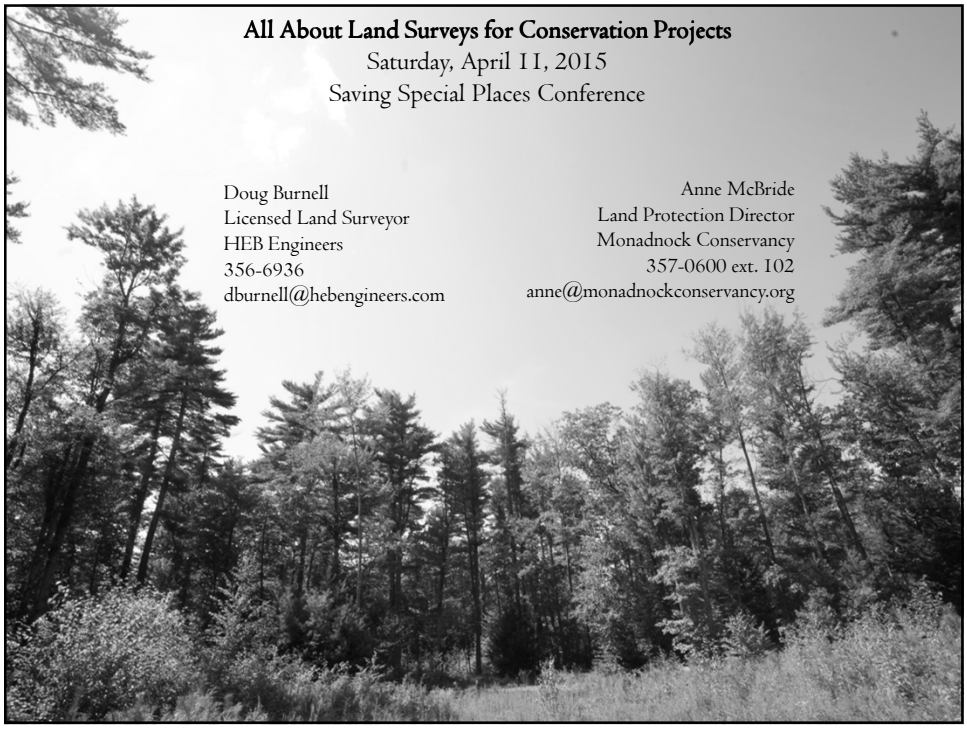


Introductions

<u>What we plan to cover:</u>

- Background on land surveying community in NH (Board of Licensure, NHLSA, standards of practice)
- Components of a complete land survey
- How do land surveys fit into the acquisition process?
- Contracting for surveying services
- Interactions with other professionals throughout the land protection process
- Recording surveys
- Common Issues
- Questions & Answers – we'll leave time for Q&A, but please ask questions as they come up

BACKGROUND ON LAND SURVEYING COMMUNITY IN NH

(BOARD OF LICENSURE, NHLSA, STANDARDS OF PRACTICE)

National Society of Professional Surveyors

About NSPS

NSPS provides the platform by which members can share their thoughts and opinions about our common interests through business meetings/committees, regional groups, and student chapters. Membership is open to all professional surveyors and to persons trained, registered, or interested in the profession of surveying and mapping.

NSPS (cont.)

- NSPS is the US organization tasked with the development of a Mutual Recognition Document with Canada and Mexico as a result of NAFTA.
- NSPS has adopted Model Standards for surveys which can be accessed on the NSPS/ACSM website, along with the standards for ALTA/ACSM Surveys.
- NHLSA is a State Affiliate of NSPS, such that NHLSA members are also members of NSPS.

NSPS (cont.)

- NSPS provides legislative representation and agency contact through the Government Affairs Committee, Political Action Committee (PAC), the Executive Director and a lobbying consultant in Washington DC. A monthly update of issues, activities, and legislative alerts is emailed to all members.

NCEES
advancing licensure for engineers and surveyors

About NCEES

The National Council of Examiners for Engineering and Surveying (NCEES) is a national nonprofit organization dedicated to advancing professional licensure for engineers and surveyors.

- Develops, administers, and scores the examinations used for engineering and surveying licensure in the United States.
- Facilitates professional mobility and promotes uniformity of the U.S. licensure processes through services for its member licensing boards and licensees.
- The Council's members are the engineering and surveying licensure boards from all 50 states, the District of Columbia, Guam, Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands.

NH Land Surveyors Association

- Created 1969
- Exec. director, officers and board
- Education foundation and several scholarships
- 182 active members, other categories
- Several working committees
- Quarterly meetings, often with full-day seminars
- Annual 2-day convention w/ workshops, vendors
- Email alerts, monthly newsletter, biannual journal
- **nhlsa.org** "find surveyor" link by county & town

NHLSA

WHO WE ARE

NHLSA members include licensed land surveyors and their employees, land information practitioners, students, and others with special interest in or knowledge of the profession of land surveying.

WHAT WE DO

The Association strives to support the profession and its members by creating a professional environment in which to operate, through the following activities:

- Sponsor educational and informational activities and publications both for ourselves and the general public.

NHLSA (cont.)

WHAT WE DO

- Fund and administer scholarships and grants.
- Improve and preserve land records.
- Work with legislative and administrative units of government to provide information, testimony, and other support in matters relating to land surveying.
- Maintain a continuous dialogue with allied professions.
- Maintain and upgrade professional standards and ethics.
- Address grievances and issues dealing with unauthorized practices.
- Promote professional and social relations.

NH Board of Licensure for Land Surveyors

The Joint Board licenses, regulates and adjudicates on behalf of the following professions or regulatory bodies

Professional Engineers
Architects
Certified Public Accountants
Electricians
Land Surveyors
Foresters
Professional Geologists
Natural Scientists
Landscape Architects
Court Reporters
Real Estate Appraisers
Home Inspectors
Manufactured Housing
Installers; and
the Board of Manufactured Housing

Board of Licensure

The Boards qualify and license or certify individuals and businesses, establish and enforce administrative rules and laws and provide information so the public may make informed decisions

- Surveyor registration laws adopted 1969
- 391 active surveyors currently
- Businesses are also licensed

Lan 501.03 Standards of Conduct

(j) The licensee shall:

(7) Advise the client of the level of precision most appropriate to the purposes of the survey.

