Additional information is in **Attachment E**, including specifications and typical details.

BMPs will be employed to minimize erosion and other potential impacts during construction as further described in **Section 5 Construction Procedures**. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable. As such, a formal Stormwater Management Report has not been prepared for this project, but a streamlined Report is included in **Attachment E**.

MASSACHUSETTS CONTINGENCY PLAN:

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes No ; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification): N/A

Closest sites are more than ¾ mile away in Newburyport, and more than 1.3 miles away in West Newbury.

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ No X;
if yes, describe which portion of the site and how the project will be consistent with the AUL: N/A

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN?
Yes ___ No X; if yes, please describe: N/A, none for more than ¾ mile

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:

The Project involves excavation of material that may include metal, stone, and other fill material. Any materials that are determined to require off-site disposal will be disposed of or recycled in accordance with state and federal legal requirements. Refer to **Section 5 Construction Procedures**.

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes ___ No X;
if yes, please consult state asbestos requirements at <http://mass.gov/MassDEP/air/asbhom01.htm>

The Project is not expected to disturb asbestos containing materials. However, should any material suspected of containing asbestos be encountered during the construction phase, a Licensed Site Professional (LSP) will conduct the appropriate assessment to ensure that all materials are handled and legally disposed of in accordance with state and federal legal requirements.

Describe anti-idling and other measures to limit emissions from construction equipment:

M.G.L. c. 90 § 16A and MassDEP regulations 310 CMR 7.11(1)(b) both limit vehicle idling to no more than five minutes. A vehicle may idle longer only if the activity falls into one of the three following categories: 1) vehicles being serviced; 2) vehicles where power is required (e.g., refrigeration trucks); and 3) vehicles that require power to operate accessories (e.g., power lifts). Contractors will be reminded to comply with the applicable regulations.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes ___ No X;
if yes, specify name of river and designation: N/A

If yes, does the project have the potential to impact any of the “outstandingly remarkable” resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River?
Yes ___ No ___; if yes, specify name of river and designation: _____;
if yes, will the project will result in any impacts to any of the designated “outstandingly remarkable” resources of the Wild and Scenic River or the stated purposes of a Scenic River. Yes ___ No ___;
if yes, describe the potential impacts to one or more of the “outstandingly remarkable” resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document.

Attachment A: Project Narrative

Attachment B: Figures, Plans, and Specifications

USGS Site Location Map

Environmental Resources

FEMA Firm Map

Site Photographs

Construction Specifications

Project Plans

Project Details

Attachment C: ENF Circulation List

Attachment D: Agency Correspondence

Order of Conditions from Town of West Newbury Conservation Commission

Order of Conditions from City of Newburyport Conservation Commission

Historical Resources Coordination and related documentation:

Correspondence to the relevant tribes, the Massachusetts Historical Commission (MHC), and the Massachusetts Board of Underwater Archaeological Resources (MBUAR)

USACE Authorization

401 WQC Application - MassDEP Correspondence

Attachment E: Design Analyses

Stream Crossing Evaluation

Hydraulic Report

Streamlined Stormwater Report

2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries. **See Attachment B.**
3. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities. **See Attachment B.**
4. Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts. **See Attachment B.**
5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase). **See Attachment B.**
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2). **See Attachment C.**
7. List of municipal and federal permits and reviews required by the project, as applicable. **See Table 1-2 in the Project Narrative / Attachment A.**

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)) ___ Yes X No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	0	0	0
Internal roadways	0	0	0
Parking and other paved areas ¹	6,794 sf (0.16 acres)	+ 858 sf (0.02 acres)	7,652 sf (0.18 acres)
Other altered areas ²	174 sf (0.004 ac)	+ 1,241 sf (0.03 acres)	1,415 sf (0.03 acres)
Undeveloped areas ³	14,411 sf (0.33 acres)	- 2,099 sf (0.05 acres)	12,312 sf (0.28 acres)
Total: Project Site Acreage	21,379 sf (0.49 ac)		21,379 sf (0.49 ac)

¹ The existing roadway is paved within the project location. The proposed bridge, roadway, shoulders, and sidewalk will be paved to protect the new structures.

² The existing shoulders and riprap slopes make up the remaining altered portions of the existing project area. A portion of these areas will become paved, and a portion of the existing undeveloped channel of the Reservoir will be newly riprapped for scour protection with the widening of the bridge span. Additionally, some of the vegetated slopes, minor amounts of LUW will be replaced by retaining walls to provide road and bridge stability.

³ Existing undeveloped areas occur within the existing channel and within the Reservoir itself, and a portion of these areas will receive riprap for scour protection at the abutments and portions of the slope will be supported by retaining walls. Vegetated slopes will remain undisturbed to the extent practicable.

B. Has any part of the project site been in active agricultural use in the last five years?
___ Yes X No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use? N/A

C. Is any part of the project site currently or proposed to be in active forestry use?
___ Yes X No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation: N/A

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes X No; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction?
X Yes ___ No; if yes, does the project involve the release or modification of such restriction?
___ Yes X No; if yes, describe:

The Project occurs entirely within the existing City/Town / transportation easement / right-of-way. However, the project occurs adjacent to open space and Article 97 lands, reserved for water supply protection. A small portion of which overlaps the existing roadway layout. The proposed project will

not impact or interfere in any way with the open space / Article 97 lands. Fixing the existing roadway will reduce erosion from the failing infrastructure and improve stormwater quality.

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes X No; if yes, describe: N/A

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No X; if yes, describe: N/A

III. Consistency

A. Identify the current municipal comprehensive land use plan

Title: *Newburyport Master Plan*

Date: 2017

<https://www.cityofnewburyport.com/sites/g/files/vyhlf3521/f/uploads/2017-master-plan-final-printed-version-w-adoption-dates.pdf>

Title: *Town of West Newbury Comprehensive Plan*

Date: Sept 1999

https://www.wnewbury.org/sites/g/files/vyhlf1436/f/uploads/west_newbury_comprehensive_plan_1999.pdf

B. Describe the project's consistency with that plan with regard to:

1). economic development:

Infrastructure improvements provide for easier movements for goods and services around West Newbury and Newburyport and provide access for tourism / recreation / scenic viewing (birdwatching, eco-tourism such as scenic views of the Reservoir) where feasible. Specifically, Newburyport identified that infrastructure is high on the list of concerns for businesses, and so in turn, high on the list for the City. Infrastructure improvement has been identified as a top priority. West Newbury, a 96% residential tax base, aims to make strategic infrastructure investments for its community. Replacing the Reservoir bridge in its current state will enable later monies to be spent elsewhere and be more cost-efficient than regular repairs in perpetuity, by developing existing infrastructure in the town now.

2). adequacy of infrastructure:

The proposed project will replace a structurally deficient, undersized bridge that closed to vehicular traffic (2018) as a result. The City of Newburyport's Master Plan acknowledges that: "Improved safety, accessibility, connectivity, and environmental awareness are important transportation priorities." Additionally, the City is "making a concerted effort to expand its sidewalk network." West Newbury's Plan aims to "encourage connected streets wherever appropriate" and to "implement road design that makes neighborhoods more accessible to one another." The proposed project will take an approximately two-lane road which is used two-way travel by vehicles and which lacks any pedestrian facilities, and will add designated pedestrian facilities (safety sidewalk) along the bridge with an upgraded roadway design.

3). open space impacts:

The project is consistent with goals to protect and preserve natural resource areas and ensure no net loss of total wetlands. Compensation for permanent impacts to wetlands will occur on-site. The Middle Street / Plummer Spring Street bridge was constructed before the Artichoke Reservoir was ever built. The adjacent protected parcels, the Upper Artichoke Reservoir Conservation Area to the southwest (West Newbury) and the Artichoke River Watershed to the east (Newburyport), will not

be impacted by the proposed project. Construction impacts will only occur within the existing town roadway layout and will be returned to preconstruction conditions to the extent practicable. Construction will not impede the function of the open space area. The reservoir is a “major drinking-water source for Newburyport” (and West Newbury); and “with its forested and marshy banks, offers valuable wildlife habitat,” as well as wetlands and land for flood control, it represents important open space for the City and Town. Rebuilding the structurally deficient bridge will allow for continued passive recreational access and use, with safety in mind for pedestrians. Newburyport Master Plan goals include protecting lands used for water protection, flood control, heritage landscapes, and to “maintain and improve...[lands] so that the community is able to access and enjoy both active and passive recreational opportunities.” West Newbury’s Plan Goal and Objective is to “protect, preserve, and enhance views of open spaces from roadways.” The project will contribute to these goals.

4) compatibility with adjacent land uses

Plummer Spring Road and Middle Street are public roads that cross the Artichoke Reservoir. The adjacent open space parcels and project area itself will benefit from improvements in the openness and habitat connectivity provided by a new roadway bridge over the Reservoir, especially during flooding events which could increase siltation on the adjoining parcels. The parcels adjacent to the roadway layout are protected open space parcels (municipal Article 97 lands, for the expressed purpose of watershed / water supply protection) which will not be impacted directly by the construction. Work will occur entirely within the town roadway layout.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)

RPA: Merrimack Valley Regional Planning Commission

Title: 2018-2023 Merrimack Valley Comprehensive

Date: June 2018

Economic Development Strategy (CEDS)

Title: 2020 Merrimack Valley Regional Transportation Plan (RTP) Date: July 2019

D. Describe the project’s consistency with that plan with regard to:

1) economic development

The CEDS Report identified economic resiliency as a top priority. Shoring-up the road that bisects an important water source for multiple towns certainly falls into this category. As one of the only three crossings of the Artichoke River and Reservoir, this road that is currently closed to traffic necessitates lengthy detours for goods and services and adds to congestion on other roads.

2) adequacy of infrastructure

The CEDS report identifies goals to “increase the number of people who live and work in the Merrimack Valley” and to “improve existing transit infrastructure.” By replacing the bridge now, the town ensures productive infrastructure to support transportation, enhance Complete Streets on the bridge, and ensure safe water supplies for an increased population. As one of the only three crossings of the Artichoke River and Reservoir, this road that is currently closed to traffic necessitates lengthy detours for goods and services and adds to congestion on other roads.

3) open space impacts

The project is consistent with the plan’s goal to “protect open spaces for our natural and human environments to thrive.” The project aims to reduce congestion and air pollution by shortening detours should this bridge stay closed. Fixing the bridge and providing pedestrian facilities would allow the public to utilize the bridge once

again. The project also proposes to create a wider-bridge span, which will provide greater openness, increased habitat connectivity and improved wildlife passage for a net benefit to the existing open space.

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___ Yes X No; if yes, specify, in quantitative terms:

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

B. Does the project require any state permits related to **rare species or habitat**? ___ Yes X No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes X No

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes ___ No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? ___ Yes ___ No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes ___ No; if yes, attach the letter of determination to this submission.

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes ___ No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts

3. Which rare species are known to occur within the Priority or Estimated Habitat?

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes ___ No

5. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes ___ No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes ___ No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? Yes No; if yes, specify, in quantitative terms:

- 301 CMR 11.03 (3)(b)c. c. alteration of 1,000 or more sf of ... outstanding resource waters: 984 sf Permanent Impacts, 885 sf (gain through openness), 641 sf temporary impacts

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? Yes No; if yes, specify which permit:

- Individual 401 WQC for work within an ORW

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? Yes No; if yes, has a Notice of Intent been filed)? Yes No; if yes, list the date and MassDEP file number: West Newbury filed January 4, 2021 (MassDEP File Number 078-0724); Newburyport filed January 11, 2021 (MassDEP File Number 051-1047); if yes, has a local Order of Conditions been issued? Yes No; Was the Order of Conditions appealed? Yes No. Will the project require a Variance from the Wetlands regulations? Yes No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

Project-related activities will result in various temporary and permanent impacts to jurisdictional wetland resource areas (Bank, Land Under Water, 100-foot Buffer to Bank, 200-foot Riverfront Area, and Bordering Land Subject to Flooding). The work will occur within the limits of existing roadway right-of-way layout and will be limited to the minimum amount of in-water work required. Temporary impacts are generally associated with the installation of water control/dewatering and erosion control best management practices which will be restored to preconstruction conditions to the extent practicable. Permanent impacts are associated with the installation of the new bridge infrastructure and retaining walls and riprap for scour protection. These impacts are discussed in detail in **Section 4 Wetlands and Waterways**. Throughout Project construction activities, BMPs will be implemented to prevent inadvertent impacts to resource areas.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

<u>Coastal Wetlands</u>	<u>Area (square feet) or Length (linear feet)</u>	<u>Temporary or Permanent Impact?</u>
Land Under the Ocean	<u>0</u>	<u>N/A</u>
Designated Port Areas	<u>0</u>	<u>N/A</u>
Coastal Beaches	<u>0</u>	<u>N/A</u>
Coastal Dunes	<u>0</u>	<u>N/A</u>
Barrier Beaches	<u>0</u>	<u>N/A</u>
Coastal Banks	<u>0</u>	<u>N/A</u>
Rocky Intertidal Shores	<u>0</u>	<u>N/A</u>

Salt Marshes	0	N/A
Land Under Salt Ponds	0	N/A
Land Containing Shellfish	0	N/A
Fish Runs	0	N/A
Land Subject to Coastal Storm Flowage	0	N/A
Tidal Flats	0	N/A

<u>Inland Wetlands</u>	<u>Area (square feet) or Length (linear feet)</u>	<u>Temporary or Permanent Impact?</u>
Bank (lf)	182 LF	Permanent
Bank (lf)	61 LF	Temporary
Bordering Vegetated Wetlands	0	Permanent
Bordering Vegetated Wetlands	0	Temporary
Isolated Vegetated Wetlands	0	N/A
Land under Water	984 SF	Permanent
Land under Water	885 SF	GAIN
Land under Water	641 SF	Temporary
Isolated Land Subject to Flooding	0	N/A
Bordering Land Subject to Flooding	211 SF	Alteration
Bordering Land Subject to Flooding	655 SF	Replacement
Riverfront Area	5,872 SF	Redevelopment
Riverfront Area	3,393 SF	Permanent
Riverfront Area	1,254 SF	Temporary

D. Is any part of the project:

1. proposed as a **limited project**? Yes ___ No; if yes, what is the area (in sf)?

The entire Project area is eligible for limited project status in accordance with:
 --310 CMR 10.53(3)(i): maintenance, repair and improvement (but not substantial enlargement) of (in part) bridges which existed prior to April 1, 1983,
 --310 CMR 10.53(3)(l) construction, reconstruction, operation, or maintenance of water dependent uses.
 310 CMR 10.58 (8) which allows for the replacement of an existing stream crossing while avoiding impacts where possible, and minimizing / mitigating impacts when not

The entire 21,379 sf (0.49 ac) project is proposed as a limited project.

2. the construction or alteration of a **dam**? ___ Yes No; if yes, describe:

3. fill or structure in a **velocity zone** or **regulatory floodway**? ___ Yes No

4. dredging or disposal of dredged material? Yes ___ No; if yes, describe the volume of dredged material and the proposed disposal site:

<u>Inland Wetlands</u>		
Land under Water	48 CY	Permanent
Land under Water	50 CY	Temporary

Excess material will be disposed of off-site at a location to be determined by the City of Newburyport and the Town of West Newbury.

5. a discharge to an Outstanding Resource Water (ORW) or an Area of Critical Environmental Concern (ACEC)? Yes ___ No

The project occurs on Middle Street/Plummer Spring Road, on the Upper Artichoke Reservoir, a public water supply Reservoir and ORW. The project area is not within an ACEC. There is no BVW in the project vicinity. Approximately 984 sf of LUW will be permanently impacted with the new bridge, retaining walls for scour protection, and riprap which is required to protect the new bridge. A total of 641 sf of temporary impacts are proposed for dewatering and construction. The proposed openness of the new span will create 885 sf of LUW.

6. subject to a wetlands restriction order? ___ Yes X No; if yes, identify the area (in sf):

7. located in buffer zones? X Yes ___ No; if yes, how much (in sf) Approx. 13,672 sf

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw? X Yes ___ No

While technically subject to Wetland Protection Ordinances by the City of Newburyport and Town of West Newbury, the Applicant has requested, and been granted waivers from each municipalities Bylaw/Ordinance.

2. alter any federally-protected wetlands not regulated under state law? ___ Yes X No; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? ___ Yes X No; if yes, is there a current Chapter 91 License or Permit affecting the project site? ___ Yes ___ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

B. Does the project require a new or modified license or permit under M.G.L.c.91? ___ Yes X No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current ___ Change ___ Total
If yes, how many square feet of solid fill or pile-supported structures (in sf)?

C. For non-water-dependent use projects, indicate the following: N/A

Area of filled tidelands on the site:

Area of filled tidelands covered by buildings:

Does the project include new non-water-dependent uses located over flowed tidelands?

Yes ___ No ___

Height of building on filled tidelands: _____.

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? ___ Yes X No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___ Yes X No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? ___ Yes X No;

(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

G. Does the project include dredging? Yes No; if yes, answer the following questions:

What type of dredging? Improvement Maintenance Both

What is the proposed dredge volume, in cubic yards (cys) _____

What is the proposed dredge footprint: _____

Will dredging impact the following resource areas?

Intertidal Yes No; if yes, _____ sq ft

Outstanding Resource Waters Yes No ; if yes, _____ sq ft

Other resource area (i.e. shellfish beds, eel grass beds) Yes No ; if yes, _____ sq ft

If no to any of the above, what information or documentation was used to support this determination?

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

Sediment Characterization

Existing gradation analysis results? Yes No; if yes, provide results.

Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? Yes No; if yes, provide results.

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Beach Nourishment

Unconfined Ocean Disposal

Confined Disposal:

Confined Aquatic Disposal (CAD)

Confined Disposal Facility (CDF)

Landfill Reuse in accordance with COMM-97-001

Shoreline Placement

Upland Material Reuse

In-State landfill disposal

Out-of-state landfill disposal

(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? Yes No; if yes, describe these effects and the projects consistency with the policies of the office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan? Yes No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___ Yes X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Municipal or regional water supply	_____	_____	_____
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. _____

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? ___ Will the project require an increase in that withdrawal? ___ Yes ___ No; if yes, then how much of an increase (gpd)? _____

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___ No. If yes, describe existing and proposed water supply facilities at the project site:

	<u>Permitted Flow</u>	<u>Existing Avg Daily Flow</u>	<u>Project Flow</u>	<u>Total</u>
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes ___ No
2. a Watershed Protection Act variance? ___ Yes ___ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___ Yes ___ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Discharge of sanitary wastewater	_____	_____	_____
Discharge of industrial wastewater	_____	_____	_____
TOTAL	_____	_____	_____
	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Discharge to groundwater	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Discharge to municipal or regional wastewater facility	_____	_____	_____
TOTAL	_____	_____	_____

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

	<u>Permitted</u>	<u>Existing Avg Daily Flow</u>	<u>Project Flow</u>	<u>Total</u>
Wastewater treatment plant capacity (in gallons per day)	_____	_____	_____	_____

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes ___ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes ___ No; if yes, what is the capacity (tons per day):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Treatment	_____	_____	_____
Processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ___ Yes X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Number of parking spaces	_____	_____	_____
Number of vehicle trips per day	_____	_____	_____
ITE Land Use Code(s):	_____	_____	_____

B. What is the estimated average daily traffic on roadways serving the site?

<u>Roadway</u>	<u>Existing</u>	<u>Change</u>	<u>Total</u>
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? ___ Yes ___ No; if yes, describe if and how will the project will participate in the TMA:

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? ___ Yes ___ No; if yes, generally describe:

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___ Yes X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

B. Will the project involve any

- 1. Alteration of bank or terrain (in linear feet)? _____
- 2. Cutting of living public shade trees (number)? _____
- 3. Elimination of stone wall (in linear feet)? _____

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))?
___ Yes No X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are:
1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ___Yes ___ No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No; if yes, describe existing and proposed emissions (in tons per day) of:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ___ Yes ___ No; if yes, what is the volume (in tons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ___ Yes ___ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?
___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? Yes No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? Yes No; if yes, attach correspondence

A PNF and request for comment were submitted to the relevant tribes, the Massachusetts Historical Commission (MHC), and the Massachusetts Board of Underwater Archaeological Resources (MBUAR) concurrently on January 14, 2021. The only response received was from the MHC, indicating that:

After review of MHC files and the materials you submitted, it has been determined that this project is unlikely to affect significant historic or archaeological resources.

Correspondence submitted to the tribes and agencies is included in **Attachment D: Agency Correspondence**.

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? Yes No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? Yes No; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? Yes No; if yes, does the project involve the destruction of all or any part of such archaeological site? Yes No; if yes, please describe:

A review of the Massachusetts Cultural Resource Information System (MACRIS) and the National Registry of Historic Places in July 2020 did not identify any listed locations within the Project area. One home (WNB.156) exists approximately one-half mile west of the project area on private property. The proposed project will not have any impacts to properties outside of the existing roadway layout. No historical or archaeological resource areas will be impacted or destroyed by the proposed Project.

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

This project will require coverage under the USACE Section 404 Program through Pre-Construction Notification written review as there are proposed impacts to waters of the U.S. (without meeting all stream crossing standards). This federal permit will trigger compliance with Section 106 of the National Historic Preservation Act. The Town of West Newbury, and City of Newburyport will consult and work with MHC as needed to complete the Section 106 process, and as part of the state permitting process. Pursuant to 950 CMR 71. M.G.L. c. 9, § 27C requires that projects that are permitted, licensed, funded, or requiring approval from state bodies be reviewed by the MHC to identify potential impacts to historic and archaeological resources included in the State Register of Historic Places (SRHP).

CERTIFICATIONS:



1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

(Name) The Daily News of Newburyport (Date) July 23, 2021

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

The Circulation List is presented in **Attachment C**.

Signatures:

	July 15, 2021		
Date	Signature of Responsible officer or Proponent	Date	Signature of person preparing ENF (if different from above)

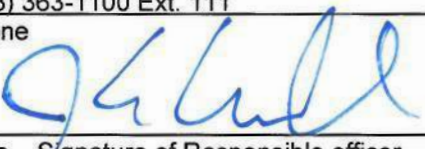
<u>Angus Jennings</u>	<u>Sara Kreisel</u>
Name (print or type)	Name (print or type)

<u>Town of West Newbury</u>	<u>BSC Group, Inc.</u>
Firm/Agency	Firm/Agency

<u>381 Main Street</u>	<u>803 Summer Street</u>
Street	Street

<u>West Newbury, MA 01985</u>	<u>Boston, MA 02127</u>
Municipality/State/Zip	Municipality/State/Zip

<u>(978) 363-1100 Ext. 111</u>	<u>(617) 896-4579</u>
Phone	Phone

	
Date	Signature of Responsible officer or Proponent

<u>Jon-Eric White</u>
Name (print or type)

<u>City of Newburyport</u>
Firm/Agency

<u>16 C Perry Way</u>
Street

<u>Newburyport, MA 01950</u>
Municipality/State/Zip

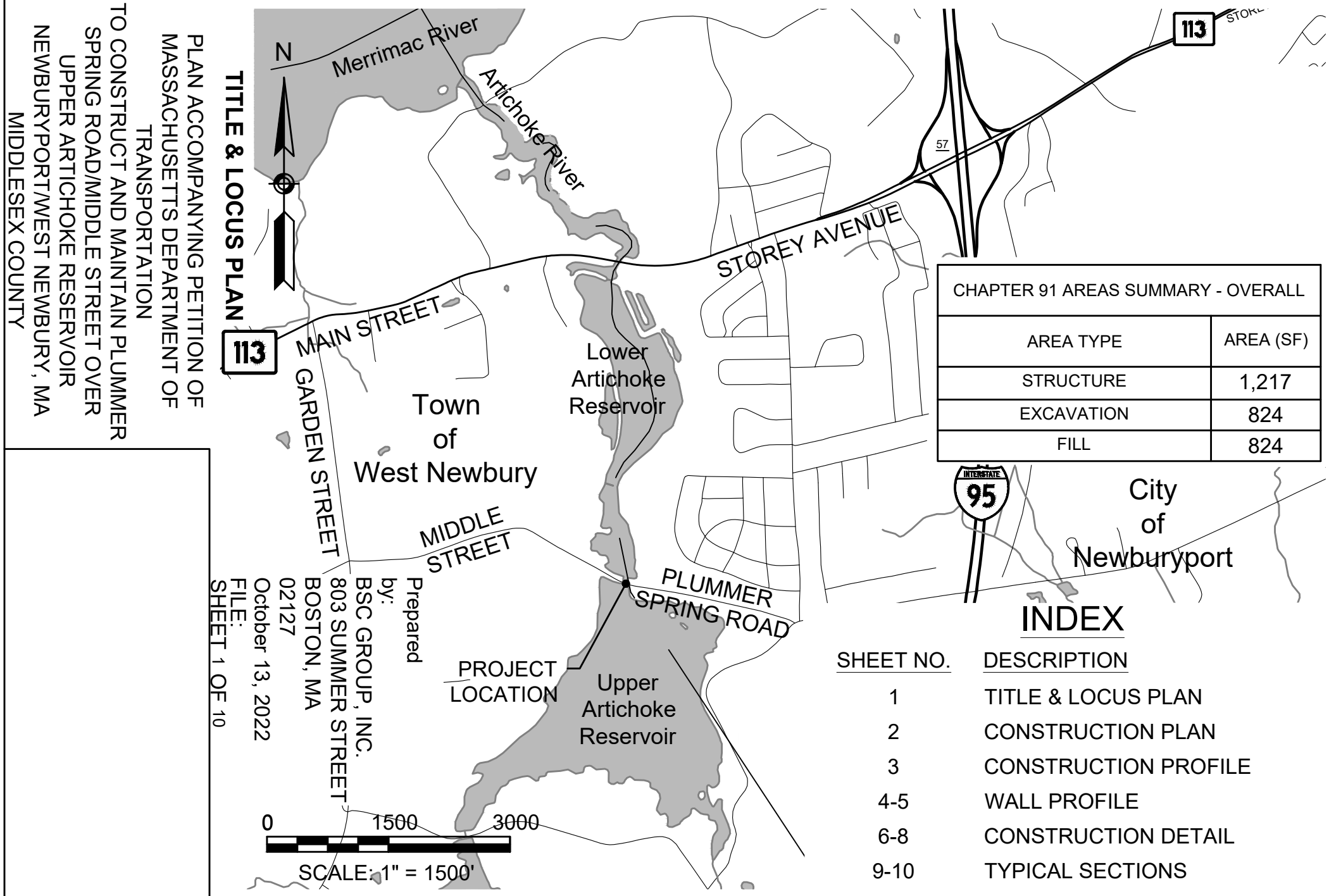
<u>978-465-4464 Ext. 1710</u>
Phone

Attachment G

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir,
West Newbury and Newburyport, MA

Chapter 91 License Application

CHAPTER 91 LICENSE PLANS



TITLE & LOCUS PLAN
113

PLAN ACCOMPANYING PETITION OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO CONSTRUCT AND MAINTAIN PLUMMER SPRING ROAD/MIDDLE STREET OVER UPPER ARTICHOKE RESERVOIR NEWBURYPORT/WEST NEWBURY, MA MIDDLESEX COUNTY

Prepared by:
 BSC GROUP, INC.
 803 SUMMER STREET
 BOSTON, MA 02127
 October 13, 2022
 FILE:
 SHEET 1 OF 10

CHAPTER 91 AREAS SUMMARY - OVERALL

AREA TYPE	AREA (SF)
STRUCTURE	1,217
EXCAVATION	824
FILL	824

INDEX

SHEET NO.	DESCRIPTION
1	TITLE & LOCUS PLAN
2	CONSTRUCTION PLAN
3	CONSTRUCTION PROFILE
4-5	WALL PROFILE
6-8	CONSTRUCTION DETAIL
9-10	TYPICAL SECTIONS

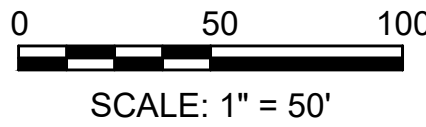
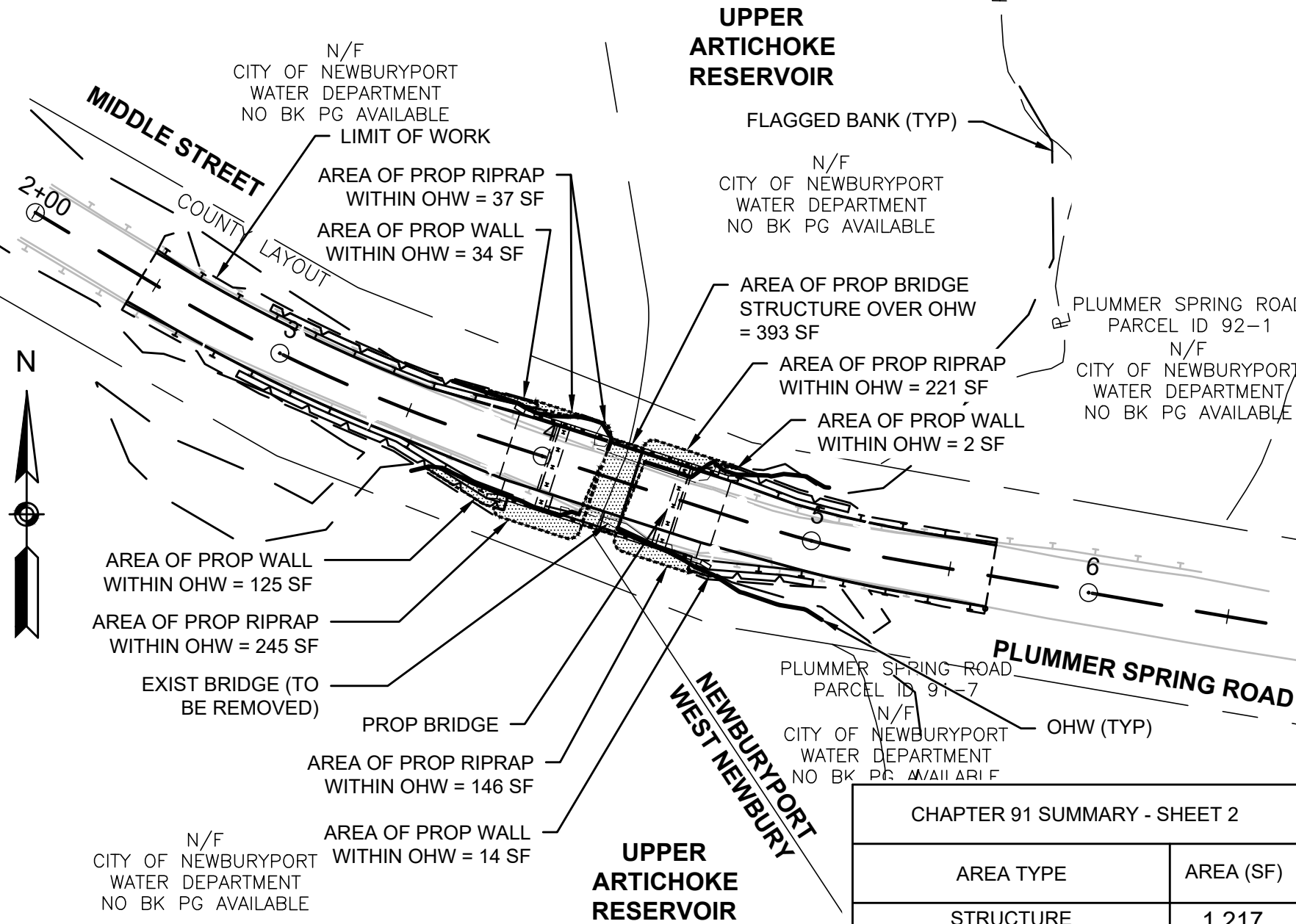
FOR REGISTRY USE ONLY

PLS

DATE

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

PLAN ACCOMPANYING PETITION OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO CONSTRUCT AND MAINTAIN PLUMMER SPRING ROAD/MIDDLE STREET OVER UPPER ARTICHOKE RESERVOIR NEWBURYPORT/WEST NEWBURY, MA MIDDLESEX COUNTY



CHAPTER 91 SUMMARY - SHEET 2	
AREA TYPE	AREA (SF)
STRUCTURE	1,217
EXCAVATION	824
FILL	824

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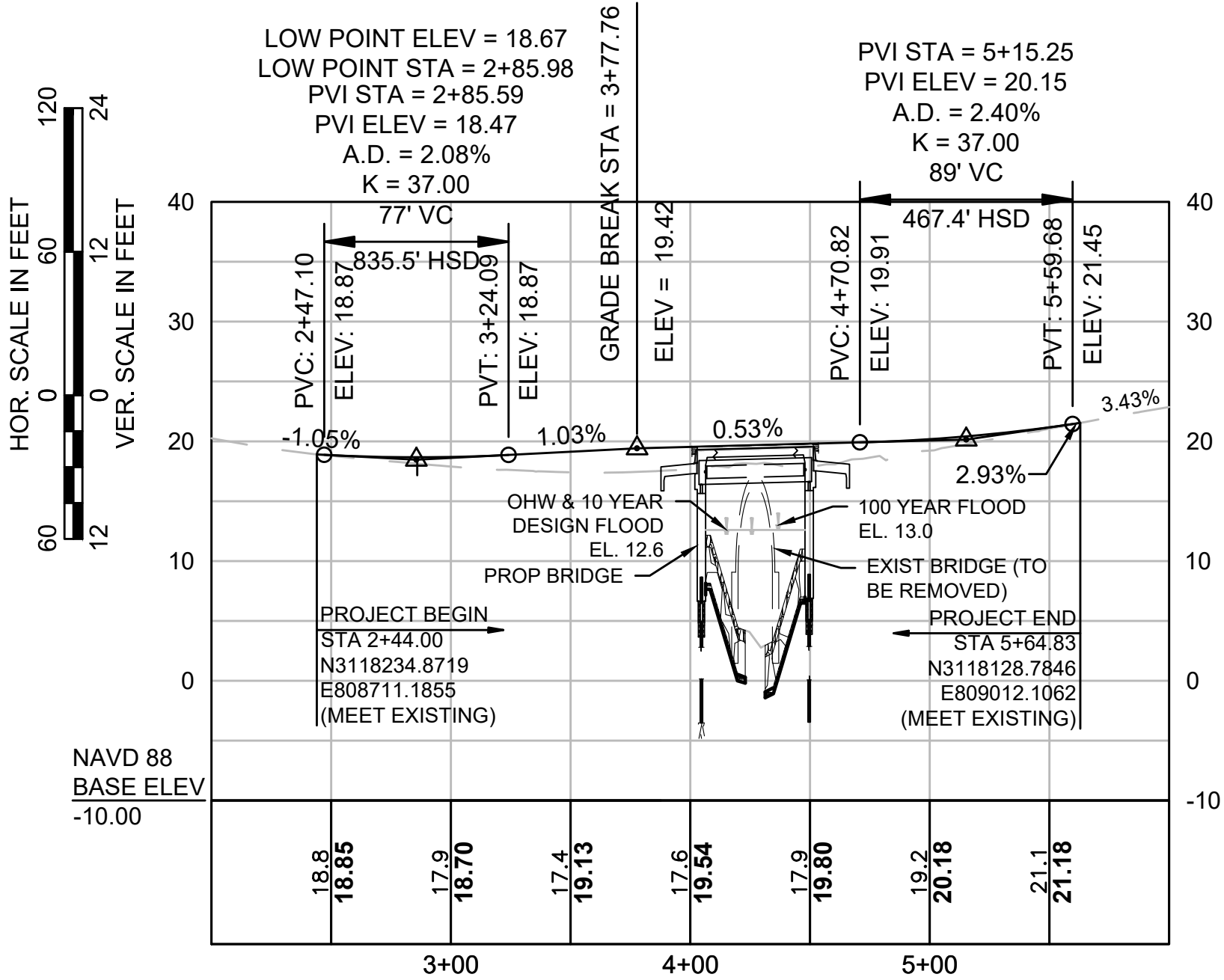
DATE

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

CONSTRUCTION PLAN
FILE:
SHEET 2 OF 10

PLAN ACCOMPANYING PETITION OF
 MASSACHUSETTS DEPARTMENT OF
 TRANSPORTATION
 TO CONSTRUCT AND MAINTAIN PLUMMER
 SPRING ROAD/MIDDLE STREET OVER
 UPPER ARTICHOKE RESERVOIR
 NEWBURYPORT/WEST NEWBURY, MA
 MIDDLESEX COUNTY

CONSTRUCTION PROFILE
 FILE:
 SHEET 3 OF 10



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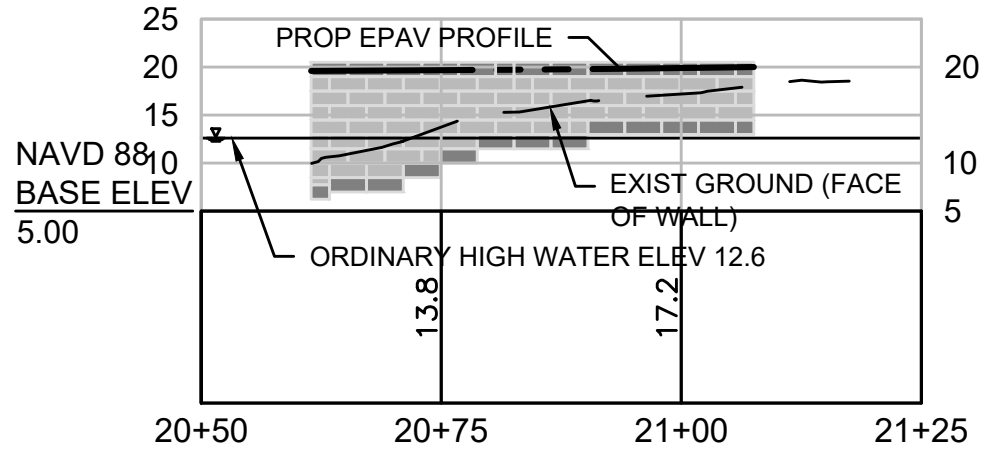
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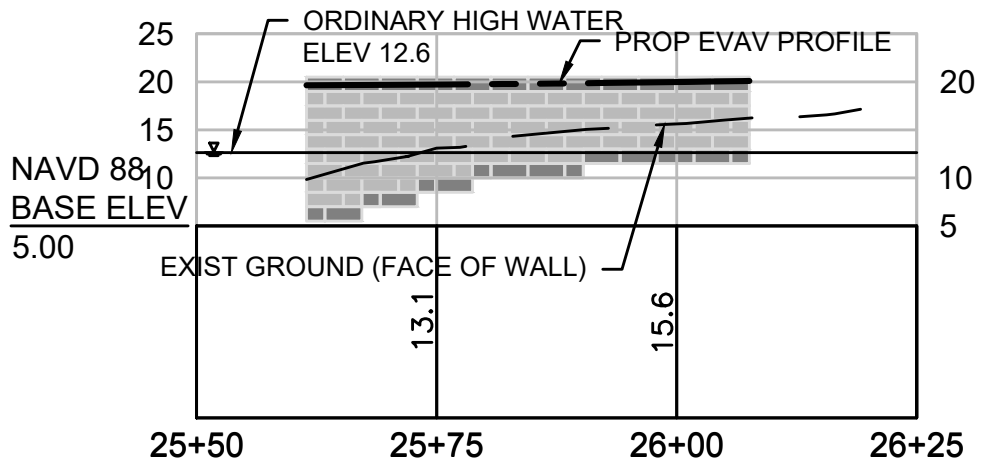
I CERTIFY THAT THIS PLAN CONFORMS TO
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 MASSACHUSETTS DEPARTMENT OF
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 SPRING ROAD/MIDDLE STREET OVER
 UPPER ARTICHOKE RESERVOIR
 NEWBURYPORT/WEST NEWBURY, MA
 MIDDLESEX COUNTY

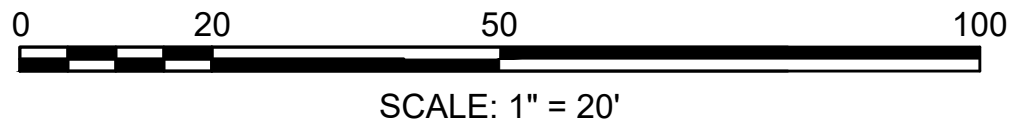
WALL PROFILE
 FILE:
 SHEET 4 OF 10



SOUTHEAST MODULAR BLOCK WALL - ELEVATION VIEW
 SCALE: 1" = 20' HORIZ.
 SCALE: 1" = 20' VERT.



NORTHEAST MODULAR BLOCK WALL - ELEVATION VIEW
 SCALE: 1" = 20' HORIZ.
 SCALE: 1" = 20' VERT.



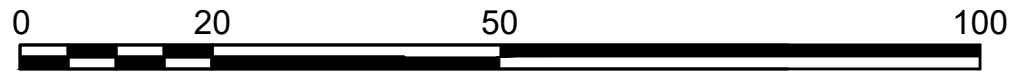
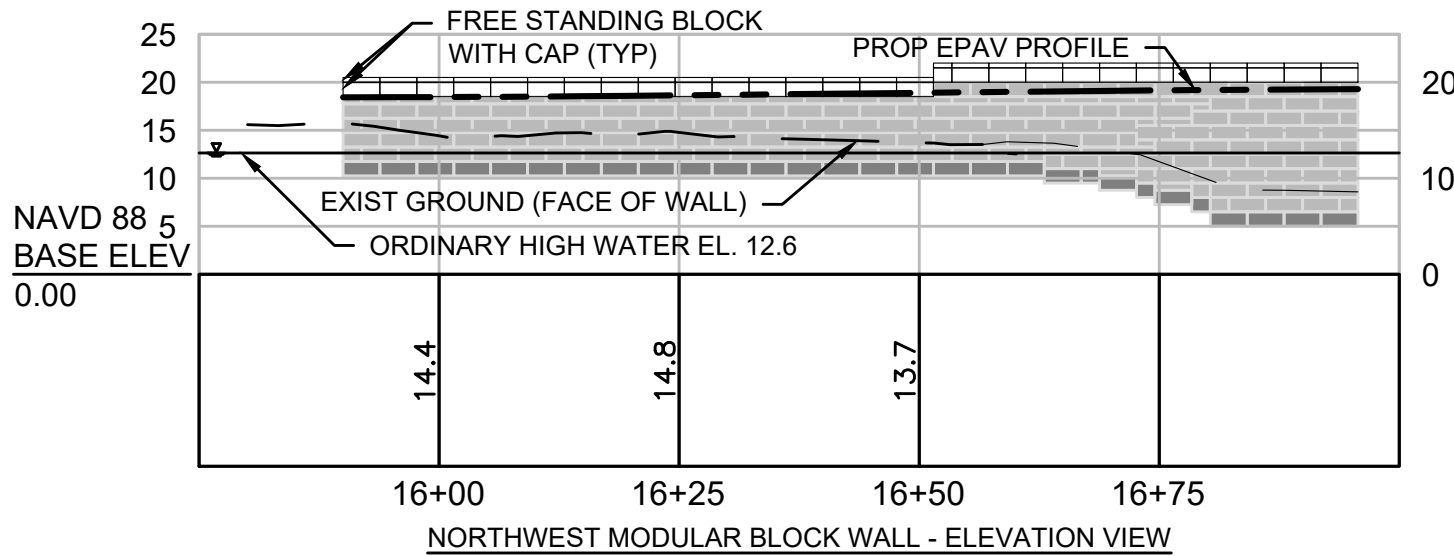
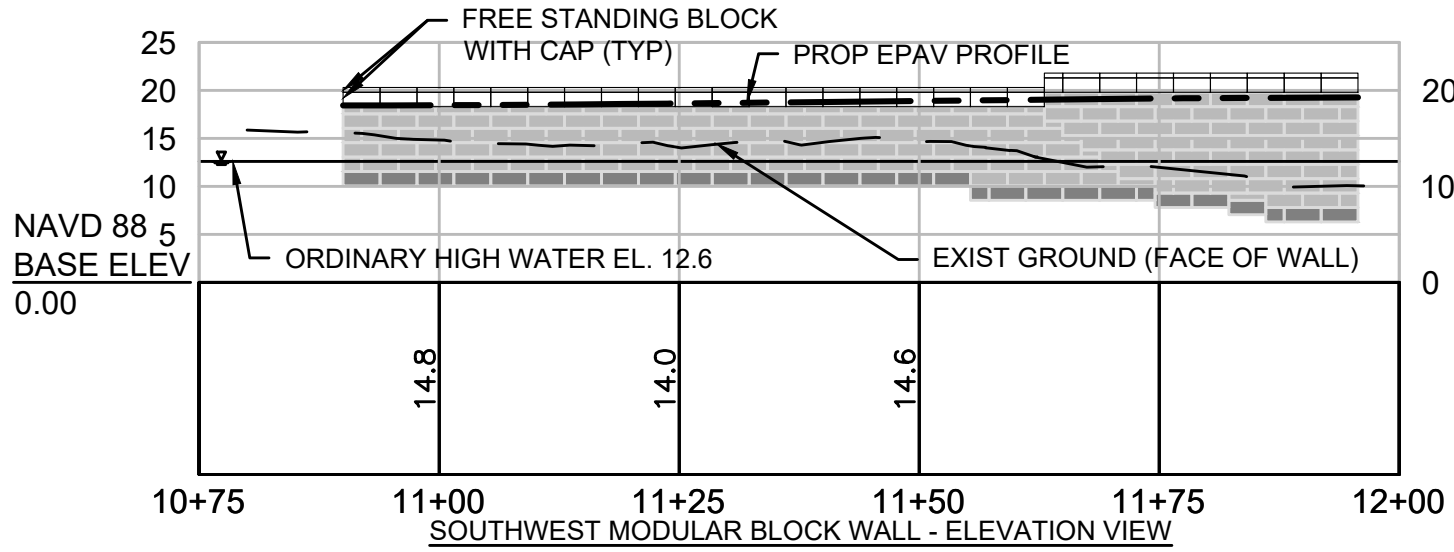
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 MASSACHUSETTS DEPARTMENT OF
 TRANSPORTATION
 TO CONSTRUCT AND MAINTAIN PLUMMER
 SPRING ROAD/MIDDLE STREET OVER
 UPPER ARTICHOKE RESERVOIR
 NEWBURYPORT/WEST NEWBURY, MA
 MIDDLESEX COUNTY



SCALE: 1" = 20'

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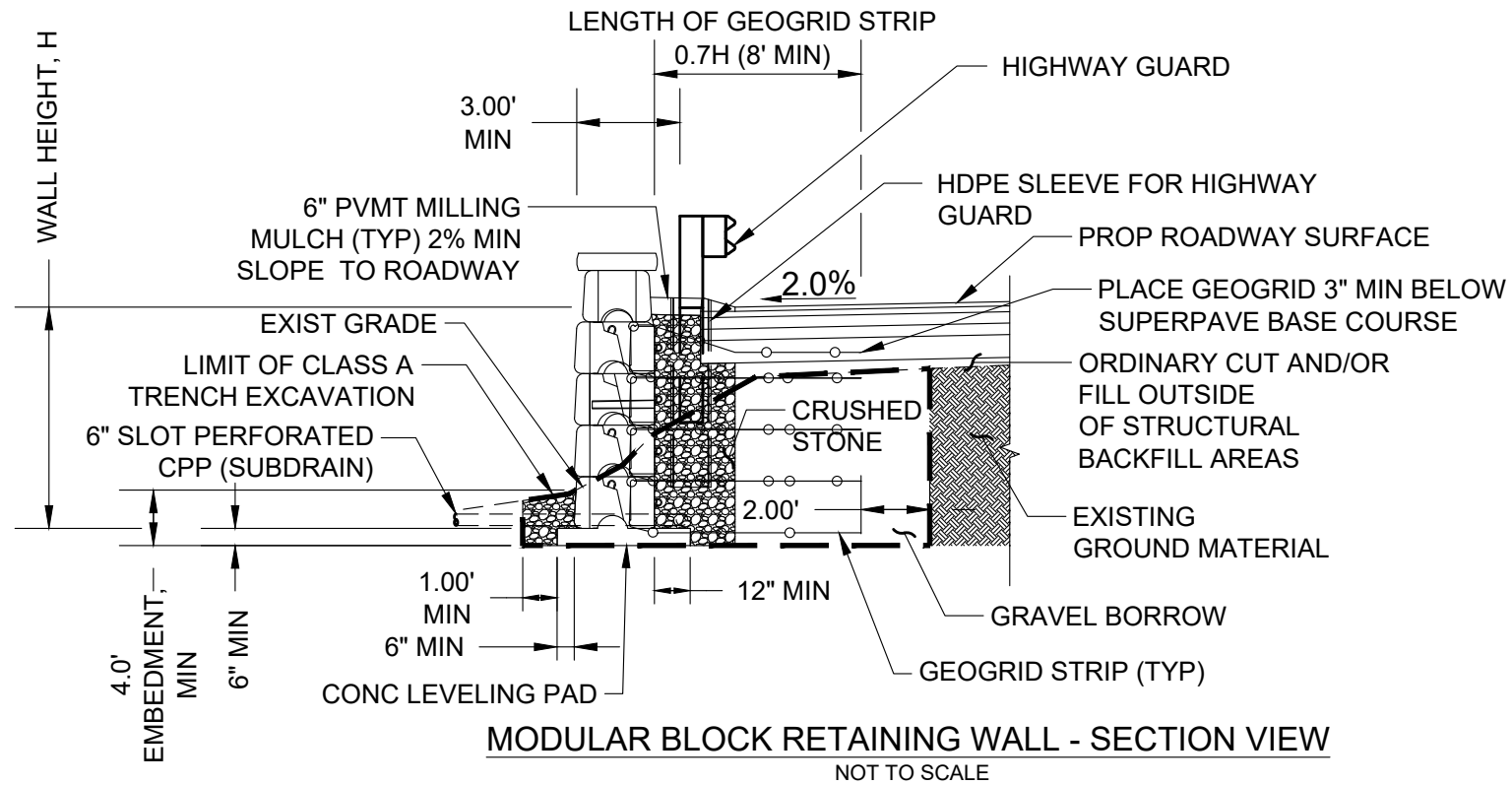
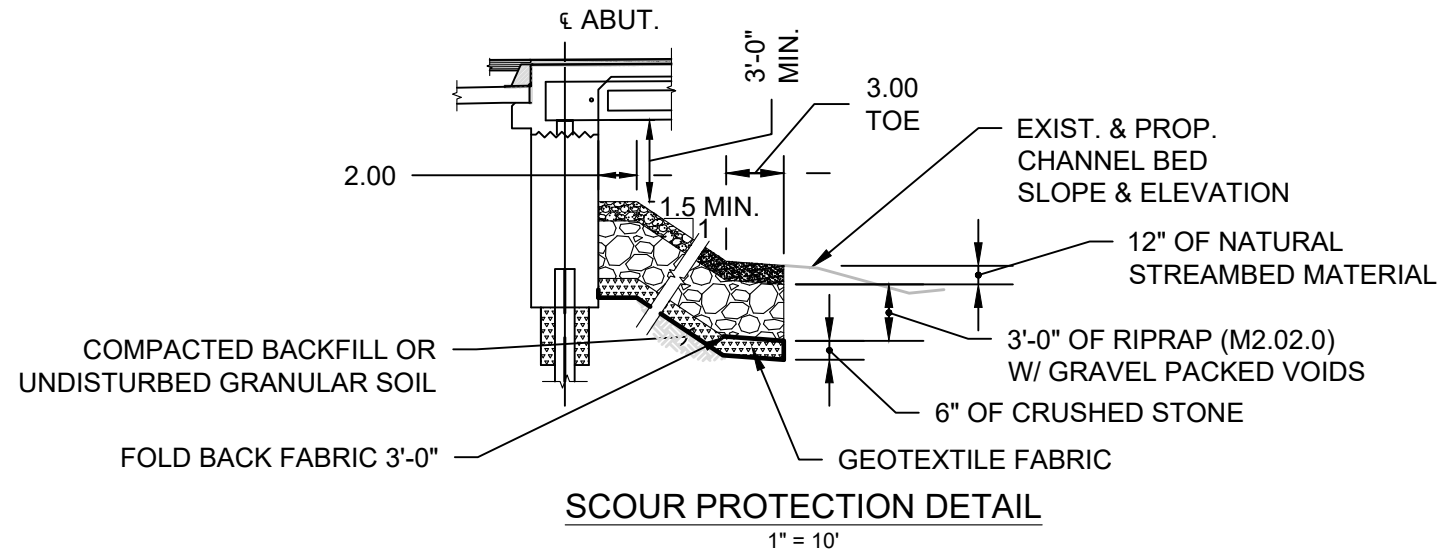
PLS

DATE

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 REGISTERS OF DEEDS

PLAN ACCOMPANYING PETITION OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO CONSTRUCT AND MAINTAIN PLUMMER SPRING ROAD/MIDDLE STREET OVER UPPER ARTICHOKE RESERVOIR NEWBURYPORT/WEST NEWBURY, MA MIDDLESEX COUNTY

CONSTRUCTION DETAIL
FILE:
SHEET 6 OF 10



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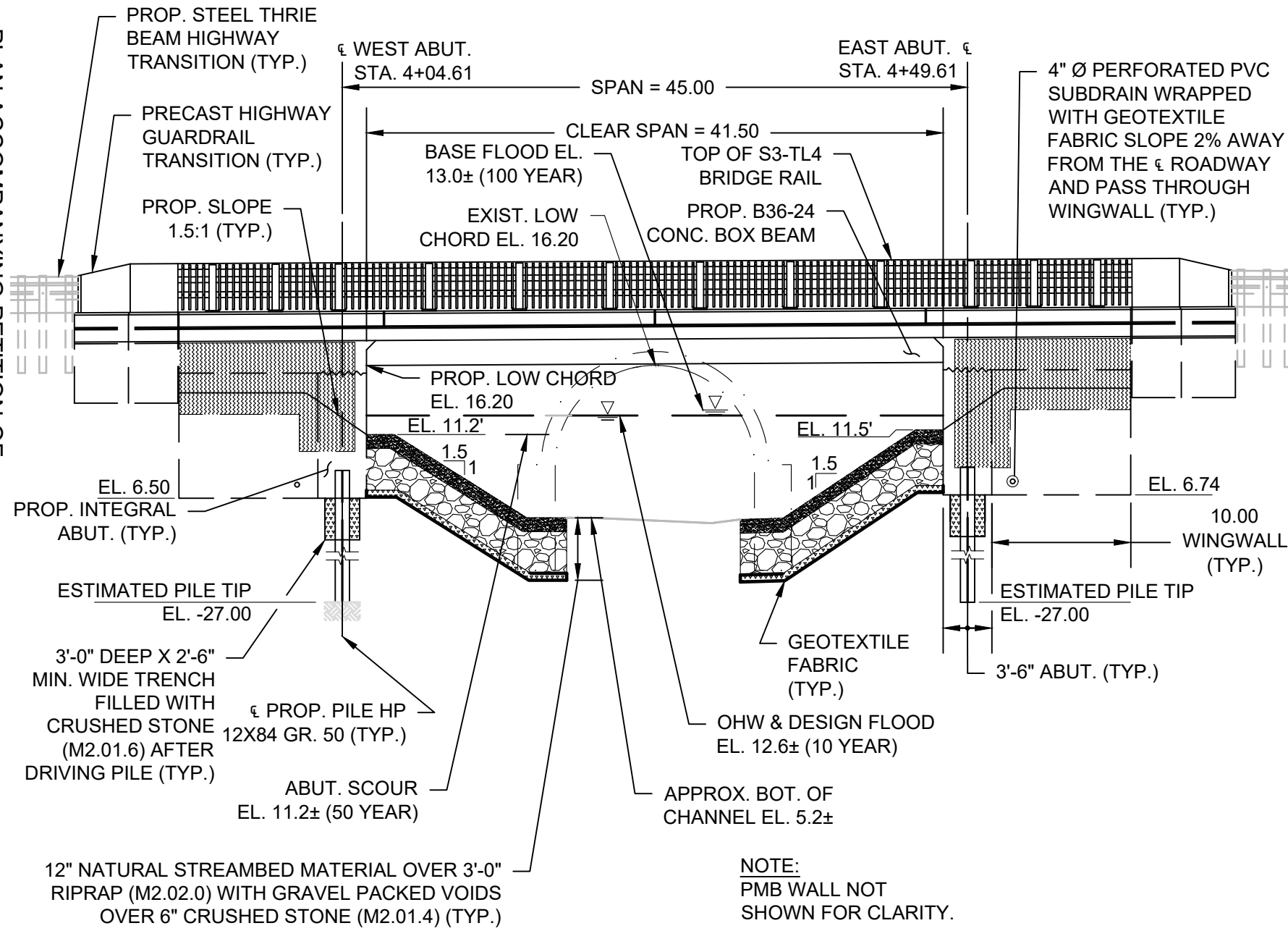
PLS

DATE

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PLAN ACCOMPANYING PETITION OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO CONSTRUCT AND MAINTAIN PLUMMER SPRING ROAD/MIDDLE STREET OVER UPPER ARTICHOKE RESERVOIR NEWBURYPORT/WEST NEWBURY, MA MIDDLESEX COUNTY

CONSTRUCTION DETAIL
FILE:
SHEET 7 OF 10



PROPOSED BRIDGE - SOUTH ELEVATION VIEW
1" = 10'

FOR REGISTRY USE ONLY

PLS

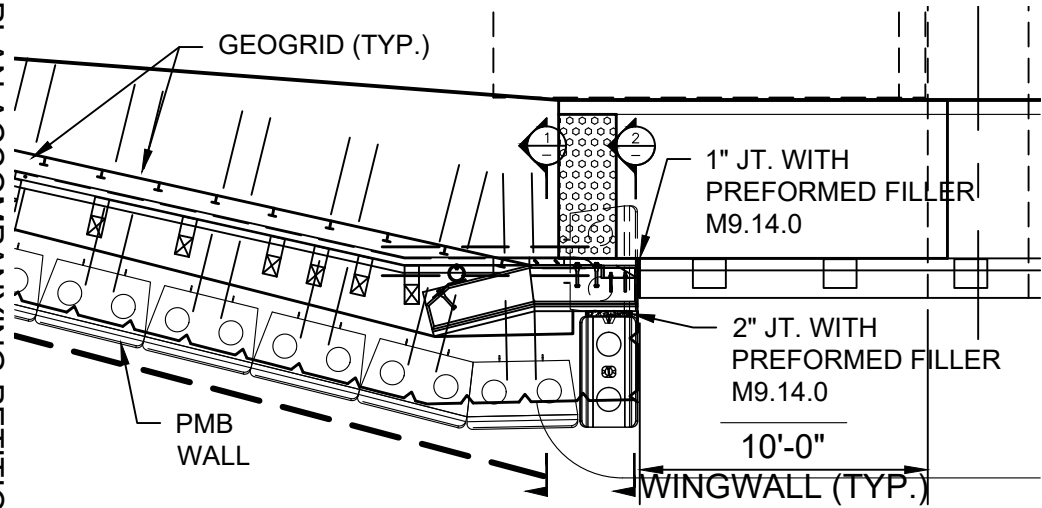
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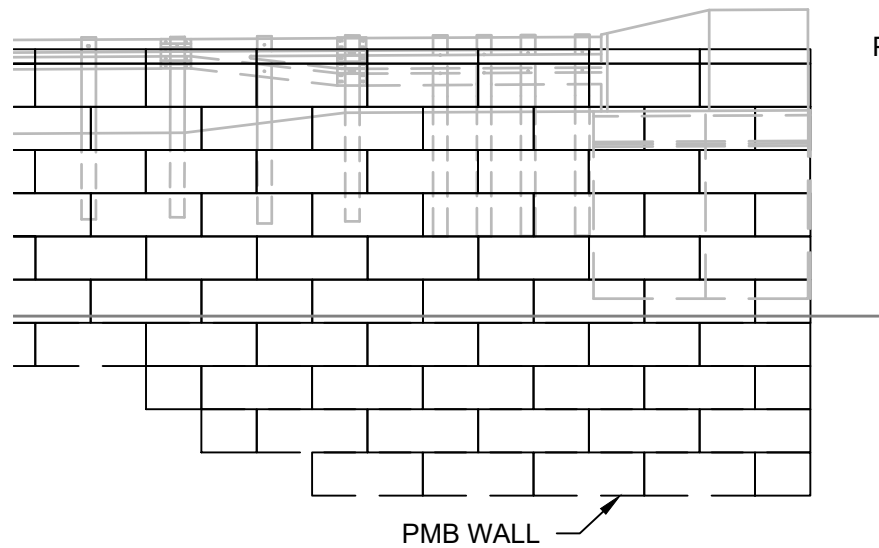
PLAN ACCOMPANYING PETITION OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO CONSTRUCT AND MAINTAIN PLUMMER SPRING ROAD/MIDDLE STREET OVER UPPER ARTICHOKE RESERVOIR NEWBURYPORT/WEST NEWBURY, MA MIDDLESEX COUNTY

