



Arlington Conservation Commission

Date: Thursday, February 6, 2020

Time: 7:30 PM

Location: Town Hall Annex, Second Floor Conference Room

Agenda

1. Administrative
 - a. Review draft 01/16/2020 minutes
 - b. Review MACC Annual Conference workshop offerings. The conference is scheduled for Saturday, 02/29/2020.
2. Updates
 - a. Updates on project statuses
 - b. Updates on committees and working groups, including: Water Bodies, Open Space, Reservoir, Spy Pond, Community Preservation Act Committee, Zoning Bylaw, Public Lands Maintenance, Land Stewards
3. Hearings

Request for Determination of Applicability

7:45pm- **Arlington High School, 869 Massachusetts Ave**

8:00pm **Arlington File Number RDA #A20.1**

Public hearing for a Request for Determination filed by the Town of Arlington for Phase 1 of the Arlington High School project which falls within the 100-foot Wetlands Buffer of Mill Brook and includes the relocation of the existing drainage system.

Arlington's Great Meadows Restoration Project

8:00pm- Discussion to determine if and how the Commission will collaborate with the Friends of

8:15pm Arlington's Great Meadows (FoAGM) on a meadow restoration project in the Entry Meadow section of AGM, near the Emerson Gardens Road entrance.

Prioritize Commission Goals Established at the 01/02/2020 Meeting

8:15pm- Discussion to determine and prioritize actionable goals for the general goals the

8:30pm Commission set for 2020 during its 01/02/2020 meeting.

Arlington Regulations for Wetlands Protection Update

8:30pm-9:00pm Discuss and draft updates to Section 25: Adjacent Upland Resource Area.

9:00pm-9:30pm Discuss and draft section for Administrative Review Permits.



Town of Arlington, Massachusetts

Review draft 01/16/2020 minutes

Summary:

Review draft 01/16/2020 minutes

ATTACHMENTS:

Type	File Name	Description
▢ Minutes	DRAFT_01162020_Minutes_Conservation_Commission.pdf	Draft 01162020 Minutes



Arlington Conservation Commission

Date: January 16, 2020

Time: 7:30pm

Location: Second floor conference room, Town Hall Annex
730 Massachusetts Ave, Arlington, MA

Minutes

Attendance: *Commission Members Susan Chapnick (Chair), Pam Heidell, Dave Kaplan, Mike Nonni, Nathaniel Stevens, Chuck Tirone (Vice Chair), and David White; Associate Commissioners Cathy Garnett and Mike Gildesgame; and Conservation Agent Emily Sullivan.*

12/19/2019 and 01/02/2020 Meeting Minutes

The Commission discussed edits to the draft 12/19/2019 minutes. N. Stevens motioned to approve the minutes as edited, D. White seconded, all were in favor, motion approved.

The Commission discussed edits to the draft 01/02/2019 minutes. N. Stevens motioned to approve the minutes as edited, D. White seconded, all were in favor, motion approved.

General Updates

S. Chapnick announced that Kathy Baskin from MassDEP said that later in 2020 MassDEP will be proposing updates to the Wetlands Protection Act to consider climate change resilience.

E. Sullivan stated that MassDEP is planning to update its Stormwater Handbook, which is currently inconsistent with the EPA's Municipal Separate Storm Sewer System (MS4) permit. MassDEP is developing a working group with a variety of stakeholders for this update.

M. Nonni announced that he was not seeking reappointment to the Commission and that this meeting was his last meeting as a Commissioner. The Commission thanked M. Nonni for his six years of being a Commissioner and for his service to the Town. The Commission expressed that it particularly appreciated his knowledge of landscape architecture and vegetation.

Community Preservation Act Committee

P. Heidell updated the Commission on the timeline for all FY2021 CPA applications. Applicants will present the project proposals to the Committee on 1/30/2020 and 2/5/2020.

Zoning Bylaw Working Group

P. Heidell stated that the Zoning Bylaw Working Group's next meeting is 1/22/2020.

Water Bodies Working Group

D. White updated the Commission on the Water Bodies Working Group (WBWG) meeting that occurred on 01/16/2020. During the meeting, the Working Group discussed: the FY2021 funding allocation for various projects and treatments and the Reservoir Management Survey/Report request for quotes (RFQ). The WBWG requested that Commissioners provide feedback on the draft RFQ and the WBWG's draft annual report.

N. Stevens motioned to submit a Warrant Article to Town Counsel for the appropriation of FY2021 funding to the Water Bodies Fund, D. White seconded, all were in favor, motion approved.

Proposed Wetlands Protection Act Amendments Discussion

The Commission reviewed and discussed the draft letter N. Stevens and E. Sullivan prepared on behalf of the Commission to the MassDEP in regard to the proposed amendments to the Wetlands Protection Act (WPA). The proposed amendments include updates to the following sections: 10.04, 10.05(3)(b), 10.05(4)(a), 10.05(6)(e), and 10.55(2)(c).

N. Stevens motioned to approve the draft letter as edited and submit to MassDEP, M. Nonni seconded, all were in favor, motion approved.

Arlington Wetlands Protection Regulations Revision Discussion

The Commission reviewed and discussed draft revisions to Section 25: Adjacent Upland Resource Area submitted by P. Heidell and N. Stevens. The Commission discussed whether proposed projects on disturbed parcels should have different standards than proposed projects on undisturbed parcels. Commissioners S. Chapnick, M. Nonni, N. Stevens, D. White, and P. Heidell stated that disturbed and undisturbed parcels should have different standards so that the standards for undisturbed parcels are stricter. Commissioners C. Tirone, C. Garnett, and M. Gildesgame stated that disturbed and undisturbed parcels should have the same standards.

The Commission decided that updates to Section 25: Adjacent Upland Resource Area and New Section: Administrative Review will be discussed at the 02/06/2020 meeting.

Meeting adjourned at 9:40pm.



Town of Arlington, Massachusetts

MACC Annual Conference

Summary:

Review MACC Annual Conference workshop offerings. The conference is scheduled for Saturday, 02/29/2020.

ATTACHMENTS:

	Type	File Name	Description
▢	Reference Material	MACC_2020_Annual_Conference_Workshops.pdf	MACC Annual Conference 2020 Workshops



**Annual Environmental Conference 2020
Workshop Descriptions
and
Fundamentals for Conservation Commissioners Units Content**

**Workshop Series A
9:45 a.m.—11:00 a.m.**

1. Addressing Climate-Related Threats to Species and Ecosystems

While climate adaptation utilizes many of the same conservation tools and approaches we have been using for years, it differs in that it is targeted to address specific climate-related threats. This workshop will discuss the need for local conservation efforts that focus on climate related threats to species and ecosystems. Conservation commissions and conservation organizations must be proactive about the need to protect species and ecosystems and ensure that local and regional climate adaptation plans do not focus exclusively on infrastructure, economic assets, and human health and safety.

Speaker: Scott Jackson, Extension Associate Professor, UMass Amherst; Conservation Commissioner, Town of Whately; MACC Director
Toni Lyn Morelli, USGS Research Ecologist, DOI Northeast Climate Adaptation Science Center; Adjunct Assistant Professor, Department of Environmental Conservation, UMass Amherst
Moderator: Cynthia O'Connell, RLA, ASLA, Manager, Stormwater Division of Dept. of Public Works, Town of Braintree; MACC Officer

2. Habits of Highly Effective Conservation Commissioners (1-10 original title confirmed)

An effective conservation commission gets its business done, works collegially to engage the strengths of each member, and is respected within its community. This interactive workshop is designed to help you identify and prioritize ways in which you can strengthen the work of your commission. We will address perennially challenging topics such as effective group decision-making, working with dominant and disengaged board members, setting expectations and engaging new members, rotating roles, and developing a proactive annual work plan. We will also talk about what to do when a commission member (or staff) is behaving badly. Depending on the topics brought by participants we may also touch on developing effective relationships between board and staff, strengthening relationships with other boards and departments (including appointing authorities), and managing agendas to shorten meetings. Participants will come away with practical suggestions for improving the effectiveness of their commissions' work.

Speakers: Kathleen (Kate) Connolly, Esq., Louison, Costello, Condon & Pfaff LLP; MACC Director
Jane Sears Pierce, Conservation Agent, Town of Foxborough
Moderator: TBD

3. MassDEP Wetlands and Waterways Permitting: Jurisdiction and More

This presentation will review the geographic areas subject to jurisdiction and activities subject to jurisdiction for state and federal wetlands and waterways regulations. The regulations to be covered include the Wetlands Protection Act, 401 Water Quality Certification, Section 404 of the Clean Water Act, Chapter 91, and the Massachusetts Environmental Policy Act (as it relates to Wetlands and Waterways).

Speakers: Andrew Poyant, PWS, Environmental Analyst and Circuit Rider, Southeastern Region, MassDEP Wetlands and Waterways Program
Maissoun Reda, Environmental Analyst, Southeast Region, MassDEP Wetlands and Waterways Program
Moderator: Margaret (Peg) Stolfa, Esq., Partner, Gordon Rees Scully Mansukhani LLP; MACC Director

4. Protecting Massachusetts Vernal Pools

Vernal pools are an important component of healthy ecosystems across the state, and they receive a host of legal protection under federal, state, and local wetland regulations. Their ecological functional values are at the root of why we protect them; and their variety, temporary nature, and fluctuations are at the root of much confusion over how we protect them. We will explore and explain both their function and best practices for their protection, including perspectives on local bylaws by a Commission administrator. This workshop will not focus on vernal pool documentation or official certification.

Speakers: Matthew R. Burne, Vernal Pool Association
Leo P. Kenney, Vernal Pool Association
Rebecca Longvall, Conservation Administrator, Town of Bolton
Moderator: Lana Spillman, Ph.D., former Conservation Administrator, Town of Topsfield; former Conservation Commissioner, Town of Boxford

5. Environmental Law 2020: Developments Commissions Need to Know

Commissioners and staff need to know recent legal changes in their powers and duties, procedures and standards, rights and remedies, and best practices. Otherwise, they are at a disadvantage to applicants, engineers, counsel, and even alleged violators appearing before them or appealing to DEP or court. This session will cover the past year of such legal developments in the laws and rules Commissions administer, MassDEP rulings, court decisions on the Wetlands Act and Home Rule, and constitutional law about enforcement.

Speakers: Gregor I. McGregor, Esq. Founder, McGregor & Legere, PC; MACC Director
Olympia A. Bowker, Esq., Associate, McGregor & Legere, PC
Moderator: Jennifer Steel, Chief Environmental Planner, City of Newton; MACC Director

6. Hands-on ID: Common Plants of Massachusetts Freshwater Wetlands

(DOUBLE SESSION—PLEASE SIGN UP FOR BOTH 6A and 6B)

This workshop will focus on the most frequently encountered trees, shrubs, vines and herbaceous plants of swamps, bogs, marshes, and other freshwater wetlands in Massachusetts. This two-block session will include both hands-on identification and PowerPoint presentations that will cover characteristics used in field identification and photos and descriptions of each plant. The classroom set-up will include both herbarium and live winter specimens. These and additional photos and field guides will help attendees recognize common freshwater wetland plants in the field using the most prominent features of each plant. This workshop is intended for beginners and may also serve as a refresher on basic wetland plant identification for others.

Speakers: Amy Ball, PWS, CWS, Senior Ecologist, Horsley Witten Group, Inc.; MACC Director
Karro Frost, Conservation Planning Botanist, Natural Heritage and Endangered Species, MA Division of Fish and Game
Moderator: Sally Zielinski, PhD, Botanist/Environmental Journalist/Artist; MACC Education Committee Member and former Executive Director

7. Green Infrastructure Goes Mainstream: Benefits and Applications (contacted 1/10)

This two-part workshop will include a presentation to update participants on the benefits, costs, design requirements, and applications of the latest advancements in Green Infrastructure practices. The second part of the workshop will include a hands-on interactive exercise, during which participants will have the opportunity to "green-up" a Boston Public School parking lot design with green infrastructure practices and report out on the pros and cons of different design options.

Speakers: Richard A. Claytor, Jr. P.E., President, Horsley Witten Group
Geoffrey Glover, Staff Engineer, Horsley Witten Group
Moderator: Marc Bergeron, PWS, CWS, Associate, Senior Wetland Scientist, Epsilon Associates, Inc.; MACC Director

8. Reducing Coastal Hazards with Nature-Based Infrastructure

In this presentation, conservation commissioners will learn about and engage in discussion of nature-based coastal infrastructure practices and an ongoing project to design, build, and monitor the performance of these projects in Massachusetts, Rhode Island, New Hampshire, Maine, and Connecticut. The presentation will begin with a brief overview of collaboration between the five coastal New England States to address coastal hazards, the regional context as it relates to climate change and sea level rise, and findings from "Living Shorelines in New England: State of the Practice (2017)." The presentation will highlight a range of project types—from marsh restoration to dune restoration to coastal bank stabilization—provide resources to assist in reviewing project proposals, and engage participants in a discussion about monitoring and maintenance of these practices.

Speakers: Eric Roberts, Coastal Resilience Specialist, The Nature Conservancy, Boston
Julia Knisel, Coastal Shoreline and Floodplain Manager, Massachusetts Office of Coastal Zone Management
Moderator: Nick Nelson, Fluvial Geomorphologist, Regional Director, Inter-Fluve, Inc.; MACC Director

Workshop Series B 11:15 a.m.—12:30 p.m.

(6B) Hands-on ID: Common Plants of Massachusetts Freshwater Wetlands

(DOUBLE SESSION—CONTINUED FROM 6A)

This workshop will focus on the most frequently encountered trees, shrubs, vines, and herbaceous plants of swamps, bogs, marshes, and other freshwater wetlands in Massachusetts. This two-block session will include both hands-on identification and PowerPoint presentations that will cover characteristics used in field identification and photos and descriptions of each plant. The classroom set-up will include both herbarium and live winter specimens. These and additional photos and field guides will help attendees recognize common freshwater wetland plants in the field using the most prominent features of each plant. This workshop is intended for beginners and may also serve as a refresher on basic wetland plant identification for others.

Speakers: Amy Ball, PWS, CWS, Senior Ecologist, Horsley Witten Group, Inc.; MACC Director
Karro Frost, Conservation Planning Botanist, Natural Heritage and Endangered Species, MA Division of Fish and Game
Moderator: Sally Zielinski, PhD, Botanist/Environmental Journalist/Artist; MACC Education Committee Member and former Executive Director

9. Nature's Value in a Changing Climate: Land for Resiliency

This workshop will provide an overview of the new, sixth edition of Mass Audubon's *Losing Ground* report on land development and conservation trends across the Commonwealth. *Losing Ground: Nature's Value in a Changing Climate* also summarizes data from the literature about the values of ecosystem services provided by forests, farmlands, inland and coastal wetlands, and urban green spaces, through the lens of climate mitigation and resiliency. The workshop will also present the EEA Resilient Lands Initiative and nature-based solutions in the Municipal Vulnerability Preparedness (MVP) Program. The workshop is relevant to the role of conservation commissions regarding open space conservation, land stewardship, and wetlands protection. It also provides information useful to conservation commissions more generally in their work with others in their community in relation to how open space and wetlands support climate change mitigation and resiliency, through local planning and land use regulations, and state grants to support that work.

