



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

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Lieutenant Governor

Rebecca L. Tepper
Secretary

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August 23, 2024

Thomas Robinson
Bowen's Pond LLC
PO Box 36
Hubbardston, MA 01452

DEP WQC APPLICATION # 24-WW26-0015-APP
EEA # 16209
NAE-2020-01643
401 WQC Application Completion: 7/22/24

RE: COMBINED PERMIT – 401 WATER QUALITY CERTIFICATION
Application for: BRP WW 26
401 WATER QUALITY CERTIFICATION FOR DREDGING & FILL/EXCAVATION

AT: Bowen's Pond Dam – Wendell
Millers River Basin

Dear Mr. Robinson:

The Department of Environmental Protection ("MassDEP") has reviewed your application for a Combined Permit 401 Water Quality Certification for Dredging and Fill/Excavation ("Combined 401 WQC"), as referenced above and is basing its certification upon an evaluation of the information contained in the application which is relevant to water quality considerations. In accordance with the provisions of Section 401 of the Federal Clean Water Act (33 U.S.C. § 1251 *et seq.*), MGL c. 21, §§ 26-53, and 314 CMR 9.00, MassDEP has determined there is reasonable assurance the project or activity, as conditioned herein, will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other appropriate requirements of state law.

The waters of Bowen's Pond, which is a man-made impoundment along Osgood Brook, are unlisted in the Massachusetts Surface Water Quality Standards, and therefore, considered Class B. Such waters are intended "as habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation." Antidegradation provisions of these Standards require that "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." In addition, Osgood Brook is designated as a Cold Water Fishery.

The above-referenced project includes the removal of Bowen's Pond Dam and the creation of a pilot stream channel in the vicinity of the former dam. Once completed, this ecological restoration project is expected to restore aquatic and riparian habitat connectivity and enhance riverine function.

Approximately 95 cubic yards ("CY") of sediment will be mechanically dredged to create the pilot channel. This sediment will be placed adjacent to the former dam and along the shoreline of the new channel. In addition, approximately 1,760 CY of sediment is expected to mobilize during future storm events and settle in depositional areas downstream. Approximately 1,270 square feet of land under water ("LUW") and 12,515 square feet of bordering vegetated wetland ("BVW") will be impacted temporarily by the placement of access roads and construction mats, which will be removed, and those areas restored, upon completion of the project. Once the dam is removed and the impoundment has drained, approximately 630,310 square feet of LUW will be lost. However, approximately 398,774 square feet of that area is expected to convert to BVW. The work is shown on the attached plans.

Sediment Chemistry Results: Sediment samples upstream of the impoundment, within the impoundment, and downstream of the dam were collected for analysis. The results of the chemical analysis were compared to MassDEP's *Interim Policy for Sampling, Analysis, Handling and Tracking Requirements for Dredged Sediment Reuse and Disposal* (COMM-94-007). All of the results were either non-detect or below the Reportable Concentration ("RC") S-1 criteria of the Massachusetts Contingency Plan ("MCP").

Public Notice: The Combined Permit Application public notice was published in the *Greenfield Recorder* on March 2, 2024. No comments were received by MassDEP during the 21-day public comment period pursuant to 314 CMR 9.05(3)(e), which ended on March 23, 2024.

Section 61 Findings: Pursuant to M.G.L. Chapter 30, Sections 61 to 62H inclusive [the Massachusetts Environmental Policy Act ("MEPA")], the project, as referenced in the Combined Permit Application, DEP Application # 24-WW26-0015-APP, was required to file an Expanded Environmental Notification Form ("EENF"). Bowen's Pond LLC (the "Proponent") filed the EENF for the construction of the project under EEA # 16209 and noticed the EENF in the Environmental Monitor (the "Monitor") on May 20, 2020. In the Certificate issued on June 26, 2020, the Secretary of Energy and Environmental Affairs (the "Secretary") determined that "this project requires the preparation of a Single Environmental Impact Report (EIR)." Further, the Proponent requested that the Secretary allow a Single EIR to be prepared in lieu of the usual two-stage Draft and Final EIR process pursuant to Section 11.06(8) of the MEPA regulations. The Secretary granted that request. Accordingly, the Proponent filed the Single EIR and noticed such in the Monitor on April 8, 2022. In the Certificate issued on May 16, 2022, the Secretary determined that the Single EIR "adequately and properly complies with MEPA and its implementing regulations" and that the Project "may proceed to permitting." MassDEP has reviewed the findings in both the EENF and Single EIR Certificates and confirms that based on the avoidance, minimization, and mitigation measures undertaken by the Proponent, in

conjunction with the requirements set forth in this Combined 401 WQC, all outstanding issues have been addressed satisfactorily.

Therefore, based on information currently in the record, MassDEP grants a Combined 401 WQC for this project subject to the following conditions to maintain or attain water quality, to minimize any damage to the environment that may result from the project, and to ensure compliance with appropriate provisions of state law. MassDEP certifies that there is reasonable assurance the project or activity, as conditioned herein, will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other appropriate requirements of state law.

1. The contractor shall take all steps necessary to ensure that the proposed activities will be conducted in a manner that will avoid violations of the antidegradation provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, that protect all waters, including wetlands. Pursuant to 314 CMR 9.01(3), this condition is necessary to ensure that any discharge from the project complies with the Massachusetts Surface Water Quality Standards, as provided in 314 CMR 4.00, to protect the public health and restore and maintain the chemical, physical, and biological integrity of the water resources of the Commonwealth.
2. Prior to the start of work, or for any portion of the work thereafter, MassDEP shall be notified of any change(s) in the proposed project or plans that may affect waters or wetlands. MassDEP will determine whether the change(s) requires a revision to this Combined 401 WQC. Pursuant to 314 CMR 9.06(1), 9.07(1) and 9.09(2), this condition 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. Dredging and filling/excavation in accordance with this Combined 401 WQC may begin following the 21-day appeal period and once all other permits have been received. Pursuant to 314 CMR 9.10, this condition is necessary to ensure that due process is provided to certain persons deemed to be aggrieved by the Combined 401 WQC.
4. All work shall be performed in accordance with the following documents and plans [Pursuant to 314 CMR 9.05(1), this condition is necessary as these documents outline how the execution of the project will meet the criteria of 314 CMR 9.06 and 9.07 thereby protecting water quality and preventing degradation to wetlands and waters of the Commonwealth]:
 - Application for Combined Permit, DEP Application # 24-WW26-0015-APP, dated March 1, 2024, as revised through July 22, 2024, with attachments.

- Plan entitled “Bowen’s Pond Dam, Proposed 90% Design Permitting Set, Dam Removal and Stream Restoration Project, Wendell, Massachusetts,” consisting of 10 sheets, various scales, dated February 16, 2024, prepared by GZA Geoenvironmental, Inc., not signed or stamped, and attached to this Combined 401 WQC.
 - Document entitled “Bowen’s Pond Dam Removal and Osgood Brook Restoration Project, Wendell, Massachusetts, Sediment Monitoring Plan,” consisting of 14 pages, dated May 2024, prepared by GZA Geoenvironmental, Inc. [the “Sediment Monitoring Plan”]
 - Document entitled “Monitoring & Invasive Species Management Plan, Bowen’s Pond Dam Removal, Osgood Brook Restoration Project,” consisting of 7 pages, dated January 13, 2022. [the “Invasive Species Management Plan”]
5. MassDEP shall be notified, attention Derek Standish [617-875-3843 derek.standish@mass.gov], one week prior to the start of in-water work so that MassDEP staff may inspect the work for compliance with the terms and conditions of this Combined 401 WQC. Pursuant to 314 CMR 9.05(4), this condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters of the Commonwealth.
 6. The term of this Combined 401 WQC remains in effect for the same duration as the federal permit that requires it. Pursuant to 314 CMR 9.00, this condition is necessary to ensure that any dredging is conducted in a timely manner and complies with the Massachusetts Surface Water Quality Standards, as provided in 314 CMR 4.00, to protect the public health and restore and maintain the chemical, physical, and biological integrity of wetlands and waters of the Commonwealth.
 7. During the project period, there shall be no discharge or spillage of fuel, oil, or other pollutants, including sediments, onto any part of the site. The applicant shall take all reasonable precautions to prevent the release of pollutants by ignorance, accident, or vandalism. Pursuant to 314 CMR 9.06(1) and 9.07(1), this condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters of the Commonwealth.
 8. No later than four weeks after issuance of this Combined 401 WQC, the applicant shall submit a notification procedure outlining the reporting process to MassDEP for incidents relating to dredging activities that impact surrounding resource areas and habitats including, but not limited to, observed dead or distressed fish or other aquatic organisms, observed oily sheen on the surface of the water, a sediment spill, a turbidity plume beyond the deployed Best Management Practices (“BMPs”), and a barge or equipment accident/spill. If at any time during implementation of the project such an incident occurs, the applicant shall immediately notify MassDEP and all site related activities impacting the water shall cease until the source of the problem is identified and adequate mitigating measures are deployed to the satisfaction of

MassDEP. Pursuant to 314 CMR 9.07(3), this condition is necessary to ensure that construction is conducted in a manner that minimizes short-term, long-term, and cumulative impacts on the aquatic ecosystem and provides protection to human health.

9. Future maintenance dredging is not authorized under this Combined 401 WQC. Pursuant to 314 CMR 9.04(5), the project does not qualify for the routine maintenance exemption. This condition is necessary to ensure that the chemical, physical and biological integrity of wetlands and waters of the Commonwealth are protected.
10. Flow to the downstream channel (Osgood Brook) shall be maintained throughout construction of the project. Pursuant to 314 CMR 9.07(1)(c), this condition is necessary to ensure that construction will be conducted in a manner that will not reduce or alter the habitat functions of the affected wetlands and waters of the Commonwealth.
11. All equipment/machinery shall be stored above the High Water Mark (“HWM”) and outside any wetland resource areas when not in use. Pursuant to 314 CMR 9.06(1)(c)4.c. and 9.07(1)(b)4.c., this condition is necessary to avoid and minimize adverse construction impacts to wetlands and waters of the Commonwealth.
12. 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, except as described in the documents and plans cited in Condition # 4. 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 MassDEP, 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 MassDEP pursuant to this Combined 401 WQC. Pursuant to 314 CMR 9.06(1)(c)4.c. and 9.07(1)(b)4.c., this condition is necessary to avoid and minimize adverse construction impacts to wetlands and waters of the Commonwealth.
13. Stockpiles of soils, aggregate, or any other unconsolidated construction materials shall be covered with tarpaulins when not being worked with. Stockpiles in place for greater than 24 hours shall be ringed with an entrenched straw bale barrier and covered by properly secured tarpaulins at the close of each workday. The areas of construction shall remain in a stable condition at the close of each construction day. Pursuant to 314 CMR 9.06(1)(c)4.c. and 9.07(1)(b)4.c., this condition is necessary to avoid and minimize adverse construction impacts to wetlands and waters of the Commonwealth.

14. MassDEP shall be notified in writing of the name and location of the upland licensed facility accepting the dredged material for disposal or reuse as daily cover material. If the licensed facility is located out of state, documentation shall be provided to MassDEP that the dredged material disposal/reuse has been approved and will be accepted by the receiving state in accordance with 314 CMR 9.07(13)(b). The dredged material shall not be transported to the facility without the concurrence of MassDEP. Pursuant to 314 CMR 9.07(5) and 314 CMR 9.07(13), this condition is necessary to ensure that dredged material disposal will not adversely affect any wetlands or waters in the receiving area.
15. A Material Shipping Record (“MSR”) shall be used to track the dredged material to the licensed upland facility. A fully executed copy of the MSR shall be provided to MassDEP within 30 days of final shipment to the reuse location or facility. Pursuant to 314 CMR 9.07(5), this condition is necessary to maintain a record of the dredged material for reference and to ensure accountability in its transportation. This assists in the protection of health, safety, public welfare, and the environment from any potential hazards during transportation. Finally, it attests to the dredged material conforming with permitting and regulatory requirements for acceptance at the receiving location.
16. BMPs shall be implemented during transportation of the dredged material to the licensed receiving facility. At a minimum, when transported upon public roadways, all dredged material shall have no free liquid as determined by the Paint Filter Test or other suitably analogous methodology acceptable to MassDEP, and a tarpaulin or other means shall be used to cover the dredged material during transport. Pursuant to 314 CMR 9.07(5), this condition is necessary to protect off site water quality during transportation. These practices help to avoid fugitive dust and siltation into wetlands and waters of the Commonwealth.
17. Within 30 days of the completion of dredging, photographs of the affected areas depicting post-dredge conditions shall be taken and submitted to Derek Standish [derek.standish@mass.gov] at MassDEP. Pursuant to 314 CMR 9.07(1), this condition is necessary to ensure that construction practices are implemented in such a manner as to prevent degradation to wetlands and waters of the Commonwealth.
18. A copy of the sediment monitoring reports described in the Sediment Monitoring Plan cited in Condition # 4 shall be submitted to Derek Standish [derek.standish@mass.gov] at MassDEP once a year for 2 years following the removal of the dam. Pursuant to 314 CMR 9.01(3), this condition is necessary to protect the public health and restore and maintain the chemical, physical, and biological integrity of the water resources of the Commonwealth.
19. A report generated pursuant to the Invasive Species Management Plan cited in Condition # 4 shall be submitted to Derek Standish [derek.standish@mass.gov] at MassDEP once a year for 3 years following the removal of the dam. Pursuant to 314

CMR 9.06(2)(a), this condition is necessary to ensure that wetlands of the Commonwealth are restored.

Failure to comply with this Combined 401 WQC is grounds for enforcement, including civil and criminal penalties, under M.G.L. c. 21, § 42, 314 CMR 9.00, M.G.L. c. 21A § 16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

This Combined 401 WQC does not relieve the applicant of the obligation to comply with other appropriate state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Combined Permit Application or supplemental documents will require further notification to and, if an amendment is required, approval by MassDEP.

NOTICE OF APPEAL RIGHTS

Certain persons shall have a right to request an adjudicatory hearing concerning Combined 401 WQCs by MassDEP 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;
- c. any ten 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
- d. 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 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. c. 30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to MassDEP, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within 21 days from the date of issuance of this Combined 401 WQC.

Department of Environmental Protection
Case Administrator
Office of Appeals and Dispute Resolution
100 Cambridge Street, Suite 900
Boston, MA 02114

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 Program at:

Department of Environmental Protection
Wetlands Program
100 Cambridge Street, Suite 900
Boston, MA 02114

A Notice of Claim for Adjudicatory Hearing shall comply with MassDEP'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 Combined Permit Application 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 numbers, and address 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 this Combined 401 WQC, including specifically the manner in which it is alleged to be inconsistent with the MassDEP'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 Combined 401 WQC; 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 Conservation and Recreation (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.

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:

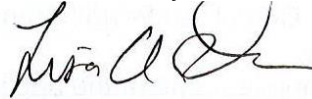
Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
PO Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid unless the appellant 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. MassDEP 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.

Should you have any questions relative to this Combined 401 WQC, please contact Derek Standish at (617) 875-3843 [derek.standish@mass.gov].

Sincerely,



Lisa Rhodes
Wetlands Program Chief

ecc:Wendell Conservation Commission, 9 Morse Village Road, Wendell, MA 01379
Adrienne Dunk, GZA Geoenvironmental, Inc., 1350 Main Street, Suite 1400, Springfield, MA 01103
Michael McHugh and Mary Grover, DEP – WERO, 436 Dwight Street, Springfield, MA 01103
Chrissy Hopps, MassDEP – Waterways, 100 Cambridge Street, Suite 900, Boston, MA 02114
Adam Kautza, Division of Fisheries and Wildlife, One Rabbit Hill Road, Westborough, MA 01581
Paul M. Maniccia, Department of the Army, New England District, Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751
Edward Reiner and Rachel Croy, EPA, 5 Post Office Square, Suite 100, Boston, MA 02109

attachments: Communication for Non-English Speaking Parties document
Plans of Record



重要 महत्वपूर्ण σημαντικός
Important
կարևոր quan trọng مهم



Communication for Non-English-Speaking Parties

This document is important and should be translated immediately.

If you need this document translated, please contact MassDEP's Director of Environmental Justice at the telephone number listed below.

Español Spanish

Este documento es importante y debe ser traducido inmediatamente. Si necesita traducir este documento, póngase en contacto con el Director de Justicia Ambiental de MassDEP (*MassDEP's Director of Environmental Justice*) en el número de teléfono que figura más abajo.

Português Portuguese

Este documento é importante e deve ser traduzido imediatamente. Se você precisar traduzir este documento, entre em contato com o Diretor de Justiça Ambiental do MassDEP no número de telefone listado abaixo.

繁體中文 Chinese Traditional

本文檔很重要，需要即刻進行翻譯。
如需對本文檔進行翻譯，請透過如下列示電話號碼與 MassDEP 的環境司法總監聯絡。

简体中文 Chinese Simplified

这份文件非常重要，需要立即翻译。
如果您需要翻译这份文件，请通过下方电话与 MassDEP 环境司法主任联系。

Ayisyen Kreyòl Haitian Creole

Dokiman sa a enpòtan epi yo ta dwe tradui l imedyatman. Si w bezwen tradui dokiman sa a, tanpri kontakte Direktè. Jistis Anviwònmanal MassDEP a nan nimewo telefòn ki endike anba a.

Việt Vietnamese

Tài liệu này và quan trọng và phải được dịch ngay. Nếu quý vị cần bản dịch của tài liệu này, vui lòng liên hệ với Giám Đốc Phòng Công Lý Môi Trường của MassDEP theo số điện thoại được liệt kê bên dưới.

ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះមានសារៈសំខាន់
ហើយគួរត្រូវបានបកប្រែភ្លាមៗ។
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយដូចខា
ងក្រោម។

Kriolu Kabuverdianu Cape Verdean

Es dokumentu sta important i tenki ser tradusidu imediatamenti. Se nho ta presisa ke es dokumentu sta tradisidu, por favor kontata O Diretor di Justisia di Environman di DEP ku es numero di telefoni menxionadu di baixo.

Contact Deneen Simpson 857-406-0738

**Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114**

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

Русский Russian

Это чрезвычайно важный документ, и он должен быть немедленно переведен. Если вам нужен перевод этого документа, обратитесь к директору Департамента экологического правосудия MassDEP (MassDEP's Director of Environmental Justice) по телефону, указанному ниже.

العربية Arabic

هذه الوثيقة مهمة وتجب ترجمتها على الفور.

إذا كنت بحاجة إلى ترجمة هذه الوثيقة، فيرجى الاتصال بمدير العدالة البيئية في MassDEP على رقم الهاتف المذكور أدناه.

한국어 Korean

이 문서는 중대하므로 즉시 번역되어야 합니다. 본 문서 번역이 필요하신 경우, 매사추세츠 환경보호부의 "환경정의" 담당자 분께 문의하십시오. 전화번호는 아래와 같습니다.