CONSTRUCTION DETAIL

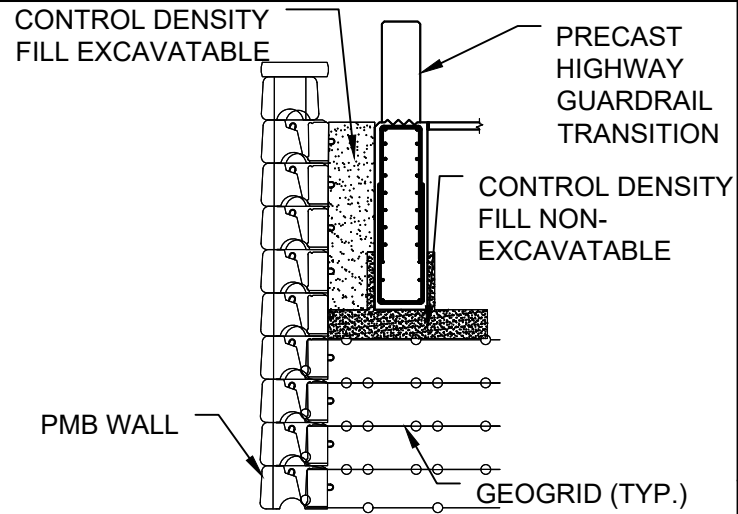
FILE: SHEET 8 OF 10



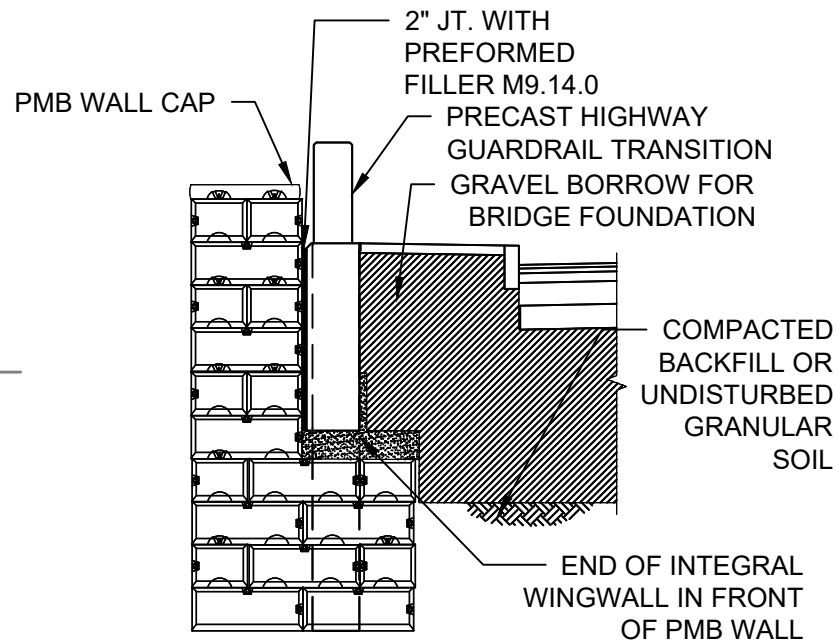
PLAN - PMB WALL NOT TO SCALE



ELEVATION - PMB WALL NOT TO SCALE



SECTION 1 - PMB WALL NOT TO SCALE



SECTION 2 - PMB WALL CORNER NOT TO SCALE

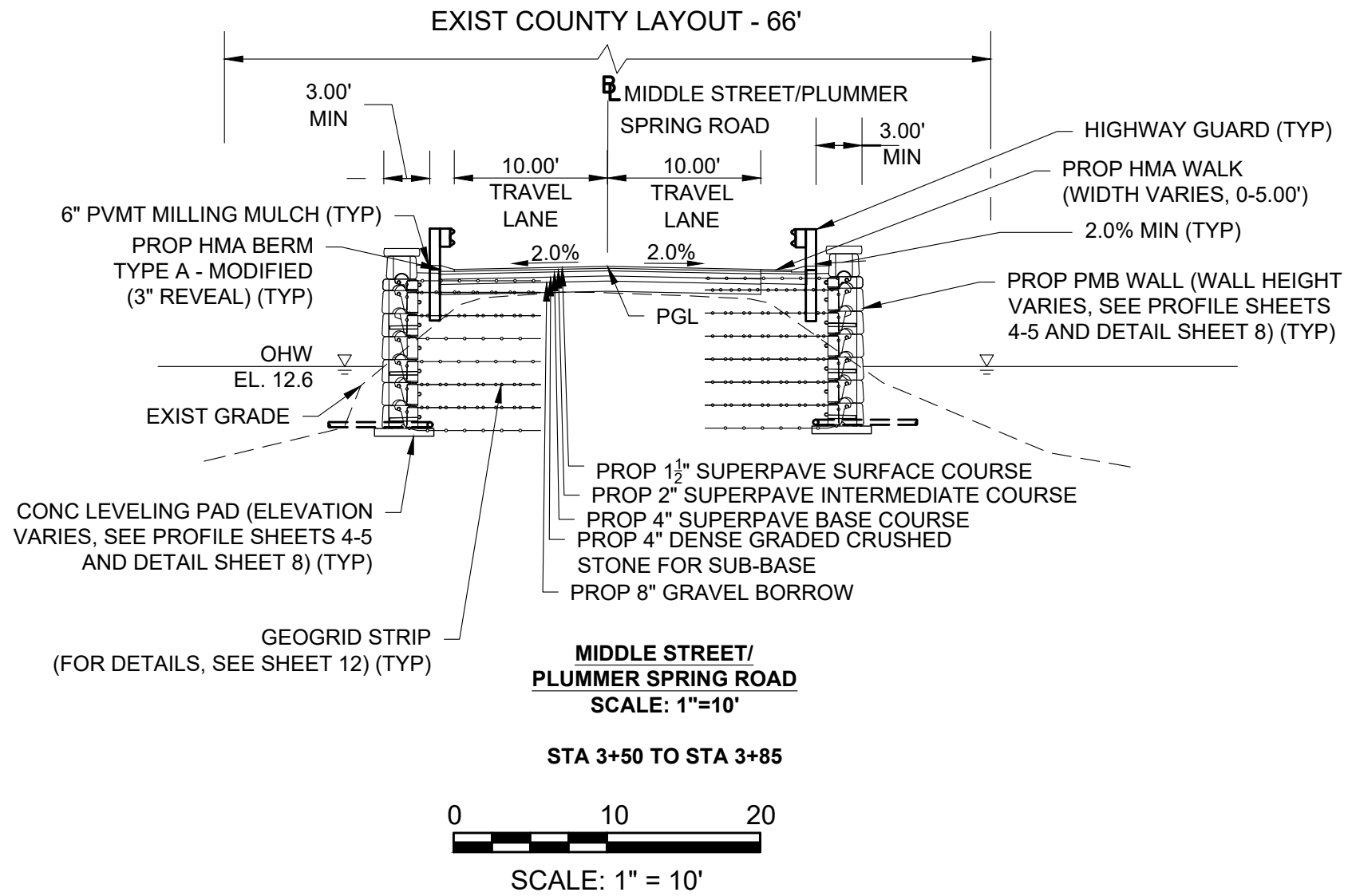
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PLAN ACCOMPANYING PETITION OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO CONSTRUCT AND MAINTAIN PLUMMER SPRING ROAD/MIDDLE STREET OVER UPPER ARTICHOKE RESERVOIR NEWBURYPORT/WEST NEWBURY, MA MIDDLESEX COUNTY



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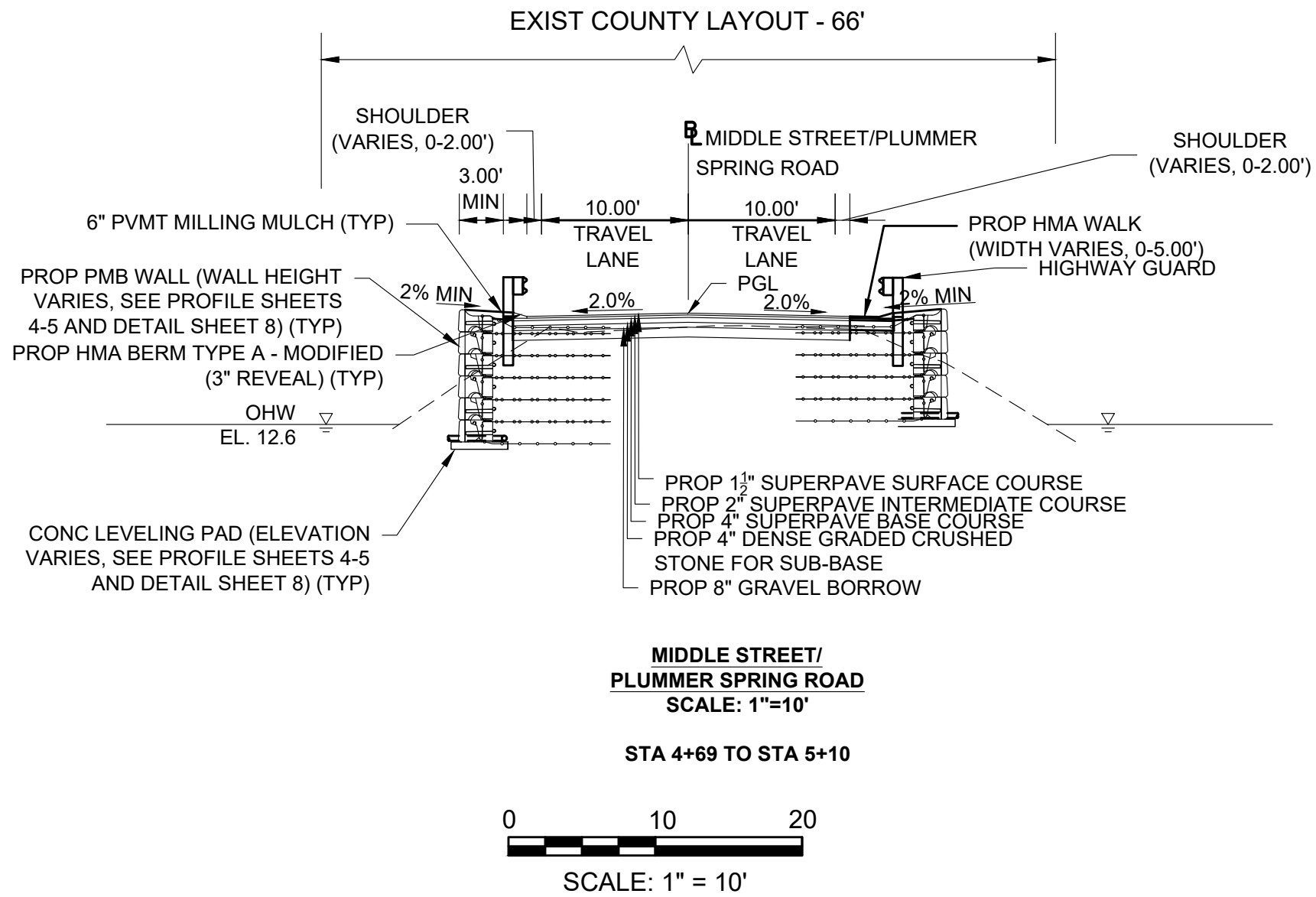
DATE

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

TYPICAL SECTIONS
FILE:
SHEET 9 OF 10

PLAN ACCOMPANYING PETITION OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO CONSTRUCT AND MAINTAIN PLUMMER SPRING ROAD/MIDDLE STREET OVER UPPER ARTICHOKE RESERVOIR NEWBURYPORT/WEST NEWBURY, MA MIDDLESEX COUNTY

TYPICAL SECTIONS
FILE:
SHEET 10 OF 10



FOR REGISTRY USE ONLY

PLS

DATE

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS

U.S. Fish and Wildlife

SECTION 7 COORDINATION



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:

08/01/2024 17:51:29 UTC

Project code: 2024-0101440

Project Name: Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd,
Newburyport

Federal Action Agency (if applicable): Army Corps of Engineers

Subject: Record of project representative's no effect determination for 'Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd, Newburyport'

Dear Hana Isihara:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on August 01, 2024, for 'Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd, Newburyport' (here forward, Project). This project has been assigned Project Code 2024-0101440 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the

action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of "No Effect" on the northern long-eared bat. If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference Project Code 2024-0101440 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

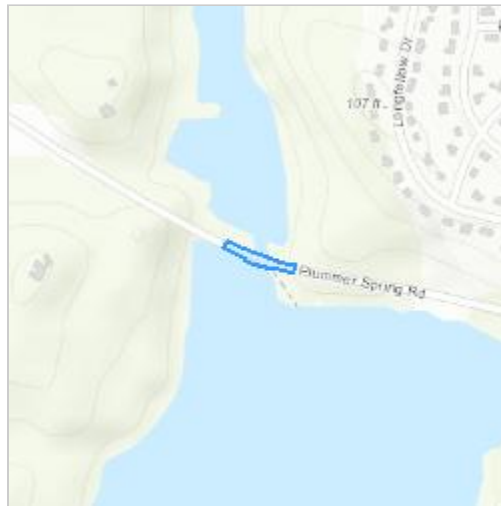
Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd, Newburyport

2. Description

The following description was provided for the project 'Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd, Newburyport':

Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd,
Newburyport

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.80303135,-70.93117358810873,14z>



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (*Myotis septentrionalis*). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The proposed action does not intersect an area where the northern long-eared bat is likely to occur, based on the information available to U.S. Fish and Wildlife Service as of the most recent update of this key. If you have data that indicates that northern long-eared bats are likely to be present in the action area, answer "NO" and continue through the key.

Do you want to make a no effect determination?

Yes

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Hana Isihara
Address: 1 Mercantile Street
Address Line 2: Suite 610
City: Worcester
State: MA
Zip: 01608
Email: hisihara@bscgroup.com
Phone: 6178964454

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

U.S. Army Corps of Engineers

MA GENERAL PERMIT AUTHORIZATION

Reverification and Original



DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

May 21, 2024

Regulatory Division
File Number: NAE-2021-00177

John White
City Engineer, City of Newburyport
16C Perry Way
Newburyport, Massachusetts 01950
(via email: jewwhite@cityofnewburyport.com)

Dear Mr. White:

The U.S. Army Corps of Engineers (USACE) has reviewed your request for re-authorization to place fill below the ordinary high water line of Artichoke Reservoir in association with the replacement of a bridge located at the confluence of Plummer Spring Road in Newburyport and Middle Street in West Newbury, Massachusetts. You propose to permanently impact 984 square feet of waters of the U.S. related to riprap installation and work on retaining walls, wing walls, and abutments. You also propose to temporarily impact 641 square feet of waters related to dewatering of the site for construction work. The proposed work is shown on the enclosed plans titled "BRIDGE REPLACEMENT PROJECT MIDDLE STREET/PLUMMER SPRING ROAD OVER UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA ESSEX COUNTY", on 14 sheets, and dated "12/21/2020."

You originally received a USACE general permit for this work on April 9, 2021 but indicated that the work could not be completed prior to the expiration date of April 5, 2023 nor the one year extension deadline of April 5, 2024. Based on the information that you have provided, we verify that the activity is authorized under General Permit # 23 of the June 2, 2023, federal permit known as the Massachusetts General Permits (GPs). The GPs are available at <https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit>.

Please review the GPs carefully, in particular the general conditions beginning on page 35, and ensure that you and all personnel performing work authorized by the GPs are fully aware of and comply with its terms and conditions. A copy of the GPs and this verification letter shall be available at the work site as required by General Condition 17. You must perform this work in compliance with the following special conditions which were also conditions of the original permit:

1. The permittee is authorized to utilize cofferdams on each side of the channel to work on the bridge abutments year-round. However a minimum of 50% of the channel

must be free to flow at all times and safe, timely, and effective downstream fish passage must be maintained.

2. Six inches of natural streambed material shall be placed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.

3. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

This authorization expires on June 1, 2028. You must commence or have under contract to commence the work authorized herein by June 1, 2028, and complete the work by June 1, 2029. If not, you must contact this office to determine the need for further authorization and we recommend you contact us *before* the work authorized herein expires. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction as we must approve any changes before you undertake them. Performing work within our jurisdiction that is not specifically authorized by this determination or failing to comply with the special condition(s) provided above or all the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations.

This authorization does not obviate the need to obtain other federal, state, or local authorizations required by law. Applicants are responsible for applying for and obtaining any other approvals.

We continually strive to improve our customer service. To better serve you, we would appreciate your completing our Customer Service Survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey>.

Please contact Ruthann Brien of my staff at ruthann.a.brien@usace.army.mil or by phone at (978) 318-8054 if you have any questions.

Sincerely,

Paul Maniccia
Chief, Massachusetts Section
Regulatory Division

Enclosures

Cc:

Sara Kreisel, BSC Group, Inc. skreisel@BSCGroup.com

Ed Reiner, U.S. EPA, Region 1, Boston, MA, reiner.ed@epa.gov

Rachel Croy, U.S. EPA, Region 1, Boston, MA, croy.rachel@epa.gov

Jill Provencal, DEP NERO, Wetland and Waterways; jill.provencal@mass.gov

Philip Di Pietro, DEP NERO, Wetland and Waterways; philip.dipietro@mass.gov

David Robinson, MBUAR, david.s.robinson@mass.gov

Newburyport Conservation Commission, jgodtfredsen@cityofnewburyport.com

West Newbury Conservation Commission, conservation@wnewbury.org

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10	FLOODPLAIN IMPACT AND MITIGATION SUMMARY
11-14	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

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CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

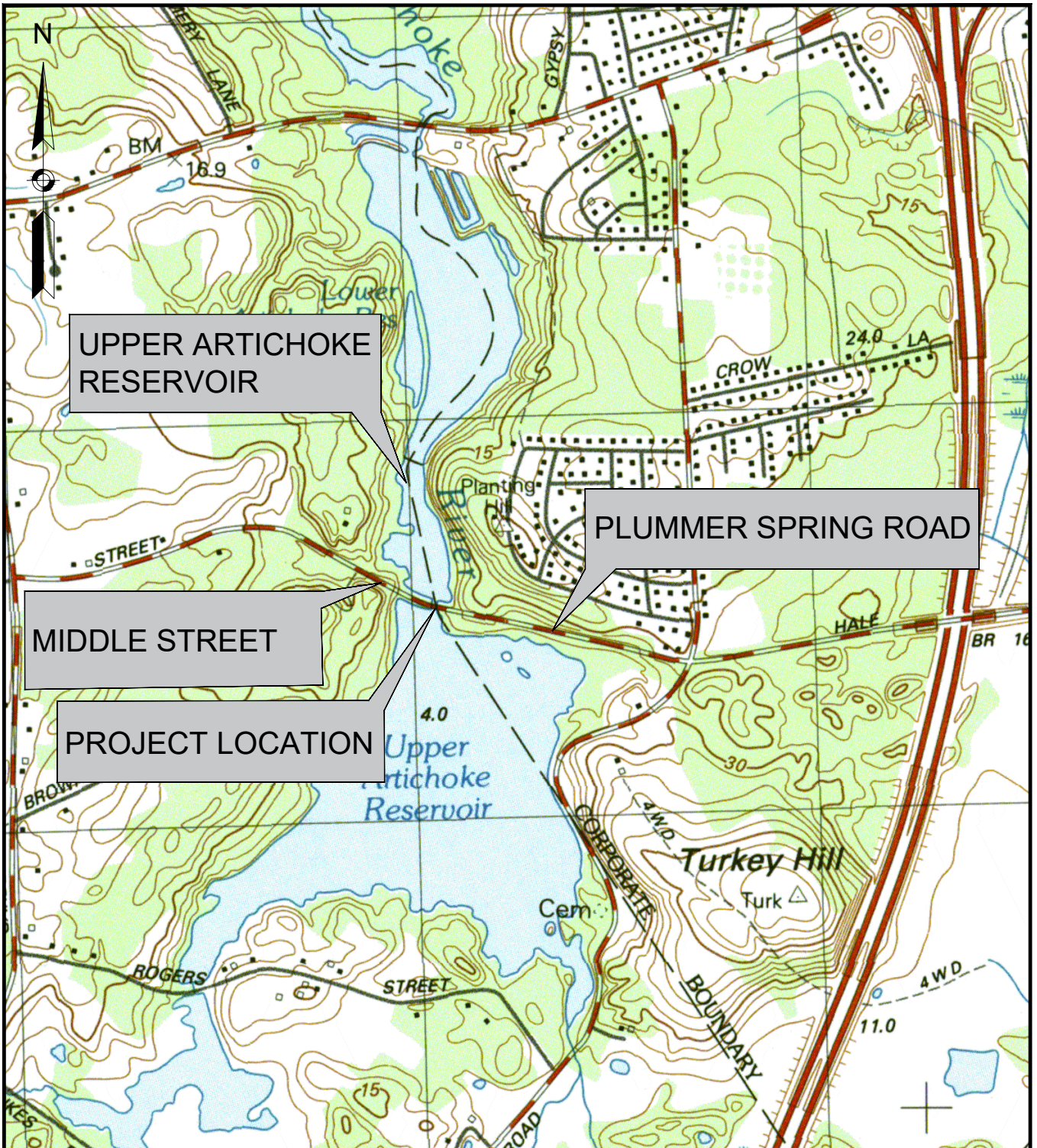
INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 14

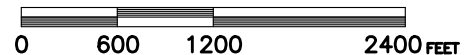


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 803 Summer Street
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LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'



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 TOWN OF
 WEST NEWBURY
 381 MAIN ST, WEST
 NEWBURY, MA 01985

LOCUS MAP

Source:

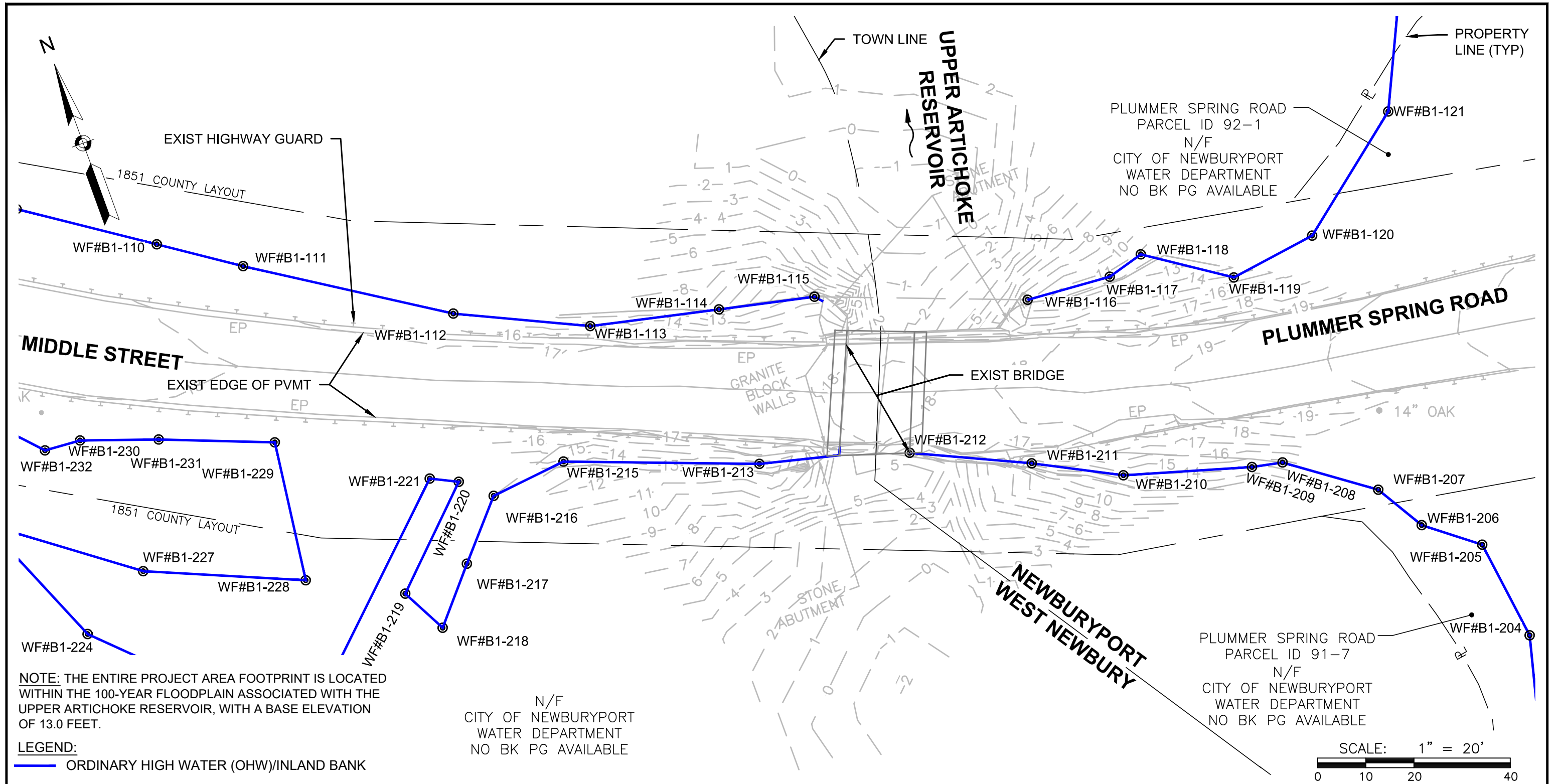
BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING
 ROAD OVER UPPER ARTICHOKE
 RESERVOIR, WEST NEWBURY/
 NEWBURYPORT, MA, ESSEX COUNTY



803 Summer Street
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Job No.:	28395.00	Date:	12/21/2020
Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 14



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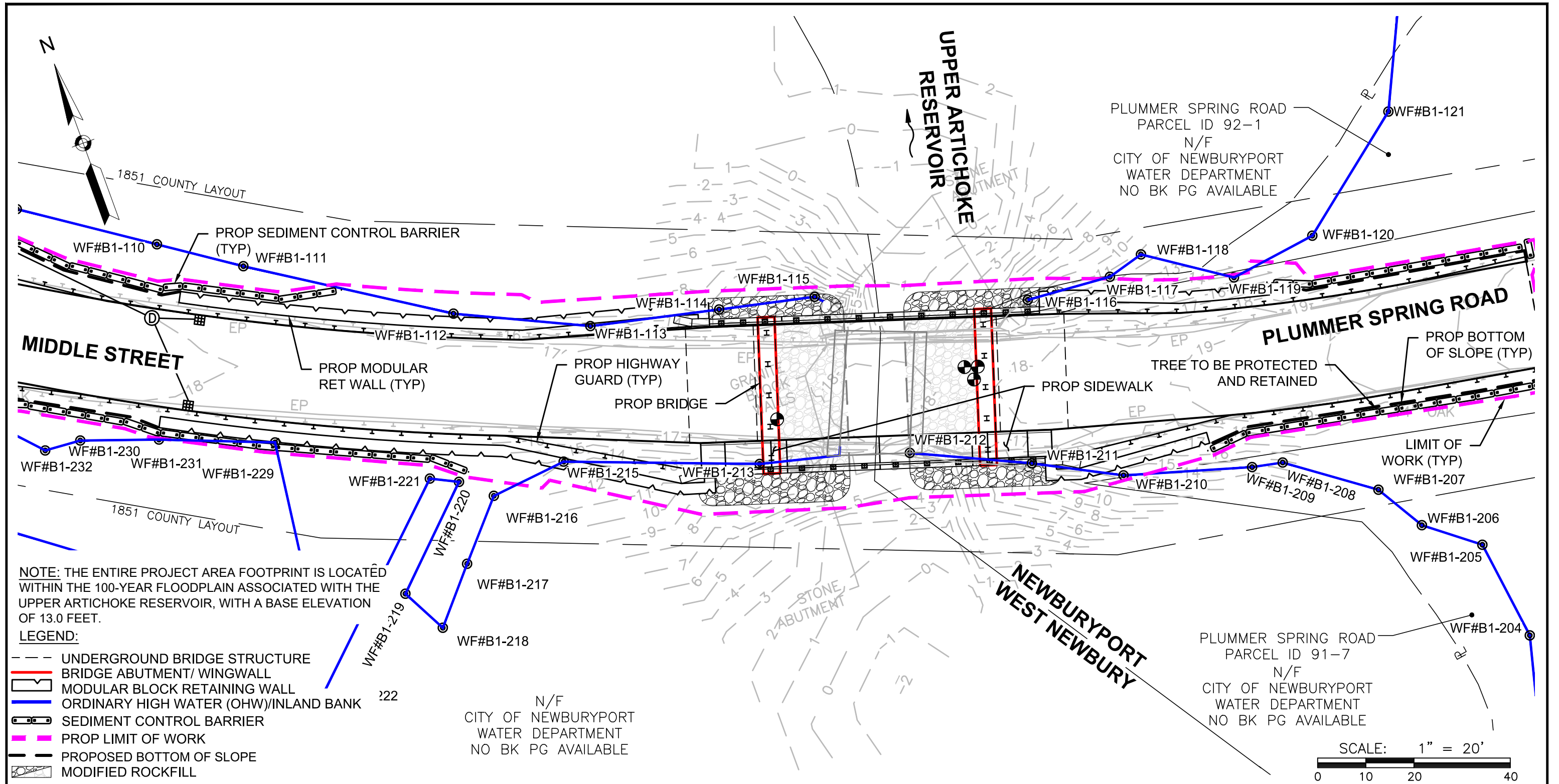
Source:

EXISTING CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: EX COND Figure: 3 OF 14

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TOWN OF WEST NEWBURY
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MA 01985

Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

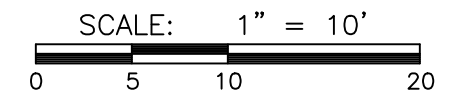
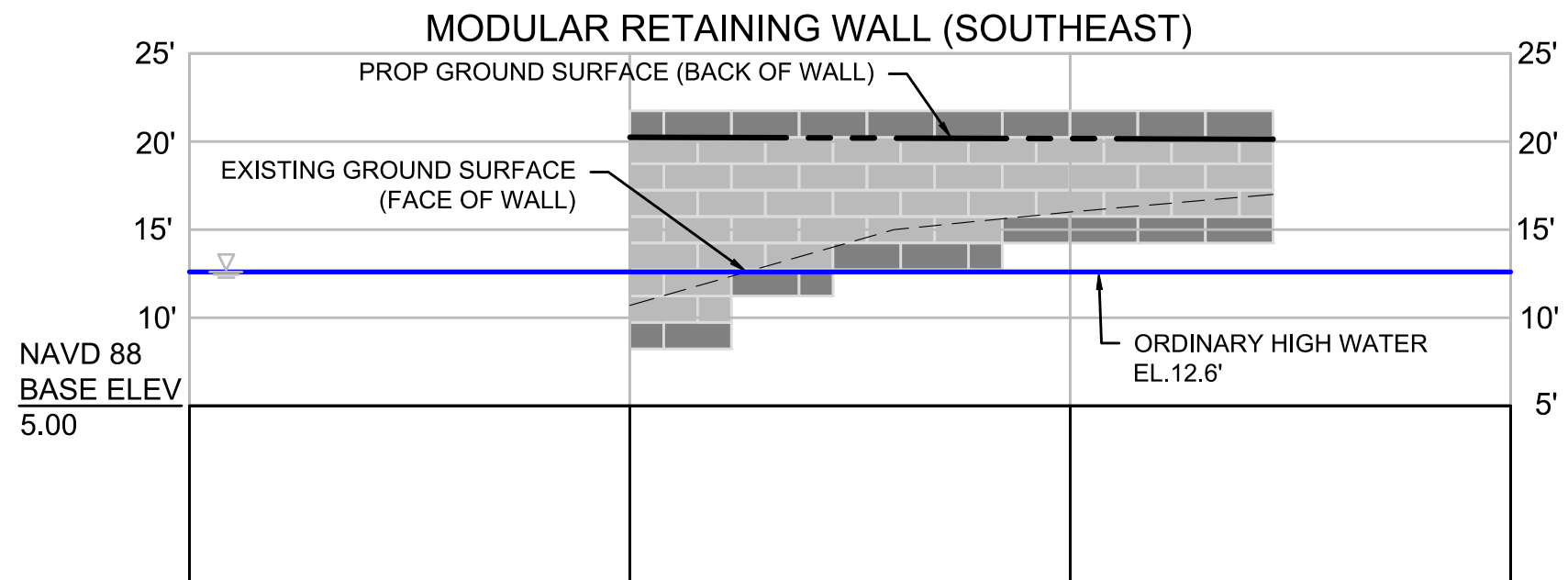
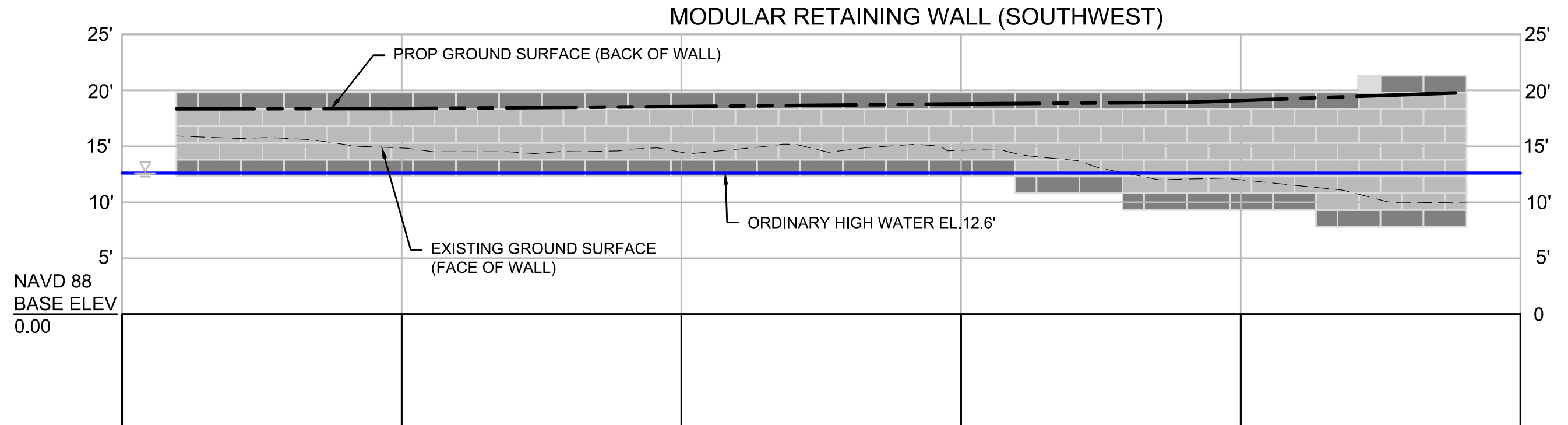
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: PROP COND Figure: 4 OF 14

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PROPOSED WALL PROFILE

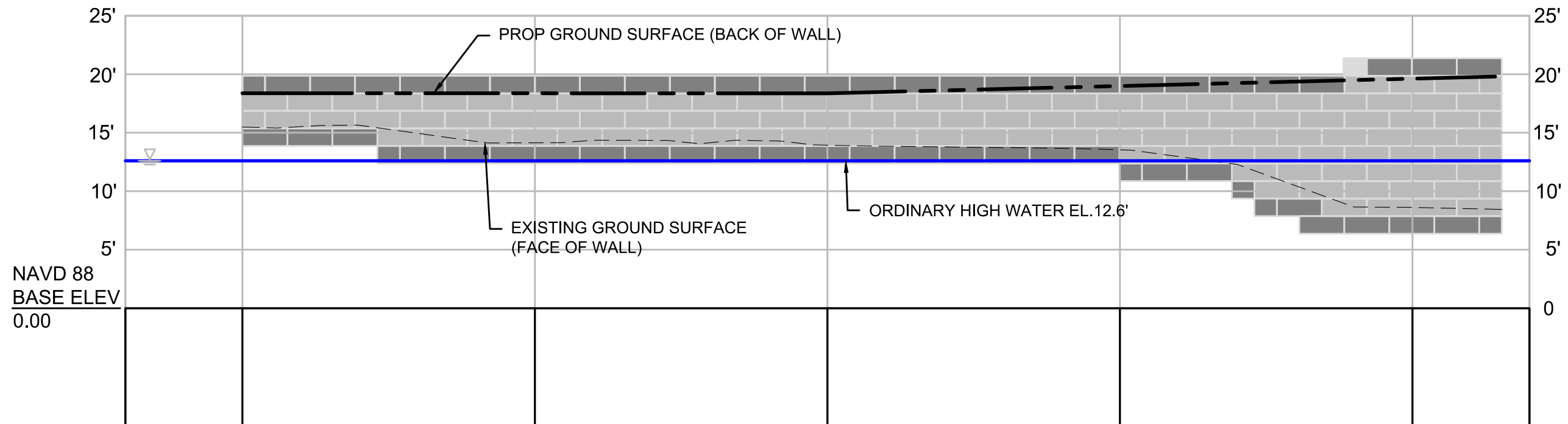
Source:

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

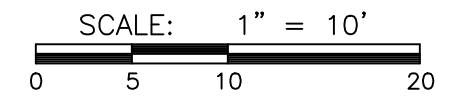
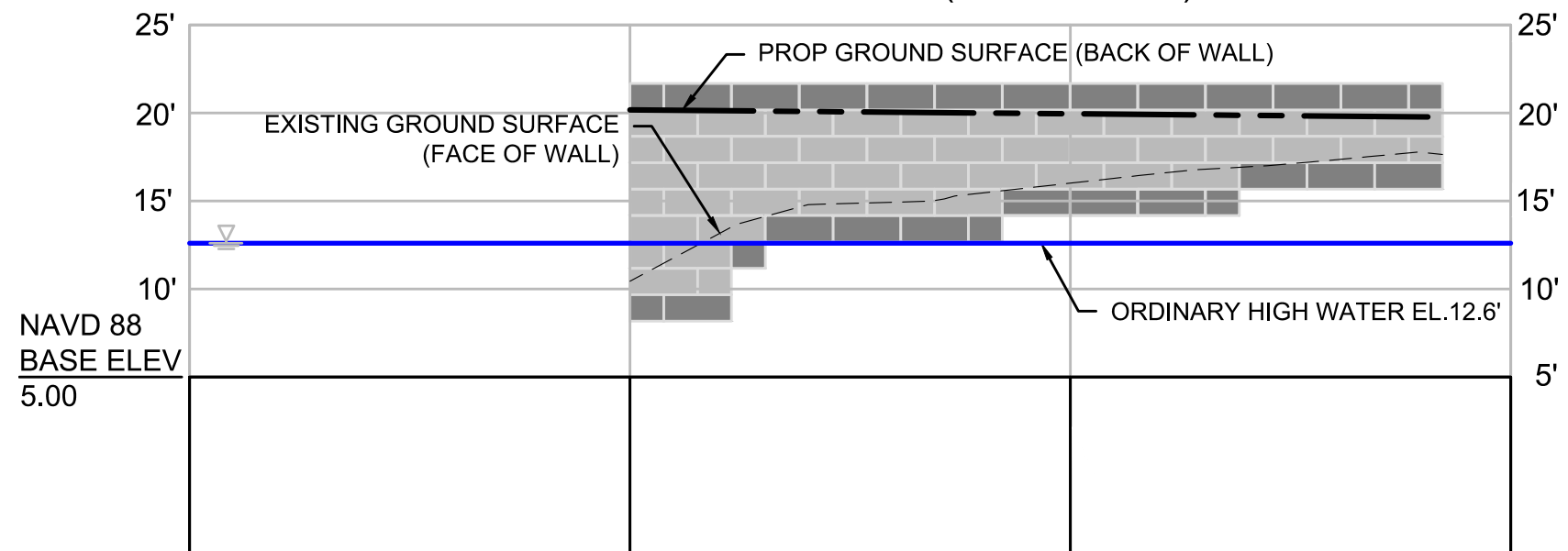
Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10' Revised: _____
 Description: PR WALL Figure: 5 OF 14

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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

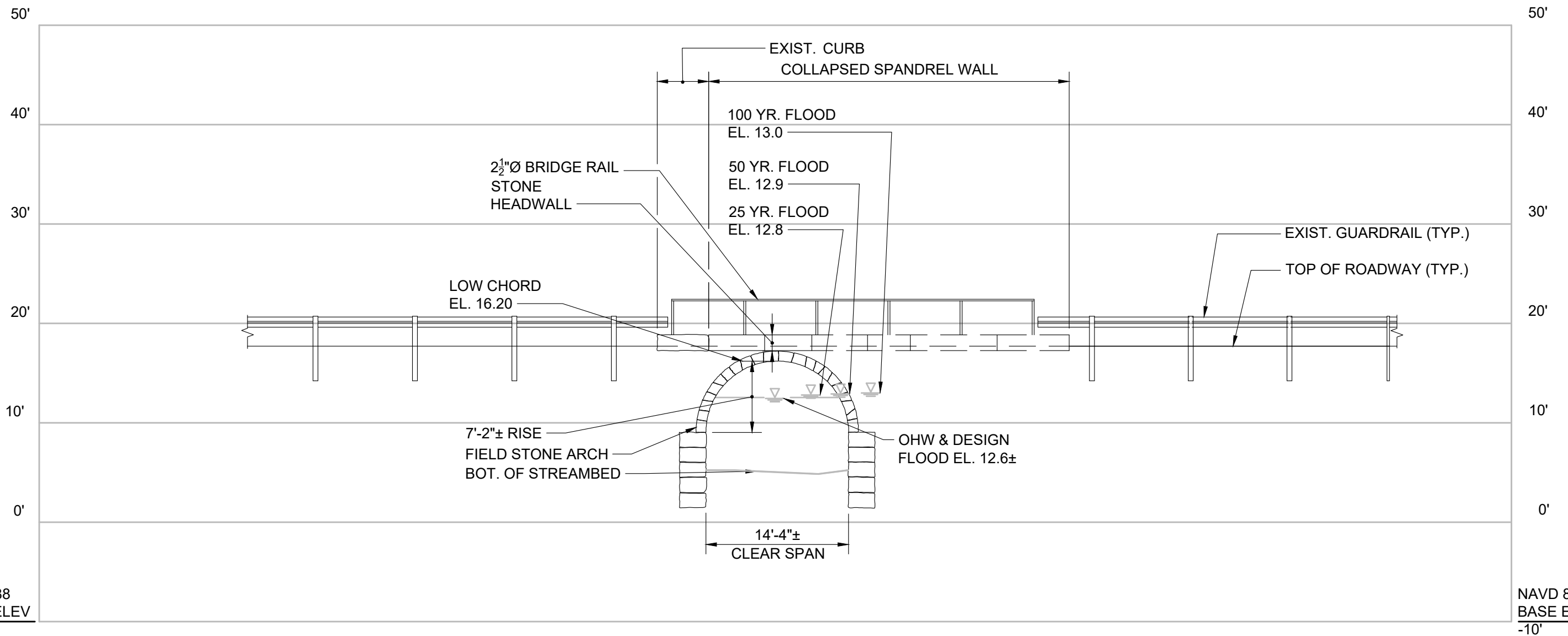


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PROPOSED WALL PROFILE
Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: _____
Description: PR WALL Figure: 6 OF 14
PROF

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EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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Source:

EXISTING - SOUTH ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

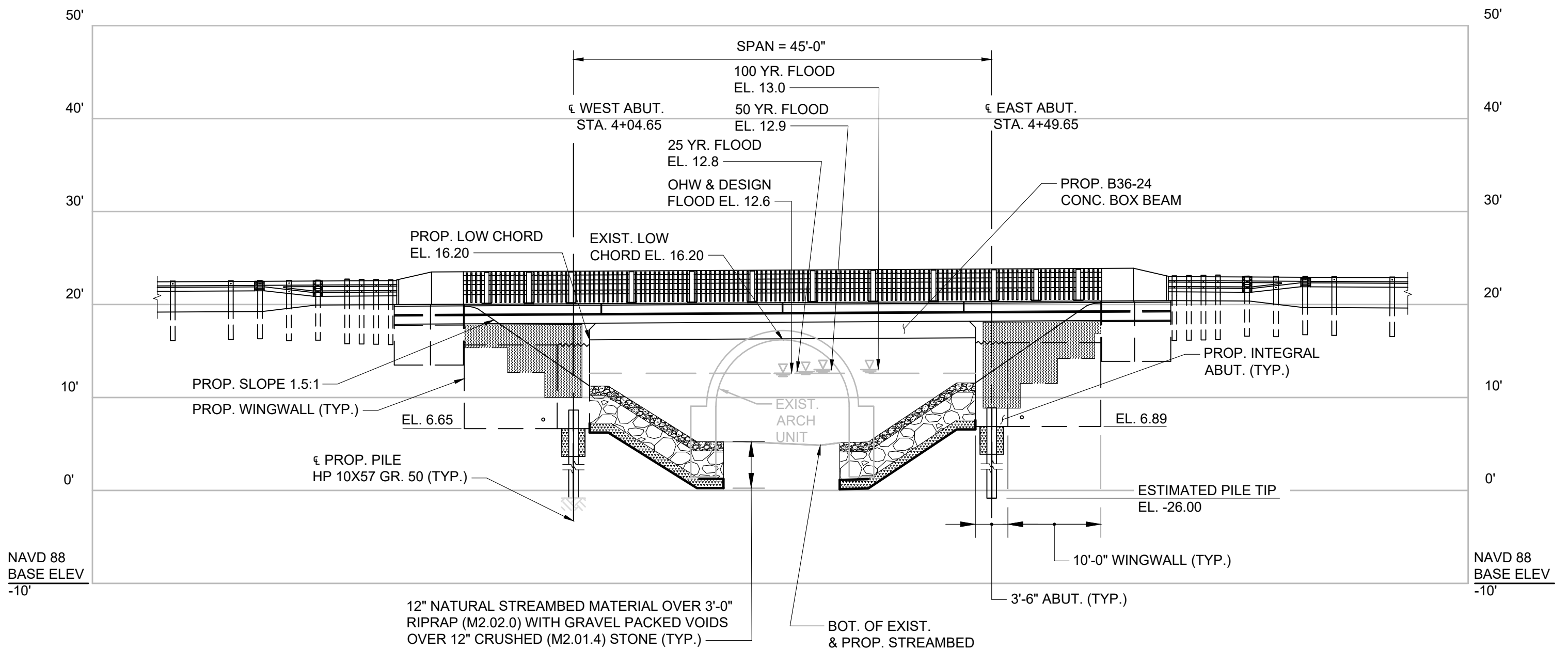
Job No.: 28395.00 Date: 12/21/2020

Scale: 3/32" = 1'-0" Revised: _____

Description: EXIST. EL. Figure: 7 OF 14

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PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

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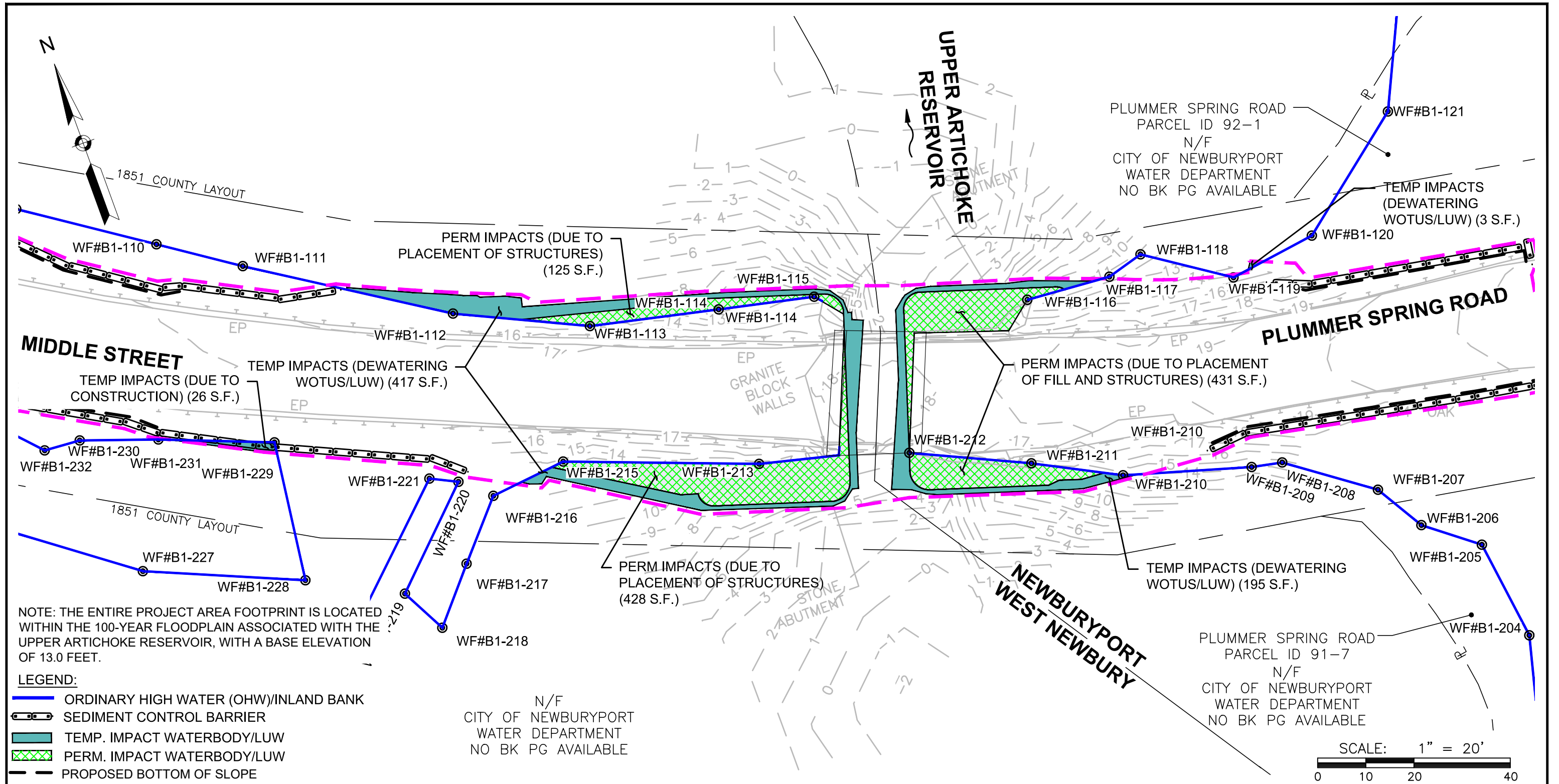
PROPOSED - SOUTH ELEVATION

Source: _____

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: PROP. EL. Figure: 8 OF 14

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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
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TOWN OF WEST NEWBURY
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IMPACTS

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

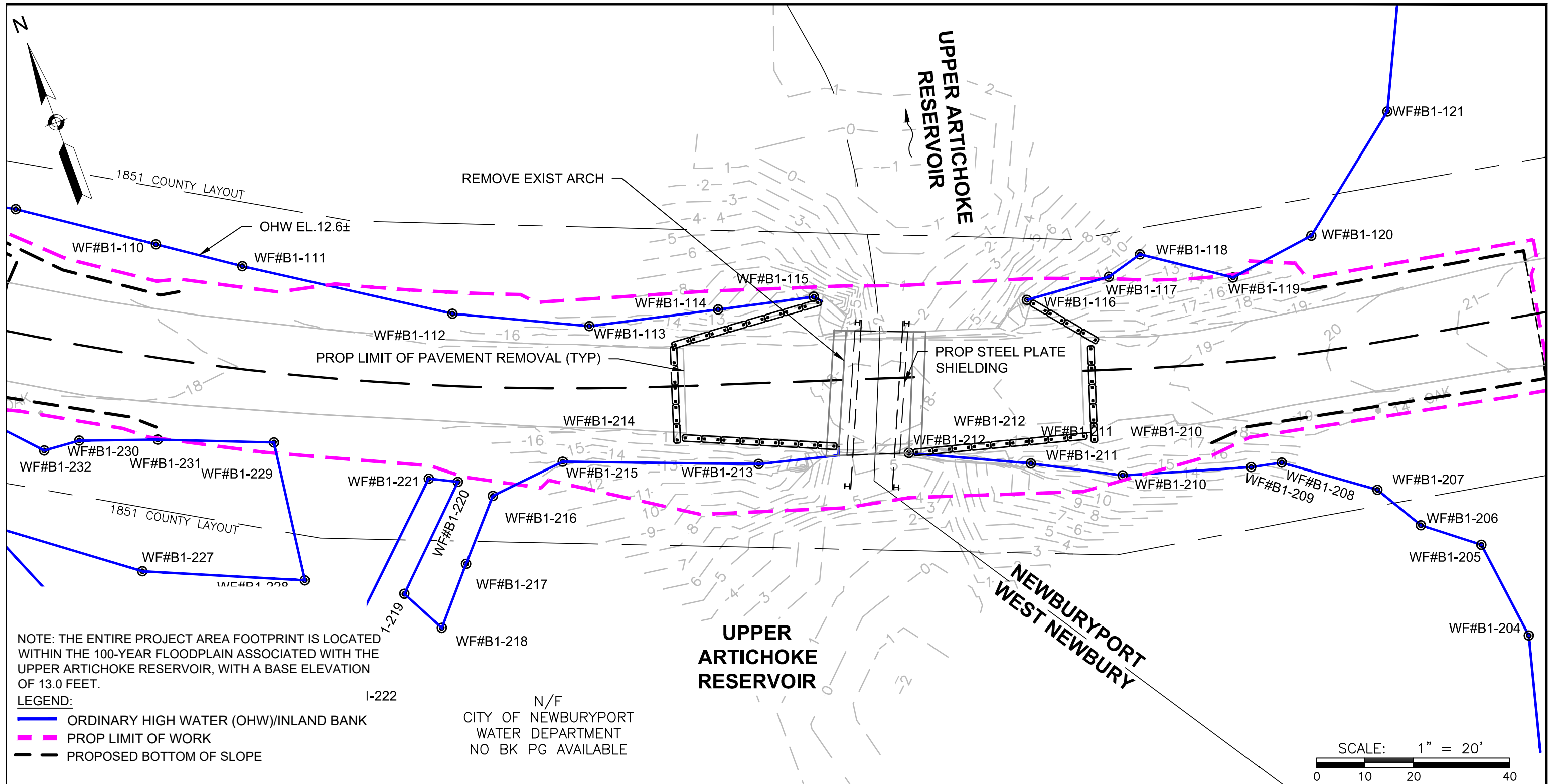
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: IMPACTS Figure: 9 OF 14

BSC GROUP

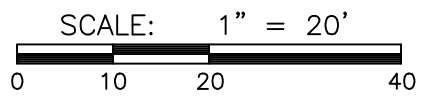
803 Summer Street
Boston, Massachusetts
02127 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 - - - PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

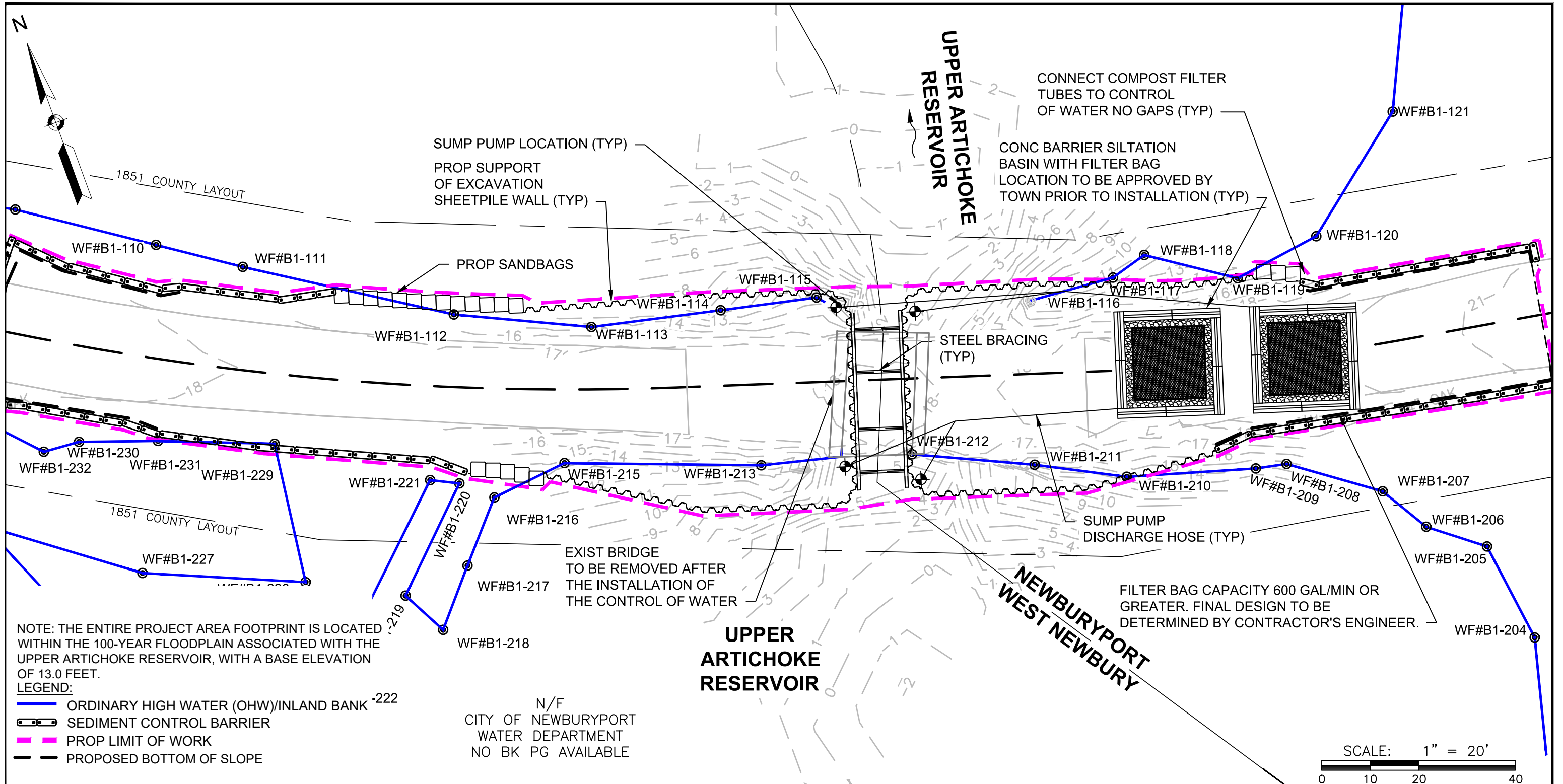


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SHIELDING PLAN - UPPER ARCH REMOVAL
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 10 OF 14

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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

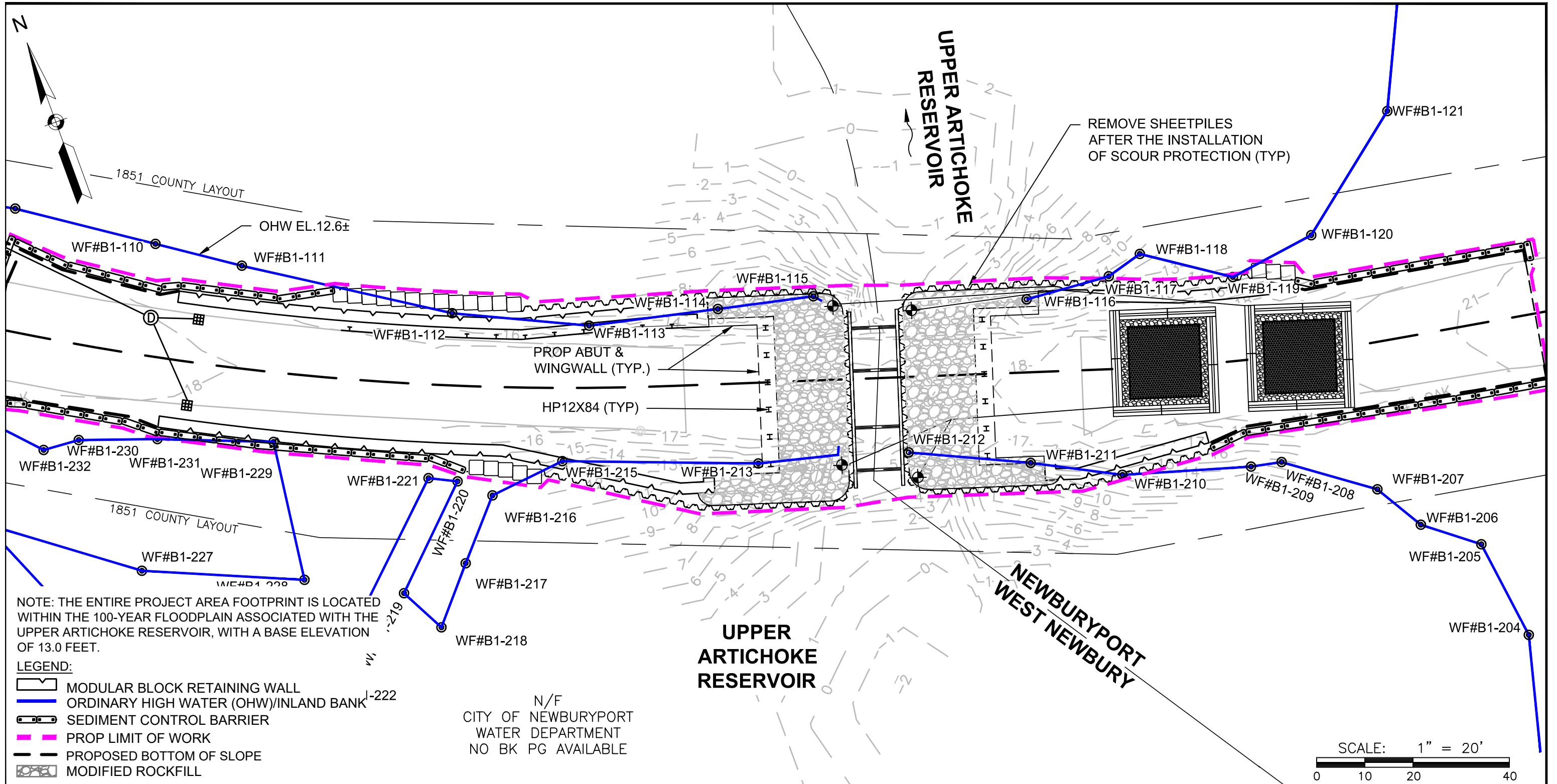
PREPARED FOR:
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TOWN OF WEST NEWBURY
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MA 01985