Speakers: Heidi Ricci, Assistant Director of Advocacy, Mass Audubon; MACC Director
Kurt Gaertner, Director of Land Policy and Planning, Executive Office of Energy and
Environmental Affairs
Moderator: Lana Spillman, Ph.D., former Conservation Administrator, Town of Topsfield; former
Conservation Commissioner, Town of Boxford

10. Making the State House Work for You

Visits from constituents to legislators is a crucial strategy for advancing our conservation agenda. This session will empower members of conservation commissions to engage in the legislative process. Participants will learn about the life of a bill, the best opportunities to influence the process, and strategies and tactics to influence legislators to achieve goals for public funding and policy. Finally, there will be an interactive session in which participants will learn and practice crafting local stories into a compelling message. Skills participants will take away:

1. How to best engage with the legislature (process and timing)
2. How to prepare for and make the most of a meeting with a legislator
3. How to turn your local story into a compelling message
4. Advocacy strategies

Speakers: Emily Myron, Government Relations Specialist, The Nature Conservancy
Gabby Queenan, Policy Director, Massachusetts River Alliance
Moderator: TBD

11. Agricultural Exemptions and USDA NRCS Farm Conservation Plans

Understanding agricultural exemptions and the use of USDA NRCS Conservation Plans in permitting projects are important parts of working with agricultural producers in and around wetland resource areas. Most routine agricultural activities are exempt from the Wetlands Protection Act, however, for some activities the exemption is contingent on the farmer having, and following, an NRCS conservation plan. A USDA NRCS conservation plan is a voluntary/non-regulatory document that provides a farmer with an objective assessment of a farm's natural resources. In concert with a farmer's goals and objectives, NRCS presents alternatives (suites of conservation practices to treat resource concerns) to the farmer that will improve a farm's natural resource base. The farmer chooses the alternative that best fits their goals and objectives. The conservation plan then documents the natural resource assessment and the farmer's decisions. Learn about the agricultural exemption in the Wetlands Protection Act and the role that conservation plans play in that exemption

Speakers: Scott Jackson, Extension Associate Professor, UMass Amherst; Conservation Commissioner, Town
of Whately; MACC Director
Thomas Akin, Assistant State Conservationist, Field Operations and State Resource
Conservationist, USDA Natural Resources Conservation Service
Moderator: Janice Stone, PWS, Conservation Agent, Town of Hadley; MACC Director

12. Beavers and Bogs: Nature-based Vulnerability Preparedness and Effective Management

Massachusetts' MVP program offers numerous opportunities to use nature-based solutions to restore ecological communities and build resilience. We will demonstrate how a variety of municipal resiliency projects can be employed through MVP, including culvert and bridge assessments, and cranberry bog restoration, and an evidence-based process for beaver management. To amplify municipalities' efforts to effectively manage beavers, an analysis of the Billerica Municipal Beaver Management Program was recently published by the Association of Massachusetts Wetlands Scientists. We will present its findings comparing the cost effectiveness of water control devices versus trapping. We will also present an overview of effective beaver control methods, including their advantages and limitations.

Speakers: Michael Callahan, Owner, Beaver Solutions, LLC
Julianne Busa, PhD, Senior Environmental Scientist, Fuss & O'Neill
Josh Wilson, PWS, Senior Ecologist, Fuss & O'Neill
Moderator: Nick Nelson, Fluvial Geomorphologist, Regional Director, Inter-Fluve, Inc.; MACC Director

13. Beyond the Building Code: How Commissions Can Reduce Flood Risk

This presentation examines the role of conservation commissions in the permitting process with an eye to non-building types of floodplain development activities, and how local commissions help to implement the heart of the National Flood Insurance Program (NFIP) in their floodplains. The presentation demonstrates the nexus between buildings in the floodplain and all other types of development, and why local commissions are key to NFIP compliance.

Speakers: Joy Duperault, State Floodplain Manager, Massachusetts Department of Conservation and Recreation
Moderator: Cynthia O'Connell, RLA, ASLA, Manager, Stormwater Division of Dept. of Public Works, Town of Braintree; MACC Officer

14. Reviewing Wetland Replication Plans

Constructing successful replication sites, especially small sites, can be tricky; existing reports document that replicated wetlands often do not fully compensate for lost and/or degraded Interests of the WPA. However, we've also seen some replication sites do well in this regard. This workshop will provide guidance to conservation commissions and others on reading and understanding wetland replication plans, including notes, specifications and drawings, and in writing effective and enforceable conditions to yield successful replication projects.

Speakers: Michael Howard, PWS, CWS, Principal, Epsilon Associates, Inc.; MACC Officer
Matt Schweisberg, PWS, Principal, Wetlands Strategies and Solutions, LLC; MACC Officer
Moderator: Marc Bergeron, PWS, CWS, Associate, Senior Wetland Scientist, Epsilon Associates, Inc.; MACC Director

15. Conservation Applications of Unmanned Aerial Systems (aka Drones)

Take off and explore exciting conservation applications of remotely collecting data with small unmanned aerial systems (sUAS). Learn about the remote flying process and data collection methods with a live on-campus demonstration. Incorporating sUAS into workflows can produce excellent quality data previously unobtainable from traditional ground survey methods. Topics are to include a variety of conservation applications, coastal monitoring, video and imagery, orthophotography, 3D modeling, and FAA flying rules and regulations, all presented by commercially licensed remote pilots in the industry. Attend this workshop to discover the numerous possibilities of using sUAS data collection in the conservation setting.

Speakers: George Andrews, GISP, sUAS Pilot, BSC Group
Shaine Bonin, Survey Technician, sUAS Pilot, BSC Group
Matt Creighton, Senior Coastal Ecologist, BSC Group

1/28/20

Moderator: Lee Curtis, Vice President, BSC Group; MACC Director

Workshop Series C
1:45 p.m.—2:45 p.m.

16. Massachusetts Endangered Species Act Regulations Overview; Considerations for Habitat Management

Regulatory review and strategic conservation planning are complementary tools for protecting Massachusetts' spectacular biodiversity, from rare species to unique natural communities. Likewise, habitat management activities such as invasive species control or early successional habitat creation can work to enhance environments for rare species if certain protective measures are taken. This workshop will provide an overview of the MA Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program (NHESP), with special emphasis on the details of regulatory review under the Massachusetts Endangered Species Act (MESA, 321 CMR 10.00) and guidelines for permitting habitat management activities.

Speakers: Rebekah Zimmerer, Endangered Species Review Biologist, Natural Heritage and Endangered Species Program, MA Division of Fisheries and Wildlife
Chris Buelow, Senior Restoration Ecologist, Natural Heritage and Endangered Species Program, MA Division of Fisheries and Wildlife

Moderator: TBD

17. Municipal Procurement Law: An Overview

Conservation Commissions must follow Chapter 30B for the purchase of supplies and services such as the hiring of consultants. This presentation will include the fundamentals of Chapter 30B, procurement principles, contracting best practices and a discussion of how public records law and commission responsibilities interact with procurement law.

Speaker: Neil Cohen, Director, Regulatory and Compliance, MA Office of the Inspector General

Moderator: Margaret (Peg) Stolfa, Esq., Partner, Gordon Rees Scully Mansukhani LLP; MACC Director

18. Assessing Road and Stream Crossings

The North Atlantic Aquatic Connectivity Collaborative (NAACC) was formed to facilitate and coordinate road-stream crossing assessments in order to set priorities for culvert replacement projects that will restore aquatic connectivity in streams and rivers. The original NAACC assessment protocol evaluated the barrier effects of road crossings on non-tidal streams. The NAACC recently developed three additional crossing assessment modules: aquatic passability for tidal streams, passability for terrestrial wildlife, and assessment of culvert condition. Learn more about these assessment methodologies, the NAACC, and how you can get involved.

Speaker: Scott Jackson, Extension Associate Professor, UMass Amherst; Conservation Commissioner, Town of Whately; MACC Director

Moderator: Nick Nelson, Fluvial Geomorphologist, Regional Director, Inter-Fluve, Inc.; MACC Director

19. Alternatives Analysis in the Riverfront Area and Beyond

Alternatives analysis is a requirement for working in Riverfront Area that is often overlooked or misunderstood. Even when Riverfront Area is not involved, an alternatives analysis can also be a useful tool for evaluating potential impacts to other resource areas that helps both applicants and commissioners understand design decisions and better protect those resource areas. This presentation first focuses on how to scope and apply the alternatives analysis regulations for Riverfront Area for large- and small-scale projects as well as for standard and limited

projects. Example scenarios will be discussed. It then focuses on a broader use for this process and how an alternatives analysis can help applicants and commissioners streamline their decisions. Attendees will gain a deeper understanding of Riverfront Area regulation requirements and how alternatives analysis can be applied to protect other resource areas during the permitting process.

Speakers: Maria Firstenberg, Project Manager/Wetland Scientist, TRC Companies, Inc
Colin Duncan, Energy Program Manager, TRC Companies, Inc.
Moderator: Matt Schweisberg, PWS, Principal, Wetlands Strategies and Solutions, LLC; MACC
Officer

20. EPA Permit for Construction Site Erosion Control and the Commission's Role (all set 1/24)

This workshop will cover how the US EPA and Massachusetts conservation commissions can work together on construction sites. The EPA presenter will go over the EPA federal permit for construction site erosion control, including requirements for site operators, how operators apply, and how to verify permit coverage. EPA's informal and formal enforcement authorities and procedures will be covered. Participants will discuss, with examples, how conservation commissions' local on-the-ground knowledge and EPA's resources can together bring environmental improvement.

Speaker: Andrew Spejewski, Inspector/Enforcement Officer, US Environmental Protection Agency
Moderator: TBD

21. When You Need an Army Corps of Engineers Permit

This workshop will provide a discussion of the Corps jurisdiction and how it differs from the State's. It will also include some tips to assist conservation commissioners in knowing when to alert wetland permit applicants that they may need a permit from the Corps.

Speakers: Katelyn Rainville, Project Manager, US Army Corps of Engineers
Paul Sneeringer, Senior Project Manager, US Army Corps of Engineers
Moderator: Gregor I. McGregor, Esq. Founder, McGregor & Legere, PC; MACC Director

22. New England Landscape Futures Explorer: A Tool to Visualize and Plan

The New England Landscape Futures Explorer (NELF) Explorer is a scenario-based online land-use visualization and planning tool. The NELF Explorer can be used to understand development vulnerability, compare impacts of different development patterns (including a scenario with no new wetland development), and inform open space and recreation planning. This session will demonstrate the capabilities of the NELF Explorer and highlight uses relevant for conservation commissions using examples from across Massachusetts.

Speakers: Lucy Lee, Research Assistant, Harvard Forest, Harvard University
Danica Warns, Southeast Regional Coordinator, Shaping the Future of your Community Program, Mass Audubon
Moderator: Heidi Ricci, Assistant Director of Advocacy, Mass Audubon; MACC Director

Workshop Series D
3:00 p.m.—4:00 p.m.

23. Nature-based Solutions for Climate Resilience: Mapping, Planning, and MVP Implementation

This talk will explore how existing science for conservation and restoration prioritization can be leveraged into a framework for holistic climate resilience planning. Project examples demonstrating economic, social, and environmental benefits will be shared and explored. Examples of transitioning from planning to action grants through the Massachusetts Vulnerability Preparedness Program will also be discussed.

Speakers: Sara Burns, Water Resource Scientist, The Nature Conservancy, Massachusetts Chapter
Jessica Dietrich, GIS Manager, The Nature Conservancy, Massachusetts Chapter
Moderator: Nick Nelson, Fluvial Geomorphologist, Regional Director, Inter-Fluve, Inc.; MACC Director

24. Increasing Visibility and Awareness of your Conservation Commission

The conservation commission serves a critical role in the town, and yet the work of the commission often goes unseen. This lack of integration within the community limits essential learning opportunities for parents and youth and decreases opportunities for cross-collaborations with other volunteer-led programs working with common goals to support protected lands and wetland species. The presentation provides examples of cross-community collaborations that have brought about significant local change. It includes an invitation for commission members to amplify their work on the protected spaces and to facilitate conversations with parents and children on ways they can mobilize citizen efforts to preserve the quality and longevity of these critical areas.

Speakers: Kristin Capezio, Conservation Commissioner, Town of Norwood
Stephen Washburn, Chair, Conservation Commission, Town of Norwood
Moderator: Jennifer Steel, Chief Environmental Planner, City of Newton; MACC Director

25. Data Sources and Tools for Land Conservation

Over the past several years, there has been a proliferation of GIS data and online tools to inform conservation decision-making. Examples include Biomap2, CAPS, Critical Linkages, Nature's Network, TNC's Resilient and Connected Lands, MA Climate Action Tool, and Mass Audubon's MAPPR Tool. Many of these data layers/tools are interrelated. This workshop will review these datasets and tools, and provide background information about their development, intended uses and how they can complement one another.

Speaker: Scott Jackson, Extension Associate Professor, UMass Amherst; Conservation Commissioner, Town of Whately; MACC Director
Moderator: TBD

26. Wetland and Floodplain Considerations for FEMA Grant Applications

The Federal Emergency Management Agency's (FEMA's) mission is helping people before, during and after disasters. FEMA grants fund disaster recovery and mitigation measures for communities. The Mitigation Division's Environmental Planning and Historical Preservation (EHP) program staff reviews all grant projects for compliance with federal, state and local regulations. Recipient projects often involve coordination with US Army Corps of Engineers, state Coastal Zone Management agencies, and local conservation commissions in Massachusetts. The FEMA environmental and historic project review process will be described, as well as regulatory compliance documentation needed for EHP review and approval. Some common wetlands and floodplain regulatory compliance issues we experience will be discussed, and conversation with participants will be encouraged to identify options to improve the process.

Speaker: Linda Hutchins, PG, CFM, Environmental Protection Specialist, FEMA Region 1, Mitigation Division
Moderator: TBD

27. NPDES MS4 Permit: How are Municipalities Complying with Permit Requirements?

Complying with the EPA's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit is a challenge for many towns and cities. This presentation will provide an overview of the NPDES MS4 requirements focusing on what communities were required to have already completed, what communities need to complete in the next year, and what long-term requirements communities need to prepare for. This presentation will highlight some local strategies and regional initiatives, using case studies from Framingham and Palmer. At the end of this presentation, participants should have a better understanding of the MS4 stormwater permit requirements and have some strategies to successfully address these requirements that could be effective in their communities.