(k) The licensee shall:

(4) Cooperate with other licensed land surveyors with an interchange of information, in particular, where discrepancies are discovered, where such interchange does not include confidential information

Lan 502.01 Research Standards

(a) A land surveyor assuming the responsibility of performing a land survey shall also assume responsibility for conducting and retaining research of adequate thoroughness to support the determination of the intended boundaries of the parcel surveyed.

(b) Minimum research standards for the surveying of real property shall be as follows:

(1) The subject tract shall be researched to ensure the correctness of the record evidence;

(2) All abutting tracts shall be researched to ensure the correctness of the record evidence;

Research Standards (cont.)

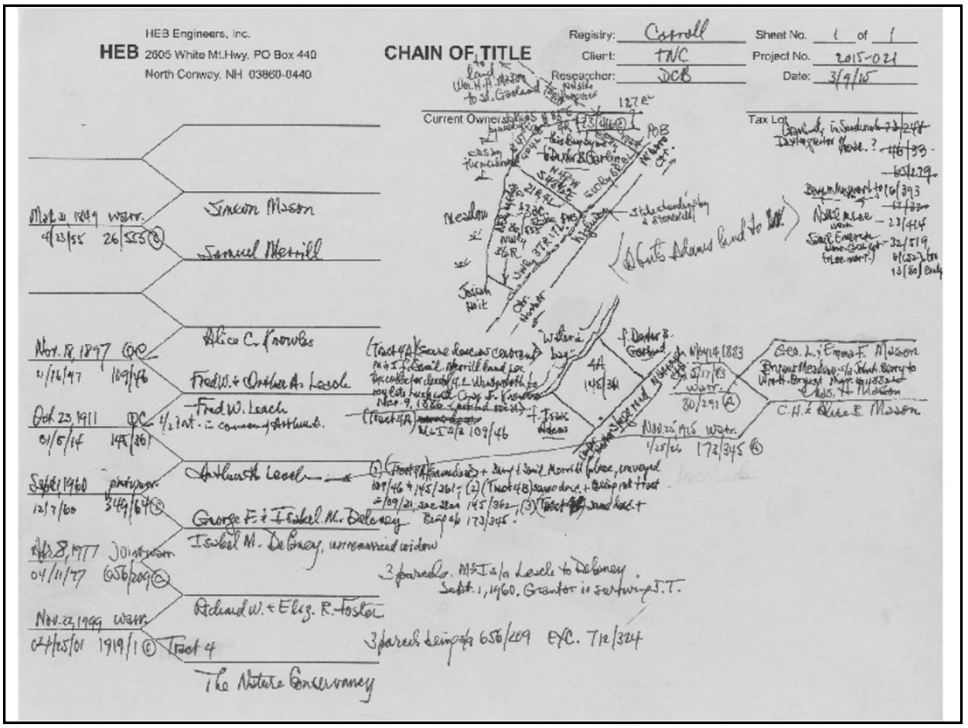
(3) Record evidence of tracts other than the subject tract and abutting tracts shall be examined, or additional information sought, which might relate to the property lines and corners being surveyed whenever necessary;

(4) In the absence of sufficient record evidence substantiating the property lines and corners being surveyed, attempts shall be made to obtain evidence from unrecorded sources;

(6) Preliminary conclusions as to the completeness of data shall be formulated and any inconsistencies in the record information shall be reconciled;

(7) The consistency of the data shall be tested by plotting and compiling the appropriate record information; and

(8) A field investigation shall accompany the record research and evaluation, if appropriate.



Lan 503.03 Survey Requirements

(d) For a survey to fall under the "farm or woodlot survey" classification, the property shall be 10 acres or greater in area, shall be bounded by physical evidence, and shall have limited potential for development at the time of the survey.

(e) A standard property survey plat shall show all data required for a complete and accurate description of the land which it delineates.

(f) Standard property surveys shall include the location of lines of occupation and any possible encroachments.

Table 500.1 Survey Classifications

- U for Urban, suburban, industrial, commercial, condominiums, multi-unit residential
- R for Rural
- F for Farmlands or woodlands

Trend: the integration of survey-grade GPS into standard practice, including tie-ins to the State Plane Coordinate System, are rendering R & F categories obsolete.

Precision Measurements (conventional closed traverse)

	U (urban)	R (rural)	F (farmland)
Unadjusted Linear Misclosure	1:10,000	1:5,000	1:300
Min. Scale Graduation of Instrument	20 sec.	30 sec.	1 deg.
Distance Measurement	EDM/Steel tape	EDM/Steel tape	Steel tape/ stadia

Trend: the equipment and adjustment methods listed and implied here are becoming outdated, leading to use of the following table, predominantly, as a matter of practice.

Accuracy Measurements (GPS survey or survey adjusted using least squares)

Minimum positional tolerances of property corners computed using least-squares adjustment at the 95% confidence level as set forth in Appendix B of the "Geometric Geodetic Accuracy Standards and Specifications For Using GPS Relative-Positioning Techniques" of the Federal Geodetic Control Committee.

	U (urban)	R (rural)	F (farmland)
<u>Local Accuracy of directly occupied corners</u>:	0.05 ft (1.7cm)+1:10000	0.25 ft (8cm)+1:5000	1.60 ft (50cm)+1:300
<u>Local Accuracy of control supporting the survey</u>:	0.03 ft (1.0cm)+1:10000	0.13 ft (4cm)+1:5000	0.66 ft (20cm)+1:300

Lan 503.06 Applicable Specifications

(a) All survey field work including GPS work shall be performed with methods of practice and equipment capable of attaining the tolerances as specified in Table 500.1, Survey Classification Precision and Accuracy providing for:

(1) Elimination and reduction of known systematic errors and mistakes;

(2) Sufficient redundancy to clearly state that the accuracy requirements have been achieved;

(3) Analysis of field procedures and data processing to achieve the accuracy and precisions; and

(4) Documentation verifying compliance with these standards.