CONTROL OF WATER - PHASE 1 - PLAN

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 11 OF 14

BSC GROUP
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02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:**
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

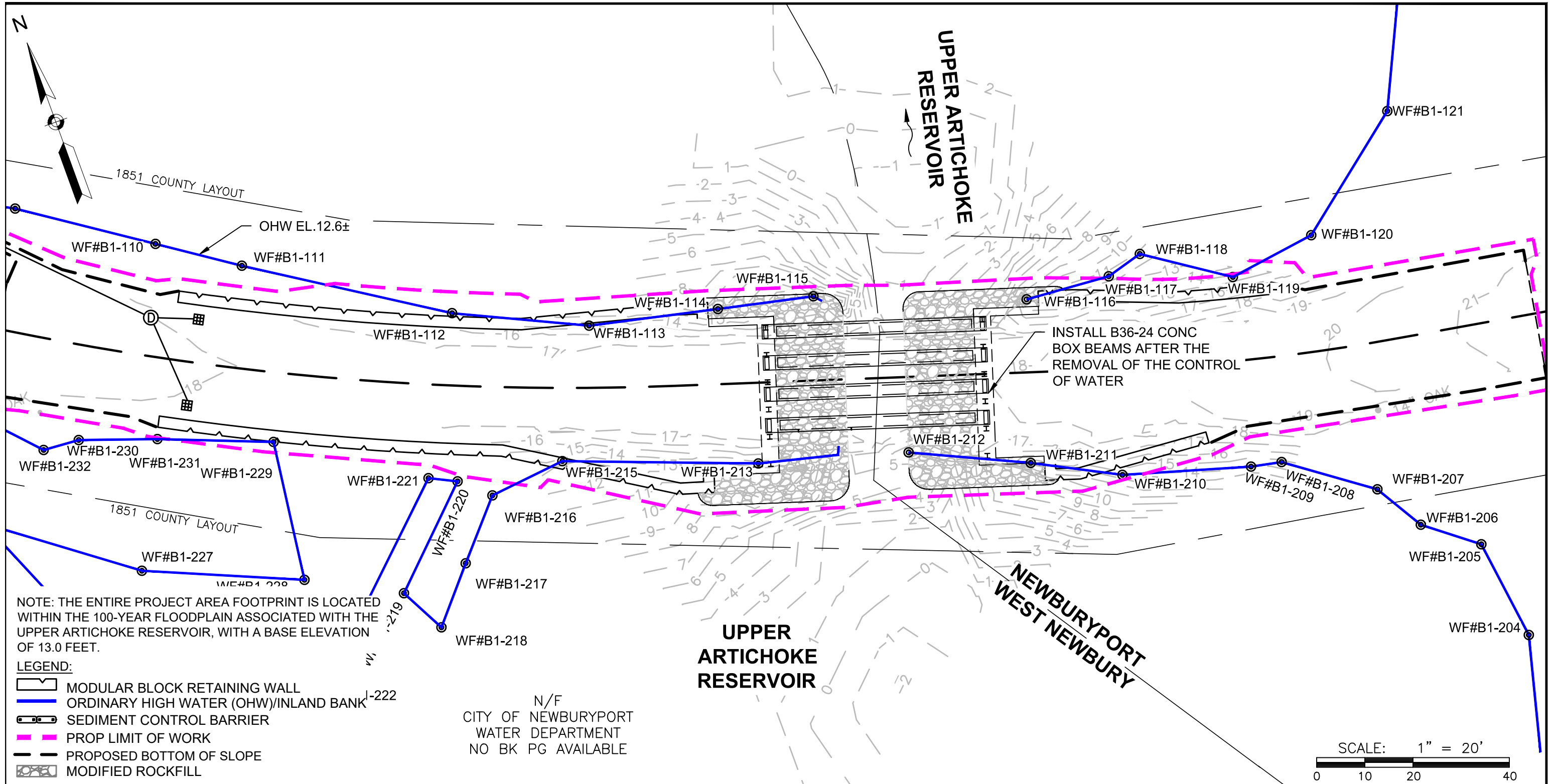
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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

CONTROL OF WATER - PHASE 2 - PLAN

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 12 OF 14

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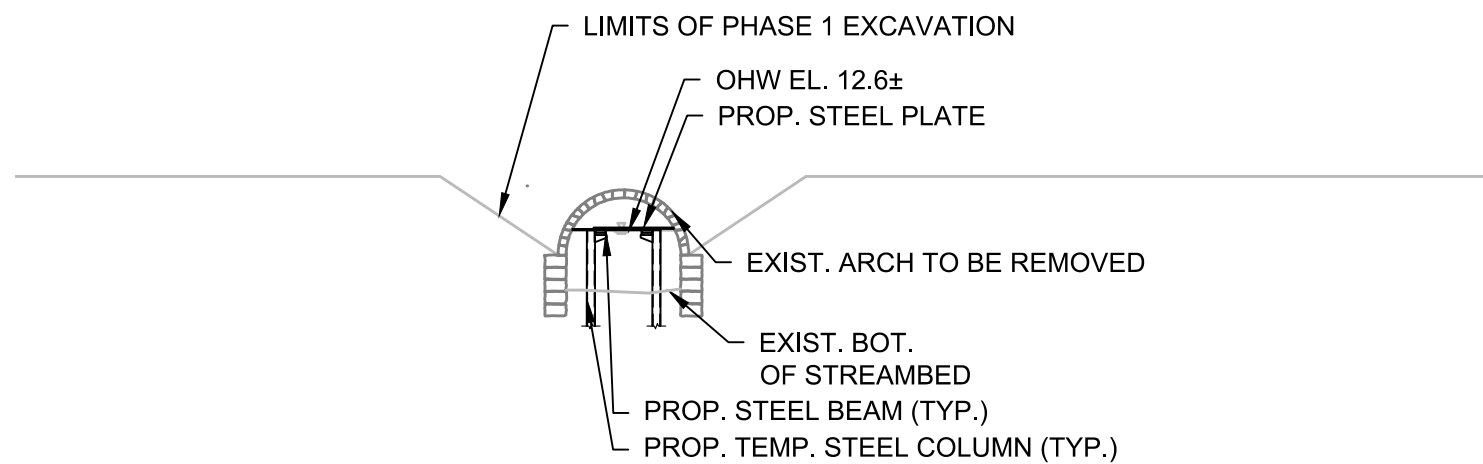


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 MA 01950
 TOWN OF WEST NEWBURY
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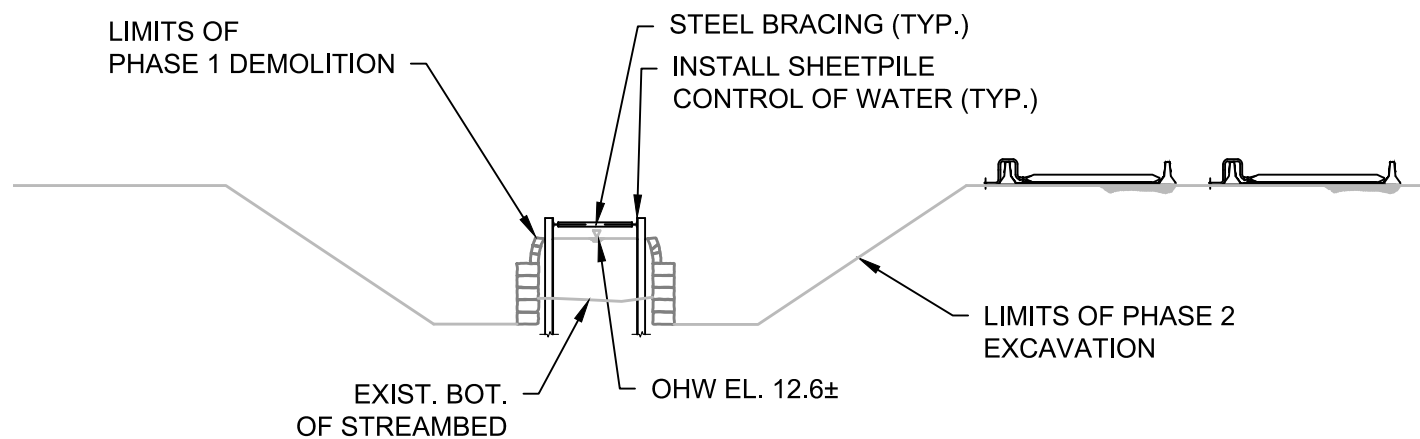
Source: **CONTROL OF WATER - PHASE 3 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 13 OF 14

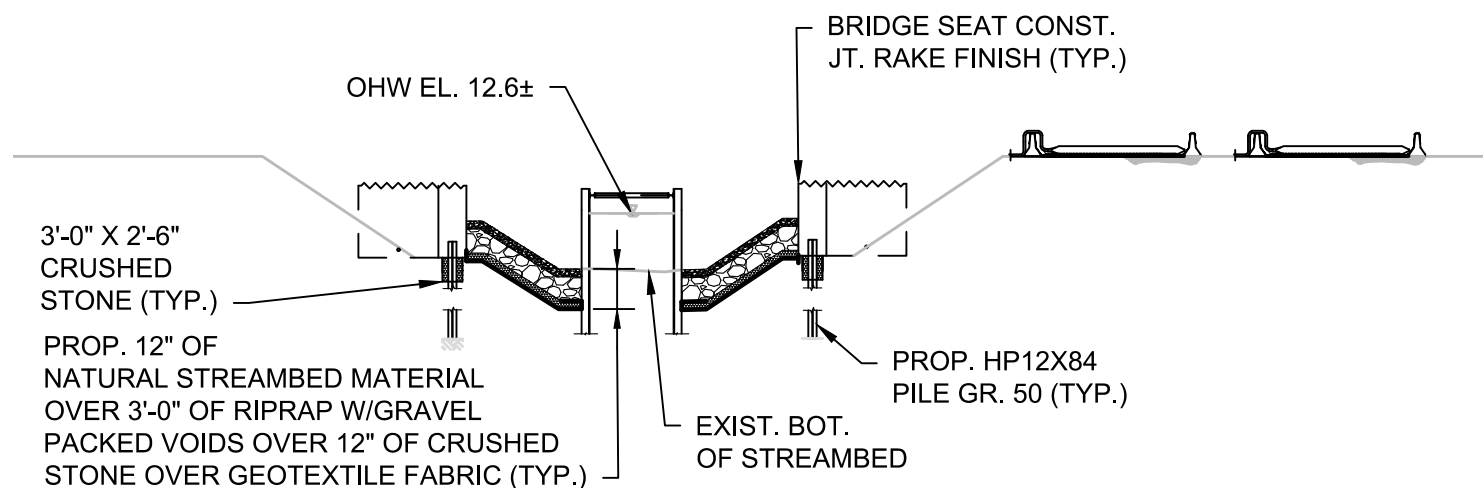
BSC GROUP
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 617 896 4300



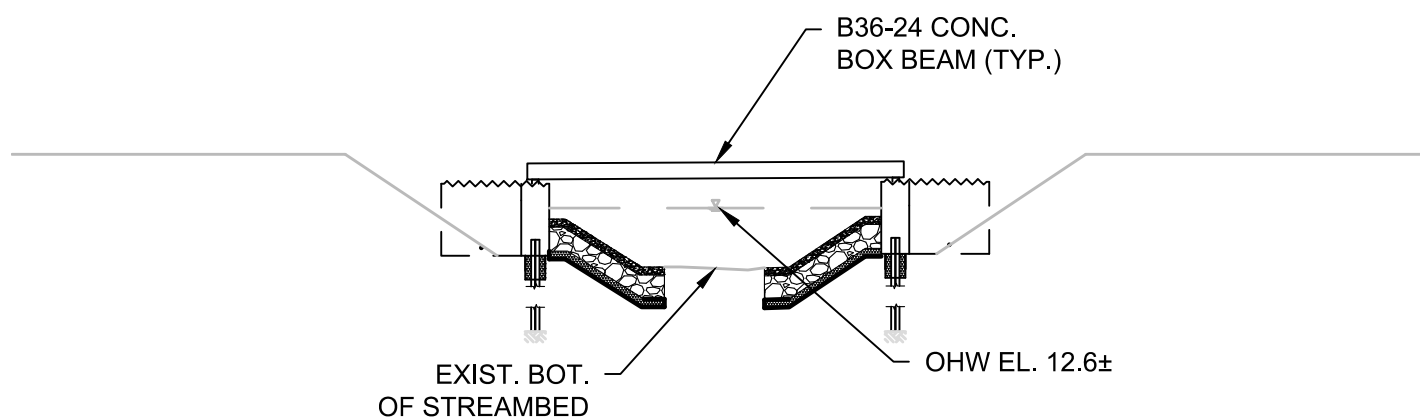
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

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SHIELDING AND CONTROL OF WATER - ELEVATION

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 14 OF 14

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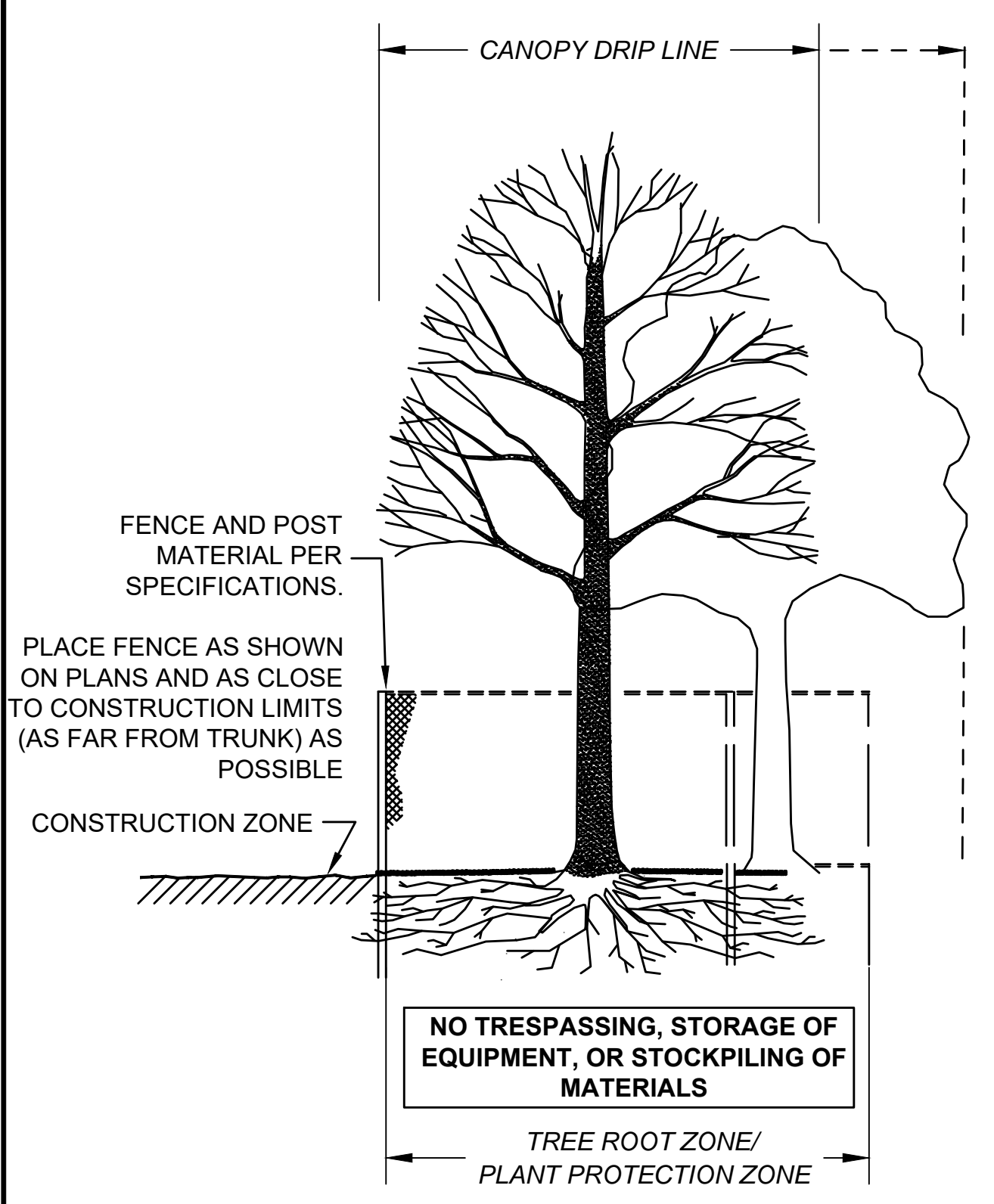
**NEWBURYPORT
PLUMMER SPRING ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	1
PROJECT FILE NO. XXXXXX			

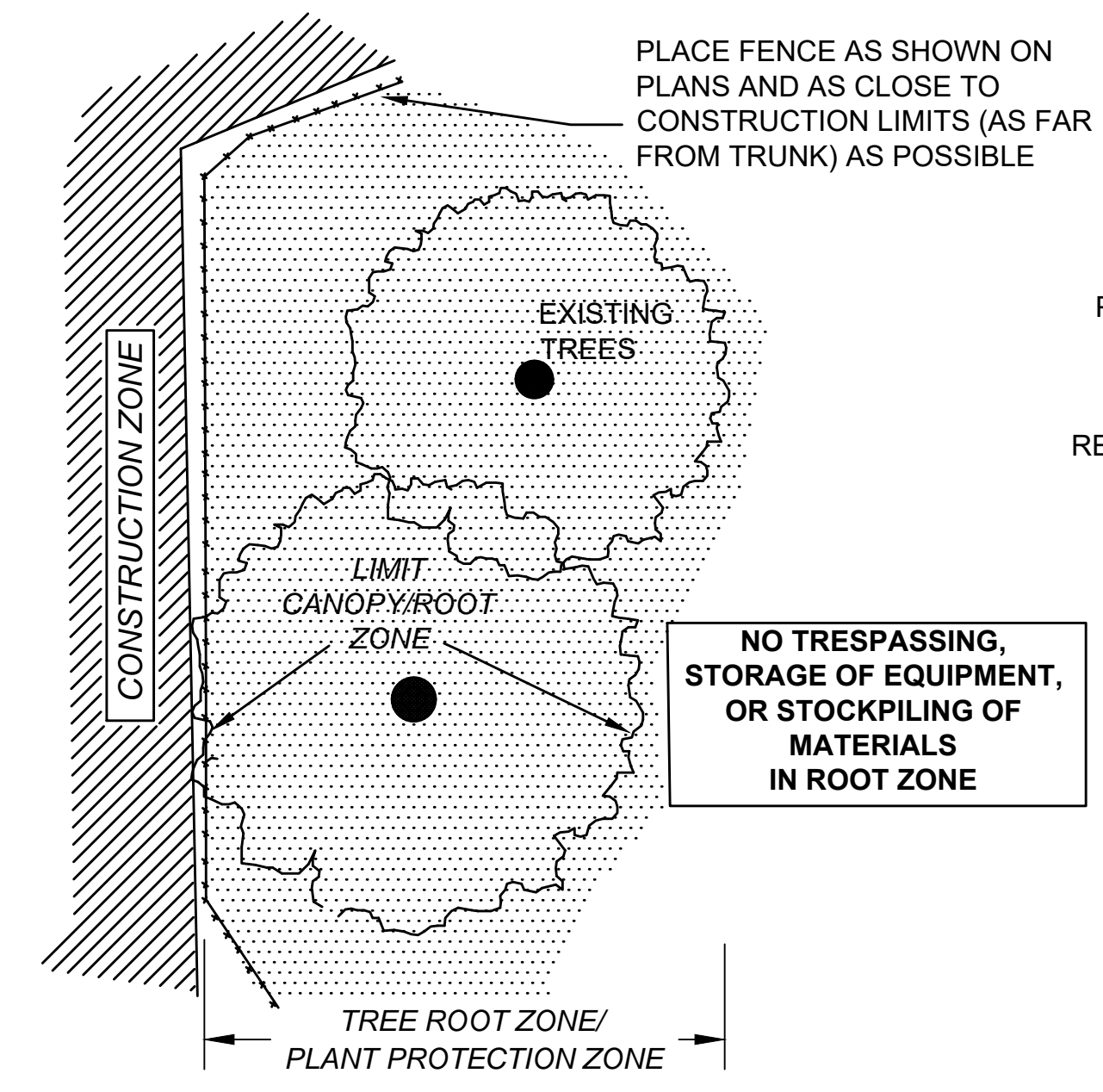
CONSTRUCTION DETAILS

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

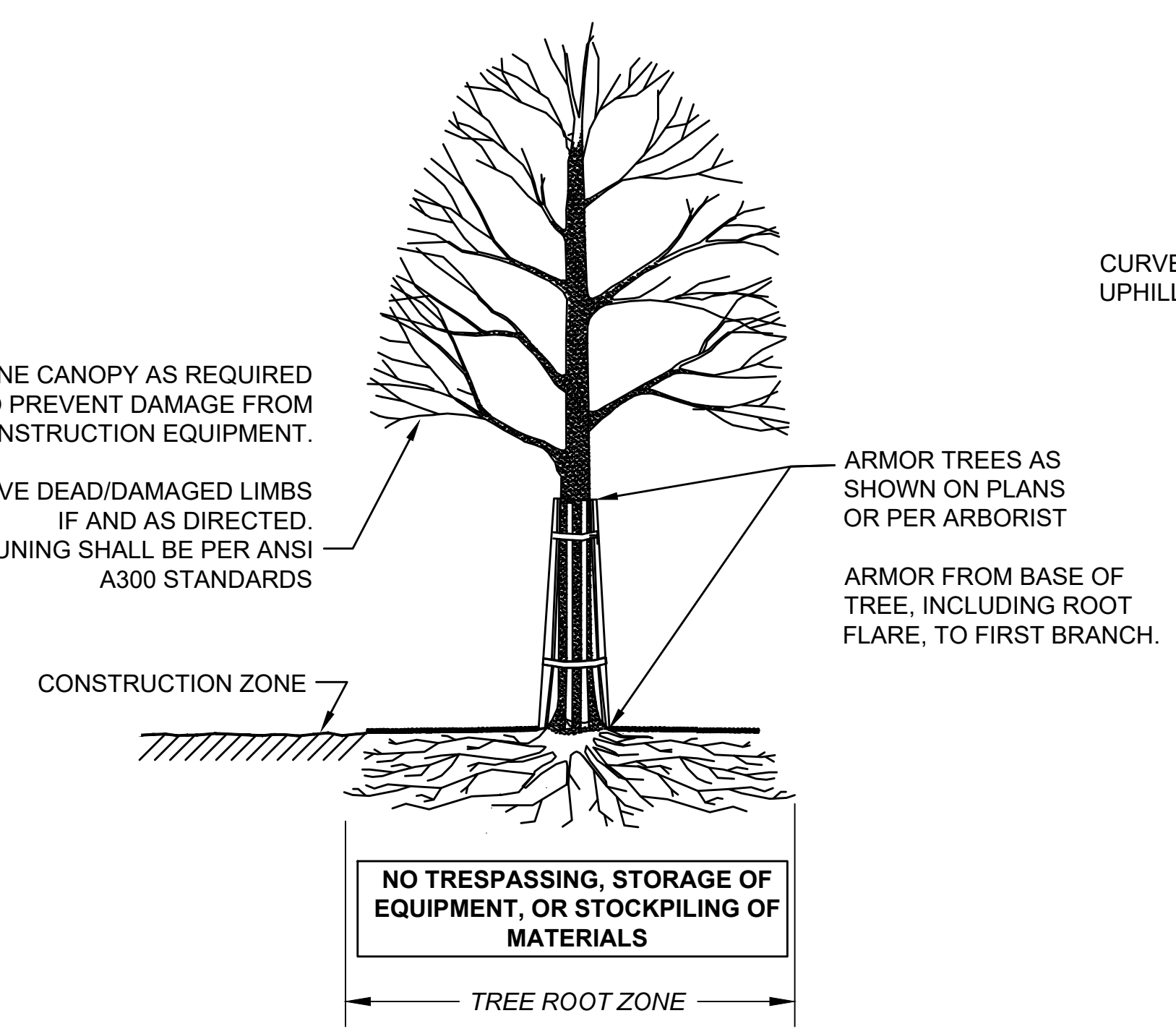
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.



SECTION - FENCE PROTECTION OF ROOT ZONE

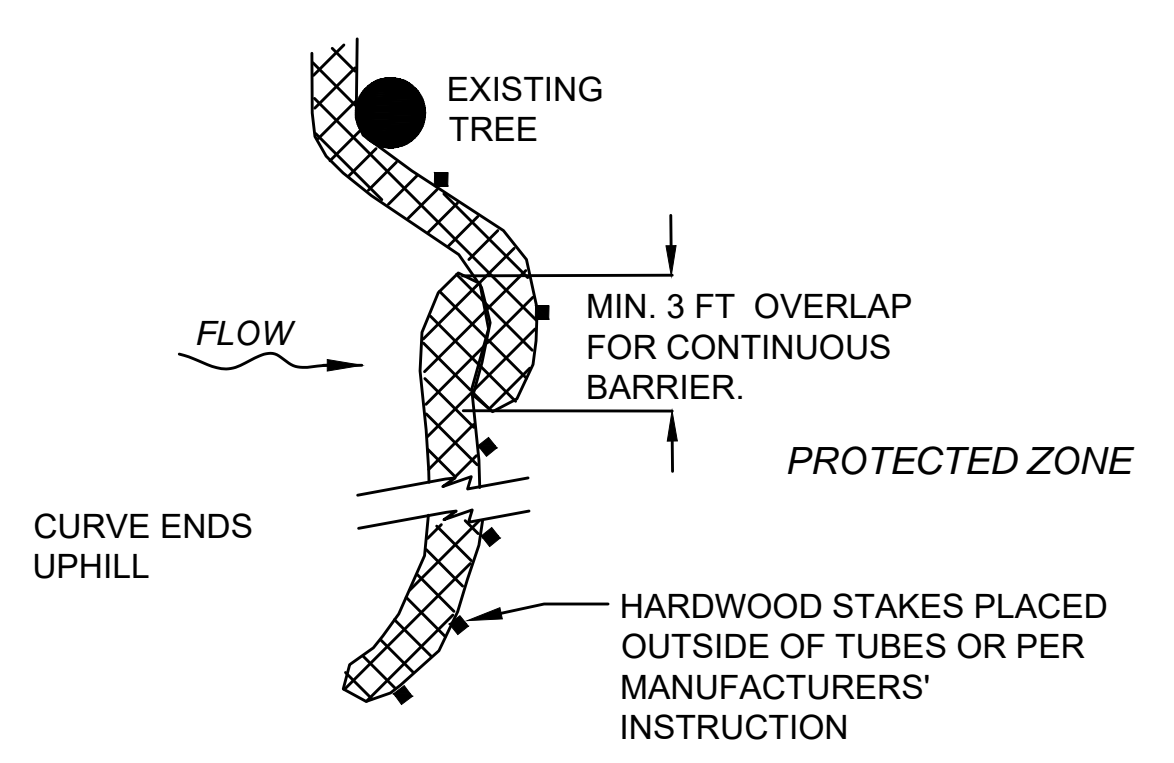


PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

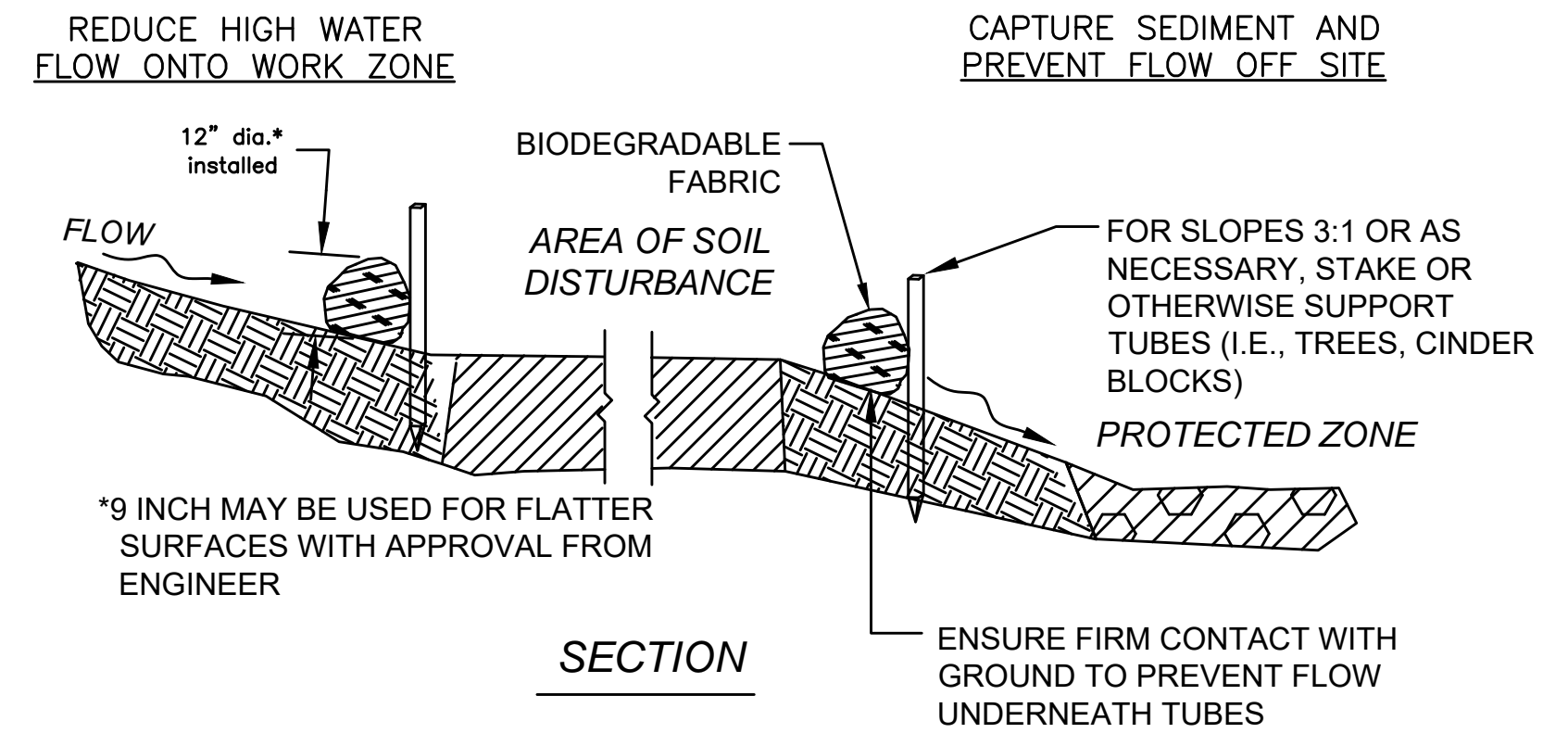


SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK



PLAN VIEW

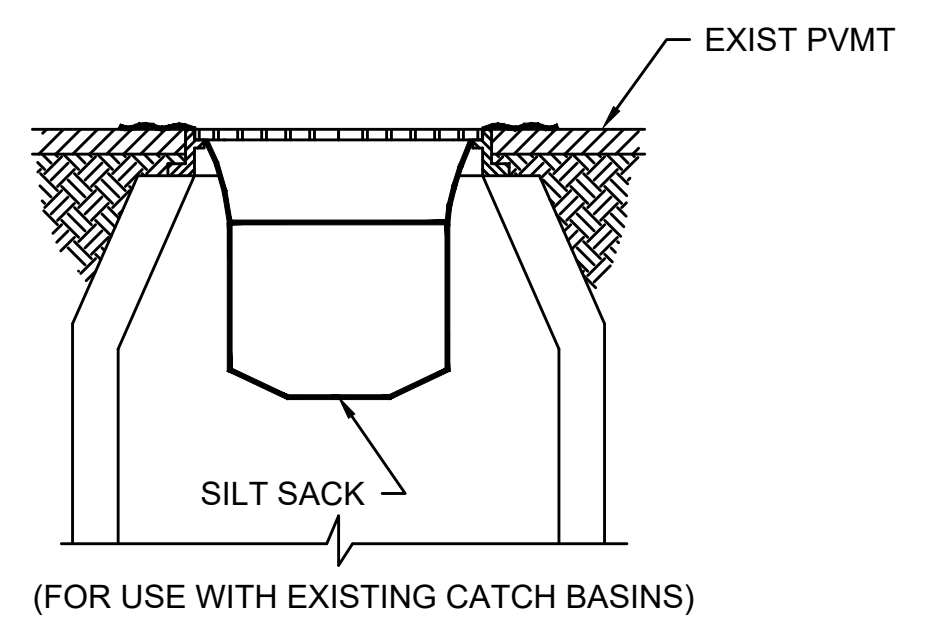


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

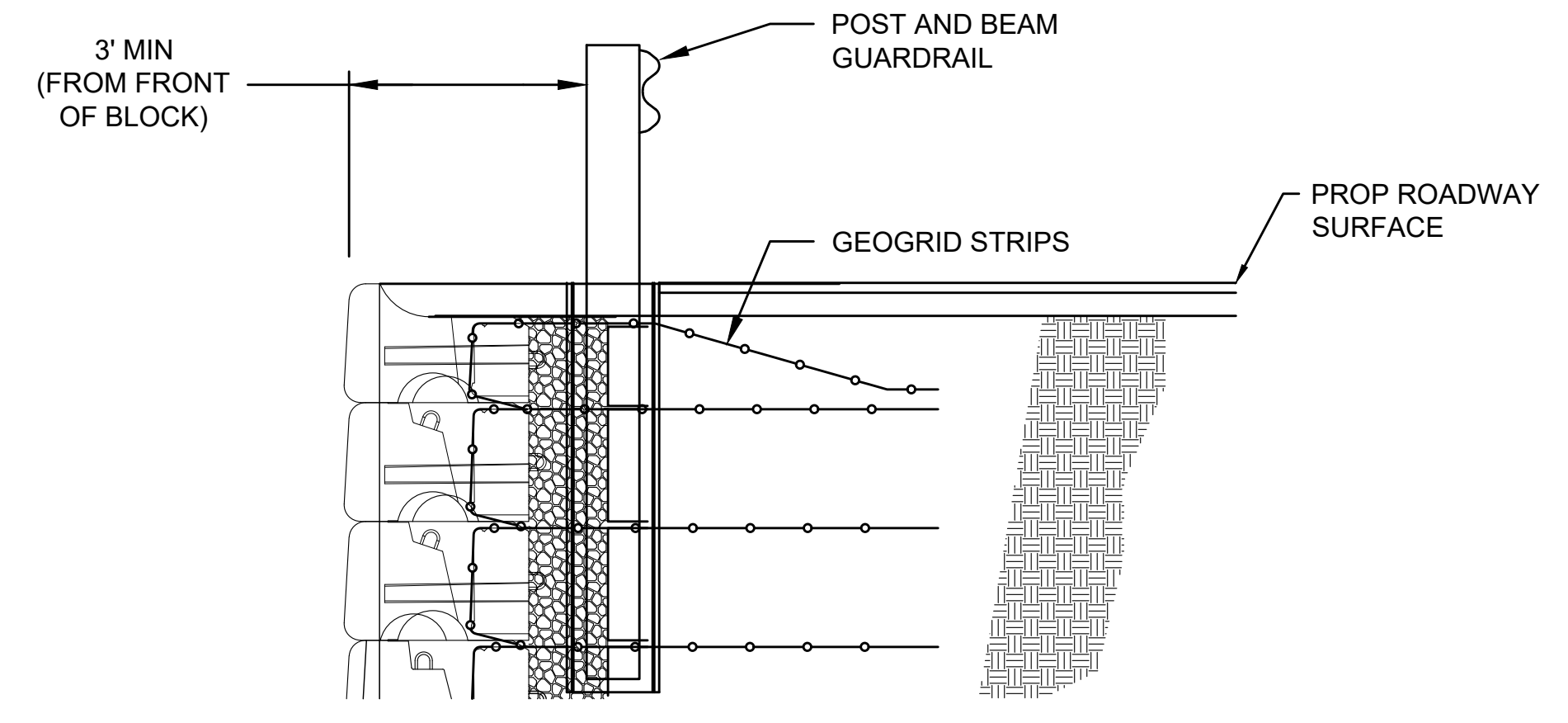
NOT TO SCALE

NOTES:
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



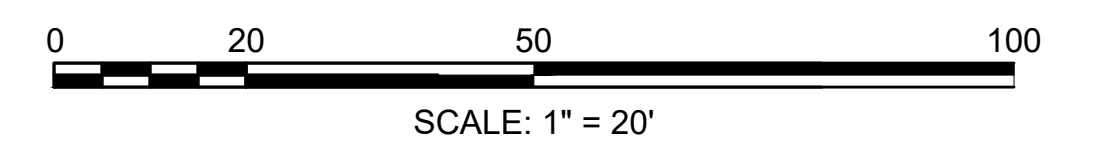
SILT SACK INLET PROTECTION

NOT TO SCALE



POST AND BEAM GUARDRAIL - SECTION VIEW

NOT TO SCALE





DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

April 9, 2021

Regulatory Division
File No. NAE-2021-00177

John White
City Engineer, City of Newburyport
16C Perry Way
Newburyport, Massachusetts 01950
(via email: jewwhite@cityofnewburyport.com)

Dear Mr. White:

We have reviewed your application to place fill below the ordinary high water line of Artichoke Reservoir in association with the replacement of a bridge. Specifically, you propose to permanently impact 984 square feet of waters of the U.S. related to riprap installation and work on retaining walls, wing walls, and abutments. You also propose to temporarily impact 641 square feet of waters related to dewatering of the site for construction work. This project is located at the confluence of Plummer Spring Road in Newburyport and Middle Street in West Newbury, Massachusetts. The work is shown on the enclosed plans titled "BRIDGE REPLACEMENT PROJECT MIDDLE STREET/PLUMMER SPRING ROAD OVER UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA ESSEX COUNTY", on 14 sheets, and dated "12/21/2020."

Based on the information that you have provided, we verify that the activity is authorized under General Permit # 10 and 14 of the enclosed April 16, 2018 Federal permit known as the Massachusetts General Permits (GPs).

Please review the enclosed GPs carefully, including the general conditions beginning on page 19, to be sure that you and whoever does the work understand its requirements. A copy of the GPs and this verification letter shall be available at the project site throughout the time the work is underway. Performing work within our jurisdiction that is not specifically authorized by this determination or failing to comply with any special condition(s) provided below or all of the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations. You must perform this work in compliance with the terms and conditions of the GPs and also in compliance with the following special conditions:

1. The permittee is authorized to utilize cofferdams on each side of the channel to work on the bridge abutments year-round. However a minimum of 50% of the channel must be free to flow at all times and safe, timely, and effective downstream fish passage must be maintained.
2. Six inches of natural streambed material shall be placed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use

during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.

3. You shall complete and return the enclosed Work Start Notification Form to this office at least two weeks before the anticipated starting date.

4. You shall complete and return the enclosed Compliance Certification Form to this office within one month of project completion.

This authorization expires on April 5, 2023. You must commence or be under contract to commence the work authorized herein by April 5, 2023, and complete the work by April 5, 2024. If not, you must contact this office to determine the need for further authorization before beginning or continuing the activity. We recommend that you contact us *before* this authorization expires to discuss reissuance. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction. We must approve any changes before you undertake them.

This authorization does not obviate the need to obtain other Federal, State, or local authorizations required by law.

This authorization becomes valid only after the Massachusetts Department of Environmental Protection (MassDEP) issues or waives Water Quality Certification (WQC) as required under Section 401 of the Clean Water Act. In the event the MassDEP denies the 401 WQC, this determination becomes null and void. The address of the MassDEP regional office for your area is provided on page 47 of the enclosed MA GPs.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Please contact Ruthann Brien of my staff at ruthann.a.brien@usace.army.mil or by phone at (978) 318-8054 or (978) 318-8338 if you have any questions.

Sincerely,

Paul M. Maniccia

Paul Maniccia
Chief, Permits & Enforcement Branch
Regulatory Division

Enclosures

cc:

Sara Kreisel, BSC Group, Inc. skreisel@BSCGroup.com

Ed Reiner, U.S. EPA, Region 1, Boston, Massachusetts, reiner.ed@epa.gov

Rachel Croy, U.S. EPA, Region 1, Boston, Massachusetts, croy.rachel@epa.gov

David Simmons, USFWS; david_simmons@fws.gov

Jill Provencal, DEP NERO, Wilmington, MA; jill.provencal@mass.gov

Philip DiPietro, DEP NERO, Wilmington, MA; philip.dipietro@mass.gov

Newburyport Conservation Commission, jgodtfredsen@cityofnewburyport.com

West Newbury Conservation Commission, conservation@wnewbury.org

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10	FLOODPLAIN IMPACT AND MITIGATION SUMMARY
11-14	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

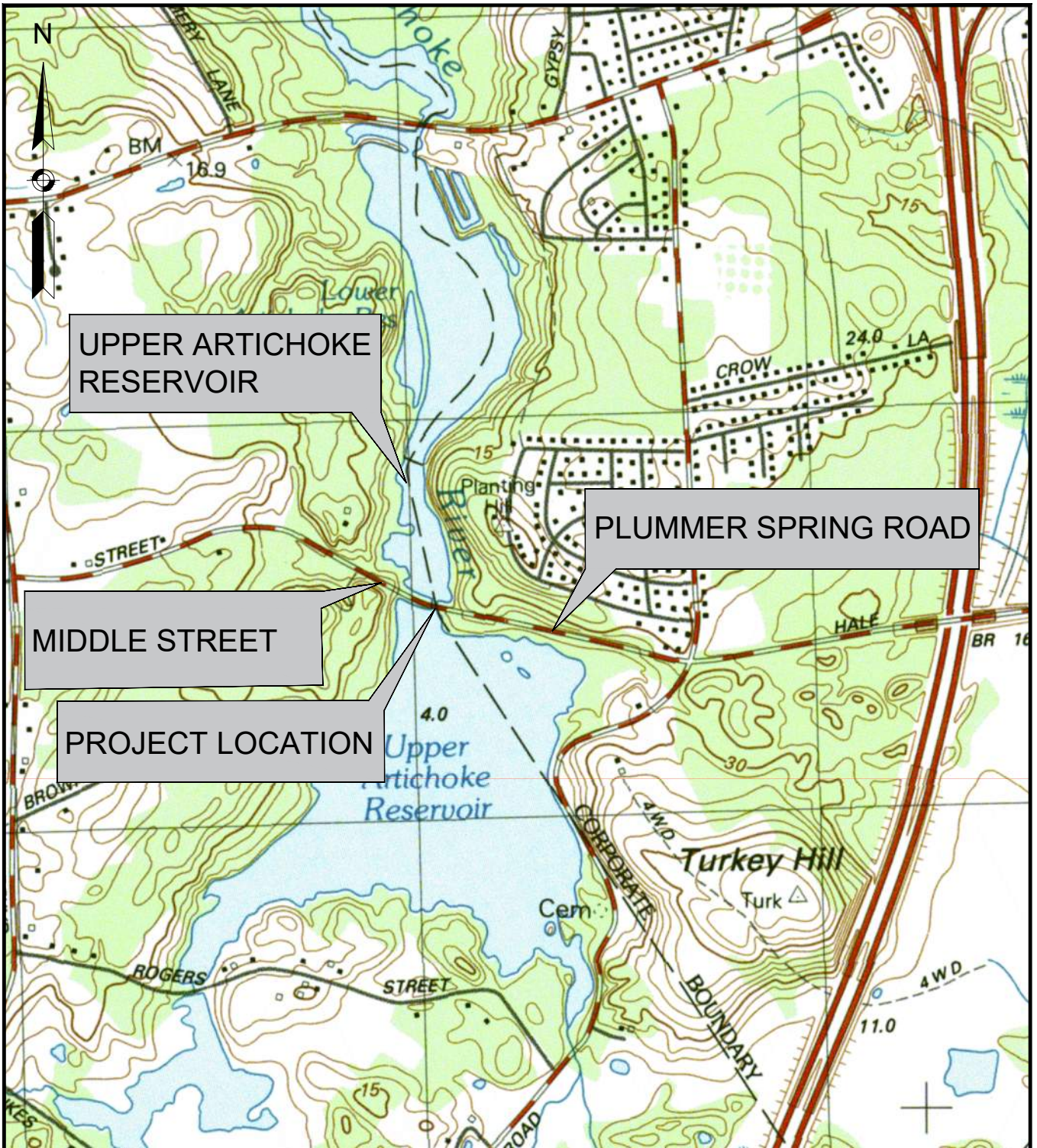
PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

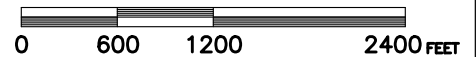
Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 14

 **BSC GROUP**
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300



LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'



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 CITY OF
 NEWBURYPORT
 60 PLEASANT ST
 NEWBURYPORT, MA 01950
 TOWN OF
 WEST NEWBURY
 381 MAIN ST, WEST
 NEWBURY, MA 01985

LOCUS MAP

Source:

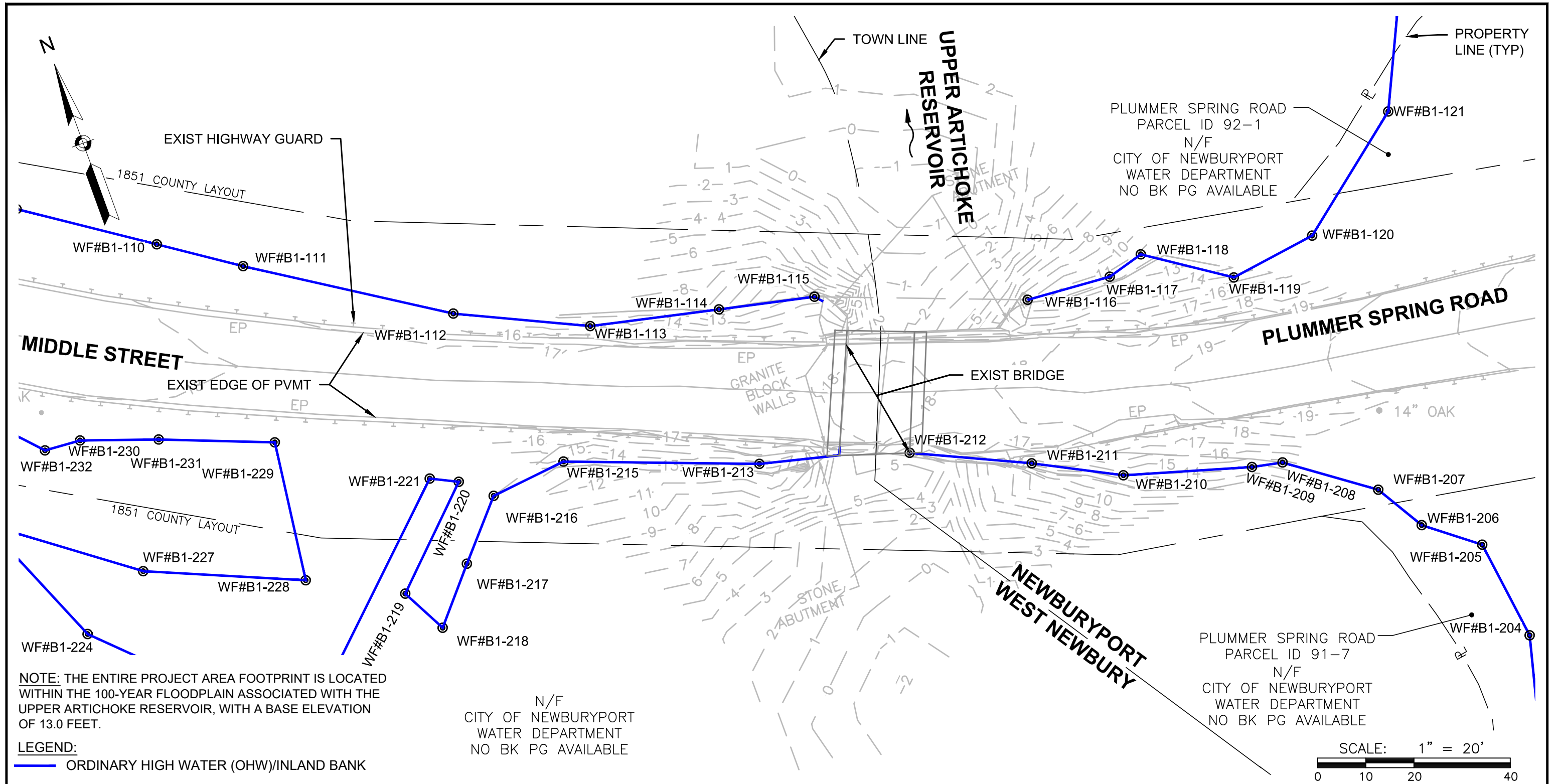
BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING
 ROAD OVER UPPER ARTICHOKE
 RESERVOIR, WEST NEWBURY/
 NEWBURYPORT, MA, ESSEX COUNTY



803 Summer Street
 Boston, Massachusetts
 02127

617 896 4300

Job No.:	28395.00	Date:	12/21/2020
Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 14



PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

EXISTING CONDITIONS

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

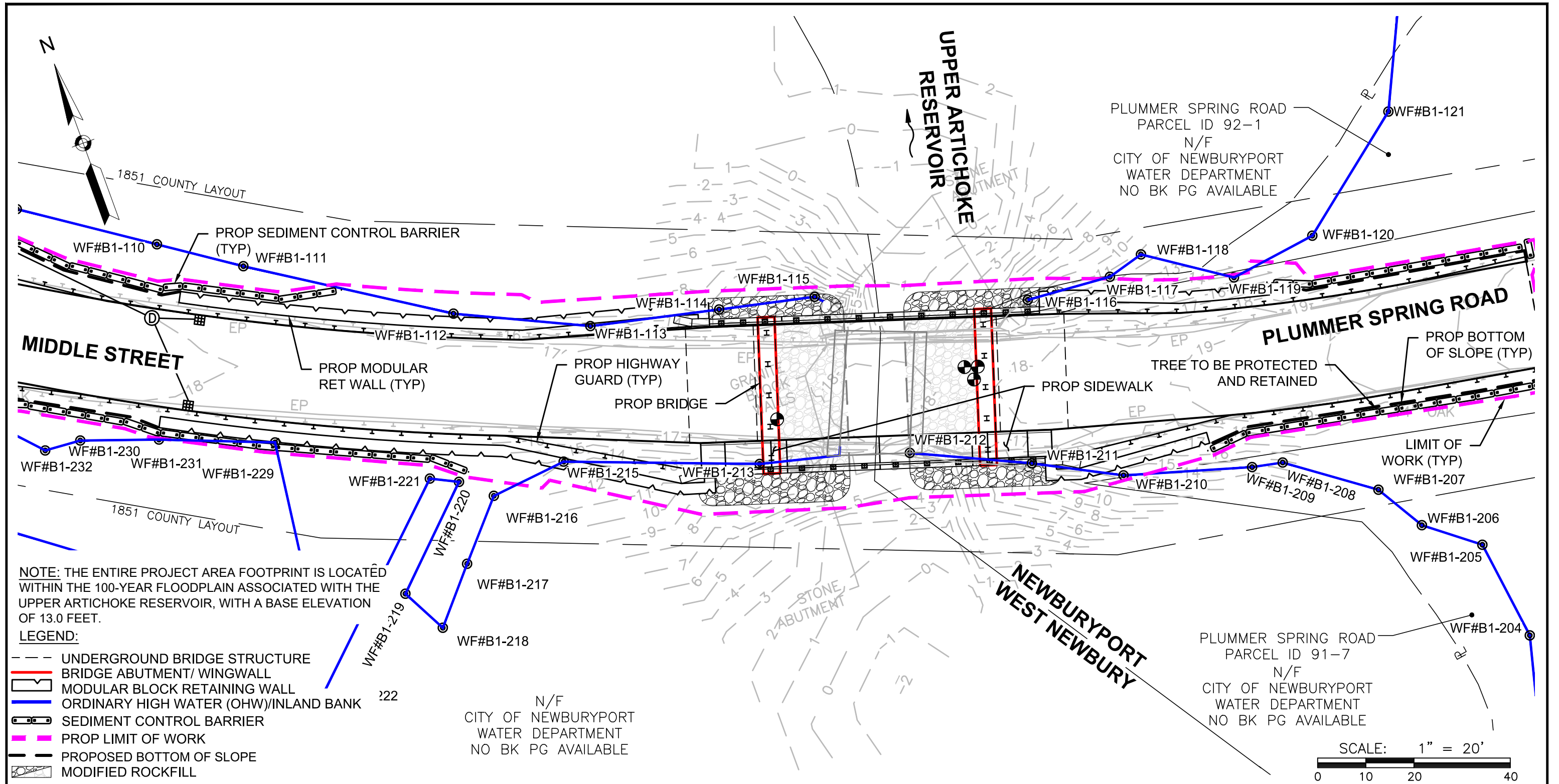
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: EX COND Figure: 3 OF 14

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 60 PLEASANT ST NEWBURYPORT,
 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

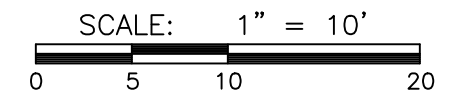
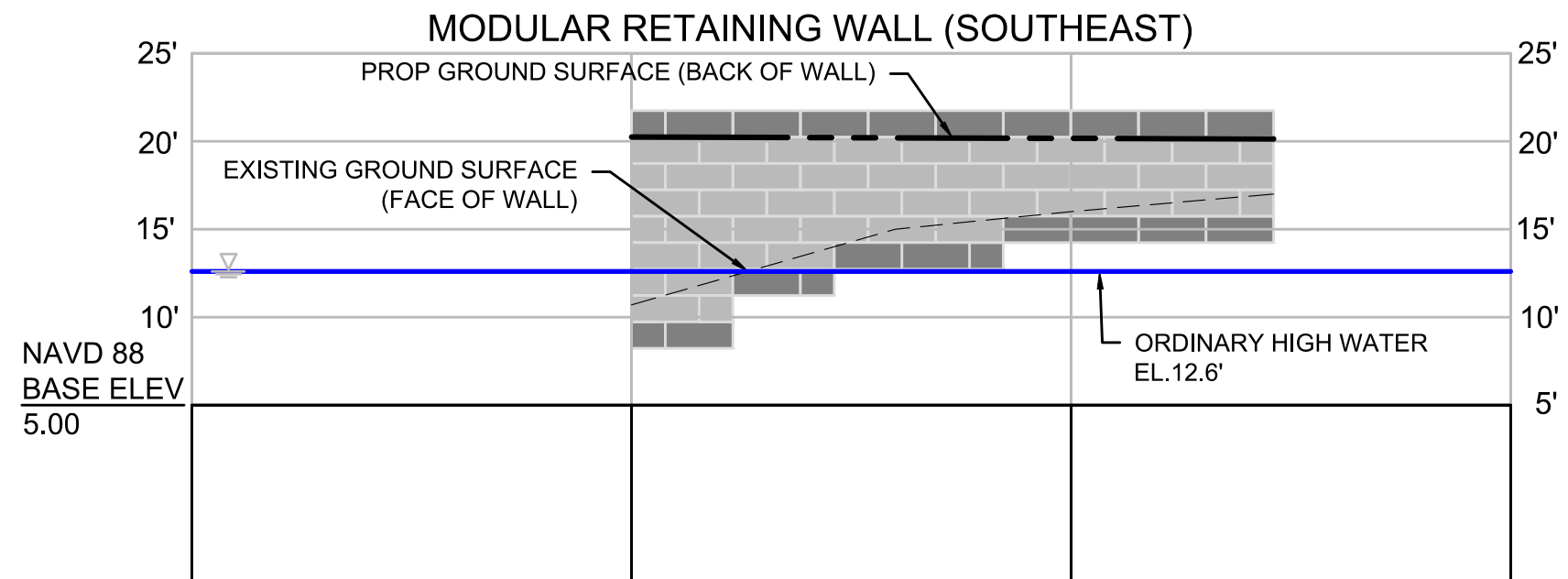
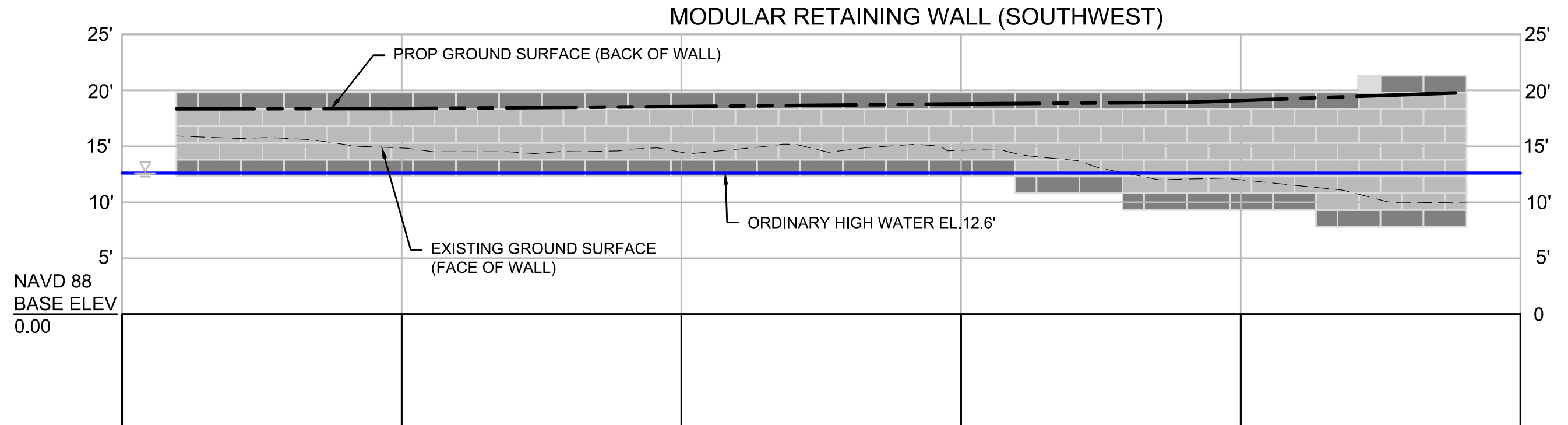
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: PROP COND Figure: 4 OF 14

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PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

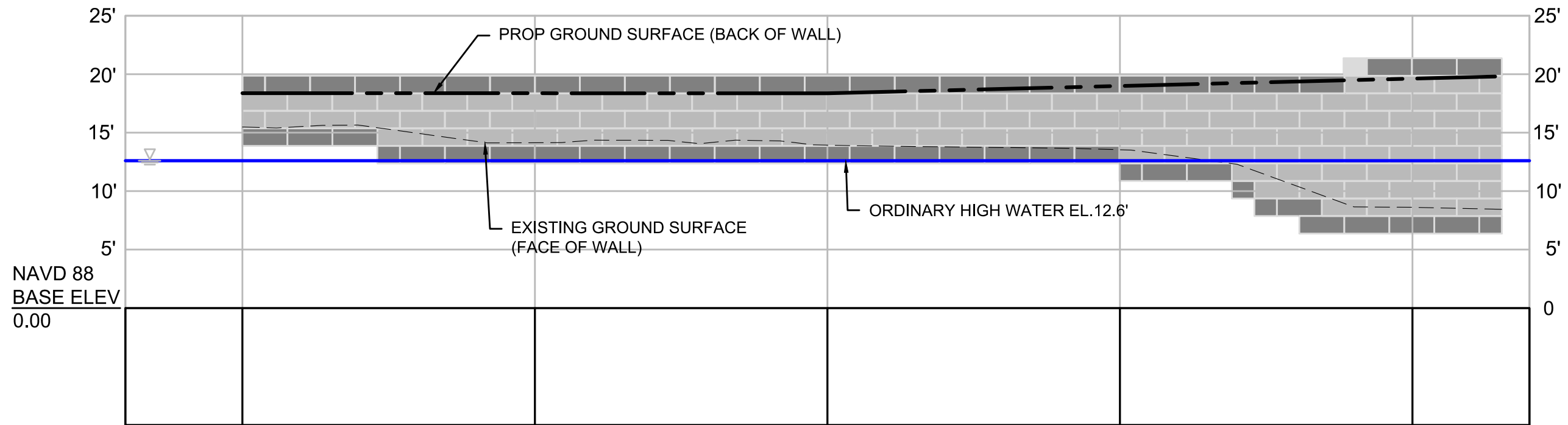
PROPOSED WALL PROFILE

Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

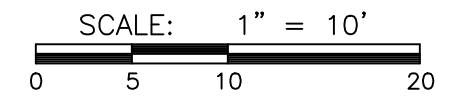
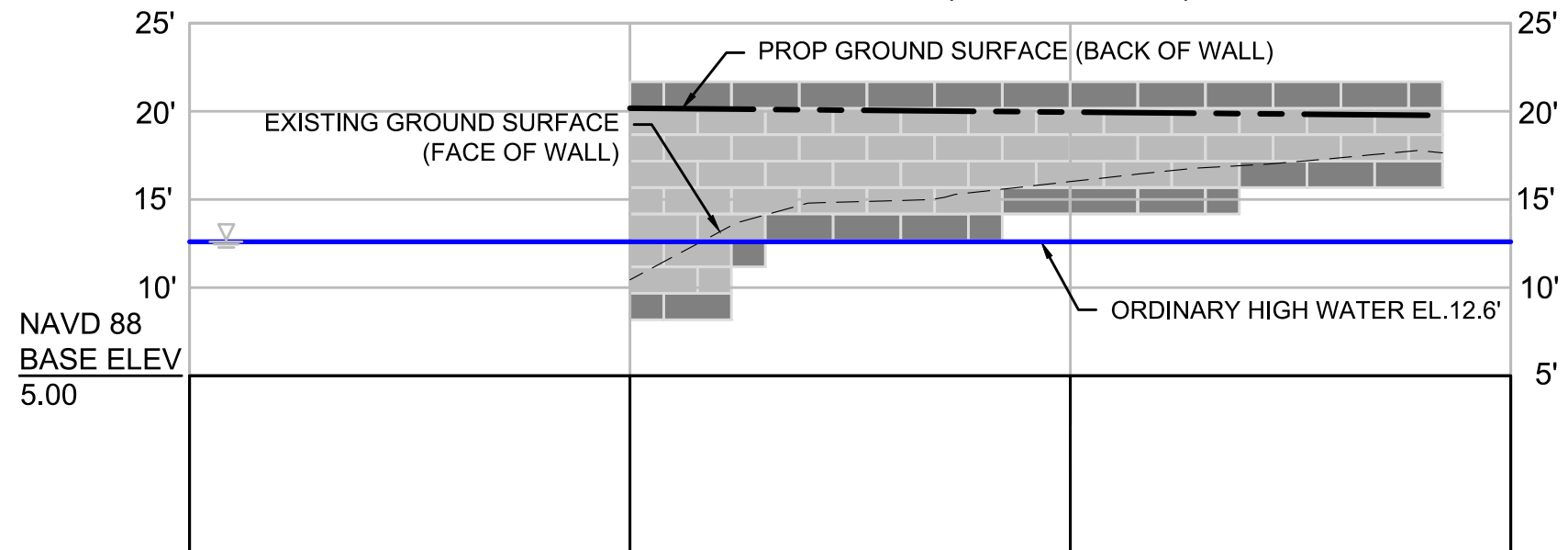
Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: _____
Description: PR WALL Figure: 5 OF 14