Speakers: Kerry Reed, Senior Stormwater and Environmental Engineer, Department of Public Works, City of Framingham; Conservation Commissioner, Town of Hopkinton
Angela Panaccione, Stormwater Coordinator and Conservation Agent, Town of Palmer
Moderator: Pamela D. Harvey, Esq., Conservation Commissioner, Town of Brookline; MACC Officer

28. Wildlife Considerations in Lake and Pond Management; Tools for Commissions

Lake and pond management is a common tool used for a variety of reasons including aquatic vegetation control and invasive species management. MassWildlife has a regulatory role in lake and pond management with regard to MESA species, but also makes recommendations to protect all fish and wildlife resources consistent with our mandate. MassWildlife has been involved in researching the relationship between fish and wildlife resources and certain management techniques. We have also developed tools that will help conservation commissions weigh the benefits and impacts of certain management techniques on target and non-target fish and wildlife resources. This workshop will help conservation commissions by providing guidance and tools to better implement the interests of the Wetlands Protection Act.

Speakers: Jason Carmignani, PhD, Aquatic Biologist, Mass Wildlife
Jason Stolarski, PhD, Watershed Project Leader, Mass Wildlife
Moderator: TBD

29. Using eDEP Online Filing for MassDEP Environmental Permits and Reports

eDEP Online Filing System allows you to submit environmental reports, certifications, data and permits to MassDEP. MassDEP staff will be available to assist you with questions about using eDEP forms, the program requirements, and general technical issues. Bring along your laptops and questions. Attendees will gain a better understanding of how to make eDEP work best for you.

Speakers: Kimberly Roth, Circuit Rider, Central Region, MassDEP; invited
Alice Smith, MEM, Wetlands and Waterways Program, MassDEP; invited
Moderator: TBD

Fundamentals for Conservation Commissioners

9:45 a.m. – 12:15 p.m.

Unit 105: Writing Effective Orders of Conditions

Content: Protecting Interests of the Act; Boilerplate and special conditions; denials and appeals; amendments and extensions; certificates of compliance

Instructor: Andrea D. Langhauser, Interim Planning Director/Environmental Planner, Town of Easton
Assistant: TBD

1/28/20

Unit 208: **Wetlands Buffer Zones: Considering the Science while Applying the Regulations**
Content: Current science on buffer zones; reviewing projects in buffer zones; decision making under the Wetlands Project Act Regulations; climate change and other considerations; writing wetland bylaws and ordinances, developing science and performance-based standards for buffer zones

Instructors: Gillian Davies, PWS, NHCWS, RSS, and CESSWI; Senior Ecological Scientist, BSC Group, Inc.,
Ingeborg Hegemann, CWS, PWS, Executive Vice President, BSC Group, Inc.
Assistant: TBD

Fundamentals for Conservation Commissioners

1:30 p.m. - 4:00 p.m.

Unit 103: **Plan Review and Site Visit Procedures**
Understanding and reading maps and engineered plans; overview of site visits—preparing for and conducting them

Instructors: Michael Howard, PWS, CWS, Principal, Epsilon Associates, Inc.; MACC Officer
Greg Hochmuth, RS, PWS, CWS, Environmental Consultant, Williams & Sparages LLC; MACC
Director
Assistant: TBD

Unit 201: **Getting Home Before Midnight: How to Run an Effective Meeting**
Content: Meeting preparation; participants and their interests; group dynamics; recordkeeping; Public Records Law; communication techniques

Instructor: Nathaniel Stevens, Esq., Senior Associate, McGregor & Legere, P.C.; Chair, Arlington Conservation
Commission
Assistant: TBD

Unit 202: **Protecting Wildlife Habitat**
Content: Presumption of significance regarding wildlife habitat; protecting habitat for rare wetlands
wildlife; protections for vernal pool habitat; understanding wildlife habitat evaluations;
determining if a project will have significant adverse impacts on wildlife habitat

Instructor: P. Chase Bernier, CWB, PWS, Natural Resources Program Manager, SWCA Environmental
Consultants
Assistant: David Cowell, PWS, CWB, CERP, Senior Wetland Scientist/Project Manager, Hancock Associates;
Conservation Commissioner, Town of Clinton



Town of Arlington, Massachusetts

Updates on project statuses

Summary:

Updates on project statuses



Town of Arlington, Massachusetts

Updates on committees and working groups, including: Water Bodies, Open Space, Reservoir, Spy Pond, Community Preservation Act Committee, Zoning Bylaw, Public Lands Maintenance, Land Stewards

Summary:

Updates on committees and working groups, including: Water Bodies, Open Space, Reservoir, Spy Pond, Community Preservation Act Committee, Zoning Bylaw, Public Lands Maintenance, Land Stewards



Town of Arlington, Massachusetts

Request for Determination of Applicability

Summary:

7:45pm- **Arlington High School, 869 Massachusetts Ave**

8:00pm **Arlington File Number RDA #A20.1**

Public hearing for a Request for Determination filed by the Town of Arlington for Phase 1 of the Arlington High School project which falls within the 100-foot Wetlands Buffer of Mill Brook and includes the relocation of the existing drainage system.

ATTACHMENTS:

Type	File Name	Description
Request for Determination of Applicability	AHS_Phase_1_Drainage_Relocation_RDA.pdf	AHS Phase 1 Drainage Relocation RDA Form 1
Request for Determination of Applicability	AHS_Phase_1_Drainage_Relocation_Climate_Change_Resilience_Narrative.pdf	AHS Phase 1 Drainage Relocation RDA Climate Change Resilience Narrative
Request for Determination of Applicability	AHS_Phase_1_Drainage_Relocation_Plans.pdf	AHS Phase 1 Drainage Relocation RDA Plans
Request for Determination of Applicability	AHS_Phase_1_Drainage_Relocation_Map_and_Photos.pdf	AHS Phase 1 Drainage Relocation RDA Maps and Photos



Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

Arlington

City/Town

WPA Form 1- Request for Determination of Applicability

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

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:

Adam Chapdelaine

Name

achapdelaine@town.arlington.ma.us

E-Mail Address

730 Mass. Ave. Annex

Mailing Address

Arlington

City/Town

MA

State

02476

Zip Code

781 316-3010

Phone Number

781 316-3019

Fax Number (if applicable)

2. Representative (if any):

Samiotes Consultants

Firm

Stephen Garvin, PE

Contact Name

sgarvin@samiotes.com

E-Mail Address

20 A Street

Mailing Address

Framingham

City/Town

MA

State

01701

Zip Code

508 877-6688 x 13

Phone Number

508 877-8349

Fax Number (if applicable)

B. Determinations

1. I request the Arlington make the following determination(s). Check any that apply:
Conservation Commission

- ☐ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.
- ☐ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.
- ☒ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.
- ☒ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Arlington

Name of Municipality

- ☐ e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).



Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

Arlington

City/Town

WPA Form 1- Request for Determination of Applicability

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

C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

869 Massachusetts Ave

Street Address

Arlington

City/Town

53-2-4

Assessors Map/Plat Number

Parcel/Lot Number

- b. Area Description (use additional paper, if necessary):

The project site is a 26.97-acre, Town of Arlington-owned lot located at 869 Massachusetts Avenue. It includes a Public High School, athletic fields, landscaped and parking areas. The eastern portion and western property boundaries consist of areas of wetlands, flood plain and Mill Brook. The lot slopes generally west to east.

- c. Plan and/or Map Reference(s):

Overall Grading and Drainage Plan - Phase 1

Title

01/23/20

Date

Title

Date

Title

Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

The limit of work on Phase 1 of the new Arlington High School project that falls within the 100' wetland buffer zone includes the relocation of the existing drainage system in the existing parking lot and grassed island south of the existing basketball courts. After the pipe is installed the trench will be backfilled and patched in the areas where it has disturbed existing pavement. There is no disturbance within the riverfront area or flood plain for this phase.



Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

Arlington

City/Town

WPA Form 1- Request for Determination of Applicability

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

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

N/A

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- ☐ Single family house on a lot recorded on or before 8/1/96
- ☐ Single family house on a lot recorded after 8/1/96
- ☐ Expansion of an existing structure on a lot recorded after 8/1/96
- ☐ Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- ☐ New agriculture or aquaculture project
- ☐ Public project where funds were appropriated prior to 8/7/96
- ☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- ☐ Residential subdivision; institutional, industrial, or commercial project
- ☒ Municipal project
- ☐ District, county, state, or federal government project
- ☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)

N/A



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Arlington
City/Town

WPA Form 1- Request for Determination of Applicability

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

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Town of Arlington

Name

730 Mass. Ave. Annex

Mailing Address

Arlington

City/Town

MA

State

02476

Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

Signature of Applicant

1/17/2020
Date

Signature of Representative (if any)

Date

January 27, 2020

Susan Chapnick, Chair
Arlington Conservation Commission
730 Mass Ave Annex
Arlington, MA 02476

Re: Arlington High School Phase 1 RDA Filing
Section 31 - climate change resilience

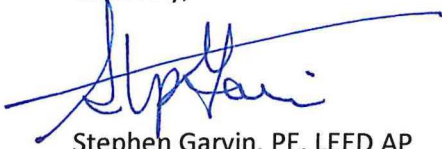
SCI#: 17211.02

Dear Ms. Chapnick,

This letter is to supplement to the project narrative in the RDA regarding how the proposed work considers climate change resilience. As detailed in Section 31 of the local [Arlington Regulations for Wetlands Protection](#), this application integrates considerations of adaptation planning into the project to promote climate change resilience so as to protect and promote resource area values into the future. The existing 36" concrete drainage main coming from Mass Ave will be replaced in Phase 1 with a 36" 48" cement-lined ductile iron main increasing the reliability and capacity of the main for better resiliency for the Town. Additionally, the contributing impervious area for the redevelopment area is now re-routed outside of this culvert, thus increasing available capacity further. In the future NOI filing for the entire High School project, there will be additional proposed improvements to the stormwater management system that will provide better treatment of stormwater runoff for the site and detailed per this section of your regulations for that filing and its benefits to promoting climate change resiliency.

If you have any question please feel free to contact me at (508) 877-6688, x13.

Sincerely,

A handwritten signature in blue ink, appearing to read "Stephen Garvin".