Lan 503.06 Specs (cont.)

b) All survey instruments shall be kept in good repair, close adjustment, and operated according to manufacturers' specifications.

(c) All steel tapes and electronic distance measuring devices shall be routinely compared to a distance traceable to the National Bureau of Standards. A record of these comparisons shall be maintained by the surveyor.

Leica Geosystems

Calibration Certificate Blue

Calibration Certificate Blue without measurement values issued by Authorized Service Center

Product	LEICA	**Certificate No.**	2375260313615
Article	TCRP*1203+ R400	**Inspection Date**	3/26/15
Serial No.	237526	**Order No.**	51264180
Equipment No.	2840682	**PO No.**	SETH
Issued by	Maine Technical Source 494 US Rt. 1 Yarmouth ME 04096	**Ordered by**	SETH
		Customer	HEB ENGINEERS 2605 WHITE MOUNTAIN HWY PO BOX 440 NORTH CONWAY, NH 03860

Compliance

The Calibration Certificate Blue without measurement values issued by Authorized Service Centre corresponds to the Producer Inspection Certificate O in accordance with DIN 55 350 Part 18-4.2.1.

Certificate

We hereby certify that the product described has been tested and complies with the specifications of the product. The test equipment used is traceable to national standards or to recognized procedures. This is established by our Quality Management System, audited and certified to ISO 9001 by an independent national accreditation authority.

Maine Technical Source — June 22, 2014-June 22, 2016

[Name of Service Supervisor] Jeff Whiting

[Name of Service Technician] Jeff Whiting

COMPONENTS OF A COMPLETE LAND SURVEY

Elements of a "proper survey"

- Thoroughly researching to understand origin of subject boundaries
- Carefully searching for and accurately locating existing boundary evidence
- Completely analyzing research combined with field evidence
- Producing a comprehensive plat and/or report clearly addressing project needs and boundary issues
- Consistently marking boundaries and corners

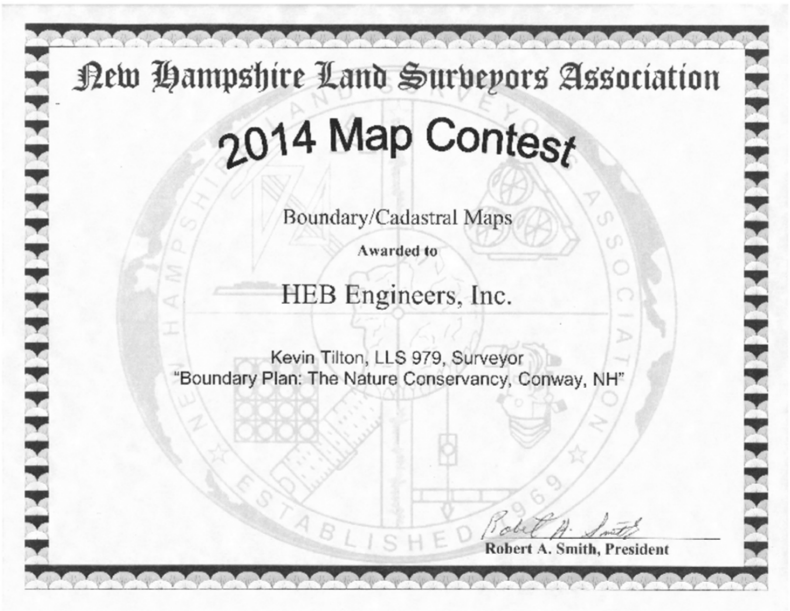
Survey Elements Checklist

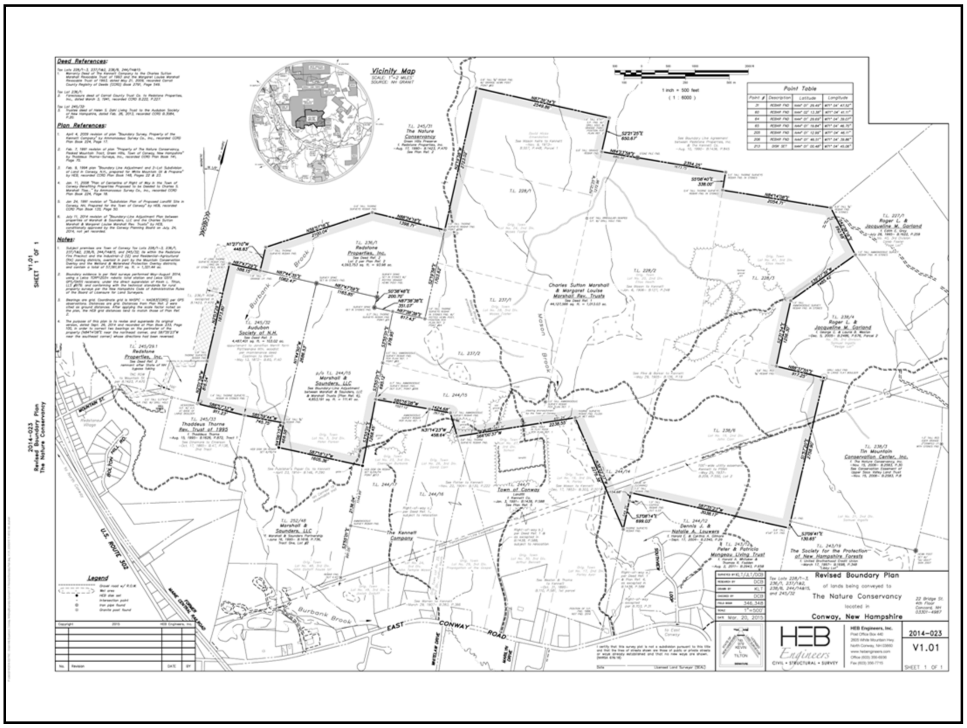
Does the survey contain the following:

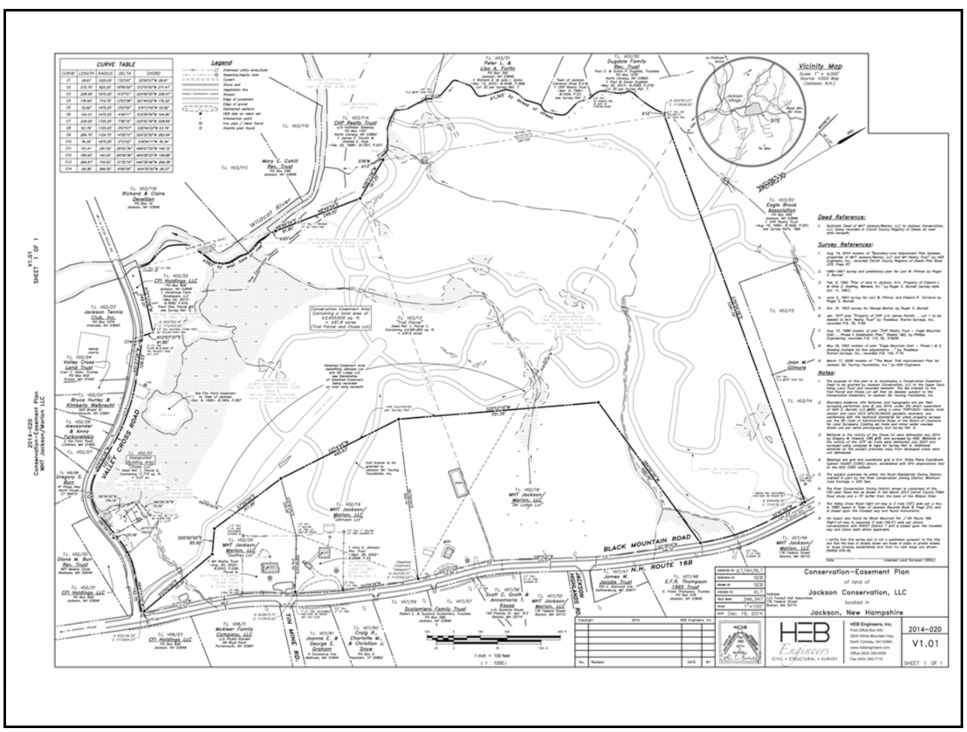
- ❑ **Survey keys.**
  - ❑ North arrow
  - ❑ Scale
  - ❑ Legend of symbols used
  - ❑ Basis for bearings
  - ❑ Vicinity map or coordinate description — this information should give you an exact location of the property in relation to its surroundings
  - ❑ Acreage of the property
- ❑ **Certification.** This information lets you know whether you are dealing with a professional with the requisite qualifications. The surveyor's certificate states that you are dealing with a true and correct survey conducted in accordance with the "Minimum Standard Detail Requirement for Land Title Surveys," jointly established and adopted by the American Title Association and the American Congress of Surveyors and Mappers and any standards adopted by the state surveyors registration or licensing board. The final survey should be signed and dated.
- ❑ **Easement locations.** The locations and dimensions of any easements of record, including the recording information. The survey should also indicate any non-recorded easements or uses that are apparent from a visual inspection of the property, such as roads and utilities.
- ❑ **Improvements.** An improvement is any artificial thing attached to land, such as a building or other structure. Improvements can include streets, sewers, curbs, gutters, landscaping, grading and the installation of utilities. The survey should also show fences marking the boundaries of the property or within the property.

Survey Elements Checklist (cont.)

- ❑**Utilities.** Determine which utilities (power, sewer, water, telephone) are available to the property (either on the property or in abutting public roadways) and whether they are above or below ground. The survey should include visible connecting lines to the property from public utility lines.
- ❑**Access.** The survey should show any adjoining streets, roads, highways, alleys and right-of-way lines, including their names, widths and distances to the property. When acquiring easements or fee interest, the land trust should make sure that the property both abuts a public road and is accessible from the road or there is a right-of-way easement providing access to the property from a public road.
- ❑**Property boundaries and corner monuments.** Corner monuments, if they exist, are important in that they physically mark, on the land itself, the exact boundaries of the property.
- ❑**Encroachments.** An encroachment occurs when all or part of a structure or improvement (such as a building, fence or driveway) illegally extends beyond the land of its owner onto the land of another. Because a survey should show the location of all improvements located on a property, encroachments can be identified. Encroachments often occur because the original surveys on two adjoining properties were faulty.
- ❑**Significant natural features.** These can include rivers and streams, pond and lakes, special geological features, such as caves or ledges, and forested versus open areas.
- ❑**Abutters.** Most surveys will also identify abutting property owners, including the deed of record to the adjoining property.

