

EcoTec, Inc.
ENVIRONMENTAL CONSULTING SERVICES
102 Grove Street
Worcester, MA 01605-2629
508-752-9666 – Fax: 508-752-9494

October 8, 2021

Newton Conservation Commission
City of Newton Planning and Development Department
1000 Commonwealth Avenue
Newton, MA 02159-1499 via email (jsteel@newtonma.gov) and 1st class mail

RE: Request for Determination of Applicability under the Massachusetts Wetlands Protection Act and Newton Floodplain Ordinance;
Portion of 791 Walnut Street, Newton, Massachusetts (Map 64003; Lot 0009);
Owner/Applicant: Newton Cemetery Corp.

To the Commission:

Enclosed please find two (2) hard copies of the Request for Determination of Applicability (“RDA”) filed under the Massachusetts Wetlands Protection Act and the Newton Floodplain Ordinance for the above-referenced property. Enclosed, please also find a check in the amount of \$50.00 made payable to the City of Newton for the filing fee under the Ordinance. There is no requirement for abutter notification for an RDA under the Act or Ordinance. Please note that it is EcoTec’s opinion that there are no jurisdictional areas located on the property and we seek confirmation of this finding from the Newton Conservation Commission.

This submittal consists of the following:

1. This cover letter;
2. City of Newton Cons.Com. Wetland Application Coversheet/Checklist and \$50.00 Ordinance Filing Fee Check;
3. The Request for Determination of Applicability Form with required Appendices and Attachments;
4. Wetland Evaluation Report, by EcoTec - Paul J. McManus, PWS dated 10/7/2021, which includes:
 - a. USGS Topographic Map, Boston South Quadrangle, dated 1987, with the site indicated;
 - b. Flood Insurance Rate Map, Map Number 25017C0566E, Effective Date June 4, 2010, with the site indicated;
 - c. Massachusetts NHESP Atlas, 15th Edition, effective August 1st, 2021, including Estimated Habitats of Rare Wetlands Wildlife and Certified Vernal Pools, with the site indicated.

Please have the legal notice billed to EcoTec, Inc. (508-752-9666 ext. 1).

We look forward to meeting with the Commission regarding this filing. If you have any questions, please feel free to contact me at any time.

Cordially,
ECOTEC, INC.



Paul J. McManus, PWS
President

C: Newton Cemetery Corp., Attn: Mary Ann Buras, President
Anser Advisory, Attn: Melissa Martinez, AIA, NCARB, MCPPO
IBI Group, Attn: Horace Aikman, RLA

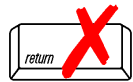


WPA Form 1- Request for Determination of Applicability

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:

Newton Cemetery Corp - Mary Ann Buras, President		mab@newcemcorp.org	
Name		E-Mail Address	
791 Walnut Street			
Mailing Address			
Newton Center		MA	02459-1719
City/Town		State	Zip Code
617-332-0047		617-969-5520	
Phone Number		Fax Number (if applicable)	

2. Representative (if any):

EcoTec, Inc.			
Firm			
Paul J. McManus, PWS		pmcmanus@ecotecinc.com	
Contact Name		E-Mail Address	
102 Grove Street			
Mailing Address			
Worcester		MA	01605-2629
City/Town		State	Zip Code
508-752-9666 ext 1		508-752-9494	
Phone Number		Fax Number (if applicable)	

B. Determinations

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

- 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:

Newton
Name of Municipality

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



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).

As outlined in the attached Wetland Evaluation Report, it is EcoTec's opinion that the land within the Northwest Quadrant of Newton Cemetery, including the existing irrigation lagoon, does not contain any jurisdictional wetland resource area. Most of the area is obvious upland, lacking any indicator of a wetland resource. The irrigation lagoon is a ponding area, however according to the Massachusetts Wetland Regulations (310 CMR 10.04), the lined irrigation lagoon is not considered a jurisdictional pond: "...the following human-made bodies of open water shall not be considered ponds:(b) swimming pools or other impervious human-made basins;" As such, it is EcoTec's opinion that there are no jurisdictional wetlands within the subject area, and no Floodplain Ordinance Jurisdiction.

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.)



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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:

Mary Ann Buras
Name
791 Walnut Street
Mailing Address
Newton Center
City/Town
MA 02459-1719
State 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.

Mary Ann Buras 10/8/2021
Signature of Applicant Date
Paul J. Matthews 10/8/2021
Signature of Representative (if any) Date

EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES

102 Grove Street

Worcester, MA 01605-2629

508-752-9666 – Fax: 508-752-9494

Wetland Evaluation Report

Northwest Quadrant: Newton Cemetery

791 Walnut Street

Newton Center, MA

Prepared For:

Newton Cemetery Corp.

791 Walnut Street

Newton Center, MA 02459-1719

Prepared By:



Paul J. McManus, LSP, SPWS
President

October 7, 2021

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INTRODUCTION:

Newton Cemetery is a historic feature of the local community, appearing on historic atlases dating to the late 19th Century, and remains an active internment facility, with associated crematorium, worship and meeting spaces, offices, and property maintenance facilities. EcoTec Inc. was retained by Newton Cemetery Corp. to conduct an evaluation of the northwest portion of the Newton Cemetery property, for the presence of wetland resources as defined by: (1) the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40; the “Act”) and its implementing regulations (310 CMR 10.00 *et seq.*; (the “Regulations”); and (2) the U.S. Clean Water Act (i.e., Section 404 and 401 wetlands). The City of Newton does not have a local wetlands protection bylaw or ordinance, but has a Floodplain Ordinance. Paul J. McManus, PWS conducted the inspection. The portion of the property which was evaluated and is the subject of this report is depicted on the attached figures, including a USGS Locus Map and a recent topographic survey of the site. For purposes of this evaluation, the subject area is referred to as the “Northwest Quadrant” of the Newton Cemetery. Note that the Northwest Quadrant is located more than 200-foot north of and does not include the pond and wetland system associated with Cold Spring Brook which extends in a generally west-east orientation through the larger cemetery property.

SITE DESCRIPTION:

The Northwest Quadrant of Newton Cemetery is located immediately south of Commonwealth Avenue, west of residences on North Street, east of residences on Mary Ellen Road, and north of additional property of the Newton Cemetery. A portion of the frontage on Commonwealth Avenue is interrupted by a parcel housing an MWRA facility. The Northwest Quadrant is largely but not entirely developed and consists of the following areas:

- Developed cemetery use areas consisting of paved roads and paths;
- Landscaped areas which include internment locations;
- Cemetery maintenance facilities, including a building, as well as paved driveway, parking, and materials storage areas;
- A soil and vegetation management area associated with cemetery operations;
- Undeveloped wooded areas; and
- A lined irrigation lagoon which also serves an aesthetic function.