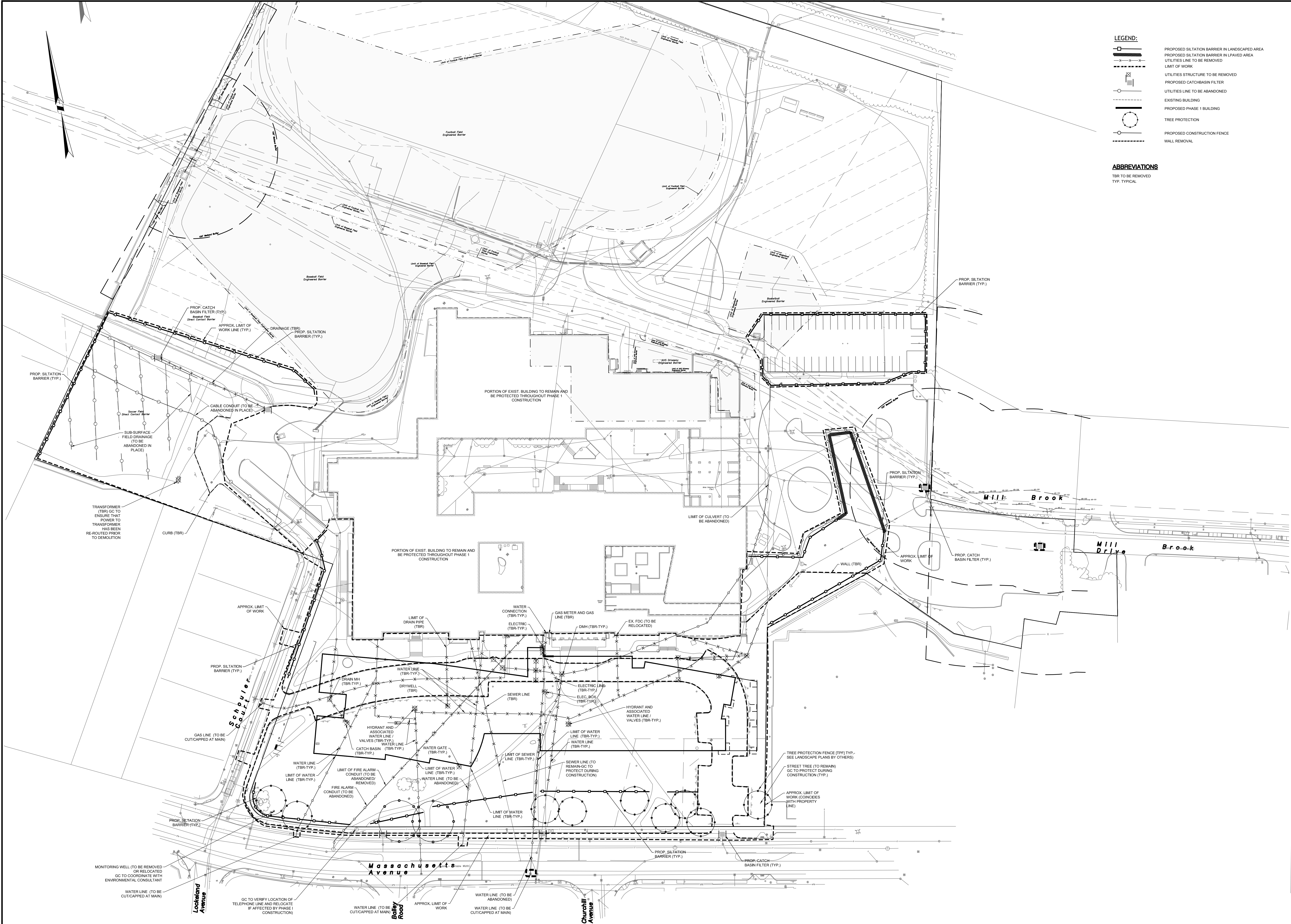
Stephen Garvin, PE, LEED AP
President

Samiotes Consultants, Inc.
Civil Engineers + Land Surveyors

20 A Street
Framingham, MA 01701-4102

T 508.877.6688
F 508.877.8349

www.samiotes.com

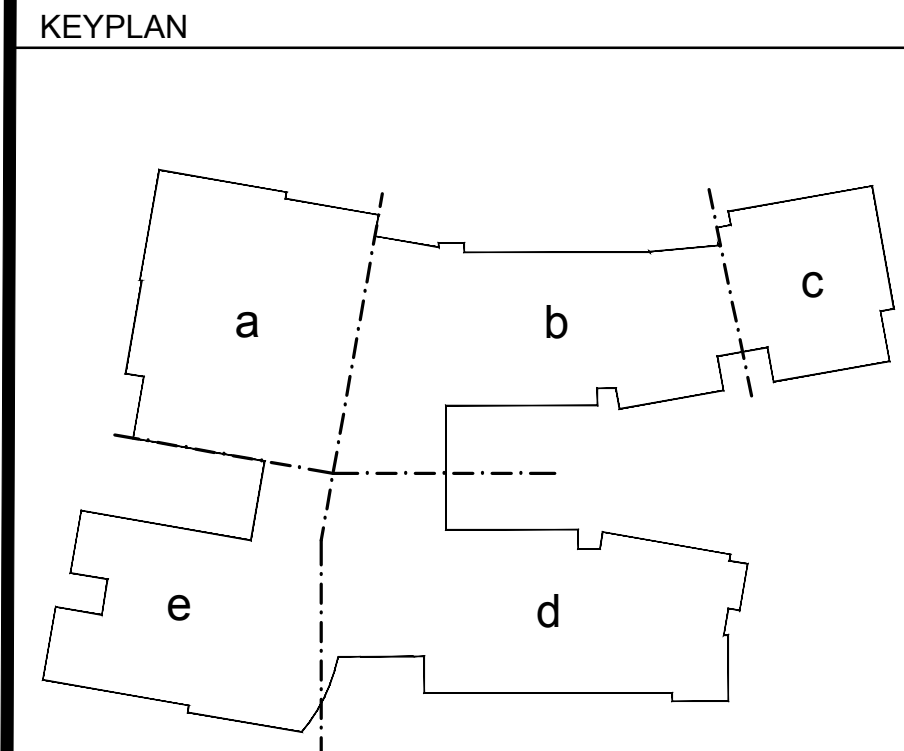
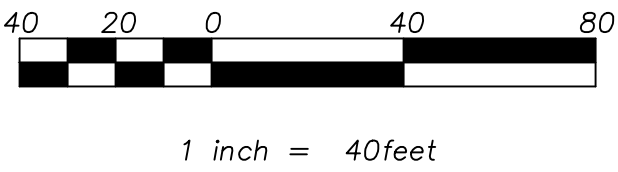
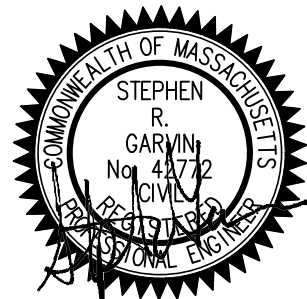


LEGEND:

- PROPOSED SILTATION BARRIER IN LANDSCAPED AREA
- PROPOSED SILTATION BARRIER IN PAVED AREA
- UTILITIES LINE TO BE REMOVED
- LIMIT OF WORK
- UTILITIES STRUCTURE TO BE REMOVED
- PROPOSED CATCHBASIN FILTER
- UTILITIES LINE TO BE ABANDONED
- EXISTING BUILDING
- PROPOSED PHASE 1 BUILDING
- TREE PROTECTION
- PROPOSED CONSTRUCTION FENCE
- WALL REMOVAL

ABBREVIATIONS

- TBR TO BE REMOVED
- TYP. TYPICAL



REVISIONS NO.	DATE	REMARKS

HM
FH

HM FH ARCHITECTS

Samotes Consultants Inc.
100 Bluebird Avenue Drive
Cambridge, MA 02139
877.482.2200
www.samotes.com

samotes

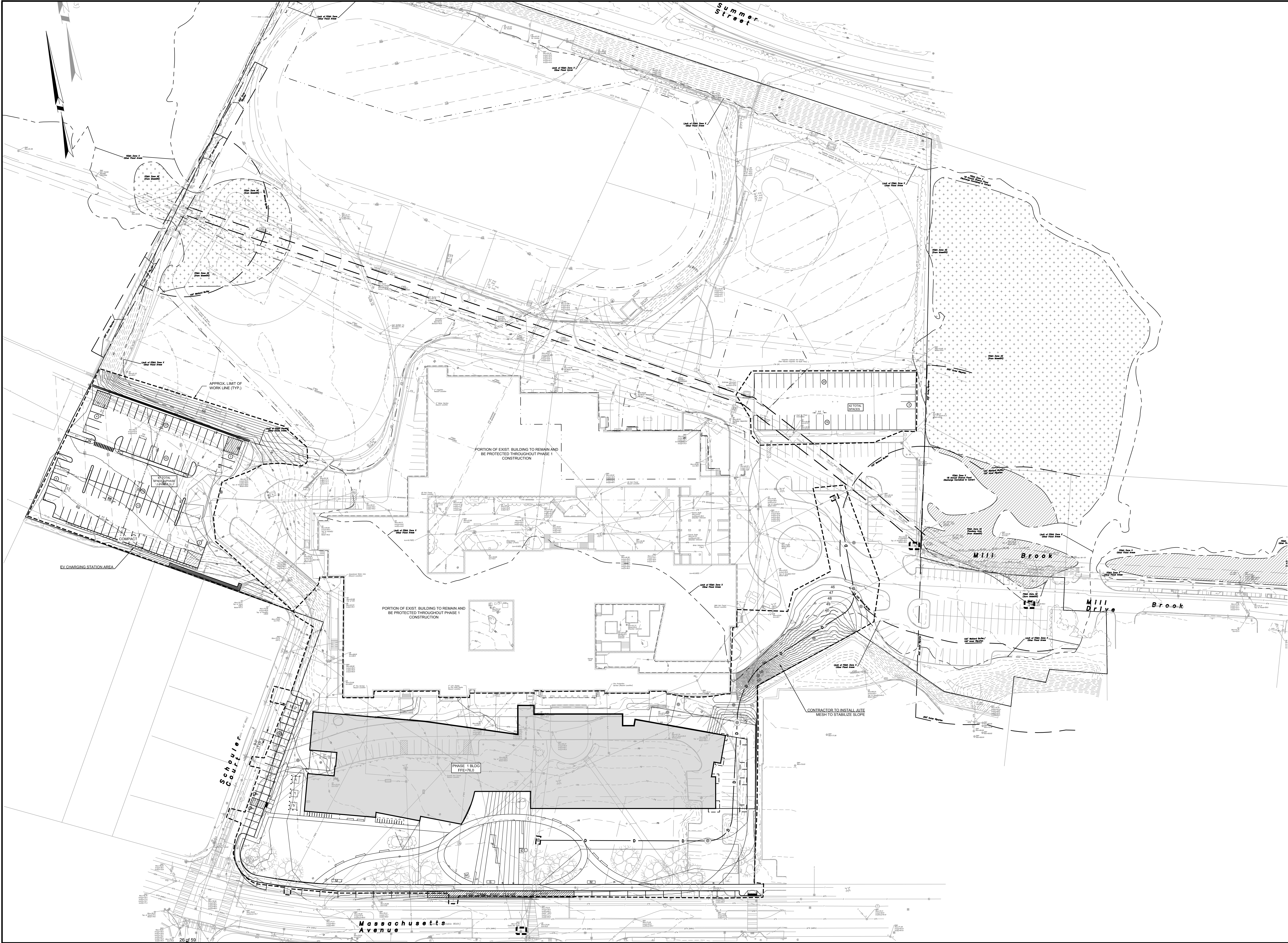
Samotes Consultants Inc.
100 Bluebird Avenue Drive
Cambridge, MA 02139
877.482.2200
www.samotes.com

RDA SUBMISSION
01/23/2020

Attingham High School
Massachusetts Avenue, Attingham, Massachusetts
SITE PREPARATION & EROSION
CONTROL PLAN - PHASE 1
SCALE: 1"=40'
DRAWN BY: SM
CHECKED BY: SG

1.0.1

17211

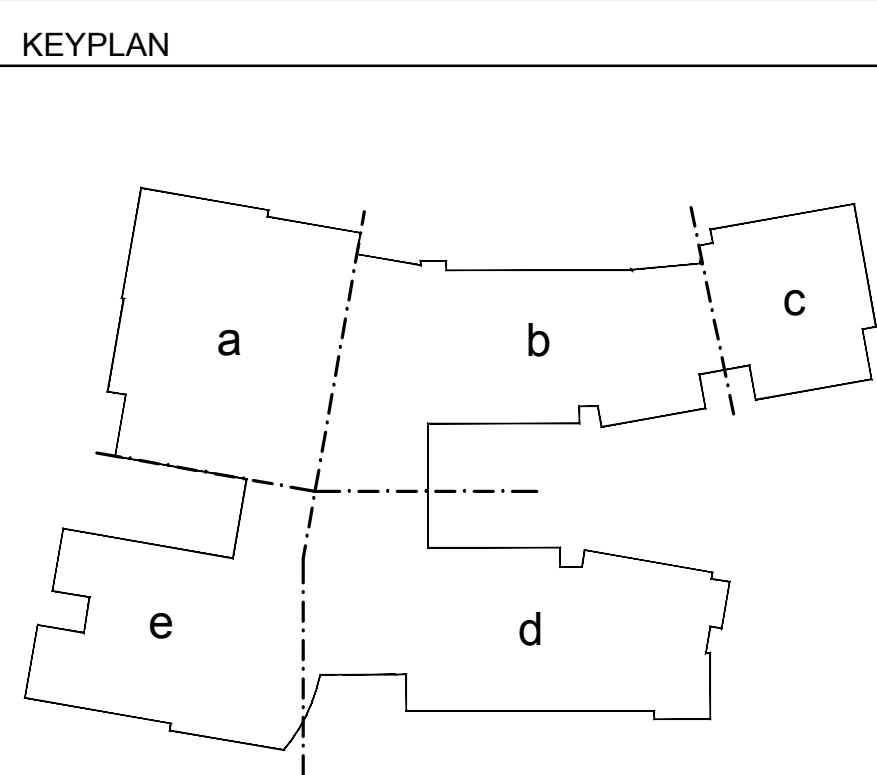
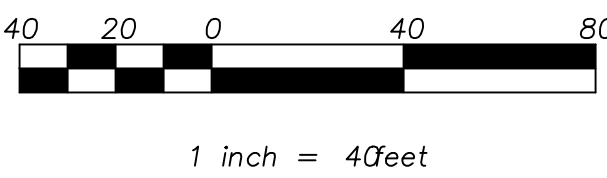


- LEGEND:**
- 129 PROPOSED INTERMEDIATE CONTOUR
 - 130 PROPOSED INDEX CONTOUR
 - 130.0 X PROPOSED SPOT GRADE
 - (130.0) X EXISTING GRADE TO REMAIN (V.I.F.)
 - TW=131.87 PROPOSED TOP/BOTTOM OF WALL (NOT FOUNDATION)
 - BW=130.50 X PROPOSED TOP/BOTTOM OF CURB
 - TC=131.87 PROPOSED TOP/BOTTOM OF STEP
 - TS=131.87 X PROPOSED RIM ELEVATION (TO FINAL GRADE)
 - BS=130.50 X VERIFY GRADE IN FIELD TO BE SET
 - RM=130.20 X AMOUNT OF PARKING SPACES PROVIDED IN STALL
 - V.I.F. V.I.F.
 - ⊙
- LIMIT OF WORK
- EXISTING BUILDING
 - PROPOSED PHASE 1 BUILDING
 - PROPOSED TRANSFORMER PAD
 - PROPOSED SWITCH GEAR PAD
 - PROPOSED BOLLARD

ABBREVIATIONS

FFE FIRST FLOOR ELEVATION

TYP. TYPICAL



REVISIONS NO.	DATE	REMARKS

Arlington High School
Massachusetts Avenue, Arlington, Massachusetts
GRADING AND LAYOUT PLAN
-PHASE 1-
SCALE: 1"=40'