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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

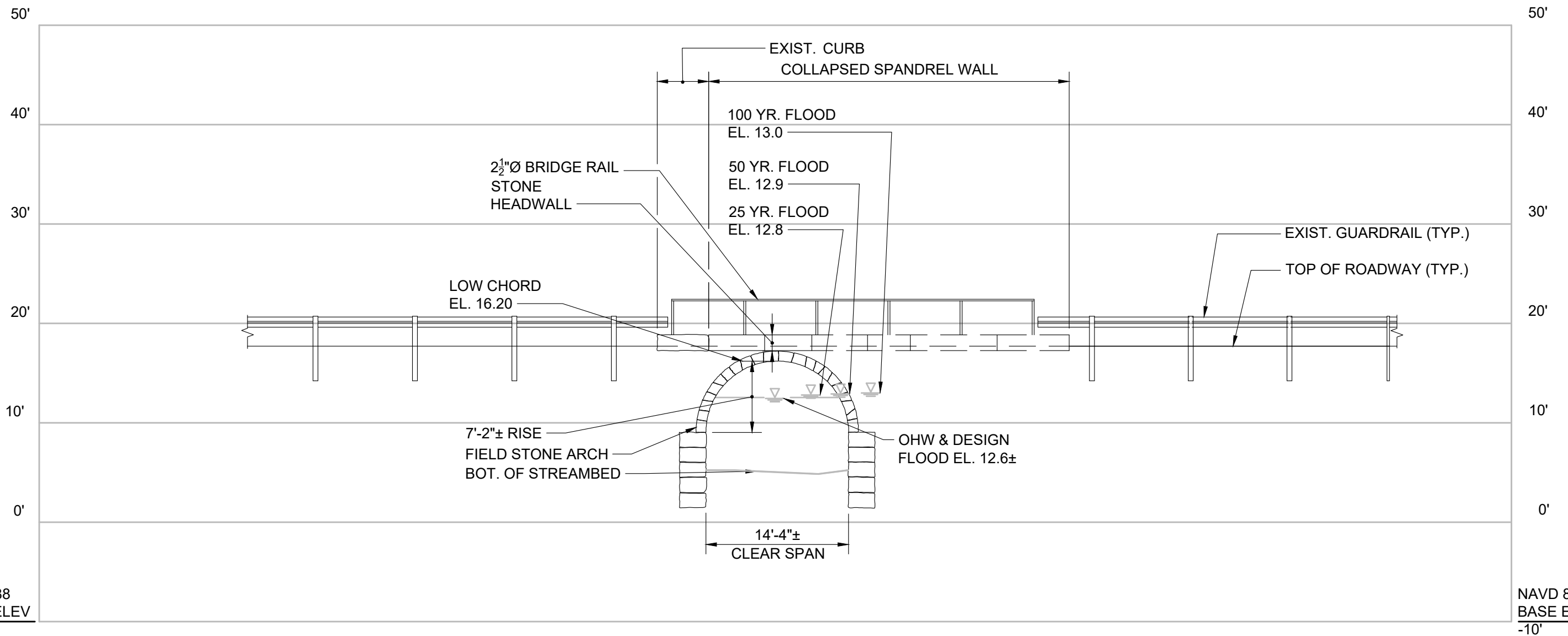


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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

PROPOSED WALL PROFILE
Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 10' Revised: _____
Description: PR WALL Figure: 6 OF 14

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EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source:

EXISTING - SOUTH ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

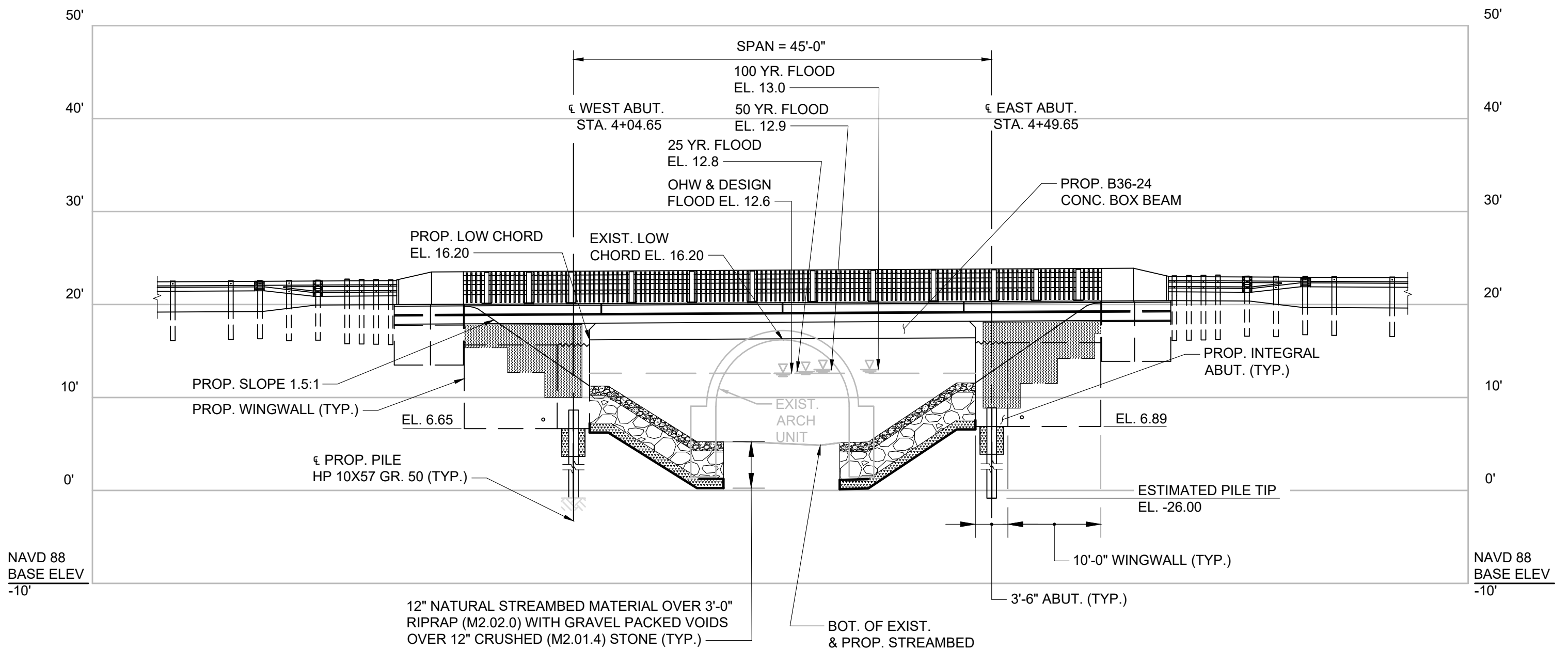
Job No.: 28395.00 Date: 12/21/2020

Scale: 3/32" = 1'-0" Revised: _____

Description: EXIST. EL. Figure: 7 OF 14

BSC GROUP

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02127
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NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

PREPARED FOR:
CITY OF NEWBURYPORT
 60 PLEASANT ST NEWBURYPORT,
 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

Source: **PROPOSED - SOUTH ELEVATION**

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

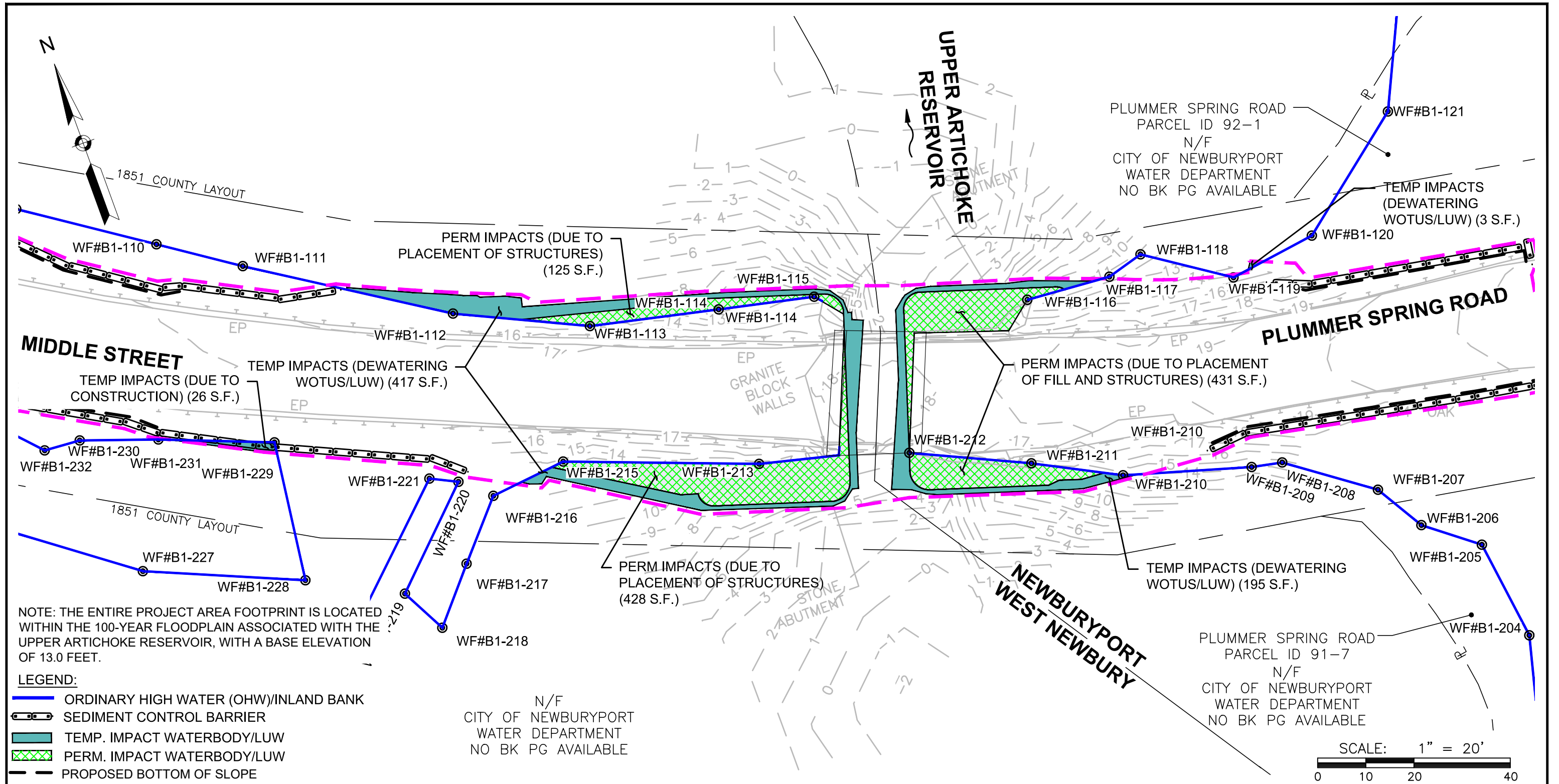
Scale: 3/32" = 1'-0" Revised: _____

Description: PROP. EL. Figure: 8 OF 14



BSC GROUP

803 Summer Street
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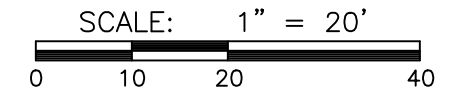
NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PLUMMER SPRING ROAD
PARCEL ID 91-7
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

IMPACTS

Source:

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

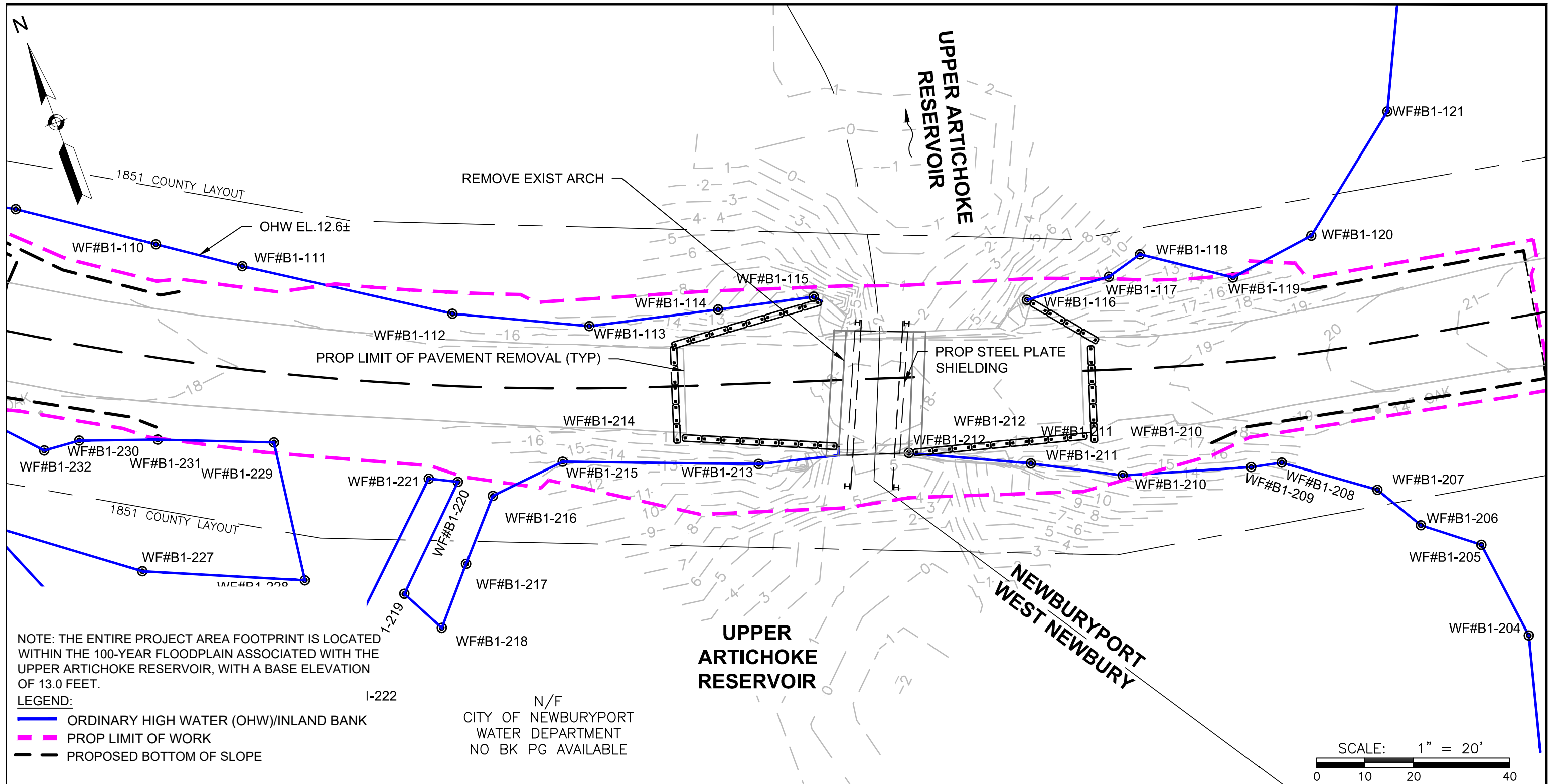
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Scale: 1" = 20' Revised: _____

Description: IMPACTS Figure: 9 OF 14

BSC GROUP

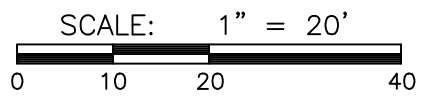
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK
 — PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

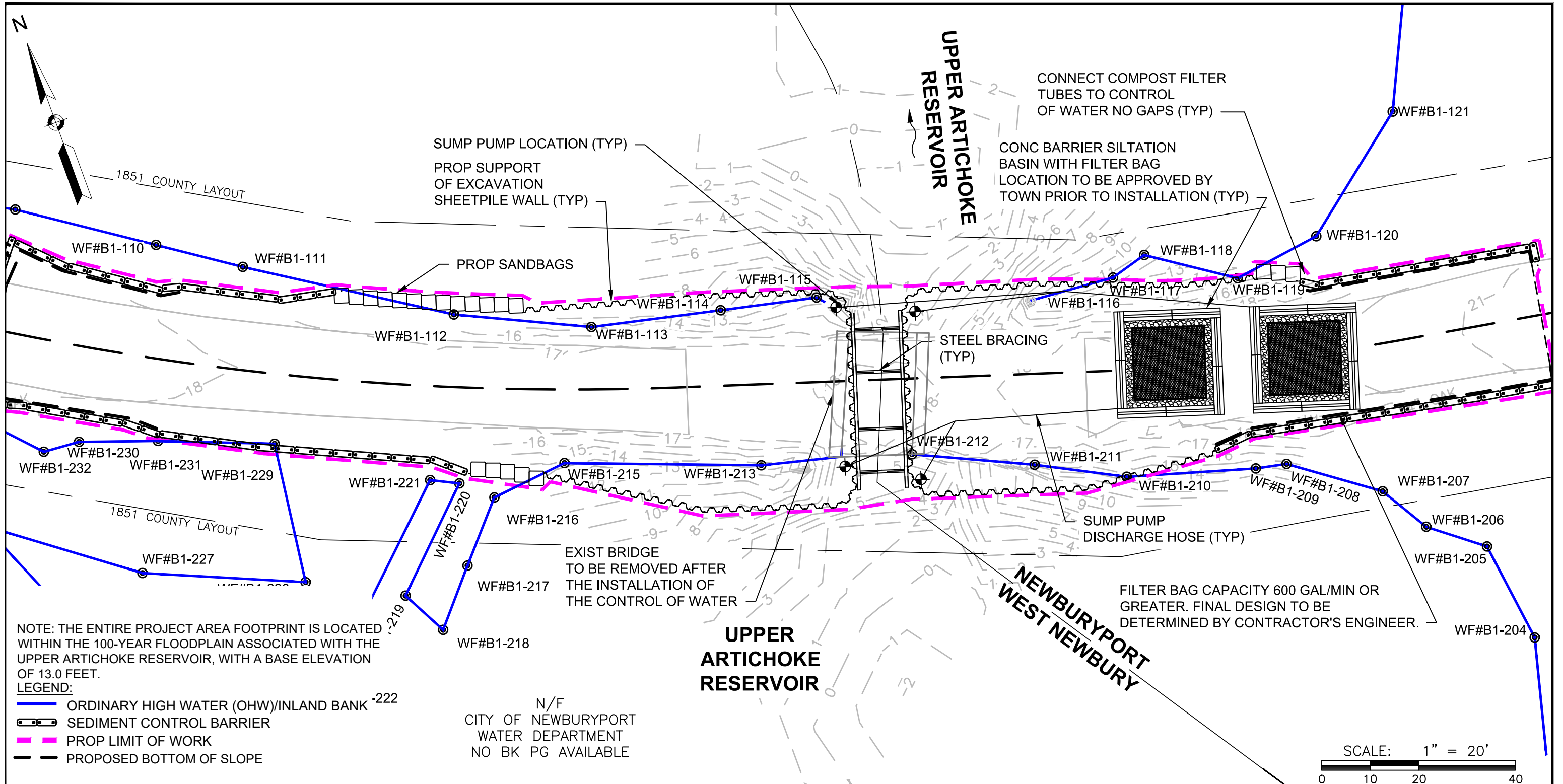


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 MA 01950
 TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

SHIELDING PLAN - UPPER ARCH REMOVAL
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 10 OF 14

BSC GROUP
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 02127
 617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

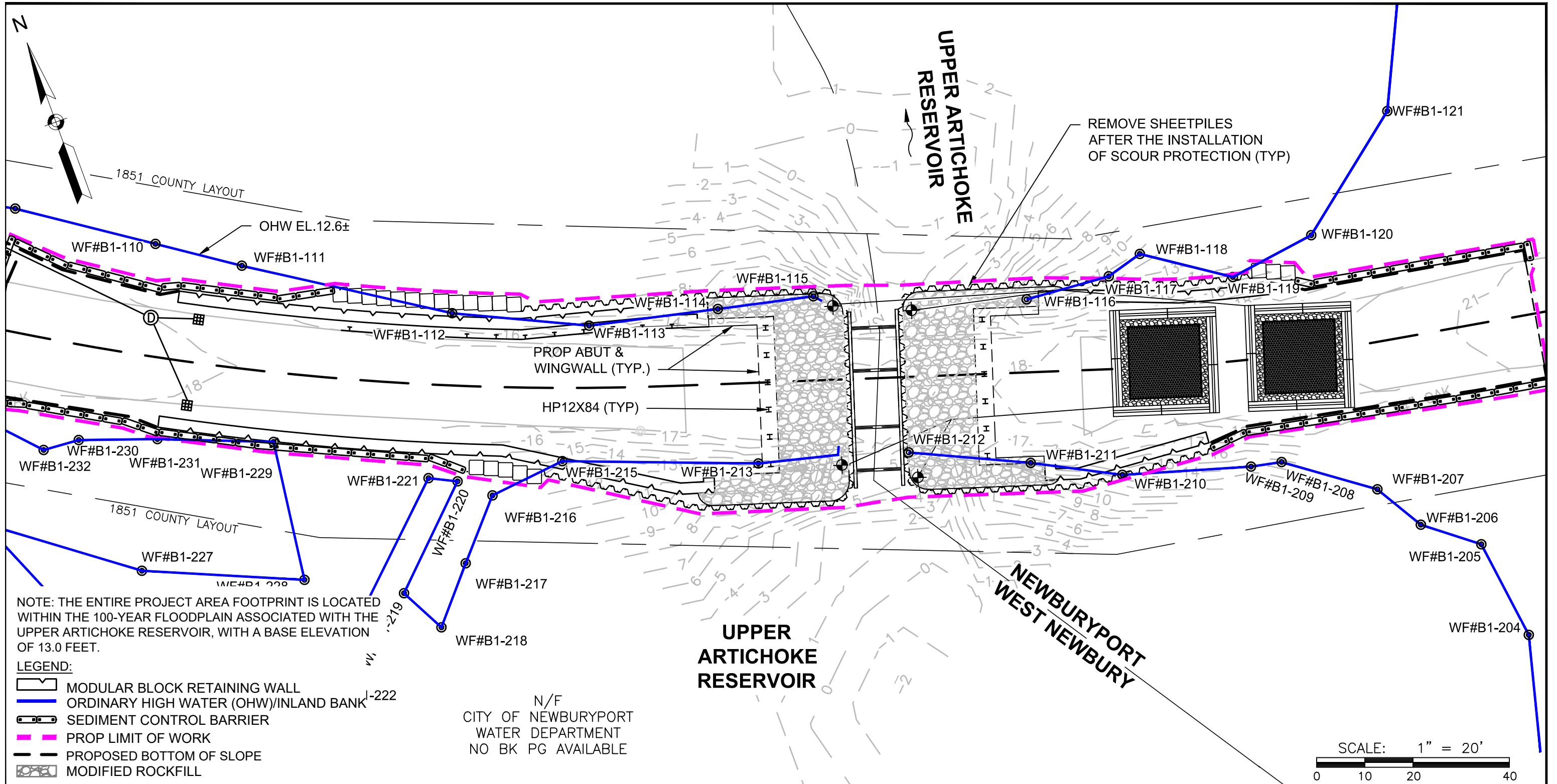
PREPARED FOR:
CITY OF NEWBURYPORT
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MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

CONTROL OF WATER - PHASE 1 - PLAN

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 11 OF 14

BSC GROUP
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02127
617 896 4300



1851 COUNTY LAYOUT

OHW EL. 12.6±

REMOVE SHEETPILES AFTER THE INSTALLATION OF SCOUR PROTECTION (TYP)

PROP ABUT & WINGWALL (TYP.)
HP12X84 (TYP)

NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

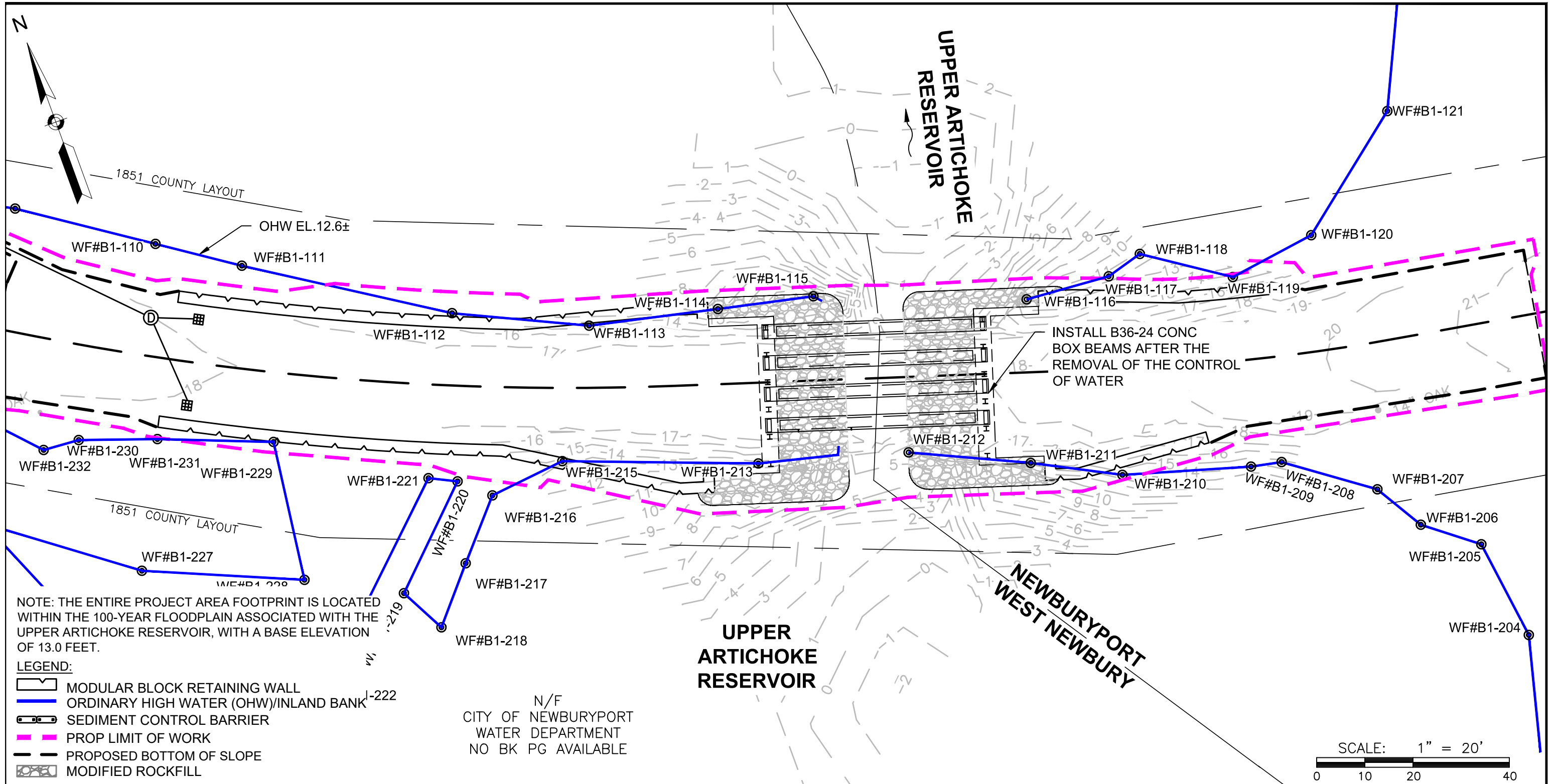
SCALE: 1" = 20'
0 10 20 40

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 12 OF 14

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:**
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

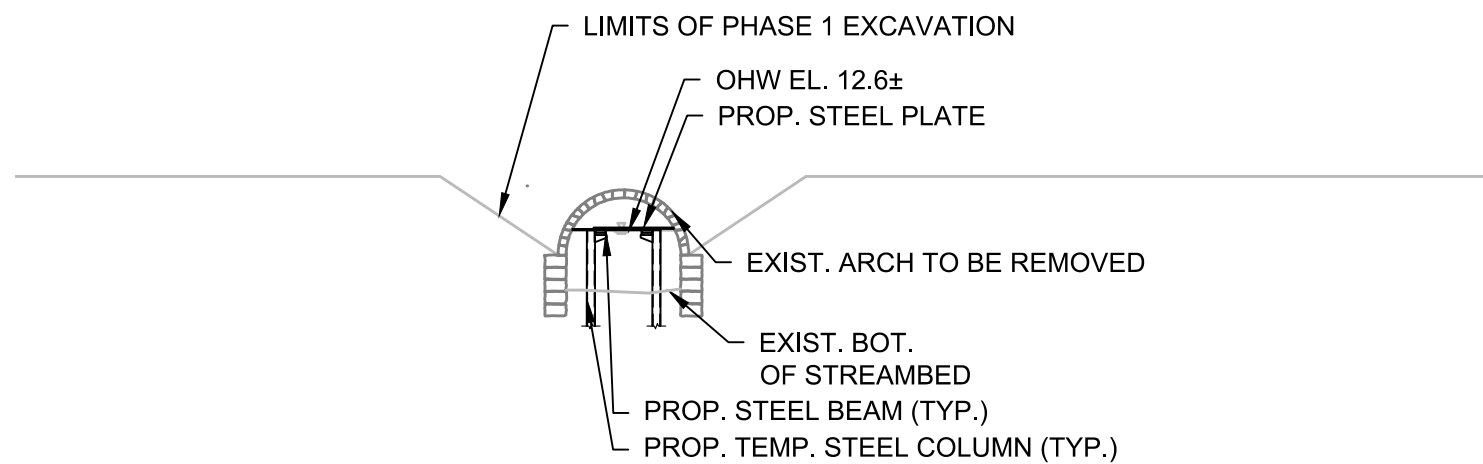
CONTROL OF WATER - PHASE 3 - PLAN

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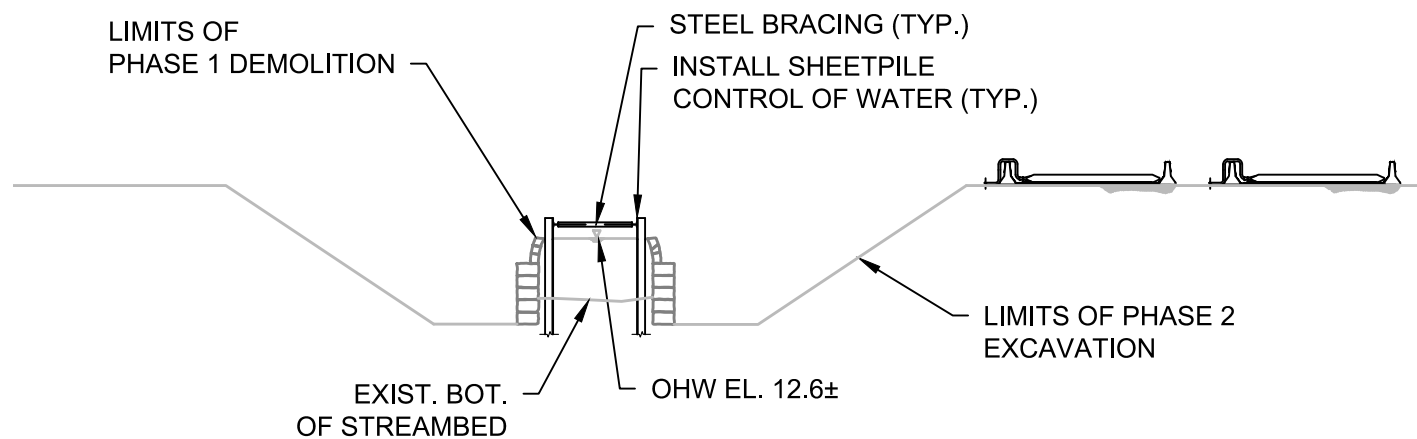
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 13 OF 14

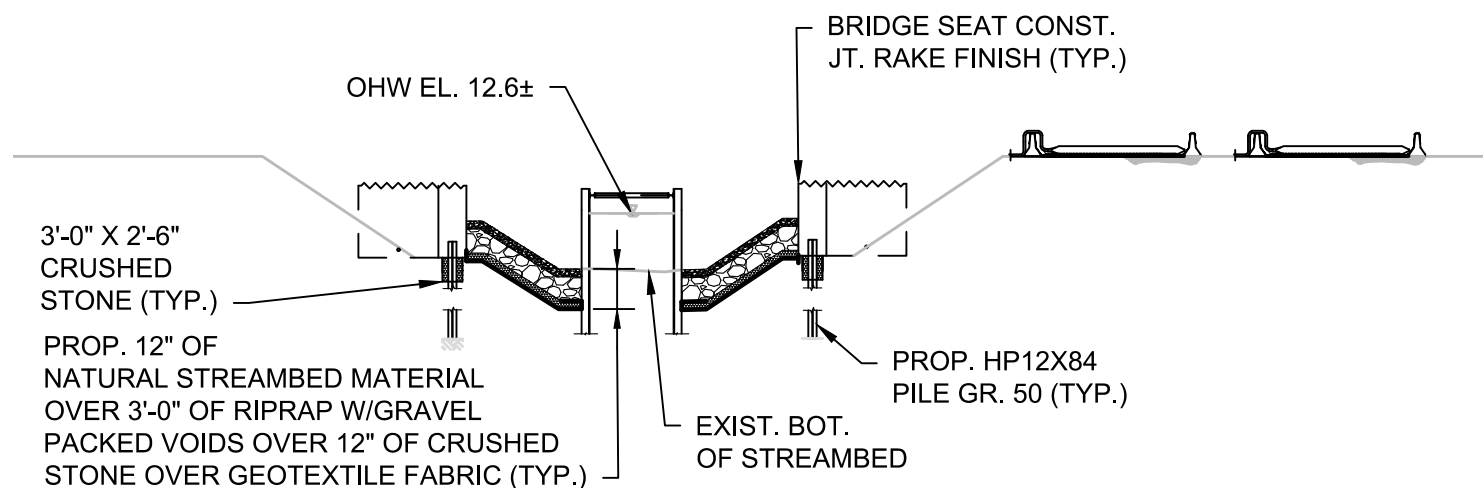
BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



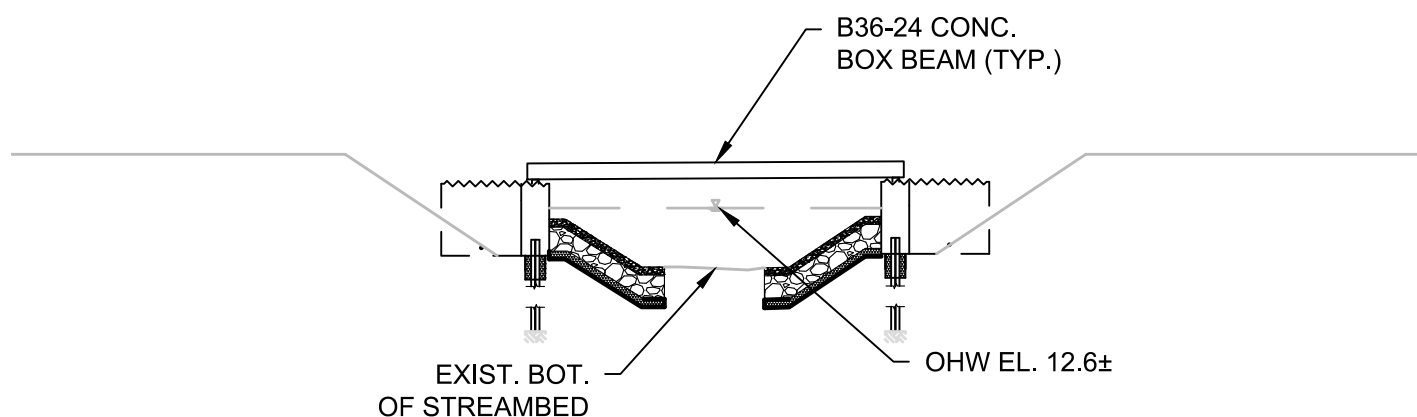
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

PREPARED FOR:
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60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 14 OF 14

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

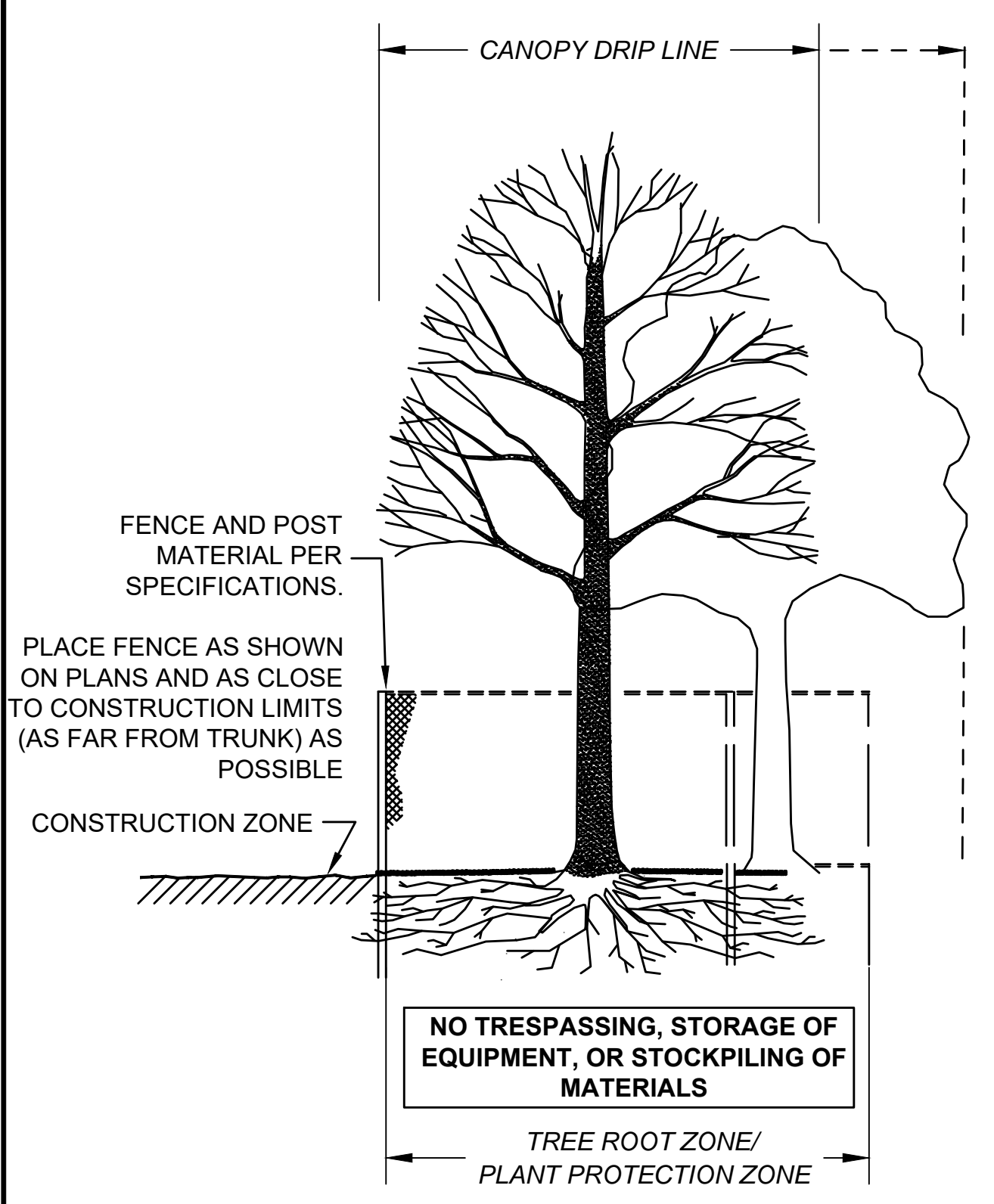
**NEWBURYPORT
PLUMMER SPRING ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	1
PROJECT FILE NO. XXXXXX			

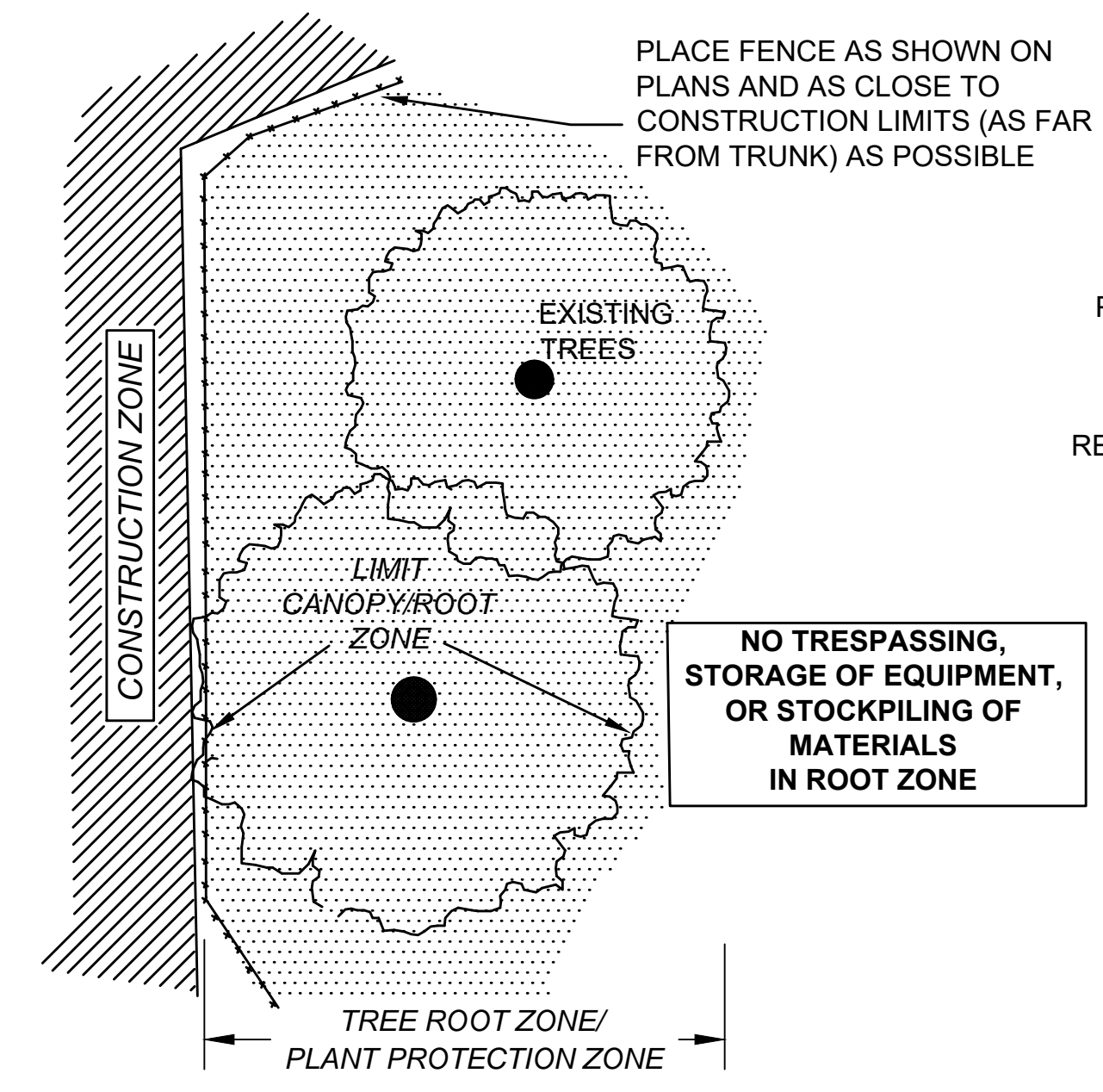
CONSTRUCTION DETAILS

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.



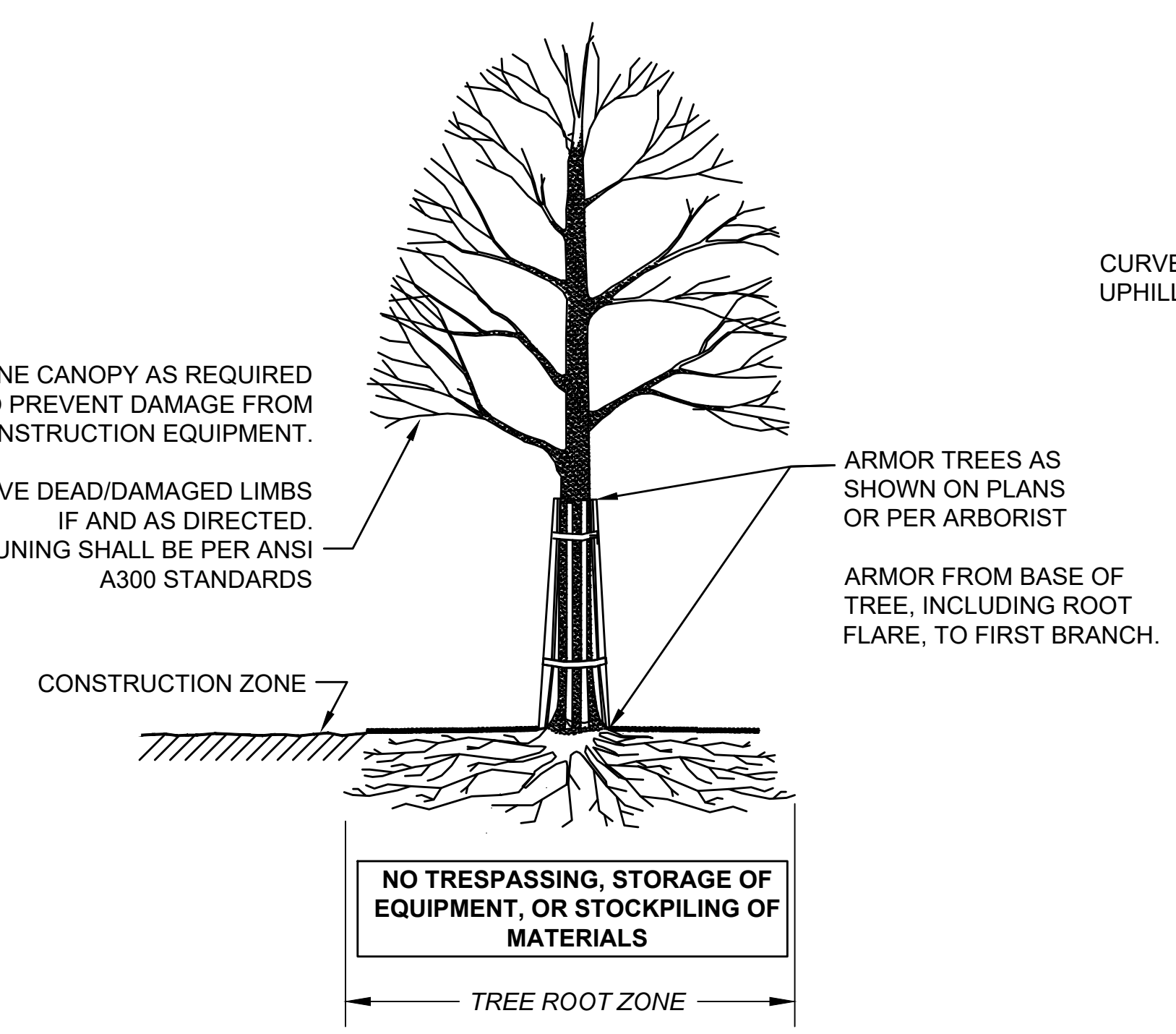
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

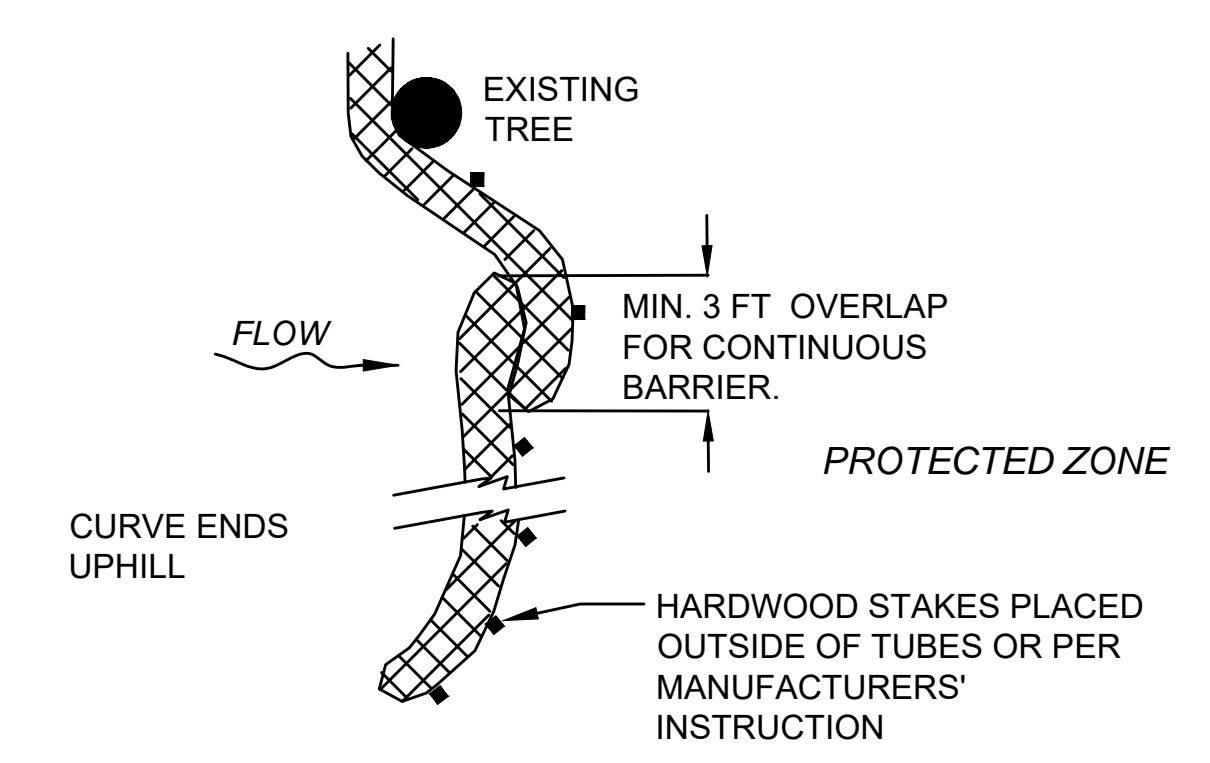
TREE PROTECTION - ROOT ZONE

NOT TO SCALE

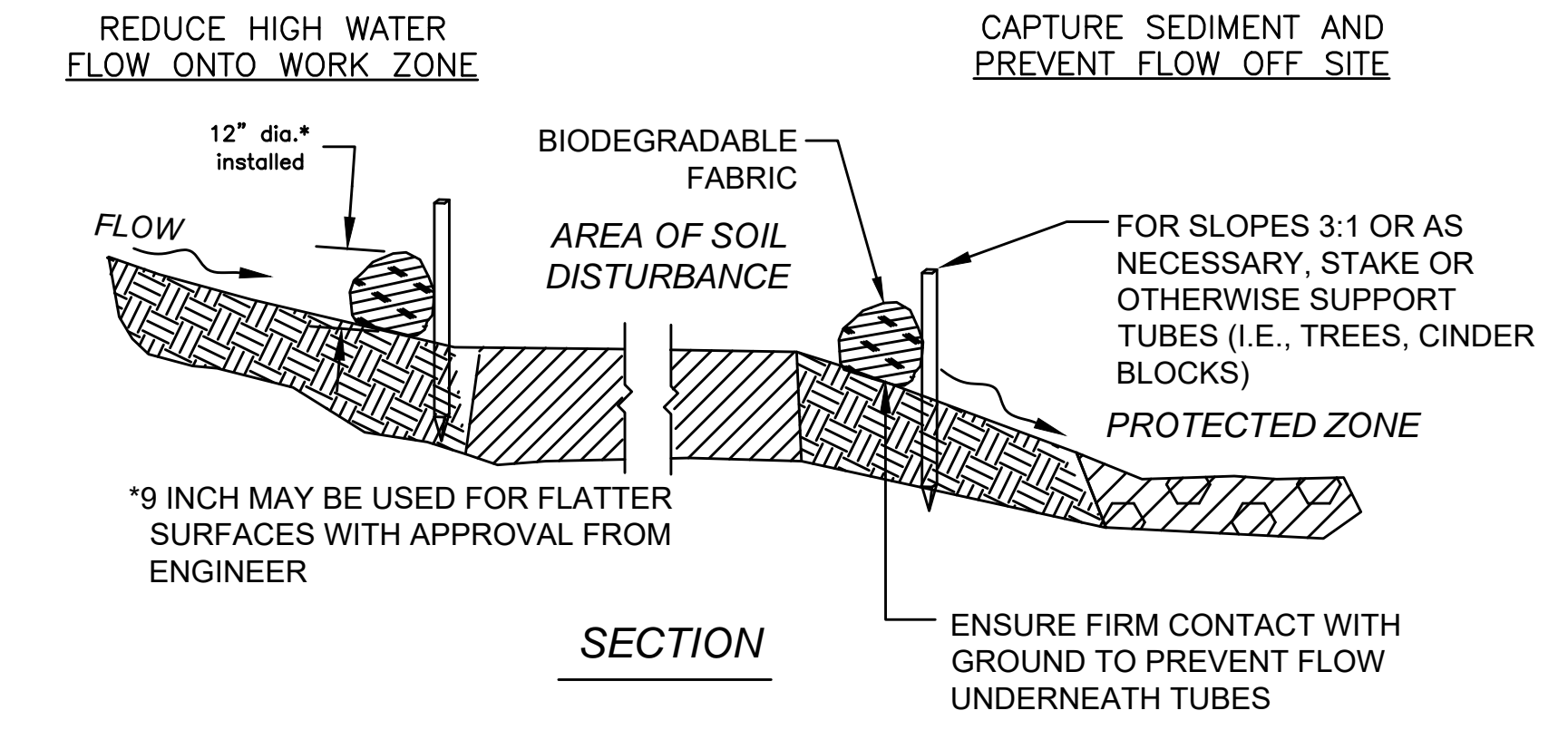


SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK



PLAN VIEW

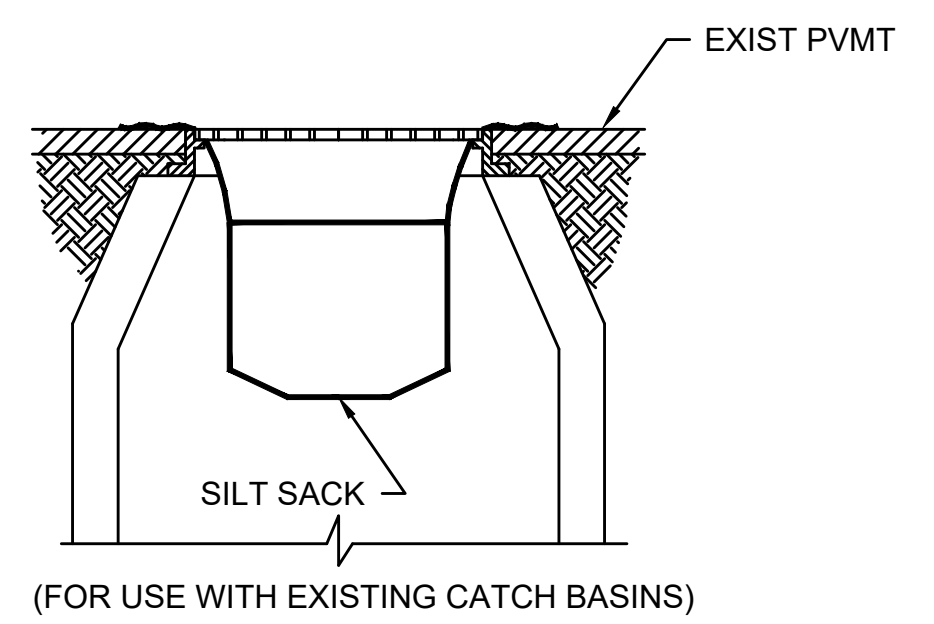


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

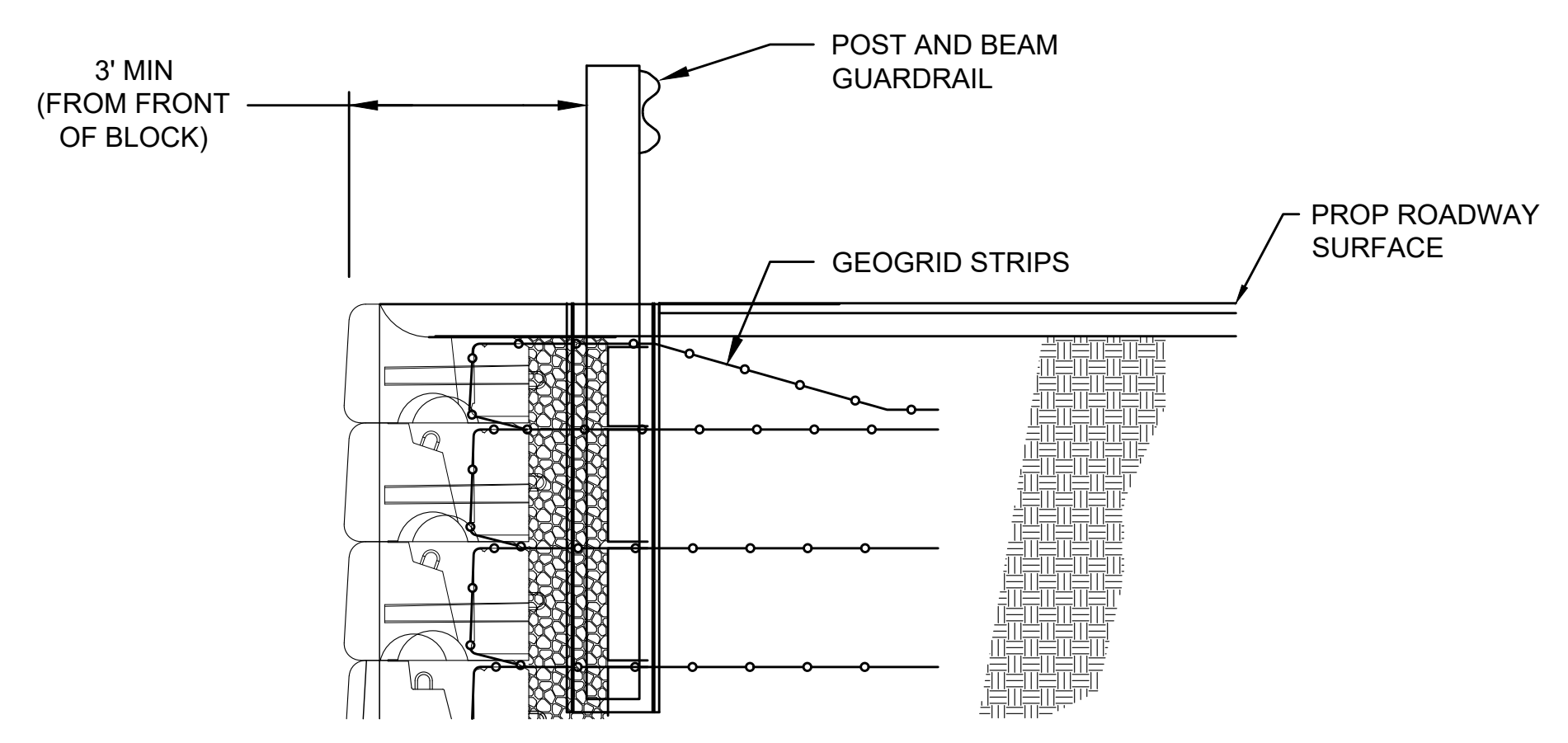
NOT TO SCALE

NOTES:
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



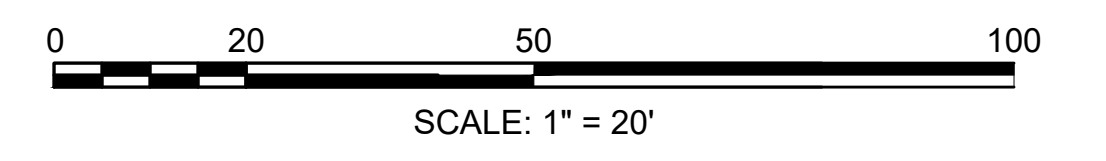
SILT SACK INLET PROTECTION

NOT TO SCALE



POST AND BEAM GUARDRAIL - SECTION VIEW

NOT TO SCALE





**US Army Corps
of Engineers**®
New England District

WORK-START NOTIFICATION FORM
(Minimum Notice: Two weeks before work begins)

EMAIL TO: ruthann.a.brien@usace.army.mil and cenae-r@usace.army.mil; or

MAIL TO: Ruthann Brien
Regulatory Division
U.S. Army Corps of Engineers, New England District
696 Virginia Road
Concord, Massachusetts 01742-2751

Also, if the work is in the Massachusetts Coastal Zone (<https://www.mass.gov/service-details/czm-regions-coastal-communities-and-coastal-zone-boundary>), email this form to robert.boeri@mass.gov or mail it to: The Massachusetts Office of Coastal Zone Management, Project Review Coordinator, Suite 800, 251 Causeway Street, Boston, MA 02114.