EcoTec’s evaluation also included a small circular parcel (Map 64003; Lot 0009A) within the Newton Cemetery property which is owned by the Commonwealth of Massachusetts (MWRA).

REVIEW OF MAP RESOURCES:

Prior to conducting a site evaluation, EcoTec conducted a review of map resources to identify possible wetland resources. These include:

- USGS Topographic Map: The USGS Boston South Quadrangle (attached) includes the site, and indicates the presence of the pond and stream system south of the Northwest Quadrant, but no streams or vegetated wetlands on the site locus;
- MassGIS: A map of the Northwest Quadrant generated by EcoTec from MassGIS Oliver is attached. The MassGIS layers on the attached figure include:
 - Wetlands and streams (default);
 - Certified vernal pools;
 - Potential vernal pools;

- Estimated Habitats of Rare Wetlands Wildlife [for use with the Wetland Regulations] and Priority Habitats [for use with Massachusetts Endangered Species Act (M.G.L. Ch. 131A; “MESA”) and MESA Regulations (321 CMR 10.00 et seq.)];

The only potential wetland resource identified on this figure within the subject locus is a small ponding area which is a lined irrigation storage lagoon. As detailed below, it is EcoTec’s opinion that the irrigation lagoon is not a jurisdictional wetland resource;

- Newton GIS: The City of Newton GIS (see attached figure generated from the local GIS system) identifies only the irrigation lagoon with an associated 100-foot Buffer Zone within the Northwest Quadrant. The irrigation lagoon is discussed below;
- 1917 Atlas of Newton by GW Bromley: This map indicates that in 1917, the irrigation lagoon was not present, however the western portion of the Northwest Quadrant included two south-flowing streams that were tributary to Cold Spring Brook and the pond/wetland system south of the Northwest Quadrant. These streams no longer exist;
- FEMA: A National Flood Insurance Program “FIRMette” is appended and indicates that no mapped flood zones occur on or near the subject locus.

SITE EVALUATION:

On June 14, 2021, Paul J. McManus, SPWS conducted an inspection of the Northwest Quadrant of Newton Cemetery, to evaluate the area for possible jurisdictional wetland resources. Also present during this inspection were:

- Mary Ann Buras, President - Newton Cemetery Corp;
- Stephen Dean, Grounds Manager - Newton Cemetery Corp;
- Melissa Martinez, AIA, NCARB, MCPPO, Senior Project Manager - Anser Advisory;
- Horace Aikman, RLA, Senior Associate - IBI Group.

As noted above in the Site Description, the majority of the Northwest Quadrant consists of actively managed grounds of the cemetery, as well as the groundskeeping facility and materials management area. A wooded area of several acres in size is located in the eastern and northeastern portion of the locus, west of the homes on North Street and south of Commonwealth Avenue. With the exception of the irrigation lagoon (discussed below) no evidence of ponding, saturated soils, stream channel, wetland plant community, or other indicator of the presence of a wetland resource area, was observed during the site inspection. The stream channels mapped on the 1917 historical Atlas are gone. The undeveloped area plant community is strongly dominated by upland species including northern red oak (*Quercus rubra*), northern white oak (*Quercus alba*), cherry (*Prunus sp.*), and Norway maple (*Acer platanoides*) trees. No localized area dominated by “wetland indicator” trees, shrubs, or ground cover was observed. It is therefore EcoTec’s opinion that no Bordering (or isolated) Vegetated Wetland, stream (perennial or intermittent), or Land Subject to Flooding is located within the site locus. Similarly, based upon the developed nature of the surrounding properties, no wetland Buffer Zone affects the site locus.

IRRIGATION LAGOON:

The irrigation lagoon is an approximately 10,000 square foot ponding area surrounded by vertical stone walls. The lagoon is depicted in the photograph below.



The irrigation lagoon is located at an elevated position on the landscape. According to Newton Cemetery personnel, the lagoon serves as a storage reservoir for irrigation water. Water is pumped into the lagoon for storage, and then pumped to irrigate landscaped areas. Review of aerial photographs obtained from HistoricAerials.com (appended) indicates that the irrigation lagoon was not present in 1978, but had been constructed by 1994. A plan (appended) titled “Plan & Grading – Irrigation Storage Newton Cemetery Corp” signed and stamped by Dennis A Tripp, PE (date obscured) depicts grading of a proposed “Irrigation Storage” feature consistent with the existing irrigation lagoon. The Tripp plan includes a plan detail that indicates the presence of a liner behind the ornamental stone that forms the perimeter of the ponding and along the bottom. Photographs of the lagoon liner being installed are appended.

The Massachusetts Wetland Regulations define a Pond as:

Pond: A Pond is defined (310 CMR 10.04) as:

“Pond (Inland) means any open body of fresh water with a surface area observed or recorded within the last ten years of at least 10,000 square feet. Ponds may be either naturally occurring or human-made by impoundment, excavation, or otherwise. Ponds shall contain standing water except for periods of extended drought. Periods of extended drought for purposes of 310 CMR 10.00 shall be those periods, in those specifically identified geographic locations, determined to be at the “Advisory” or more severe drought level by the Massachusetts Drought Management Task Force, as established by the Executive Office of Energy and Environmental Affairs and the Massachusetts Emergency Management Agency in 2001, in accordance with the Massachusetts Drought Management Plan (MDMP). Notwithstanding the above, the following human-made bodies of open water shall not be considered ponds:

- (a) basins or lagoons which are part of wastewater treatment plants;*
- (b) swimming pools or **other impervious human-made basins;** and*
- (c) individual gravel pits or quarries excavated from upland areas unless inactive for five or more consecutive years”*

(emphasis added).

Based upon the obvious human-made history, the presence of an impervious liner for use as irrigation storage, and the regulatory provision that “impervious human-made basins” “shall not be considered ponds” it is EcoTec’s opinion that the irrigation lagoon is not a Pond or other protected Wetland Resource Area under the Massachusetts Wetland Regulations at 310 CMR 10.00. For similar reasons as outlined above, it is also EcoTec’s opinion that the irrigation lagoon is not a federal Water of the US, and that no federal-regulated wetlands/ waters exist within the site locus.

NEWTON FLOODPLAIN ORDINANCE:

The Newton Floodplain Ordinance establishes an overlay district within which certain activities are regulated. The nearest area to the subject locus subject to the Floodplain Ordinance is Cold Spring Brook, to which the Floodplain Ordinance attaches a 30-foot-wide offset from the Brook and tributaries centerline. The geographic limits of the Floodplain Ordinance do not extend onto the subject locus.