DRAWN BY: SM CHECKED BY: SG

C
3.0.1

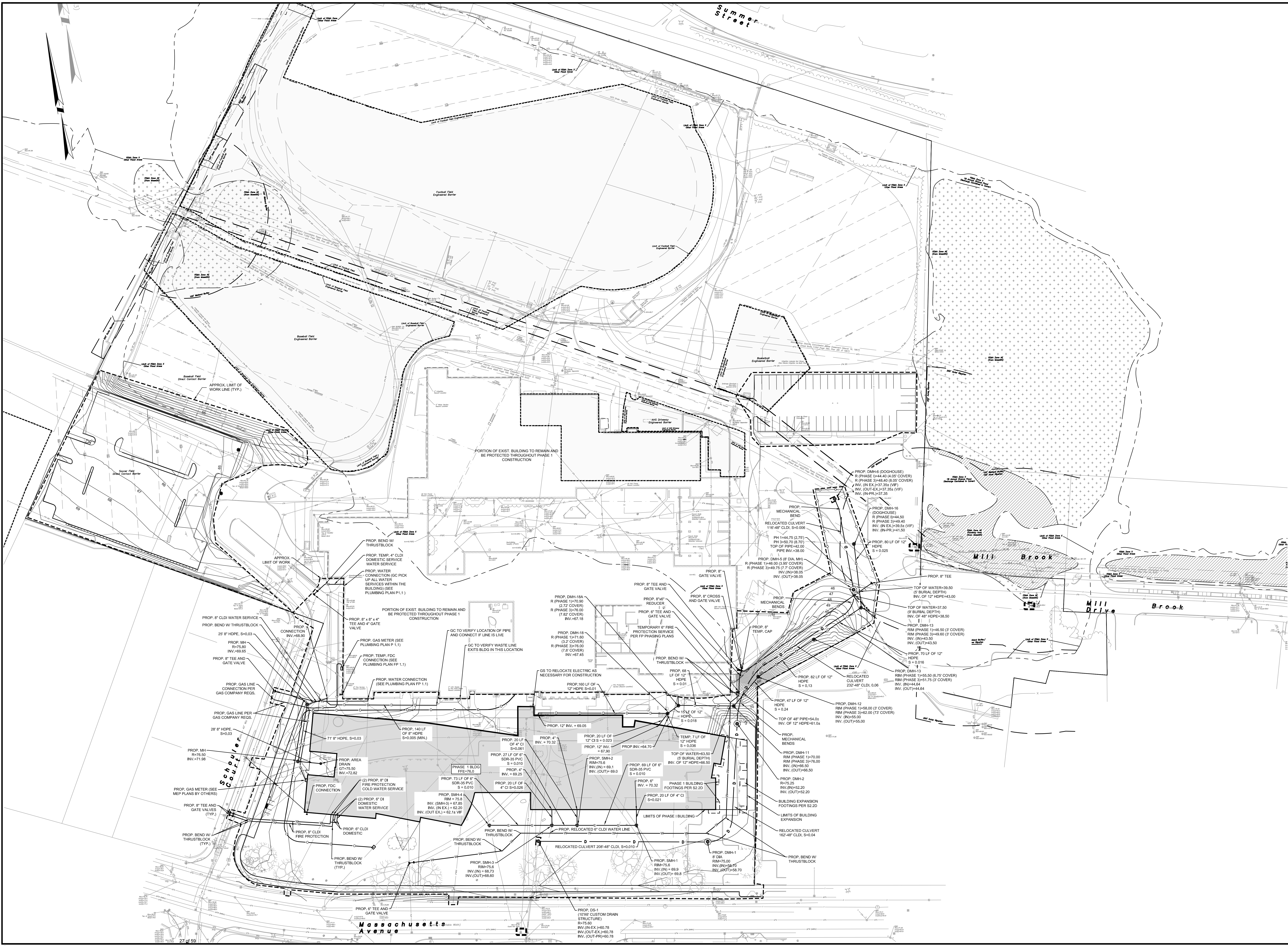
CD NUMBER 17211

RDA SUBMISSION
01/23/2020

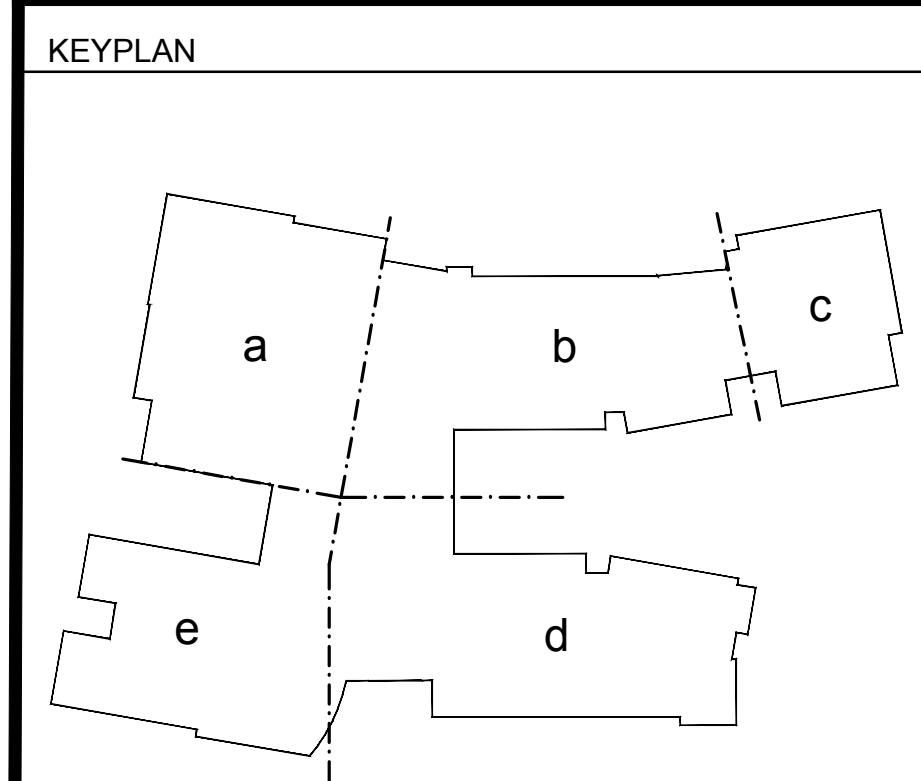
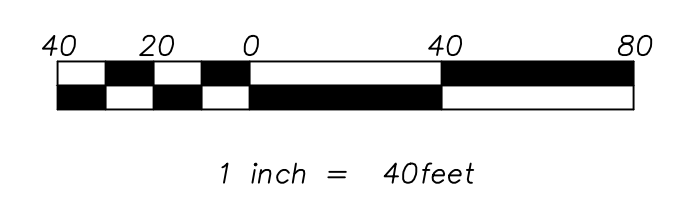
Samotes Consultants Inc.
100 Bishop Allen Drive
Cambridge, MA 02139
T 603.877.6688
F 603.877.6689
www.samotes.com

samotes

HM
FH
ARCHITECTS



- LEGEND:**
- D — PROPOSED STORM DRAINAGE LINE
 - W — PROPOSED WATER LINE
 - FP — PROPOSED FIRE PROTECTION LINE
 - SS — PROPOSED SANITARY SEWER LINE
 - G — PROPOSED GAS LINE (BY OTHERS)
 - E — PROPOSED UNDERGROUND ELECTRIC LINE
 - ⊙ DMH PROPOSED SANITARY SEWER MANHOLE
 - ⊙ DMH PROPOSED STORM DRAINAGE MANHOLE
 - ⊙ CB PROPOSED CATCH BASIN
 - ⊙ H PROPOSED HYDRANT
 - ⊙ GGV PROPOSED GAS GATE VALVE
 - ⊙ WGV PROPOSED WATER GATE VALVE
 - ⊙ TSV PROPOSED TAP AND SLEEVE VALVE
 - ⊙ ESB APPROX. LOCATION OF ENGINEERED SOIL BARRIER
 - ⊙ TEE PROPOSED TEE
- ABBREVIATIONS**
- FFE FIRST FLOOR ELEVATION
 - TYP. TYPICAL
 - INV. INVERT
 - MM MANHOLE
 - FDC FIRE DEPARTMENT CONNECTION
 - S SLOPE



REVISIONS NO.	DATE	REMARKS

HM
FFH
HMFH ARCHITECTS
130 Bishop Allen Drive
Cambridge, MA 02138
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800.525.8888
www.hmfh.com

Samioles
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100 Main Street
Framingham, MA 01701
T 508.877.6688
F 508.877.6849
www.samioles.com

RDA SUBMISSION
01/23/2020

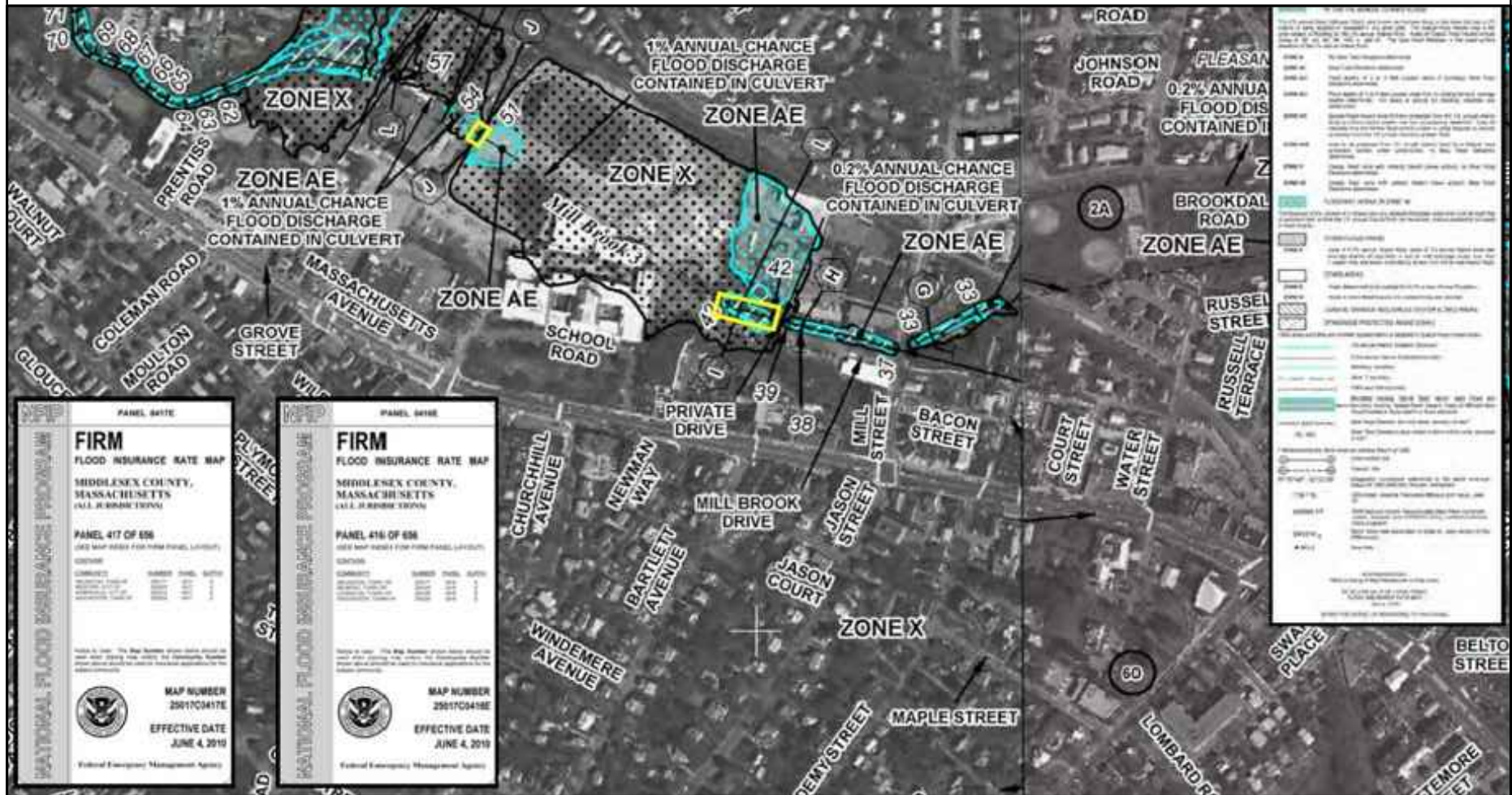
Arlington High School
Massachusetts Avenue Arlington, Massachusetts
OVERALL DRAINAGE AND UTILITY PLAN - PHASE 1
SCALE: 1"=40'
DRAWN BY: SM
CHECKED BY: SG

C
4.0.1

JOB NUMBER 17211

—

samiotes



Sketch No.
RDA-1

Reference Drawing
-

Job #: 17211.00

Drawn by: DJS

Scale: As Shown

Date: 01/23/20

Project: ARLINGTON HIGH SCHOOL

Title: TOPOGRAPHIC LOCUS MAP

Samiotes Consultants Inc.
Civil Engineers + Land Surveyors

20 A Street
Framingham, MA 01701

29 of 59
T 508.877.6688
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samiotes







Town of Arlington, Massachusetts

Arlington's Great Meadows Restoration Project

Summary:

8:00pm- Discussion to determine if and how the Commission will collaborate with the Friends of Arlington's
8:15pm Great Meadows (FoAGM) on a meadow restoration project in the Entry Meadow section of AGM,
near the Emerson Gardens Road entrance.

ATTACHMENTS:

Type	File Name	Description
▢ Reference Material	2009_Arlington_Great_Meadows_Restoration_Plan.pdf	Arlington's Great Meadows 2009 Restoration Plan

Recommendations for Restoration of Meadow Habitat at Arlington's Great Meadows

FINAL DRAFT Report to Friends of Arlington's Great Meadows
5/14/09

by Jeffrey Collins
Mass Audubon
Ecological Extension Service



Mass Audubon works to protect the nature of Massachusetts for people and wildlife. Together with more than 100,000 members, we care for 32,000 acres of conservation land, provide educational programs for 200,000 children and adults annually, and advocate for sound environmental policies at local, state, and federal levels. We are the largest conservation organization in New England. Our statewide network of 45 wildlife sanctuaries welcomes visitors of all ages and serves as the base for our conservation, education, and advocacy work. Through the Ecological Extension Service, Mass Audubon is able to share with conservation partners our broad experience in natural resource inventory and conservation land management based on the work we do on our own wildlife sanctuaries.

Purpose

This report was completed at the request of the Friends of Arlington's Great Meadows in order to inform decision-making regarding maintenance of open meadows on the Great Meadows property. Since undisturbed meadows will eventually be overtaken by fast-growing woody plants over time, in a process known as old-field succession, it is necessary to maintain fields and meadows by introducing disturbance such as mowing or grazing. A natural resource inventory of the area completed by Frances Clark in 2001 concluded that the open meadows on the site were of particular value to a wide range of plants and animals. Since a majority of Arlington's Great Meadows is forested or wetland, these open areas contribute significantly to the overall habitat diversity of the site.

With early-successional natural communities such as grasslands and shrublands in decline across our region, the plant and animal species that rely on them are also in decline. It is of particular importance to recognize high quality grassland and shrubland habitat and to manage it in a way that maintains its highest habitat value while accommodating other values of the site. The recommendations in this report should serve as a starting point for decision-makers in Arlington and Lexington to discuss the best course of action to balance habitat maintenance and protection and public use of the site.

This project did not involve any delineation of wetland boundaries in the areas adjacent to the meadows. Altering vegetation in the wetland buffer is regulated under the Wetlands Protection Act and town bylaws. Any vegetation management activities should be planned in consultation with the Lexington Conservation Commission to ensure that bylaws are adhered to and wetland resources are protected in the effort to maintain open habitat.

There are four areas identified as early successional in the Clark report – the grassland, two grassland/shrub areas, and an area of early successional forest. I twice visited the site with members of the Friends of Arlington's Great Meadows board to identify the areas of interest. We followed up with an exchange of draft maps to locate them in more detail. For this report, we were asked to look at the "grassland" as identified by Clark, a small patch of the "grassland/shrubland", and the central area of the "early successional forest". The early successional forest actually lies on Joyce Miller's Meadow, a conservation lot owned by the Town of Lexington. We refer to the grassland as the Entry Meadow, the small patch of grassland/shrubland as the Small Meadow, and the early successional forest as the Shrubby Meadow (Map 1).

Site Description & Management Recommendations

Entry Meadow – This 5-acre area extends from the trailhead and entry sign at the northwest, to the oak woodland hillside at the northeast, to the pitch pine woodland at the southeast and the marsh at the southwest. The meadow and adjacent areas are divided into nine stands based on dominant vegetation.

As Clark reports, the grassland is dominated by little bluestem and other grasses, with wildflowers and woody shrubs ranging from uncommon to co-dominant. Small tree species and shrubs have begun to pioneer in the grassland, and given time, will come to completely dominate this area, shading out the grasses and thoroughly changing the habitat and aesthetic characteristics of the site. The detailed comments below are keyed to Map 2.