հայերեն Armenian

Այս փաստաթուղթը կարևոր է, և պետք է անհապաղ թարգմանել այն:
Եթե Ձեզ անհրաժեշտ է թարգմանել այս փաստաթուղթը, դիմեք Մասաչուսեթսի շրջակա միջավայրի պահպանության նախարարության (MassDEP) Բնապահպանական հարցերով արդարադատության ղեկավարին (Director of Environmental Justice)՝ ստորև նշված հեռախոսահամարով

فارسی Farsi Persian

این نوشتار بسیار مهمی است و باید فوراً ترجمه شود. اگر نیاز به ترجمه این نوشتار دارید لطفاً با مدیر عدالت محیط زیستی MassDEP در شماره تلفن ذکر شده زیر تماس بگیرید.

Français French

Ce document est important et doit être traduit immédiatement. Si vous avez besoin d'une traduction de ce document, veuillez contacter le directeur de la justice environnementale du MassDEP au numéro de téléphone indiqué ci-dessous.

Deutsch German

Dieses Dokument ist wichtig und muss sofort übersetzt werden. Wenn Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an MassDEP's Director of Environmental Justice (Direktor für Umweltgerechtigkeit in Massachusetts) unter der unten angegebenen Telefonnummer.

Ελληνική Greek

Το έγγραφο αυτό είναι πολύ σημαντικό και πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του εγγράφου αυτού, παρακαλώ επικοινωνήστε με τον Διευθυντή του Τμήματος Περιβαλλοντικής Δικαιοσύνης της Μασαχουσέτης στον αριθμό τηλεφώνου που αναγράφεται παρακάτω

Italiano Italian

Questo documento è importante e deve essere tradotto immediatamente. Se hai bisogno di tradurre questo documento, contatta il Direttore della Giustizia Ambientale di MassDEP al numero di telefono sotto indicato.

Język Polski Polish

Ten dokument jest ważny i powinien zostać niezwłocznie przetłumaczony. Jeśli potrzebne jest tłumaczenie tego dokumentu, należy skontaktować się z dyrektorem ds. sprawiedliwości środowiskowej MassDEP pod numerem telefonu podanym poniżej.

हिन्दी Hindi

यह दस्तावेज महत्वपूर्ण है और इसका अनुवाद तुरंत किया जाना चाहिए। यदि आपको इस दस्तावेज का अनुवाद कराने की जरूरत है, तो कृपया नीचे दिए गए टेलीफोन नंबर पर MassDEP के पर्यावरणीय न्याय निदेशक से संपर्क करें।

Contact Deneen Simpson 857-406-0738

Massachusetts Department of Environmental Protection
100 Cambridge Street 9th Floor Boston, MA 02114

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>

(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

© 2024 - GZA GeoEnvironmental, Inc. GZA--\A\ 166700 - 0. 166799\15.0166724.09 BOWEN'S POND DAM OSGOOD BROOK DESIGN PERMIT\15.0166724.09 CAD\DWG\GZA BASE - 166724.09.DWG DWG 2 FEBRUARY 16, 2024 3:52PM EDWARD MULLIN

PLAN REFERENCES AND INFORMATION SOURCES

THE BASE MAP WAS DEVELOPED AND EXISTING SITE FEATURES WERE OBTAINED FROM THE FOLLOWING:

- 1. EDGE OF WATER WAS DEVELOPED USING AVAILABLE AUTOCAD CIVIL 3D GEOLOCATION MAPS AERIAL PHOTO ACCESSED IN 2019 AND CONFIRMED DURING BATHYMETRY STUDY BY GZA ON JUNE 17, 2019.
2. VICINITY TOPOGRAPHY SHOWN PROVIDED BY NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) DIGITAL COAST SERVICE FOR LIDAR DATA - 2015 USGS LIDAR: MAINE AND MASSACHUSETTS Q1 7 Q2.
3. EXISTING BATHYMETRY, ESTIMATED BOTTOM OF SEDIMENT, AND EDGE OF WATER LOCATIONS WITHIN BOWEN'S POND WERE OBTAINED BY GZA GEOENVIRONMENTAL INC. IN JUNE 2019.
4. DAM ELEMENTS, EMBANKMENT TOPOGRAPHY, AND LIMITED BATHYMETRY SHOWN ON PLANS TAKEN FROM DRAWING ENTITLED "SITE PLAN PREPARED FOR TOM & MARY ROBINSON, WENDELL, MA" DATED OCTOBER 28, 2015, PREPARED BY EDMOND J. BOUCHER, PLS. ROYALSTON, MA. VERTICAL DATUM CONVERTED FROM NGVD 1929 TO NAVD 88 BY GZA. GZA SURVEY LOCATED UTILITY POLES AND CONFIRMED LOCATIONS FOR DRY HYDRANT AND DAM ELEMENTS. GZA ADDED ESTIMATED LOCATIONS OF BOLLARDS, STREET SIGN, AND GUARDRAIL, BUT THESE ELEMENTS WERE NOT SURVEY LOCATED.
5. WETLAND BOUNDARIES WITHIN 100 FEET UPSTREAM AND DOWNSTREAM OF THE DAM WERE FIELD-DELINEATED BY GZA ON JUNE 17, 2019 AND WETLAND BOUNDARIES RECONFIRMED IN THE FIELD ON JUNE 2, 2023. WETLAND FLAG LOCATIONS WERE SURVEY-LOCATED BY A GZA PROFESSIONAL ENGINEER AND ARE DEPICTED ON THE DRAWINGS. REFER TO GZA'S "PRELIMINARY DESIGN REPORT", DECEMBER 27, 2019, FOR A DETAILED DESCRIPTION OF THE DELINEATED WETLAND AREAS. THE CURRENT MASSGIS DEP WETLANDS DATALAYER WAS USED TO DEPICT THE GENERAL LOCATION OF WETLAND AREAS BEYOND 100 FT FROM THE DAM. GZA DID NOT FIELD VERIFY THE MASSGIS DEP WETLANDS INFORMATION.
6. ELEVATIONS DEPICTED ON THESE DRAWINGS BY GZA ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) IN UNITS OF FEET.
7. HORIZONTAL DATUM IS NORTH AMERICAN DATUM OF 1983 (NAD 83) MASSACHUSETTS MAINLAND, IN UNITS OF FEET.
8. LAND PARCEL BOUNDARIES DEPICTED ON THE DRAWINGS WERE TAKEN FROM THE CURRENT MASSGIS PARCELS DATALAYER AND ARE APPROXIMATE AND NOT INTENDED AS LEGAL DESCRIPTIONS.

GENERAL CONDITIONS

- 1. THE LOCATIONS OF ANY UTILITIES ARE APPROXIMATE ONLY, AS PROVIDED BY OTHERS, AND ARE NOT WARRANTED TO BE CORRECT. ALL EXISTING UTILITIES SHALL BE VERIFIED FOR SERVICE, SIZE, INVERT ELEVATION, LOCATIONS, ETC. PRIOR TO START OF ANY WORK IN THE GENERAL AREA. CONTRACTOR MUST NOTIFY DIG-SAFE AT 1-888-344-7233 AT LEAST 72 BUSINESS HOURS PRIOR TO ANY CONSTRUCTION. NOTIFY ENGINEER IN WRITING OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
2. THE RESPONSIBILITY FOR SAFETY IN, ON, OR ABOUT THE JOBSITE SHALL BE THAT OF THE CONSTRUCTION CONTRACTOR. THESE DRAWINGS DO NOT INCLUDE COMPONENTS WHICH MAY BE NECESSARY FOR CONSTRUCTION SAFETY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION, EXCEPT WHERE SPECIFICALLY DETAILED IN THE PLANS AND SPECIFICATIONS. LIKEWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SEQUENCE OF THE WORK, EXCEPT WHERE SPECIFICALLY DETAILED IN THE PLANS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURFACE AND GROUNDWATER CONTROL DURING THE WORK OF THE CONTRACT. TEMPORARY WATER CONTROL MEASURES SHALL BE, AT MINIMUM, AS REQUIRED BY THE PROJECT PLANS, SPECIFICATIONS, AND PERMIT CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL MEASURES NECESSARY FOR WATER CONTROL REQUIRED TO EXECUTE THE WORK OF THE CONTRACT "IN THE DRY." WATER CONTROL MEASURES ARE SUBJECT TO SPECIFIC LIMITS AND CONDITIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL AND DIVERSION DURING THE WORK OF THE CONTRACT. TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE, AT MINIMUM, AS REQUIRED BY THE PROJECT PLANS, SPECIFICATIONS, AND PERMIT CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL MEASURES AS MAY BE NECESSARY FOR THE PREVENTION OF SEDIMENT DISCHARGE OR EROSION AT UPLAND AREAS OF THE SITE.
6. SPECIFIC AREAS HAVE BEEN DESIGNATED AND DELINEATED ON THE PLANS AS CONTRACTOR STAGING AREAS. THE CONTRACTOR SHALL USE THESE AREAS, AND THESE AREAS ONLY FOR ON-SITE PARKING, OFFICE TRAILERS, EQUIPMENT AND MATERIAL STORAGE, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY SIGNAGE, FENCING, SAFETY, SEDIMENT/EROSION CONTROL, IMPROVEMENTS, RESTORATIONS ETC. IN THESE AREAS. AREA WITHIN THE LIMITS OF THE WORK MAY BE USED FOR TEMPORARY STORAGE, HALL ROADS, PARKING, ETC.; HOWEVER, NO ADDITIONAL CONSIDERATION OR PAYMENT WILL BE MADE FOR WORK NECESSARY TO RE-GRADE SUCH AREAS OR RELOCATE ANY MATERIALS OR EQUIPMENT TEMPORARILY STORED WITHIN THE LIMITS OF THE WORK. IF THE CONTRACTOR REQUIRES AND IDENTIFIES ADDITIONAL STAGING AREAS ON THE OWNER'S PROPERTY, THE CONTRACTOR SHALL MAKE A WRITTEN REQUEST TO THE OWNER AND ENGINEER DESCRIBING THE NEED AND LOCATION OF THE PROPOSED AREA. NO GUARANTEE IS MADE THAT ADDITIONAL LAYDOWN AREAS WILL BE MADE AVAILABLE.
7. THE CONTRACTOR SHALL RESTORE AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AS PER THE PLANS AND SPECIFICATIONS. WHERE NO SPECIFIC INSTRUCTION IS GIVEN, RESTORATION SHALL BE TO THE ORIGINAL CONDITION AND AT NO ADDITIONAL COST TO THE OWNER.
8. THE CONTRACTOR IS SPECIFICALLY INFORMED THAT THE RESTORATION REQUIREMENT APPLIES TO ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITY AS A RESULT OF THE PROJECT.
9. IN THE EVENT OF THE DISCOVERY OF THE PRESENCE OF AN ENDANGERED PLANT OR ANIMAL IN THE WORK AREA OR STAGING AREAS, ALL WORK IN THE IMMEDIATE AREA OF THE FIND SHALL STOP AND THE OWNER AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY. WORK IN THE IMMEDIATE AREA AND/OR THE ENTIRE SITE (AT THE DISCRETION OF THE OWNER) SHALL BE DISCONTINUED UNTIL CLEARANCE IS GRANTED BY THE OWNER.
10. IN THE EVENT OF THE DISCOVERY OF A PREVIOUSLY UNKNOWN ARCHAEOLOGICAL SITE, POTENTIAL CULTURAL ARTIFACTS OR RESOURCES, OR ANY OTHER UNUSUAL ITEMS OR CONDITIONS, ALL WORK IN THE IMMEDIATE AREA OF THE FIND SHALL STOP AND THE OWNER AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY. WORK IN THE IMMEDIATE AREA SHALL BE DISCONTINUED UNTIL CLEARANCE IS GRANTED BY THE OWNER.
11. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL DEVELOP, SUBMIT, AND MAINTAIN A COMPANY EMERGENCY CONTACT LIST WITH NAMES AND PHONE NUMBERS (DAY AND NIGHT) OF ALL KEY PERSONNEL INVOLVED WITH THE PROJECT. THE LIST SHALL SPECIFICALLY INCLUDE THE PERSON FROM THE CONTRACTOR WHO SHALL BE RESPONSIBLE FOR ENVIRONMENTAL COMPLIANCE. THE LIST SHALL BE PROVIDED TO THE OWNER, ENGINEER, AND CONSERVATION COMMISSION AND UPDATED AS NEEDED.
12. IN THE EVENT OF UNANTICIPATED ENVIRONMENTAL AND/OR ARCHAEOLOGICAL CONDITIONS WHICH PREVENT CONTINUED WORK, THE OWNER MAY DIRECT THE CONTRACTOR TO STOP WORK AND STABILIZE THE SITE. THE OWNER RESERVES THE RIGHT TO TERMINATE THE CONTRACT IN SUCH A CASE.
13. ALL WORK SHALL COMPLY WITH ENVIRONMENTAL PERMITS ISSUED FOR THE PROJECT. CONTRACTOR SHALL PROVIDE AND ERECT REQUIRED SIGN FOR DISPLAYING DEP FILE NUMBER (SEE SPECIFICATIONS). THE CONTRACTOR IS RESPONSIBLE FOR ALL PENALTIES AND DELAYS DUE TO NON-COMPLIANCE WITH PERMIT CONDITIONS.
14. CONTRACTOR SHALL REMOVE AND PROVIDE FOR LEGAL OFFSITE DISPOSAL OF DRY HYDRANT.
15. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC AND THE ROADWAY AND CULVERT UNDER THE ROADWAY AT ALL TIMES AS PART OF THIS WORK. CONTRACTOR MUST CONDUCT ALL NEEDED COORDINATION AND OBTAIN ALL NEEDED PERMITS AND APPROVALS FOR WORK ADJACENT TO THE ROADWAY AND PROVIDE POLICE DETAILS/FLAGGERS AS REQUIRED BY THE OWNER, ENGINEER, AND/OR TOWN AND STATE OFFICIALS.
16. UNSUITABLE MATERIALS INCLUDING ALL MANMADE OR NATURAL OBJECTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO TIRES, CAR PARTS, APPLIANCES, TREE STUMPS, TRASH, VEGETATION, ETC. THESE MATERIALS MUST BE DISPOSED OF AT AN APPROPRIATE LOCATION OFFSITE CONSISTENT WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
17. SEDIMENTS TO BE DREGDED SHALL BE REPOSITIONED WITHIN THE FORMER IMPOUNDMENT WITHIN THE LIMITS OF WORK.
18. CONTRACTOR SHALL PROTECT ALL TOWN PROPERTY THROUGHOUT THE WORK, INCLUDING CULVERT AND WALLS AND SHALL REPAIR ANY DAMAGE AT NO COST TO THE OWNER. NO WORK IS PROPOSED RELATED TO EXISTING CULVERT.