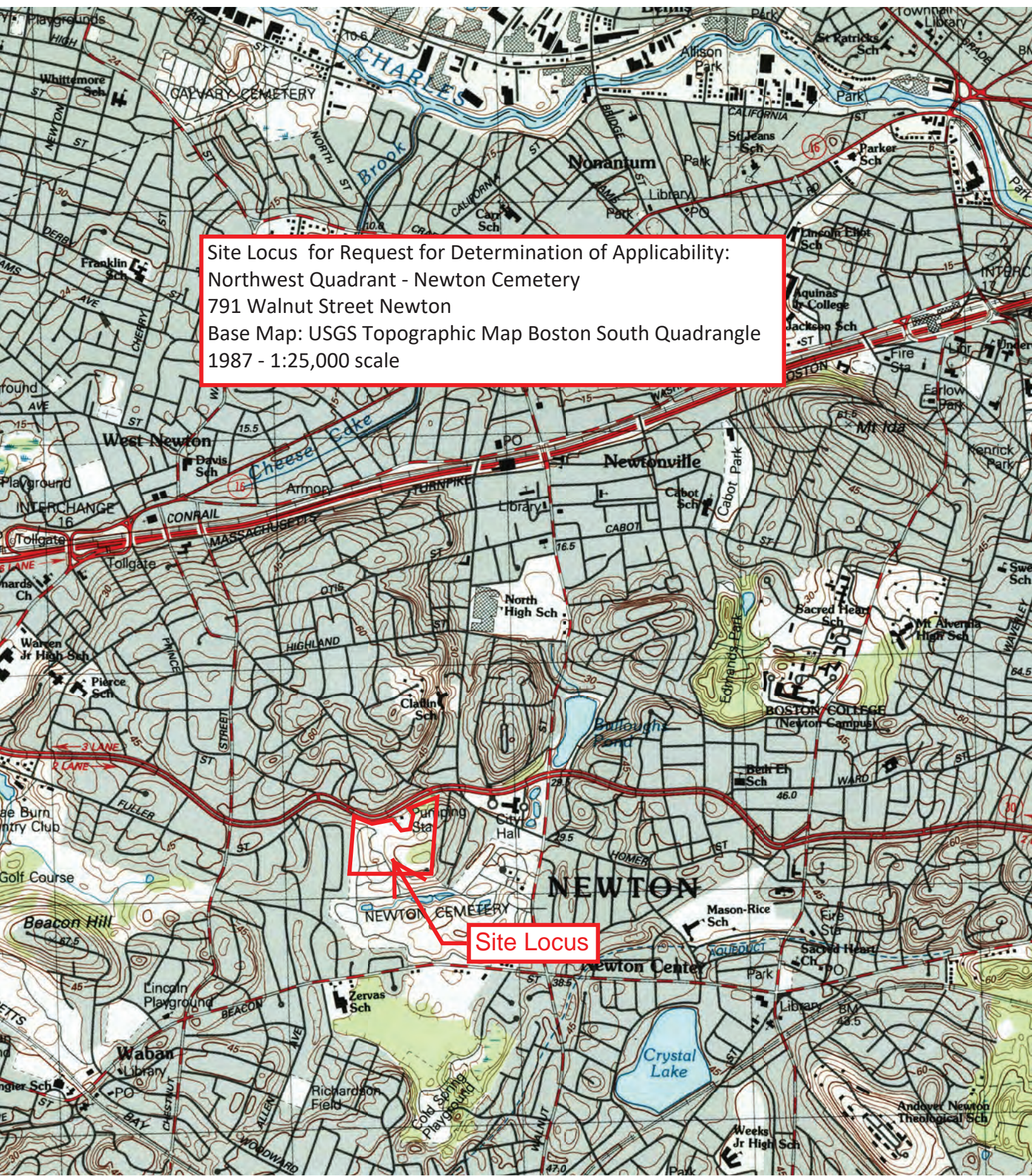
SUMMARY AND CONCLUSION:

Within the Northeast Quadrant portion of the Newton Cemetery property, the only area which contains any attributes of a regulated Wetland Resource Area is the lined, human-made irrigation lagoon, which is specifically excluded from regulation as a wetland resource. No areas containing a wetland plant community, wetland hydrology, or stream flow occur on the project locus. Therefore, it is EcoTec’s opinion that the portion of the Newton Cemetery identified as the Northwest Quadrant contains no areas subject to the provisions of the Massachusetts Wetland Regulations at 310 CMR 10.00, or to the federal Clean Water Act provisions for Waters of the US. Similarly, it is EcoTec’s opinion that the subject locus is not subject to the Newton Floodplain Ordinance.