<u>Unit</u>	<u>Description</u>	<u>Management Recommendation</u>
1 0.46 acres	A half acre area of widely-spaced trees and shrubs growing over grasses. Mature black and white oaks stand along the stone wall on the north side of this unit. A lobe of small trees, including black and white oak and black cherry, with lower-growing bear oak shrubs, extends a short distance (~50 feet) south from the wall, into the meadow. Between these oaks and the walking trail is a more open area with pioneer species including gray birch and quaking aspen, glossy buckthorn, highbush blueberry, a few black oak, black cherry, white pine, some patches of lowbush blueberry and huckleberry.	Large oaks along wall should be left untouched and few smaller oaks could remain a short distance into meadow. Bear oaks should remain. Other woody species should be removed, especially birches, aspens, white pines, and cherries. Particular attention should be paid to removing glossy buckthorn. No restoration necessary since grasses are quite well established between woody plants.
2 0.18 acres	This is the large, dense shrub stand immediately opposite the information kiosk. Dominated by staghorn sumac and gray dogwood with a few medium-sized black cherries. Glossy buckthorn and honeysuckle shrubs make up a large component on the southern side.	Left unmanaged, this stand will continue to expand east further into the meadow. The entire stand should be removed. Will require several years of mowing or hand removal of resprouts to favor grasses and wildflowers over woody species. Some seeding or restoration may be necessary.
3 0.25 acres	A stand of tall quaking aspens with black cherry, glossy buckthorn, honeysuckle shrubs, multiflora rose, and staghorn sumac underneath.	Invasives find harbor under the taller trees of this stand and provide seed source for reinvasion of the meadow. Invasive control efforts should include a focus on this stand. Clearing the eastern lobe of this unit would contribute to enlarging the meadow and limit the spread of aspens in the grassland.
4 0.27 acres	A dense stand dominated by young quaking aspens with some gray birch. Goldenrods, other wildflowers and grasses dominated the groundcover.	This section lies on lower ground quite close the wetland edge; some of the unit may be wetland itself. Would be advantageous to remove as much of this stand as is practicable while maintaining wetland buffer, especially on the eastern edge adjacent to the meadow.
5 0.49 acres	The remaining heart of the formerly open meadow. A few pioneering quaking aspens are found, growing over little bluestem, goldenrods and other grass and wildflower species. There are a few invasive plant locations, but the vegetation, largely controlled by the dry soils, is closest to the variant sandplain grassland community described by Clark.	All quaking aspen should be cleared from this unit. Entire area should be managed to limit regrowth of woody species. The grassland will need no restoration.

6 0.93 acres	A section of the meadow with slightly higher density of pioneering tree species than Unit 5. Quaking aspen is replaced by gray birch growing sparsely, with some glossy buckthorn. Grasses, wildflowers, and lowbush blueberry dominate the groundcover.	Same as Unit 5. Should remove all gray birch and treat glossy buckthorn. As with Unit 5, grassland community will need no restoration after removal and control of woody stems.
7 1.05 acres	Similar to Unit 6, but with gray birch and glossy buckthorn growing at higher density. Multi-stemmed gray birch copses throughout suggest that this area was mown or hand-cut 10-15 years ago. Grasses dominate underneath. Merges with oak-pitch pine stand at southeast.	Management of this area will require more effort than Units 5 and 6, but would nearly double the area of the grassland. Gray birch stumps will likely need herbicide treatment to prevent resprouting. Oaks and pitch pines should be left.
8 0.80 acres	Dense young quaking aspen with staghorn sumac, black cherry and glossy buckthorn growing from meadow to wetland edge. Grasses and wildflowers growing underneath.	Clearing along the grassland edge of this unit would serve to expand the grassland marginally, but should be planned so as to limit disturbance of wetland buffer. Smaller aspens on edge of stand and individual shrubs near trail should be removed.
9 0.53 acres	A taller, less dense stand of quaking aspen and gray birch between the grassland and the wetland. Very open underneath with grasses dominating the groundcover.	Tempting to remove a section to improve view of marsh from meadow trail, but unnecessary from grassland management perspective.

Small meadow – A 0.44 acre area identified by FoAGM board members as of potential interest for restoration to a more open condition, indicated as Section 10 on Map 2. The area, which appears to have been open formerly, now includes several multi-stemmed gray birch copses and patches of glossy buckthorn. While a restored grassland community here would not be of tremendous habitat value, it would likely provide a supplemental resource for invertebrates drawn to the main grassland and it would offer a pleasant aesthetic diversion from the adjacent trail. Hand removal of gray birches and glossy buckthorn could be accomplished with hand tools, but these species would grow back without herbicide treatment or follow up mechanical control. The ground layer is well vegetated with grasses and other herbaceous species, so no restoration would be necessary after removal of woody vegetation. Glossy buckthorn is thick in the surrounding forest and threatens to completely invade this small opening in the future.

Shrubby Meadow – A 2.7-acre former meadow now mostly grown in with young trees and shrubs. Glossy buckthorn is present in most parts of this meadow and thick in some locations. Staghorn sumac, apple, cherries, and oaks provide food for a variety of wildlife. The detailed comments below are keyed to Map 3.

<u>Unit</u>	<u>Description</u>	<u>Management Recommendation</u>
11 0.39 acres	A line of large black oaks grows along a stone wall which marks the boundary between this meadow and the footpath running to the north of the meadow. Glossy buckthorn grows very dense underneath these oaks.	The very attractive, mature oaks should stay. Any effort in this area should focus on removing as much glossy buckthorn as possible.
12 0.32 acres	This 0.3-acre section is largely open with birches and cherries growing above a grass-dominated groundcover.	This stand has relatively few non-native invasive species, but the birches and cherries will continue to move this stand from grassland to shrubland. To maximize extent and value of meadow habitat, this stand should be cleared out if section 13 is cleared.
13 0.44 acres	Stand of young, densely-growing black oak, aspens, cherries, apples, and staghorn sumac, thoroughly invaded with glossy buckthorn. Sparse groundcover growing underneath thick, ~10-foot 'canopy' of shrubs. Thick glossy buckthorn continues southwest of area identified on map as Section 3, across footpath.	This stand should be cleared along with section 12. Conversion to grassland or meadow habitat will require several years of monitoring and follow-up effort to reduce woody cover. With repeated mowing and no seeding, nearby meadow species would establish within the newly cleared ground. Supplemental seeding with native grass and wildflower seeds would be advantageous to outcompete woody species and non-natives. Restoration extending southwest, across footpath, into additional glossy buckthorn area would reduce seed source of invasives and expand extent of meadow habitat.
14 1.26 acres	The most open area of this meadow, with a few tall black oaks, some black cherry and gray birch, apples, a stand of staghorn sumac at the north end, and glossy buckthorn present throughout. Of all sections of this meadow, the groundcover in this section most closely resembles a target mix for meadow habitat. The forest extending east, towards the wetland, is densely invaded with honeysuckles.	Effort should focus on removing small trees in this section, beginning on the east side and extending downslope to the east to the extent feasible, with a focus on controlling glossy buckthorn. The few apples should be left as food sources if possible. Meadow habitat could extend nearly to trail running north-south along wetland edge, but this would require a massive effort to remove thick honeysuckle stands in shrub layer.
15 0.34 acres	A line of large black oaks extending from the stone wall in section 1 into the center of this meadow. Glossy buckthorn grows underneath.	Larger meadows tend to provide habitat for a wider variety of species. This line of oaks breaks this former meadow into two smaller patches thus detracting from the potential value of meadow habitat; but since the total area of meadow, even if all woody vegetation were cleared, is less than 3 acres, leaving the oaks standing for sources of cover and food would be the best approach. Glossy buckthorn growing underneath the oaks should be cleared.

Discussion

Entry Meadow – This meadow area is being invaded by both native and non-native woody pioneer species. If left unmanaged, the shrubs and small trees will continue to expand and within ten years the area will change from somewhat open meadow to an old-field condition dominated by saplings and shrubs. Although shrubland habitat is a desirable and increasingly uncommon wildlife habitat, the multiple values of habitat quality, natural community diversity, user experience, and aesthetics would argue for maintaining this area as an open grassland.

The extent of grassland habitat should be maximized here by removing pioneer species such as gray birch, quaking aspen, and black cherry. Removal of woody vegetation should take care to leave sufficient wetland buffers intact. Stands of invasive species and stump-sprouting woody species should be monitored for regrowth and retreated. Treatment can rely exclusively on mechanical removal with chainsaw and Brush-Hog-type equipment, or include judicious use of chemical herbicides to reduce resprouting of invasives and aggressive stump sprouters. Any vegetation management or use of herbicides in the wetland buffers should be reviewed by the Conservation Commission. The current extent of desirable meadow species means that very little, if any, reseeding is necessary in this meadow.

Restored in this way, the Entry Meadow would total roughly five acres of contiguous sparse grassland. While this size is below the area threshold for nesting habitat of the less common grassland breeding birds such as savannah sparrow, bobolink, and eastern meadowlark, the enlarged grassland area will benefit a wide variety of invertebrate species as well as grassland-specialized plants. While much discussion of grassland conservation focuses on large expanses of grassland, which can accommodate species which require large areas, these smaller grasslands are also important pieces of a diverse landscape.

Small Meadow – Do not expend too much effort on restoration activities in this area. This little forest opening is too small to be of significant habitat value to species seeking open grassland or meadow habitat. Decisions on its management should be made based on other factors including aesthetics.

Shrubby Meadow – Old field succession, the process by which an abandoned field is slowly converted back to forest, has taken its first steps in this former meadow. The meadow could be restored to a grass and wildflower dominated community with considerable effort focused on removal of dense stands of both native and non-native shrubs as described in the detailed comments. Since the modest size of this meadow will keep it from functioning as grassland habitat for a wide variety of species, it might better be managed as a tree-studded meadow, presenting a different aesthetic quality than the entry meadow. Retaining food tree species could lead this open area to perform a habitat role akin to an orchard, with birds and small mammals drawn to the abundant fruits of apples, cherries, and oaks.

Another alternative is to allow this meadow to continue as shrub-dominated cover to provide habitat for shrub-nesting birds and other wildlife that prefer this successional stage. Shrubland habitat is disappearing at an even faster rate than grassland in our region, and populations of shrubland nesting birds are facing a parallel decline. Managing the area as shrubland would require little effort in the near term, but would call for occasional removal of taller-growing species, such as oaks and maple saplings, to prevent succession to a forested stand. Since this meadow includes a combination of shrubs and saplings, it could possibly be managed with hand removal of the saplings of the taller-growing species such as oaks and maples, while retaining the sumac, apples, gray birch, quaking aspens, and pin cherries. This approach would require that individual trees be identified for removal. The more common method of shrubland management is to periodically cut the shrubby growth back with a heavy-duty mower deck

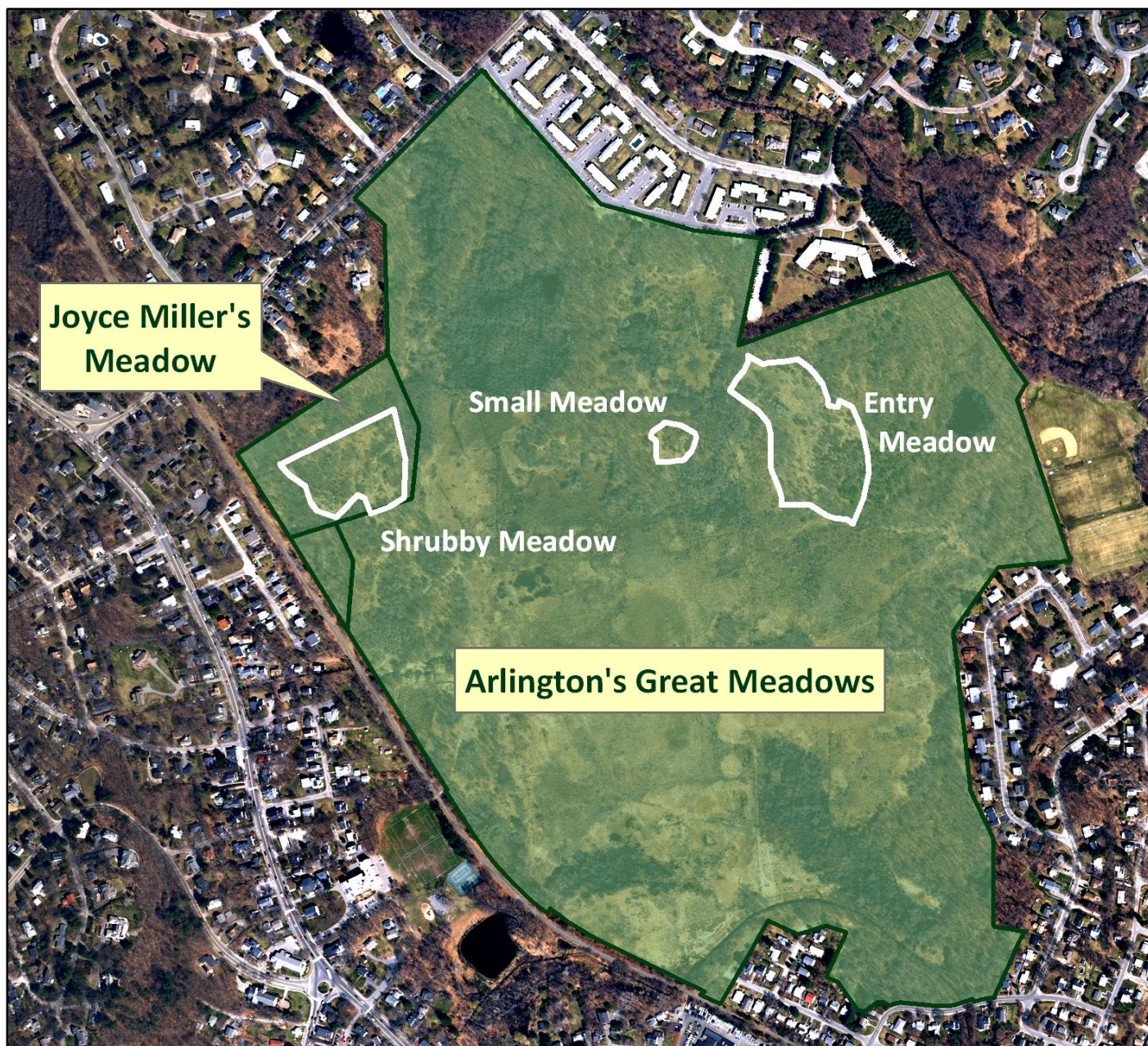
such as a Brush-Hog. This method may be faster, but the area serves as poor habitat in the year immediately following mowing, and equipment costs and access issues may complicate such an approach in this meadow. Neither method would be likely to suppress invasive shrub species.

Conclusion

As stated in the introduction, maintenance of early successional habitats such as grasslands and shrublands in our region generally requires some sort of disturbance to prevent succession to forest. Historical natural disturbances included grazing by large herbivores, fire, forest disease, and flooding. Since we have largely removed these processes from our landscape, early successional habitats require our intervention; we need to introduce the disturbance. Managing the Entry Meadow as an open grassy meadow and the Shrubby Meadow as a treed meadow or as a shrubland would contribute to increased overall habitat diversity at Arlington's Great Meadow as well as enhance the aesthetic diversity of the property.