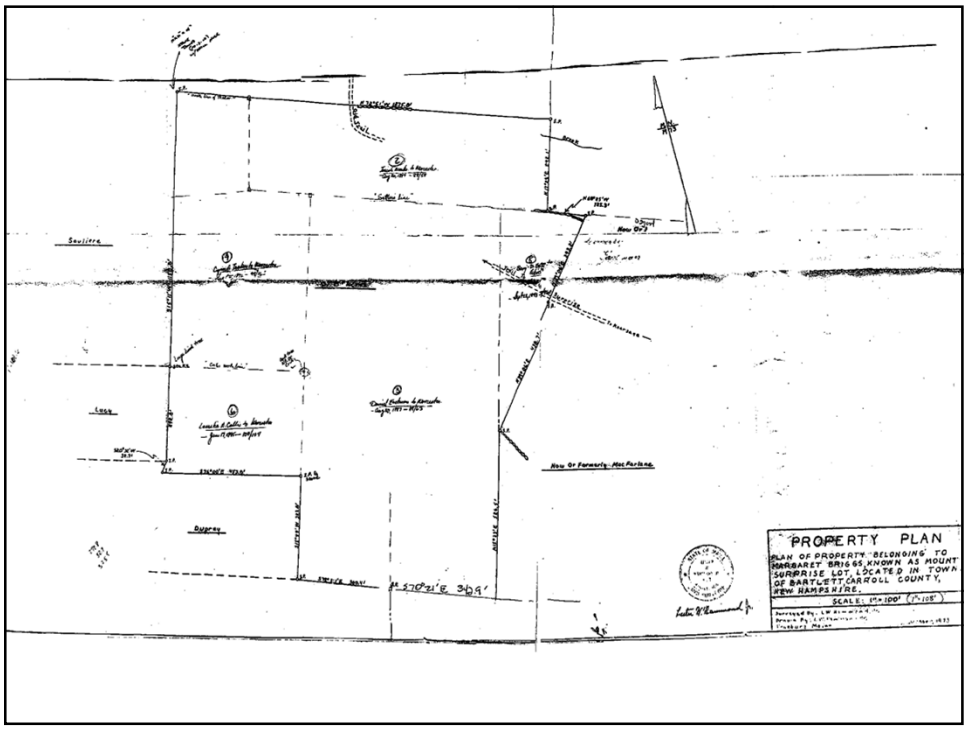


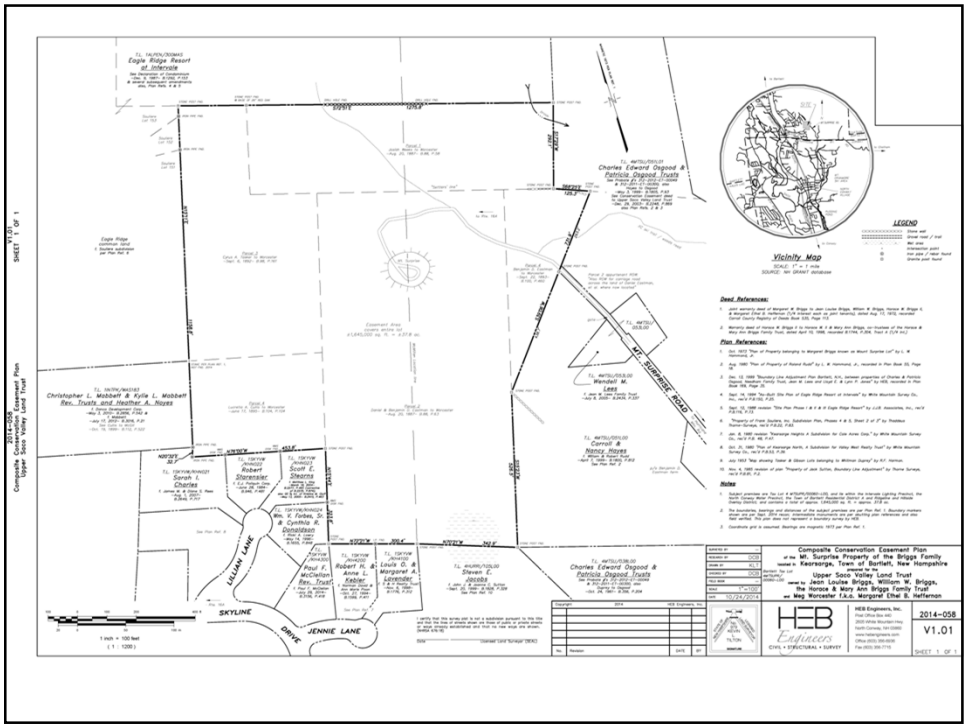

Revised Boundary Plan
The Nature Conservancy
Conway, New Hampshire
HEB Engineers
2014-023
V1.01
EAST CONWAY ROAD
Vicinity Map
Point Table


Conservation-Easement Plan
Jackson Conservation, LLC
Jackson, New Hampshire
HEB Engineers
2014-020
V1.01
CURVE TABLE
Legend
Vicinity Map
BLACK MOUNTAIN ROAD
N.H. ROUTE 16B
VALLEY CROSS ROAD

HOW DO LAND SURVEYS FIT INTO THE ACQUISITION PROCESS?

When is an existing survey adequate or when is it time for a new survey?
When in the acquisition process do you order land surveys?





CONTRACTING FOR SURVEY SERVICES

Different methods of selecting a surveyor

- Pick the best person based on your knowledge of surveyors in the area and who may have done work on abutting properties
- RFP
- QBS

About N.H.Q.B.S.

The NH QBS Coalition is sponsored by six of the leading professional associations who represent New Hampshire Architects, Engineers and Land Surveyors.

If You Bid Professional Services Consider...

- The low bidder is often the one who proposes to provide the least service, not the firm with the best approach or qualifications.
- You may need assistance defining your need for services.
- A failure to clearly define your needs may result in a disparity between your expectations and the contracted services.
- QBS has been required by law for all Federal Projects since 1972. In New Hampshire, state law requires that all State Agencies use QBS. Numerous other organizations and municipalities use QBS because it works. In addition, the QBS process is included in the American Bar Association's Model Procurement Code for State and Local Governments.

The QBS process usually involves the following steps:

1. Owner prepares the preliminary scope of services, describing the project to be built or problem to be solved and formulates a schedule of activities.
2. Owner places legal notices of invitation in newspapers and/or invites qualified firms to submit letters of qualifications in a format provided by Owner.
3. Owner reviews letters of qualifications, checks references, ranks firms and selects 3 to 5 firms for interviews. All other firms are notified in writing of the selections. Pre-interview site visits are arranged with the firms to be interviewed to provide the opportunity for a better understanding of the project requirements.

QBS process (cont.)