GENERAL SEDIMENT AND EROSION CONTROL NOTES

- 1. TEMPORARY EROSION AND SEDIMENT CONTROLS ARE REQUIRED THROUGHOUT THE DURATION OF THE PROJECT AND UNTIL FINAL STABILIZATION IS ACHIEVED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THE AREAS WITHIN THE LIMITS OF WORK AND BEYOND FROM SEDIMENT AND/OR POLLUTANTS ORIGINATING FROM ANY WORK DONE ON OR IN SUPPORT OF THE PROJECT, INCLUDING SEDIMENT DUE TO EROSION FROM STORMWATER RUNOFF.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES NECESSARY TO EXECUTE AND COMPLETE THE WORK OF THE CONTRACT, IN COMPLIANCE WITH THE TERMS AND CONDITIONS CONTAINED IN THE CONTRACT, PROJECT PERMITS AND ALL STATE AND LOCAL ORDINANCES THAT APPLY. CONTROLS SHOWN ON THE CONTRACT DRAWINGS SHALL BE CONSIDERED MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL EMPLOY WHATEVER SUPPLEMENTARY MEASURES NECESSARY TO PROTECT WETLANDS, WATERS, AND ADJACENT AREAS FROM DISTURBANCE OR DISCHARGE OF SEDIMENTS.
3. THE CONTRACTOR SHALL NOT DISTURB VEGETATED AREAS OUTSIDE OF THE WORK ZONE, EXCEPT TO THE MINIMUM EXTENT NECESSARY FOR ACCESS AND ACCOMPLISHMENT OF THE WORK SHOWN. NO EQUIPMENT SHALL BE USED OUTSIDE THE WORK AREA.
4. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT MIGRATION INTO WATER BY SILT, SEDIMENT, FUELS, SOLVENTS, LUBRICANTS, CONCRETE, OR ANY OTHER POLLUTANTS ASSOCIATED WITH CONSTRUCTION PROCEDURES.
5. ACTUAL LOCATIONS OF EROSION CONTROLS AND BEST MANAGEMENT PRACTICES (BMPs) MAY VARY DUE TO FIELD CHANGES, ONGOING CONSTRUCTION, ACCESS NEEDS, WEATHER, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING THESE CHANGES AND ADJUSTING EROSION CONTROLS AND BMP LOCATIONS ACCORDINGLY. IN PARTICULAR, THE CONTRACTOR SHALL COORDINATE THE INSTALLATION AND RELOCATION OF BMPs WITH PROJECT PHASING, AS NECESSARY.
6. ALL EROSION CONTROLS AND BMPs SHALL REMAIN IN PLACE, EXCEPT AS OTHERWISE NECESSARY, UNTIL CONSTRUCTION IS COMPLETED AND FINAL STABILIZATION IS ACHIEVED.
7. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING A PROJECT-SPECIFIC STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PRIOR TO THE START OF CONSTRUCTION, A COPY OF THE SWPPP SHALL BE KEPT ON SITE AT ALL TIMES. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE AND FILING WITH THE EPA, AS NEEDED FOR THE NPDES GENERAL PERMIT FOR DISCHARGES FROM CONSTRUCTION ACTIVITIES.
8. ADDITIONAL EROSION CONTROL BARRIERS SHALL BE INSTALLED AT THE DIRECTION OF THE ENGINEER AND AS NEEDED TO MINIMIZE THE THREAT OF ADVERSE IMPACT DURING THE CONSTRUCTION PROCESS. AN ADEQUATE SUPPLY OF REPLACEMENT EROSION CONTROL BARRIERS WILL BE AVAILABLE ON-SITE FOR EMERGENCY PURPOSES.
9. SEDIMENT AND EROSION CONTROLS AND BMPs SHALL BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION AT THE SITE. NO WORK WHICH SHALL DISTURB THE SITE OR CREATE THE POTENTIAL FOR SEDIMENT RELEASE SHALL COMMENCE UNTIL THE SEDIMENT AND EROSION CONTROLS HAVE BEEN INSPECTED AND APPROVED BY THE OWNER, ENGINEER, AND CONSERVATION COMMISSION. ALL CONTROLS AND BMPs SHALL BE SUBJECT TO INSPECTION BY THE OWNER AND HIS REPRESENTATIVE AT ANYTIME THEREAFTER.
10. PERIODIC INSPECTION, MAINTENANCE, AND CLEANING OF TEMPORARY EROSION OF SEDIMENT CONTROL MEASURES AND BMPs ARE REQUIRED. ALL CONTROLS AND BMPs SHALL BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF RAINFALL EVENTS OF 0.25 INCHES OR GREATER. ROUTINE INSPECTION AND MAINTENANCE WILL REDUCE THE CHANCE OF POLLUTING STORMWATER BY FINDING AND CORRECTING PROBLEMS BEFORE THE NEXT RAIN EVENT. THE CONTRACTOR WILL BE REQUIRED TO KEEP A WRITTEN, UPDATED SITE MAINTENANCE LOG DOCUMENTING INSPECTION AND MAINTENANCE ACTIVITY.
11. REPORTING AND RECORD KEEPING: IN ADDITION TO THE AFOREMENTIONED INSPECTION AND MAINTENANCE PROCEDURES, THE CONTRACTOR IS TO KEEP A RECORD OF THE FOLLOWING INFORMATION:
- THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR IN A PARTICULAR AREA;
- THE DATES WHEN CONSTRUCTION ACTIVITIES CEASE IN AN AREA, TEMPORARILY OR PERMANENTLY;
- THE DATES WHEN AN AREA IS STABILIZED, TEMPORARILY OR PERMANENTLY;
- ALL OTHER INFORMATION, DATA, AND REPORTS REQUIRED BY THE PERMIT, INCLUDING DEWATERING MONITORING AND REPORTING;
- A COPY OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND ALL REPORTS GENERATED DURING CONSTRUCTION ACTIVITIES ARE TO BE RETAINED AS REQUIRED BY REGULATION.
12. SITE CLEARING: PRIOR TO ANY SITE CLEARING ACTIVITIES, SEDIMENT CONTROL BARRIERS SHALL BE INSTALLED AS INDICATED ON THE PLANS. ALONG THE OUTER LIMIT OF DISTURBED AREAS ARE TO BE KEPT TO A MINIMUM. NO CLEARING IS ALLOWED OUTSIDE THE WORK AREA WITHOUT PRIOR APPROVAL FROM THE OWNER.
13. SEDIMENT AND EROSION CONTROL BARRIERS: SEDIMENT/EROSION CONTROL BARRIERS ARE INTENDED TO TRAP SEDIMENT TRANSPORTED BY RUNOFF BEFORE IT REACHES THE DRAINAGE FEATURES, WATERBODIES, OR WETLANDS, IN ADDITION TO AREAS WHERE HIGH RUNOFF VELOCITIES OR HIGH SEDIMENT LOADS ARE EXPECTED. SAID CONTROLS ARE TO BE REPLACED AS NEEDED AS DETERMINED BY PERIODIC FIELD INSPECTIONS.
14. DUST CONTROL: DUST CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
15. STAGING AREAS: THE CONTRACTOR MAY ESTABLISH LAYDOWN AND STAGING AREAS IN WHICH TO STORE EQUIPMENT AND MATERIALS ONLY IN THOSE AREAS SPECIFICALLY INDICATED ON THE CONTRACT DRAWINGS OR SPECIFICATIONS OR AS DIRECTED BY THE OWNER. LOCATION OF ADDITIONAL AREAS, IF NEEDED, SHALL BE COORDINATED WITH AND SHALL BE SUBJECT TO APPROVAL BY THE OWNER. STAGING AREAS SHALL BE ENCIRCLED WITH SEDIMENT/EROSION CONTROL BARRIERS AS APPROPRIATE. STAGING AREAS SHALL BE ENCIRCLED BY ORANGE PLASTIC TEMPORARY CONSTRUCTION FENCING OR OTHER MEANS OF DELINEATING THE AREAS. AT THE CONTRACTOR'S OPTION, ADDITIONAL OR MORE STURDY BARRIERS MAY BE INCLUDED.
16. STOCKPILED MATERIALS: STOCKPILES OF SOIL IN AREAS CREATED DURING CONSTRUCTION ACTIVITIES ARE TO BE SURROUNDED WITH SEDIMENT/EROSION CONTROL AND PILE SHALL BE COVERED AS NEEDED TO LIMIT EROSION.
17. TEMPORARY STABILIZATION: WHEN NECESSARY, TEMPORARY SLOPE PROTECTION SHALL BE PROVIDED BY INSTALLING SEDIMENT/EROSION CONTROL BARRIERS AT THE TOE OF FILLS OR CUT SLOPES. IF ADDITIONAL STABILIZATION IS NEEDED, THEN THE CONTRACTOR SHALL INSTALL MATTING, SUCH AS HAY, JUTE, WOOD FIBER, OR BIO OR PHOTO-DEGRADABLE MESH. IN THE EVENT THAT DISTURBED AREAS AT THE SITE ARE TO BE LEFT UN-WORKED FOR MORE THAN TWO WEEKS, THE AREAS SHALL BE MULCHED WITH STRAW AT A RATE OF 100 LBS. PER 1,000 S.F. TO HELP CONTROL EROSION. TWO INCHES OF WOOD CHIP MULCH MAY ALSO BE USED AS TEMPORARY COVER. IN THE EVENT THAT DISTURBED AREAS AT THE SITE ARE TO BE LEFT UN-WORKED FOR MORE THAN ONE MONTH, THE AREAS SHALL BE TOPSOILED AND SEEDED AT NO ADDITIONAL COST TO THE OWNER. LEAVE THE SURFACE OF ALL EXCAVATIONS AND FILLS IN A FIRM AND STABLE CONDITION AT THE END OF EACH DAY. ROLL OR OTHERWISE TREAT THE SURFACE AS NEEDED.
18. UPSTREAM CHANNEL FORMATION: THE INTENT OF THE PROJECT IS TO UTILIZE LIMITED ACTIVE EXCAVATION UPSTREAM OF THE FORMER DAM AS NEEDED TO ESTABLISH A PILOT CHANNEL WHICH WILL SERVE TO GUIDE ADDITIONAL UPSTREAM NATURAL CHANNEL FORMATION. IT IS EXPECTED THAT DOWNSTREAM SEDIMENT TRANSPORT WILL BE ASSOCIATED WITH THIS PROCESS.
19. WORK AREA SITE RESTORATION: STABILIZATION OF DISTURBED AREAS OR NEW SOIL FILLS SHALL BE COMPLETED WITHIN 7 DAYS AFTER GRADING OR CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. APPROPRIATE VEGETATIVE SOIL STABILIZATION IS TO BE USED TO MINIMIZE EROSION. TEMPORARY AND PERMANENT VEGETATIVE COVER IS TO BE ESTABLISHED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS USING HYDRO-SEEDING, BROADCASTING, OR OTHER APPROVED TECHNIQUES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF PREVIOUSLY VEGETATED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. UNLESS OTHERWISE SHOWN ON DRAWINGS, RESTORATION SHALL CONSIST OF REPLACEMENT OF TOPSOIL OR PLACEMENT OF IMPORTED LOAM AS NEEDED SUCH THAT A MINIMUM OF 6 INCHES OF SUITABLE MATERIAL IS PRESENT AND APPROPRIATELY LIMED, FERTILIZED, GRADED, AND SCARIFIED. WHERE NOT OTHERWISE SPECIFIED, DISTURBED UPLAND AREAS SHALL BE SEEDED WITH AN APPROVED SEED MIX AND AT A RATE SHOWN ON THE PROJECT PLANS AND SPECIFICATIONS. SEEDING RATE SHALL BE DOUBLED FOR DORMANT SEEDING.
RESTORED AREAS SHALL BE ROLLED AND THEN APPROPRIATELY MULCHED OR COVERED.
FINAL STABILIZATION SHALL BE CONSIDERED COMPLETE WHEN ALL SOIL-DISTURBING ACTIVITIES HAVE BEEN COMPLETED AND A UNIFORM, PERENNIAL VEGETATIVE COVER WITH A DENSITY OF EIGHTY PERCENT HAS BEEN ESTABLISHED OR EQUIVALENT STABILIZATION MEASURES (SUCH AS THE USE OF MULCHES OR EROSION CONTROL MATTING) HAVE BEEN EMPLOYED ON ALL UNPAVED UPLAND AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL VEGETATED UPLAND SURFACES AND PLANTINGS, INCLUDING WATERING, FERTILIZING, AND RE-SEEDING UNTIL ESTABLISHMENT CONDITIONS ARE MET AND UNTIL THE END OF THE CONTRACTUAL MAINTENANCE PERIOD.
ALL SLOPES WITHIN THE PROJECT LIMITS WILL BE STABILIZED WITHIN 7 DAYS OF THE FINAL GRADING. AREAS FAILING TO BE STABILIZED SHALL BE RE-GRADED AND CONTINUED TO BE STABILIZED AS NEEDED.
20. WETLAND ESTABLISHMENT: WETLAND ESTABLISHMENT IN THE FORMER POND AREA SHALL BE IMPLEMENTED AS PER THE PROJECT DRAWINGS, PERMITS AND SPECIFICATIONS. THE GENERAL APPROACH SHALL INVOLVE NATURAL RECOLONIZATION WITH LIMITED SUPPLEMENTAL SEEDING, RESTORATION WETLAND PLANTINGS, POST-COMPLETION MONITORING, AND AN INVASIVE SPECIES CONTROL PLAN.

WATER CONTROL NOTES

- 1. TEMPORARY WATER CONTROL BY THE CONTRACTOR SHALL BE PERFORMED AS SPECIFIED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL BE AWARE THAT LOW LEVEL OUTLET IS NOT FUNCTIONAL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY WATER CONTROL, SURFACE WATER AND GROUNDWATER CONTROL, NECESSARY TO EXECUTE AND COMPLETE THE WORK OF THE CONTRACT, SUBJECT TO THE RESTRICTIONS CONTAINED IN THE CONTRACT AND PROJECT PERMITS. CONTROLS SHOWN IN THE CONTRACT DRAWINGS AND MENTIONED IN THE TECHNICAL SPECIFICATIONS SHALL BE CONSIDERED MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL EMPLOY ALL SUPPLEMENTARY MEASURES NECESSARY TO PROTECT THE SITE AND THE WORK.
3. ALL TEMPORARY WATER CONTROL MEASURES SHALL BE IMPLEMENTED IN CONJUNCTION WITH APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES SO AS TO MINIMIZE TO THE GREATEST EXTENT POSSIBLE RELEASE OF SEDIMENT INTO WATER BODIES AND POTENTIAL EROSION OF SOIL.
4. THE CONTRACTOR IS HEREBY NOTIFIED THAT STRICT ADHERENCE TO THE WATER CONTROL CONDITIONS AND LIMITATIONS AND USE OF BEST MANAGEMENT PRACTICES IS CRITICAL TO PREVENT POSSIBLE IMPACTS TO SENSITIVE ENVIRONMENTAL AREAS.
5. CONTRACTOR SHALL NOT COMPLETELY OBSTRUCT FLOW DOWNSTREAM OF THE CULVERT UNDER SUCH CONDITIONS WHEN FLOW WOULD NATURALLY OCCUR. CONTRACTOR SHALL SEEK TO MAINTAIN A MINIMUM OUTFLOW OF 1.5 CFS OR PASS THROUGH ACTUAL INFLOW, WHICHEVER IS LESSER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND SUBMISSION OF A CONSTRUCTION-PHASE FLOOD CONTROL / EMERGENCY RESPONSE PLAN.
7. ANY TEMPORARY PUMPS UTILIZED AT THE SITE MUST BE PROPERLY BAFLED AGAINST EXCESSIVE NOISE. PUMPS OR GENERATORS WHICH UTILIZE LIQUID FUEL MUST BE PLACED WITHIN AN IMPERMEABLE SECONDARY CONTAINMENT AREA WITH SUFFICIENT CAPACITY TO CONTAIN THE FULL VOLUME OF THE FUEL TANK PLUS PRECIPITATION.
8. WATER PUMPED FROM EXCAVATIONS MUST BE PASSED THROUGH A PUMPED WATER FILTER BAG OR OTHER SUCH BEST MANAGEMENT PRACTICE (BMP) FEATURE PRIOR TO BEING DISCHARGED BACK TO A SURFACE WATER BODY. DISCHARGE WATER SHALL MEET APPROPRIATE WATER QUALITY STANDARDS.
9. PUMPED WATER DISCHARGE AREAS MUST BE PROPERLY PROTECTED TO PREVENT EROSION BY HIGH VELOCITY FLOW.
10. DISCHARGE OF WATER FROM THE POND DURING UNWATERING OPERATIONS (INITIAL AND SUBSEQUENT) SHALL BE LIMITED TO A FLOW RATE WHICH PRODUCES NO GREATER THAN 1.0' DEPTH OF FLOW AT THE UPSTREAM END OF THE WENDELL DEPOT ROAD CULVERT #1.
11. SEE WATER CONTROL SPECIFICATIONS FOR REQUIREMENTS REGARDING CONTROL OF WATER DURING FLOOD CONDITIONS. CONTRACTOR REQUIRED TO PASS FLOWS UP TO 5-YR RETURN PERIOD WITHOUT DISRUPTION OF CONSTRUCTION ACTIVITIES.

GENERAL SCOPE AND ANTICIPATED CONSTRUCTION SEQUENCE

- 1. MOBILIZE TO THE SITE AND INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS ASSOCIATED WITH THE PROJECT, INCLUDING PERIMETER EROSION AND SEDIMENTATION BARRIERS AND OTHER BMPs.
2. NOTIFY OWNER, ENGINEER, AND CONSERVATION COMMISSION, SCHEDULE AND CONDUCT SITE WALK TO INSPECT EROSION AND SEDIMENT CONTROL MEASURES. MODIFY CONTROLS AS REQUIRED. WORK MAY PROCEED ONCE APPROVAL HAS BEEN GRANTED FROM CONSERVATION COMMISSION.
3. CONTRACTOR SHALL DRAWDOWN THE POND TO MAXIMUM ELEVATION 913± VIA SIPHON, PUMPING, OR OTHER APPROVED METHOD AND ESTABLISH BYPASS SYSTEMS TO MAINTAIN WATER LEVELS AT OR BELOW THIS ELEVATION THROUGHOUT THE WORK.
4. REMOVE DRY HYDRANT AND ASSOCIATED SIGNAGE AND BOLLARDS AND BACKFILL.
5. ESTABLISH STAGING AND WORK AREAS AND BEGIN SITE PREPARATION, PROTECTION, AND DEMOLITION PROCESS. REMOVE DEBRIS AT SPILLWAY AND CONCRETE PORTIONS OF SPILLWAY THAT HAVE BEEN DISPLACED TO DOWNSTREAM OF DAM TO PREPARE FOR DAM REMOVAL.
6. USING AN EXCAVATOR, REMOVE THE SPILLWAY AND STONE/CONCRETE COMPONENTS PROGRAMMED FOR REMOVAL. CONTRACTOR SHALL PROCEED IN PHASED MANNER, REMOVING NOTCHED PORTION OF DAM IN VERTICAL SECTIONS, ALLOWING FOR STABILIZATION BETWEEN PHASES. NO MORE THAN 1 FOOT SHALL BE NOTCHED AT ANY TIME AND DURING NOTCHING FLOW RATES SHALL NOT EXCEED APPROXIMATELY 65 CUBIC FEET PER SECOND (CFS), WHICH IS EQUIVALENT TO APPROXIMATELY 1 FOOT OF FLOW IMMEDIATELY DOWNSTREAM AT THE UPSTREAM END OF THE WENDELL DEPOT ROAD #1 CULVERT CROSSING. THE INTENT OF THIS CONSTRAINT IS TO LIMIT CONTROLLED DISCHARGES TO FLOW RATES THAT WILL GENERALLY BE MAINTAINED WITHIN THE BANKS OF THE DOWNSTREAM CHANNEL AND ARE NOT ANTICIPATED TO RESULT IN DAMAGE OR DISRUPTION TO DOWNSTREAM PROPERTY AND INFRASTRUCTURE. DOWNSTREAM CROSSINGS WILL BE MONITORED THROUGHOUT THE PROJECT BY THE CONTRACTOR AND ADAPTIVE MANAGEMENT MEASURES TAKEN AS NEEDED OR AS DIRECTED BY THE OWNER OR REGULATORY AGENCIES.
7. THE FULL VERTICAL EXTENT OF MANMADE PORTIONS OF THE DAM (CONCRETE) SHALL BE REMOVED TO THE LIMITS OF THE BREACH SECTION, AS SHOWN ON THE DRAWINGS. IF FULL VERTICAL REMOVAL EXTENDS BELOW THE INTENDED STREAM BOTTOM, FILL SHALL BE USED TO BRING THE CHANNEL BOTTOM TO THE INTENDED GRADE. IF BEDROCK IS ENCOUNTERED IN THE CHANNEL, NOTIFY THE ENGINEER WHO WILL PROVIDE SUPPLEMENTAL INSTRUCTIONS. NO SUBSTANTIAL BEDROCK EXCAVATION IS INCLUDED IN THIS WORK.
8. ALL DEMOLISHED CONCRETE, MANMADE MATERIALS, AND DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY OFFSITE BY CONTRACTOR. STONE MATERIALS SHALL BE PLACED ALONG BREACH CHANNEL SECTION AND SIDE SLOPES AT THE DIRECTION OF THE ENGINEER.
9. INSTALL TEMPORARY COFFERDAMS AND MAINTAIN DIVERSION TO ALLOW FOR DRY WORK AREA FOR STREAM CHANNEL CONSTRUCTION AT BREACH SECTION AND IMMEDIATELY DOWNSTREAM.
10. EXCAVATE CHANNEL, FORM OVERBANK AREAS, AND REPAIR/REGRADE THE BANK AREA. PLACE MATERIALS GENERATED FROM THIS PROCESS IN A DESIGNATED AREAS FOR MATERIAL REPOSITIONING. PROVIDE FOR STABLE SLOPES IN THESE AREAS.
11. EXCAVATE TO LOCATE AND REMOVE ALL COMPONENTS OF LOW-LEVEL OUTLET INCLUDING PIPE, CHAMBER, OPERATORS, ETC. AND BACKFILL.
12. PLACE AND SECURE EROSION CONTROL MATTING, COIR LOGS, ROCK, AND ASSOCIATED STREAM/BANK STABILIZERS.
13. RESTORE AND LOAM (6 INCHES MINIMUM), SEED AND MULCH DISTURBED AREAS, INCLUDING ACCESS ROUTES, STAGING AREAS, AND DESIGNATED REVEGETATION AREAS. SPREAD APPROPRIATE SEED MIXES IN NEWLY LOAMED AREAS. IF EROSION CONTROL BLANKETS ARE PROPOSED, WORK AN ADDITIONAL THIN LAYER (3-4 INCHES) OF TOPSOIL/LOAM INTO THE MATRIX FOLLOWED BY OVERSEEDING AND WATERING TO PROMOTE HEALTHY VEGETATIVE GROWTH. NOTE MITIGATION PLANTING TO BE PERFORMED PER IDENTIFIED SCHEDULE OR AS DIRECTED BY ENGINEER.
14. REMOVE EQUIPMENT AND TEMPORARY FACILITIES. COMPLETE ALL SITE RESTORATION.
15. NOTIFY OWNER, ENGINEER, AND CONSERVATION COMMISSION OF FINAL STABILIZATION. SCHEDULE AND CONDUCT SITE INSPECTION.
16. MODIFY STABILIZATION AREAS AS NECESSARY.
17. UPON APPROVAL BY CONSERVATION COMMISSION AND REGULATORY AGENCIES, REMOVE TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
18. COMPLETE INITIAL DEMOBILIZATION.
19. REMOBILIZE AS NEEDED WITH APPROPRIATE CONTROLS AND CONDUCT MITIGATION PLANTING WORK.
20. COMPLETE FINAL DEMOBILIZATION.