Mowing and brush-cutting, burning, and grazing have all been used effectively to create and maintain early successional habitat. Mowing is generally the least expensive and most feasible method. Herbicides may also be appropriate, both to control invasive species and to maintain a grassland or low shrub community by removing individual plants such as fast-growing pioneer tree species. Invasive species control with herbicides is highly species-specific, with the actual chemical as well as the application method varying from plant to plant. Herbicide should ideally be applied with only the most low-impact methods, such as basal bark, stem injection, or stump painting.

Appendix A – Grassland Section from Clark (2001) Report [to be attached]



Map 1 -- Early Successional Areas
Arlington's Great Meadows Vegetation Management Plan





Map 2 -- Entry Meadow & Small Meadow
Arlington's Great Meadows Vegetation Management Plan

0 50 100 Feet



 management units  estimated wetland edge



Map 3 -- Shrubby Meadow
Arlington's Great Meadows Vegetation Management Plan

0 50 100 Feet





Town of Arlington, Massachusetts

Prioritize Commission Goals Established at the 01/02/2020 Meeting

Summary:

8:15pm- Discussion to determine and prioritize actionable goals for the general goals the
8:30pm Commission set for 2020 during its 01/02/2020 meeting.

ATTACHMENTS:

Type	File Name	Description
▢ Minutes	01022020_Minutes_Conservation_Commission.pdf	01/02/2020 ACC Meeting Minutes



Arlington Conservation Commission

Date: January 2, 2020

Time: 7:30pm

Location: Second floor conference room, Town Hall Annex
730 Massachusetts Ave, Arlington, MA

Minutes

Attendance: Commission Members Susan Chapnick (Chair), Pam Heidell, Dave Kaplan, Nathaniel Stevens, Chuck Tirone (Vice Chair), and David White; Associate Commissioners Cathy Garnett and Mike Gildesgame; and Conservation Agent Emily Sullivan. Commissioner Mike Nonni was not present.

Project Updates

E. Sullivan summarized the status of the following projects: Spy Pond Erosion Control and Slope Stabilization, the Arlington Reservoir Master Plan Phase 1, Wellington Park, and Downing Square (19R Park Ave).

The Spy Pond project is still under construction and will be completed once the proposed overlook is built.

The Arlington Reservoir project is still under construction.

The Wellington Park project is complete.

The Arlington Housing Authority's Downing Square project is beginning construction this winter. The Conservation Agent performed a site visit on 01/02/2020. The project team has begun installing erosion controls and cutting back vegetation. The approved construction entrance needs to be changed due to slope issues. Once erosion controls are completely installed and a pre-construction meeting is conducted, the project will begin excavation of contaminated soil. C. Tirone was concerned with the potential indoor vapor exposure even though the proponent will install an intra-slab vapor mitigation system and vapor barrier. C. Tirone was also concerned with PCBs left on the site after cleanup becoming mobilized in the ground water column.

Water Bodies Working Group

D. White updated the Commission on the Water Bodies Working Group meeting that occurred on 01/02/2020. During the meeting, the Working Group discussed: the

Working Group's annual report, the warrant article for FY2021 funding, and FY2021 funding allocation for various projects and treatments.

Goal Setting

The Commission reviewed Commissioners' responses to the following questions about 2020 goals:

- a) List up to three goals for improving ACC procedures
- b) List up to three goals for improving ACC permitting
- c) List up to three goals for improving education and training for the Commissioners and/or ACC public outreach
- d) List up to three general goals
- e) List up to three ACC project ideas

Ideas generated for improving ACC procedures included:

- Add administrative project/general project process to regulations
- Add a consent agenda to meetings
- Facilitate meetings so everyone in attendance can hear
- Create a master permit tracking list
- Schedule site visits for substantive projects prior to first hearing

Ideas generated for improving ACC permitting included:

- Revise the Arlington Regulations for Wetlands Protection
- Have Commissioners submit questions/comments prior to first hearing
- Encourage the Conservation Agent to provide recommendations on applications during hearing
- Invite other town committees (Park & Recreation, DPW, etc.) to meetings to discuss areas of overlap and to improve permit coordination
- Add a general permit to the regulations
- Have Commission review/approve special conditions and OOCs for permits prior to permit issuance
- Create a list of all properties that fall under Commission jurisdiction and proactively send mailings about permitting procedures
- Develop FAQs
- Develop performance standards
- Schedule site visits

Ideas generated for goals for improving education and training for the Commissioners and/or ACC public outreach included:

- Leverage Town social media
- Create a permitting guide with ZBA, Inspectional Services, ARB, etc.
- Attend MACC and AMWS workshops
- Create a floodplain guidance document
- Include open forum for general questions on meeting agendas
- Devote 1-2 hours of a meeting to a wetland topic training and invite an expert to give the training
- Write educational articles for the Advocate and online

- Add tips and FAQ to webpage
- Target trainings to frequent issues in Town

Ideas generated for general goals included:

- Encourage each Commission member to lead at least one special project during the year or act as liaison to an existing project/effort
- Allow agenda time during a meeting at least once per quarter to discuss how processes are going, recommendations for improvements/changes, needs for education, and to evaluate how the Commission is progressing on 2020 goals
- Be a resource to residents
- Promote natural resource benefits
- Identify maintenance needs/gaps for ACC-managed properties and secure town resources for implementation

Ideas generated for project ideas included:

- Cooke's Hollow
- Vegetative buffers (C. Garnett's project)
- Floating wetlands pilot project
- Coordinate regional management of Upper/Lower Mystic Lakes
- Promote low-impact landscaping, connect with groups like Garden Club and Sustainable Arlington
- Invasive removal
- Certify vernal pools
- Open space clean-ups
- Tree planting
- Coordinate with schools for project ideas and class curriculums

Through review of these ideas and discussion of what the Commission's priorities should be, the Commission created the following goals for 2020 which will be included in the Annual Report to Town Meeting:

1. Strengthen and update regulations for performance standards, permitting efficiency, and process clarity
2. Host additional collaborative community clean-up and educational events
3. Improve the stewardship of conservation lands and other town open spaces
4. Improve communication and educational outreach to residents in resource areas

Annual Reports to Town Meeting

The Commission reviewed the draft annual report and discussed edits. N. Stevens motioned to submit the annual report with revisions and annual goals for the Commission as discussed, D. Kaplan seconded, all were in favor, motion approved.

Regulatory Update Discussion

The Commission agreed that the Arlington Regulations for Wetlands Protection should be updated in 2020 during its 11/21/2019 meeting and consistent with Commission's

goals. Further discussion of regulation updates will occur during the Commission's 1/16/2020 meeting. Possible areas for revision include:

Alternatives analysis [P. Heidell to draft]: buffer zones, AURA

Plan requirements [N. Stevens to draft]: standardize colors for resource areas (e.g. Plympton), detailed topographic maps (BLSF)

Stormwater calculations: consider updating to the NOAA Atlas 14 numbers from 2015 to replace the Cornell Method numbers from 2008

Tree / vegetation replacement: consider 2:1 replacement minimum and require minimum 3" DBH for survival. Current tree replacement table allows for 1:1. However, there are certain situations when there cannot be a 2:1 replacement. Consider alternatives for difficult situations

General permit [N. Stevens and C. Tirone to draft]: Falmouth and Reading examples, minor projects WPA list, notice sent to commission, right to request attendance at meeting

Administrative Review projects [N. Stevens and C. Tirone to draft]: consider projects that would not require even a general permit, such as projects that will improve the resource area (e.g., remove impervious surface or reduce flood storage encroachments) or have no impact (e.g., replace roof on an existing structure within the resource area / buffer). These projects could only require Conservation Agent review to ensure they have documentation of the project and any required calculations or project components

Cooling off period: [would require a bylaw change] consider that Applicants cannot resubmit an application if denied for certain period of time

Climate change adaptation section: using the new MACC buffer zone guidance

Section 2.B.1&2 [C. Tirone to draft]: clarify jurisdiction

Floodplain [N. Stevens and C. Tirone to draft]: clarify compensatory flood storage

Meeting adjourned at 9:35pm.



Town of Arlington, Massachusetts

Arlington Regulations for Wetlands Protection Update

Summary:

8:30pm-9:00pm Discuss and draft updates to Section 25: Adjacent Upland Resource Area.

9:00pm-9:30pm Discuss and draft section for Administrative Review Permits.

ATTACHMENTS:

Type	File Name	Description
▢ Reference Material	Section_25_(AURAAAlternativesAnalysis)_Revisions_02062020_Draft.pdf	Draft Section 25 Revisions
▢ Reference Material	New_Section_Administrative_Review_02062020_Draft_.pdf	Draft New Section Administrative Review

Section 25 – Adjacent Upland Resource Area

A. Findings.

- (1) The Adjacent Upland Resource Area (AURA) ~~usually is~~ presumed significant to wildlife, plant or wildlife habitat, to water quality, public and private water supply, to groundwater supply, to flood control, to storm damage prevention, to prevention of pollution, to erosion control and sedimentation control, to natural character and recreation, to protection of surrounding land and other homes or buildings and to mitigation of potential climate change impacts.
- (2) Trees in the AURA provide additional important functions not provided by any other plant type. Trees provide shade to moderate water temperatures, levels of dissolved oxygen and water flow. They serve as windbreaks to moderate wind stress and shear during storms, and provide nesting, roosting and perching areas for birds, and other wildlife. The transitional assemblage of trees, shrubs and groundcover (containing both wetland and upland elements) frequently found in AURAs has been found significant to the support of a greater number of native and specialist wildlife species in the interior of resource areas, which they border. ~~Trees and other vegetation, if undisturbed or minimally disturbed, slow the rate of surface runoff providing flood control and reducing down gradient storm damage. In these ways, trees also mitigate potential climate change impacts due to extreme heat and heavy storm and rain events.~~
- (3) Lands within the AURA are best left ~~in an~~ undisturbed or in an untouched and natural or vegetated state. These lands play a critical role in protecting the important functions provided by wetlands, waterways and water bodies. Undisturbed AURAs:
 - reduce runoff velocity and filter pollutants, which mitigates erosion and nutrient and other pollutant transport to wetland resources.
 - temper the impacts of stressors on wetland resources, and also enhance the capacity of resource areas to adopt and respond to challenges presented by climate change such as increased flooding and drought events.
 - Undisturbed lands within the Adjacent Upland Resource area provide Area AURA provide filtering functions that limit pollution in adjacent resource areas and serve to reduce the heat island effect by casting shade on the upland and can shade adjacent wetlands and water bodies.
 - provide habitat for wildlife that also utilize wetlands, waterways and waterbodies. By maintaining lower water temperatures, Adjacent Upland Resource Area contribute to cold water fisheries and reduce the risk of eutrophication.
- (4) There is overwhelming scientific consensus that significant physical, chemical, or biological alterations to AURAs will have significant physical, chemical, or biological impacts on associated or adjacent wetland resource areas such as banks, creeks, streams, rivers, ponds, lakes, and wetlands. AURAs are presumed important to the protection of these resources because activities undertaken in close proximity to wetlands and other resource areas protected by the Bylaw have a high likelihood of adverse impact upon those areas, either immediately, as a consequence of construction, or over time, as a consequence of daily operation or existence of the activities. These adverse impacts from construction activities, impervious surfaces, and use can include, without limitation,

Comment [1]:
Article 8 Wetland Protection section 1 Purpose

Comment [2]:
Now addressed in (3)

Comment [3]:
All things listed temper impacts of stressors.

erosion, siltation, loss of groundwater recharge, loss of flood control or storm damage prevention, poor water quality, harm to wildlife and wildlife habitat, and loss of resource resiliency for potential impacts of climate change. The ability of the [AURA](#) to protect a wetland resource, and to provide habitat, increases with buffer width and continuity.

- (5) Generally, vegetated buffers within the [AURA](#) and next to the adjacent resource area of less than 25 feet wide are ineffective in protecting adjacent wetlands or providing wildlife habitat functions. Vegetated buffers often larger than 25 feet are necessary to provide wildlife habitat and to protect adjacent resource areas from continuing activities such as inputs of sediments and nutrients, to protect from direct human disturbance, to protect sensitive species from adverse impacts, and to protect adjacent resource areas from the adverse effects of climate change and changing water quality, including but not limited to nutrient concentrations, temperature, salinity, and dissolved oxygen concentrations. “

(6) ~~Vegetation slows runoff velocity so that it has greater potential to infiltrate into soil and has less erosion potential. Most studies find that buffers dominated by trees or a mix of vegetation cover types (e.g., trees, shrubs, and grasses are most effective in removing nutrients and sediment pollution...IN addition to removing pollutants, vegetation improves water quality by stabilizing banks and moderating water temperature through shading.”~~ (Massachusetts Association of Conservation Commissions Buffer Zone Guidebook, 2019).

~~(67) “Massachusetts is experiencing increased incidence of heavy precipitation events and increased drought because of climate change. This increases the need for flood storage capacity and water providing ecosystem services provided by wetlands, supported by adjacent buffer and riparian corridors.”~~ (Massachusetts Association of Conservation Commissions’ Buffer Zone Guidebook, 2019);

~~(786) “The effectiveness of buffers in removing pollutants is dependent upon slope, soil condition pollutant type, flow patterns, vegetation, exposure to sunlight, width and upland land use. Steep slopes increase the velocity at which water travels through a buffer, thereby decreasing the amount of time that rate can filter through soil and vegetation. For removal of most pollutants, flat slopes with gradients of less than 5% are desirable (Hruby 2013). Increasing buffer width is common when slopes are steeper than 15%.”~~ (Massachusetts Association of Conservation Commissions’ Buffer Zone Guidebook, 2019).

B. Definition and Boundary. The [AURA](#) is the area adjacent to a resource area specified in Section 2, A(1) through (4) and is the land within 100 feet (measured horizontally) of any of the aforesaid resource areas.

C. [Evaluation of Alternatives to Work in Adjacent Upland Resource Area.](#) ~~A growing body of research evidence suggests that even “no disturbance” areas reaching beyond 25 feet from wetlands, streams, rivers, and other water bodies may be insufficient to protect many important characteristics and values. Problems of nutrient runoff, water pollution, siltation, erosion, vegetation change, and habitat destruction are greatly exacerbated by activities within 100 feet of wetlands. Thus, W~~work and activity in the [AURA](#) shall be avoided-and discouraged and ~~practicable reasonable~~ alternatives pursued [that achieve the project purpose.](#) ~~Where work is~~

Comment [4]:

I suggest deleting these if you think I succeeded in consolidating in A(3) Create a bibliography that supports all findings.

proposed in the AURA, the Applicant shall conduct an Alternatives Analysis to prove by a preponderance of evidence that the project as proposed has met the standard of avoid minimize and mitigate and there are no practicable alternatives to the proposed project with materially less adverse or cumulative effects¹ on the interests protected by this bylaw, and that the work, including proposed mitigation will have no significant adverse impacts.