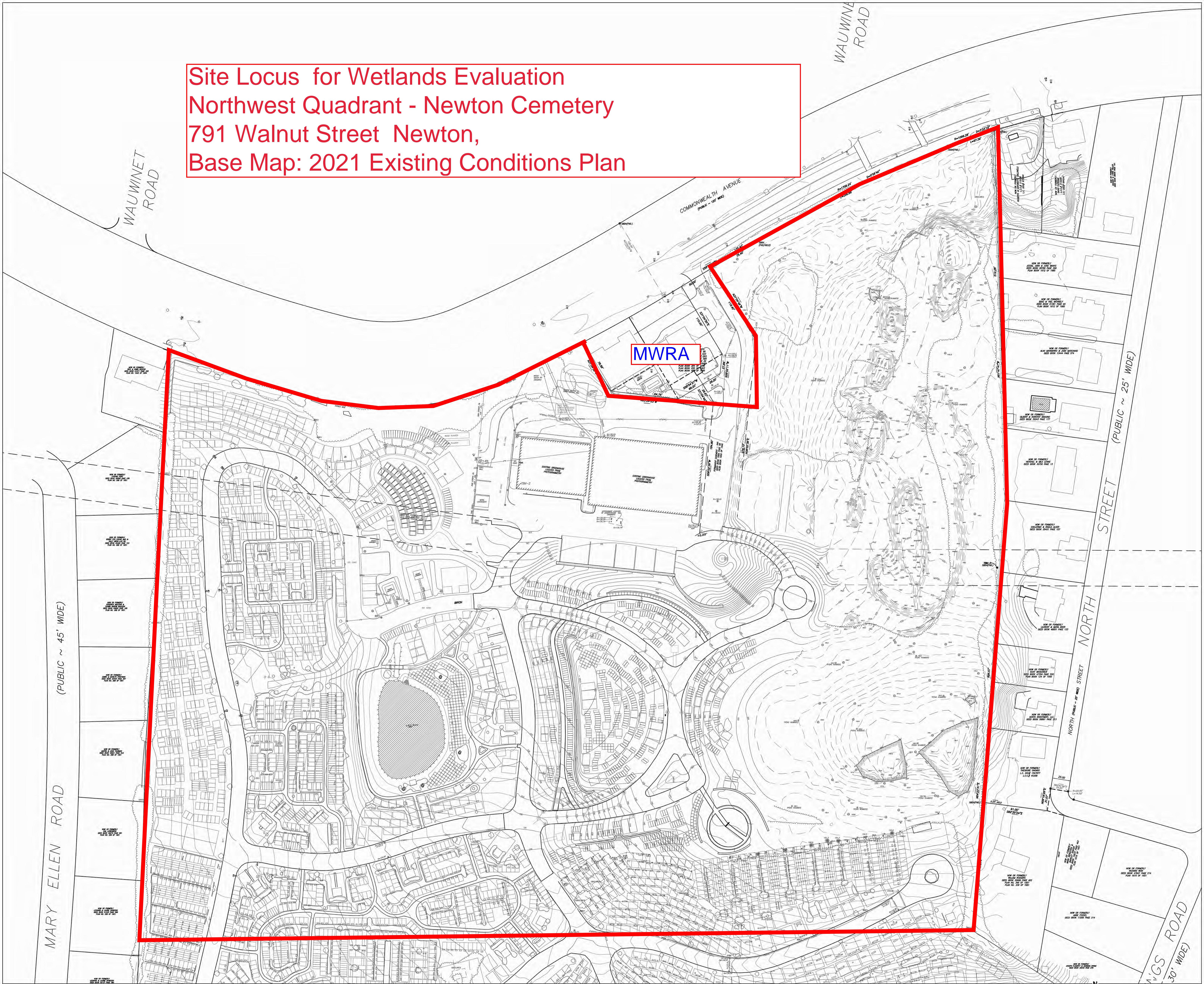
APPENDICES

1. USGS Map locus
2. Existing Conditions topographic survey
3. FEMA Flood Insurance Map (FIRMette)
4. Newton GIS Floodplain and Riverfront Area Mapping
5. MassGIS locus with NHESP data layers
6. Historic map: 1917 Newton Atlas
7. Plan: *Plan and Grading: Irrigation Storage Newton Cemetery Corp.*
8. Historic aerial photographs:
 - 1978
 - 1994
9. Photographs of Irrigation Lagoon Construction

Site Locus for Request for Determination of Applicability:
Northwest Quadrant - Newton Cemetery
791 Walnut Street Newton
Base Map: USGS Topographic Map Boston South Quadrangle
1987 - 1:25,000 scale



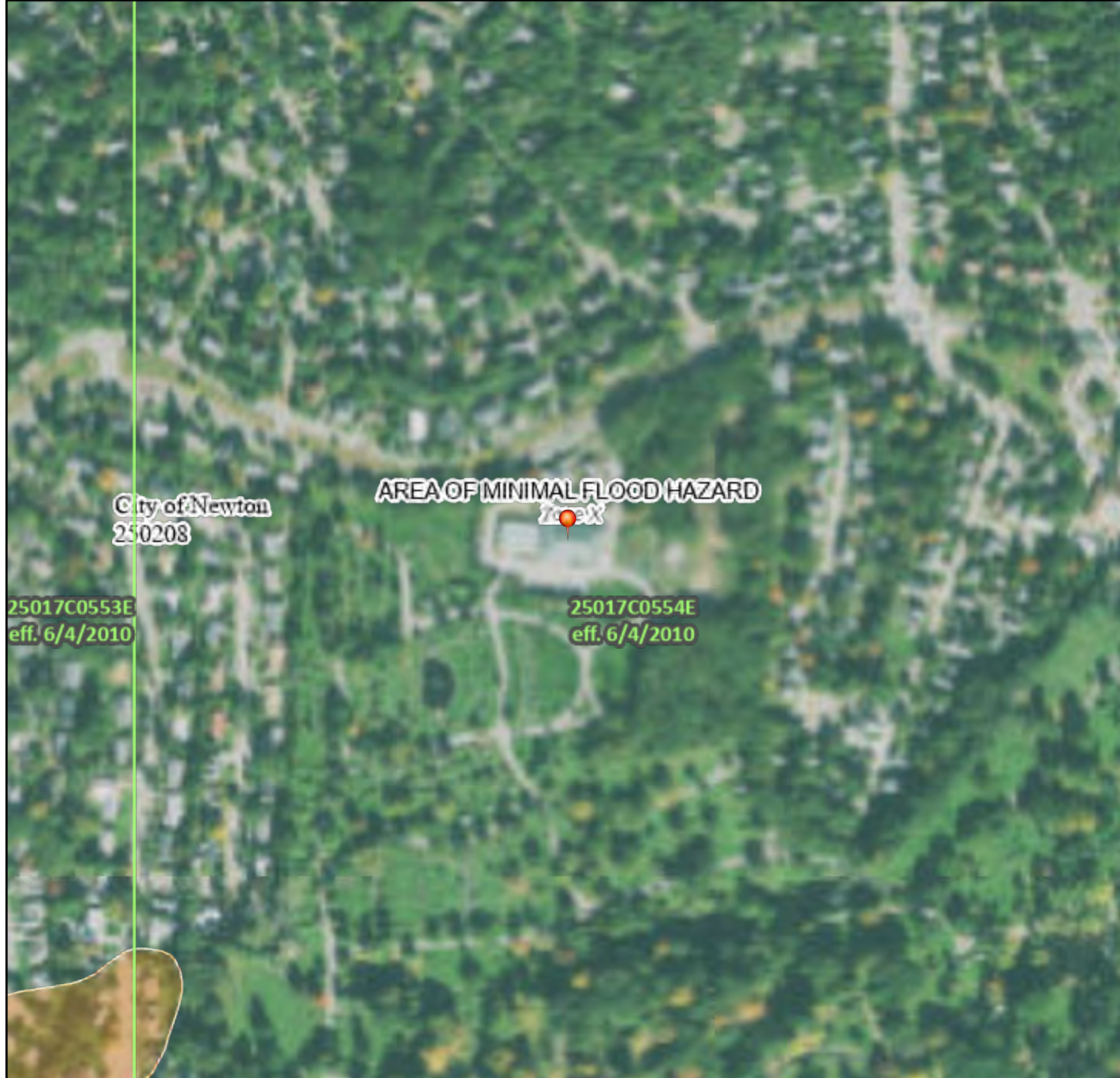
Site Locus for Wetlands Evaluation
Northwest Quadrant - Newton Cemetery
791 Walnut Street Newton,
Base Map: 2021 Existing Conditions Plan