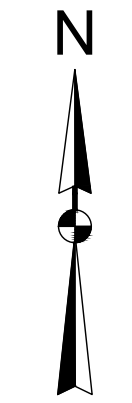
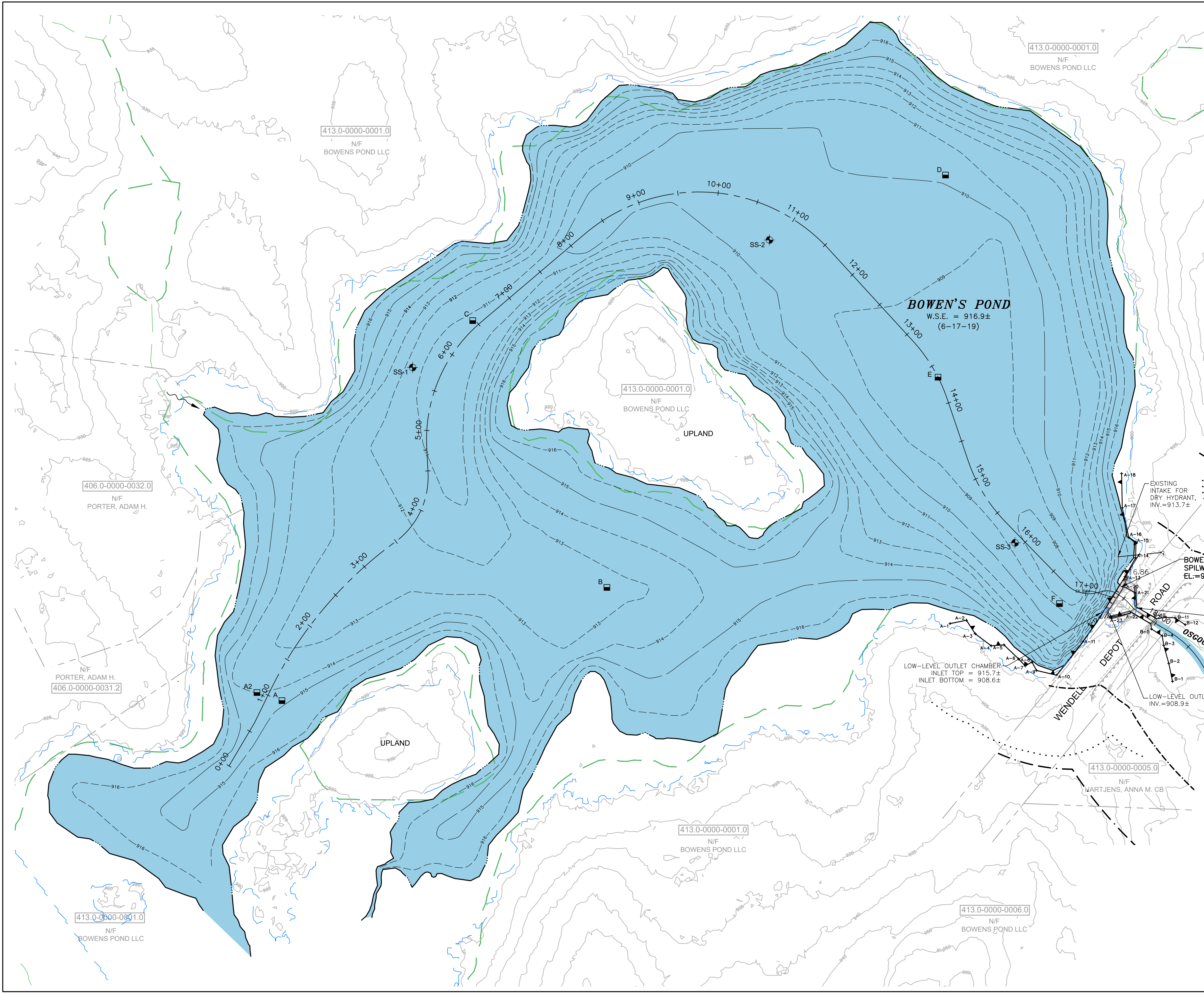
PERMITTING PLANS NOT FOR CONSTRUCTION

Table with 4 columns: Description, Issued By, Date, and Issue/Description. Row 1: ISSUED FOR PERMITTING, JRB, 2/16/24. Row 2: ISSUE/DESCRIPTION, BY, DATE.

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BOWEN'S POND DAM DAM REMOVAL AND STREAM RESTORATION PROJECT WENDELL, MASSACHUSETTS
GENERAL NOTES
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com
PREPARED FOR: BOWENS POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452
PROJ MGR: JRB REVIEWED BY: CWC CHECKED BY: NLR DRAWING
DESIGNED BY: JRB DRAWN BY: EDM SCALE: N/A
DATE: FEBRUARY, 2024 PROJECT NO. 15.0166724.09 REVISION NO. 0
2

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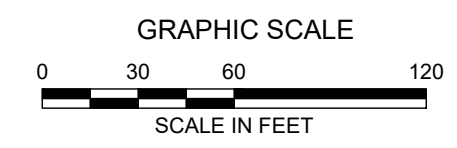
- LEGEND**
- DELINEATED AND SURVEYED WETLAND (GZA; JUNE 17, 2019) CONFIRMED (6/2/23)
 - MASSGIS DEP WETLANDS
 - 100 FT. WETLAND BUFFER
 - 100 FT. RIVERFRONT AREA
 - 200 FT. RIVERFRONT AREA
 - MODELED LIMITS OF BORDERING LAND SUBJECT TO FLOODING (BLSF)
 - EDGE OF WATER** (PRIOR TO DAM REMOVAL)
 - APPROXIMATE LAND PARCEL BOUNDARIES (MASSGIS)
 - ON-SHORE CONTOUR, 5-FT INTERVAL (USGS LIDAR)
 - ESTIMATED TOP OF SEDIMENT CONTOUR, 10-FT INTERVAL
 - ESTIMATED TOP OF SEDIMENT CONTOUR, 1-FT INTERVAL
 - EDGE OF PAVEMENT
 - GUARDRAIL
 - DRY HYDRANT
 - UTILITY POLE
 - CONCRETE POST
 - TRAFFIC SIGN
 - SS-3
 - SEDIMENT SAMPLING LOCATION (GZA; AUGUST 2019)
 - A
 - SEDIMENT SAMPLING LOCATION (GZA; JUNE 1, 2022)
 - APPROXIMATE LIMITS OF LAND UNDER WATER (UPSTREAM OF DAM, PRIOR TO DAM REMOVAL)
 - 413.0-0000-0001.0
 - LAND PARCEL IDENTIFIER (MASSGIS)

** NOTE: EDGE OF WATER AS DEPICTED HEREON IS APPROXIMATELY EQUIVALENT TO:

- ORDINARY HIGH WATER MARK ["OHWM"; 33 CFR 328.3(e)]
- HIGH WATER MARK ["HWM"; 314 CMR 9.00], AND
- MEAN ANNUAL HIGH WATER LINE ["MAHWL"; 310 CMR 10.58(2)]

BENCHMARK
 NW BOLT OF GUARDRAIL POST
 (BOUCHER, 2015) EL. 921.19
 (NAVD 88) SEE PLAN REFERENCES
 NOTE #4 ON DRAWING #2.

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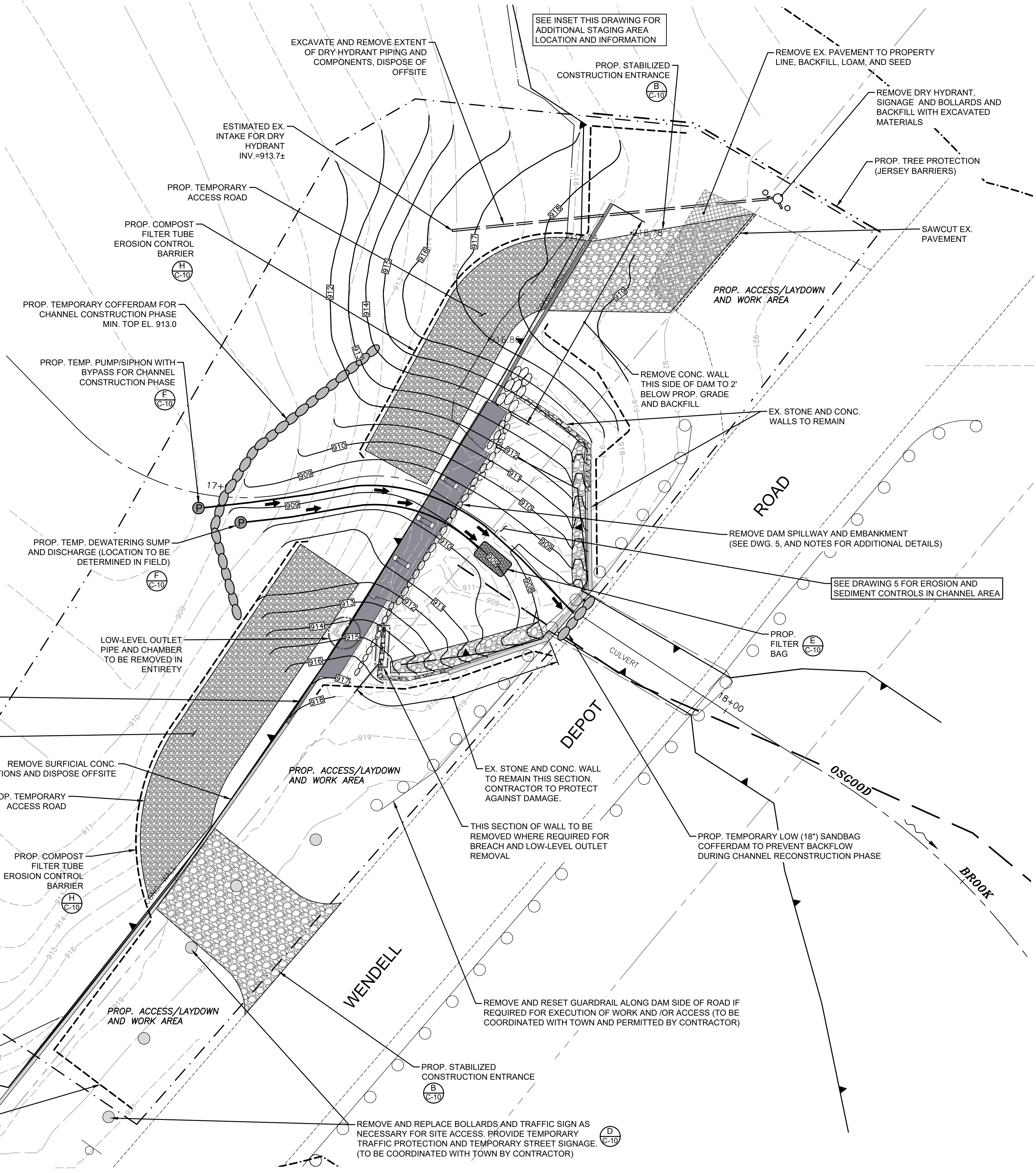
**BOWEN'S POND DAM
 DAM REMOVAL AND STREAM RESTORATION PROJECT
 WENDELL, MASSACHUSETTS**

EXISTING CONDITIONS AND RESOURCE DELINEATION PLAN	
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: BOWEN'S POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452
PROJ MGR: JRB	REVIEWED BY: CWC
DESIGNED BY: JRB	DRAWN BY: EDM
DATE: FEBRUARY, 2024	PROJECT NO. 15.0166724.09
CHECKED BY: NLR	SCALE: 1"=60'
REVISION NO. 0	DRAWING NO. 3

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ADDITIONAL STAGING AREA LOCATION INSET
1"=80'



LEGEND

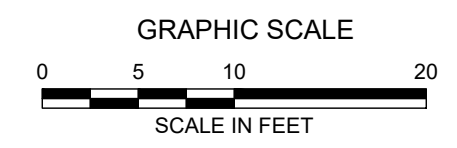
- DELINEATED AND SURVEYED WETLAND (GZA; JUNE 17, 2019) CONFIRMED (6/2/23)
- MASSGIS DEP WETLANDS
- 100 FT. WETLAND BUFFER
- 100 FT. RIVERFRONT AREA
- 200 FT. RIVERFRONT AREA
- EDGE OF WATER** (PRIOR TO DAM REMOVAL)
- APPROXIMATE LAND PARCEL BOUNDARIES (MASSGIS)
- ON-SHORE CONTOUR, 1-FT INTERVAL (FROM 2015 TOPO)
- ESTIMATED TOP OF SEDIMENT CONTOUR, 10-FT INTERVAL
- ESTIMATED TOP OF SEDIMENT CONTOUR, 1-FT INTERVAL
- EDGE OF PAVEMENT
- GUARDRAIL
- DRY HYDRANT (TO BE REMOVED)
- CONCRETE POST
- TRAFFIC SIGN
- PROPOSED CONTOUR
- PROPOSED TREE PROTECTION
- PROPOSED SILT FENCE
- PROPOSED COMPOST FILTER TUBES
- PROPOSED LIMIT OF WORK
- LAND PARCEL IDENTIFIER (MASSGIS)

** NOTE: EDGE OF WATER AS DEPICTED HEREON IS APPROXIMATELY EQUIVALENT TO:

- ORDINARY HIGH WATER MARK ["OHWM"; 33 CFR 328.3(e)]
- HIGH WATER MARK ["HWM"; 314 CMR 9.00], AND
- MEAN ANNUAL HIGH WATER LINE ["MAHWL"; 310 CMR 10.58(2)]

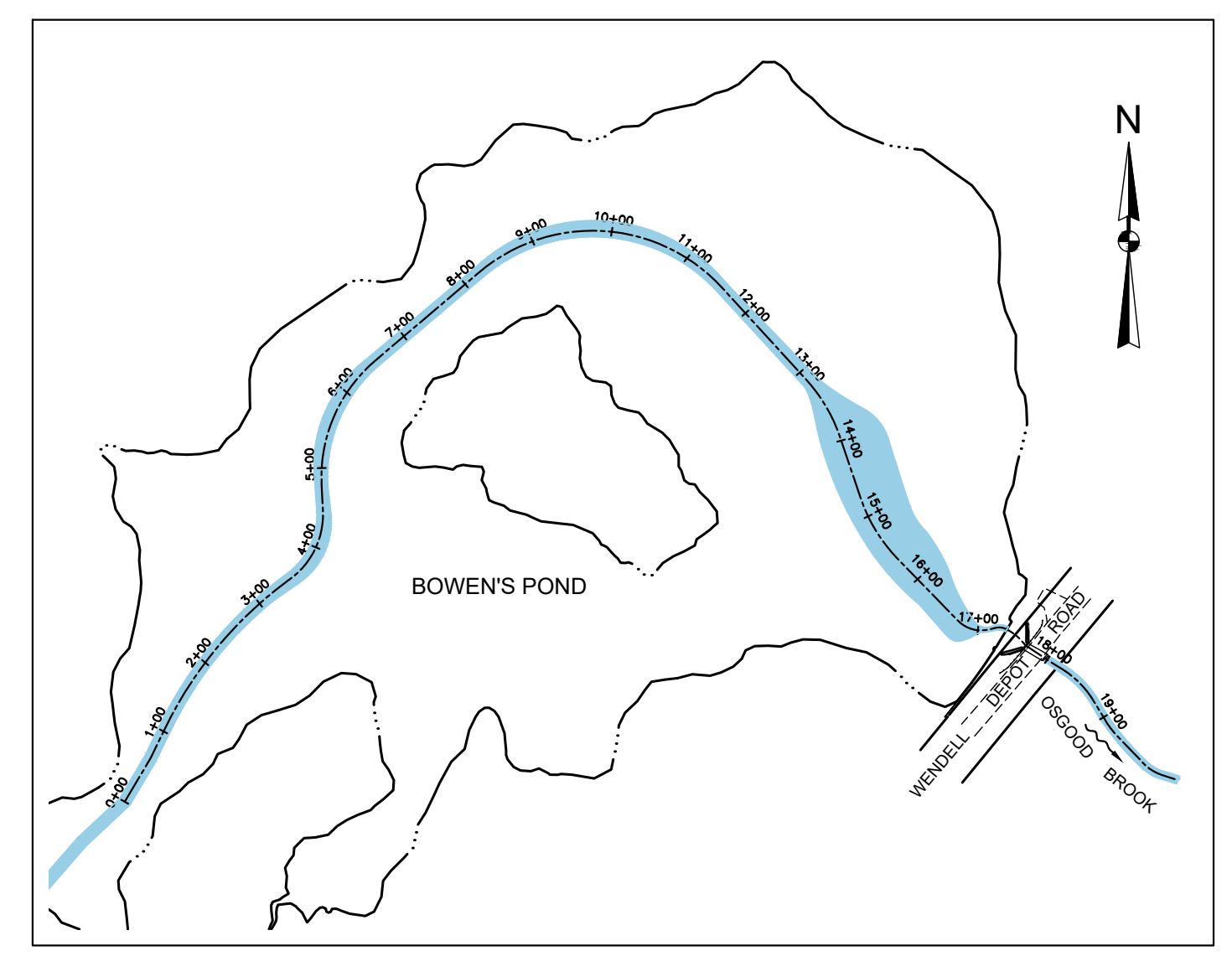
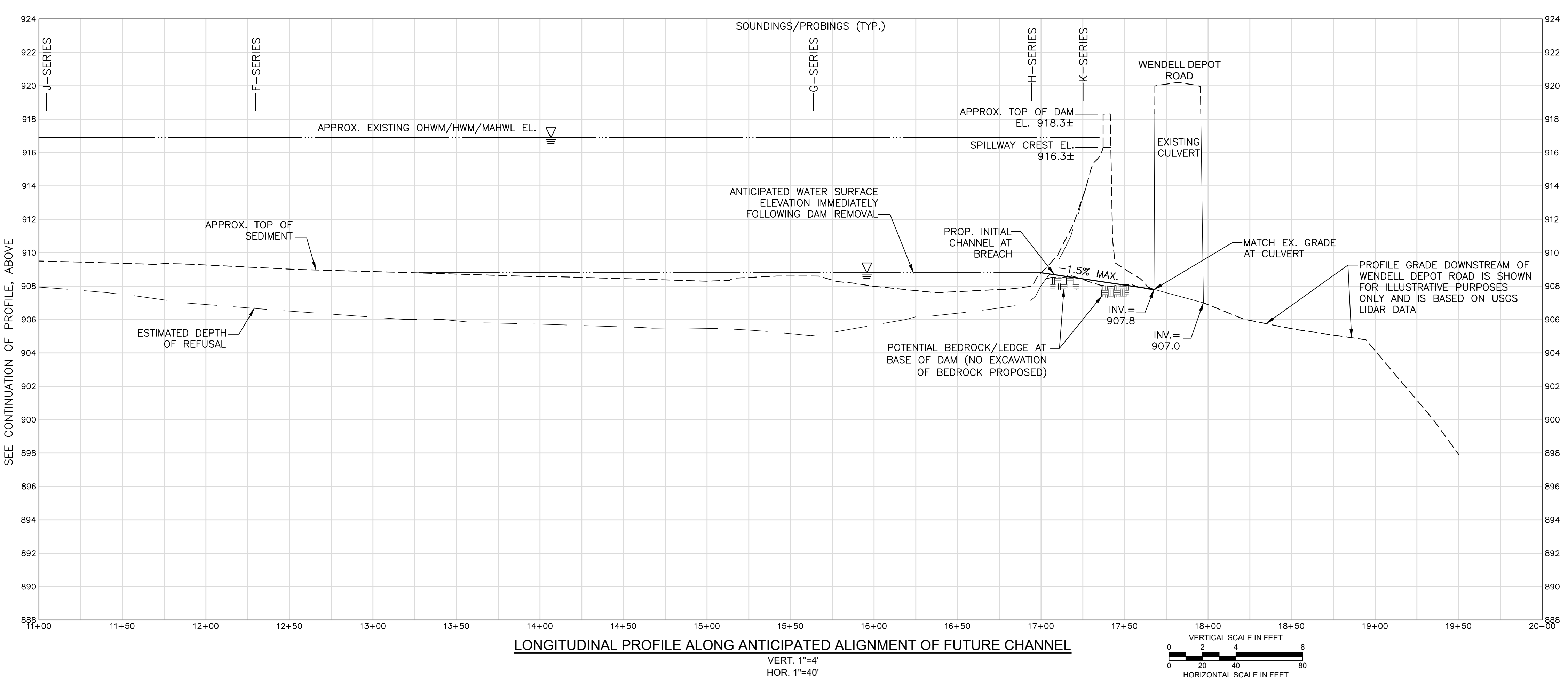
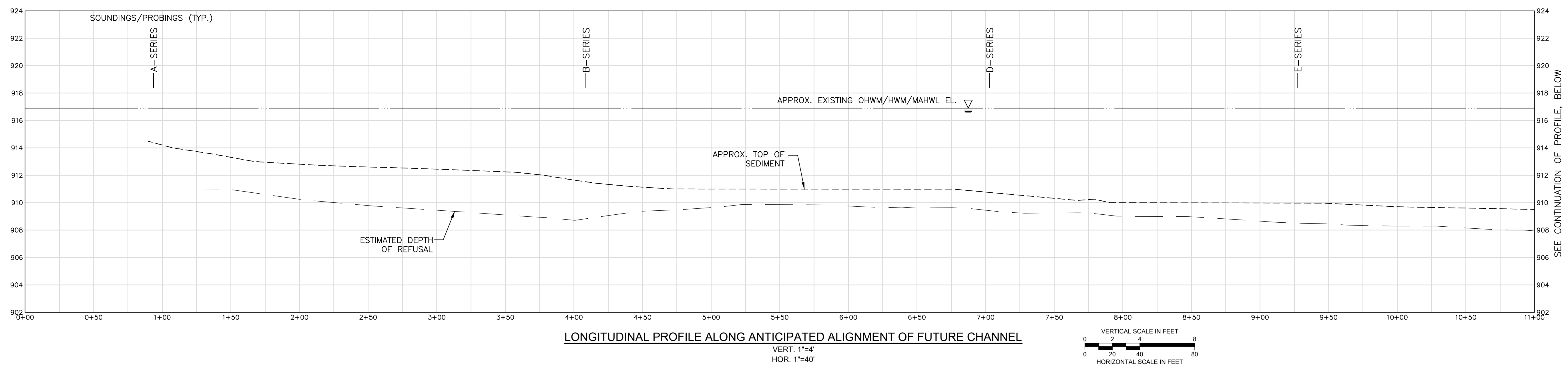
- NOTES:**
1. WORK AREA TO BE GRADED/STABILIZED AS NEEDED TO PERFORM WORK PER DRAWINGS AND SPECIFICATIONS.
 2. GRADES TO BE RESTORED AS SHOWN, STABILIZED AND LOAMED/SEEDED.
 3. CONTRACTOR TO INSTALL UPLAND SEDIMENT AND EROSION CONTROLS AT DOWNGRADIENT LIMIT OF WORK OUTSIDE OF EXPECTED STREAM AREAS (COMPOST FILTER TUBES, SILT FENCE).
 4. FOR CONTROL OF WATER NOTES, SEE DRAWING 2.

