

Massachusetts Department of Agricultural Resources Agricultural Preservation Restriction (APR) Program Survey Specifications

May 2021

These *APR Program Survey Specifications* supersede the *Executive Office of Energy and Environmental Affairs (EEA) Land Acquisition Policy - Specifications for Surveys, dated December 2018*, and any other survey specifications formerly used by the Massachusetts Department of Agricultural Resources. These Program Survey Specifications shall be used in conjunction with Project Specific Specifications provided.

INTRODUCTION

These specifications replace all previous versions. Some of the significant changes include:

- i) A draft plan must be submitted in 60 days versus the previous 90-day submission requirement (see #3).
- ii) Surveyors shall leave temporary markers on site (see #5).
- iii) It may be required to identify encroachments on a separate version of the plan (see #6).
- iv) Massachusetts State Plan Coordinate System is now required.
- v) Easement locations must be identified on plan or described in a note if not found (see #9d).
- vi) A CAD or GIS shapefile of drafts must be submitted, along with additional digital deliverables when the final plan is submitted (see #5 and #13 under Final Deliverables).
- vii) Changes to deliverable requirements when submitting to Planning Board (see #16).
- viii) Explanation of deliverables needed to satisfy invoice payment (see Invoices section).
- ix) Trees shall not be used as permanent markers (see #4 in Monuments section).

General Scope of Work for Surveys

Under the provisions of 301 CMR 51.05 (4) and subject to the provisions therein, and in accordance with the current EEA Land Acquisition Policy and Specification for Surveys, and the Natural Resources Conservation Service (NRCS) Agricultural Conservation Easement Program (ACEP) Agricultural Land Easement (ALE) Survey requirements, the APR Program includes the following specifications for surveys of lands being protected by an Agricultural Preservation Restriction:

- 1. All property survey plans shall be prepared for the Department by a registered, professional land surveyor performing in compliance with 250 CMR 5.00 (Professional Practice).
- 2. The Surveyor shall perform services in accordance with the procedural and technical standards for the practice of land surveying, 250 CMR 6.00 (Land Surveying Procedures and Standards).
- 3. The Surveyor shall begin field work within 30 days and complete a draft plan within 60 days of receiving the Notice to Proceed. The surveyor shall notify the Department's Project Manager and Field Representative (as indicated in the Project Specific Scope & Specifications) at least one week prior to the commencement of field data collection to alert the Department when work will begin. Field work cannot begin until approval is secured from the Department's Field Representative.

4. Surveyor must ensure the proposed APR “lot” and any other “lots” created or reconfigured due to the APR conform to zoning and can be legally separated from any non-APR land. Therefore, the surveyor must research town requirements and prepare the plan for submittal to the planning board. If the proposed APR configuration raises concerns that it or resultant lots will not be approved by the planning board, the surveyor should indicate this in the bid proposal and notify the Department before work begins. Surveyor will not assume rights of ways can be granted to satisfy zoning/subdivision regulations.
5. The Surveyor shall place temporary markers, such as wooden stakes and/or survey tape, at corners of any excluded areas, trail easements, or APR boundary corners not already monumented. The purpose being to provide the landowner and the Department’s Agent the ability to see the boundary location “on the ground” vs. on a map/plan. This will aid in the approval of the draft plan. After the draft plan is approved, the Surveyor shall leave said temporary markers on site if they do not appear to interfere with any agricultural activities.
6. If the Surveyor discovers significant discrepancies between acreage, monuments, or courses called out in the deed(s) to the subject property and what exists on the ground as determined by surveyor, or if they discover any disputed boundaries or encroachments, piles of debris, or evidence of potential hazardous material release/storage, they shall notify the Department. If an encroachment is discovered, the Surveyor shall contact the Project Manager and if requested, submit a draft plan depicting the location of the encroachment(s) and a separate plan that does not show the encroachment(s).
7. The title report may also be included with bidding materials. If not, it will be made available, normally within 45 days from the time of the Notice to Proceed.
8. The use of the Massachusetts State Plane Coordinate System is required.
9. Unless specifically waived in the Project Specific Requirements, the survey plan shall show the following:
 - a. A locus map, legend, north arrow, and scale bar. The locus map should be legible when reproduced at lower resolution;
 - b. Current ownership of locus parcels and abutters, including names, Assessors Map & Lot, and deed book and page. If an abutting parcel has an associated Agricultural Preservation Restriction, Conservation Restriction, Watershed Preservation Restriction or if the parcel is protected Federal land, label the parcel accordingly and add the deed reference of the restriction;
 - c. Physical features including tree lines, lakes, ponds, streams, stone walls or ditches located within 50 feet of any boundary. When the feature is not part of a locus, accuracy is not a priority for these features and the data can be taken from aerial photos, other surveys, or other secondary sources when available.
 - d. All rights of way and easements of record, with their book and page references. If easement boundaries cannot be located, describe the extent of the easement coverage in a note on the plan.
 - e. All roads or traveled ways, labeled public or private, including all roads that cross or abut the APR's boundary, or those which provide access between portions of the APR that are otherwise separated, e.g. with stone walls. The width of the road