Corps of Engineers Permit No. NAE-2021-00177 was issued to the City of Newburyport. This work is located in the Upper Artichoke Reservoir and authorized fill associated with bridge replacement.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

Business Address: _____

Phone & email: () _____ () _____

Proposed Work Dates: Start: _____ Finish: _____

Permittee/Agent Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Date Permit Issued: April 9, 2021 **Date Permit Expires:** April 5, 2023

FOR USE BY THE CORPS OF ENGINEERS

PM: Ruthann Brien **Submittals Required:** _____

Inspection Recommendation: _____



**US Army Corps
of Engineers**®
New England District

COMPLIANCE CERTIFICATION FORM
(Minimum Notice: Permittee must sign and return notification
within one month of the completion of work.)

Permit Number: NAE-2021-00177

Project Manager: Ruthann Brien

Name of Permittee: City of Newburyport

Permit Issuance Date: April 9, 2021

Please sign this certification and return it to our office upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

```

*****
* E-MAIL TO: cenae-r@usace.army.mil; or *
* * *
* MAIL TO: Permits and Enforcement Branch A *
* U.S. Army Corps of Engineers, New England District *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *
*****

```

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

Printed Name

Date of Work Completion

() _____
Telephone Number

() _____
Telephone Number

U.S. Army Corps of Engineers

MA GENERAL PERMIT APPLICATION

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
West Newbury & Newburyport, Massachusetts

Pre-Construction Notification Submission

United States Army Corps of Engineers
January 2021

Prepared for:

Town of West Newbury
381 Main Street
West Newbury, MA 01985

City of Newburyport
16C Perry Way
Newburyport, MA 01950

BSC Project No. 28395.00

Prepared by:



803 Summer Street
Boston, MA 02127

January 15, 2021

U.S. Army Corps of Engineers
New England District
Regulatory Division
696 Virginia Road
Concord, MA 01742-2751

**RE: Pre-Construction Notification (PCN)
Middle Street / Plummer Spring Road over The Upper Artichoke Reservoir
Bridge Replacement Project
Bridge No. N-11-007
West Newbury & Newburyport, Massachusetts**

Dear Reviewer:

On behalf of the Town of West Newbury and the City of Newburyport (the Applicants), BSC Group, Inc. (BSC) is requesting authorization from the U.S. Army Corps of Engineers (USACE) for the Middle Street, West Newbury / Plummer Spring Road, Newburyport over the Upper Artichoke Reservoir (Bridge No. N-11-007) Bridge Replacement Project (the Project) under MA General Permit 10. The bridge is structurally deficient, and the road is currently closed due to undermining of the existing roadway foundation. Therefore, the applicant proposes to replace the bridge structure with a new high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness.

Approximately 984 square feet (sf) of permanent impacts to land under Waters of the US (LUWOTUS) will occur within the Reservoir and stream channel with the installation of riprap, retaining walls, and the new bridge wingwalls and abutments. A total of 885 sf of new LUWOTUS will be created with the increased openness of the expanded crossing. Additionally, approximately 641 sf of temporary impacts at the inlet and outlet of the bridge will occur as a result of dewatering the channel for construction. All temporary impacts will be restored to preconstruction conditions.

This Pre-Construction Notification is being submitted in accordance with the General Permit for the Commonwealth of Massachusetts per the regulations set forth at 33 CFR 320-332. This project is PCN eligible under General Permit 10 – Linear Transportation Projects including Stream Crossings. As part of this PCN review, the **Applicants are requesting a waiver from the Time of Year Restriction (GC 16).**

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



Please do not hesitate to contact me at 617-896-4579, or skreisel@bscgroup.com with any inquiries you may have.

Sincerely,
BSC Group, Inc.

Sara Kreisel, PWS
Ecological Project Manager

cc: Angus Jennings, Town of West Newbury
Jon-Eric White, City Engineer, City of Newburyport

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over Upper Artichoke Reservoir
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ATTACHMENT B	SITE FIGURES PHOTOGRAPHS
ATTACHMENT C	USGS STREAM STATS FEMA FIRM MAP USFWS IPaC
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ATTACHMENT E	HISTORICAL REVIEW PROOF OF MAILING / EMAILING
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ATTACHMENT G	PROJECT SITE PLANS CONSTRUCTION DETAILS

17. DIRECTIONS TO THE SITE

The project site is located at the confluence of Plummer Spring Road, Newburyport and Middle Street, West Newbury, MA.

18. Nature of Activity (Description of project, include all features)

Bridge replacement project. The Town of West Newbury and the City of Newburyport ("the Applicants") propose to replace the structurally deficient, undersized bridge, Bridge No. N-11-007, which carries Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA over the Artichoke River / Upper Artichoke Reservoir. The Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. The bridge and roadway is currently considered structurally deficient and was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway. The proposed span length will increase from the 14-feet to 45-feet. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the project is to replace a structurally deficient bridge.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

The bridge and roadway is currently considered structurally deficient and was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable along the roadway. In order to protect the new bridge structure, riprap will be installed at the crossing inlet/outlet. The new bridge will result in an additional 885 sf of new LUWOTUS with the increased openness of the expanded crossing. All temporary impacts will be restored to preconstruction conditions.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

48CY (Perm) ReservoirConstructionDredging 50CY (Temp)ReservoirConstructionDredging

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres Waterbody / Land Under Waters of the US - 984 sf (Perm), 641 sf (Temp); Gain of 885 sf proposed

or

Linear Feet Stream Bank - 182 lf (Perm), 61 lf (Temp)

23. Description of Avoidance, Minimization, and Compensation (see instructions)

To address the replacement of the existing bridge, impacts to Waters of the U.S. cannot be avoided. However, proposed project activities and associated mitigation measures have been designed to demonstrate that the project will have no adverse impacts for work within jurisdictional areas. This will be achieved specifically by limiting alteration within WOTUS to the maximum extent feasible and preserving undisturbed areas adjacent to the bridge as much as possible. This will also be accomplished through project phasing activities that minimize work within resources to the maximum extent practicable. The project has been designed to improve the previously disturbed areas directly adjacent to the bridge, by implementing design features to reduce erosion potential and the surrounding area during storm events.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See attached list

City - _____ State - _____ Zip - _____

b. Address-

City - _____ State - _____ Zip - _____

c. Address-

City - _____ State - _____ Zip - _____

d. Address-

City - _____ State - _____ Zip - _____

e. Address-

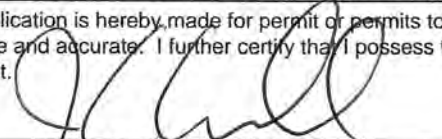

City - _____ State - _____ Zip - _____

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
NewburyportConCom	NOI-OOC	DEP # TBD	2021-01-11	TBD	
WestNewbryConCom	NOI-OOC	DEP # 078-0724	2021-01-04	TBD	
MassDEP	401 WQC	TBD	TBD		

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.


1-13-21

2021-01-13

 SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

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b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

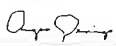
City - State - Zip -

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27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.



Digitally signed by Angus Jennings
Date: 2021.01.13 15:28:06 -05'00'

2021-01-13

SIGNATURE OF APPLICANT

DATE



2021-01-13

SIGNATURE OF AGENT

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

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Abutters Immediately Adjacent to the Project Area

Newburyport

91 / 7 / / /
CITY OF NEWBURYPORT
WATER DEPARTMENT
16C PERRY WAY
NEWBURYPORT, MA 01950

92 / 1 / / /
CITY OF NEWBURYPORT
WATER DEPARTMENT
16C PERRY WAY
NEWBURYPORT, MA 01950

West Newbury

0270 0000 0031
CITY OF NEWBURYPORT
CITY HALL
PLEASANT STREET
NEWBURYPORT, MA 01950

0200 0000 0011
443 MIDDLE STREET RE TRUST
C/O BENNETT & CO
45 WATER STREET
NEWBURYPORT, MA 01950

Attachment A

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Pre-Construction Notification

PROJECT NARRATIVE

1.0 Introduction

The BSC Group Inc., on behalf of both the Town of West Newbury and the City of Newburyport (“the Applicant”) is seeking Pre-Construction Notification Authorization from the U.S. Army Corps of Engineers to authorize project activities associated with the replacement of a bridge (Bridge No. N-11-007) which carries Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA over the Artichoke River / Upper Artichoke Reservoir (hereby referred to as “the bridge”) (See Attachment B for Site Location Maps and Photos). The bridge is structurally deficient due to undermining of the existing roadway foundation. The Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. A Notice of Intent has been filed concurrently with the West Newbury and Newburyport Conservation Commissions for impacts to wetland resource areas under the Massachusetts Wetlands Protection Act and its implementing regulations 310 CMR 10.00.

Due to the nature of the bridge replacement activities, impacts are proposed to the streambed – Land Under Waters of the US (LUWOTUS) and the stream bank. However, mitigation measures will be implemented to minimize disturbances to the surrounding environment during construction. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment G) for additional detail. The project has been designed to be in compliance with the Massachusetts Stream Crossing Standards to the maximum extent practicable and improves openness and habitat connectivity.

2.0 Existing Conditions

West Newbury is located on the northwestern side of the bridge, and Newburyport is on the eastern side. Plummer Spring Road, Newburyport turns into Middle Street upon entering West Newbury. The project site is approximately 2,000 feet west of the intersection with Turkey Hill Road, Newburyport and approximately 0.7 mile east of the intersection with Garden Street, West Newbury. The crossing occurs within the Upper Artichoke Reservoir, a public water supply. The surrounding area is comprised of Article 97 lands, reserved for water supply protection. Beyond that, the area is generally characterized by low-density residential development. The bridge predates and divides the existing Upper Artichoke Reservoir, through which the Artichoke River flows. The Reservoir was originally formed by damming the Artichoke River which flows north to the Merrimack River. While the majority of the surrounding area consists of residential development and forested land, the project area is limited to previously disturbed Riverfront Area and other resource areas encumbered by the existing bridge.

The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. The road and stone arch bridge were constructed in 1891 before the Upper Artichoke Reservoir was built. The low chord on the existing arch is set at an elevation of 16.20 feet. The paved roadway consists of two travel lanes that vary in width from 8.5 feet to 10-feet for a total roadway width of approximately 17-feet to 20-feet. There are no sidewalks on the bridge. The bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. The project area consists of country drainage, whereby runoff travels to the approach roadway and informally runs off down the side slopes. Plummer Spring Road / Middle Street is functionally classified as a Rural Local road.

2.1 Waters of the United States

BSC wetland scientists delineated the boundary of existing wetland resource areas within and in the immediate vicinity of the bridge in December 2019. Wetlands were delineated in accordance with the methods in the USACE 1987 Wetland Delineation Manual. Existing conditions, stream bank, and LUWOTUS, in relation to the proposed activities are shown in Attachment B along with copies of the Project Site Plans in Attachment G.

Watershed

The Artichoke River generally flows in a south-to-north orientation in the Upper Artichoke Reservoirs before discharging into the Merrimack River, 1.3 miles north of the project area. The Artichoke River connects the Upper Artichoke Reservoir, the Lower Artichoke Reservoir, and the Merrimack River, by two dams. According to the USGS Stream Stats Report for this area, the drainage area at the Plummer Spring Road / bridge crossing is approximately 5.48 square miles.

Stream Bank

The natural banks of the Reservoir have gradual slopes vegetated mainly by deciduous and occasionally coniferous trees. The banks are littered with leaf detritus as a result. The roadway is steeply sloped, and the banks are vegetated with shrubs and trees growing over a riprap substrate.

Vegetated Wetlands

No vegetated wetlands were identified within the project site.

Land Under Waters of the US

The entire bed of the Reservoir upstream and downstream of the existing crossing, and within the existing bridge crossing constitutes LUWOTUS. The streambed near the crossing is characterized by sand and cobbles with trace amounts of silt and gravel.

2.2 FEMA Floodplain

According to the FEMA Flood Insurance Rate Maps for Newburyport / West Newbury (Community Panel Number 25009C0116F dated July 2012), the project occurs within the 100-year floodplain (Zone AE). The bridge is located within Zone AE for the 100-year storm event at, and below the 13-foot base flood elevation.

2.3 Rare, Threatened, and Endangered Species Mapped Habitat

According to the most-recently published (2017-2020) information using MassGIS data layers, there are no Natural Heritage Endangered Species Program (NHESP) Priority Habitats of Rare Species, Estimated Habitats of Rare Wildlife, potential or certified vernal pools within the vicinity of the proposed project.

Additionally, according to the US Fish and Wildlife Service (USFWS) Information for Planning and Consulting (IPaC) tool, the northern long eared bat (*Myotis septentrionalis*) is listed within the limits of the project area. However, NHESP has no records of winter hibernacula within ¼ mile of the project site, nor known maternity roost trees within 150 feet. Therefore, due diligence complies with the 4(d) rule. The project will minimize disturbance to the vegetation to the maximum extent practicable. Some smaller trees along the roadway are proposed to be removed as a result of this work (< 0.1 acres).

2.4 Other Environmental Resources

According to MassGIS data layers, the entire project area occurs within an Outstanding Resource Water (ORW) and Surface Water Protection Zone associated with the Upper Artichoke Reservoir, which is an Article 97, municipal land, and a public water supply watershed. According to MassGIS data layers, the project area does not fall within an Area of Critical Environmental Concern (ACEC), neither the Upper Artichoke Reservoir nor the river are EPA impaired waterways, nor Coldwater Fisheries (CFR).

3.0 Alternative Analysis

The existing bridge over the Upper Artichoke Reservoir has already partially collapsed which has resulted in the road being permanently closed to traffic in its current state. In order to reduce the risk of injury from any further collapse, and to reopen the roadway, it is necessary to replace the bridge. The design of the bridge has been analyzed by engineers with four possible alternatives: a No-build, a Three-sided Open Bottom Bridge with a precast concrete rigid frame (Alternative 1), an Open Bottom Arch Bridge with precast concrete arch (Alternative 2), and a Three-sided Open Bottom Bridge with a precast concrete beam (Alternative 3, preferred alternative). Please refer to Attachment C for a detailed analysis of the different stream crossing alternatives and their abilities to meet Stream Crossing Standards.

4.0 Proposed Project

The purpose of the project is to replace a structurally deficient, undersized bridge with a new bridge along a similar horizontal and vertical alignment. The project activities include the replacement of the bridge over the Upper Artichoke Reservoir in its entirety. The full sequence of project construction activities will take approximately twelve months to complete. The project involves mitigation measures intended to address existing structural deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The proposed replacement bridge will carry two lanes of traffic on Middle Street/Plummer Spring Road. The roadway width will increase by approximately 4 feet to include safety improvements to the existing alignment. A safety sidewalk will be added to the south side of the bridge. Roadway reconstruction of Middle Street will occur 160-feet to the west of the bridge and 115-feet to the east on Plummer Spring Road for improved roadway approaches. The total length of the project is approximately 320-feet. The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment E) for additional details.

- **Proposed Bridge** – The proposed bridge is a high strength precast concrete structure that will follow a similar horizontal and vertical alignment as the existing bridge. The proposed span length will increase from the 14-feet to 45-feet. The overall width of the bridge will be 32.5-feet to accommodate safety improvements, including the sidewalk. In addition to substantially increasing the openness ratio, the increased span eliminates the need for the bridge's substructure to be located in the deep portion of the reservoir. In accordance with the MassDOT Bridge Manual for a Rural Local road, the proposed bridge has been designed to meet the 10-year flood frequency storm event. Based on hydraulic analysis, the proposed bridge can also accommodate the 100-year flood frequency storm event. The proposed bridge increases the hydraulic opening by a factor of two compared to the existing condition.
- **Riprap Scour Protection** – With the increased span, to achieve a 1:1.5 vertical: horizontal ratio from the elevation of the existing streambed to the elevation at the new bridge abutments, slope stabilization is required. The slope stabilization will consist of 36-inches of variable sized riprap (10- to 22-inch stones)

placed below the natural streambed material. In addition, 6-inches of natural streambed material is proposed on top of the riprap. Prior to streambed excavation, natural streambed material will be removed and stockpiled on site for use during restoration to ensure the sizing and arrangement of materials under pre- and post-construction conditions. Upon completion of the proposed bridge replacement activities, the streambed elevation will be restored to its natural condition.

- **Roadway Reconstruction** – At the approaches of the existing bridge the roadway is narrow and the slopes adjacent to the roadway are steep making the existing guardrail ineffective. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable. However, in areas where slopes with a 1:1.5 vertical: horizontal ratio or less exist, they will be regraded (without impacting the reservoir),
- **Installation of Guardrail and Repaving Activity** – Bridge replacement activities provide an opportunity to make safety improvements to existing conditions surrounding the bridge. The existing functional roadway width will expand from approximately 20-feet to 24-feet wide over the bridge. The widened roadway will meet the existing roadway width at the limits of the project. The approaches to the bridge will be repaved following the completion of project activities. Extended steel guardrail is proposed along the approaches to the bridge to replace existing non-functioning guardrail posts.

Work in Wetland Resource Areas

The bridge replacement project is considered a redevelopment project. Impacts to wetland resource areas are unavoidable, however upon completion of the project, slopes will be stabilized and the streambed will be restored to match the natural stream channel. The outcome will result in an improvement over existing conditions. Table 1 provides an overview of impacts with regard to each resource area.

Stream Bank

The existing bank along all four quadrants of the bridge will be impacted to some extent as a result of the proposed project. Retaining walls have been proposed in order to better stabilize the proposed bridge structure. Approximately 61 linear feet (lf) of temporary impacts are proposed to allow for access to the structures through the dewatering structure installation. Approximately 182 lf project-wide of permanent impacts to the bank are proposed as a result of the placement of the retaining walls and riprap for scour protection to the bridge abutments. Additional bank will be created where it previously did not exist, within the crossing itself. Some smaller trees along the roadway are proposed to be removed as a result of this work (< 0.1 acres). Upon completion of the bridge and retaining wall construction, the embankment will be installed to tie into elevations and contours to the extent practicable. Bank above Ordinary High Water (OHW) will be restored where appropriate by installing 12-inches of compost mulch and seeded with a native seed mix. Please refer to Project Specs and Project Site Plans (Attachments F and G) for additional detail.

Land Under Waters of the US

Approximately 984 square feet (sf) of permanent impacts to LUWOTUS will occur within the Reservoir and stream channel with the installation of riprap, retaining walls, and the new bridge wingwalls and abutments. The majority of LUWOTUS within the existing crossing will not be disturbed. Steel plates will be inserted in the channel abutting the existing structure to allow for its safe removal and to allow water to continue to flow. No other impacts are proposed within the channel itself. In order to protect the new bridge structure, riprap will be installed at the crossing inlet/outlet which will also constitute a permanent impact. A total of 885 sf of new LUWOTUS will be created with the increased openness of the expanded crossing. The new crossing will have a natural streambed installed, similar to what occurs within the existing crossing (Attachments F & G). Additionally, approximately 641 sf of temporary

impacts at the inlet and outlet of the bridge will occur as a result of dewatering the channel for construction. All temporary impacts will be restored to preconstruction conditions. Please refer to Project Site Plans (Attachment G) for additional detail.

Vegetated Wetlands

No impacts to Vegetated Wetlands are proposed.

Table 1 below provides an overview of impacts with regard to each WPA wetland resource area:

Table 1 – Summary of Wetland Resource Area Impacts

Resource Area	Impact Type	West Newbury	Newburyport	TOTAL
Land Under Waters of the US (LUWOTUS)	Permanent	553 sf	431 sf	984 sf
	Permanent Dredge / Fill	39 cy / 17 cy	9 cy / 2 cy	48 cy / 19 cy
	Temporary	443 sf	198 sf	641 sf
	Temporary Dredge / Fill	28 cy / 0 cy	22 cy / 0 cy	50 cy / 0 cy
Bank	Permanent	128 lf	54 lf	182 lf
	Temporary	47 lf	14 lf	61 lf

5.0 Stormwater Management

The Project area currently exhibits country drainage whereby runoff travels to the approach roadway and informally runs off down the side slopes. The proposed bridge replacement is considered a redevelopment project, and while the widened roadway will increase impervious area at the site, mitigation measures are not feasible to reduce runoff rates due to site limitations. As a redevelopment project, the proposed design meets the stormwater standard to the maximum extent practicable. As such, a formal Stormwater Management Report has not been prepared for this project, but a streamlined one is included in Attachment E.

To provide stormwater drainage improvements, it's proposed that runoff will be captured at the low points on either side of the roadway via two deep sump catch basins. The deep sump catch basins flow to a manhole on the north side of the roadway. From there the runoff is directed northwest to a flared end section that discharges towards the reservoir into stone for pipe ends. Like the existing conditions, all other runoff within the project limits will continue to flow via country drainage. Please refer to Attachment E for Stormwater Report.

6.0 Construction Considerations and Sequencing

Installation of the recommended foundation system will require control of water during construction and the use of a temporary excavation support system. Control of water during construction, which typically includes water diversion and dewatering operations to maintain dry conditions during foundation placement, is the responsibility of the Contractor. Typical systems for water diversion primarily include cofferdams, which can incorporate steel sheet piling, large sandbags, or other proprietary systems. Based on site constraints, actual flowrates during construction and specific project permitting requirements, cofferdams can be combined with temporary diversion pipes to completely redirect flows around the work area. Final means and methods are up to the contractor.

The temporary excavation support system will be selected by the Contractor, but typical installations for use with the existing subsurface conditions include cantilevered, or braced steel sheet piling systems. The Contractor will select the support of excavation based on site constraints, traffic control plan and other methods of construction.

Following the excavation, proper subgrade preparation must be completed prior to installation of the recommended foundation system. Proper treatment includes the installation of an approved geotextile fabric over the subgrade, followed by the placement and compaction of crushed stone.

The construction is generally proposed as outlined below:

- Additional signage to fully close existing roadway (closed for pedestrian traffic, already closed to vehicles).
- Installation of erosion controls.
- Water handling and dewatering.
- Removal of existing bridge
- Excavation of soils.
- Installation of new bridge structure.
- Placement of riprap for scour protection / placement natural substrate in streambed.
- Construction and pavement of roadway approaches and related work.
- Open new bridge to traffic.
- Site restoration including stabilization and seeding.
- Remove erosion and sedimentation controls.

7.0 Mitigation Measures

The proposed project will occur within the jurisdictional limits of the streambed (LUWOTUS) and bank. The project has been designed to incorporate construction Best Management Practices (BMPs) to ensure adequate protection to wetland resource areas within proximity of the project location.

Disturbed areas within affected resources will be stabilized and restored following the completion of project activities. This will be achieved specifically by limiting alteration within resource areas to the maximum extent practicable. The proposed work is considered a Redevelopment Project but will preserve undisturbed areas adjacent to the bridge as much as possible. This will also be accomplished through project phasing activities that minimize work within resources to the maximum extent practicable.

Erosion and Sedimentation Controls

Siltation barriers composed of compost filter tubes will be installed at the downgradient limits of work. Sedimentation barriers will be checked on a weekly basis and following significant storm events. Sediment controls will remain in-place during all phases of the project and will be removed once the area is sufficiently stabilized. Please refer to Attachment G (Site Plans) for erosion and sedimentation control details and the proposed locations of controls.

Construction Stockpiling Locations

All stockpile locations and staging areas will be located within the existing roadway; and while locations are to be determined by the Contractor, they will need to be approved by the Municipalities prior to use. In the event stockpiled materials must be left on site overnight, the piles will be covered with tarps and surrounded by erosion control measures (e.g. compost filter tubes). Stockpiled streambed material will be stored at a location within the existing roadway. Staging and storage areas will be outside of all jurisdictional environmental resource areas where feasible and practicable.

Water Control Measures and Dewatering

Prior to in-water work, cofferdams will be installed for construction activities to occur in dry conditions. As such,

work will require dewatering. The contractor will be required to develop and maintain a Construction Water Management Plan that is prepared in accordance with the contract design documents, and generally, the means and methods will be determined by the contractor. Flow will be maintained within the existing channel and between the cofferdams while the dewatered construction area can be maintained by pumping the water out of the work areas.

All discharge resulting from dewatering activities shall be directed to temporary sedimentation/retention basins as specified by the contractor to control turbidity. At no time shall the discharge be directly released into adjacent resource areas, nor will any settling tank/basin be located within a wetland/waterway. If stone or other erosion control is utilized at the outlet of the settling tank/basin, this material will be removed, and the area will be restored to existing conditions prior to the completion of the project. Please refer to Attachment G, Project Site Plans for additional detail on proposed water control measures.

8.0 Stream Crossing General Standards Compliance

The proposed project design complies with the Massachusetts Stream Crossing Standards to the extent practicable, as required for a limited project under the WPA. The proposed project meets all Stream Crossing Standards. The proposed design mitigates for the existing scouring, flow contraction, outlet perching, and inlet drops and will not act as a physical barrier to fish and wildlife passage.

The following outlines compliance with the Stream Crossing General Standards:

1. *Spans (bridges, 3-sided box culverts, open-bottom culverts or arches) that preserve the natural stream channel are strongly preferred.*

Meets standard. The width of the existing span earth filled stone arch is 14.3 feet, while the width of the proposed bridge is 23.4 feet. The replacement structure will mimic natural stream channel conditions.

2. *If a culvert, then it should be embedded:*
 - *a minimum of 2 feet for all culverts,*
 - *a minimum of 2 feet and at least 25 percent for round pipe culverts*
 - *When embedment material includes elements > 15 inches in diameter, embedment depths should be at least twice the D84 (particle width larger than 84 % of particles) of the embedment material.*

Meets Standard. Span bridge proposed with a natural stream bottom.

3. *Spans channel width (a minimum of 1.2 times the bankfull width).*

Meets Standard. According to Stream Stats, the bankfull width is 28.4 feet. To meet the Standard, the minimum bankfull width would need to be 34.0 feet wide. The structure opening is proposed to be 41.5 feet wide.

4. *Natural bottom substrate within the structure.*

Meets Standard. Natural material will remain within the existing channel, and stream material removed during construction will be reused on top of bank scour protection.

5. *Designed with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows.*

Meets Standard. Hydraulic Report prepared for the project indicates the post-construction water depth is

approximately the same as existing conditions.

6. *Openness > 0.82 feet (0.25 meters).*

Meets Standard. The proposed openness ratio is 11.7.

7. *Banks should be present on each side of the stream matching the horizontal profile of the existing stream and banks.*

Meets Standard. The proposed design will match the horizontal profile of the existing stream and associated banks.

***If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems.*

- *Inlet drops*
- *Outlet drops*
- *Flow contraction that produces significant turbulence*
- *Tailwater armoring*
- *Tailwater scour pools*
- *Physical barriers to fish and wildlife passage*

Please refer to Attachment C – Alternative Analysis for further stream crossing alternate analysis and compliance with Stream Crossing Standards.

9.0 Summary

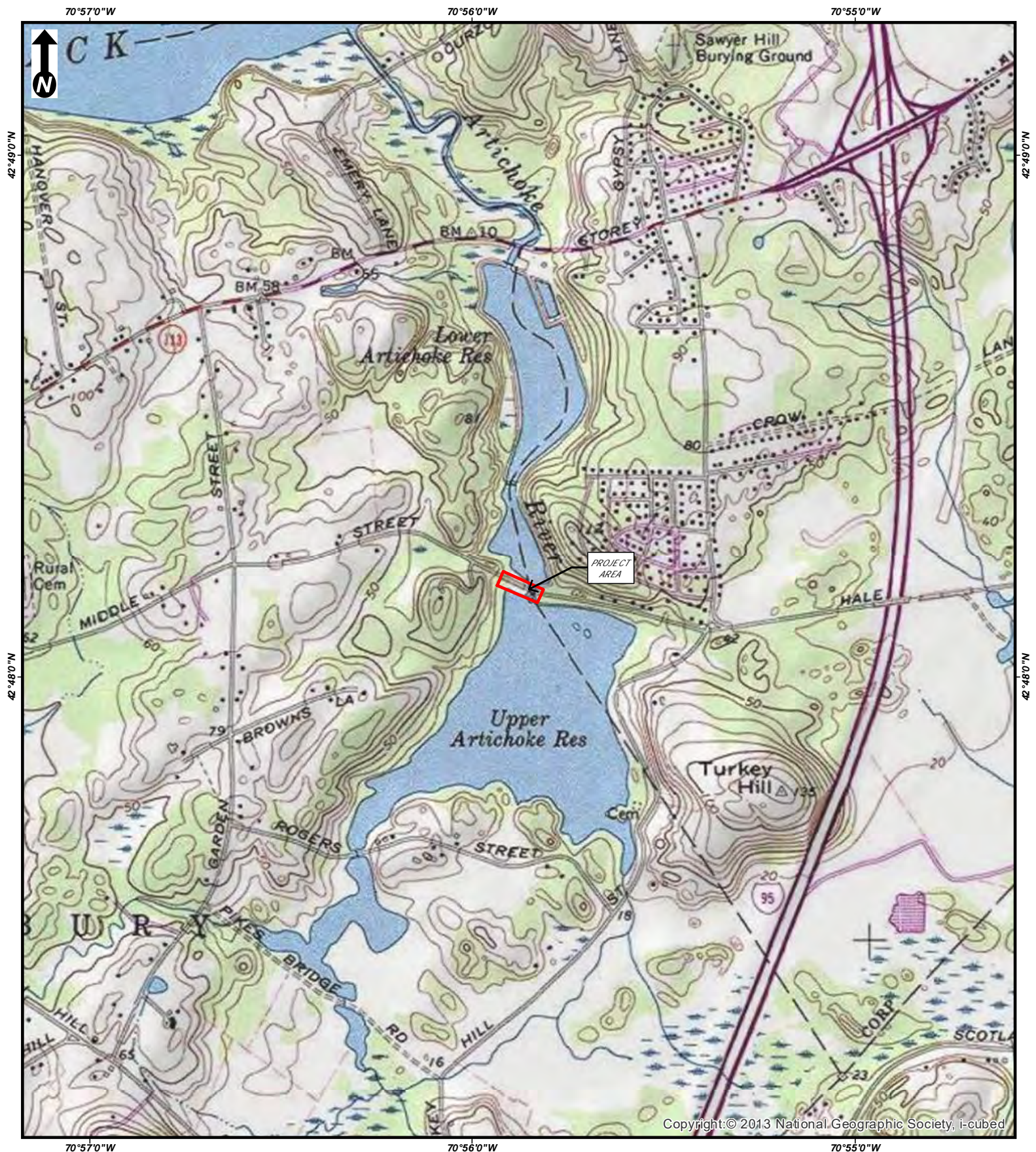
The Applicants, the Town of West Newbury and the City of Newburyport, are proposing to replace a structurally deficient bridge on Middle Street / Plummer Spring Road over the Upper Artichoke Reservoir. The design approach taken was to first avoid impacts to Waters of the U.S. where feasible, and where unavoidable, to minimize the impacts to the extent practicable and mitigate where applicable. The application further demonstrates that the project can be constructed in accordance with the Massachusetts Stream Crossing Standards to the extent practicable. Throughout the project design process, the project team has carefully considered various development alternatives, and has moved forward with the alternative that has the least impact to WOTUS while satisfying the project goals. Reasonable measures have been taken to avoid, minimize, and mitigate potential adverse impacts. As such, the applicant requests project authorization as described in this narrative and as shown on the project plans, with a waiver from the Time of Year Restriction established under General Condition 16.

Attachment B

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Pre-Construction Notification

SITE FIGURES
USGS Locus Map
Environmental Resources Map

PHOTOGRAPHS



Copyright:© 2013 National Geographic Society, i-cubed

Scale:
1 inch = 2,000 feet
(page size: 8.5 X 11)

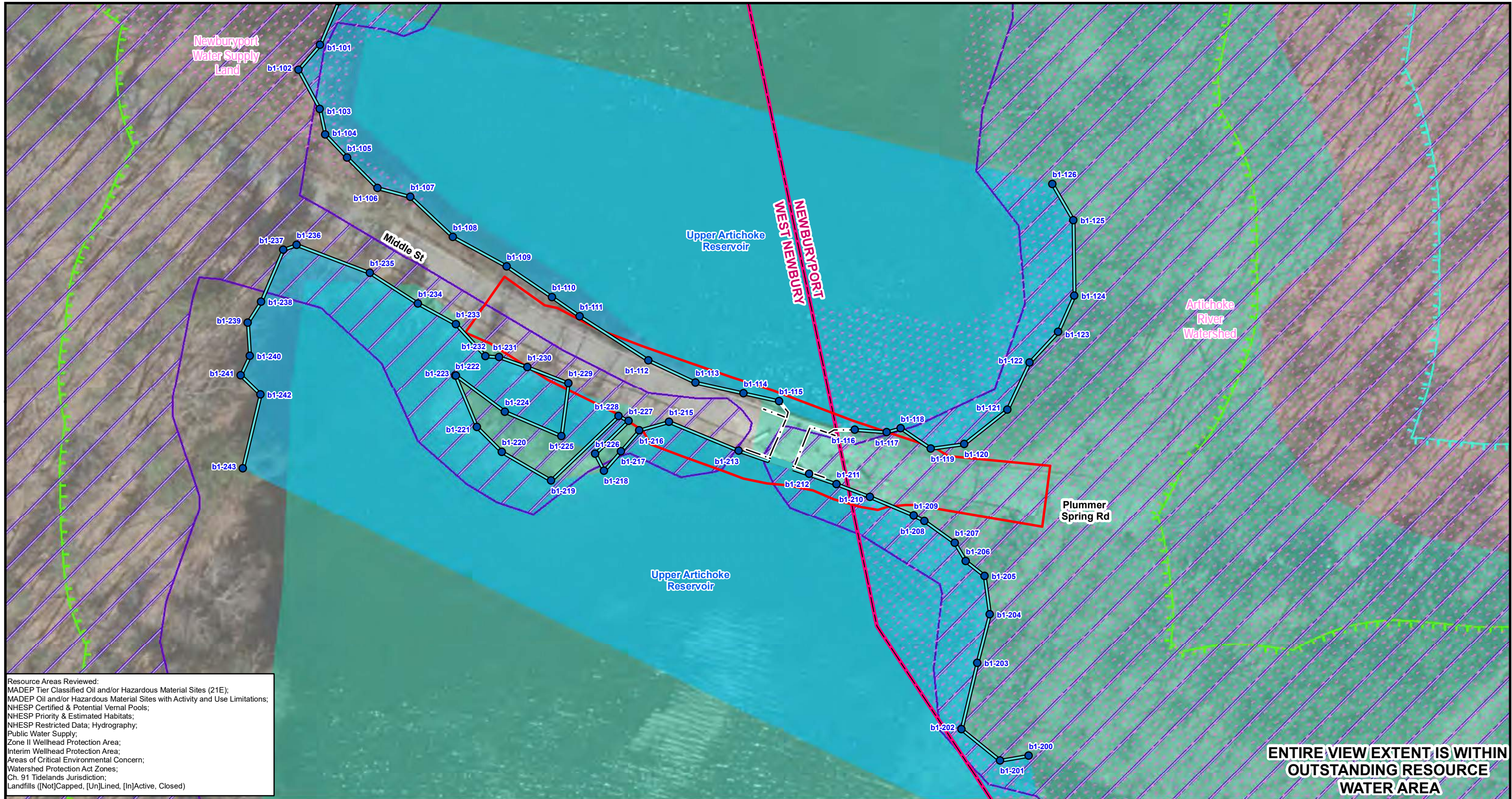
0 1,000 2,000
Feet

**MIDDLE ST / PLUMMER SPRING RD OVER UPPER ARTICHOKE RESERVOIR
BRIDGE REPLACEMENT PROJECT**

**USGS Site Location Map
West Newbury & Newburyport, MA**

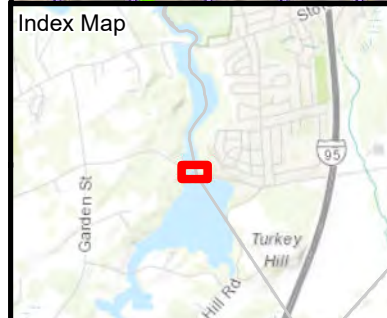
Source: 2013
National Geographic
Society, i-cubed





Resource Areas Reviewed:
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;
 NHESP Certified & Potential Vernal Pools;
 NHESP Priority & Estimated Habitats;
 NHESP Restricted Data; Hydrography;
 Public Water Supply;
 Zone II Wellhead Protection Area;
 Interim Wellhead Protection Area;
 Areas of Critical Environmental Concern;
 Watershed Protection Act Zones;
 Ch. 91 Tidelands Jurisdiction;
 Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed)

**ENTIRE VIEW EXTENT IS WITHIN
 OUTSTANDING RESOURCE
 WATER AREA**



Legend

Project Area	100ft Buffer to Wetlands & Streams	Article 97 Lands
Existing Bridge Structure	200ft Riverfront Area	Municipal
Field Delineated Bank Flags	FEMA 100yr Floodplain (Zone AE)*	Surface Water Protection Zone
Field Delineated Edge of Bank	Town Boundary	
Field Delineated Waterbody		
MADEP Hydrologic Connections		

1 inch = 50 feet
 0 25 50
 Feet
 *Indicates Layers Set to Transparency

**MIDDLE STREET / PLUMMER SPRING ROAD
 OVER THE UPPER ARTICHOKE RESERVOIR
 BRIDGE REPLACEMENT PROJECT**

Environmental Resources Map

West Newbury & Newburyport, MA

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Photo #1: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #2: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #3: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir. View of the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #4: View northwest of Plummer Spring Rd, Newburyport facing Middle St, West Newbury over the Upper Artichoke Reservoir.. Up close view of the bridge in disrepair.



Photo #5: View southeast of Middle St, West Newbury facing Plummer Spring Rd, Newburyport over the Upper Artichoke Reservoir. Arrow indicates the failed section at the southern end of the roadway, directly over the bridge which is closed for public safety.



Photo #6: View southwest of the northern side of the roadway and bridge over the Upper Artichoke Reservoir.

Attachment C

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Pre-Construction Notification

USGS STREAM STATS
FEMA FIRM MAP
USFWS IPAC

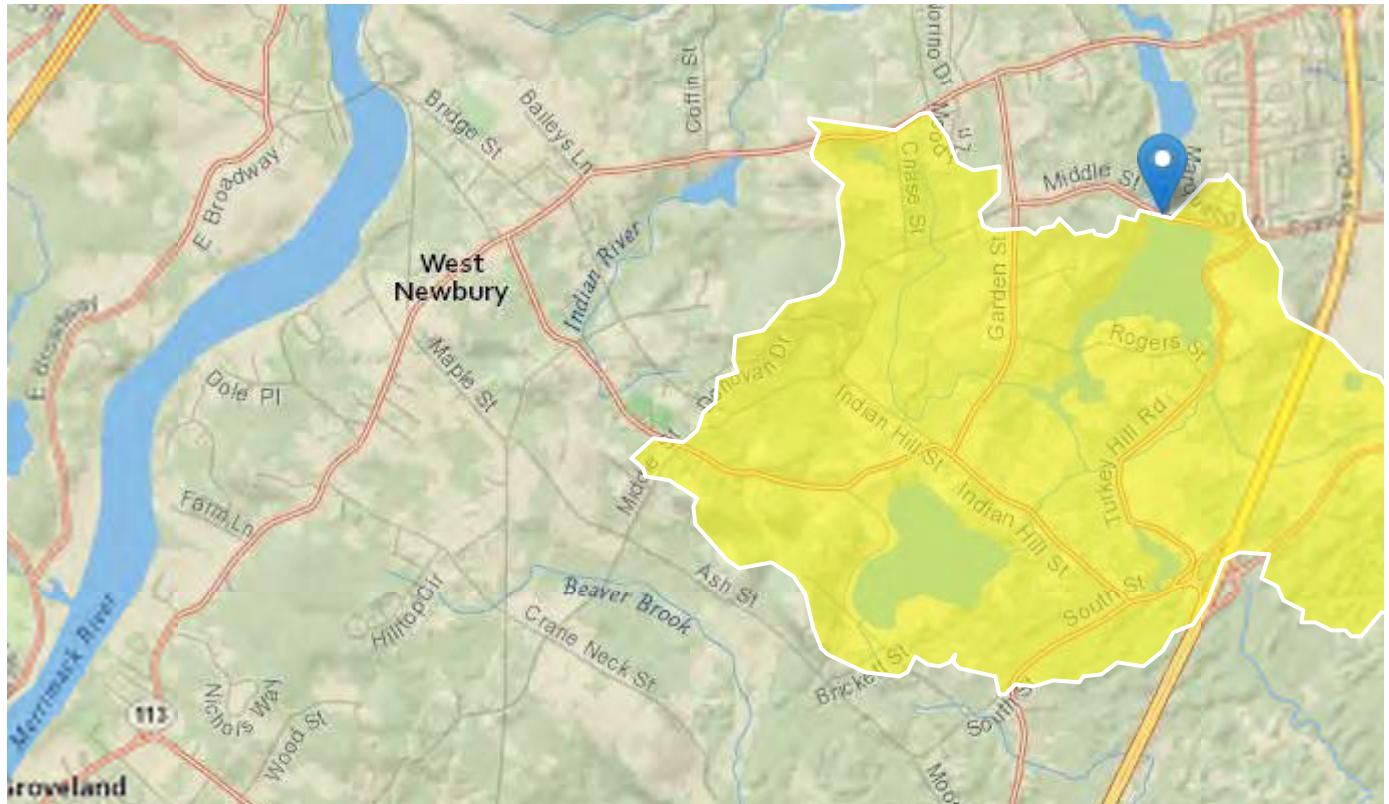
Upper Artichoke Reservoir

Region ID: MA

Workspace ID: MA20181113205234897000

Clicked Point (Latitude, Longitude): 42.80304, -70.93112

Time: 2018-11-13 15:52:50 -0500



Middle Street - West Newbury/Plummer Spring Road - Newburyport

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	5.48	square miles
ELEV	Mean Basin Elevation	62.2	feet
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	26.59	percent
BSLDEM10M	Mean basin slope computed from 10 m DEM	5.845	percent

Peak-Flow Statistics Parameters [Peak Statewide 2016 5156]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.48	square miles	0.16	512
ELEV	Mean Basin Elevation	62.2	feet	80.6	1948
LC06STOR	Percent Storage from NLCD2006	26.59	percent	0	32.3

Peak-Flow Statistics Disclaimers [Peak Statewide 2016 5156]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Peak-Flow Statistics Flow Report [Peak Statewide 2016 5156]

Statistic	Value	Unit
2 Year Peak Flood	85.4	ft ³ /s
5 Year Peak Flood	140	ft ³ /s
10 Year Peak Flood	182	ft ³ /s
25 Year Peak Flood	242	ft ³ /s
50 Year Peak Flood	291	ft ³ /s
100 Year Peak Flood	343	ft ³ /s
200 Year Peak Flood	398	ft ³ /s
500 Year Peak Flood	476	ft ³ /s

Peak-Flow Statistics Citations

Zarriello, P.J.,2017, Magnitude of flood flows at selected annual exceedance probabilities for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2016–5156, 99 p. (<https://dx.doi.org/10.3133/sir20165156>)

Bankfull Statistics Parameters [Bankfull Statewide SIR2013 5155]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
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Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	5.48	square miles	0.6	329
BSLDEM10M	Mean Basin Slope from 10m DEM	5.845	percent	2.2	23.9

Bankfull Statistics Flow Report [Bankfull Statewide SIR2013 5155]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SEp
Bankfull Width	28.4	ft	21.3
Bankfull Depth	1.51	ft	19.8
Bankfull Area	42.5	ft ²	29
Bankfull Streamflow	115	ft ³ /s	55

Bankfull Statistics Citations

Bent, G.C., and Waite, A.M., 2013, Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013–5155, 62 p., (<http://pubs.usgs.gov/sir/2013/5155/>)

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Application Version: 4.2.1

National Flood Hazard Layer FIRMMette



70°56'9"W 42°48'23"N



70°55'32"W 42°47'57"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway	

OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X	Future Conditions 1% Annual Chance Flood Hazard Zone X	Area with Reduced Flood Risk due to Levee. See Notes. Zone X	Area with Flood Risk due to Levee Zone D

OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard Zone X	Effective LOMRs	Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer	Levee, Dike, or Floodwall

OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation	Coastal Transect	Base Flood Elevation Line (BFE)	Limit of Study	Jurisdiction Boundary	Coastal Transect Baseline	Profile Baseline	Hydrographic Feature

MAP PANELS	Digital Data Available	No Digital Data Available	Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/9/2020 at 5:01 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery. Data refreshed April 2020



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

December 15, 2020

Consultation Code: 05E1NE00-2021-SLI-0734

Event Code: 05E1NE00-2021-E-02220

Project Name: Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd,
Newburyport

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2021-SLI-0734

Event Code: 05E1NE00-2021-E-02220

Project Name: Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd, Newburyport

Project Type: TRANSPORTATION

Project Description: Bridge Replacement - Middle St, West Newbury / Plummer Spring Rd, Newburyport

The project is being proposed to replace the structurally deficient, undersized bridge which carries Plummer Spring Road / Middle Street over the Upper Artichoke Reservoir. The bridge is structurally deficient due to undermining of the existing roadway pavement. The Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.80298745644829N70.93097274231184W>



Counties: Essex, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Attachment D

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Pre-Construction Notification

ALTERNATIVES ANALYSIS /
STREAM CROSSING EVALUATION WORKSHEET

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Bridge Replacement Project –Plummer Spring Road/Middle Street over Artichoke Reservoir– Alternatives Analysis

Due to existing site conditions, the proposed project was not able to reach full compliance with the Massachusetts Stream Crossing Standards. However, the project is considered a Limited Project under 310 CMR 10.53(3)(i): the maintenance, repair, and improvement...bridges which existed prior to April 1, 1983, 310 CMR 10.53(3)(l): construction, reconstruction...or maintenance of water dependent uses, and 10.53(8)(a): Replace...existing stream crossing in a non-tidal crossing.

Therefore, it has been designed to meet the Stream Crossing Standards to the maximum extent practicable per the provisions at 310 CMR 10.53(8). The following description provides an overview of the bridge design and is followed by an Alternatives Analysis and an evaluation of compliance with the Stream Crossing Standards.

Table 1.0 – Existing Crossing Data

Stream Crossing Standard	Existing Conditions
Type of Crossing	Single span earth filled stone arch
Size	Width: 14.3-feet Height: 13.2-feet Crossing Length: 24.2-feet Cross Sectional Area: 138 sq. ft.
Bankfull Width (Reported by StreamStats)	28.4-feet (Reported by StreamStats, drainage area = 5.48 square miles). The existing stone arch bridge was built in 1891 before the Upper Artichoke dam was installed to create the Upper Artichoke Reservoir
Openness Ratio	5.7
Water Level	Observed Water Elevation (10/1/2018): 12.5± OHW Elevation 12.6 ± Streambed Elevation 3.0±

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Table 2.0 – Proposed Crossing Conditions

Alternative 1		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete 3-Sided Rigid Frame (open bottom)	Yes	Proposed Concrete Rigid Frame (open bottom) Width: 22-feet Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 27.25-feet Cross Sectional Area: 241 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 22-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 241 sq. ft. Proposed Openness Ratio: 8.8
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 2		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Arch Bridge (open bottom)	Yes	Proposed Precast Concrete Arch Bridge with Pile Supported Footings (open bottom) Width: 30.7-feet Height: 13.2-feet (Measured from top of proposed streambed to center of arch) Crossing Length: 27.3-feet Cross Sectional Area: 246 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have a maximum of 13.2-feet clearance throughout the length of the bridge
Crossing Span (1.2 Bankfull Width)	No	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 30.7-feet . The design intent is to provide a ‘Roughened Channel Embedded Culvert’ in accordance with the MassDOT publication ‘Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams’, December 2010, which allow waiver of the bankfull width requirement provided target openness values are met and a stable substrate is provided within the proposed bridge.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 246 sq. ft. Proposed Openness Ratio: 9.0
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Alternative 3 (Proposed Bridge Replacement)		
Stream Crossing Standard	Meets Standard?	Comment
Type of Crossing – Precast Concrete Beams 3-Sided Bridge (open bottom)	Yes	Proposed Precast Concrete Beam Bridge with Pile Supported Abutments (open bottom) Width: 41.5-feet (Measured between inside faces of bridge sidewalls) Height: 13.2-feet (Measured from top of proposed streambed to low chord of bridge) Crossing Length: 32.5-feet Cross Sectional Area: 380 sq. ft.
Embedment	Yes	The proposed bridge footings will be embedded a minimum of 4-foot below the streambed. This design will have approximately 13.2-feet of available clearance throughout the full length of the bridge
Crossing Span (1.2 Bankfull Width)	Yes	Bankfull Width: 28.4-feet Minimum Bankfull Width for Compliance: 34.0-feet The clear span of the bridge measures 41.5-feet.
Openness Ratio (Cross Sectional Area / Crossing Length) General = 0.82 feet Optimum = 1.64 feet	Yes	Proposed Cross Sectional Area: 380 sq. ft. Proposed Openness Ratio: 11.7
Substrate	Yes	Natural stream bottom will be placed over riprap throughout the full length of the bridge. Constructed stream grades will match existing (pre-construction) conditions.
Water Depth and Velocity	Yes	Approximately the same as pre-construction conditions. Limited change from current;

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative: Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Alternative 1: Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Alternative 2: Meet General Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Alternative 3: Stream Crossing Standards 1.2 x bankfull width ² (Proposed Alternative) Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
1) potential for downstream flooding	No change	No change	No change	No change
2) upstream and downstream habitat	No improvement.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.	The design intent provides a 'Roughened Channel Embedded Culvert' in accordance with <i>'Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams'</i> and increased habitat connectivity from increased openness.
3) potential for erosion and head-cutting	No change	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.	Erosion and head-cutting issues improved.
4) stream stability	No change	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.	Scour and slope stability issues addressed. Scour protection material sized for stability at the design event, is provided (below top layer of natural material) through the full length of the proposed bridge.
5) habitat fragmentation caused by the crossing	No change	Increased openness	Increased openness	Increased openness
6) amount of stream mileage made accessible	No change	Improved stream continuity.	Improved stream continuity.	Improved stream continuity

MassDEP Wetlands Program: 10.53(8) Replacement Stream Crossing Evaluation Worksheet

Evaluation Criteria	No Build Alternative:	Alternative 1:	Alternative 2: Meet General	Alternative 3: Stream Crossing Standards 1.2 x bankfull width²
	Stone Arch Open Bottom Bridge Stone blocks & field stone 14.4'W X 13.2'H X 24.2'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete rigid frame 22'W X 13.2'H X 27.3'L (dimensions)	Open Bottom Arch Bridge Precast concrete arch 30.8'W X 13.2'H X 27.3'L (dimensions)	Three-sided Open Bottom Bridge Precast concrete beam 41.5'W X 13.2'H X 32.5'L (dimensions)
7) storm flow conveyance	100-year event water Cross Sectional Area: 111 sq. ft.	100-year event water Cross Sectional Area: 171 sq. ft.	100-year event water Cross Sectional Area: 201 sq. ft.	100-year event water Cross Sectional Area: 242 sq. ft.
8) engineering design constraints	No change, no improvements. Bridge remains closed and roadway width remains inadequate.	The poor soil conditions require large deep footings to distribute the bridge loads. Due to the depth of water and relatively short span extensive retaining walls are required to replace the existing failed stone retaining walls.	The weight of the soil over the arch requires an extensive amount of piles. Installation of heavy arch units would likely require temporary fill to provide a stable work platform for a large crane.	The addition of a sidewalk on the bridge requires widening and retaining of the road at the approaches.
9) hydrologic constraints	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)	No change (water elevation regulated by dam downstream)
10) impacts to wetlands that would occur	No construction impacts to adjacent wetland resource areas.	Permanent impacts to adjacent wetland resource areas due extensive retaining walls and deep excavation for footings.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.	Permanent impacts to adjacent wetland resource areas are minimized by use of pile supported footing.
11) potential to affect property and infrastructure	Bridge has failed. Emergency evacuation route remains closed.	None	None	None
12) cost of replacement	N/A	Proposed Replacement Cost: \$2,400,000	Proposed Replacement Cost: \$2,300,000	Proposed Replacement Cost: \$2,600,000

¹ Bank Standards at 310 CMR 10.54 and LUWW Standards at 310 CMR 10.56 (LUWW = Land Under Water Bodies & Waterways)² Per the *Massachusetts River &*

²*Stream Crossing Standards* (March 1, 2011, Revised March 8, 2012), Page 18, Item #2 - If it is not possible to meet all of the applicable standards, replacement crossings should be designed to avoid or mitigate the following problems: (1) Inlet drops; (2) Outlet drops; (3) Flow contraction that produces significant turbulence; (4) Tailwater armoring; (5) Tailwater scour pools; (6) Physical barriers to fish and wildlife passage.

Attachment E

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Pre-Construction Notification

HISTORICAL REVIEW
PROOF OF MAILING / EMAILING



January 14, 2021

Massachusetts Historical Commission
Attn: Brona Simon
220 Morrissey Boulevard
Boston, MA 02125

803 Summer Street
Boston, MA 02127

Tel: 617-896-4300

www.bscgroup.com

**RE: Plummer Spring Road / Middle Street over the Upper Artichoke Reservoir
Bridge Replacement Project
Newburyport / West Newbury, Massachusetts
Historic Property Notification Form Submittal
Cultural and Historic Resources Coordination
BSC Group Project Number 28395.00**

Dear Ms. Simon:

BSC Group Inc., on behalf of The City of Newburyport and Town of West Newbury, is providing supplemental information to the Massachusetts Historical Commission (MHC) in regard to a Pre-Construction Notification (PCN) Filing submission for the above-referenced project. This supplemental information is being provided to further assist with the MHC’s review of the project.

The project is being proposed to replace the structurally deficient, undersized bridge which carries Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA over the Upper Artichoke Reservoir. The existing single span earth-filled stone arch bridge is structurally deficient due to undermining of the existing roadway foundation and is proposed to be replaced with a new bridge in a similar horizontal and vertical alignment. The proposed span length will increase from the 14-feet to 45-feet. Additionally, the overall width of the bridge will expand slightly to 32.5-feet to accommodate safety improvements, including a safety sidewalk. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. It is anticipated that this project will not be supported in part with federal funds.

Preliminary review has identified that there is one state-listed historical and/or cultural resource approximately 0.4 miles west of the project area, the Walter Drescher Farmhouse (WNB. 156). No impacts are proposed to this property. There are no state or Federally-listed historic or cultural resources located within the project area.

We respectfully request your review of the enclosed materials at your earliest convenience and solicit any comments or concerns regarding the proposed project. Written comments should be directed to BSC Group, Inc., 803 Summer Street, Boston, MA 02127, Attn: Sara Kreisel. Please note that project solicitation is being requested from the Massachusetts Historical Commission, relevant Native American Tribes, and the Massachusetts Board of Underwater Archaeological Resources for concurrent review.

- Engineers
- Environmental Scientists
- Custom Software Developers
- Landscape Architects
- Planners
- Surveyors



If you have any questions or require additional information, please do not hesitate to contact me at (617) 896-4579 or at skreisel@bscgroup.com.

Sincerely,
BSC Group, Inc.

Sara Kreisel, PWS
Ecological Project Manager

Enclosures: Historic Property Notification Form
 USACE 4345 Forms (2)
 USGS Site Location Map
 MACRIS Report
 Project Site Plans

cc: Jon-Eric White, City Engineer, City of Newburyport
 Angus Jennings, Town of West Newbury

Distribution List:

- United States Army Corps of Engineers (USACE)
- Massachusetts Board of Underwater Archaeological Resources (MBUAR)
- Tribal Historic Preservation Officers (THPOs):
 - Wampanoag Tribe of Gay Head (Aquinnah) THPO
 - Mashpee Wampanoag THPO



**US Army Corps
of Engineers**[®]
New England District

IX: HISTORIC PROPERTY NOTIFICATION FORM

In accordance with General Condition 7, proponents must ensure and document that all potential historic properties within the permit area have been identified. To assist with this effort, proponents may send this form for self-verification activities, but must send this form for PCN activities, to the SHPO, BUAR and applicable THPO(s). You must include any Corps or state waterway agency application forms, plans and a copy of the USGS quadrangle map section that clearly marks the project location. It is recommended that you complete **all** fields (write “none” or “see attached application form” if applicable). The PCN sent to the Corps must include proof of having sent this form, e.g. the email or certified mail receipt that was used to send it, to the SHPO (does not accept email), BUAR and applicable THPOs. Please include any comments or requests received from these agencies with your PCN.

Project Name: Bridge Replacement- Plummer Spring Road/ Middle Street over Upper Artichoke Reservoir
 Address, City, State & Zip: Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA
 Project Proponent Name: City of Newburyport & Town of West Newbury
 Address: 16C Perry Way, Newburyport, MA 01950 & 381 Main Street, West Newbury, MA 01985
 Phone(s) and Email: Jon-Eric White, City Engineer; (978) 465-4464 x1710, jewwhite@cityofnewburyport.com
Angus Jennings, Town Manager; (978) 363-1100 x111, townmanager@wnewbury.org
 Project Location (provide detailed description if necessary) Address, City, State & Zip: Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA over Upper Artichoke Reservoir
 Latitude/Longitude Coordinates (if address doesn't exist): 42.802999, -70.931053
 Waterway Name: Upper Artichoke Reservoir

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

<u>Agency Name</u>	<u>Type of License or Funding (specify)</u>
<u>MassDEP</u>	<u>Superseding Order of Conditions (potential)</u>
<u>United States Army Corps of Engineers</u>	<u>MA General Permit Authorization</u>

Project Description: The bridge is structurally deficient due to undermining of the existing roadway foundation. The Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition: The existing structurally deficient, undersized bridge was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway, and is currently considered structurally deficient due to undermining of the paved roadway foundation. It will be removed and replaced with a longer span bridge.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation: No.

Does the project include new construction? If so, describe (attach plans and elevations if necessary): No.

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify: No.

What is the total acreage of the project area?

Woodland	<u>0</u>	acres
Wetland	<u>0</u>	acres
Floodplain	<u>7,571 sf / 0.17</u>	acres
Underwater and/or bottomlands	<u>8,327 sf / 0.19</u>	acres
Open space	<u>5,872 sf / 0.13</u>	acres
Developed	<u>7,286 sf / 0.17</u>	acres

Productive Resources:

Agriculture	<u>0</u>	acres
Forestry	<u>0</u>	acres
Mining/Extraction	<u>0</u>	acres
Total Project Acreage	<u>21,485 sf / 0.49</u>	acres

What is the acreage of the proposed new construction? 0 acres

What is the present land use of the project area? Public roadway.



Signature of person submitting this form: _____ Date: January 14, 2021

Name: BSC Group, Inc. Attn: Sara Kreisel

Address: 803 Summer Street

City/Town/Zip: Boston, MA 02127

Telephone: (617) 896-4579

Email: skreisel@bscgroup.com

17. DIRECTIONS TO THE SITE

The project site is located at the confluence of Plummer Spring Road, Newburyport and Middle Street, West Newbury, MA.