**PERMITTING PLANS
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BOWEN'S POND DAM DAM REMOVAL AND STREAM RESTORATION PROJECT WENDELL, MASSACHUSETTS					
DEMOLITION & SITE ACCESS, WATER CONTROL, AND SEDIMENT & EROSION CONTROL PLAN					
PREPARED BY:		GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: BOWEN'S POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452	
PROJ MGR:	JRB	REVIEWED BY:	CWC	CHECKED BY:	NLR
DESIGNED BY:	JRB	DRAWN BY:	EDM	SCALE:	AS NOTED
DATE:	FEBRUARY, 2024	PROJECT NO.:	15.0166724.09	REVISION NO.:	0
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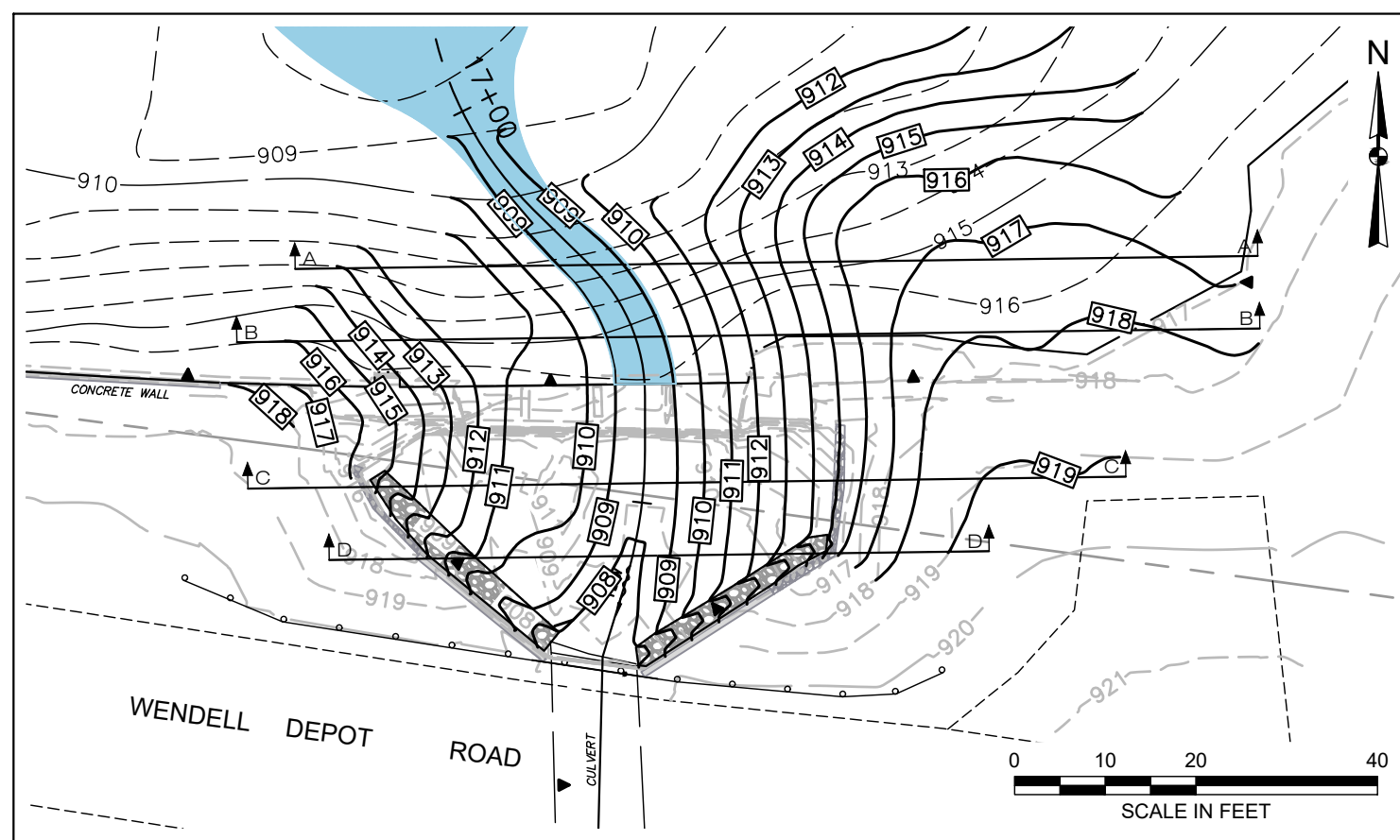
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**BOWEN'S POND DAM
 DAM REMOVAL AND STREAM RESTORATION PROJECT
 WENDELL, MASSACHUSETTS**

**PROPOSED CONDITIONS
 LONGITUDINAL PROFILE**

PREPARED BY:	GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR:	BOWEN'S POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452
PROJ MGR:	JRB	REVIEWED BY:	CWC
DESIGNED BY:	JRB	DRAWN BY:	EDM
DATE:	FEBRUARY, 2024	PROJECT NO.:	15.0166724.09
		CHECKED BY:	NLR
		SCALE:	AS NOTED
		REVISION NO.:	0
		DRAWING	6

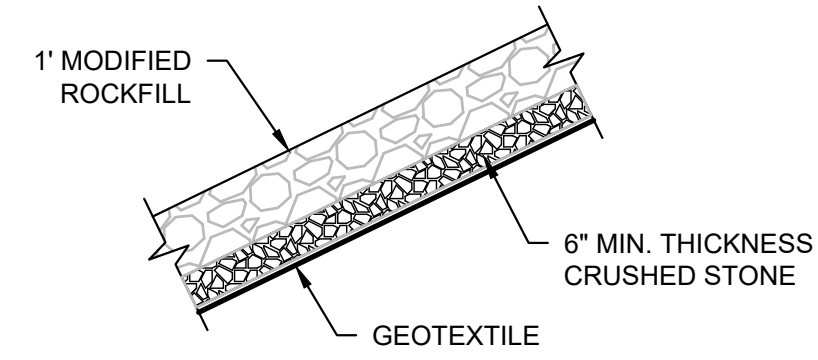
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PLAN VIEW
1"=20'

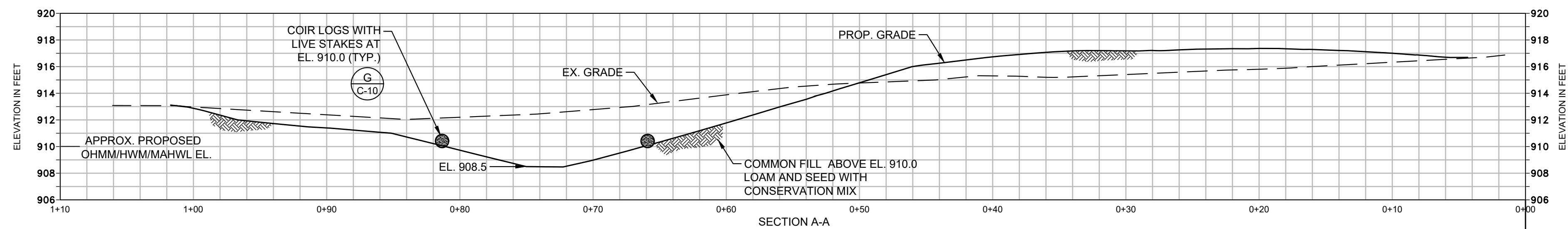
- LEGEND**
- EDGE OF WATER (PRIOR TO DAM REMOVAL)
 - - - APPROXIMATE LAND PARCEL BOUNDARIES (MASSGIS)
 - 919 ON-SHORE CONTOURS, 1-FT INTERVAL (FROM 2015 TOPO)
 - 920 ON-SHORE CONTOURS, 5-FT INTERVAL (FROM 2015 TOPO)
 - 909 ESTIMATED TOP OF SEDIMENT CONTOUR, 1-FT INTERVAL
 - 910 ESTIMATED TOP OF SEDIMENT CONTOUR, 5-FT INTERVAL
 - GUARDRAIL
 - PROPOSED CONTOUR
 - ▲ CROSS SECTION

NOTE: ALL SECTIONS FACING UPSTREAM

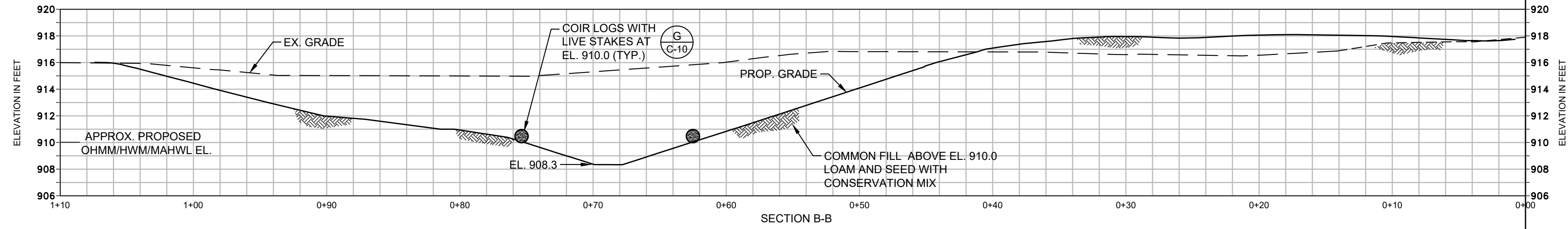


A
7
RIPRAP SWALE - GENERALIZED CROSS SECTION
NTS

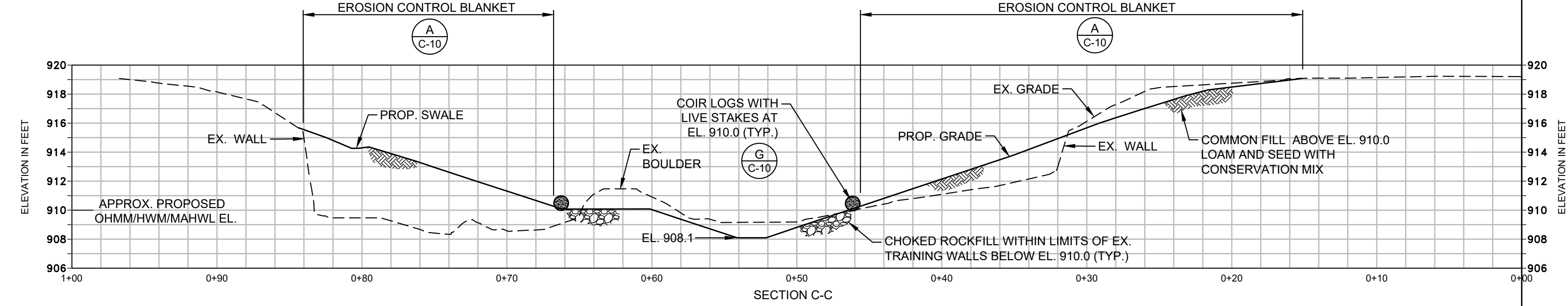
NOTES:
FABRIC AND CRUSHED STONE ARE NOT REQUIRED WHEN RIPRAP WILL BE SET ON BEDROCK. COORDINATE WITH ENGINEER.
RIPRAP SECTION CAN BE REDUCED TO MEET EXISTING GRADES IN COORDINATION WITH ENGINEER.



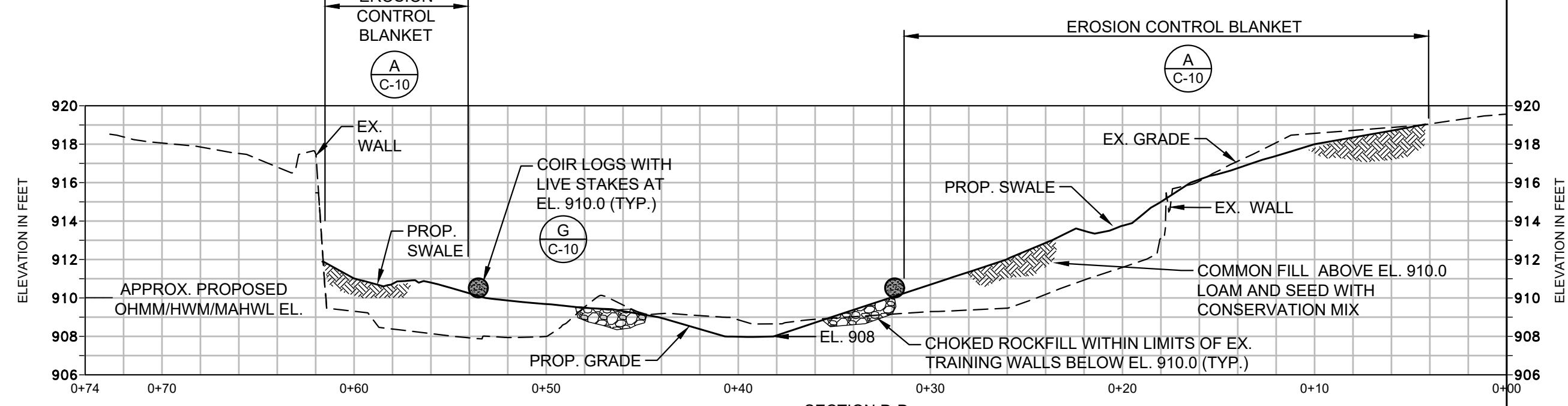
SECTION A-A



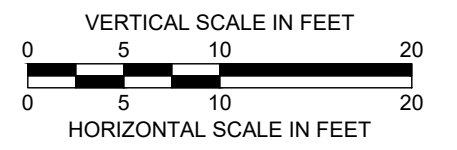
SECTION B-B



SECTION C-C



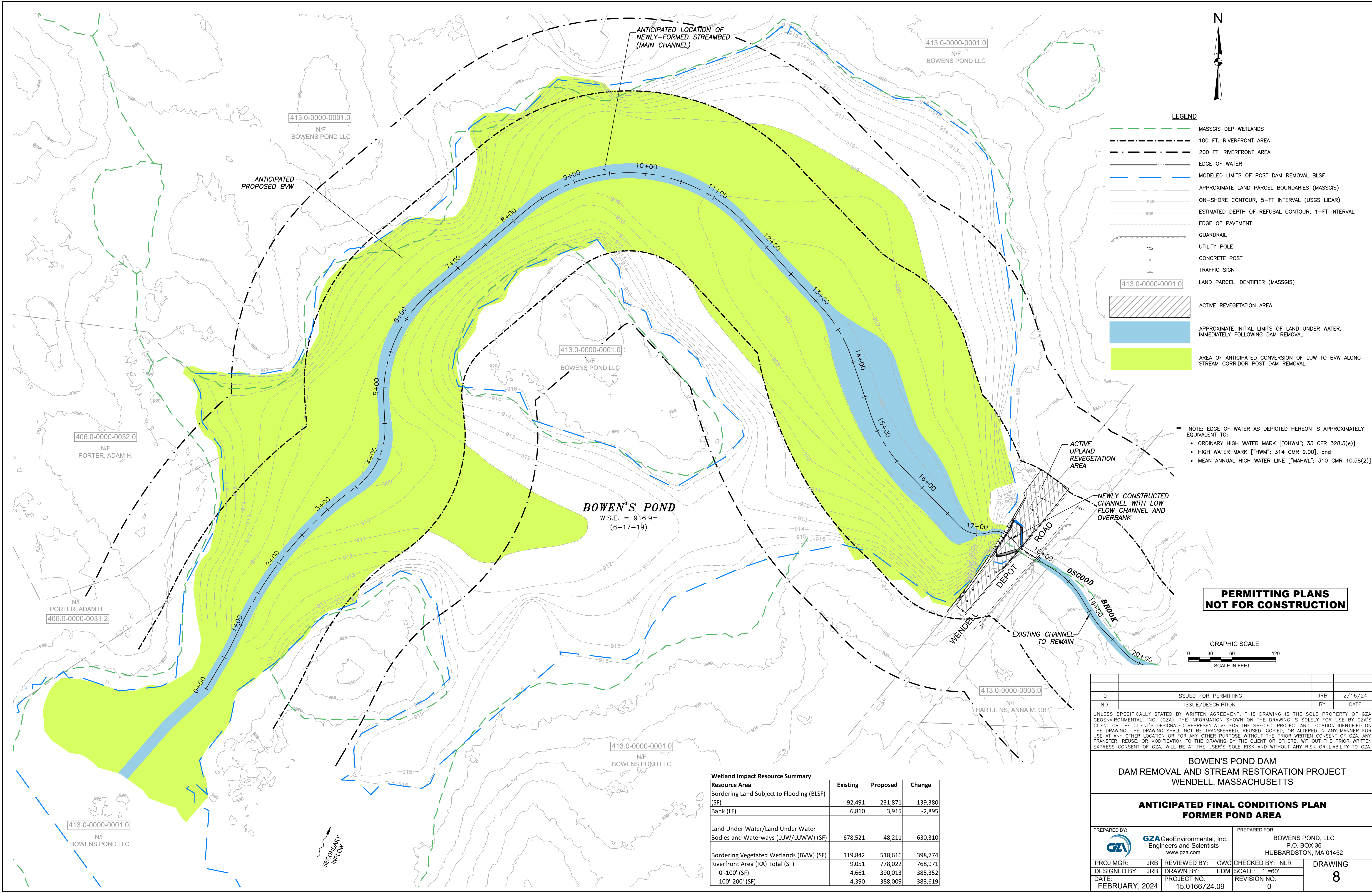
SECTIONS
1"=10'