National Flood Hazard Layer FIRMMette



71°13'12"W 42°20'25"N



Legend

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

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

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

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

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

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/28/2021 at 5:26 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Search by Address ie: 2 Fox Pl

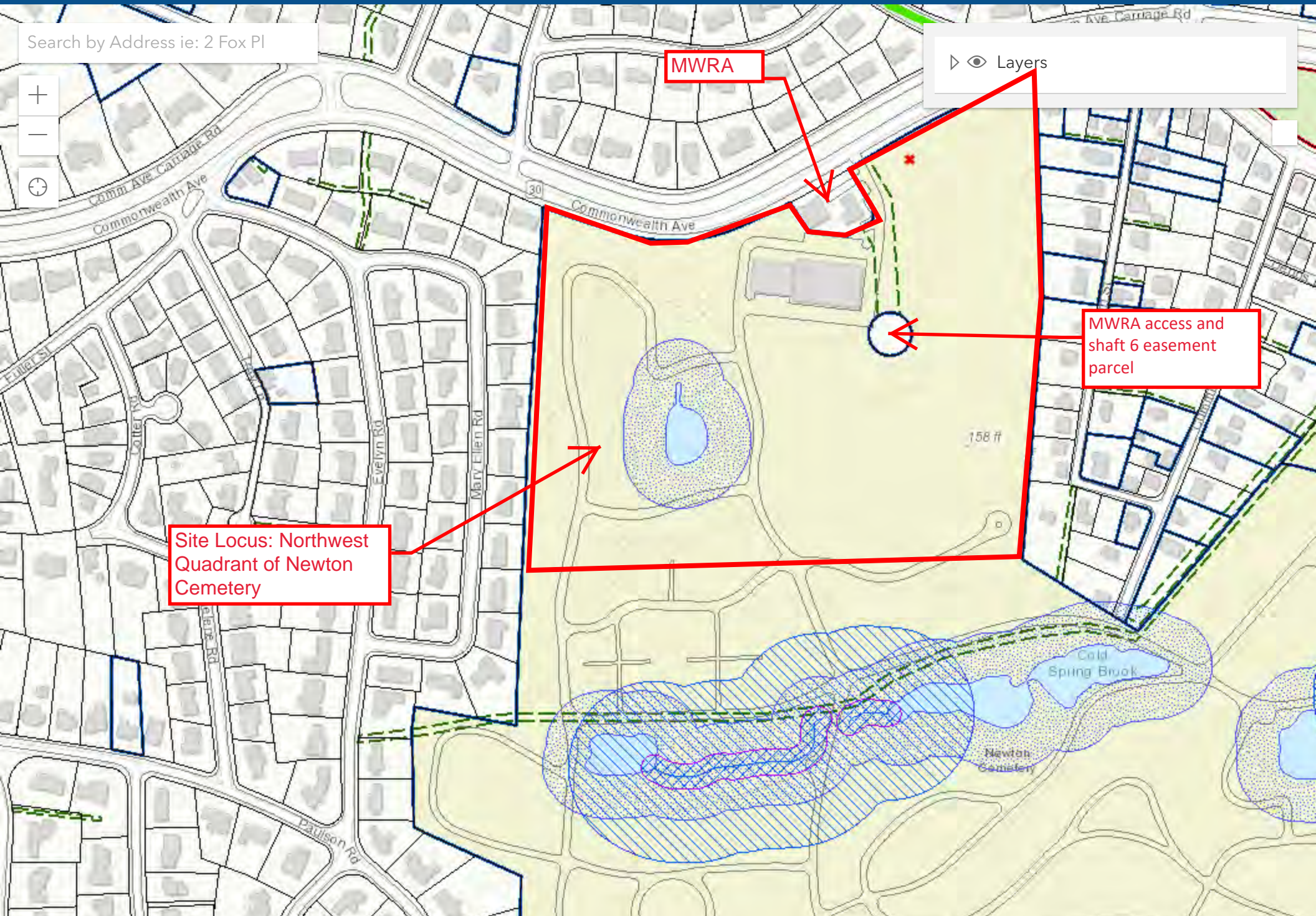


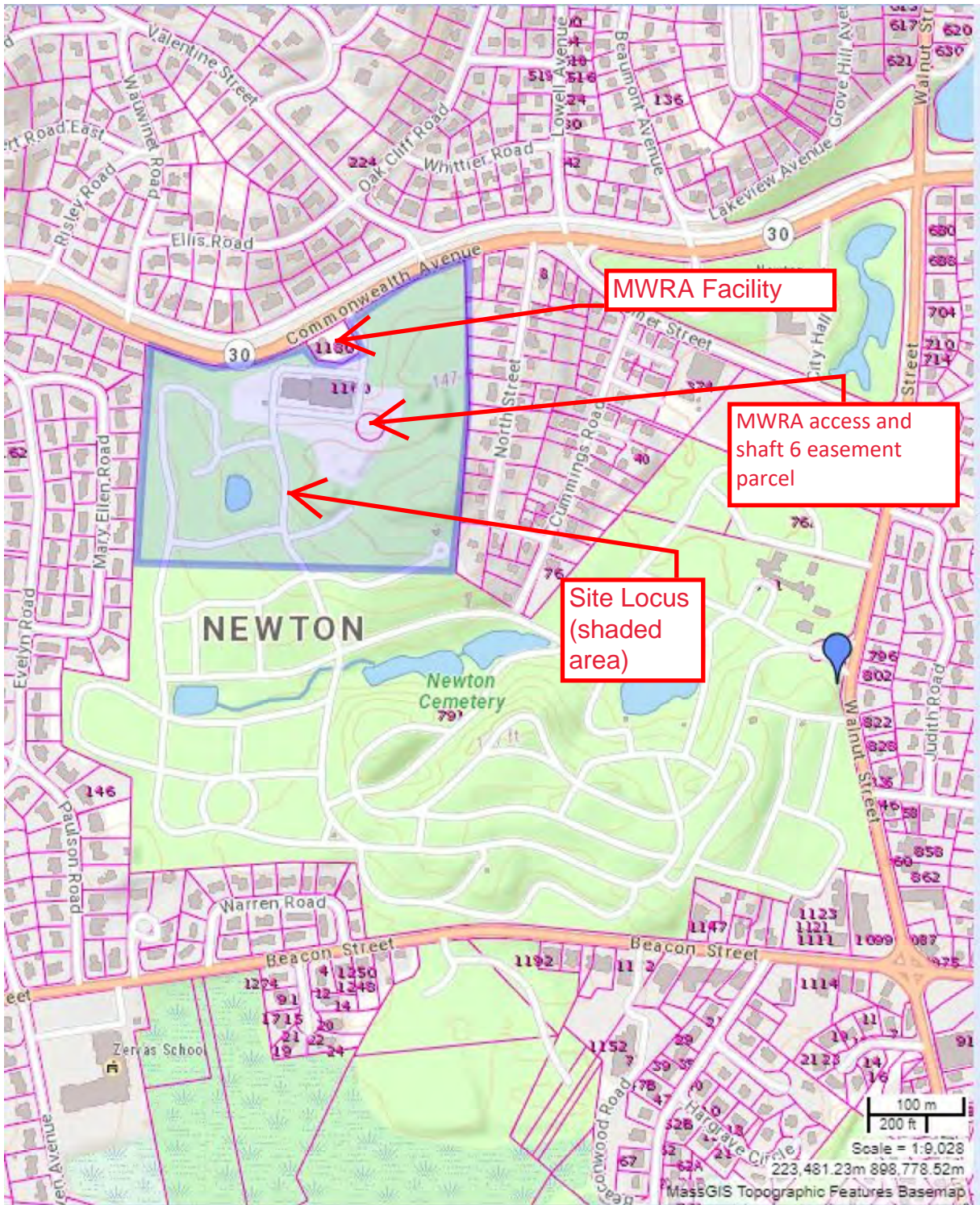
Layers

MWRA

MWRA access and shaft 6 easement parcel

Site Locus: Northwest Quadrant of Newton Cemetery





Active Data Layers

Check all | Uncheck all

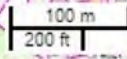
Legend

- NHESP Priority Habitats of Rare Species
 -
 -
- NHESP Estimated Habitats of Rare Wildlife
 -
- Potential Vernal Pools
 -
- NHESP Certified Vernal Pools
 - *
- Tax Parcels for Query

MWRA Facility

MWRA access and shaft 6 easement parcel

Site Locus (shaded area)