~~(Cumulative effect is defined an effect that is significant when considered in combination with other activities that have occurred, that are occurring simultaneously, or that are reasonably foreseeable, whether such activities are contemplated as a separate phase of the project or arise from unrelated but reasonably foreseeable projects).~~

Comment [5]:
Heidell (Added definition of cumulative, based on Boston ordinance)

1. Definition of Practicable. An alternative is practicable and substantially equivalent economically if it is available and capable of being done after taking into consideration costs, existing technology, proposed use, and logistics, in light of overall project purposes. The Commission shall consider as practical alternative options that were available to the Applicant but appear to be precluded due to self-imposed hardships and constraints (e.g., lot, roadway and drainage layouts engineered without proper regard to impact on Wetland Resource Areas protected by the By-Law. The four factors to be considered are:

- a. Costs, including both costs of the alternatives and overall project costs, and whether such costs are reasonable or prohibitive to the owner. Higher or lower costs taken alone will not determine whether an alternative is practicable. Applicants should not submit, nor should the Commission request, financial information of a confidential nature, such as income tax records or bank statements. The Commission may require documentation of costs, but may also base its determinations on descriptions of alternatives, knowledge of alternative sites, information provided by qualified professionals, comparisons to costs normally associated with similar projects, or other evidence. Any documentation of costs should be limited to that required for a determination of whether the costs are reasonable or prohibitive.
- b. Existing technology, which includes best available measures (i.e., the most up-to- date technology or the best designs, measures, or engineering practices that have been developed and are commercially available);
- c. The Proposed Use. This term is related to the concept of project purpose. In the context of a typical single family home, the project purpose (construction of a single family house) and proposed use (family home) are virtually identical. In the context of projects where the purpose implies a business component, the proposed use typically requires economic viability. Practicable and substantially equivalent economic alternatives include alternatives which are economically viable for the proposed use from the perspective of site location,

Comment [6]:
definition

¹ Cumulative effects is defined in the Definition Section of our existing Regulations. Boston's ordinance is slightly different, and reads in part: An effect that is significant when considered in combination with other activities that have occurred, that are occurring simultaneously, or that are reasonably foreseeable, whether such activities are contemplated as a separate phase of the same project, or arise from unrelated but reasonably foreseeable future projects. ...Future effects of sea level rise, coastal or inland flooding, or other future climate change effects are included among cumulative effects.

project configuration within a site, and the scope of the project. In the context of publically financed projects, the proposed use includes consideration of legitimate governmental purposes (e.g., protection of health and safety, providing economic development opportunities, or similar public purposes);

Comment [7]:

Heidell - added more text defining purpose. Text comes from Riverfront language, but a little abbreviated.

- d. Logistics. Logistics refers to the presence or absence of physical or legal constraints. Physical characteristics of a site may influence its development. Legal barriers include circumstances where a project cannot meet other applicable requirements to obtain the necessary permits at an alternative site. An alternative site is not practicable if special legislation or changes to municipal zoning or zoning variance would be required to achieve the proposed use or project purpose.

2. Scope of Alternative Analysis. The purpose of evaluating project alternatives to locate activities so that impacts to the Adjacent Upland Resource Area are avoided to the extent practicable. The applicant shall submit information to describe sites and the work both for the proposed location and alternative site configurations and locations. The Applicant shall have the burden of proof for providing credible evidence that the work proposed will not have unacceptable significant or cumulative effect upon resource area values protected by the By-Law. Failure to provide adequate evidence shall be sufficient cause for the Commission to deny a permit or grant a permit with conditions. The Alternative Analysis shall include at a minimum: a) an alternative that does not alter Adjacent Upland Resource Area to provide baseline data for evaluating other alternatives, and b) an assessment of alternatives to both temporary and permanent impacts to the Adjacent Upland Resource Area including configurations that would avoid, minimize, and mitigate disturbance and alteration by either moving the proposed project outside of or farther away from wetland resources or reducing the size of the proposed project. It shall also include a description of all reasonable identified alternatives that were considered by the Applicant along with the reasons why such alternatives were considered inadequate, unworkable or inadvisable. The level of detail of information shall be commensurate with the scope of the project and the practicability of alternatives. Where an applicant identifies an alternative which can be summarily demonstrated to be not practicable, an evaluation is not required. The Applicant shall carry the burden of proof for demonstrating to the Commission that activities in the Adjacent Upland Resource Area are necessary.

Comment [8]:

definition

D. Only when the Applicant proves through a written alternative analysis that reasonable alternatives are not available or practicable, The Commission may, in its discretion, allow temporary, limited, or permanent disturbance as appropriate and consistent with this Section if the Applicant documents that there are no practicable alternatives to the project with materially less adverse and cumulative effects on the interests protected by this bylaw and convinces the Commission by a preponderance of evidence that the area or part of it may be altered without harm to the values protected by this Bylaw taking into consideration depending on the characteristics of the Adjacent Upland Resource Area, including but not limited to the following:

- (1) slope
- (2) soil characteristics
- (3) drainage patterns

- (4) extent and type of existing native vegetation
- (5) extent and type of invasive vegetation
- (6) amount of impervious surface
- (7) wildlife and wildlife habitat
- (8) intensity and extent of use
- (9) intensity and extent of adjacent and nearby uses
- (10) capacity to provide resiliency to climate change

This approach is intended to allow flexibility for use of property while maintaining necessary levels of protection of the resource values protected by the Bylaw.

ED. No activities or work, other than passive passage and resource area enhancement, are permitted within the first 25 feet of the Adjacent Upland Resource Area (measured horizontally from a resource area specified in Section 2, A(1) through (4)). Except as part of Resource Area Enhancement or an Ecological Restoration Project, no vegetation may be disturbed, and leaf litter and natural debris shall remain in place. This No-Disturbance area shall at a minimum contain the same amount of area of undisturbed and natural vegetation from its pre-project state. A previously disturbed or previously developed 25-foot area shall be restored to a naturally vegetated state to the greatest extent practicable. Depending on site conditions and for sites with including but not limited to slopes greater than 15%, or highly erodible soils, or hydrologic conditions likely to promote significant erosion, soil permeability or other impact potential the Commission may require a wider undisturbed buffer.

Comment [9]:
maybe definition

FE. No new structure(s) shall be placed in the first 50 feet of the Adjacent Upland Resource Area (measured horizontally from a resource area specified in Section 2, A(1) through (4)), unless approved by the Commission in evaluation of existing total impervious surface (see Section F. below) within the 50-foot area compared to the proposed impervious surface, and other considerations for the improvement of the resource area and climate change resiliency. Depending upon site conditions, including but not limited to slopes greater than 15%, or highly erodible soils, or hydrologic conditions likely to promote significant erosion, soil permeability or other impact potential, the Commission may require new structures to be setback greater than 50 feet.

G. For either new lots created after (INSERT DATE OF REG. REVISION WILL BE INSERTED HERE) by dividing a pre-existing pre-existing lot of record, as of the time the wetland bylaw was first adopted by the Town or for work on undisturbed land (land determined by the Commission to be of a predominately natural character or to have been altered without a permit from the Commission), or work in undeveloped buffer zones, when partial intrusion into the AURA is unavoidable, in addition to the requirements noted above, the Applicant must mitigate the intrusion by increasing the width of an buffer (as addressed in E. above) by an amount equal to or greater than the distance of the intrusion into the AURA. For unavoidable encroachment, as mitigation, the Commission may require improvements to remaining undisturbed AURA function.

HF. Impervious surface.

- (1) The total area of impervious surface within the AURA shall not increase over existing total area unless mitigation is provided and there is no impact on Resource Area values.
- (2) Impervious surfaces shall not intrude farther into the AURA than pre-project conditions unless the Commission in its sole discretion determines that the total area of impervious surface is significantly decreased or other mitigation is provided that serves to protect the resource area values. Impervious surface shall be kept as close as possible to the outer (upland) boundary of the AURA.

(3) Work in the AURA shall not adversely affect the hydrology of the site including runoff rates, volume, water quality, flood storage capacity, or flow paths.

I For new development or redevelopment For permitted projects in the AURA, landowners shall not apply or allow the application of phosphorus-containing fertilizers in the AURA unless needed as indicated by a soil test. shall minimize application of fertilizer containing nitrogen and phosphorus. All landowners in AURAs are otherwise expected to follow 330 CMR 31.00 Plant Nutrient Application Requirements for Agricultural Land and Land Not Used for Agricultural Purposes.

JX. Chloride-based De-icing chemicals containing sodium, potassium and calcium chloride are prohibited from use on driveways located on impervious surfaces in the AURA. However, eco-friendly alternative de-icing measures and/or sand may be used to mitigate icing conditions in these areas. Alternatives will be reviewed and approved by the Commission on a case-by-case basis.

JKG. The following activities may not be conducted in any portion of the AURA: changing of oil, refueling, or damage to other vegetation not scheduled for removal.

KH. Certain Proposed Activities in AURA.

The AURA should be left intact in a naturally vegetated state to the maximum extent practicable and as provided in these regulations. However there are some activities that may be permitted by the Commission that are not likely to have a significant or cumulative effect on the resource area values of the Bylaw, nor are they expected to have a significant effect on the ability of the resource area resilience to climate change, provided the other provisions of these Regulations are met. These proposed activities are addressed in Section XX (THE SECTION NUMBER OF THE SECTION THAT WILL ADDRESS MINOR/ADMINISTRATIVE REVIEW WILL BE INSERTED HERE) must be reviewed by the Conservation Commission Administrator to determine the appropriate permitting procedures, and to determine what, if any, mitigation is required. These activities are:

- (1) Fencing, provided it will not constitute a barrier to wildlife movement;
- (2) Plantings of native species of trees, shrubs, or groundcover, but excluding lawns that would require mowing, regardless of species composition;
- (3) The conversion of impervious surfaces to vegetated surfaces, provided erosion and sedimentation controls are implemented during construction;

Comment [10]:

Delete this if we're going to have an Administrative Review section elsewhere?

- (4) Activities that are temporary in nature, have negligible impacts, and are necessary for planning and design purposes (e.g., installation of monitoring wells, exploratory borings, sediment sampling and surveying);
- (5) Nonpermanent wildlife watching blinds; or
- (6) Short-term scientific or educational activities.

DRAFT

Section ?? – Administrative Review of Minor Projects or Work

[I suggest inserting these as a new Section 8 and moving the other sections accordingly-NS]

A. Findings

Some projects are simple, small in scale, minor, or routine, and such project involve very little activity or alteration in Resource Areas protected by the Bylaw and are not likely to have a significant or cumulative effect on the Resource Area Values protected by the Bylaw. Such projects would not even require a Request for Determination of Applicability and usually may be reviewed and approved by the Conservation Administrator rather than the full Commission.

B. Applicability

If a project meets the criteria in Section 8?? B.(1) or (2) below, the work may be reviewed and approved by the Conservation Administrator. If the Conservation Administrator has any doubt that a project meets these criteria, the Applicant will be required to file a Request for Determination of Applicability or application for a permit.

(1) A project may be approved by the Conservation Administrator if it meets all of the following conditions:

- a. No work is proposed in the Resource Areas listed in Section 2.A.(1), (2), (3), or (4) of these regulations [*Note: these are all RA's except AURA, Riverfront Area and Land Subject to Flooding*];
- b. Work is not proposed within 25 feet from the edge of the Resource Areas listed in Section 2.A.(1), (2), (3), or (4) of these regulations;
- c. No uprooting of non-invasive vegetation and not mowing to the ground or clear-cutting is proposed;
- d. *Other conditions?*

(2) A project may be approved by the Conservation Administrator if it one of the following activities:

- a. Fencing, provided that there are openings along the bottom at least 4 inches high in to allow wildlife movement; a sketch or survey of the property showing the proposed fence location must accompany the application.
- b. Installation of dried laid (not mortared) stone walls and compacted gravel footing, provided they do not constitute a barrier to wildlife movement; a sketch or survey of the property showing the proposed fence location must accompany the application.

- c. Vista pruning of shrubs and trees according to the following guidelines . . . [*See Falmouth's for detailed parameters*]?
 - d. Removal of invasive species by hand on the _____ list within the Buffer Zone and Adjacent Upland Resource Area provided native plants from the ____ list are planted in the same area *?or nearby?*
 - e. Planting of native species of trees, shrubs, or groundcover that are on the _____ list, but excluding planting or expansion of lawn area.
 - f. Not within 50 feet of the Resource Areas listed in Section 2.A.(1), (2), (3), or (4) of these regulations, the conversion of impervious surface to lawn, provided erosion and sedimentation controls are implemented during construction;
 - g. Activities that are temporary in nature, having negligible impacts, and are necessary for planning and design purposes (e.g., installation of monitoring wells, exploratory borings, sediment sampling, and surveying); a sketch or survey of the property showing the proposed locations and resource areas must accompany the application.
 - h. Pervious walkways of no more than four (4) feet in width as long as no trees or shrubs will be removed;
 - i. Filling of less than 1 cubic foot of floodplain ?
 - j. Conversion of existing lawn area to uses accessory to a single-family house, provided that the work is located more than 50 feet from the Resource Areas listed in Section 2.A.(1), (2), (3), or (4) of these regulations and is built on sono tubes, such as: open-slotted decks with crushed stone underneath, above-ground pools, patios under 100 square feet provided there is spacing between patio stones; freestanding (no foundation) sheds with a foot print of less than 15 x 15 feet; steps under 100 square feet; porches under 100 square feet on concrete sono tube footings. The conversion of such accessory uses to lawn is also allowed.
 - k. [*any other specific types of projects?*]
- C. Procedure:
- a. The Applicant shall complete and submit a Form ____ [*create form and name it*] that shall contain sufficient information to determine where the project or work is proposed and whether it meets the requirements set forth in this section.
 - b. The Applicant must provide a complete written description of all the work proposed and protective or mitigation measures proposed
 - c. The Conservation Administrator shall visit the site and the boundaries of Resource Areas must be clearly evident to the Conservation Administrator;

- d. The Conservation Administrator shall determine whether the project or work meets the criteria listed in Section __ (B) above.
- e. The Conservation Administrator shall issue an Administrative Review Decision (Form ____) within 7?? days of receipt of Form ____ that fulfills the information requirements of this section.
- f. The Conservation Administrator may approve the work as proposed, approve it with conditions, or deny the work.
- g. The decision will be filed with the Commission and a copy provided to the Applicant.

[Discussion point: do we want the Commission to be able to appeal to itself/reverse decision?]

D. Appeal

The decision rendered by the Conservation Administrator may be appealed by the person seeking Administrative Review by filing a Request for Determination of Applicability.

[Do we want the following?] Any person aggrieved by a decision rendered by the Conservation Commission under this Section may file an RDA with the Commission within ??? days.

E. x