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BOWEN'S POND DAM DAM REMOVAL AND STREAM RESTORATION PROJECT WENDELL, MASSACHUSETTS			
CHANNEL CROSS SECTIONS			
PREPARED BY:	GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR:	BOWEN'S POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452
PROJ MGR:	JRB	REVIEWED BY:	CWC
DESIGNED BY:	JRB	DRAWN BY:	EDM
DATE:	FEBRUARY, 2024	PROJECT NO.:	15.0166724.09
		CHECKED BY:	NLR
		SCALE:	AS NOTED
		REVISION NO.:	0
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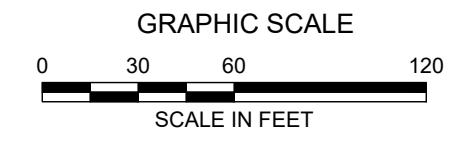
LEGEND

- MASSGIS DEP WETLANDS
- 100 FT. RIVERFRONT AREA
- 200 FT. RIVERFRONT AREA
- EDGE OF WATER
- MODELED LIMITS OF POST DAM REMOVAL BLSF
- APPROXIMATE LAND PARCEL BOUNDARIES (MASSGIS)
- ON-SHORE CONTOUR, 5-FT INTERVAL (USGS LIDAR)
- ESTIMATED DEPTH OF REFUSAL CONTOUR, 1-FT INTERVAL
- EDGE OF PAVEMENT
- GUARDRAIL
- UTILITY POLE
- CONCRETE POST
- TRAFFIC SIGN
- LAND PARCEL IDENTIFIER (MASSGIS)
- ACTIVE REVEGETATION AREA
- APPROXIMATE INITIAL LIMITS OF LAND UNDER WATER, IMMEDIATELY FOLLOWING DAM REMOVAL
- AREA OF ANTICIPATED CONVERSION OF LUW TO BWV ALONG STREAM CORRIDOR POST DAM REMOVAL

** NOTE: EDGE OF WATER AS DEPICTED HEREON IS APPROXIMATELY EQUIVALENT TO:

- ORDINARY HIGH WATER MARK ["OHWM"; 33 CFR 328.3(e)],
- HIGH WATER MARK ["HWM"; 314 CMR 9.00], and
- MEAN ANNUAL HIGH WATER LINE ["MAHWL"; 310 CMR 10.58(2)]

**PERMITTING PLANS
NOT FOR CONSTRUCTION**



Wetland Impact Resource Summary

Resource Area	Existing	Proposed	Change
Bordering Land Subject to Flooding (BLSF) (SF)	92,491	231,871	139,380
Bank (LF)	6,810	3,915	-2,895
Land Under Water/Land Under Water Bodies and Waterways (LUW/LUWW) (SF)	678,521	48,211	-630,310
Bordering Vegetated Wetlands (BVW) (SF)	119,842	518,616	398,774
Riverfront Area (RA) Total (SF)	9,051	778,022	768,971
0'-100' (SF)	4,661	390,013	385,352
100'-200' (SF)	4,390	388,009	383,619

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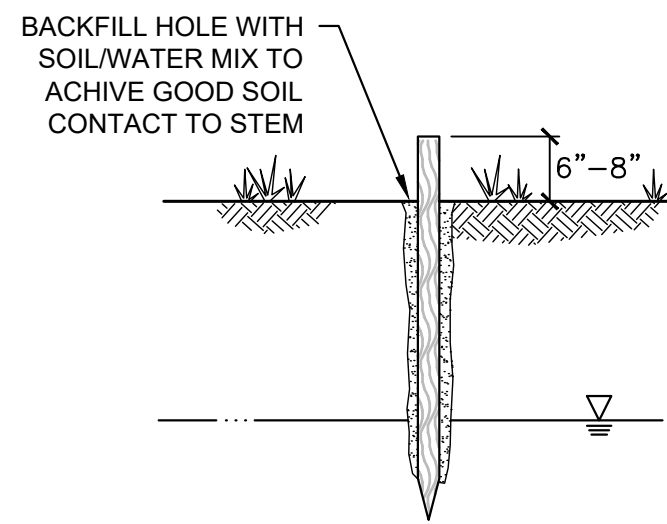
**BOWEN'S POND DAM
DAM REMOVAL AND STREAM RESTORATION PROJECT
WENDELL, MASSACHUSETTS**

**ANTICIPATED FINAL CONDITIONS PLAN
FORMER POND AREA**

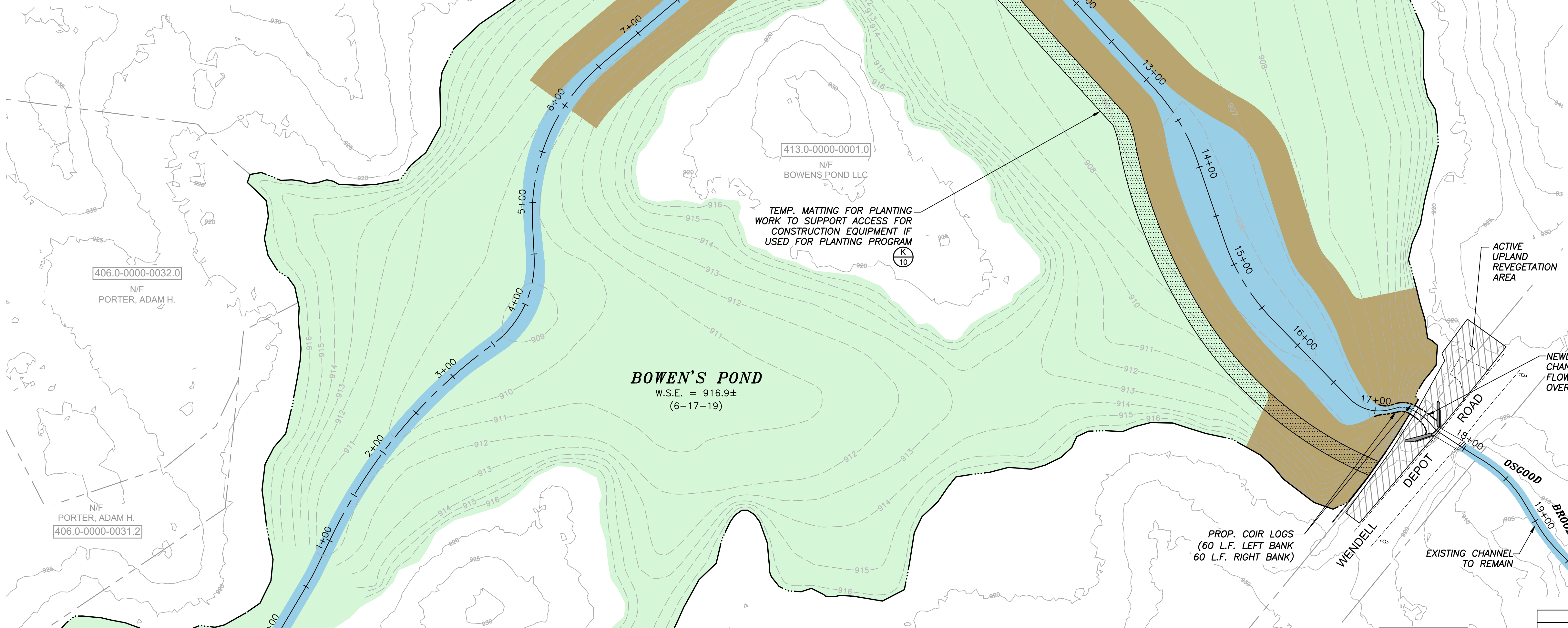
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: BOWEN'S POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452		
PROJ MGR: JRB	REVIEWED BY: CWC	CHECKED BY: NLR	DRAWING 8
DESIGNED BY: JRB	DRAWN BY: EDM	SCALE: 1"=60'	
DATE: FEBRUARY, 2024	PROJECT NO: 15.0166724.09	REVISION NO: 0	

LIVE STAKE INSTALLATION NOTES:

- DORMANT LIVE STAKES/POLES SHALL BE INSTALLED AT RANDOM INTERVALS IN TRIANGULAR ARRANGEMENTS WITHIN THE PFO AREAS AND ALONG TOP OF BANK, AT AN OVERALL MINIMUM DENSITY OF 200/ACRE. GROUPING/CLUMPING AND LOCATION SHALL BE IDENTIFIED IN THE FIELD WITH THE WETLAND SCIENTIST. DORMANT LIVE STAKES SHALL CONSIST OF A MIX OF SPECIES AS IDENTIFIED ON THE PLANTING PLAN. LIVE STAKES MUST BE NATIVE SPECIES FROM AN APPROVED REGIONAL WETLAND PLANTS NURSERY OR SUPPLIER AND IN ACCORDANCE WITH THE SPECIFICATIONS. LIVE STAKES MUST BE FROM AN AREA WITH SIMILAR SOIL, CLIMATE, AND LOCATION RELATIVE TO THE STREAM. THE MATERIAL SHALL BE AT LEAST TWO YEARS OLD AND FREE OF DISEASE, ROT, OR INSECT INFESTATION. MATERIAL SHALL BE HARVESTED WHILE DORMANT AND SOAKED FOR 1-14 DAYS PRIOR TO INSTALLATION.
- CONTRACTOR SHALL USE A STINGER, REBAR, OR OTHER APPROPRIATE TOOL TO ESTABLISH A PILOT HOLE FOR THE LIVE STAKES/POLES. THE HOLE SHALL BE PERPENDICULAR TO THE SURFACE/SLOPE AND SHALL REACH INTO THE SUBSOIL TO AN ADEQUATE DEPTH TO ENSURE SURVIVAL (BELOW WATER TABLE). THE HOLE SHALL BE A DIAMETER SUFFICIENT TO ACCOMMODATE THE LIVE STAKE/POLE STEM SURROUNDED BY SOIL MEDIUM TO ENCOURAGE ROOTING. THE LIVE STAKE/POLE SHALL BE OF SUFFICIENT LENGTH TO ALLOW FOR AT LEAST ONE TO TWO FEET MINIMUM TO BE EMBEDDED INTO THE SOIL/SUBSOIL.
- ALL STAKES/POLES TO BE PLANTED WITH THE POINTY END IN THE GROUND AND LEAF BUD SCARS OR EMERGING BUDS POINTING UP. REMOVE ANY SIDE BRANCHES PRIOR TO INSTALLATION. STAKES SHALL BE INSTALLED AT "SHORT HEIGHT" (6-8" MAX. ABOVE GRADE) TO DISCOURAGE BEAVER BROWSE.
- STAKES/POLES SHALL BE INSTALLED ON THE SAME DAY THEY ARE BROUGHT TO THE SITE. BEFORE INSTALLING, THE CONTRACTOR SHALL INSPECT THE STAKES AND NOT USE THOSE THAT HAVE BEGUN TO ROOT OR MOLD OR THAT APPEAR TO BE DRY OR LEAF OUT.
- THE CONTRACTOR SHALL NOT DAMAGE OR SPLIT THE LIVE STAKES DURING INSTALLATION. ANY STAKES THAT SPLIT DURING INSTALLATION SHALL BE REPLACED.
- LIVE STAKES SHALL BE INSTALLED AT THE TIME OF YEAR IDENTIFIED IN PROJECT PERMITS OR BY THE PROJECT WETLAND SCIENTIST.
- CONTRACTOR SHALL IRRIGATE STAKES TO MAINTAIN MOIST SOIL CONDITIONS FOR AT LEAST 6 WEEKS FOLLOWING PLANTING AND SHALL INSPECT, MAINTAIN, AND IRRIGATE PLANTINGS UNTIL SUCH TIME AS A UNIFORM GROWTH OF VEGETATION HAS BEEN ESTABLISHED AND ACCEPTED BY THE OWNER.



(A) LIVE STAKE DETAIL
NTS



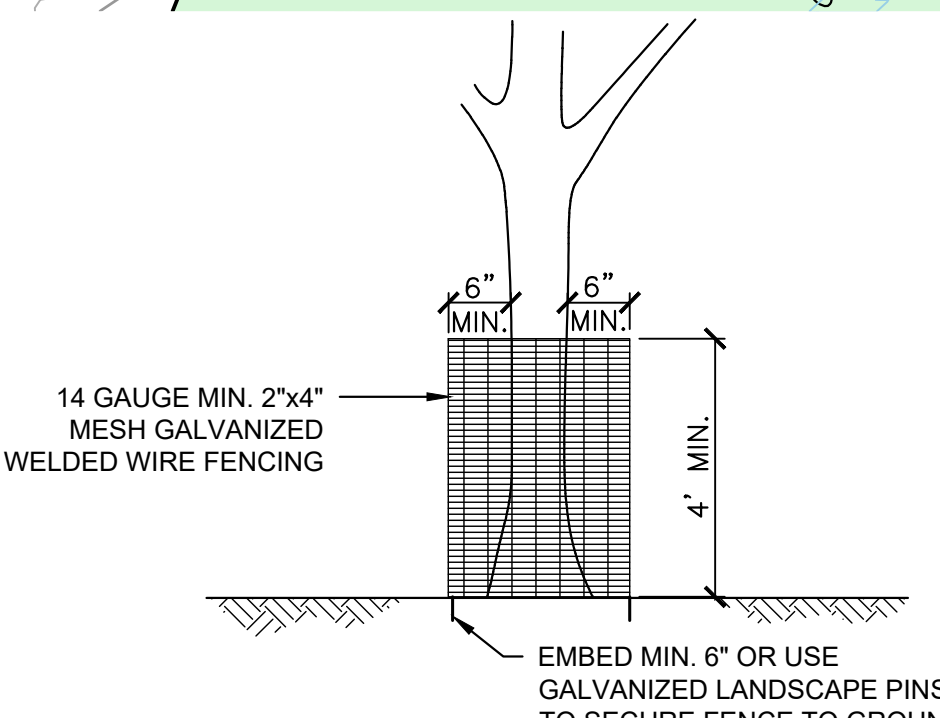
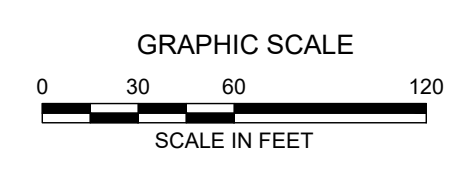
LEGEND

	EDGE OF WATER** (PRIOR TO DAM REMOVAL)
	APPROXIMATE LAND PARCEL BOUNDARIES (MASSGIS)
	ON-SHORE CONTOUR, 5-FT INTERVAL (USGS LIDAR)
	ESTIMATED DEPTH OF REFUSAL CONTOUR, 1-FT INTERVAL
	EDGE OF PAVEMENT
	GUARDRAIL
	UTILITY POLE
	CONCRETE POST
	TRAFFIC SIGN
	PROPOSED COIR LOG
	LAND PARCEL IDENTIFIER (MASSGIS)
	ACTIVE UPLAND REVEGETATION AREA
	APPROXIMATE INITIAL LIMITS OF LAND UNDER WATER, IMMEDIATELY FOLLOWING DAM REMOVAL
	LIMITS OF FORMER POND (AREA TO SELF-NATURALIZE, MONITOR FOR INVASIVES WITH SUPPLEMENTAL SEED IF NEEDED)
	LIMITS OF ACTIVE PLANTING AREA