Scale = 1:9,028

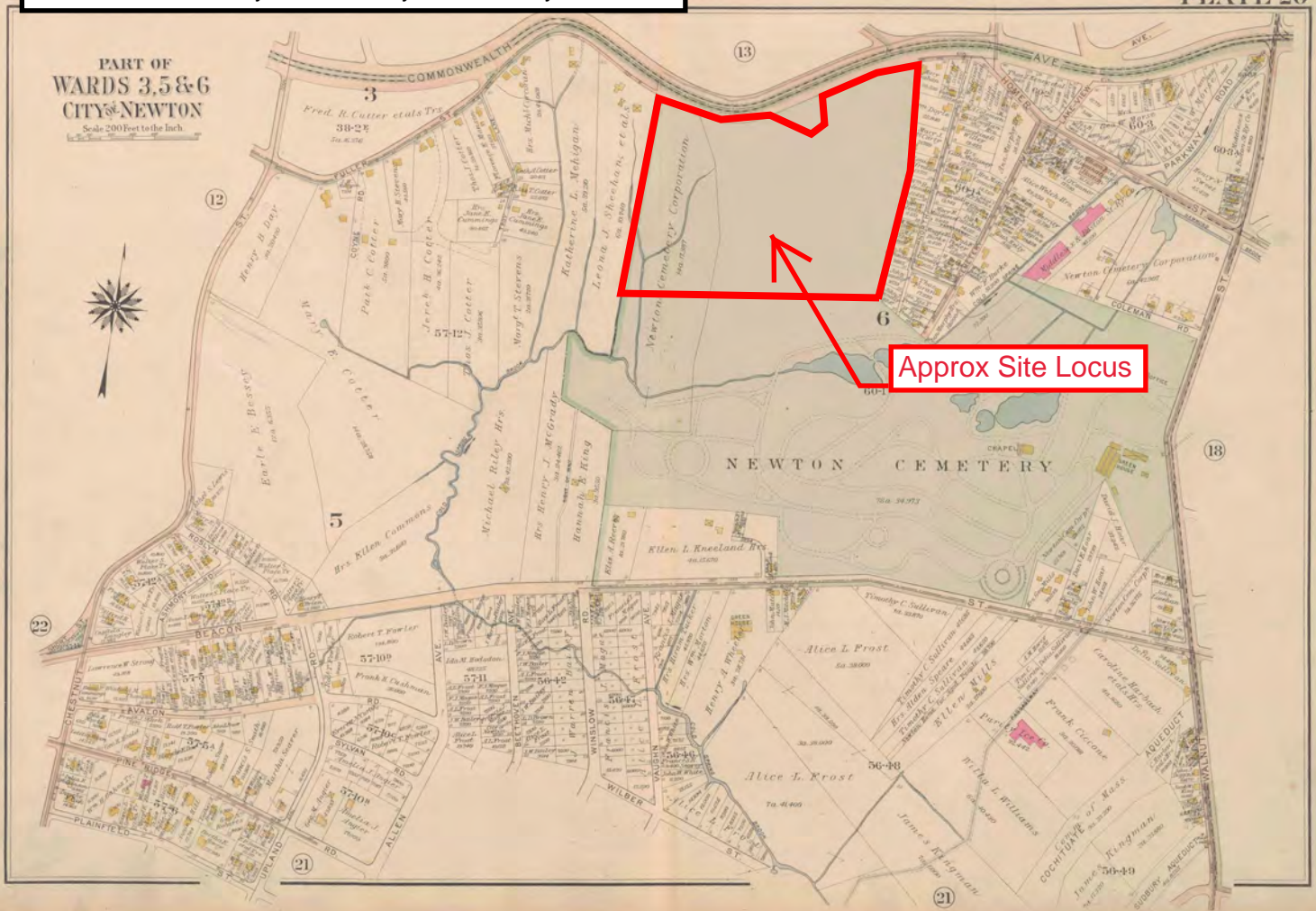
223,481.23m 898,778.52m

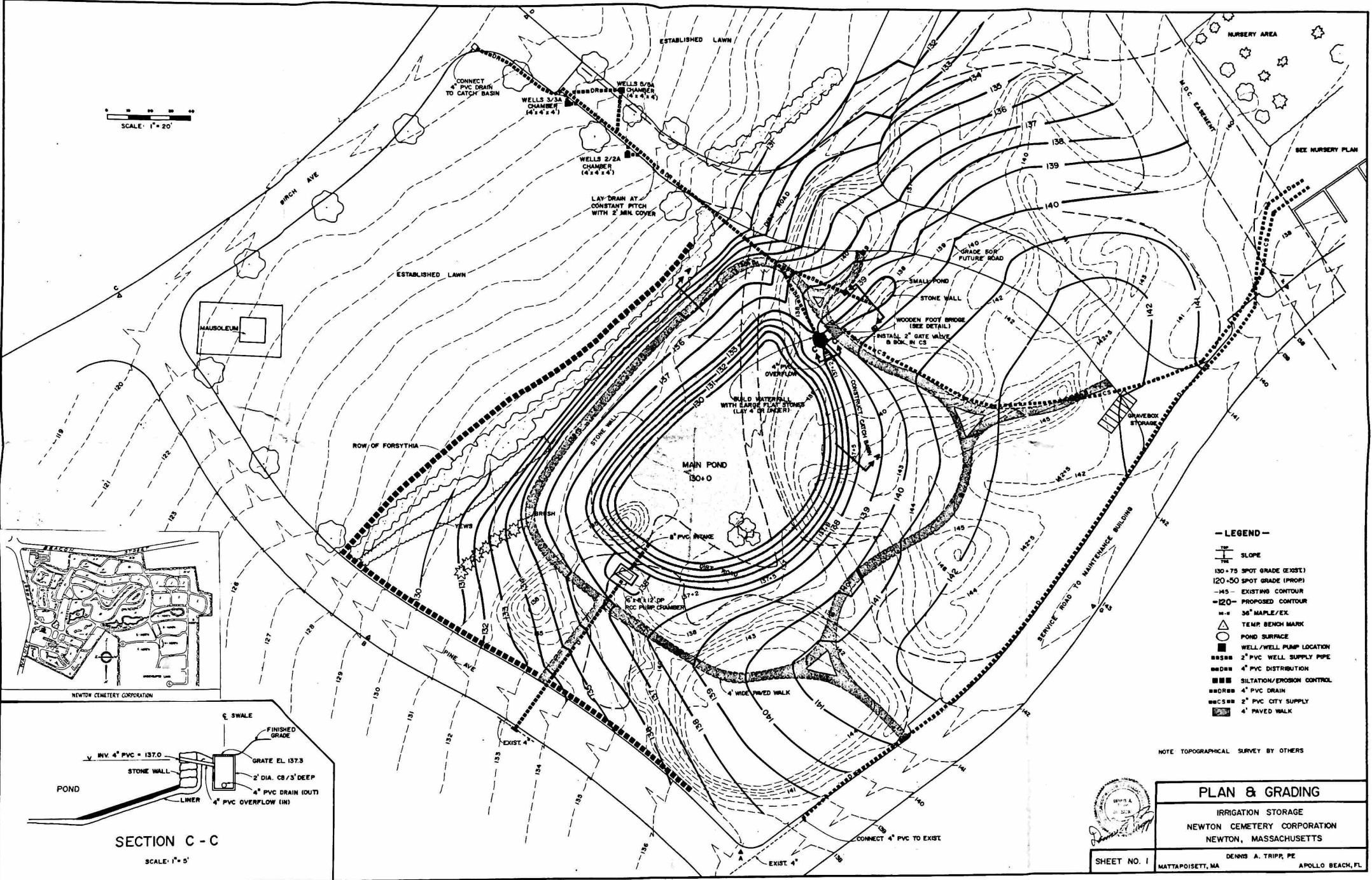
MassGIS Topographic Features Basemap

PART OF
WARDS 3,5&6
CITY OF NEWTON
Scale 200 Feet to the Inch

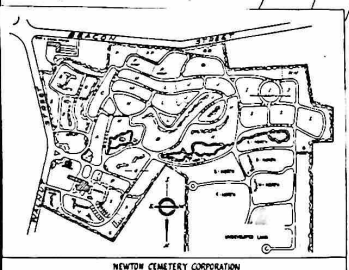


Approx Site Locus



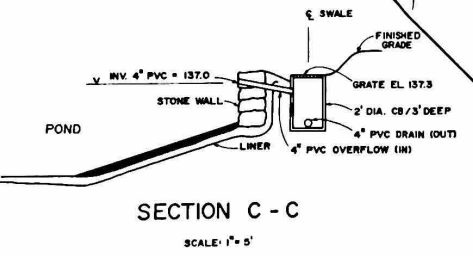


SCALE: 1" = 20'



- LEGEND —**
- SLOPE
 - 130+75 SPOT GRADE (EXIST)
 - 120+50 SPOT GRADE (PROP)
 - 45 EXISTING CONTOUR
 - 120 PROPOSED CONTOUR
 - 36" MAPLE/EX
 - TEMP BENCH MARK
 - POND SURFACE
 - WELL/WELL PUMP LOCATION
 - 2" PVC WELL SUPPLY PIPE
 - 4" PVC DISTRIBUTION
 - SILTATION/EROSION CONTROL
 - 4" PVC DRAIN
 - 2" PVC CITY SUPPLY
 - 4" PAVED WALK

NOTE TOPOGRAPHICAL SURVEY BY OTHERS



SECTION C - C

SCALE: 1" = 5'



PLAN & GRADING		
IRRIGATION STORAGE		
NEWTON CEMETERY CORPORATION		
NEWTON, MASSACHUSETTS		
SHEET NO. 1	DENNIS A. TRIPP, PE	APOLLO BEACH, FL.
MATTAPANSETT, MA		