4. Interviews are conducted. During this process, it is important that the same questions be asked of each firm. In fact, it is suggested that qualification criteria and interview format material be made available to each firm prior to being interviewed.
5. Following the interviews, the Owner ranks each firm in accordance with a predetermined ranking system. All interviewed firms are notified of the results.
6. The highest-ranking firm is asked to participate in the preparation of a detailed scope of services and to negotiate conditions of the contract, including a fair and equitable fee.
7. If a satisfactory agreement cannot be reached, negotiations with that firm are suspended and negotiations are commenced with the second-highest ranking firm. The process continues until an agreement is reached and a formal contract is executed.

CONTRACTING FOR SURVEY SERVICES (cont.)

What to include in the scope of work?

- Make clear if you want blazing or flagging
- Make clear that you want permanent markers set at all corners (unless stone wall) and if some pins need to be set below grade if they are in a field
- Decide if surveyor or land trust will record survey. If LT, mylar should be delivered
- GPS shapefile? Or CAD file (.DWG), projected or to-scale?
- Make clear if there are certain buildings or improvements you need to have shown on the survey, especially if they are referenced in the conservation easement deed (e.g. well, driveway, spring house, ROW)

CONTRACTING FOR SURVEY SERVICES (cont.)

Insurance requirements - Some land trusts may only require that a surveyor have a Certificate of Insurance while other land trusts go further and set minimum levels of insurance.

When the land trust isn't the client… what to avoid

INTERACTING WITH OTHER PROFESSIONALS INVOLVED IN THE PROJECT

- Appraisers
- Lawyers
- Title Abstractors
- Foresters
- Natural Scientists

RECORDING SURVEYS

NH Revised Statutes Annotated

TITLE I
THE STATE AND ITS GOVERNMENT

1-A:1 Definitions. – In this chapter:

II. "The New Hampshire coordinate system of 1983'', as defined by the National Ocean Survey/National Geodetic Survey, means a transverse Mercator projection of the North American datum of 1983, having a standard meridian at 71°40’ along which meridian the scale shall be one part in 30,000 too small. The origin of coordinates is at the intersection of the said meridian 71°40’ west of Greenwich and the parallel 42°30’ north latitude. This origin is given the coordinates: x = 300,000 meters and y = 0 meters.

NH RSA Title I (cont.)

1-A:5 Recording Coordinates. – No coordinates based on either the 1927 (obsolete as of 1990) or 1983 New Hampshire coordinate system, purporting to define the position of a point on a land boundary, shall be presented to be recorded in any public land records or deed records unless the licensed land surveyor in charge attaches a certification regarding the beginning coordinate source, distance traversed to establish the final coordinates, and adheres to third-order geodetic surveying procedures or better, in effect at the time of the survey as outlined by the Federal Geodetic Control Committee or its successors.

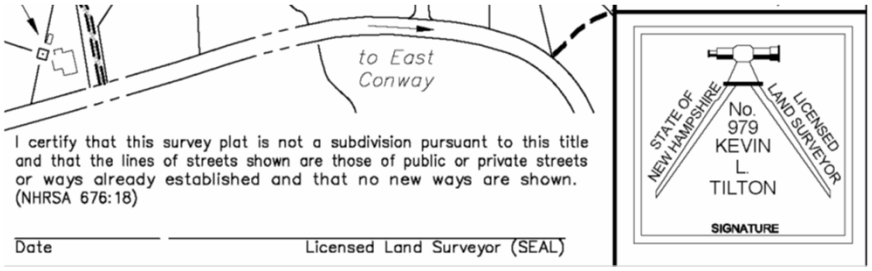
NH RSA re: plan recording

676:18 Register of Deeds. –

I. A register of deeds who files or records a plat of a subdivision without the approval of a planning board shall be guilty of a misdemeanor.

II. Notwithstanding the provisions of paragraph I, the register of deeds shall accept for recording a plat prepared and certified by a licensed land surveyor or by a former registered land surveyor if such plat bears a certificate by a licensed or registered land surveyor that this survey plat is not a subdivision pursuant to this title and that the lines of streets and ways shown are those of public or private streets or ways already established and that no new ways are shown.

Surveyor's recording certification



NH RSA re: plan recording (cont.)

II-a. Notwithstanding the provisions of paragraph I or II, the register of deeds may accept for recording a plat without the licensed land surveyor's seal if such plat was in existence on December 31, 1969, or if the plat has been incorporated into deeds or other instruments recorded before town zoning ordinances or planning board subdivision regulations, or both, became effective in that particular town.

IV. Prior to recording any plat in the registry of deeds, the surveyor shall file, for information purposes only, a copy of the survey with the town planning board.

Plat Law (NH RSA 478:1-a)

II. Each register of deeds will establish a policy for providing adequate space, on the plat, for recording the registry plan number and recording information.

III. The register of deeds will refuse for recording any map that does not meet the definition of a plat under paragraph I and any plat that does not contain the information or meet the specifications required by this section. Construction plans, construction details and maps that do not define the limits or extent of legal rights or interest in land will not be recorded.

IV. All plats will be drawn with the following sizes: 8.5”x11”, 11”x17”, 17”x22”, 22”x34”, or such specifications and sizes as may be required by the register of deeds. The material composition of the plats will be suitable for electronic scanning and archiving by the register of deeds.

V. All plats will have a minimum of ½ inch margins on all sides.

VI. All text and dimensions will be legible for reproduction, and the text sizes will be no smaller than .08 of an inch for mechanical drafting and 1/8 inch for hand drafting.

Plat Law (cont.)

VII. All certifications, seals, and approval blocks will have original dates and signatures in a legible, permanent black ink.