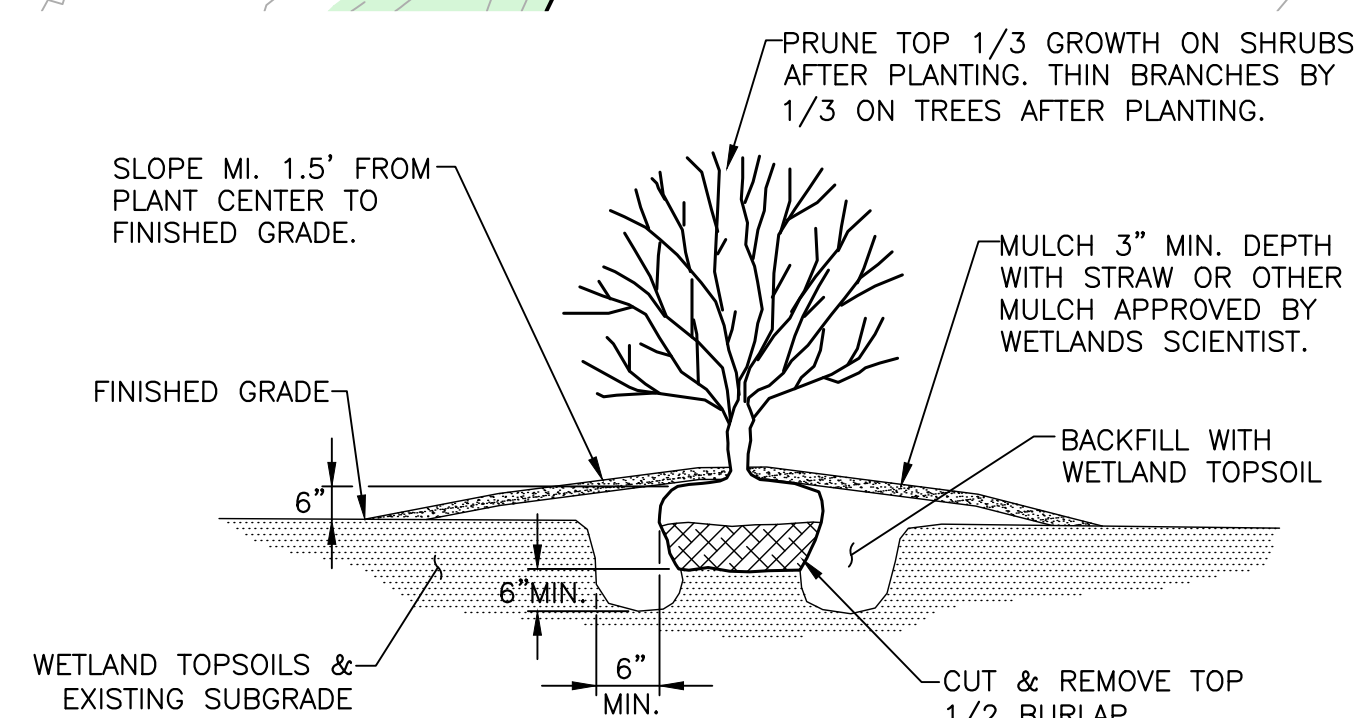
** NOTE: EDGE OF WATER AS DEPICTED HEREON IS APPROXIMATELY EQUIVALENT TO:

- ORDINARY HIGH WATER MARK ["OHWM"; 33 CFR 328.3(e)]
- HIGH WATER MARK ["HWM"; 314 CMR 9.00], AND
- MEAN ANNUAL HIGH WATER LINE ["MAHWL"; 310 CMR 10.58(2)]

PERMITTING PLANS NOT FOR CONSTRUCTION



(B) BEAVER BROWSE PROTECTION
(FOR 18" AND LARGER PLANTINGS)
NTS



(C) WETLAND SHRUB & TREE PLANTING DETAIL
NTS

PLANTING PLAN FOR ACTIVE PLANTING AREA

Common Name	Scientific Name	Type/size	Quantity
Red Maple	Acer rubrum	Cont./3-4 ft.	15
Swamp White Oak	Quercus alba	Cont./3-4 ft.	15
Pin Oak	Quercus palustris	Cont./3-4 ft.	15
Serviceberry	Amelanchier canadensis	Cont./2-3 ft.	15
Red Maple	Acer rubrum	Cont./18-24 in.	20
Swamp White Oak	Quercus alba	Cont./18-24 in.	20
Pin Oak	Quercus palustris	Cont./18-24 in.	20
Serviceberry	Amelanchier canadensis	Cont./18-24 in.	20
Black Willow	Salix nigra	Cont./18-24 in.	20
Red Maple	Acer rubrum	Live stake, cut to 6-8" above grade	150
Swamp White Oak	Quercus alba	Live stake, cut to 6-8" above grade	150
Pin Oak	Quercus palustris	Live stake, cut to 6-8" above grade	150
Serviceberry	Amelanchier canadensis	Live stake, cut to 6-8" above grade	150
Black Willow	Salix nigra	Live stake, cut to 6-8" above grade	150

- GROUPING/CLUMPING AND LAYOUT OF PLANTINGS TO BE IDENTIFIED AND MARKED IN FIELD WITH WETLAND SCIENTIST.
- TREE/SHRUB PLANTING SHALL FOLLOW THE PLANTING DETAIL ON THIS DRAWING.
- BEAVER BROWSE PROTECTION SHALL BE INSTALLED AS DESCRIBED IN PERMITTING DOCUMENTS AND IN SPECIFICATIONS.

0	ISSUED FOR PERMITTING	JRB	2/16/24
NO.	ISSUE/DESCRIPTION	BY	DATE

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**BOWEN'S POND DAM
DAM REMOVAL AND STREAM RESTORATION PROJECT
WENDELL, MASSACHUSETTS**

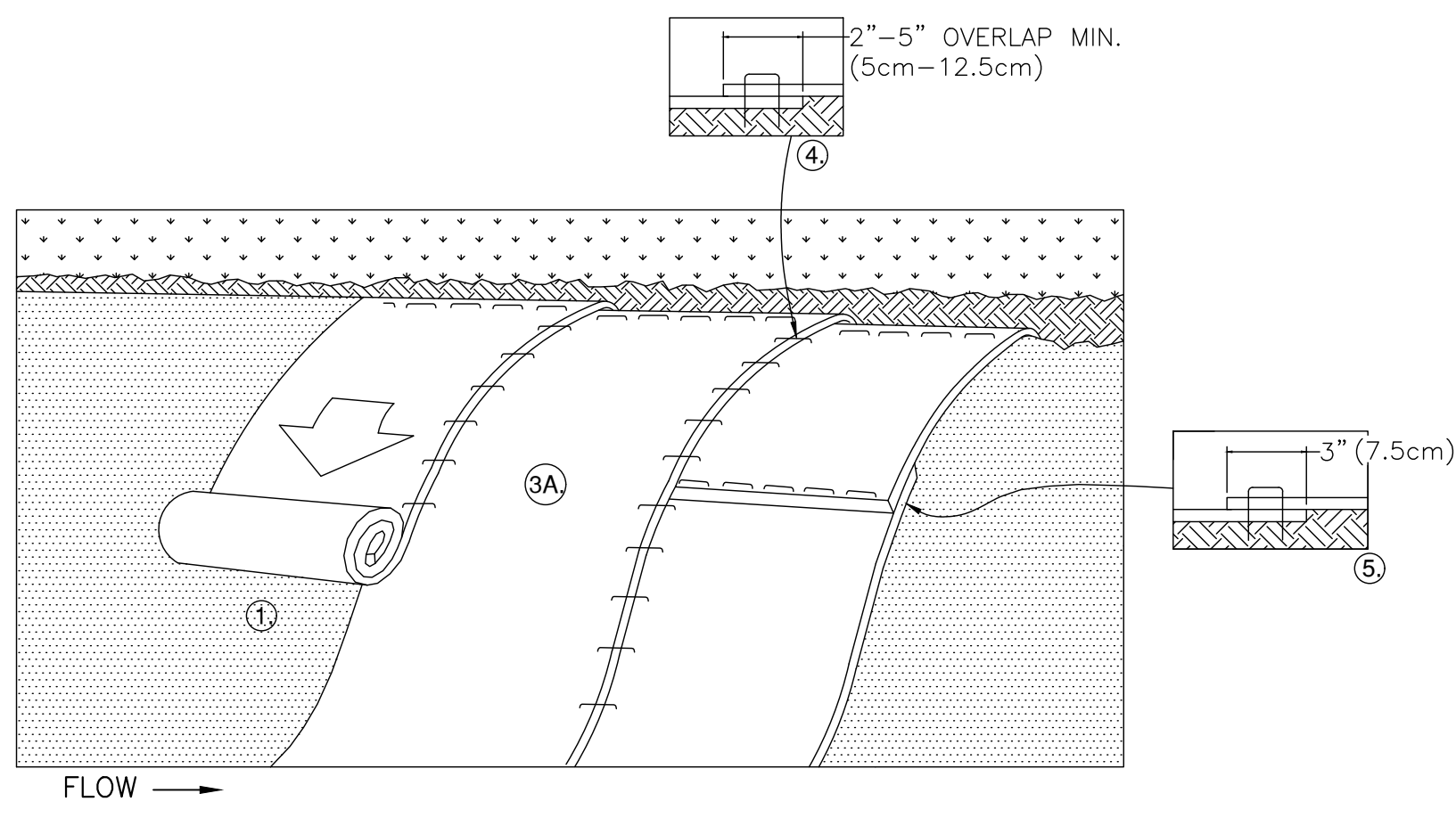
PLANTING PLAN

PREPARED BY:	GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR:	BOWEN'S POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452
PROJ MGR:	JRB	REVIEWED BY:	CWC
DESIGNED BY:	JRB	DRAWN BY:	EDM
DATE:	FEBRUARY, 2024	PROJECT NO.:	15.0166724.09
		SCALE:	1"=60'
		REVISION NO.:	0

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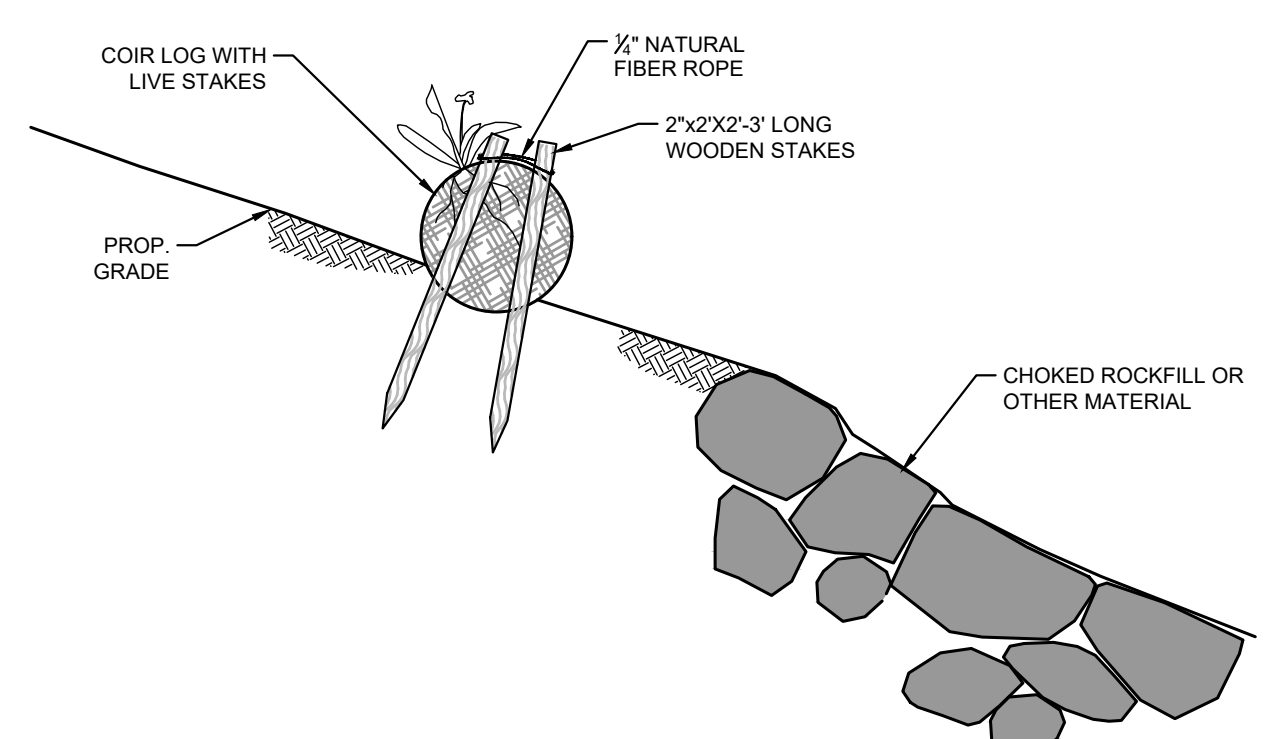
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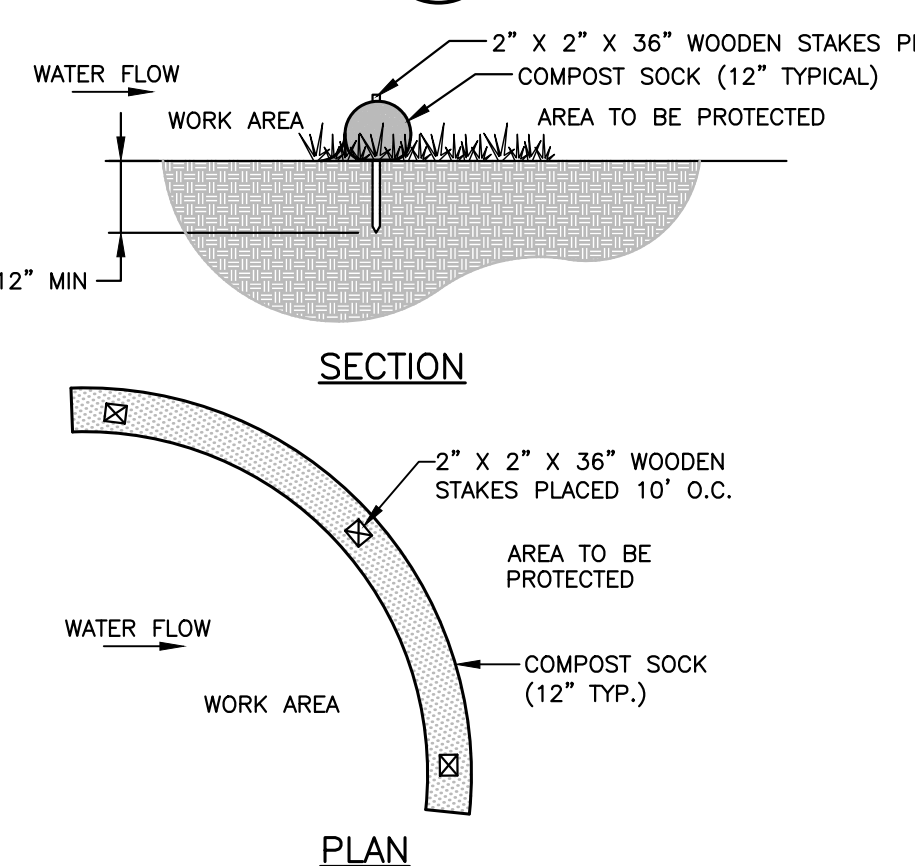


- NOTES:**
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCT (RECP) (I.E. TURF REINFORCEMENT MAT (TRM) AND EROSION CONTROL MATTING) INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 12" (30 CM) DEEP X 12" (30 CM) WIDE TRENCH WITH APPROXIMATELY 18" (45cm) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 18" (45 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
 3. ROLL THE RECP'S DOWN THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 4. RECP'S SHOULD BE INSTALLED DOWNSTREAM FIRST AND PROGRESS UPSTREAM SO PARALLEL EDGES OF RECP'S OVERLAP CREATING A SHINGLE-TYPE ARRANGEMENT (SO WATER MAY FLOW OVER THE MATERIAL WITHOUT UNDERMINING IT). THE EDGES OF OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
 5. CONSECUTIVE RECP'S SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH.
 6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
 7. AFTER TURF REINFORCEMENT MATTING HAS BEEN INSTALLED WORK AN ADDITIONAL THIN LAYER (3" TO 4") OF TOPSOIL INTO THE MATRIX FOLLOWED BY OVERSEEDING AND WATERING TO PROMOTE HEALTHY VEGETATIVE GROWTH.