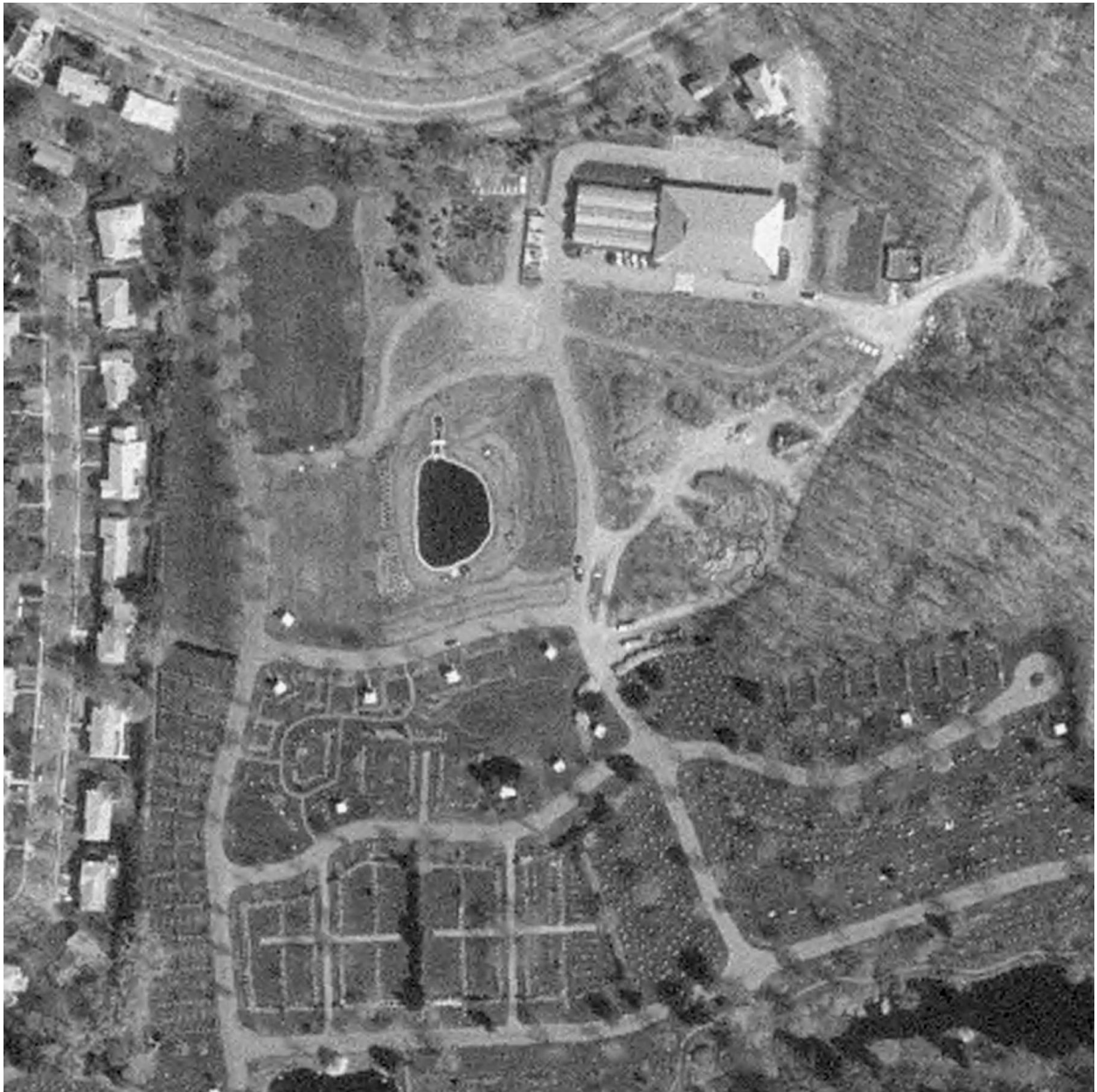
Aerial Photo: 1978. Source Historicaerials.com

Note: Irrigation lagoon not present



Aerial Photo: 1994. Source Historicaerials.com

Note: Irrigation Lagoon present



Newton Cemetery Irrigation lagoon – Construction Photographs



X

Newton Cemetery Irrigation lagoon – Construction Photographs



EcoTec, Inc.
ENVIRONMENTAL CONSULTING SERVICES
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Paul J. McManus, LSP, PWS
President

Paul McManus is the President and owner of EcoTec, Inc., which he founded in 1990. He is a certified Professional Wetlands Scientist (PWS) from the International Society of Wetlands Scientists (SWS), the leading professional organization in the field, where he served as President of the New England Chapter of SWS, representing the Chapter on the International Board of Directors for several years, and currently serves as Chapter Treasurer. Mr. McManus is also a Massachusetts Licensed Site Professional (LSP) with experience including a wide range of projects, focused on ecological risk assessment at sites with contaminated wetland resources. Prior to the founding of EcoTec, Mr. McManus was employed at other Massachusetts consulting firms and as an aquatic ecologist at the Massachusetts Division of Water Pollution Control. Mr. McManus brings a wide variety of environmental consulting experience to EcoTec, including wetland evaluation and delineation, lake and stream assessment, wildlife habitat evaluation, oil and hazardous materials ecological risk assessment, and a variety of other types of environmental impact assessment. He has conducted detailed wetland community surveys and impact restoration specifications in "Areas of Critical Environmental Concern" (ACECs), and led the local, state and federal wetland permitting, including vernal pool mitigation design and a Wetlands Protection Act Variance, at the MWRA's Norumbega Reservoir property in Weston. He has directed hundreds of other wetlands projects at sites including large and small residential and commercial developments. He has completed all phases of environmental permitting work, including wetland delineation, replication and mitigation design, implementation, and monitoring in freshwater wetlands and salt marsh, as well as general wildlife and rare species assessments and trapping, including marbled salamander, 4-toed salamander, wood turtle, and eastern box turtle, under the MA Wetlands and Endangered Species Act Regulations. Permitting efforts regularly include federal, local and state permitting, including filings under the Massachusetts Environmental Policy Act (MEPA) regulations. Additional projects he has directed include major biological and chemical marine sampling programs; he has been involved in a variety of freshwater system evaluations, and conducted evaluations and sampling for proposed fresh water and marine dredging projects. He also has experience in large scale soil reuse projects, where he completed wetland permitting and served as the independent third-party monitor in accordance with voluntary Administrative Consent Orders for the sites. Mr. McManus serves as a consultant on behalf of government, business, private citizens, utility companies, the development community, conservation commissions, and concerned citizens' groups. He presently serves on a continual basis as technical wetlands consultant for the Town of Dover Conservation Commission, and works regularly for Boylston, Shrewsbury, and other Commissions providing peer review expertise for varied projects.

Education: Master of Science: Applied Marine Ecology - University of Massachusetts/Boston, 1988
Bachelor of Arts: Biology (Ecology emphasis) – College of the Holy Cross, Worcester, MA, 1984
U.S. Fish and Wildlife Service: Habitat Evaluation Procedure (HEP) Certification
Massachusetts Division of Water Pollution Control: Algal Assay (eutrophication) Short Course

Professional Affiliations: Massachusetts Association of Conservation Commissioners (Board of Directors)
(Partial list) Society of Wetland Scientists (Treasurer and former President of the New England Chapter)
Association of Massachusetts Wetlands Scientists
Licensed Site Professional Association

Certifications: Society of Wetlands Scientists Professional Wetlands Scientist # 962
Commonwealth of Massachusetts Licensed Site Professional # 5711
OSHA Health & Safety Hazardous Waste Safety Training, 29 CFR 1910.120 (40 hr & refresher)