18. Nature of Activity (Description of project, include all features)

Bridge replacement project. The Town of West Newbury and the City of Newburyport ("the Applicants") propose to replace the structurally deficient, undersized bridge, Bridge No. N-11-007, which carries Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA over the Artichoke River / Upper Artichoke Reservoir. The Applicant proposes to replace the bridge structure with a new bridge in a similar horizontal and vertical alignment. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. The existing crossing structure consists of a 14.3-foot (span) by 13.2-foot (rise) by 24.2-foot (long) single span earth-filled stone arch, set at an approximate slope of 0%. The bridge and roadway is currently considered structurally deficient and was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway. The proposed span length will increase from the 14-feet to 45-feet. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the project is to replace a structurally deficient bridge.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

The bridge and roadway is currently considered structurally deficient and was closed in 2018 to vehicular traffic due to the collapse of portions of the bridge, stone headwall, and southeast approach roadway. To meet current roadway geometric and safety requirements, portions of the road will be widened and the slopes reduced and/or retaining walls installed. To limit impacts to the reservoir, retaining walls will be installed where applicable along the roadway. In order to protect the new bridge structure, riprap will be installed at the crossing inlet/outlet. The new bridge will result in an additional 885 sf of new LUWOTUS with the increased openness of the expanded crossing. All temporary impacts will be restored to preconstruction conditions.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

48CY (Perm) ReservoirConstructionDredging 50CY (Temp)ReservoirConstructionDredging

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres Waterbody / Land Under Waters of the US - 984 sf (Perm), 641 sf (Temp); Gain of 885 sf proposed

or

Linear Feet Stream Bank - 182 lf (Perm), 61 lf (Temp)

23. Description of Avoidance, Minimization, and Compensation (see instructions)

To address the replacement of the existing bridge, impacts to Waters of the U.S. cannot be avoided. However, proposed project activities and associated mitigation measures have been designed to demonstrate that the project will have no adverse impacts for work within jurisdictional areas. This will be achieved specifically by limiting alteration within WOTUS to the maximum extent feasible and preserving undisturbed areas adjacent to the bridge as much as possible. This will also be accomplished through project phasing activities that minimize work within resources to the maximum extent practicable. The project has been designed to improve the previously disturbed areas directly adjacent to the bridge, by implementing design features to reduce erosion potential and the surrounding area during storm events.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See attached list

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

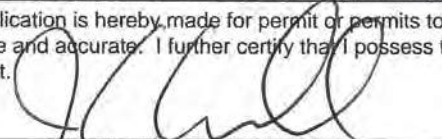

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
NewburyportConCom	NOI-OOC	DEP # TBD	2021-01-11	TBD	
WestNewbryConCom	NOI-OOC	DEP # 078-0724	2021-01-04	TBD	
MassDEP	401 WQC	TBD	TBD		

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.


1-13-21

2021-01-13

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

U.S. Army Corps of Engineers (USACE)
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

*Form Approved -
 OMB No. 0710-0003
 Expires: 01-08-2018*

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dcl-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpold.defense.gov/Privacy/SORNs/index/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Angus Middle - Last - Jennings Company - Town of West Newbury E-mail Address - townmanager@wnewbury.org	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Sara Middle - Last - Kreisel Company - BSC Group, Inc. E-mail Address - skreisel@BSCGroup.com
6. APPLICANT'S ADDRESS: Address- 381 Main Street City - West Newbury State - MA Zip - 01985 Country -USA	9. AGENT'S ADDRESS: Address- 803 Summer Street City - Boston State - MA Zip - 02127 Country -USA
7. APPLICANT'S PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax (978) 363-1100 x111	10. AGENTS PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax 617-896-4579

STATEMENT OF AUTHORIZATION

11. I hereby authorize, BSC Group, Inc. to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.



Digitally signed by Angus Jennings
 Date: 2021.01.13 15:27:26 -05'00'

2021-01-13

SIGNATURE OF APPLICANT

DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Bridge Replacement Project - Middle Street, West Newbury / Plummer Spring Road, Newburyport, over Upper Artichoke Reservoir	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Upper Artichoke Reservoir	14. PROJECT STREET ADDRESS (if applicable) Address Plummer Spring Road / Middle Street
15. LOCATION OF PROJECT Latitude: °N 42.802999 N Longitude: °W -70.931053 W	City - Newburyport/WNewbury State- MA Zip- 01950
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID N/A Town Roadway Layout Municipality Section - Township - Range -	

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City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

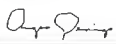
City - State - Zip -

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MassDEP	401 WQC	TBD	TBD		

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Digitally signed by Angus Jennings
Date: 2021.01.13 15:28:06 -05'00'

2021-01-13

SIGNATURE OF APPLICANT

DATE



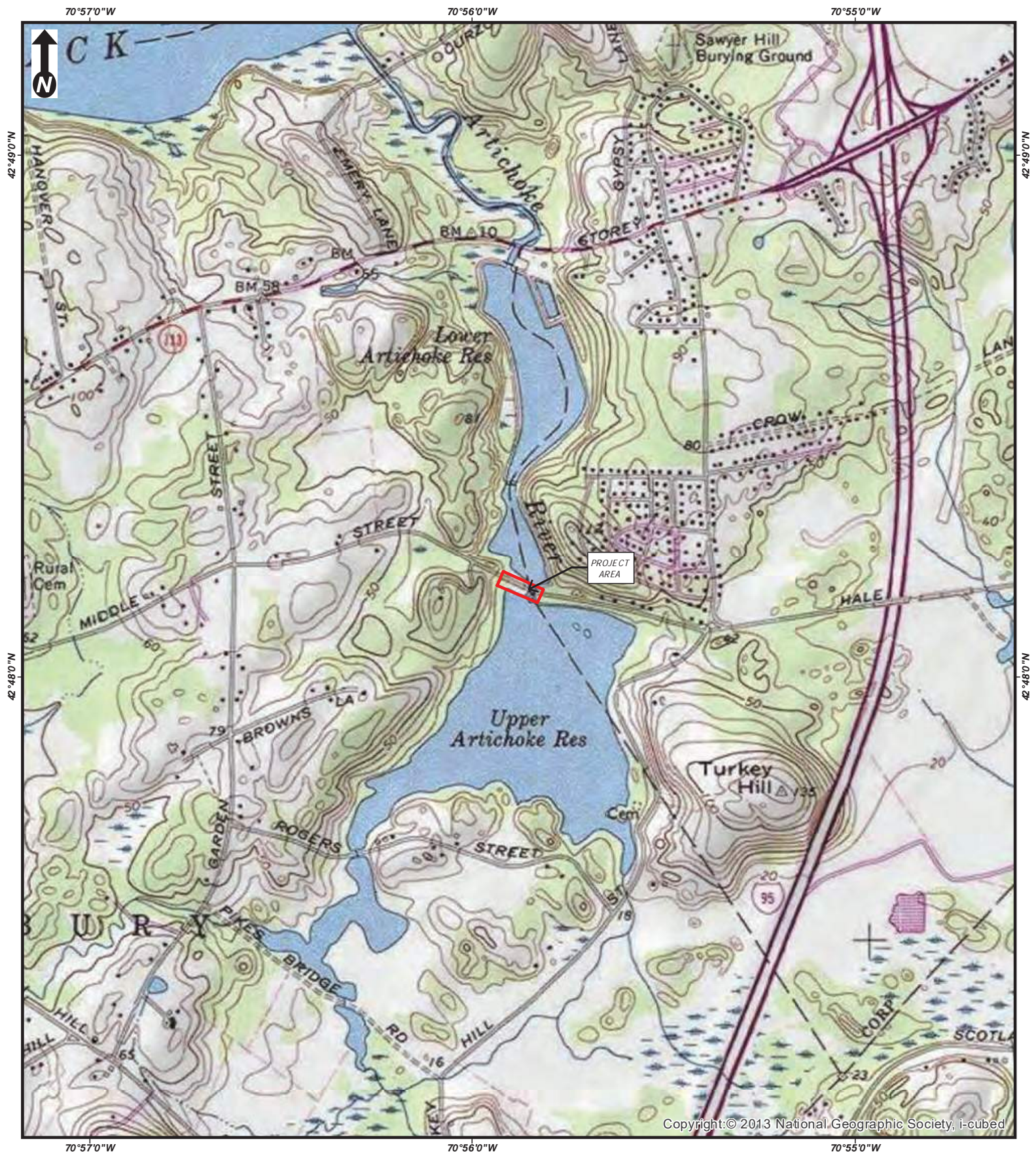
2021-01-13

SIGNATURE OF AGENT

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



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Scale:
1 inch = 2,000 feet
(page size: 8.5 X 11)

0 1,000 2,000
Feet

**MIDDLE ST / PLUMMER SPRING RD OVER UPPER ARTICHOKE RESERVOIR
BRIDGE REPLACEMENT PROJECT**

**USGS Site Location Map
West Newbury & Newburyport, MA**

Source: 2013
National Geographic
Society, i-cubed



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Newburyport; Street Name: Plummer Spring Rd; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
----------	---------------	--------	------	------

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): West Newbury; Street Name: Middle St; Resource Type(s): Area, Burial Ground, Building, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
WNB.909	West Newbury Water Trough	Middle St	West Newbury	1888
WNB.148	Hale House	157 Middle St	West Newbury	1729
WNB.149	Bartlett, Richard House	162 Middle St	West Newbury	1726
WNB.150	Elliott, T. House	210 Middle St	West Newbury	r 1780
WNB.151	Poor, Abel House	260 Middle St	West Newbury	1865
WNB.152	Moore, Greenleaf House	272 Middle St	West Newbury	1858
WNB.153		327 Middle St	West Newbury	c 1830
WNB.154	Pilsbury, Joseph House	374 Middle St	West Newbury	c 1729
WNB.155	Davis, Nathaniel House	406 Middle St	West Newbury	c 1750
WNB.156		418 Middle St	West Newbury	c 1730

Massachusetts Cultural Resource Information System

Scanned Record Cover Page

Inventory No: WNB.156
Historic Name:
Common Name:
Address: 418 Middle St
City/Town: West Newbury
Village/Neighborhood:
Local No:
Year Constructed: c 1730
Architect(s):
Architectural Style(s): Greek Revival
Use(s): Agricultural; Single Family Dwelling House
Significance: Agriculture; Architecture
Area(s):
Designation(s):
Building Materials(s): Roof: Asphalt Shingle
Wall: Cedar Shingle; Vinyl Siding; Wood
Foundation: Stone, Uncut



The Massachusetts Historical Commission (MHC) has converted this paper record to digital format as part of ongoing projects to scan records of the Inventory of Historic Assets of the Commonwealth and National Register of Historic Places nominations for Massachusetts. Efforts are ongoing and not all inventory or National Register records related to this resource may be available in digital format at this time.

The MACRIS database and scanned files are highly dynamic; new information is added daily and both database records and related scanned files may be updated as new information is incorporated into MHC files. Users should note that there may be a considerable lag time between the receipt of new or updated records by MHC and the appearance of related information in MACRIS. Users should also note that not all source materials for the MACRIS database are made available as scanned images. Users may consult the records, files and maps available in MHC's public research area at its offices at the State Archives Building, 220 Morrissey Boulevard, Boston, open M-F, 9-5.

Users of this digital material acknowledge that they have read and understood the MACRIS Information and Disclaimer (<http://mhc-macris.net/macrisdisclaimer.htm>)

Data available via the MACRIS web interface, and associated scanned files are for information purposes only. THE ACT OF CHECKING THIS DATABASE AND ASSOCIATED SCANNED FILES DOES NOT SUBSTITUTE FOR COMPLIANCE WITH APPLICABLE LOCAL, STATE OR FEDERAL LAWS AND REGULATIONS. IF YOU ARE REPRESENTING A DEVELOPER AND/OR A PROPOSED PROJECT THAT WILL REQUIRE A PERMIT, LICENSE OR FUNDING FROM ANY STATE OR FEDERAL AGENCY YOU MUST SUBMIT A PROJECT NOTIFICATION FORM TO MHC FOR MHC'S REVIEW AND COMMENT. You can obtain a copy of a PNF through the MHC web site (www.sec.state.ma.us/mhc) under the subject heading "MHC Forms."

Commonwealth of Massachusetts
Massachusetts Historical Commission
220 Morrissey Boulevard, Boston, Massachusetts 02125
www.sec.state.ma.us/mhc

This file was accessed on: Tuesday, July 28, 2020 at 10:15 AM



Architectural reason for inventorying:

SECT B	156	MH
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2. Town West Newbury
 Street address Middle St.
 Name Walter Drescher
 Use: original & present Farmhouse - home
 Present owner Walter Drescher
 Open to public no
 Date c-1730 Style Colonial
 Source of date tradition
 Architect _____

OR part of Area # _____

3. CONDITION Excellent Good Fair Deteriorated Moved Altered Added kitchen/wing c-1955 ^{all in 1910-2}

4. DESCRIPTION

FOUNDATION/BASEMENT: High Regular Low Material field stoneWALL COVER: Wood cedar shingles on east Brick Stone Other white clapboard
vinyl siding in frontROOF: Ridge Gambrel Flat Hip Mansard
Tower Cupola Dormer windows Balustrade Grillwork one dormer in backCHIMNEYS: 1 2 3 4 Center End Interior Irregular Cluster ElaborateSTORIES: 1 1/2 3 4 ATTACHMENTS: Wings Ell Shed Small shed where a closet was added

PORCHES: 1 2 3 4 PORTICO Balcony

FACADE: Gable end Front side Ornament noneEntrance: Side Front Center Side Details: lights either side of doorWindows: Spacing: Regular Irregular Identical Varied 6/6 eyebrow windows added laterCorners: Plain Pilasters Quoins Cornerboards

5. Indicate location of building in relation to nearest cross streets and other buildings

6. Footage of structure from street c-12
Property has 42.3 feet frontage on street

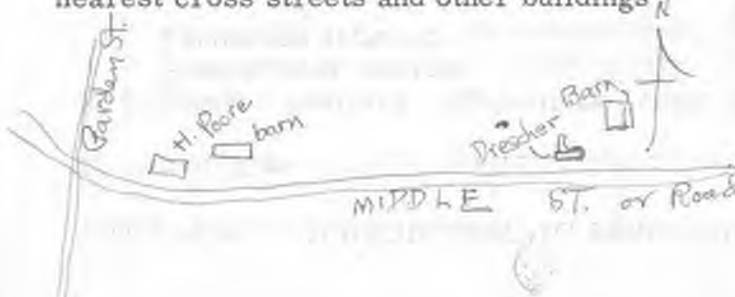
Recorder _____

For _____

Photo # _____ Date _____

SEE REVERSE SIDE

JUN 29 1973



RELATION OF SURROUNDING TO STRUCTURE

1. Outbuildings wood shed (former privy) barn-garage barn very old - steep roof - widened to 2 car garage
2. Landscape Features: Agriculture Open Wooded Garden: Formal/Informal
 Predominant features large lawn largest horsechestnut tree in town large pine
 Landscape architect Mrs. Pauline Bond many lovely shrubs + small trees
3. Neighboring Structures
 Style: Colonial Federal Greek Revival Gothic Revival Italian Villa Lombard Rom.
 Venetian Gothic Mansard Richardsonian Modern
- Use: Residential Commercial Religious Conditions: Excellent Good Fair Deteriorated

GIVE A BRIEF DESCRIPTION OF HISTORIC IMPORTANCE OF SITE (Refer and elaborate on theme circled on front of form)

Mrs. Agnes Davenport Rogers lived here - 1912 - 1950 about. She was a gifted teacher, and a great influence to her many pupils. She taught District School number 9. Also at Central School and in Byfield. Her granddaughter is now a teacher in Haverhill public schools.
 The present owner, Walter Drescher is a teacher of mathematics, formerly at Bentley, now at Northern Essex Community College.

Mrs. Drescher is an accomplished organist, has served at the Congregational Church, also is youth choir director, and also a registered nurse.

Sam Plummer, ^{who lived here} improved the spring down the road with a sunken bucket, stone steps leading down, a pump & a granite trough. He left a sum of money for its upkeep. It was known as Plummer Spring, and cut in the trough, and date 1883. The road by the house & spring known as "Plummer Spring Road."

BIBLIOGRAPHY AND/OR REFERENCE

Remembered by me, the next-door neighbor for 53 years, as told me.

RESTRICTIONS

Original Owner: S. Rogers, owned it in 1830, on the town map -
 Deed Information: Book Number 5210 Page 796.

Registry of Deeds

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10	FLOODPLAIN IMPACT AND MITIGATION SUMMARY
11-14	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

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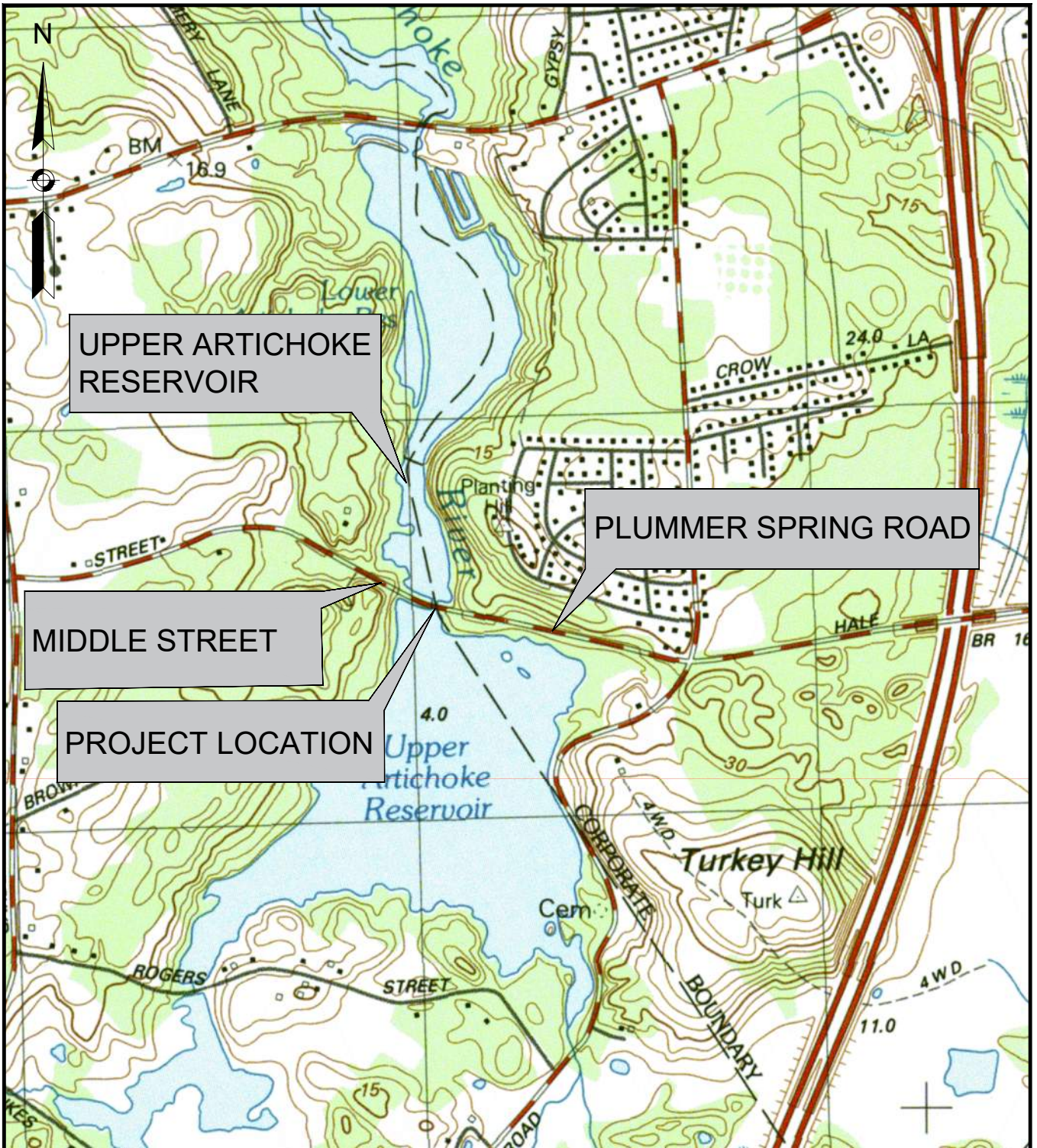
INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 14

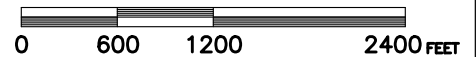


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LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'



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LOCUS MAP

Source:

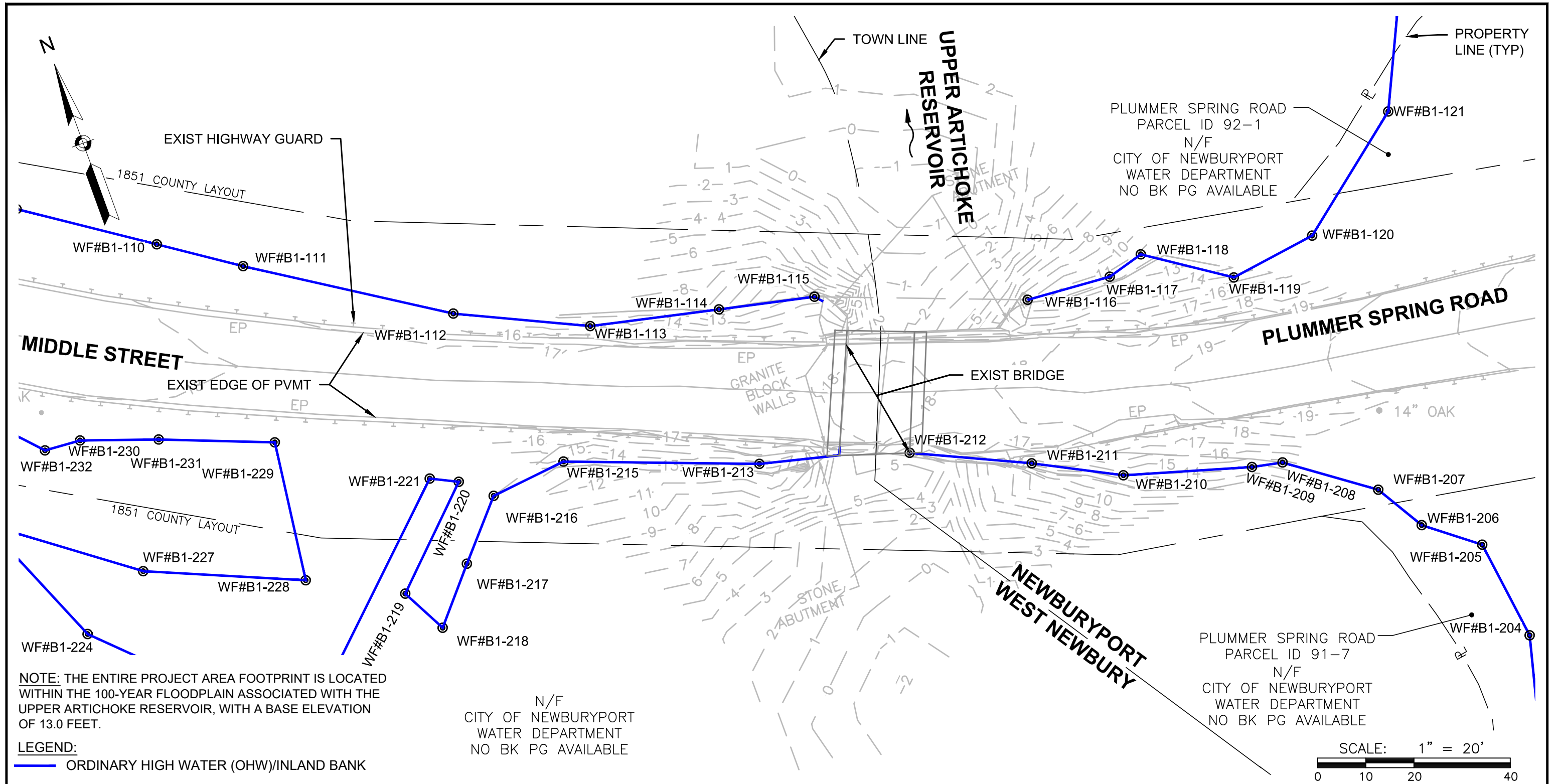
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 ROAD OVER UPPER ARTICHOKE
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617 896 4300

Job No.:	28395.00	Date:	12/21/2020
Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 14



NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:
— ORDINARY HIGH WATER (OHW)/INLAND BANK

N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

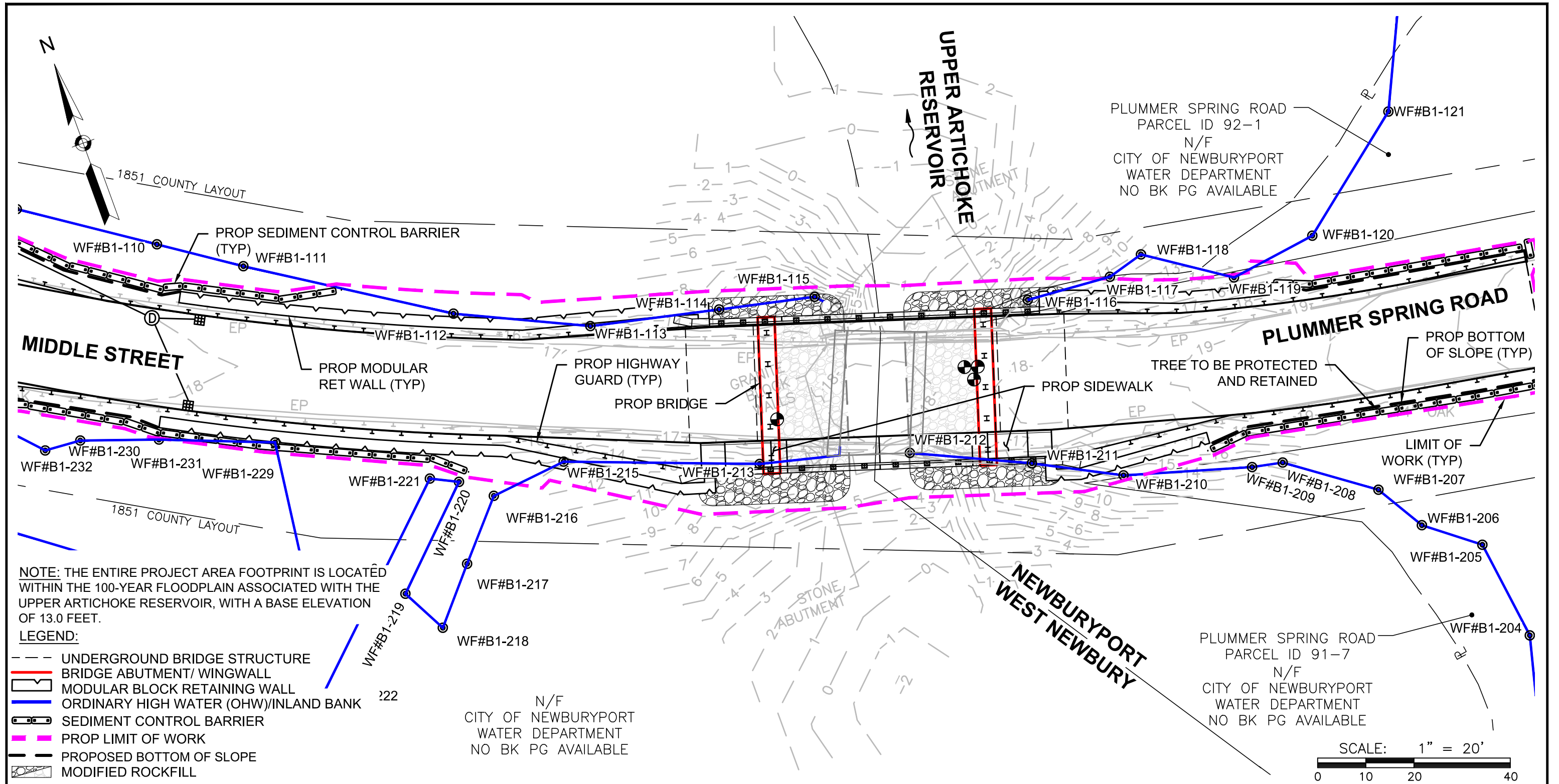
PLUMMER SPRING ROAD
 PARCEL ID 91-7
 N/F
 CITY OF NEWBURYPORT
 WATER DEPARTMENT
 NO BK PG AVAILABLE

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EXISTING CONDITIONS
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: EX COND Figure: 3 OF 14

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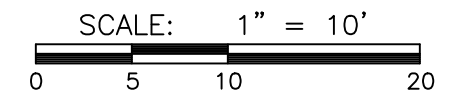
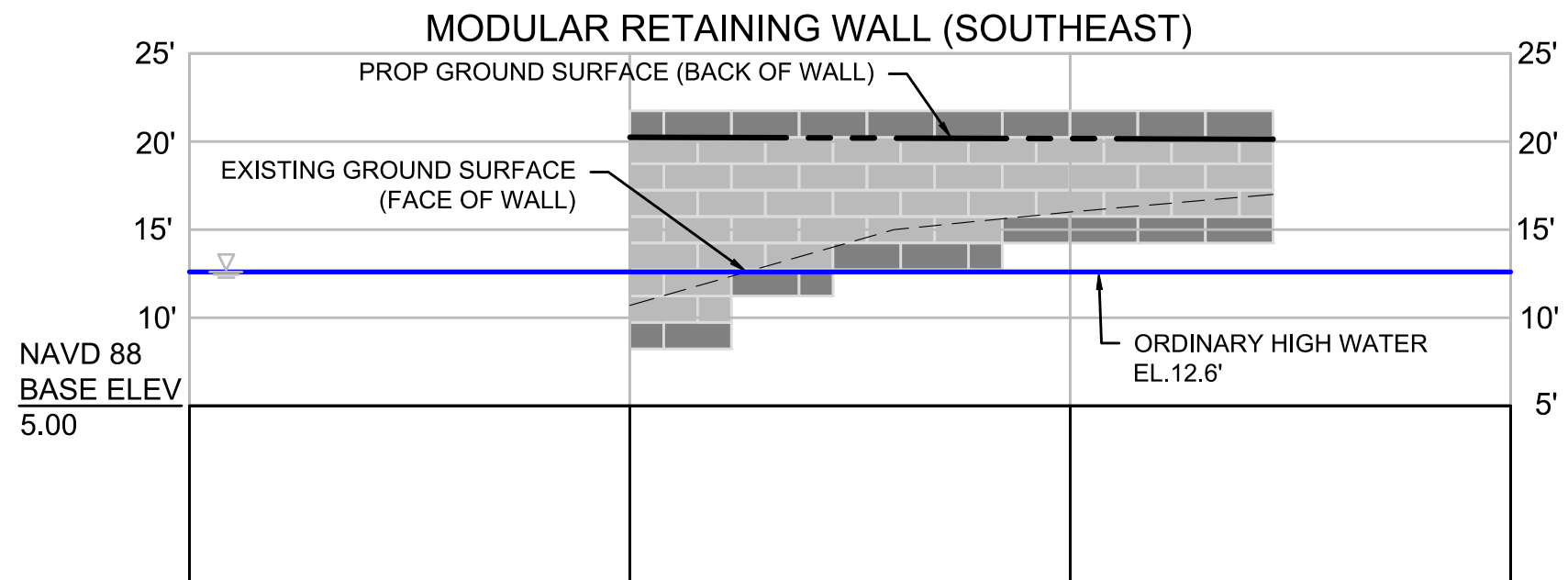
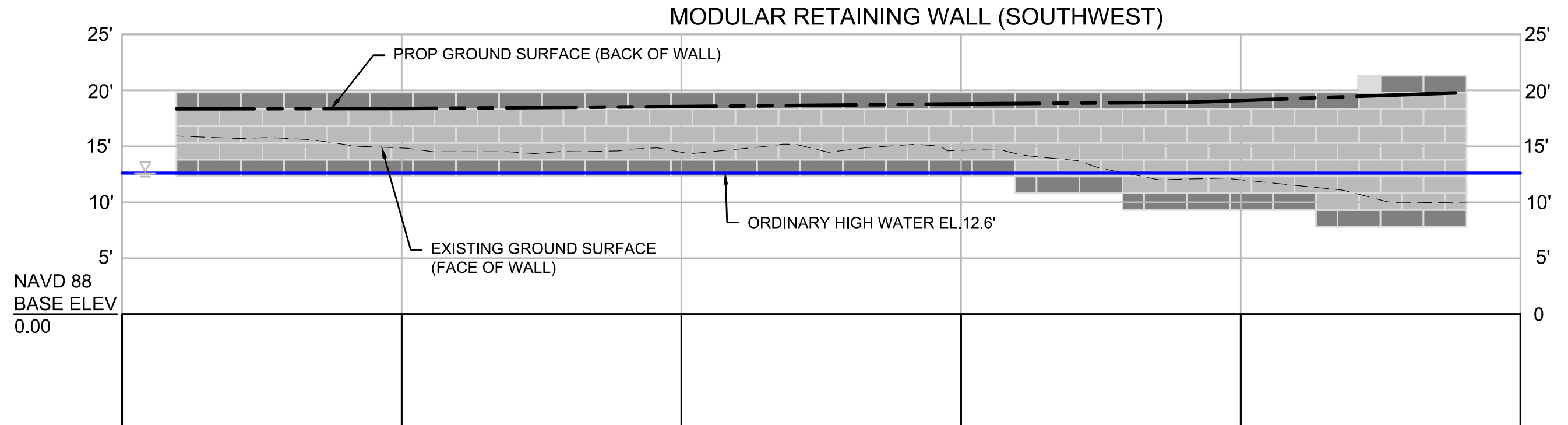
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PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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PROPOSED WALL PROFILE

Source:

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ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

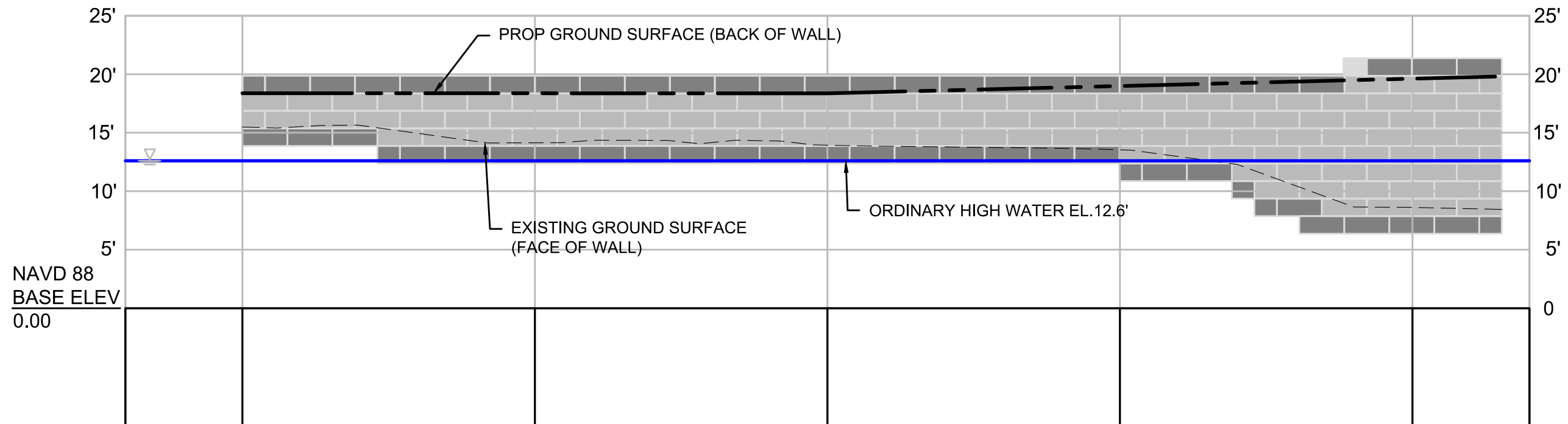
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Description: PR WALL Figure: 5 OF 14

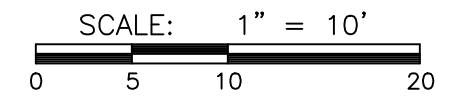
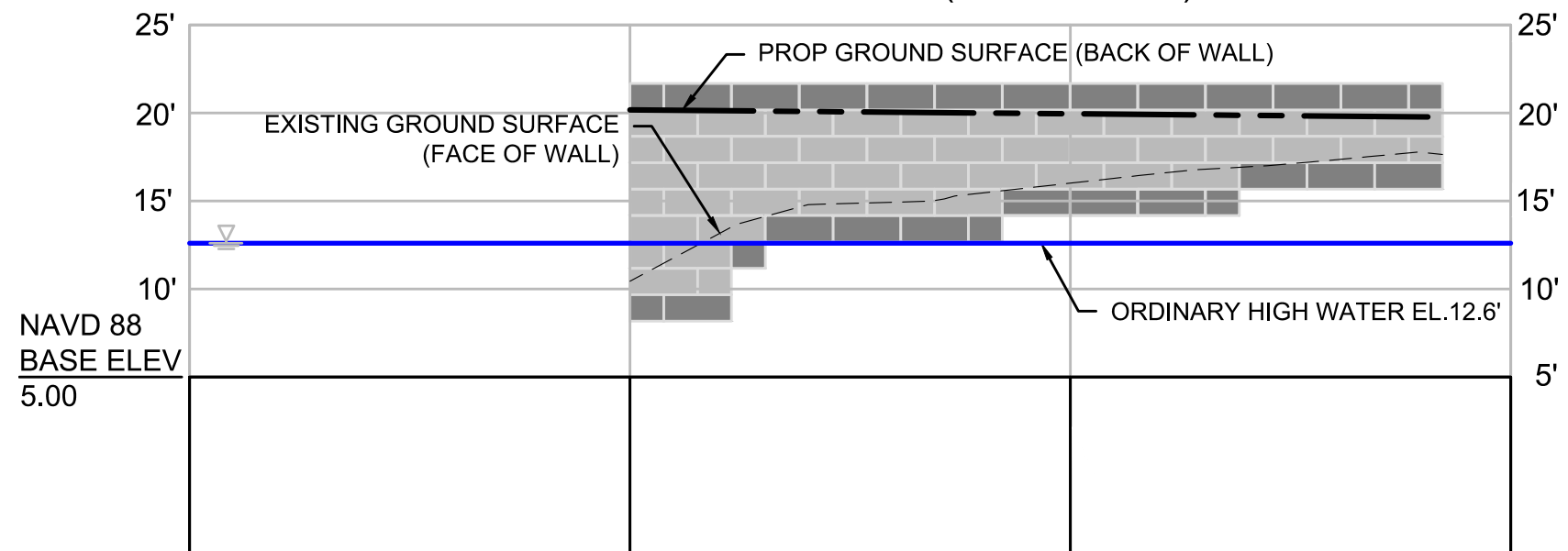
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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

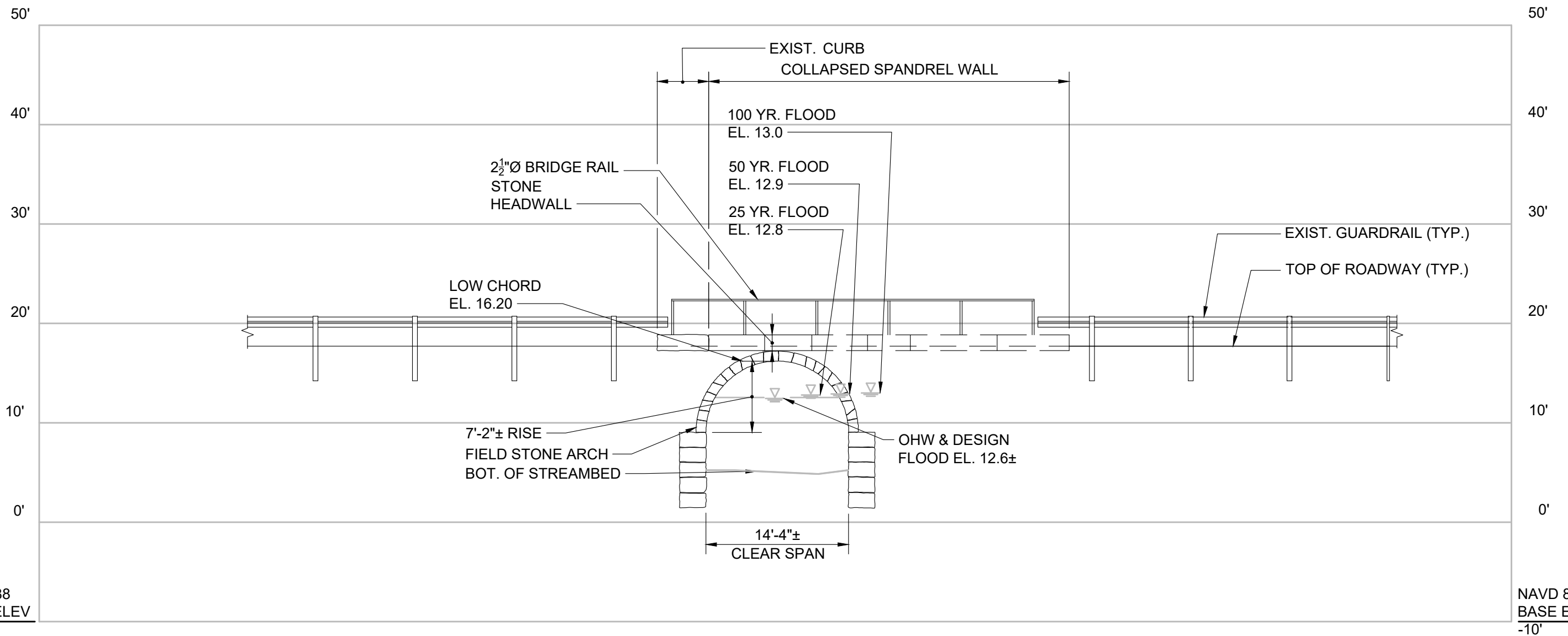


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PROPOSED WALL PROFILE
Source:
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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Source:

EXISTING - SOUTH ELEVATION

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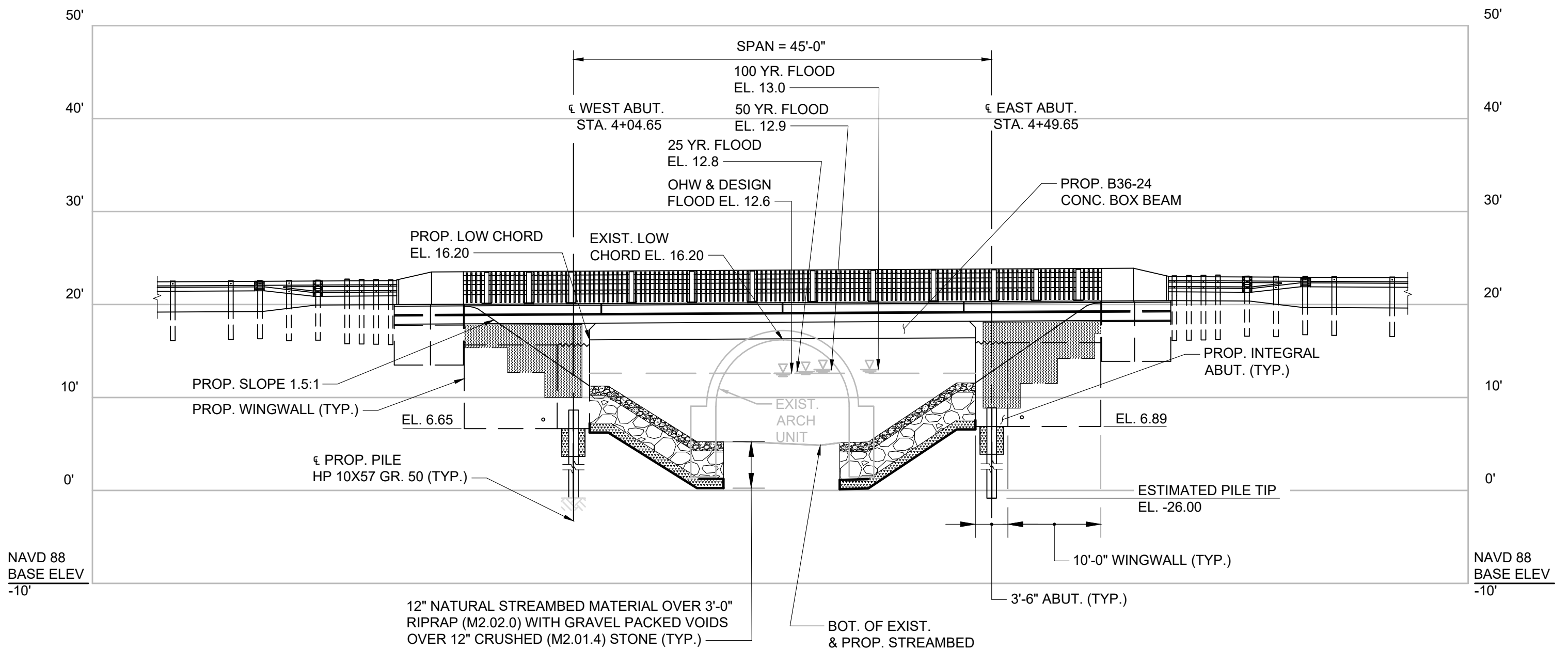
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Scale: 3/32" = 1'-0" Revised: _____

Description: EXIST. EL. Figure: 7 OF 14

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NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

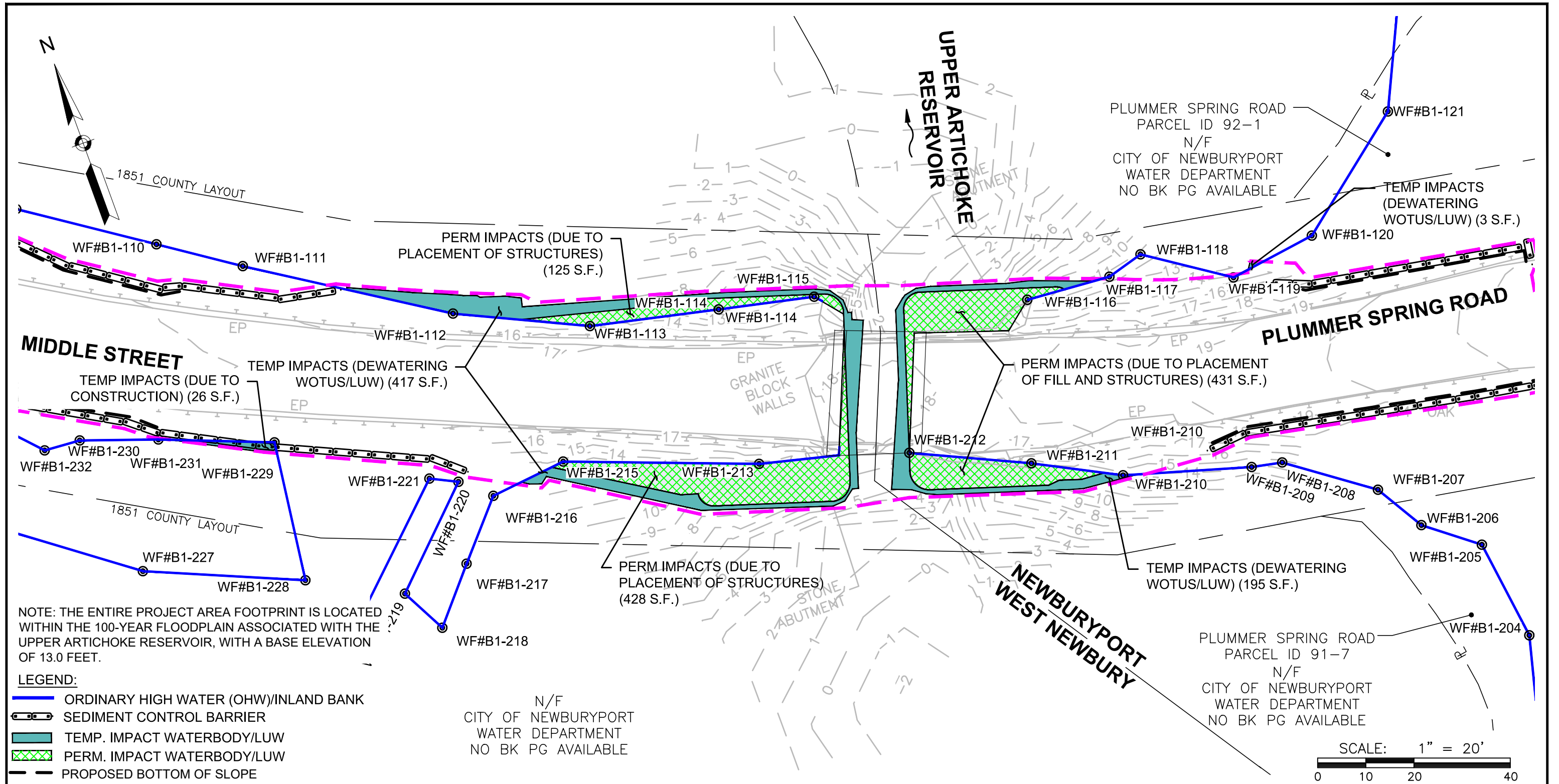
PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

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Source: **PROPOSED - SOUTH ELEVATION**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: PROP. EL. Figure: 8 OF 14

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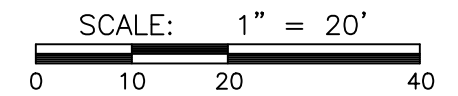
NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PLUMMER SPRING ROAD
PARCEL ID 91-7
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



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IMPACTS

Source: _____

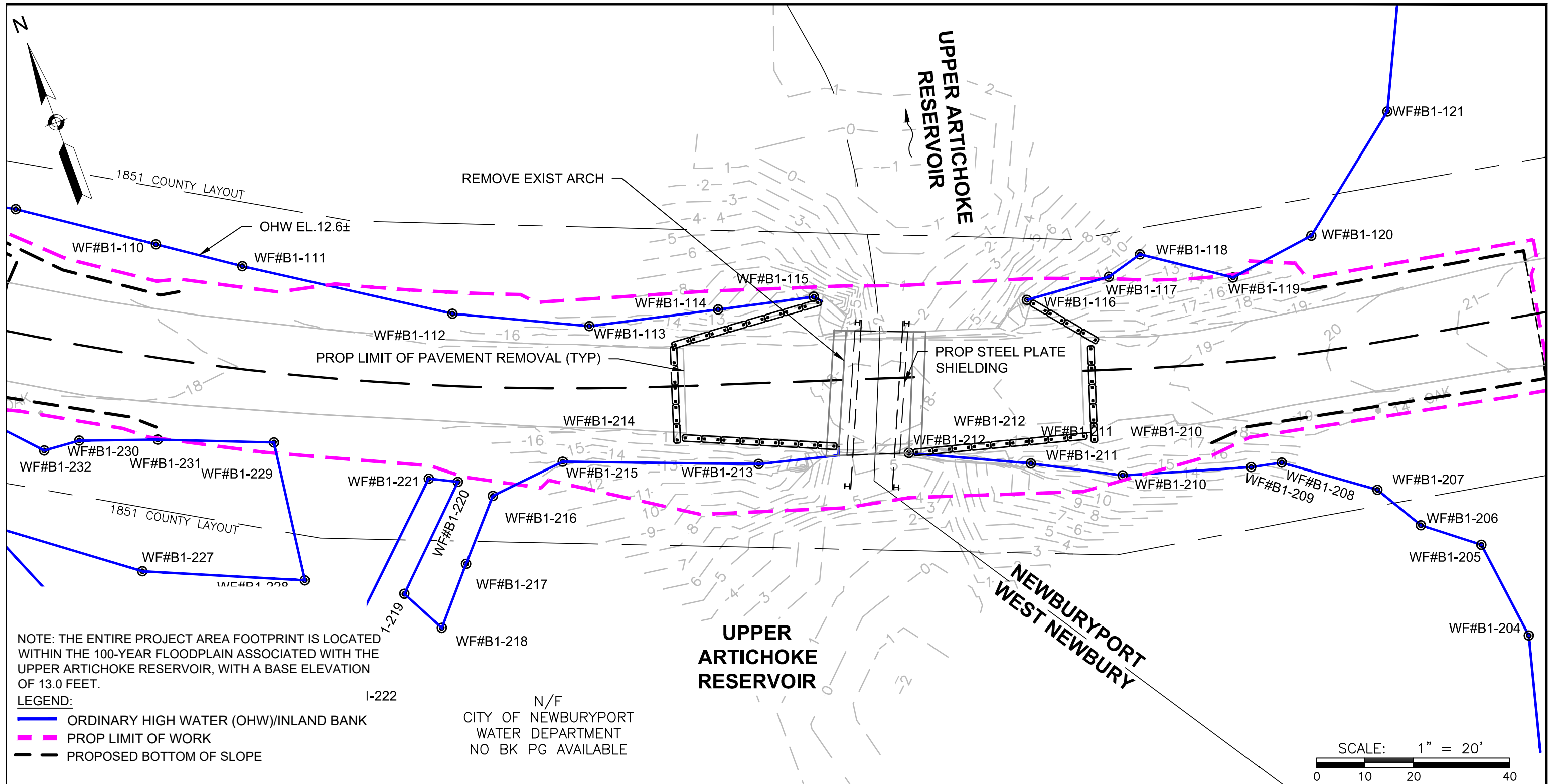
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020

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Description: IMPACTS Figure: 9 OF 14

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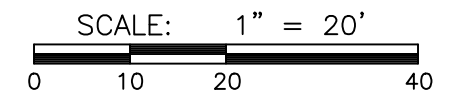


NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- - - PROP LIMIT OF WORK
- - - PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

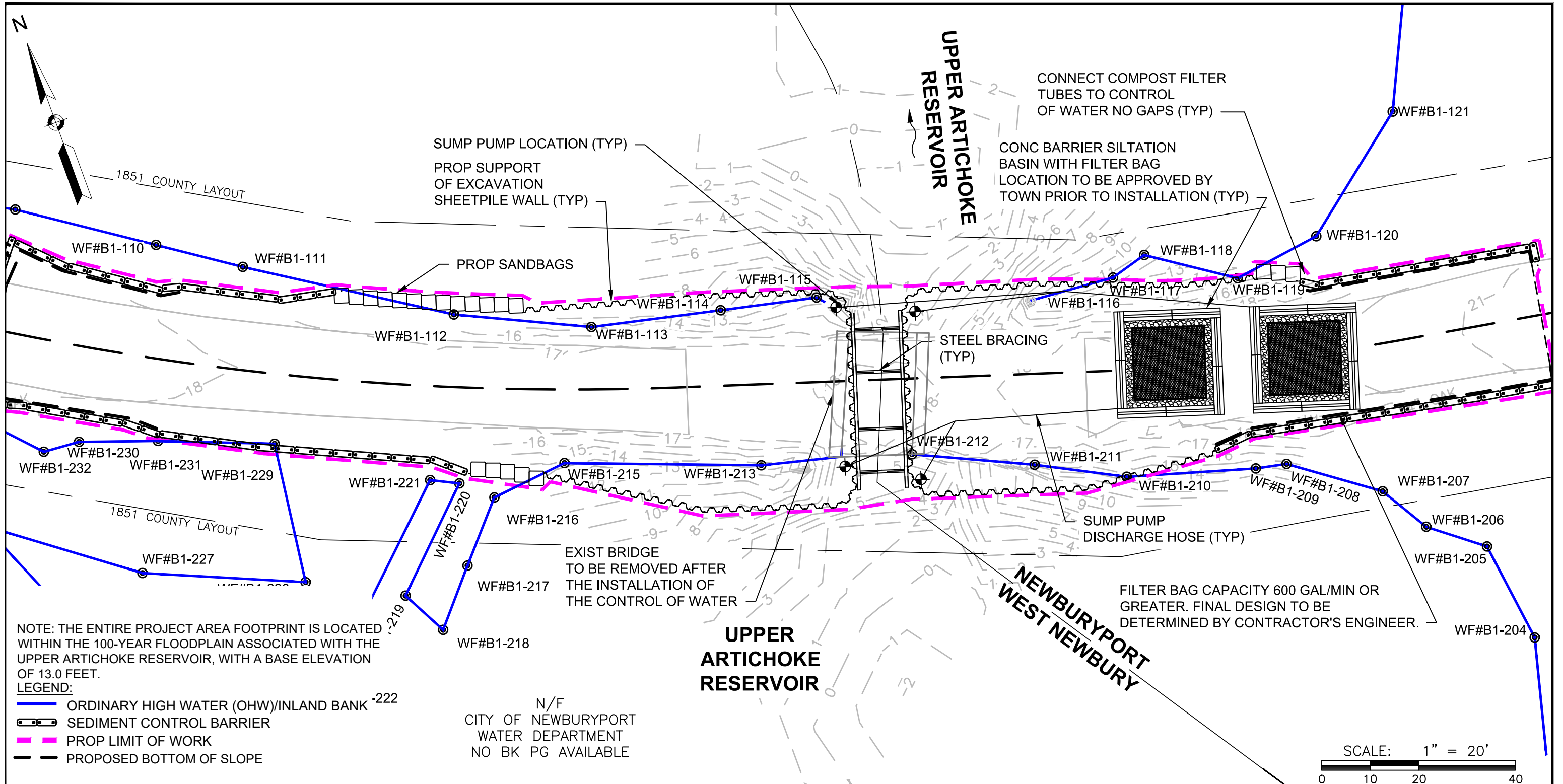


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SHIELDING PLAN - UPPER ARCH REMOVAL
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
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Description: COW Figure: 10 OF 14

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LEGEND:
 — ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 — SEDIMENT CONTROL BARRIER
 — PROP LIMIT OF WORK
 - - - PROPOSED BOTTOM OF SLOPE

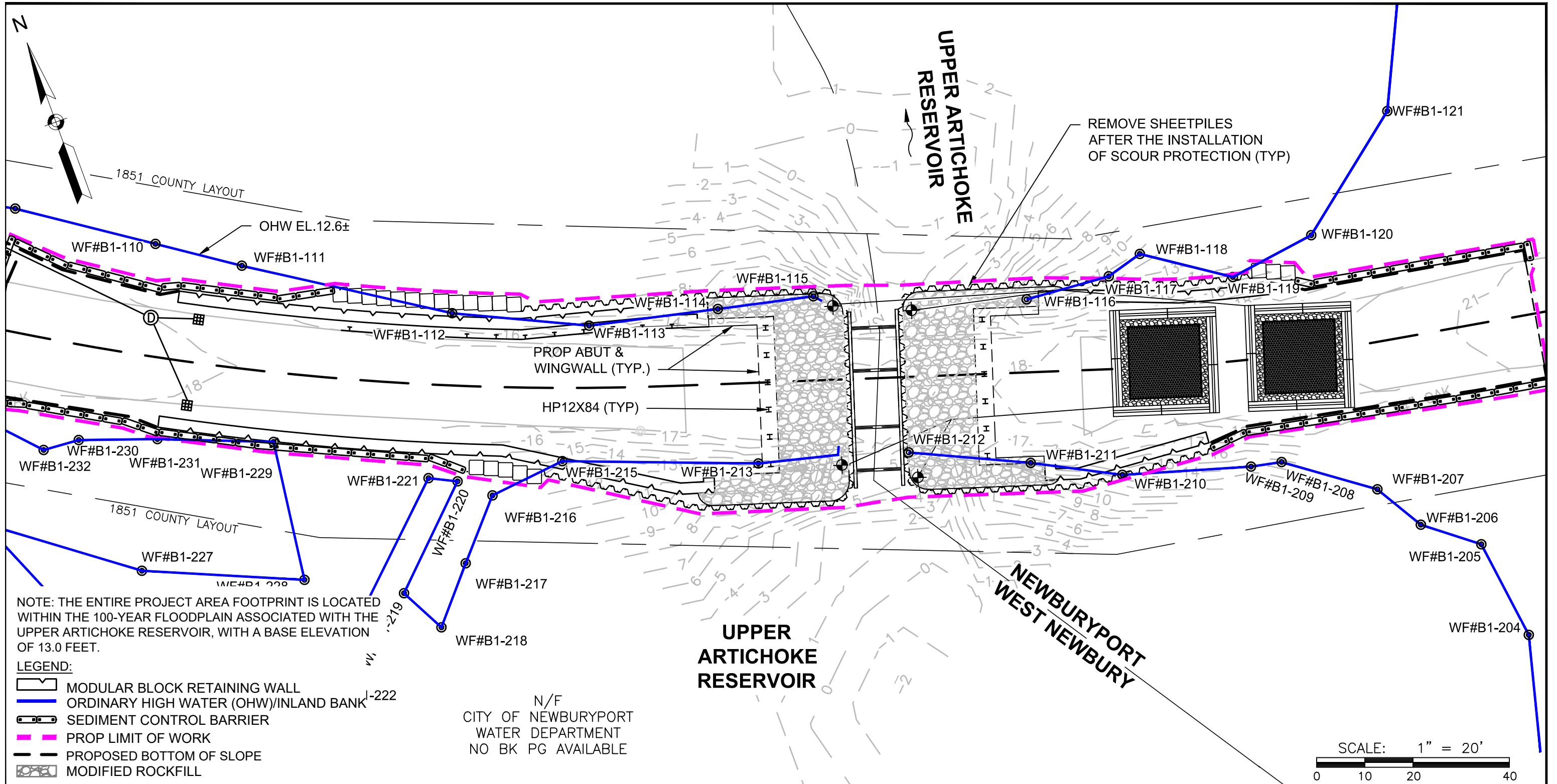
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Source: **CONTROL OF WATER - PHASE 1 - PLAN**
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
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Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 11 OF 14

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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