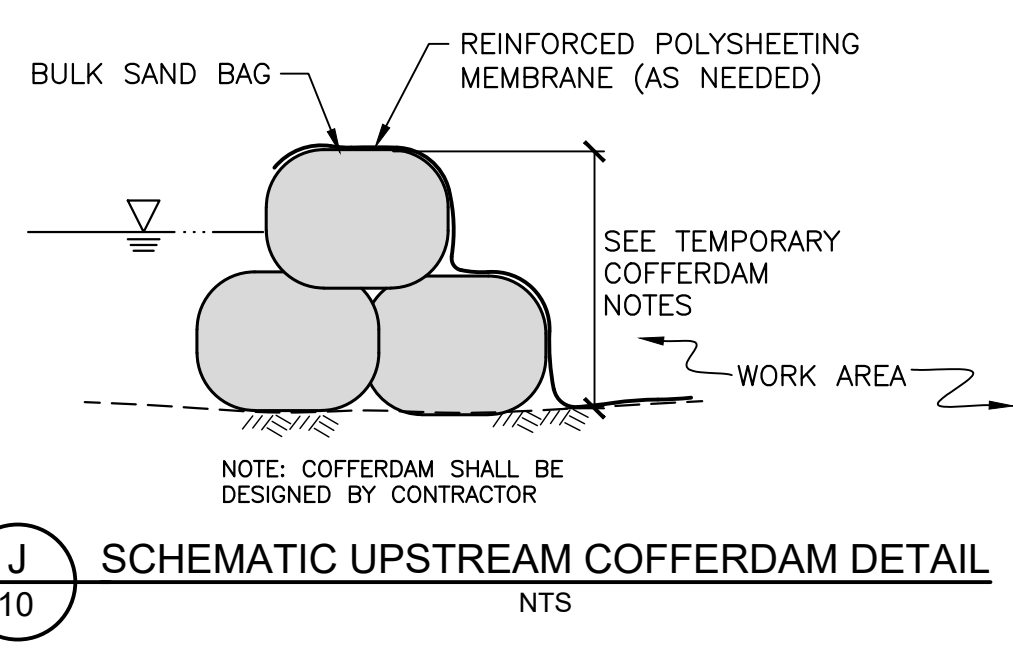
A ROLLED EROSION CONTROL PRODUCT SLOPE DETAIL
10 NTS



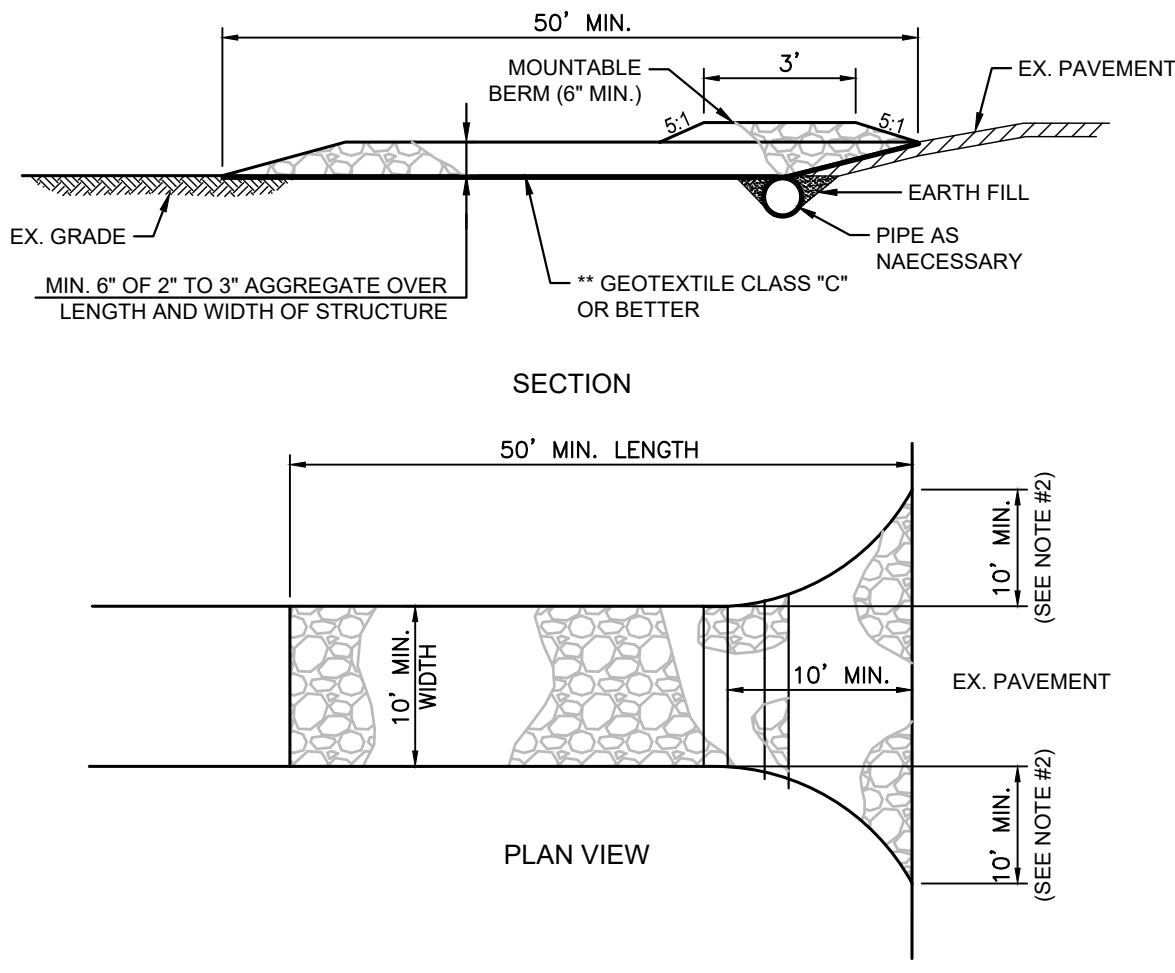
G COIR LOG WITH LIVE STAKES
10 NTS



H COMPOST FILTER TUBE
10 NTS

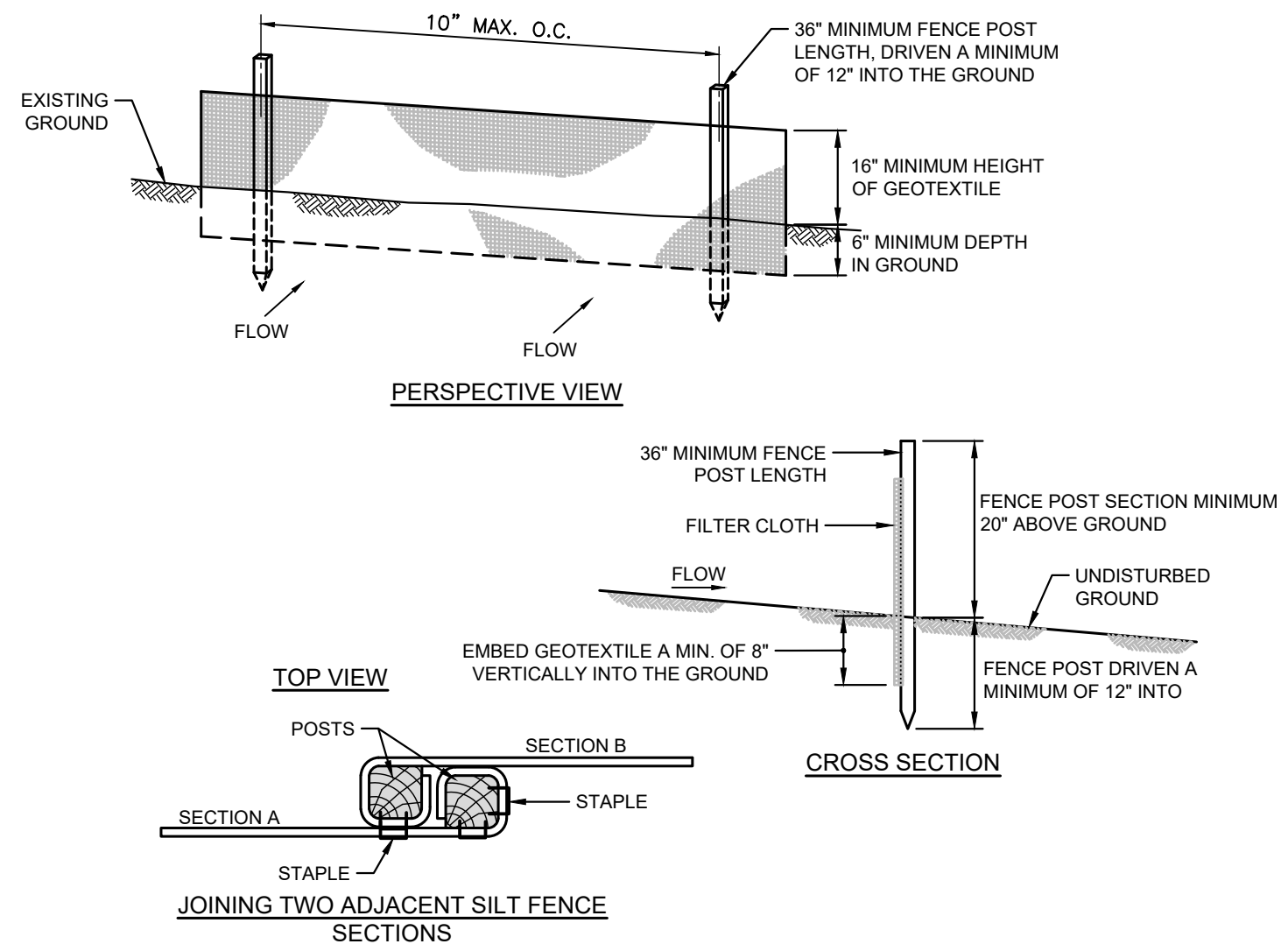


J SCHEMATIC UPSTREAM COFFERDAM DETAIL
10 NTS

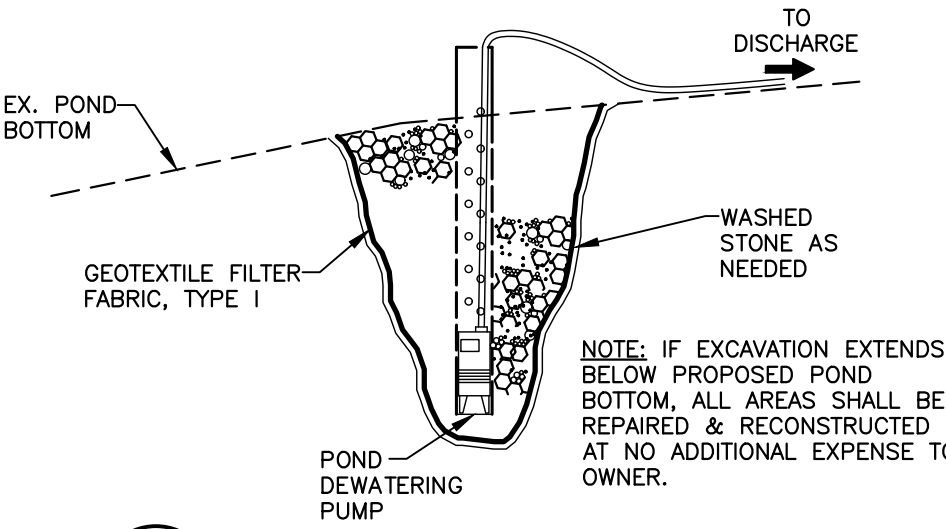


- STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS**
1. LENGTH - MINIMUM OF 50' (30' FOR SINGLE RESIDENCE LOT).
 2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
 3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
 4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
 5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM DIAMETER PIPE WILL BE REQUIRED.
 6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

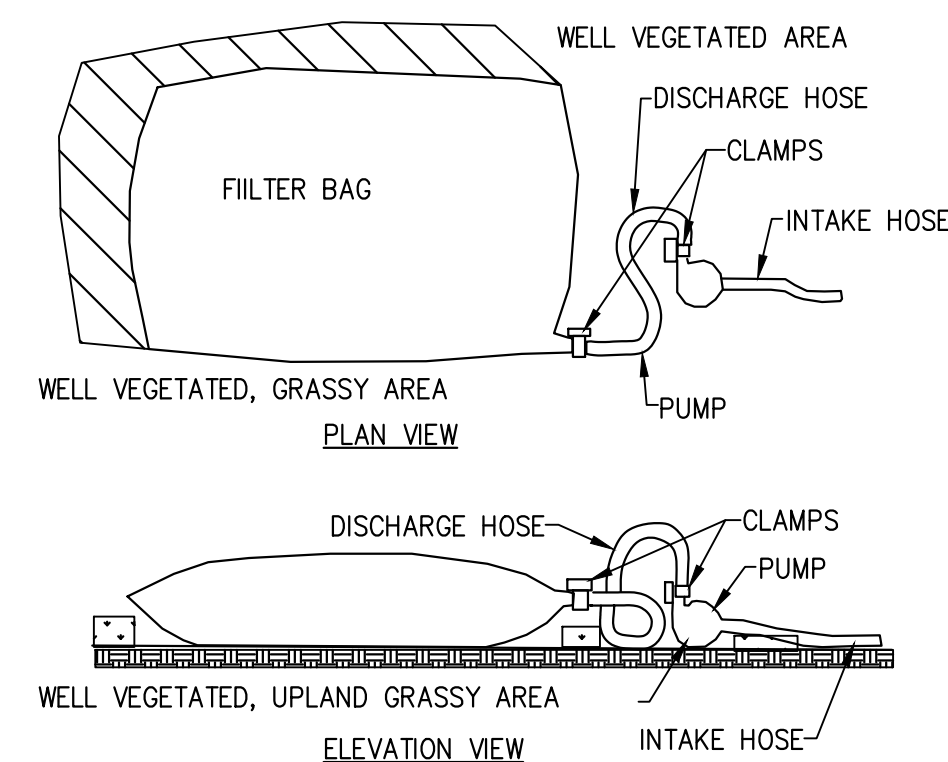
B STABILIZED CONSTRUCTION ENTRANCE
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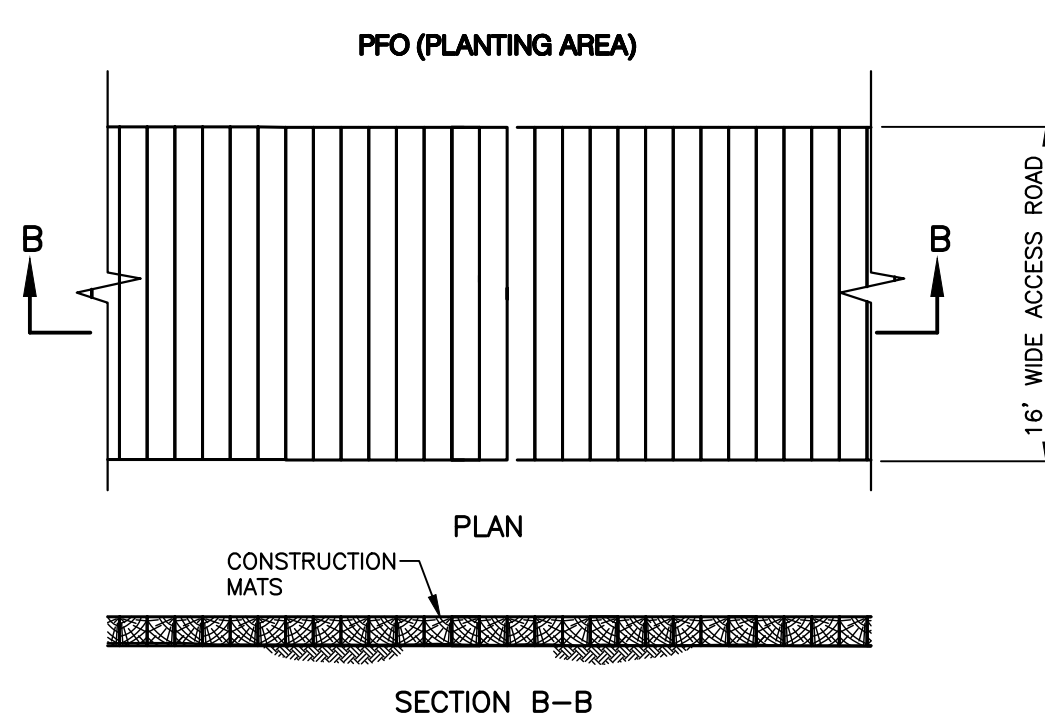
C TEMPORARY EROSION & SEDIMENT CONTROL - SILT FENCE DETAIL
10 NTS



F DEWATERING SUMP CONCEPT
10 NTS



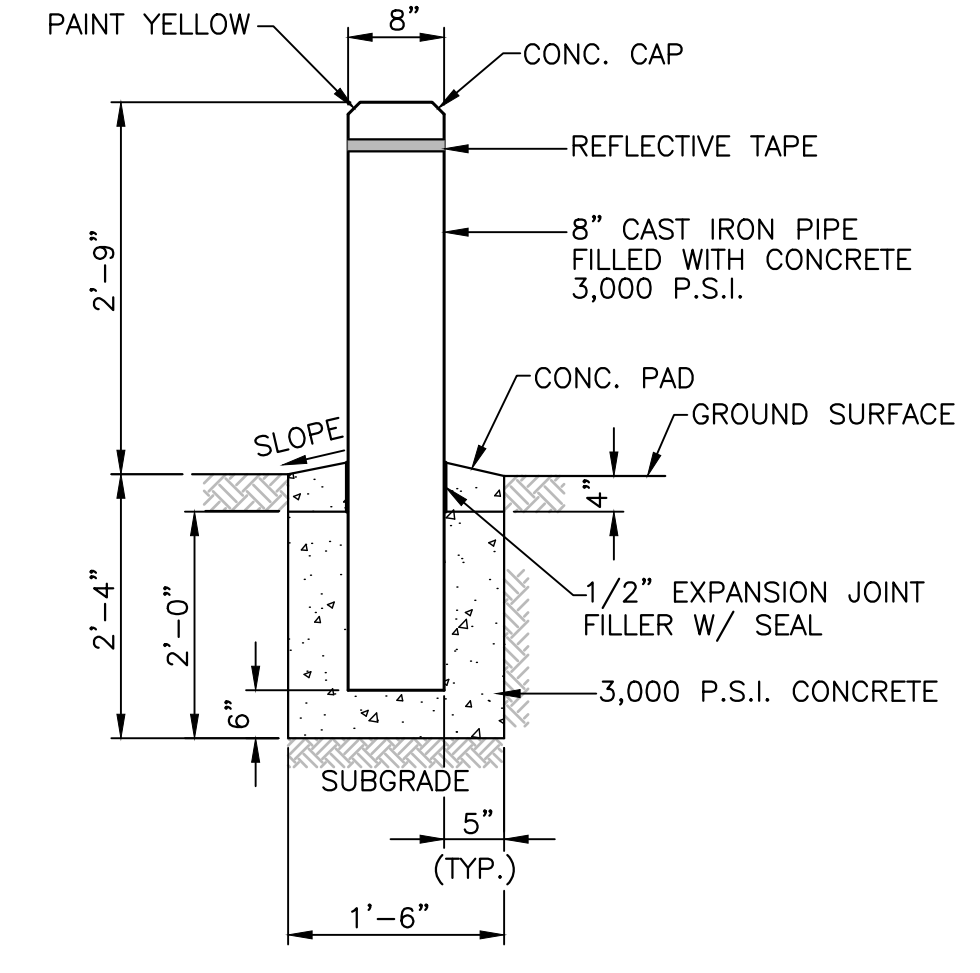
E PUMPED WATER FILTER BAG
10 NTS



K TEMPORARY ACCESS FOR PLANTING
10 NTS

(FINAL DIMENSIONS SHALL BE BASED ON ACTUAL FIELD CONDITIONS)

- CONSTRUCTION MAT NOTES:**
1. TIMBER MATS SHALL BE USED FOR THE TEMPORARY CONSTRUCTION ACCESS WERE SHOWN ON THE PLANS.
 2. TIMBER MATS DIMENSIONS AND MATERIAL REQUIREMENTS SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS BASED ON THE CONTRACTOR'S INTENDED EQUIPMENT LOADING AND THE MINIMUM REQUIREMENTS SHOWN ON THE DRAWINGS.
 3. AT SWALE/STREAM CROSSINGS, THE TIMBER MATS SHALL BE INSTALLED PERPENDICULAR AT SWALE/STREAM. THE TIMBER MATS SHALL EXTEND PAST THE EDGE OF THE SWALE/STREAM A SUFFICIENT DISTANCE TO ADEQUATELY SUPPORT THE MAT UNDER THE ANTICIPATED EQUIPMENT LOADING.
 4. ALL TIMBER MATS SHALL BE COMPLETELY REMOVED FROM THE SITE AS PART OF THE SITE RESTORATION ACTIVITIES.



NOTE: BOLLARDS TO BE INSTALLED AFTER ALL ACCESS IS COMPLETE, INCLUDING TEMPORARY MITIGATION PLANTING. CONTRACTOR TO PROVIDE TEMPORARY ACCESS CONTROLS UNTIL PERMANENT BARRIERS INSTALLED.

D PIPE BOLLARD DETAIL
10 NTS

- NOTES:**
1. CONTRACTOR SHALL LOCATE FILTER BAG TO COMPLY WITH REQUIREMENTS BELOW. LOCATION IS SUBJECT TO APPROVAL BY OWNER'S CONSULTANT AND SHALL BE IN ACCORDANCE WITH ALL PERMITS AND REGULATIONS.
 2. FILTER BAGS SHALL BE USED TO FILTER WATER PUMPED FROM DISTURBED AREAS PRIOR TO DISCHARGING TO WATERS OF THE COMMONWEALTH.
 3. FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. CONTRACTOR SHALL PROVIDE A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY (FOR DISPOSAL PURPOSES).
 4. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL.
 5. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
 6. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) UPLAND AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%.
 7. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
 8. THE PUMPING RATE SHALL BE NO GREATER THAN 100 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
 9. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

**PERMITTING PLANS
NOT FOR CONSTRUCTION**

NO.	ISSUE/DESCRIPTION	BY	DATE
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**BOWEN'S POND DAM
DAM REMOVAL AND STREAM RESTORATION PROJECT
WENDELL, MASSACHUSETTS**

MISCELLANEOUS NOTES AND DETAILS

PREPARED BY:	GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR:	BOWEN'S POND, LLC P.O. BOX 36 HUBBARDSTON, MA 01452
PROJ MGR:	JRB	REVIEWED BY:	CWC
DESIGNED BY:	JRB	DRAWN BY:	EDM
DATE:	FEBRUARY, 2024	PROJECT NO.:	15.0166724.09
		SCALE:	AS NOTED
		REVISION NO.:	0

**DRAWING
10**