- layouts shall be noted if known;
- f. Buildings, wells, utility poles, septic systems and other significant structures or improvements in the APR area and including those in any exclusion(s) in the same ownership that lie within 100 feet of the APR boundary. Distances between boundary lines and structures shall be included;
 - g. Known disputed boundaries or encroachments as described in #6 above;
 - h. Non-tangent curves shall be labeled on the plan with the curve radius, chord bearing, chord or curve length, and "L" or "R" in cases where it is not immediately apparent whether the line curves to the left or right;
 - i. All curves on plan must be indicated with Chord Bearing, Radius, and Arc Length
 - j. For irregular curvilinear features, tie lines shall be shown on the plan. A closed polygon must be created from courses with bearings and distances;
 - k. If 2 APR parcels are on opposite sides of the road, include a tie-line between them;
 - l. If the survey is comprised of more than one page, match lines must be included and labeled. If the survey is comprised of more than 2 pages, an index must also be added.
 - m. Directional arrows between bearings should be included if they do not impact legibility of the plan.
 - n. Other requirements as defined in the Project Specific Requirements.
10. Unless otherwise specified, the plan's title block shall include the phrase "Prepared for (*owner of record*) and the Massachusetts Department of Agricultural Resources". If more than one plan is recorded for the same owner, the text in the title block must be different for the two plans, e.g. "Smith Farm North of Main St", and "Smith Farm South of Main St". If a plan has more than one sheet, the sheets shall be numbered, show match points, and the remaining text in the title block will be the same on each sheet.

11. Parcel Information:

Note: A parcel shall not contain both restricted and unrestricted land.

- a. Each parcel shall have a unique name (e.g. "Parcel A"). Where space permits, each parcel shall contain information as illustrated below.
 - If part of the federal ACEP ALE:

<p>Parcel A Mr. John Smith Bk 022, Pg 32 27.300 acres Assessors Map 222, Lot 333 ACEP- ALE Parcel To be Protected by an Agricultural Preservation Restriction</p>

- If NOT part of the federal ACEP ALE but included in the APR:

Parcel B

Mr. John Smith Bk 022, Pg 32

27.300 acres Assessors Map 222, Lot 333

APR Parcel To be Protected by an Agricultural Preservation
Restriction

If there is only space for the parcel's name, then the Notes section of the survey shall contain the ancillary information:

The Following (number of
parcels) Parcels are to be
Protected by an Agricultural
Preservation Restriction

Parcel A

(owner)

(title reference)

(acreage)

(Map and Lot)

Parcel B (etc)

The Notes shall also report the total acreage of the ACEP ALE & APR parcels shown on that individual survey.

- b. If a part of the APR consists of a portion of a pre-existing parcel, the remaining portion of that parcel shall be labeled "Excluded from the Agricultural Preservation Restriction".
12. The Surveyor shall include the landowner's name and plan version date in electronic file names and refer to the owner of record in all communications.
13. The Surveyor shall submit to the Department's Primary Contact and Field Representative (as indicated in Project Specific Scope & Specifications), a preliminary plan of the property surveyed in Portable Document Format (PDF). All drafts shall have the date of the most recent change. Drafts shall be labeled as such. Black ink is preferable. If colors are used in the PDF, they must be easily visible when printed in either color or black and white. When exporting from CAD to PDF, please try to find the settings that allow the bulk of the survey to be exported in vector format as opposed to raster (image) format and must be over 300 dpi. A draft of the CAD or GIS file shall be included.
14. Along with the preliminary plan the Surveyor shall furnish the Department's Primary Contact with a written legal description of the land's metes and bounds for review. The Surveyor shall provide the description in MICROSOFT WORD or text format, entitled EXHIBIT A, and which references the Plan in the introductory paragraph and refers to the Grantor's title reference at the end of the description. The descriptions shall include:
 - a. A descriptive phrase identifying the location of a monumented point of beginning;
 - b. Bearings and distances in feet. The bearings and distances of all tie lines shall also be included;
 - c. Monuments, and the type of monument. Monuments to be set shall be included and

described as such. (consult Guidance on Monuments section below);

- d. Ruling features, such as a stone wall or the top of a river bank;
- e. Prominent landmarks;
- f. The acreage of each individual parcel, and the sum of acres to be put in APR. The description shall adhere to the format used in this example:

Thence N 35°20'11"W a distance of 639.28 feet along the stone wall to a capped iron pin on the southerly side of Pomeroy Meadow Road;