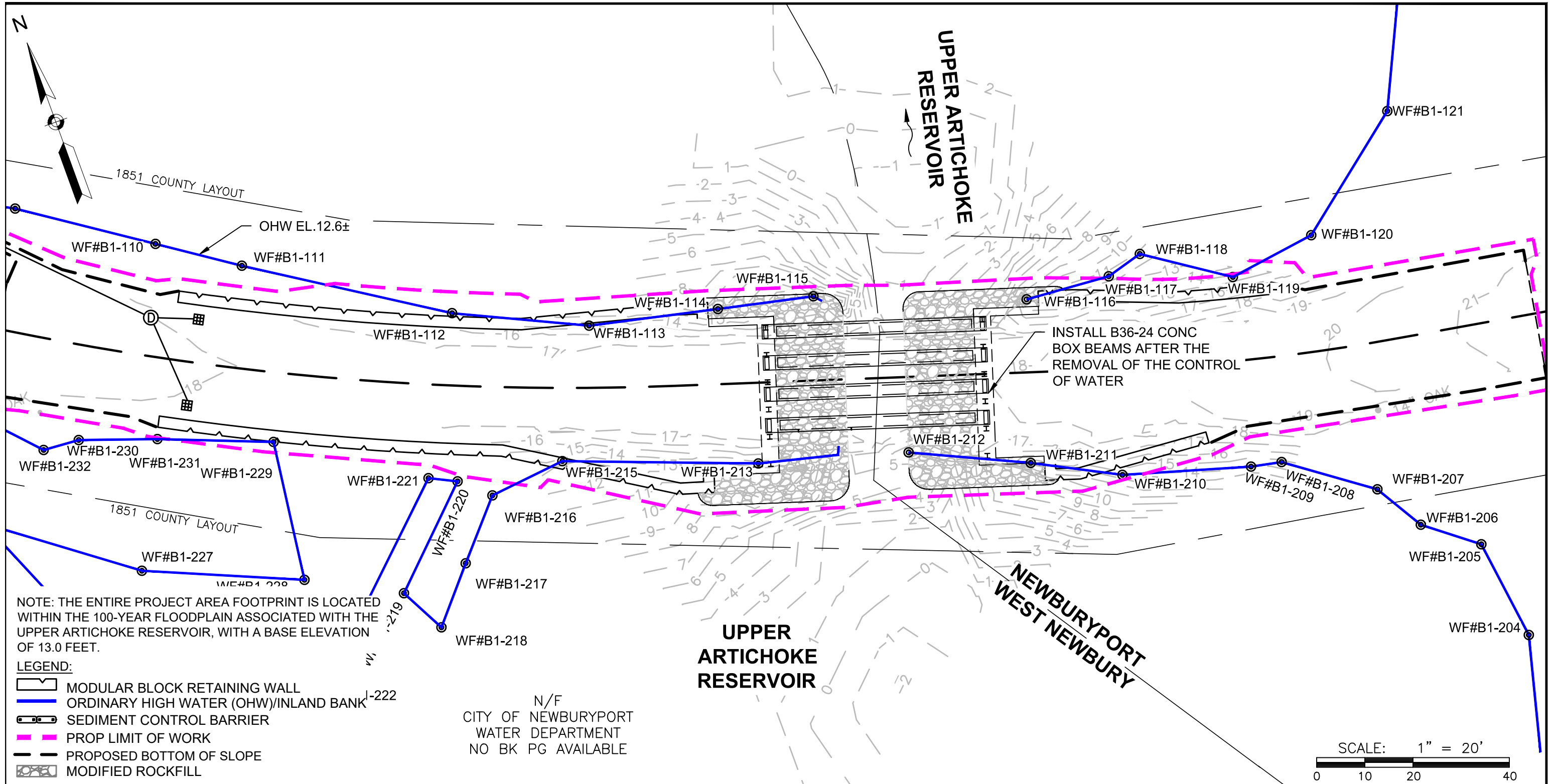
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PREPARED FOR:
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MA 01950
TOWN OF WEST NEWBURY
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MA 01985

Source: **CONTROL OF WATER - PHASE 2 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
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Description: COW Figure: 12 OF 14

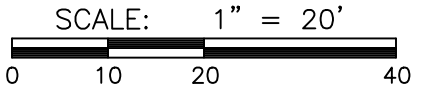
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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:**
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



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MA 01950
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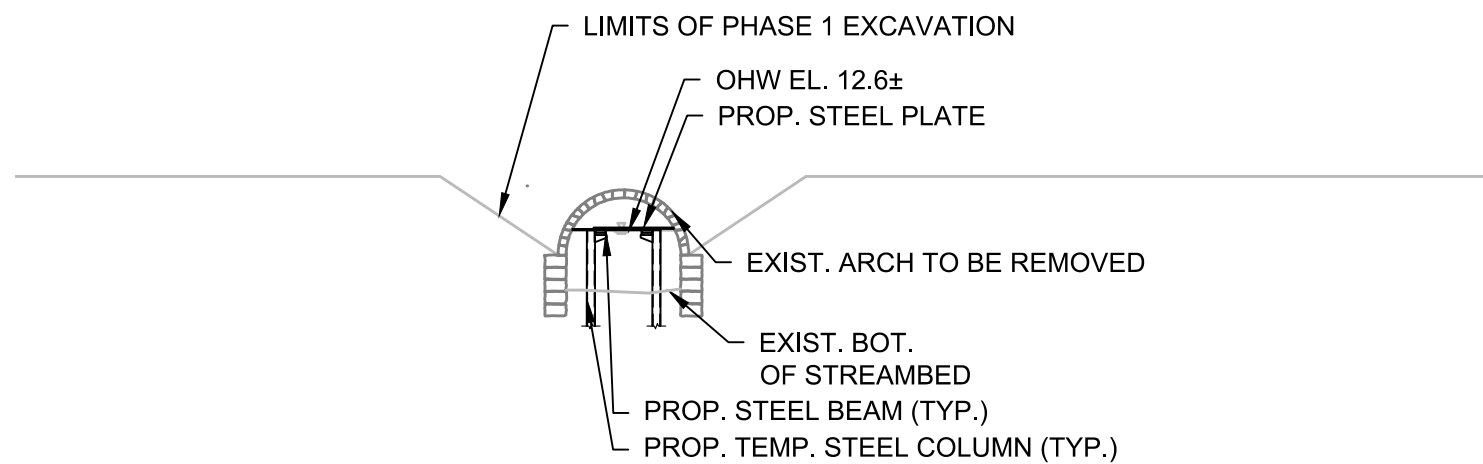
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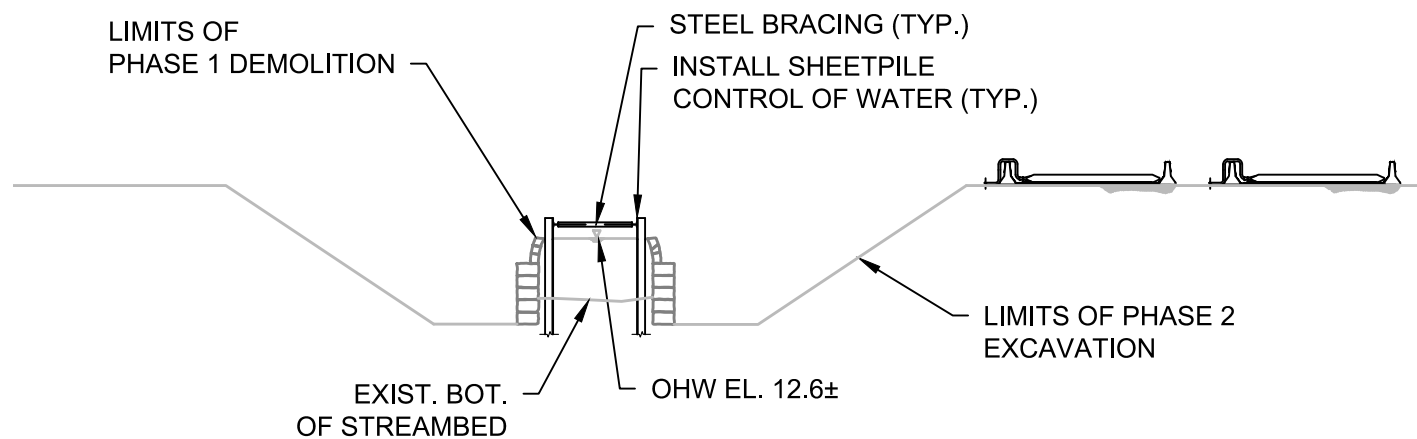
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 13 OF 14

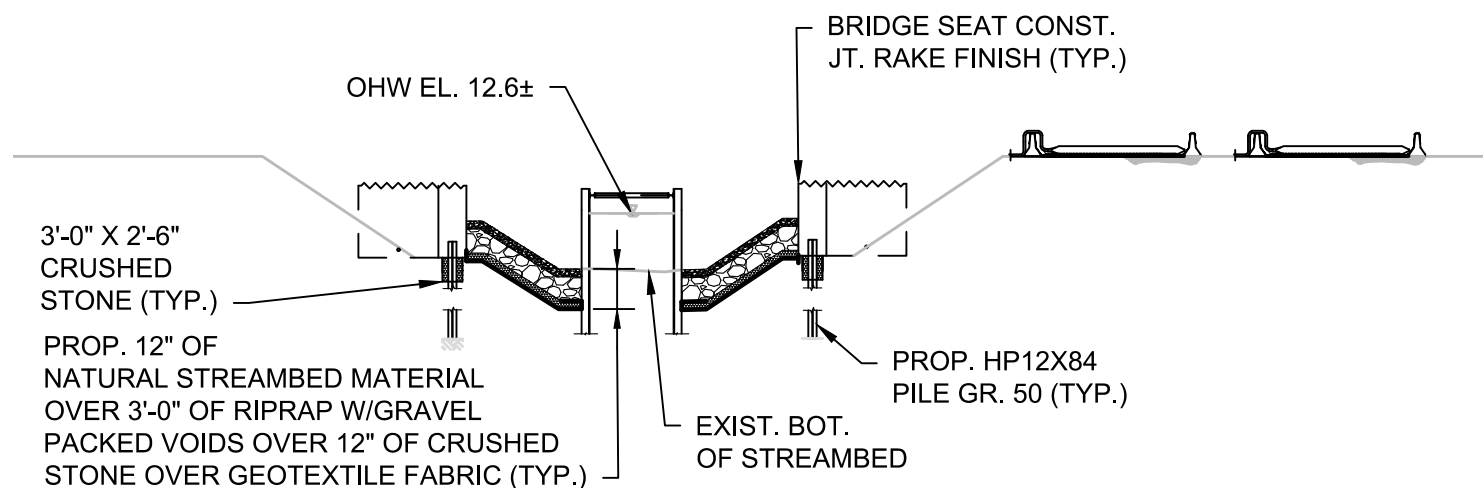
BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300



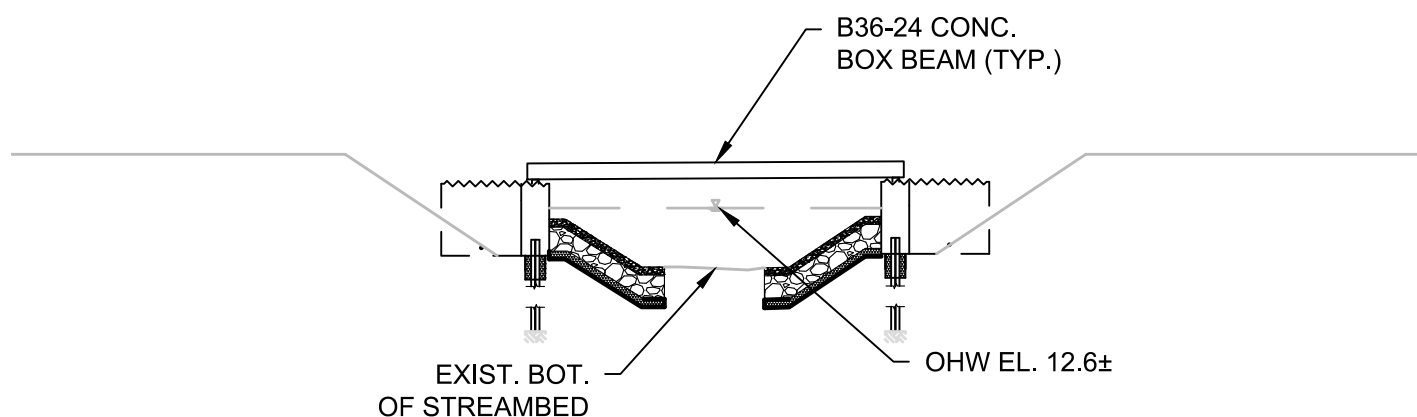
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

PREPARED FOR:
CITY OF NEWBURYPORT
60 PLEASANT ST NEWBURYPORT,
MA 01950
TOWN OF WEST NEWBURY
381 MAIN ST, WEST NEWBURY,
MA 01985

SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 14 OF 14

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MA Historical Commission
 220 Morrissey Blvd.
 Boston, MA 02125



Sara Kreisel

From: Sara Kreisel
Sent: Thursday, January 14, 2021 1:24 PM
To: david.s.robinson@mass.gov
Cc: Morrison, Micah; Jon-Eric White; Town Manager
Subject: Plummer Spring Road, Newburyport / Middle Street, West Newbury over Upper Artichoke Reservoir Bridge Replacement Project - Cultural / Historic Resources Coordination & Request for Comment
Attachments: Transmittal_MBUAR_Jan14_Digital.pdf;
UpperArtichokeReservoir_HistoricReview_Package_MBUAR_Jan14_2021.pdf

Good afternoon,

BSC Group Inc., on behalf of The City of Newburyport and Town of West Newbury, is providing supplemental information to you in regards to a Pre-Construction Notification (PCN) submission for the above-referenced project. The information in the email attachment addressed to the MHC is being provided to you as well to assist with the project review.

The project is being proposed to replace the structurally deficient, undersized bridge which carries Plummer Spring Road, Newburyport / Middle Street, West Newbury, MA over the Upper Artichoke Reservoir. The existing single span earth-filled stone arch bridge is structurally deficient due to undermining of the existing roadway foundation and is proposed to be replaced with a new bridge in a similar horizontal and vertical alignment. The proposed span length will increase from the 14-feet to 45-feet. Additionally, the overall width of the bridge will expand slightly to 32.5-feet to accommodate safety improvements, including a safety sidewalk. The project involves mitigation measures intended to address existing structural and hydraulic deficiencies, while also minimizing disturbances to the surrounding environment and improving openness. It is anticipated that this project will not be supported in part with federal funds.

Preliminary review has identified that there is one state-listed historical and/or cultural resource approximately 0.4 miles west of the project area, the Walter Drescher Farmhouse (WNB. 156). No impacts are proposed to this property. There are no state or Federally-listed historic or cultural resources located within the project area.

We respectfully request your review of the enclosed materials at your earliest convenience and solicit any comments or concerns regarding the proposed project. Written comments should be directed to BSC Group, Inc., 803 Summer Street, Boston, MA 02127, Attn: Sara Kreisel. Please note that project solicitation is being requested from the Massachusetts Historical Commission, relevant Native American Tribes, and the Massachusetts Board of Underwater Archaeological Resources for concurrent review.

If you have any questions or require additional information, please do not hesitate to contact me at (617) 896-4579 or at skreisel@bscgroup.com.

Sincerely,
Sara

Sara E. Kreisel, PWS
Ecological Project Manager

Personal Pronouns: She/Her/Hers ([Why pronouns?](#))

skreisel@bscgroup.com

BSC Group

33 Waldo Street | Worcester | MA, 01608
803 Summer Street | Boston | MA, 02127

direct | 617-896-4579
main | 508-792-4500

Sara Kreisel

From: Sara Kreisel
Sent: Thursday, January 14, 2021 1:43 PM
To: David.Weeden@mwtribe-nsn.gov
Cc: Morrison, Micah; Jon-Eric White; Town Manager
Subject: Plummer Spring Road, Newburyport / Middle Street, West Newbury over Upper Artichoke Reservoir Bridge Replacement Project - Cultural / Historic Resources Coordination & Request for Comment
Attachments: Transmittal_THPO_Mashpee Wampanoag_Jan14_Digital.pdf;
UpperArtichokeReservoir_HistoricReview_Package_THPO_Jan14_2021.pdf

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Sara E. Kreisel, PWS
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Personal Pronouns: She/Her/Hers ([Why pronouns?](#))

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803 Summer Street | Boston | MA, 02127

direct | 617-896-4579
main | 508-792-4500

Sara Kreisel

From: Sara Kreisel
Sent: Thursday, January 14, 2021 2:04 PM
To: bettina@wampanoagtribe.net; thpo@wampanoagtribe-nsn.gov
Cc: Morrison, Micah; Jon-Eric White; Town Manager
Subject: Plummer Spring Road, Newburyport / Middle Street, West Newbury over Upper Artichoke Reservoir Bridge Replacement Project - Cultural / Historic Resources Coordination & Request for Comment
Attachments: Transmittal_THPO_Wampanoag Tribe of Gay Head (Aquinnah)_Jan14_Digital.pdf; UpperArtichokeReservoir_HistoricReview_Package_THPO_Jan14_2021.pdf

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Sincerely,
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Ecological Project Manager

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Attachment F

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Pre-Construction Notification

CONSTRUCTION SPECIFICATIONS

ITEM 765.3**SEED FOR EROSION CONTROL****ACRE**

The work under this item shall conform to the relevant provisions of Section 765 and M6.03.0 of the Standard Specifications and the following:

The work shall consist of planting and establishing a stand of grass in the areas shown on the plans or as required by the Engineer or listed in this document.

For the purposes of these specifications, the term “grass” shall apply to all the forbs, grasses, sedges, and rushes included in the materials.

All seeding shall be done by a company having a minimum of five years of experience with native grass establishment. Prior to beginning work, the applicator shall furnish proof of qualifications to the Engineer for approval. Proof of qualifications includes providing documentation to demonstrate knowledge and expertise with native seeding and proof of having completed successful native seeding projects.

SEEDING SEASON

Seeding seasons shall be April 1 through May 15 and October 1 through November 15 for dormant seeding. For seeding that occurs outside of these periods, the seed rate shall be increased by 50%.

MATERIALS**Samples and Submittals**

- 1) Certificate of Materials. Prior to ordering, the Contractor shall submit to the Engineer the manufacturer or supplier’s notarized Certificate of Materials. This document shall not be used as proof of purchase, proof of material delivered, or proof of material seeded, but simply to verify supplier availability of seed listed on the date certified. The species listed shall match those specified on the plans or herein, however, cultivars may vary due to availability.
- 2) Seed Tag Certification. All seed lots have a seed analysis tag as required by State and Federal law. The contractor shall submit seed tags for each bag of seed used on the project site or ensure that each tag is photo documented by the Engineer. Number of tags shall match number of bags sent by the supplier to meet rate of Pure Live Seed specified on the plans. Tag must include: kind and variety of seed; lot number; origin of seed; net weight; % purity; germination; dormant seed; germination test date; inert matter; weed, noxious and other crop seed; and name and address of company responsible for the analysis. Seeding may be considered unacceptable for payment if no tags are submitted.
- 3) Certificate of Compliance. Prior to payment, contractor shall submit a signed, dated and notarized Certificate of Compliance from the Supplier that serves as proof of purchase or bill of lading. This document shall include kind and variety of seed, lot

number, net weight shipped, date of sale, invoice number under which seed was purchased, and name and address of Supplier or Manufacturer. All information must be included on the notarized form, including lot number and net weight shipped for specified job. This information shall match Seed Tag Certification and quantity of seed applied on the job. Seeding may be considered unacceptable for payment if information is incomplete.

- 4) Seed Sample. Contractor may be asked, prior to seeding, to submit a seed sample for testing. Testing shall be incidental to this item.

Quantities specified are Pure Live Seed (PLS). Greater quantities of ordered seed may be required to achieve actual specified seeding rates. Pure Live Seed is defined as the fraction of pure seed species within the mix that, by standard seed testing practices, will germinate. This is determined by multiplying the percent of seed purity by the percent of seed germination.

Seed mix shall be a custom blend as shown on the plans or shall be as specified below. Seed cultivars shall be those that are as regional to New England or the local ecotype as possible.

Any species substitutions shall be with a species having similar characteristics and native to New England.

Seed Mix

	<u>Botanical Name</u>	<u>Common Name</u>	<u>% PLS By Weight</u>
Grass	Festuca rubra	Creeping Red Fescue	69.5%
	Panicum virgatum 'Shelter'	Switchgrass 'Shelter'	5.0%
	Panicum clandestinum 'Tioga'	Deer Tongue 'Tioga'	5.0%
	Elymus virginicus	Virginia Wild Rye	4.0%
	Elymus canadensis	Canada Wild Rye	4.0%
	Schizachyrium scoparium	Little Bluestem 'Albany	4.0%
	'Albany Pine'	Pine'	
	Agrostis perennans	Upland Bentgrass	4.0%
		<u>Subtotal</u>	<hr/> 95.5%
Herb/Forb	Chamaecrista fasciculata	Partridge Pea	1.5%
	Rudbeckia hirta	Black-eyed Susan	1.2%
	Aster laevis	Smooth Aster	0.8%
	Solidago bicolor	White Goldenrod	0.4%
	Monarda fistulosa	Wild Bergamot	0.4%
	Asclepias syriaca	Common Milkweed	0.2%
		<u>Subtotal</u>	<hr/> 4.5%
		<u>Total</u>	<hr/> 100.00%

Seeding Rate:

Apply this mix at **50 lbs PLS/acre** on areas of less than 3:1 slope and 150 lbs PLS on areas of greater than 3:1 slope. Add 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 July) or grain rye (1 Aug to 31 Dec). Cover crop shall be incidental to seeding item.

Fertilizer

No fertilizers shall be applied.

Water

Water, including hose and all other watering equipment required for the work, shall be furnished by the Contractor to the site at no additional cost. Water shall be suitable for irrigation and free from ingredients harmful to plant life. All plants injured or work damaged due to the lack of water or the use of too much water shall be the Contractor's responsibility to correct.

Mulch

Seed areas shall be separately mulched with hydromulch, straw or as specified below when incorporated with compost topsoil.

Photo Documentation

Contractor shall submit photo documentation to the Engineer
Each photo shall be date stamped. Photos shall be submitted after the following stages of construction:

- Soil preparation
- Seed and hydromulch/Compost topsoil and seed
- Germination
- Grass establishment after one full growing season (June-September)

CONSTRUCTION

Surface Preparation

Soil preparation and seeding shall occur only when the bed is in a friable condition, not muddy or hard. Bare soils shall be raked to remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. All ruts and any depressions caused by settlement, erosion or rolling shall be filled with additional loam or compost and the soil shall be re-graded to a smooth and even finish corresponding to the required grades. No tracking or rolling shall be done on wet soil.

Prior to seeding, site preparation shall be approved by the Engineer.

Seeding Methods

Seeding on Loam

Seeding application shall be by broadcast methods followed by hydromulching. Seed may be broadcast by using a cyclone or whirlwind seeder, or by hand.

If spread by hand, small or light-seeded species such as bluestem may be mixed with approved filler (e.g., sawdust, rice, kitty litter, or clean damp sand) to achieve an even distribution. Broadcast seeding shall be undertaken in two separate passes at ninety degrees to each other. One-half the seeding rate shall be applied in each direction. Seed shall be incorporated 1/8 to 1/4-inch deep by raking or dragging, culti-packing, or tracking with heavy machinery. Raked areas shall be rolled with a weighted roller to provide good seed to soil contact. Do not roll or track the seed if the soil is wet.

Immediately following completion of broadcast seeding and packing, area shall be hydromulched. Hydromulch shall be per the Standard Specifications and per the manufacturer's directions. Mulch for hydroseeding shall be wood fiber only.

Seeding in Combination with Compost Topsoil

If proposed in the contract, compost topsoil shall be as specified under Item 751.7 Compost Topsoil.

Seeding shall be done as a second operation after placement of compost has been approved by the Engineer. Seeding shall be broadcast followed by hydro-mulching.

Contractor shall notify Engineer prior to seeding operation to obtain written approval of site preparation and compost topsoil application.

Irrigation

After seeding and mulching, water seeded areas to moisten soil to a depth of at least 2 inches.

No seeding shall be done if soils are muddy or dry and compacted.

Care during Seed Germination

Contractor shall care for seeded areas as required. Care shall include irrigation and weed removal as necessary for germination and healthy growth.

Over-seeding

If there are numerous areas of bare ground greater than 10-12 inches, these areas shall be over-seeded. Areas where seed fails to germinate and that become invaded by weeds shall be mowed as low as possible and over-seeded. Soil that is compacted shall be raked or roughened prior to seeding to ensure seed to soil contact.

Over-seeding application rates and methods shall be the same as those listed above. After seeding, areas shall be mulched with straw mulch or 1/4 - 1/2 inch compost topsoil and watered with a fine mist to moisten soil to a depth of at least 2 inches.

Over-seeding shall be incidental and shall not be paid for separately.

Care during Grass Establishment

Following germination of seeded species, the contractor shall maintain the stand of grasses to ensure healthy growth.

Work shall include mowing or weed-whacking for weed control, irrigation if necessary, and monitoring for invasive plants. Watering shall provide uniform coverage without eroding soil or grassed surfaces. Treatment of invasive plants shall be per the requirements of the Engineer.

The Contractor shall provide all labor, equipment, materials, and water required for establishment. Contractor shall water all seeded areas as necessary to a depth of 2 inches or greater.

EXPECTATIONS OF ESTABLISHMENT

Native upland grasses and forbs will not look like turf grass. Many of the native grasses are bunch type grasses and will not form a uniform growth or have a sod-type appearance. However, seeded area shall show general uniform growth of the seeded species throughout the area. Areas with gaps of bare soil greater than 10-12 inches will be considered unacceptable and shall be over-seeded.

A well-established stand of grasses at the end of one full growing season (June-September), as determined by the Engineer, will be required for acceptance. At least 80-90 percent of the grass established shall be the seeded species and any invasive or aggressive weeds (mugwort, ragweed, or knapweed) shall have been cut or otherwise managed.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Measurement for Item 765.3 shall be by the ACRE of material installed, approved, and maintained in place as listed. Payment shall be the bid price and shall be compensation for all labor and materials necessary to complete the work specified above and under item 765.3 in the Standard Specifications.

This price shall include surface preparation prior to seeding as specified under Surface Preparation, and as required by the Engineer, seeding, reseeding, irrigation, care during germination and establishment, labor materials, equipment, photo documentation, and all incidental costs required to complete the work to spread the seed mix.

ITEM 983.12**RIPRAP WITH GRAVEL PACKED VOIDS****CUBIC YARD****DESCRIPTION**

The cost of the following items is incidental to the unit price of Riprap with Gravel Packed Voids: Excavation to install Riprap including any chipping and removal of bedrock or boulders, Geotextile Fabric, Crushed Stone, Riprap, Gravel to pack Riprap voids and Natural Streambed Material excavated during the installation of the Riprap shall be stockpiled for reuse as a 6" layer of material on top of the Riprap. Any remaining streambed material shall be removed from the site and become the property of the contractor unless otherwise directed by the Town. If any excavated material is unsuitable natural streambed material as determined by the town, natural streambed material shall be pre-blended outside the project area. The cost of the pre-blended natural streambed, if necessary shall be considered incidental to this item.

The work under this Item shall conform to the relevant provisions of Section 983 and the following:

The work under this item includes furnishing and placing new Riprap to the location and limits as shown on the Plans, and as directed in the field by the Engineer. The Riprap shall be placed to stabilize and protect the embankments and armor the streambed against scour.

Stone for Riprap shall be placed on the prepared slopes or areas in a manner that will produce a well-graded mass of stone with the minimum practicable percentage of voids and thickness as depicted on the contract drawings. Riprap protection shall be placed to its full thickness in one operation in such a manner to avoid displacing the underlying material. Placing of Riprap in layers or by dumping into chutes or by placing by similar methods that are likely to cause segregation will not be permitted.

Riprap shall consist of stones that conform to M2.02.0 as described in Section M2 of the Standard Specifications "*Riprap shall be sound, durable rock which is angular in shape. Rounded stones, boulders, sandstone or similar soft stone or relatively thin slabs will not be acceptable. Each stone shall weigh not less than 50 pounds and at least 75% of the volume shall consist of stones weighing not less than 500 pounds each. The remainder of the stones shall be so graded that when placed with the larger stones the entire mass will be compact.*" All material going into the Riprap protection shall be so placed and distributed that there will be no large accumulations of either the larger or smaller sizes of stone.

It is the intent of this specification to produce compact Riprap aprons and slopes in which all sizes of material are placed in their proper proportions. Hand placing or rearranging of individual stones by mechanical equipment shall be required to the extent necessary to secure the specified results.

Unless otherwise authorized by the Engineer, the Riprap protection shall be placed in conjunction with the reconstruction of the embankment slopes. The lag time between the placement of the Riprap protection and the reconstruction of the embankment slope shall be minimized to prevent mixture of the embankment and Riprap material.

A geotextile fabric shall be placed under the crushed stone bedding M2.01.4 prior to placement of the Riprap. The geotextile fabric shall meet the requirements of Section M9.50.0 of the relevant provisions and AASHTO M288, Class 2.

DESCRIPTION – GEOTEXTILE

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days. If laid under water, the covering crushed stone or Riprap shall be placed on the same day as the geotextile fabric.

For seams that are sewn in the field, the contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density.

The geotextile shall be placed in intimate contact with the soils without wrinkles or folds, and it shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials, when applicable, will not excessively stretch or tear the geotextile.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. Overlapped seams at roll ends shall be overlapped a minimum of 18 inches, except when placed under water. In such instances, the overlap shall be a minimum of 3 feet. Overlaps of adjacent rolls shall be a minimum of 18 inches in all instances.

Care shall be taken during installation so as to avoid damage to the geotextile as a result of the installation process. Should the geotextile be damaged during installation, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

When stone or Riprap is placed over Geotextile Fabric for Separation, the stone placement shall begin at the toe of slope and proceed up the slope. Placement shall take place so as to avoid stretching and subsequent tearing of the geotextile. Stone shall not be dropped from a height exceeding 12 inches.

Field monitoring shall be performed to verify that the crushed stone or Riprap placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as directed by the Engineer, at the Contractor's expense.

DESCRIPTION – GRAVEL

The finished surface shall be free of voids and shall be approved by the Engineer as it will serve as bedding for natural streambed material. Gravel shall conform to MassDOT Standard Specification Item 151 [Gravel Borrow M1.03.0].

STOCKPILE NATURAL STREAMBED MATERIAL

Natural streambed material is to be stockpiled on site. It shall be contained within an area approved of by the Town with containment methods acceptable to the Town. The excavated streambed material will be placed on a tarp or impervious surface. The stockpiled material will be covered with a tarp and surrounded by sediment barriers until its reuse. Any stone excavated from the existing streambed can be stockpiled and reused for streambed restoration, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area. Any material not reused shall become the property of the Contractor.

PRE-BLENDED NATURAL STREAMBED MATERIAL (IF NECESSARY)

The streambed material shall be comprised of two primary components.

1. Stone 4 inches and under shall meet the following gradation:

<u>Sieve opening</u>	<u>Percent by Mass Passing Through</u>
4"	95
2"	55 – 65
¾"	30 – 45
#4	0 – 5

2. Stone 6 inches to 2.5 foot in diameter:

<u>Stone Size</u>	<u>Percent Passing</u>
2.0'	80
1.5'	25
0.5'	0

The streambed/bank stone for all two components shall be native cobbles and boulders similar in shape and size of streambed/bank stone adjacent to the work area. Partially angular rock is preferred over round and shall be able to lock together to prevent movement during high flows. Crushed Stone will not be accepted for any of the two components. Any stone excavated from the existing streambed can be stockpiled and reused for natural streambed, provided the excavated stone is characteristic of the existing stream material upstream and downstream of the work area, or meets the above criteria. The elevations and conditions of the existing streambed shall be maintained to the maximum extent practicable.

Components one and two shall be pre-blended outside the project area at a volume ratio of 30% and 70% respectively. The pre-blending shall be done in a way that will prevent the mass from being contaminated by work-place soils. The pre-blended mass shall be placed over areas of proposed Riprap as shown on the plans.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Riprap with Gravel Packed voids will be measured and paid for per cubic yard completed in place. Crushed stone, gravel, geotextile fabric, excavation, and all work related natural streambed material shall be included in the bid price for Riprap with Gravel Packed Voids. Said price shall be considered full compensation for all labor, tools, equipment and materials necessary for the completion of the work.

ITEM 991.1 CONTROL OF WATER-STRUCTURE NO. N-11-007= LUMP SUM

W-20-001

The cost for all excavation (except for within the limits of Bridge Excavation shown on the contract drawings) to install the control of water system shall be included in the bid price for Item 991.1. The environmental permits contained in the contract documents depict a suggested control of water system. Any modification of existing or new permits are at the contractor's expense and the contract completion date will not be altered.

The contractor is alerted to the requirements imposed by the environmental permits contained in the contract documents.

DESCRIPTION

The work to be performed under this Item shall include all pumping, sandbagging, sheeting, for sufficient water control to accomplish the removal of the existing bridge, construction of the proposed bridge and Riprap installation "*in the dry*". Work under this Item shall consist of dewatering within the work limits as shown on the plans. Water within the work area shall be discharged as specified in the contract documents, environmental permits obtained for this project and as directed by the Municipalities. No direct discharge will be allowed into waterways, or the adjacent wetlands during the dewatering operations.

Dewatering shall be conducted to ensure that all bridge components are placed and cured in the dry. For demolition purposes, dewatering shall be conducted for demolition of the existing bridge. Proposed methods of dewatering for the bridge are included in the contract documents. However, it is the responsibility of the Contractor to determine the need and extent of additional dewatering required, sedimentation and dewatering techniques and controls and submit method and materials he/she proposes to use for approval by the Engineer.

Plans and calculations for all the sandbagging, sheeting and other water control measures shall be developed by the Contractor. These plans and calculations shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts and shall be submitted for review prior to the start of construction.

All dewatering and related earthwork shall be conducted in such a manner as to prevent siltation or contamination of the waterway and wetlands. The pumping discharge shall not be allowed to enter the Artichoke Reservoir or the wetland resource areas. The water from the work areas shall be pumped either to a filter bag, temporary settling tank, forebay basin, or other approved containment structure conforming to MassDOT's "*Guidelines for Soil Erosion & Sediment Control*". The containment structure shall be constructed so as to allow for the pumped water to pass through the structure with sediments settling out before outletting to an area enclosed by a concrete barrier siltation basin with a clean layer of crushed stone. Water filtering thorough the containment structure shall not cause erosion of the surrounding area.

An approved method of controlling erosion, such as an erosion control blanket, stone, etc. shall be used at the outlet.

The control of water containment structure shall be maintained as follows:

1. Inspect at least twice daily during dewatering operations.
2. Repair any damage immediately.
3. Clean containment structure daily. Remove any debris immediately.
4. Remove sediments as needed.

The Contractor shall inspect compost filter tubes and sedimentation fence that surround the outlet daily and shall immediately replace any that are damaged.

Placement of the dewatering containment structure will be as approved by the Municipalities and the Engineer based on specific site conditions and staging operations of the Contractor.

The Contractor shall investigate and verify existing conditions and evaluate the need for protection and the type of facilities required. Before commencing construction, the Contractor shall furnish the Engineer with details of the plan and methods he/she proposes to use for handling water including details for material, equipment and pumping based on actual needs to accomplish the work. The Contractor may use barriers, sandbags, sheeting, portadams or other types of protective facilities as approved by the Engineer. The furnishings of such plans and methods shall not relieve the Contractor of his responsibility for the safety of the work and for the successful completion of the project.

All such temporary structures or facilities shall be safely designed, extended to sufficient depth and be of such dimensions and water-tightness so as to assure construction of the permanent work in the dry. Water control structures shall not interfere with the proper performance of the work. Their construction shall be such as to permit excavation for the permanent work and any conflicts shall be corrected at the sole expense of the Contractor.

Any pumping from within the areas of construction shall be done in such a manner as to prevent the possibility of movement of water through any fresh concrete.

Unless otherwise provided or directed by the Engineer, all such temporary protective work shall be removed and disposed of in an approved manner when no longer required.

The Engineer/Municipalities have the right to order the Contractor to stop all work when in his judgment the Contractor's water control operations are failing to produce adequate results or are posing a threat to the environment.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for work under this Item shall be paid at the lump sum contract bid price, complete.

Payment for all water control work, including design for the dewatering operations used to maintain a water free excavation, shall include all labor, tools and equipment materials and installation, piping, pumping, stone ends for pipes, maintenance, subsequent removal of all related materials and equipment all as outlined above; and restoration of site shall be included in the lump sum contract price bid under this Item.

Eighty-five (85%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system. The final fifteen (15%) percent of the Lump Sum Price Bid for this Item will be paid upon the complete removal of the water control system from the project site at the completion of the work.

Compost filter tubes and sedimentation fence provided specifically for the outlet from the sedimentation containment structure shall be included in the lump sum bid price for this Item.

Attachment G

Bridge Replacement Project
Middle Street / Plummer Spring Road
over Upper Artichoke Reservoir
Pre-Construction Notification

PROJECT SITE PLANS
CONSTRUCTION DETAILS

INDEX	
SHEET NO.	DESCRIPTION
1	INDEX
2	LOCUS MAP
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5-6	PROPOSED WALL ELEVATION
7	EXISTING SOUTH ELEVATION
8	PROPOSED SOUTH ELEVATION
9	IMPACTS
10	FLOODPLAIN IMPACT AND MITIGATION SUMMARY
11-14	CONTROL OF WATER

IMPACTS TO WETLAND AND WATERBODY RESOURCES AND WATERS OF THE UNITED STATES					
		WEST NEWBURY	NEWBURYPORT	TOTAL	
LAND UNDER WATERS OF THE US (LUW) / WATERBODY	PERMANENT IMPACT	553	431	984	SF
	TEMPORARY IMPACT	443	198	641	SF
	PERMANENT IMPACT - DREDGE / FILL	39 / 17	9 / 2	48 / 19	CY
	TEMPORARY IMPACT - DREDGE / FILL	28 / 0	22 / 0	50 / 0	CY
INLAND BANK / ORDINARY HIGH WATER (OHW)	PERMANENT IMPACT	128	54	182	LF
	TEMPORARY IMPACT	47	14	61	LF

NOTES:

- HORIZONTAL DATUM IS BASED OFF OF THE NORTH AMERICAN DATUM (NAD) 1983
- ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

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 MA 01950
TOWN OF WEST NEWBURY
 381 MAIN ST, WEST NEWBURY,
 MA 01985

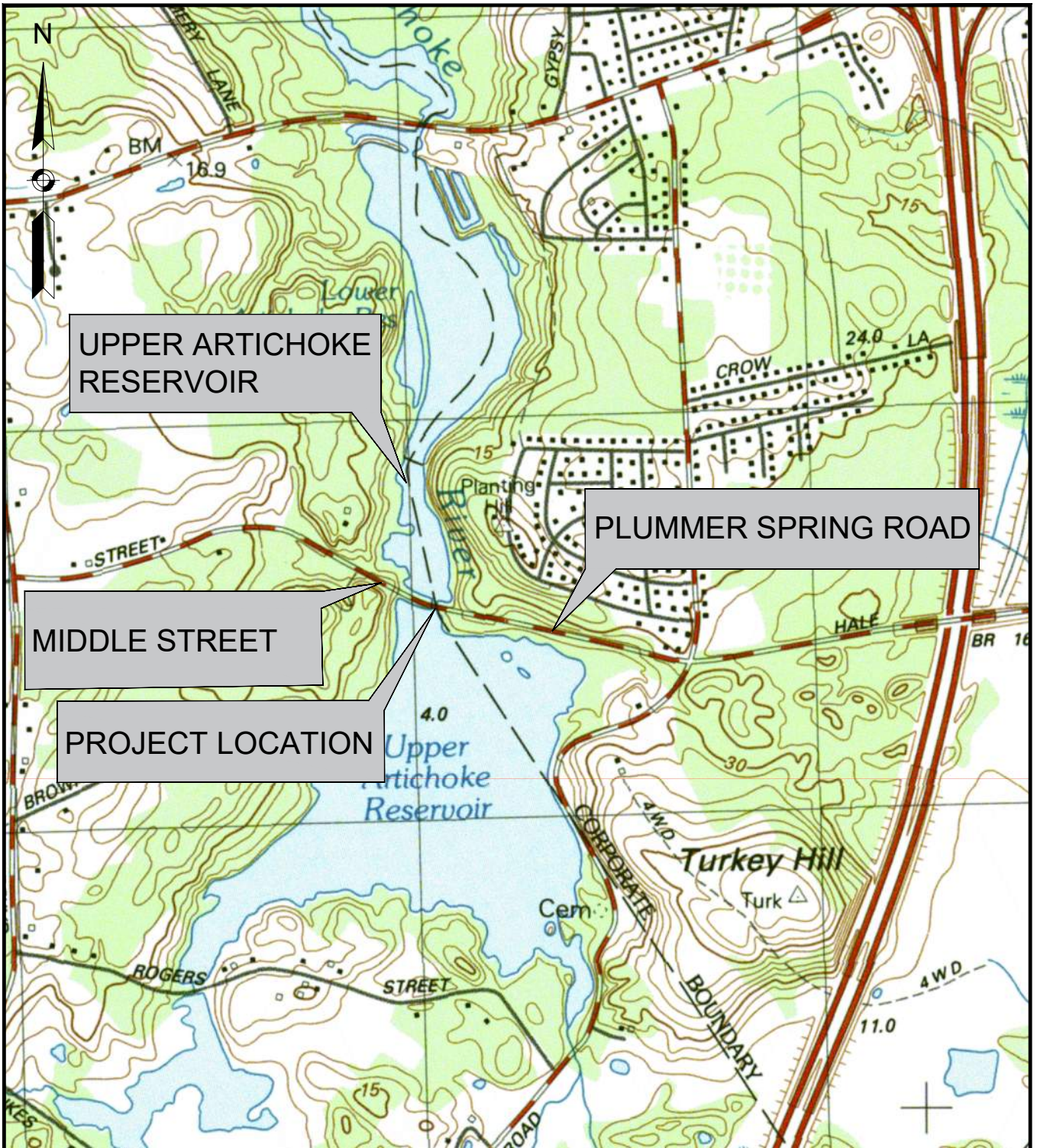
INDEX

Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: N/A Revised: _____
 Description: INDEX Figure: 1 OF 14

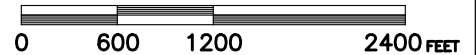


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LATITUDE: 42°48'10.7"N
 LONGITUDE: -70°55'51.5"W

SCALE: 1" = 1200'



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 WEST NEWBURY
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LOCUS MAP

Source:

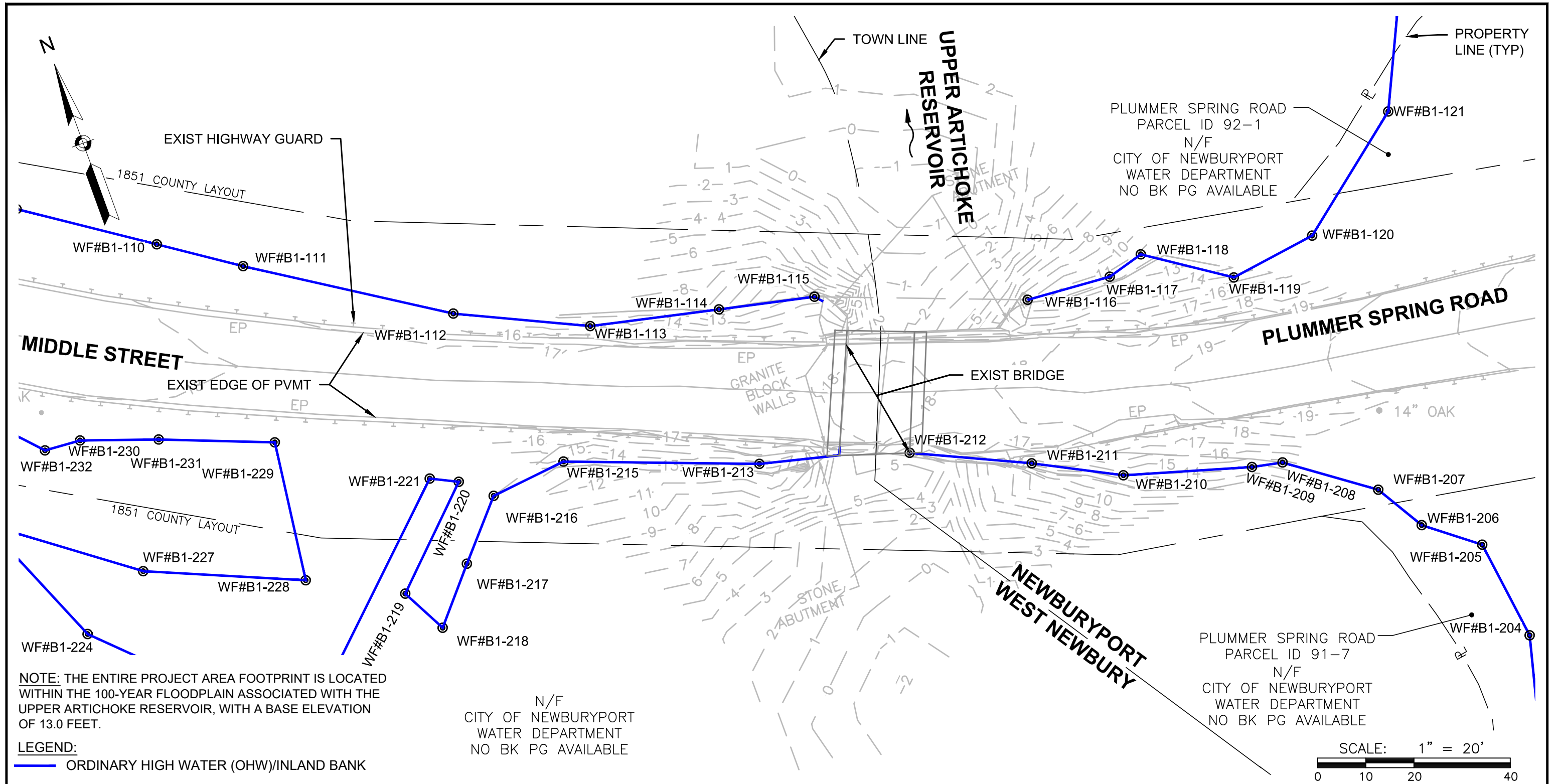
BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING
 ROAD OVER UPPER ARTICHOKE
 RESERVOIR, WEST NEWBURY/
 NEWBURYPORT, MA, ESSEX COUNTY



803 Summer Street
 Boston, Massachusetts
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617 896 4300

Job No.:	28395.00	Date:	12/21/2020
Scale:	1"=1200'	Revised:	
Dwg. No.:	Locus	Figure:	2 OF 14



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EXISTING CONDITIONS

Source:

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

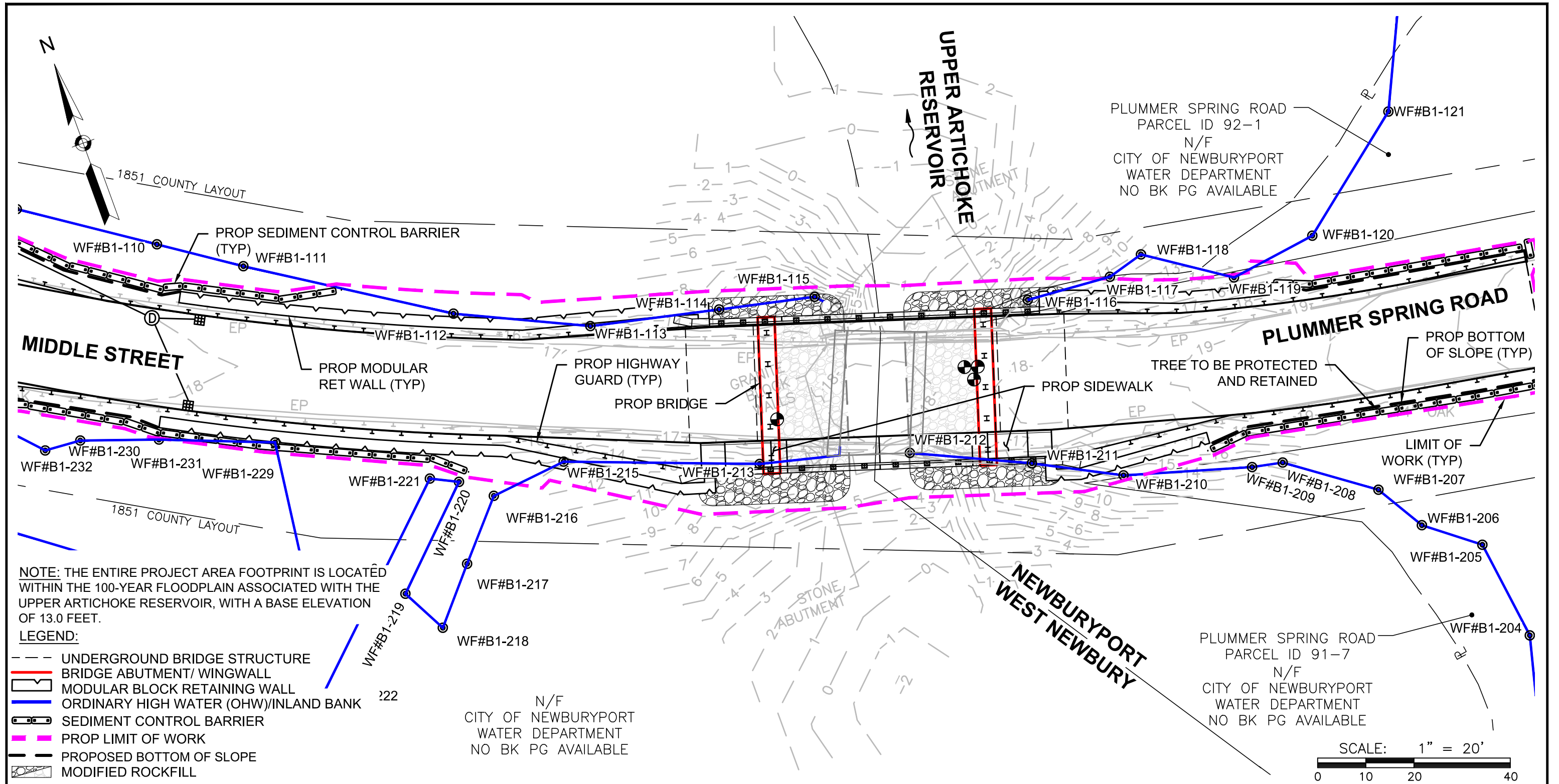
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: EX COND Figure: 3 OF 14

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Source:

PROPOSED CONDITIONS

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

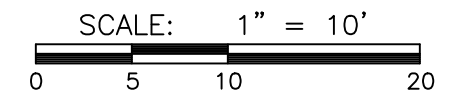
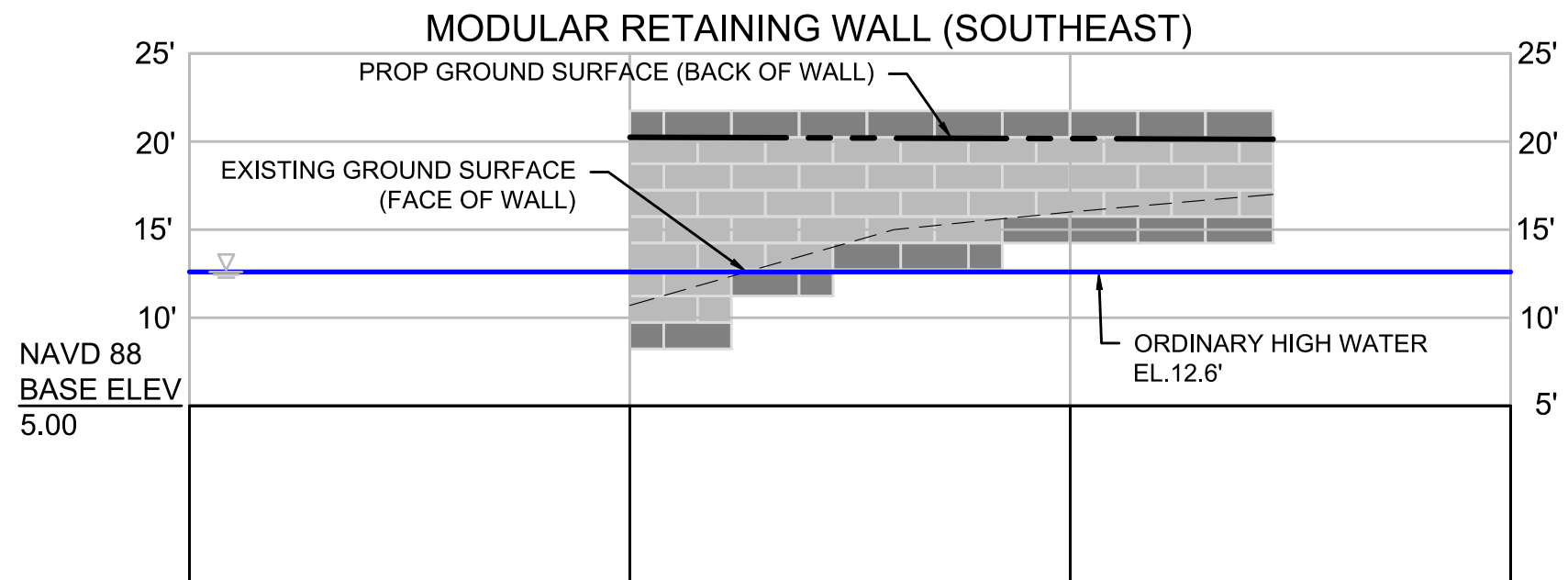
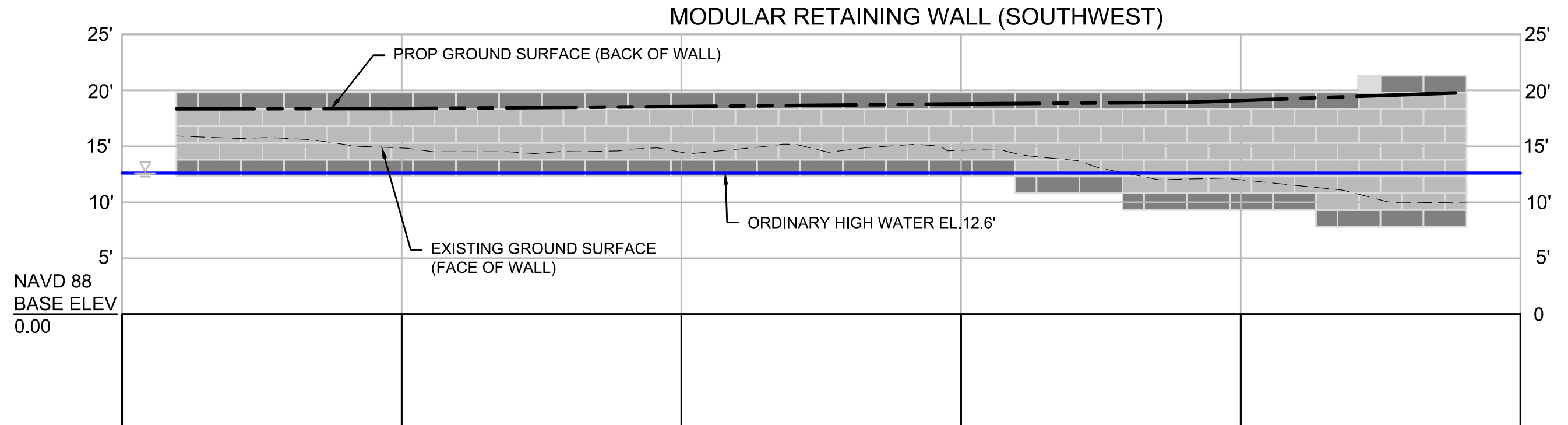
Job No.: 28395.00 Date: 12/21/2020

Scale: 1" = 20' Revised: _____

Description: PROP COND Figure: 4 OF 14

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PROPOSED WALL PROFILE

Source:

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020

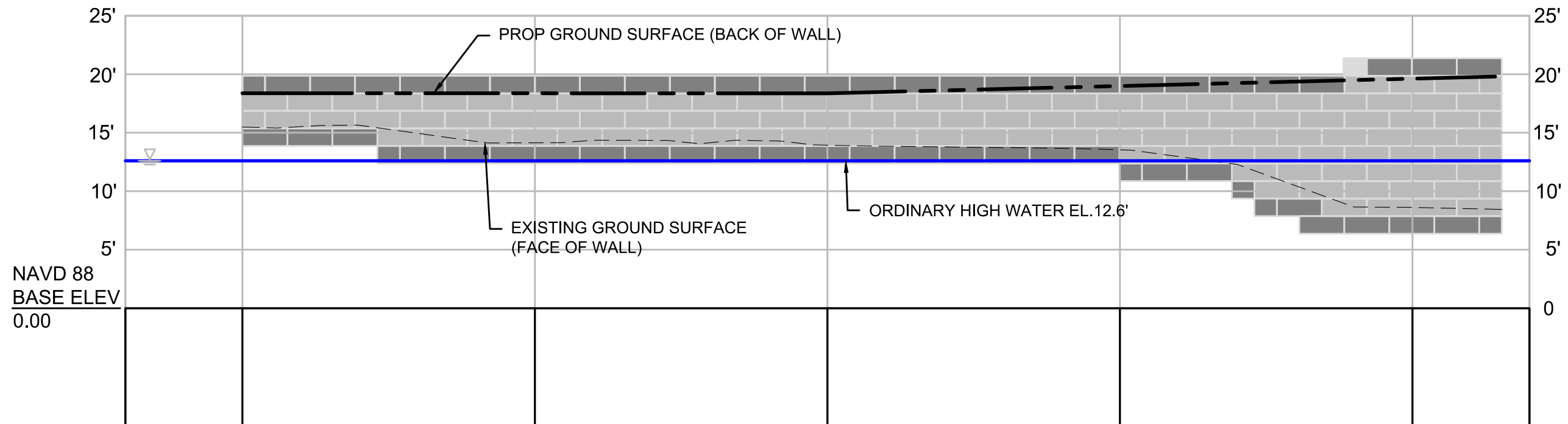
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Description: PR WALL Figure: 5 OF 14

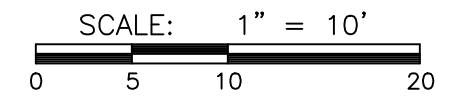
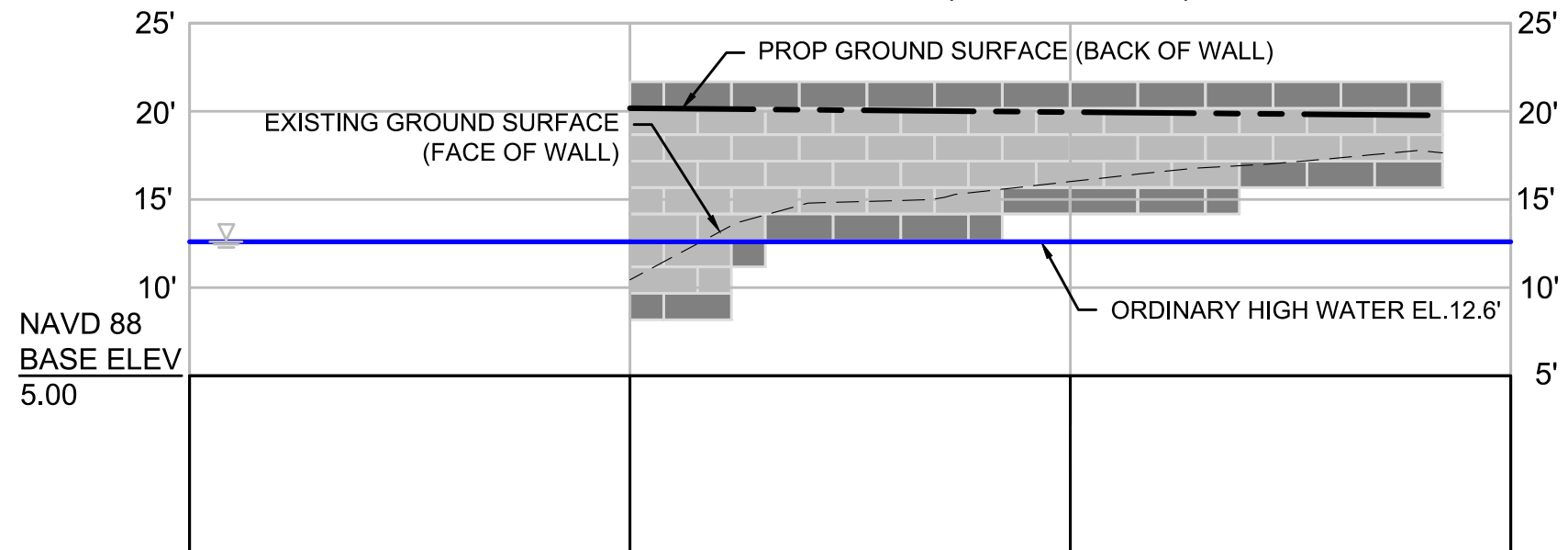
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MODULAR RETAINING WALL (NORTHWEST)



MODULAR RETAINING WALL (NORTHEAST)