VIII. All title blocks will be located in the lower right-hand corner, when possible, and will indicate the following:

(a) Type of survey, such as a boundary survey, subdivision, American Land Title Association (ALTA) survey, or lot line adjustment;

(b) Owner of record;

(c) Title of plat or development;

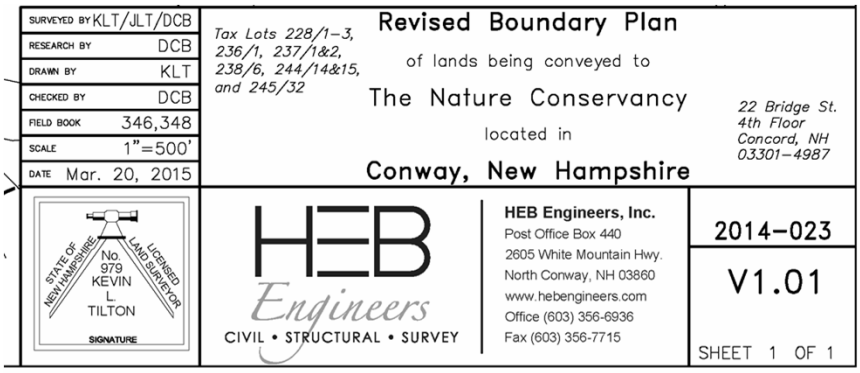
(d) Tax map number;

(e) Name of the town in which the parcel is located;

(f) Plat and revision dates.

IX. All plats will have a scale both as a written and graphic representation.

Title Block



SURVEYED BY	KLT/JLT/DCB
RESEARCH BY	DCB
DRAWN BY	KLT
CHECKED BY	DCB
FIELD BOOK	346,348
SCALE	1"=500'
DATE	Mar. 20, 2015

STATE OF NEW HAMPSHIRE — No. 979 KEVIN L TILTON — LICENSED LAND SURVEYOR — SIGNATURE

Tax Lots 228/1–3, 236/1, 237/1&2, 238/6, 244/14&15, and 245/32

Revised Boundary Plan

of lands being conveyed to

The Nature Conservancy

located in

Conway, New Hampshire

22 Bridge St. 4th Floor Concord, NH 03301–4987

HEB Engineers
CIVIL • STRUCTURAL • SURVEY

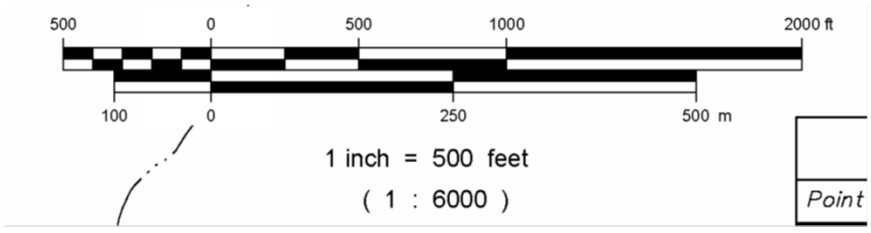
HEB Engineers, Inc.
Post Office Box 440
2605 White Mountain Hwy.
North Conway, NH 03860
www.hebengineers.com
Office (603) 356-6936
Fax (603) 356-7715

2014–023

V1.01

SHEET 1 OF 1

Scale representations



Plat Law (cont.)

X. All plats will have a north arrow with reference to magnetic grid or astronomic north, as applicable. The north arrow will be labeled with its reference direction.

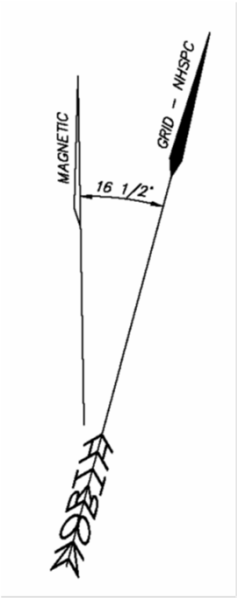
XI. Shading over any text will not be permitted on any plat. Cross hatching or other hatching at a scale large enough not to interfere with text legibility, before and after reproduction, may be permitted.

XII. No lines, whether hatching, boundary lines, or topographic contours will obstruct or interfere with the legibility, either before or after reproduction, of any bearings, dimensions, or text.

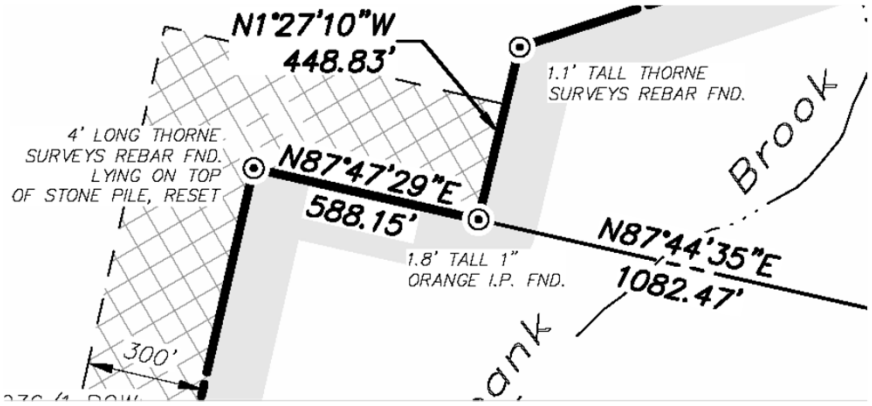
XIII. The minimum line widths on plats will not be smaller than .01 inches.

North arrow

- Shows approximate declination to magnetic north
- Main arrow depicts direction to Grid North on the NH State Plane Coordinate System



No text obscured



LAN 503.09 Plats

a) For results of a survey where a plat is prepared, the plat shall be drawn on reproducible medium. The plat shall identify the tract or parcel and contain enough information so that the boundaries of the parcel of interest can be located with certainty in the future by a competent land surveyor.

(b) As appropriate to the purpose of the survey, a survey plat shall contain but not be limited to containing the following:

Plat Rules (cont.)