- 15. Unless otherwise instructed in the Project Specific Requirements, the Surveyor shall be responsible for submitting the Plan to the local planning board for required endorsements. This shall include obtaining landowner signatures for Form A documents and other applicable signatures.
- 16. Prior to submitting to Planning Board, a copy of the draft must be submitted and approved by the Department. This responsibility includes preparing applications, paying associated fees, and attendance at meetings to explain and support the requested endorsements. Any changes required by the Planning Board must be approved by the Department.
- 17. As soon as possible after Municipal and Departmental approval of the final Plan, monuments shall be placed in accordance with the Guidance on Monuments further explained below and in the Project Specific Requirements. Additional, specific guidance may be provided during review, if necessary.
- 18. Upon Departmental review and approval, Surveyor shall record the final plan, which shall comply with current Rules and Regulations of the Registers of Deeds, and submit one full-size paper copy of the stamped original to each of the Department's Primary Contact and Field Representative (as named Project Specific Scope & Specifications). The recording fees are to be paid by the Surveyor.
- 19. As soon as possible, the surveyor will provide the plan recording reference (book, page, date) to the Department's Primary Contact & Field Representative.
- 20. Upon completion of the final plan the Surveyor shall provide Shapefiles (.shp) to MDAR as further explained in Final Deliverables #5 below.

Final Deliverables

- 1. Legal Boundary Description in Microsoft Word (as indicated in #14 above);
- 2. Boundary shall be marked as specified by project scope. See "Guidance on Monuments" further below in this document;
- 3. Recorded Plan in high resolution .PDF format with recording reference (book, page, date) to MDAR;
- 4. One full size hard copy of the stamped original sent to the Department's Primary Contact (as named in the Project Specific Scope & Specifications);
- 5. Upon completion of the final plan the Surveyor shall provide the following digital products

by email to the Department's GIS Coordinator (as named in the Project Specific Scope & Specifications). The Digital Deliverables Package shall be in the form of one zipped file containing all components, regardless of whether the Department has already received current versions or not. Only final versions shall appear in the final Deliverables Package.

- a. All line features including boundary lines, ties, offsets, and other features as requested or shown on the plan in the form of a shapefile (s);
- b. All corner monuments, tie points, road monuments, or other features as points;
- c. Polygons for each building shown on the plan excluding those on abutting properties beyond 10 ft of APR boundary or beyond the scope of the project;
- d. Other features as requested by GIS Coordinator;
- e. The name of the files shall include the date of the most recent revision, to match the name of the PDF;
- f. The shapefile shall be produced in the NAD 1983 Mass State Plane (Feet) projection;
- g. Each individual parcel, if under 100 acres must have boundary lines that close to within a foot. If over 100 acres boundary lines must close to within 3 feet;
- h. The surveyor may also provide a complete set of all CAD features used on the draft plan.

Invoices

Status of Deliverables Needed to Satisfy Payment

- The survey is considered 50% complete when a workable draft is received by the Department. This draft includes all coordinates and bearings and the locus parcels close in GIS software.
- The survey is considered 80% complete when monuments are set and, if applicable, Planning Board approval is secured.
- The survey is considered 100% complete when the survey is recorded at the Registry of Deeds and there are no outstanding deliverables or items to address.

The following information is required on every invoice:

1. Landowner's name
2. Site address
3. Dates of Service
4. Percent of project completion being invoiced for

Guidance on Coordinate System, Reference Points

Unless the Project-Specific Requirements specifies differently, Mass State Plane Coordinate System, North American Datum 1983, shall be used. Methods shall be used to achieve at least Third Order Class One accuracy as defined by the Federal Geodetic Control Committee (FGCC). At least two points, spaced far apart, shall have their coordinates labeled on the plan and in the CAD file. Said points shall be at monuments or otherwise explicitly tied to the boundaries.

Guidance on Monuments

The Department requires boundary markers that are sufficient for the purposes of monitoring the property be placed. Flagging or other markings shall be made at all recovered or set monuments, and in between when necessary, to allow a layman to find them easily during the following year. Cases where corners fall in active agricultural fields present special challenges. Buried pins may

be impractical, since subsoilers are sometimes used to break up hardpan, and may cut a groove up to three feet deep. In addition, buried pins are impractical to locate without advanced equipment. Occasionally, we will request placement of a pin just off the tilled field, and another on the same line roughly 10-30 feet further away from the field, so that a line of sight is created. Laymen can use two such lines of sight to establish the location of the corner in the tilled field with an accuracy that will likely be adequate for their practical needs. These and other monuments might be suggested by the Surveyor or may be requested in the Project Specific Requirements.

1. The types of monuments to be used will be specified in the Project Specific Requirements.
2. The status of all monuments, whether 'found,' 'set,' or 'to be set', shall be shown on the plan.
3. Trees shall not be used as permanent markers, only as tie points due to the ephemeral nature of tree biology. A tree used as a marker at one time may not exist in perpetuity unlike the APR. Therefore, more permanent markers should be used such as stone walls, stone monuments, iron pins, or other permanent monuments. Fence posts, stumps, or other temporary markers should not be used in place of a monument.
4. Monument should be placed a sufficient distance away from waterbodies such as rivers, streams, or other features as the course may adapt over time. This could result in the loss of the permanent monument. Additionally, they should also not be placed inside active or previously existing roadways.