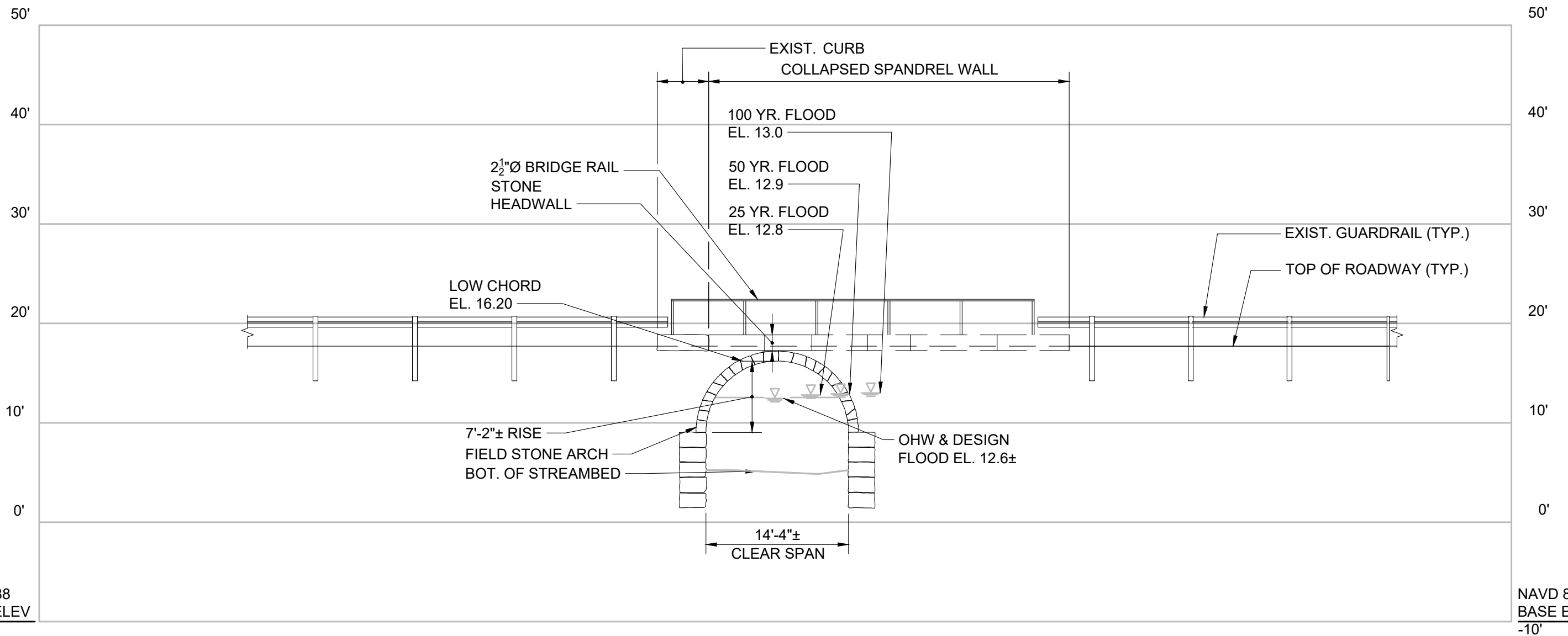


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PROPOSED WALL PROFILE
 Source:
 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 10'
 Description: PR WALL
 Revised: _____
 Figure: 6 OF 14

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EXISTING ELEVATION
SCALE: 3/32" = 1'-0"

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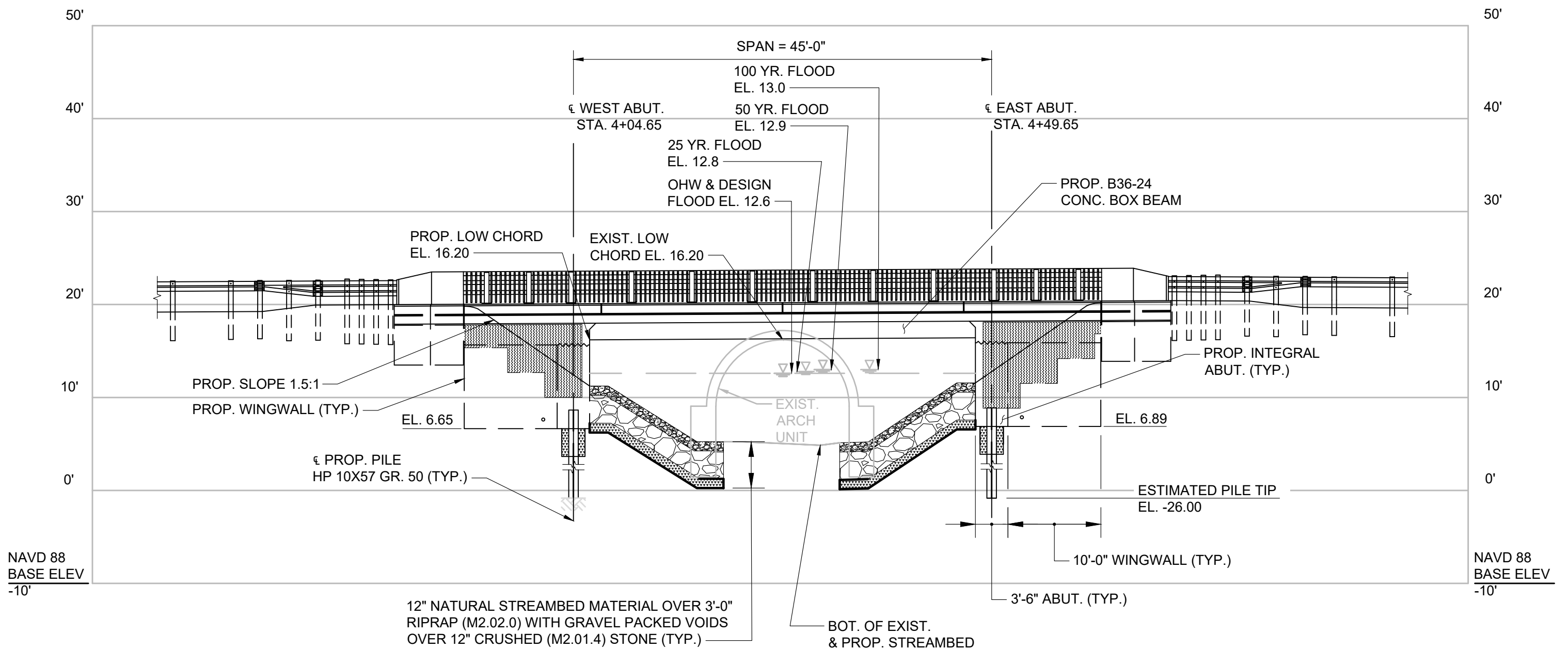
Source:

EXISTING - SOUTH ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: EXIST. EL. Figure: 7 OF 14

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NOTE: EXISTING STRUCTURE TO BE REMOVED IN ITS ENTIRETY

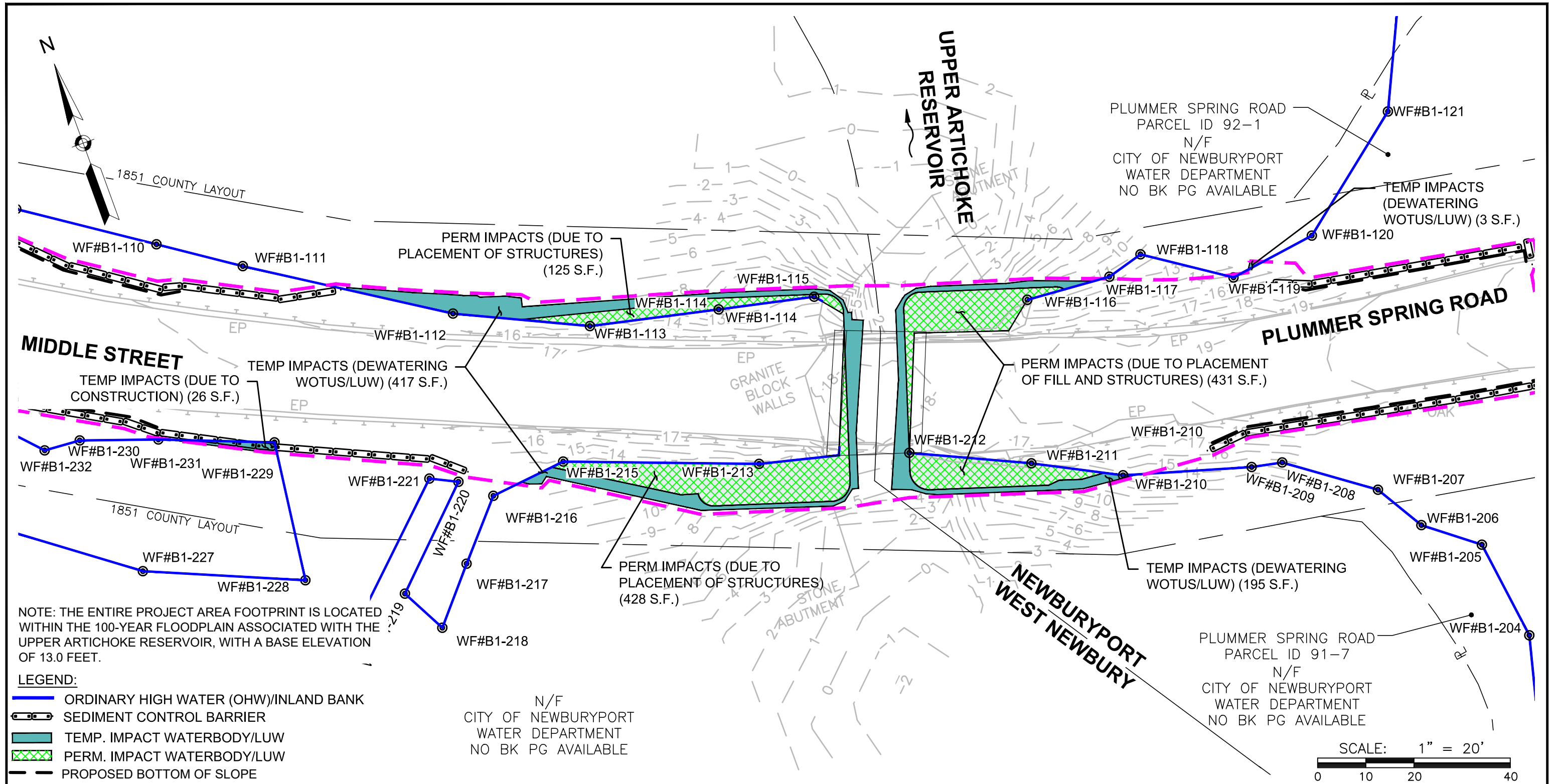
PROPOSED SOUTH ELEVATION
SCALE: 3/32" = 1'-0"

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Source: **PROPOSED - SOUTH ELEVATION**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 3/32" = 1'-0" Revised: _____
Description: PROP. EL. Figure: 8 OF 14

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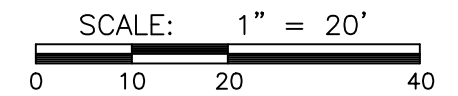
NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

LEGEND:

- ORDINARY HIGH WATER (OHW)/INLAND BANK
- SEDIMENT CONTROL BARRIER
- TEMP. IMPACT WATERBODY/LUW
- PERM. IMPACT WATERBODY/LUW
- PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

PLUMMER SPRING ROAD
PARCEL ID 91-7
N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE



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TOWN OF WEST NEWBURY
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IMPACTS

Source: _____

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

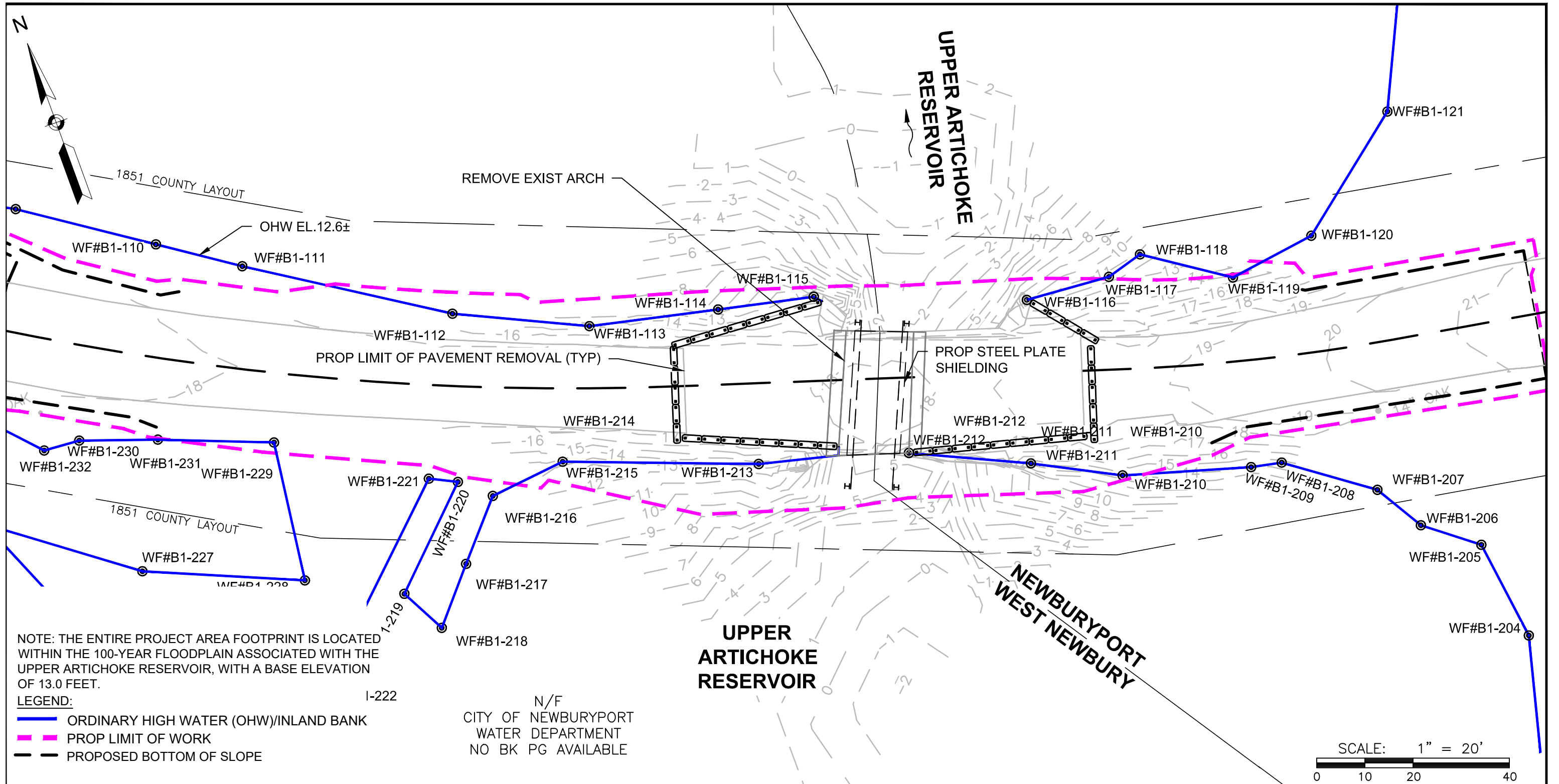
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Scale: 1" = 20' Revised: _____

Description: IMPACTS Figure: 9 OF 14

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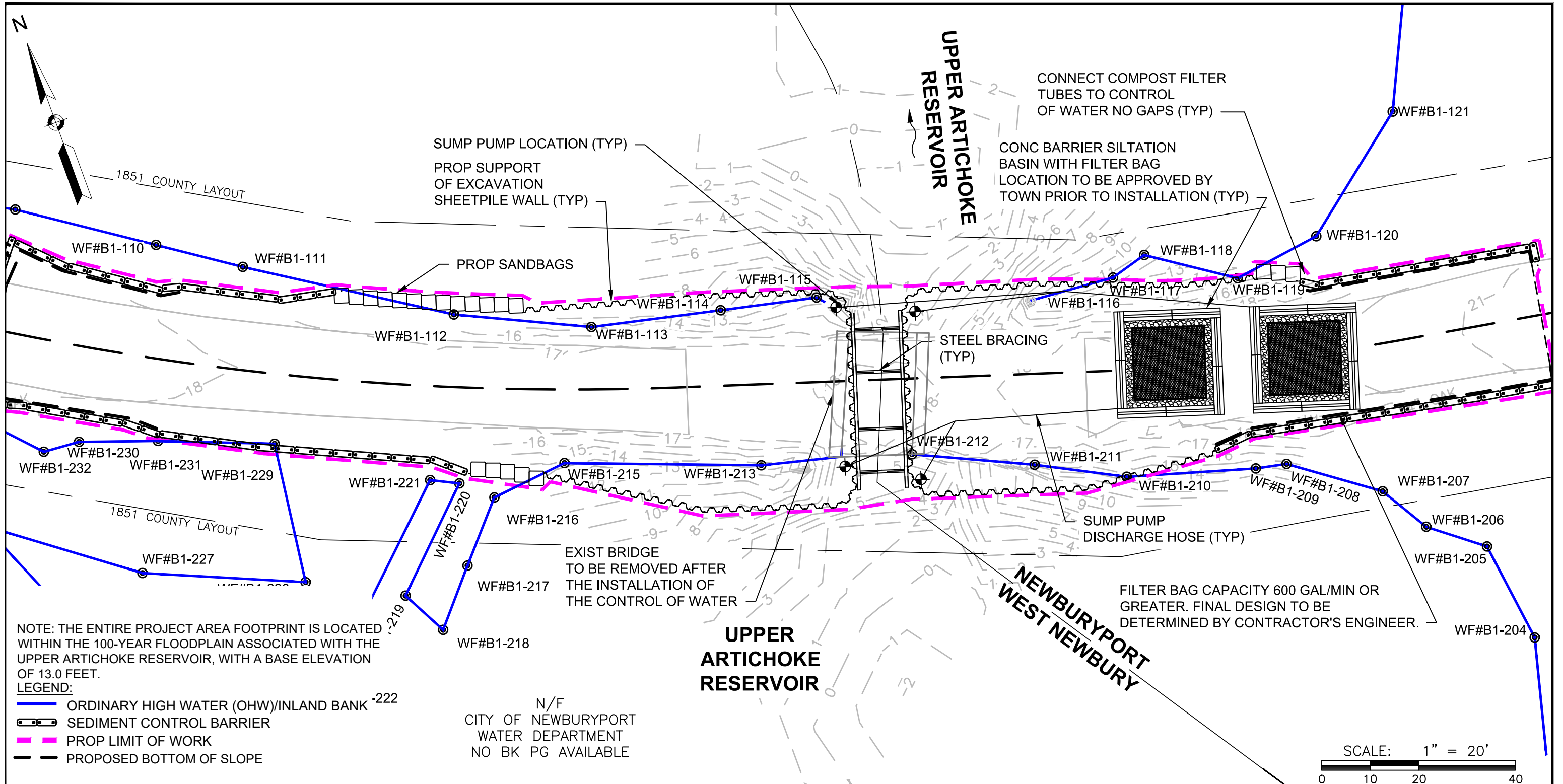
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SHIELDING PLAN - UPPER ARCH REMOVAL

BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 10 OF 14

BSC GROUP
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NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- ORDINARY HIGH WATER (OHW)/INLAND BANK -222
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

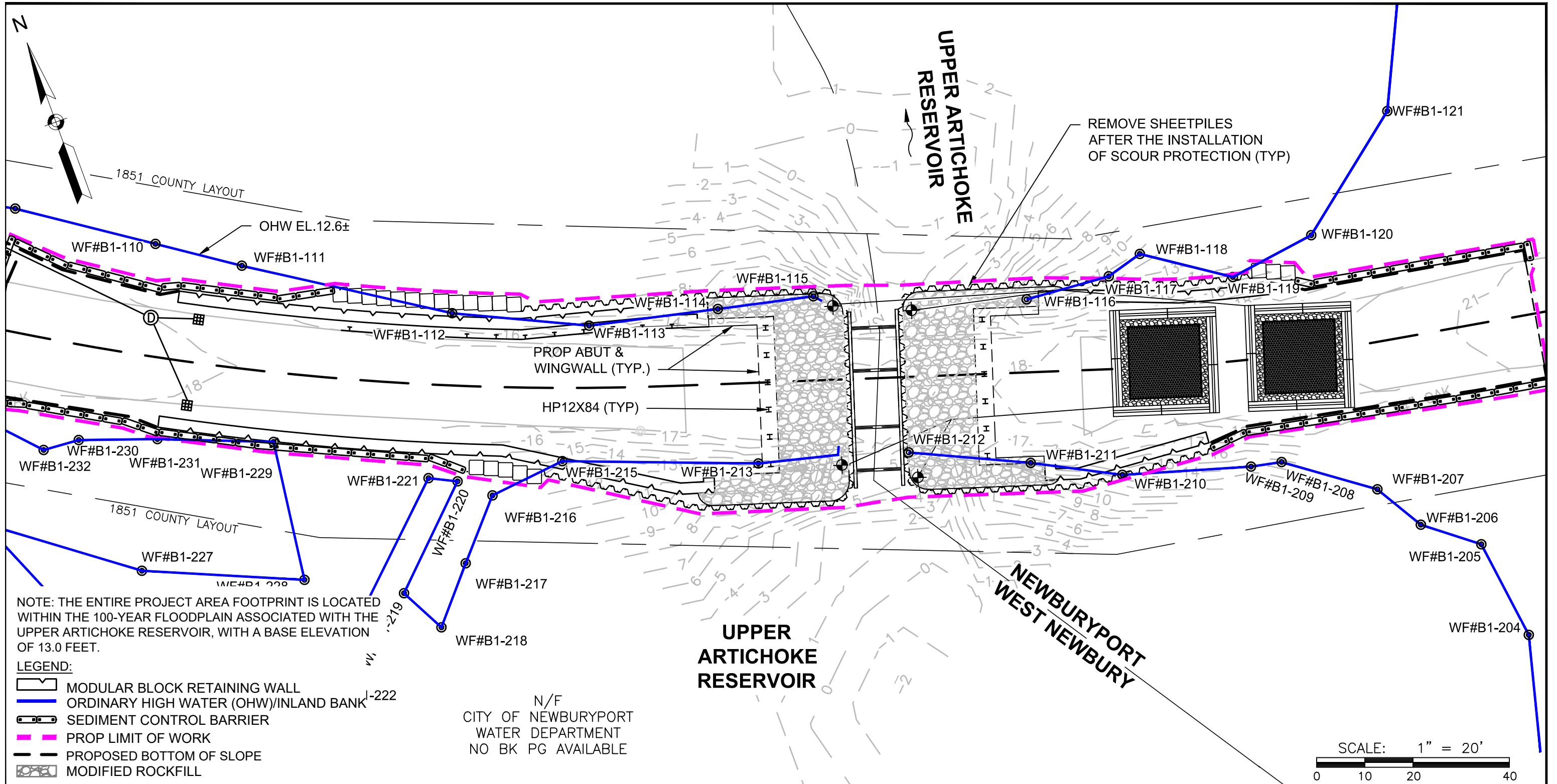
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CONTROL OF WATER - PHASE 1 - PLAN

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 11 OF 14

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02127
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1851 COUNTY LAYOUT

OHW EL. 12.6±

REMOVE SHEETPILES AFTER THE INSTALLATION OF SCOUR PROTECTION (TYP)

PROP ABUT & WINGWALL (TYP.)
HP12X84 (TYP)

NOTE: THE ENTIRE PROJECT AREA FOOTPRINT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH THE UPPER ARTICHOKE RESERVOIR, WITH A BASE ELEVATION OF 13.0 FEET.

- LEGEND:
- MODULAR BLOCK RETAINING WALL
 - ORDINARY HIGH WATER (OHW)/INLAND BANK
 - SEDIMENT CONTROL BARRIER
 - PROP LIMIT OF WORK
 - PROPOSED BOTTOM OF SLOPE
 - MODIFIED ROCKFILL

N/F
CITY OF NEWBURYPORT
WATER DEPARTMENT
NO BK PG AVAILABLE

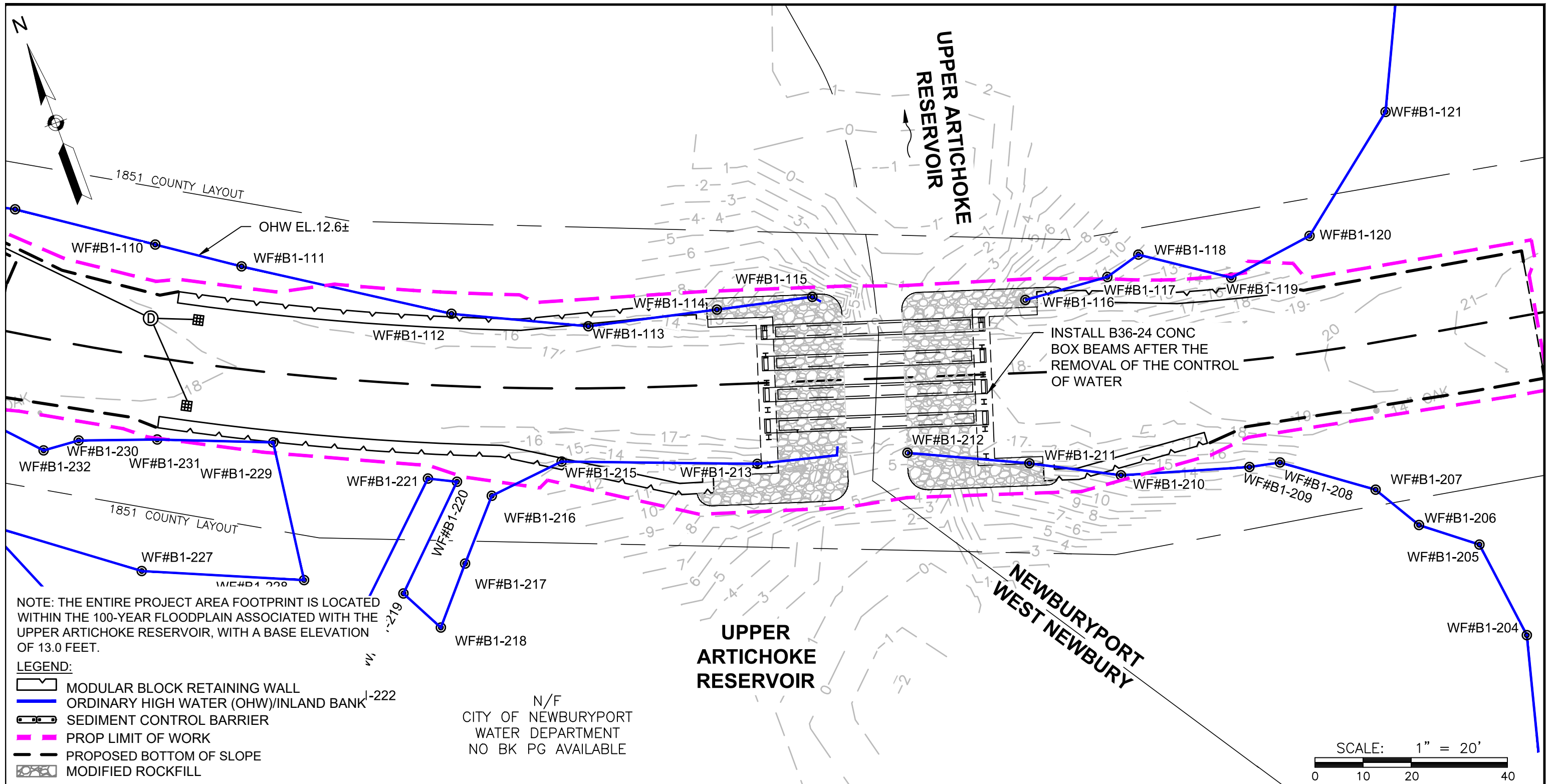
SCALE: 1" = 20'
0 10 20 40

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MA 01950
TOWN OF WEST NEWBURY
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Source: **CONTROL OF WATER - PHASE 2 - PLAN**
BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1" = 20' Revised: _____
Description: COW Figure: 12 OF 14

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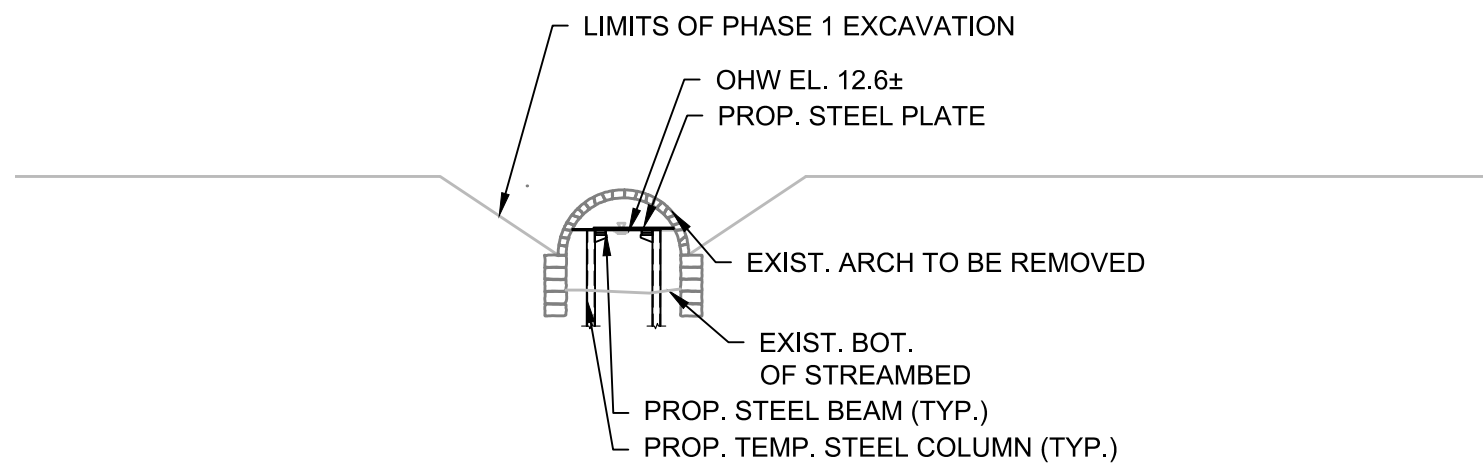


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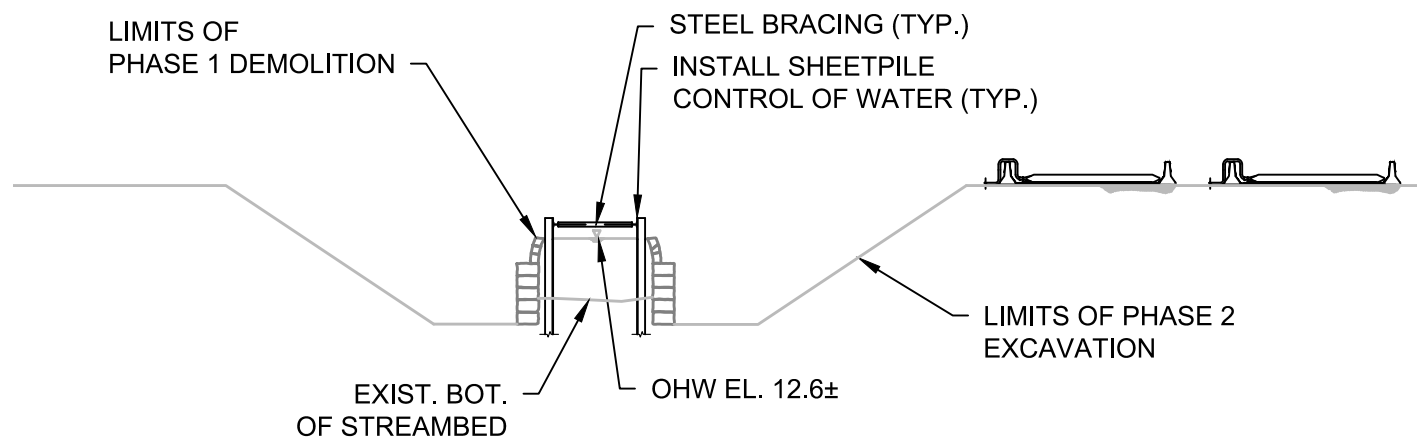
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 BRIDGE REPLACEMENT PROJECT
 MIDDLE STREET/PLUMMER SPRING ROAD OVER
 UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
 ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
 Scale: 1" = 20' Revised: _____
 Description: COW Figure: 13 OF 14

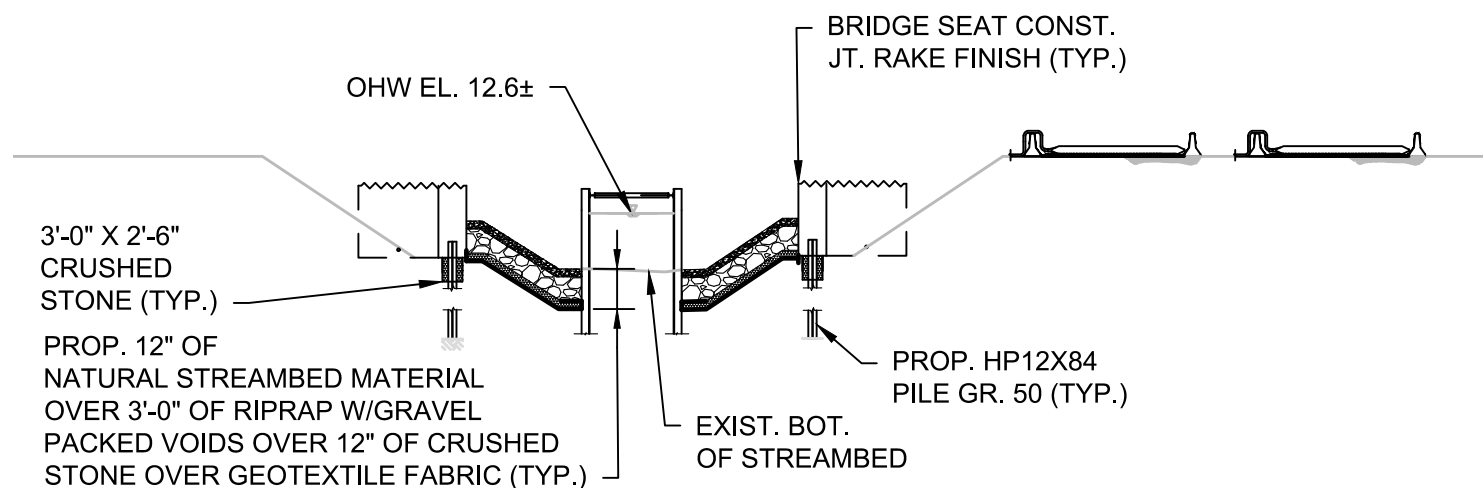
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 803 Summer Street
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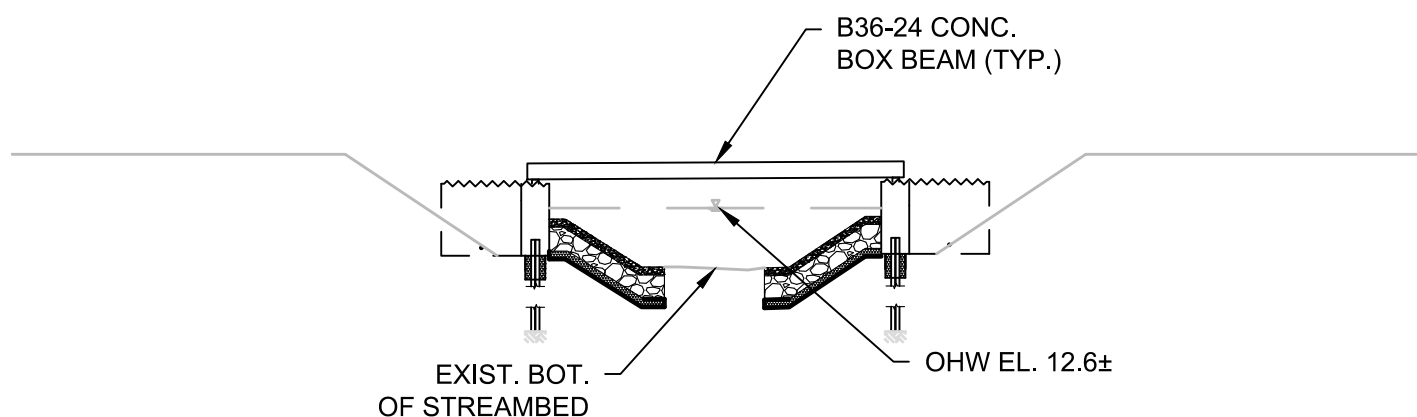
SHIELDING PLAN - UPPER ARCH REMOVAL
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 1 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 2 - ELEVATION
SCALE: 1/2" = 1'-0"



CONTROL OF WATER - PHASE 3 - ELEVATION
SCALE: 1/2" = 1'-0"

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SHIELDING AND CONTROL OF WATER - ELEVATION

BRIDGE REPLACEMENT PROJECT
MIDDLE STREET/PLUMMER SPRING ROAD OVER
UPPER ARTICHOKE RESERVOIR, WEST NEWBURY/NEWBURYPORT, MA
ESSEX COUNTY

Job No.: 28395.00 Date: 12/21/2020
Scale: 1/2" = 1'-0" Revised: _____
Description: COW Figure: 14 OF 14

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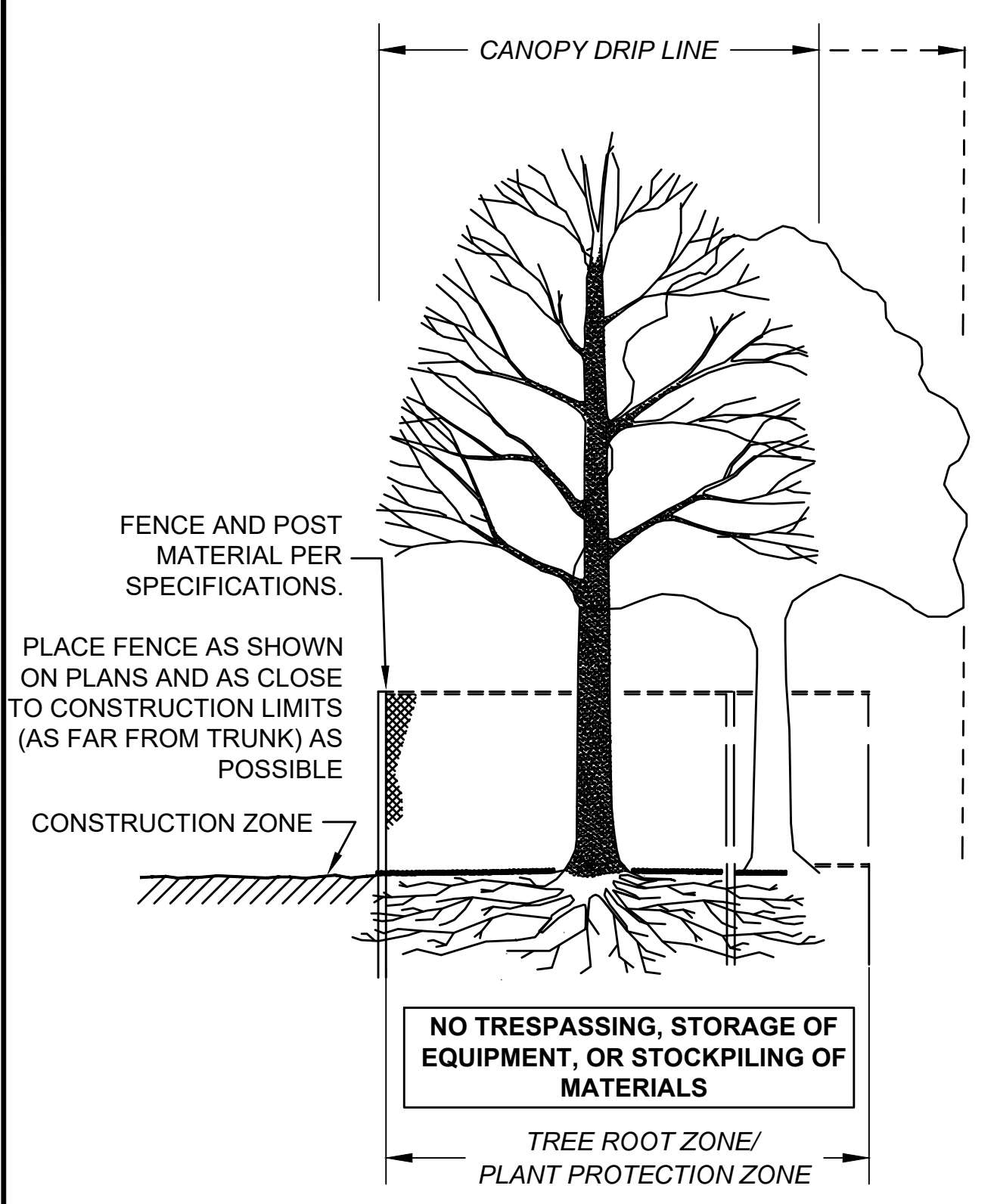
**NEWBURYPORT
PLUMMER SPRING ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	1
PROJECT FILE NO. XXXXXX			

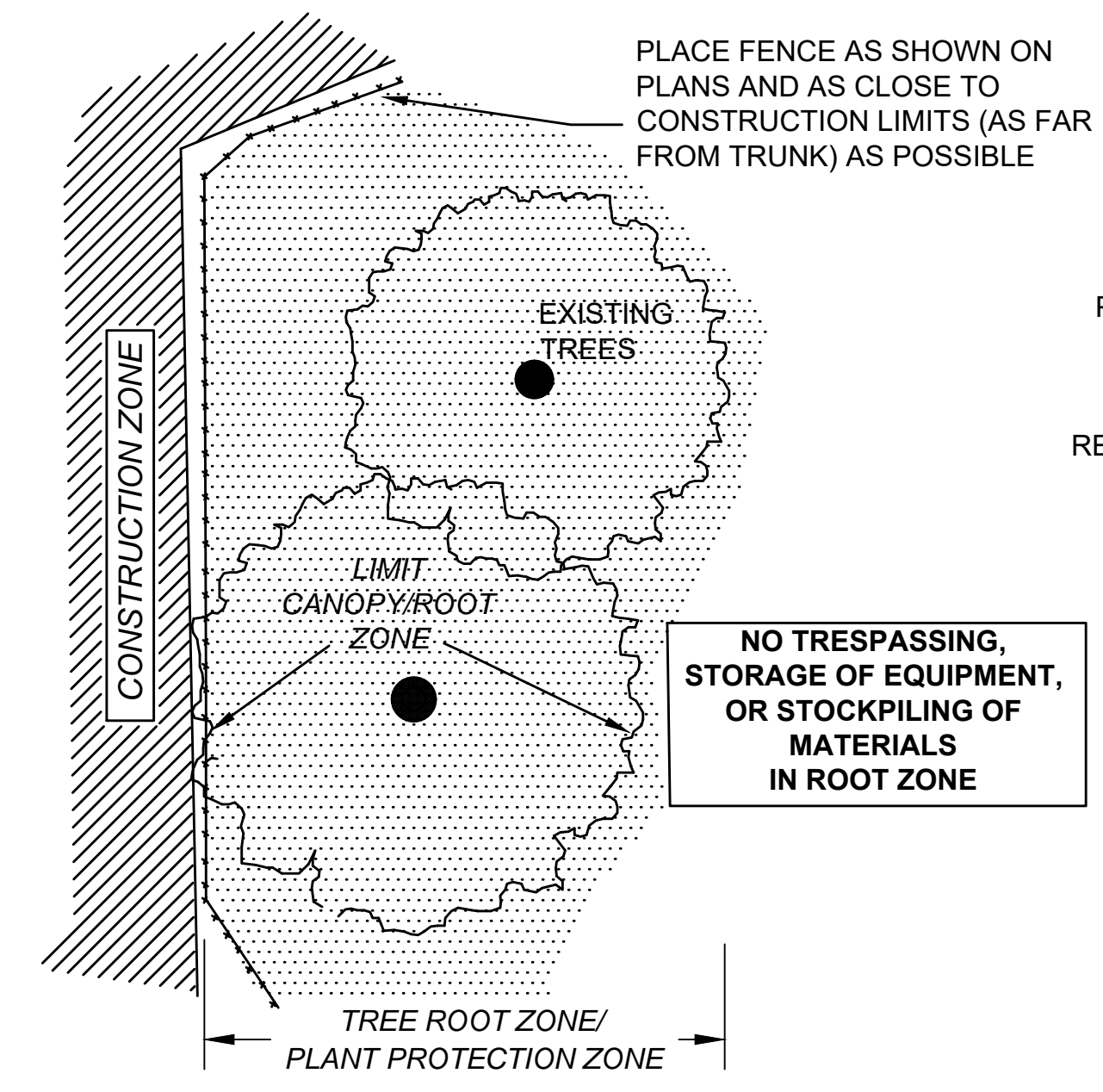
CONSTRUCTION DETAILS

PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.



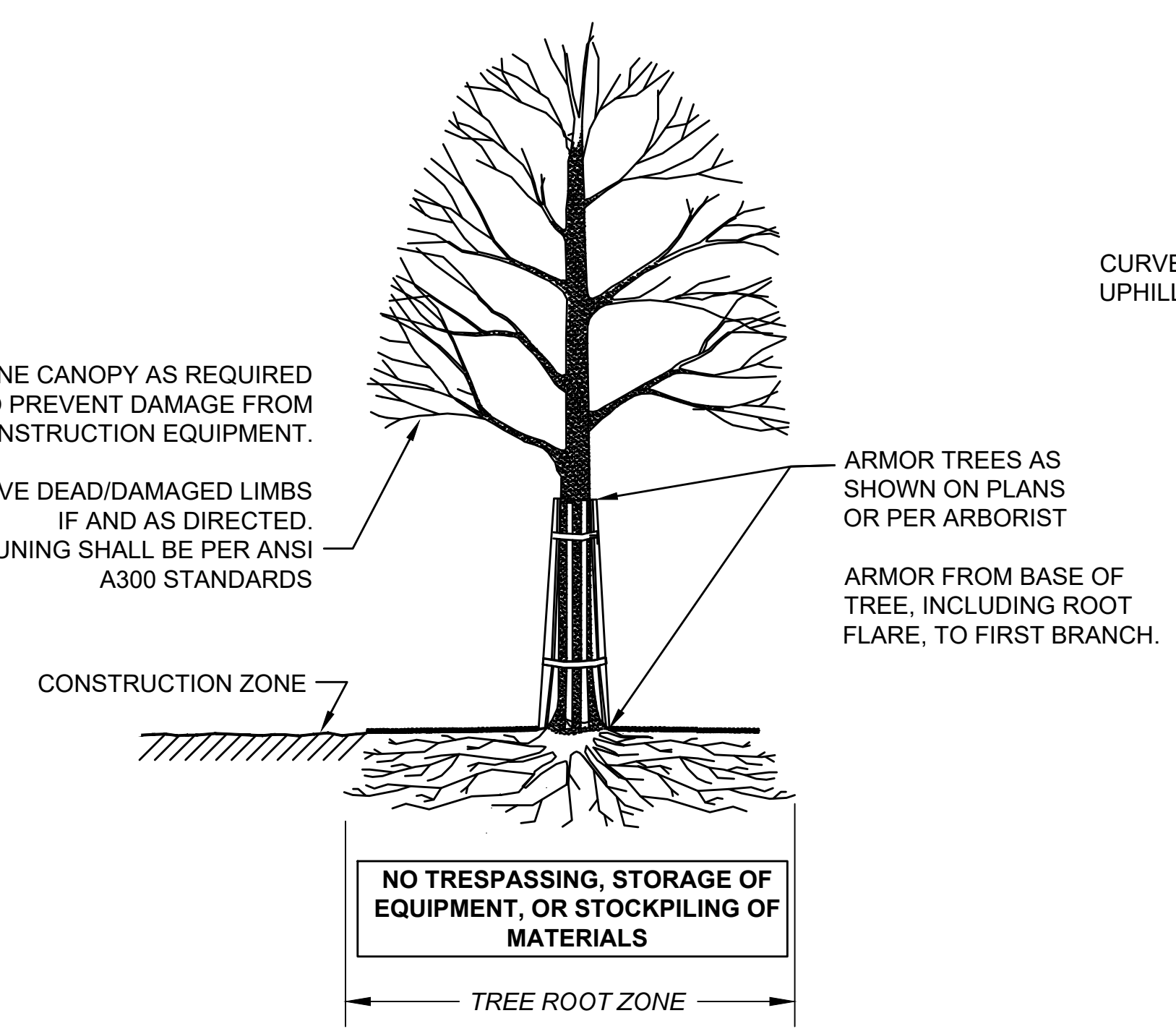
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

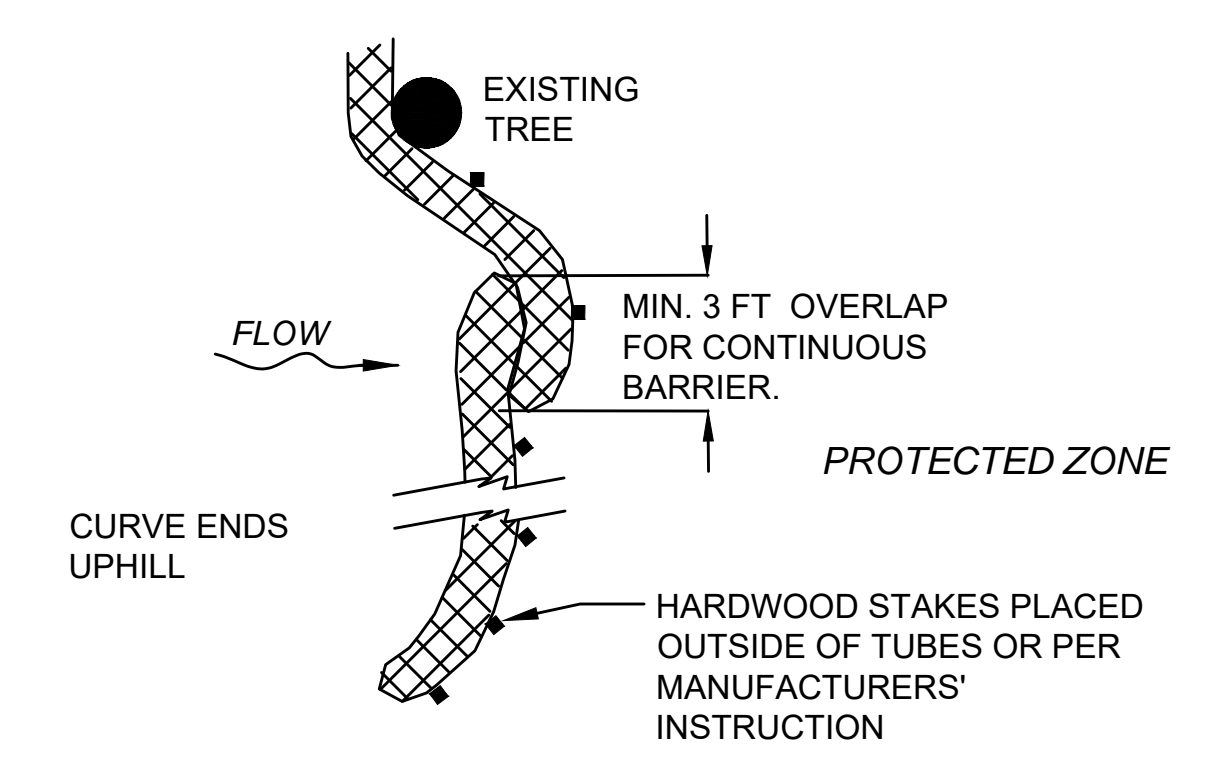
TREE PROTECTION - ROOT ZONE

NOT TO SCALE

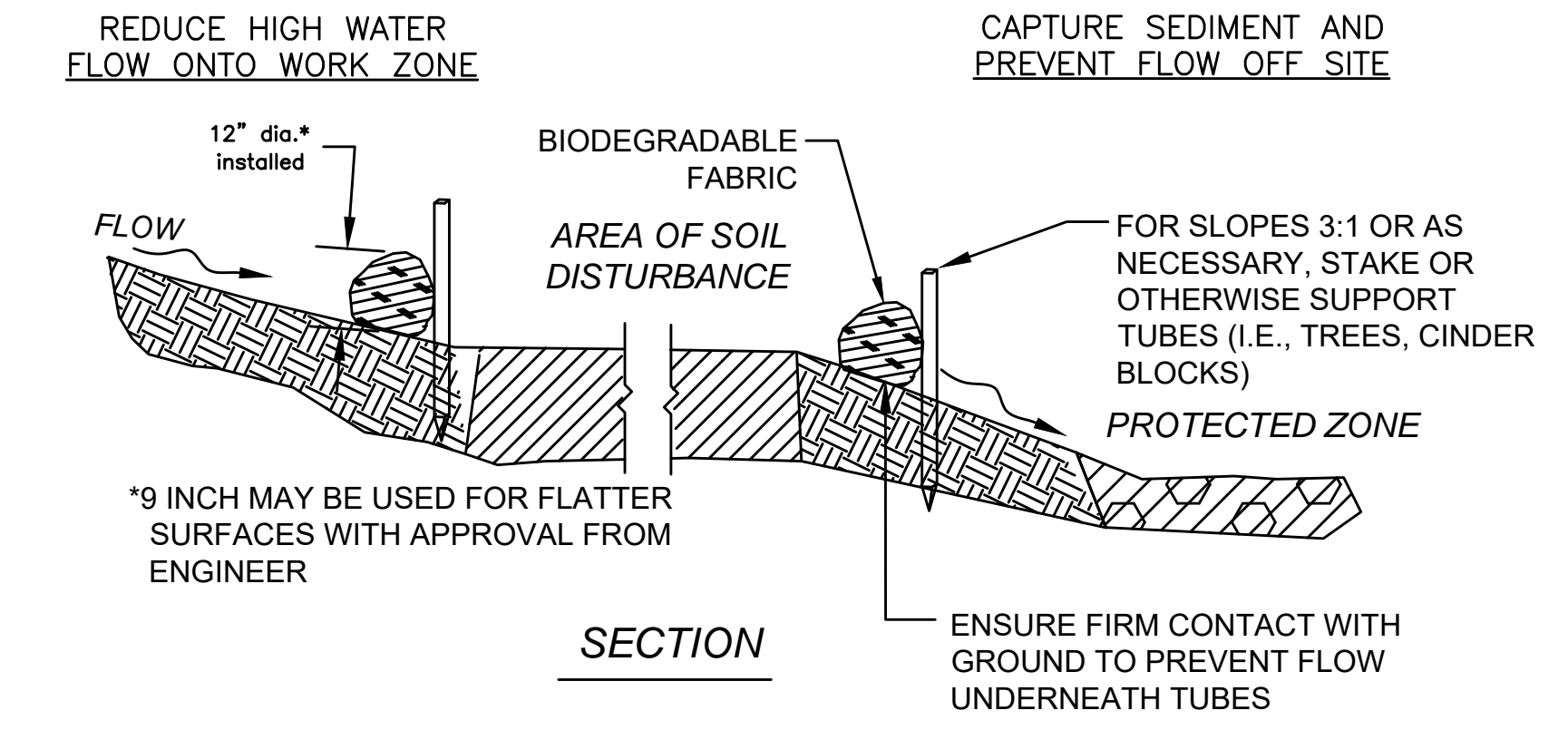


SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK



PLAN VIEW

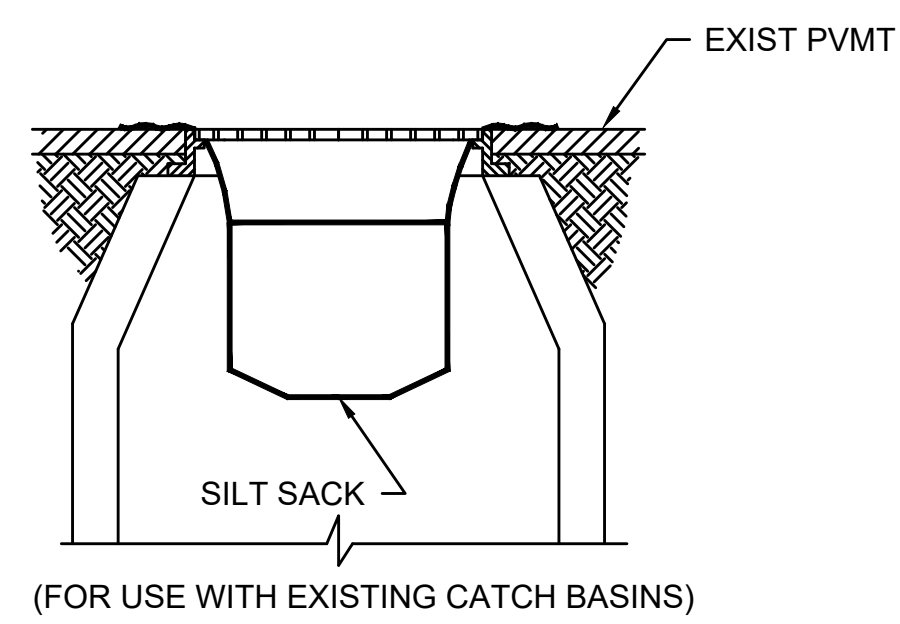


SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

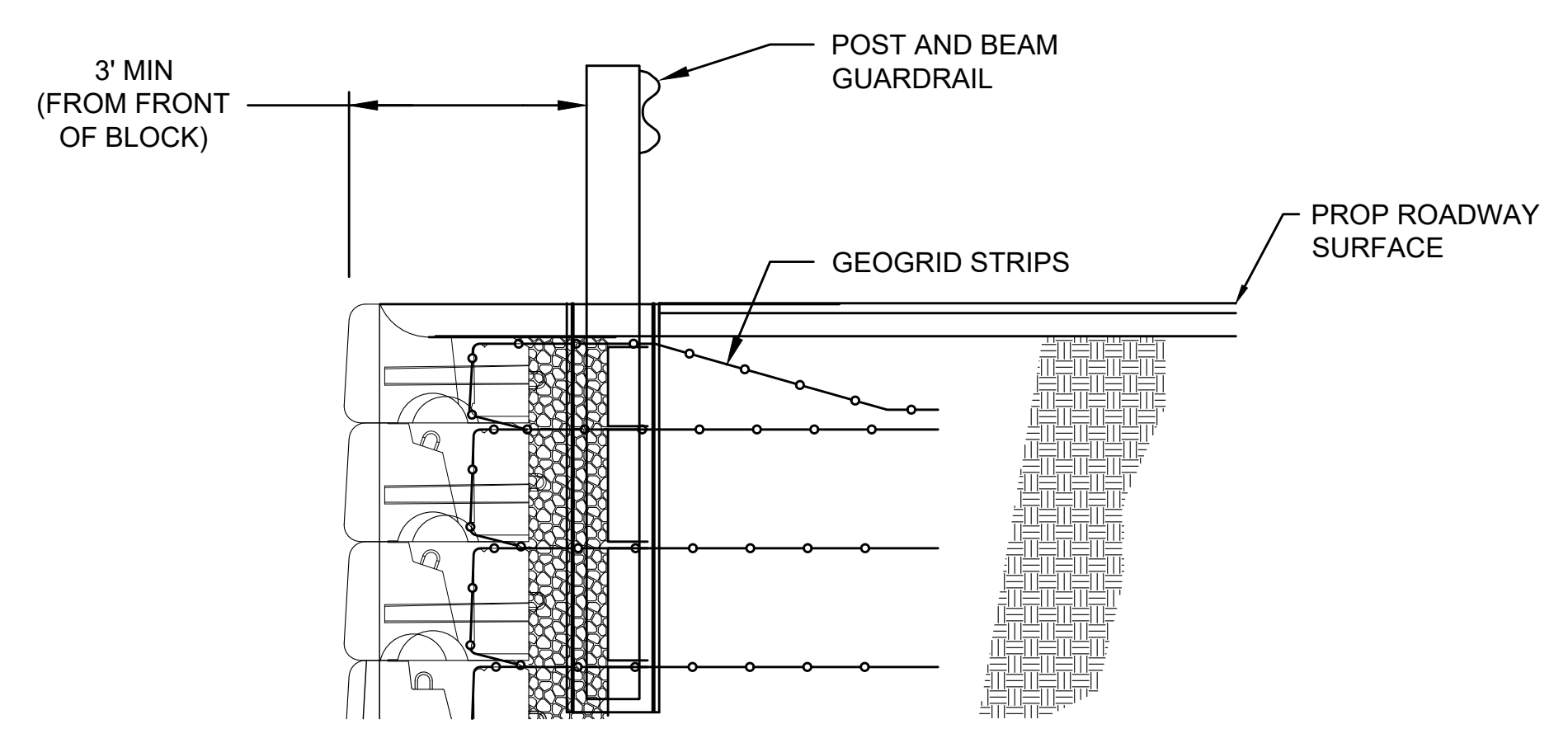
NOT TO SCALE

NOTES:
SILT SACKS SHALL BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS SHALL BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED, AND REPLACED IF NECESSARY.



SILT SACK INLET PROTECTION

NOT TO SCALE



POST AND BEAM GUARDRAIL - SECTION VIEW

NOT TO SCALE