(1) The municipality, date, scale, bar scale, and description or purpose of the plan;

(2) The name and address of the company and or individual which prepared the plat, or both, and the name and seal of the licensed land surveyor;

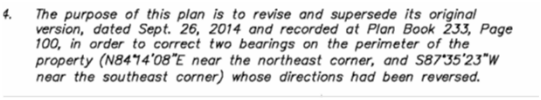
(3) Owner of record with mailing address, assessor's parcel number, and title reference;

(4) Meridian arrow and origin with the date of observation or reference plat;

(5) Vicinity map;

Note citing purpose of plan

In this case, bearings with their directions inadvertently drafted to run opposite from the clockwise flow around the perimeter were deemed confusing enough by the TNC attorney to trigger a request to correct them and re-record the plan, along with an explanatory affidavit


4. The purpose of this plan is to revise and supersede its original version, dated Sept. 26, 2014 and recorded at Plan Book 233, Page 100, in order to correct two bearings on the perimeter of the property (N84°14'08"E near the northeast corner, and S87°35'23"W near the southeast corner) whose directions had been reversed.

Deed References:

Tax Lots 228/1–3, 237/1&2, 238/6, 244/14&15:

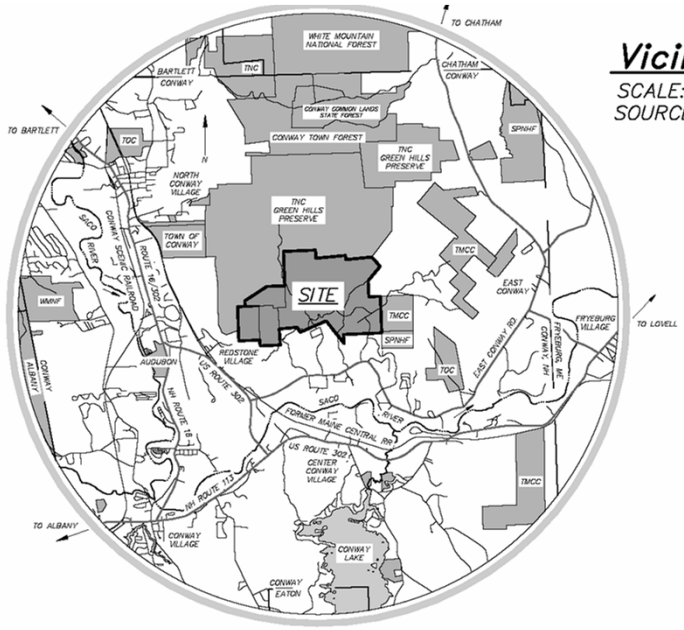
1. Warranty Deed of The Kennett Company to the Charles Sutton Marshall Revocable Trust of 1993 and the Margaret Louise Marshall Revocable Trust of 1993, dated May 21, 2009, recorded Carroll County Registry of Deeds (CCRD) Book 2791, Page 549.

Tax Lot 236/1:

2. Foreclosure deed of Carroll County Trust Co. to Redstone Properties, Inc., dated March 3, 1941, recorded CCRD B.222, P.227.

Tax Lot 245/32:

3. Trustee deed of Helen S. Dahl Living Trust to the Audubon Society of New Hampshire, dated Feb. 26, 2013, recorded CCRD B.3084, P.20.



Vicinity Map

SCALE: 1"=2 MILES'
SOURCE: NH GRANIT

T.L. 245/
The Nat
Conserva
Green Hills Pr
f. Redstone Prope
–Aug. 17, 1990– B.
See Plan Re

Plat Rules (cont.)

(6) Bearing and horizontal distances on all pertinent property lines;

(7) Curved boundary lines showing radius, delta, and length;

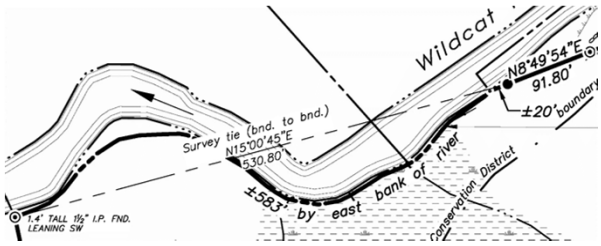
(9) Irregular boundaries without curves, such as rivers or streams, or with curves which have no definable geometry, shall have sufficient info to mathematically close the plat;

(10) Tie lines, when used, shall be noted that they are not property lines;

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	CHORD
C1	29.61'	1225.25'	1°23'05"	S2°00'27"W 29.61'
C2	272.70'	825.25'	18°56'00"	S12°10'00"W 271.47'

Irregular boundary/Tie line



Plat Rules (cont.)

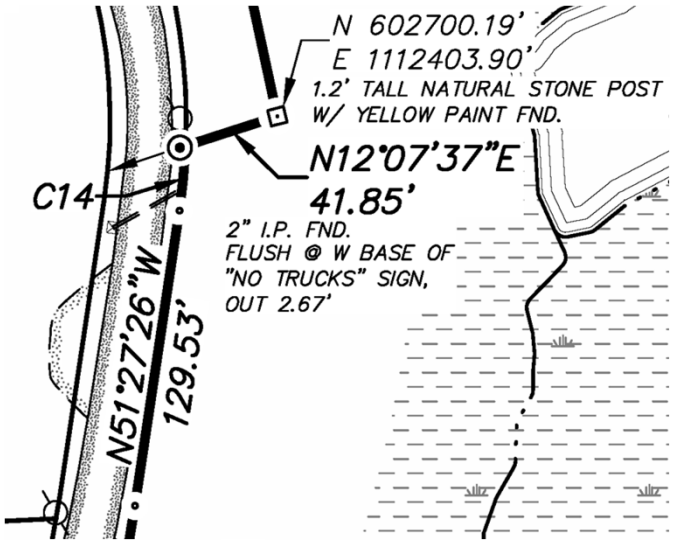
(11) All monuments set or found, including monuments with tie lines on which establishment of the corners of the surveyed premises are dependent;

(12) Monuments shall be described as to material, and the relation of the monument to the surveyed lines and/or corner;

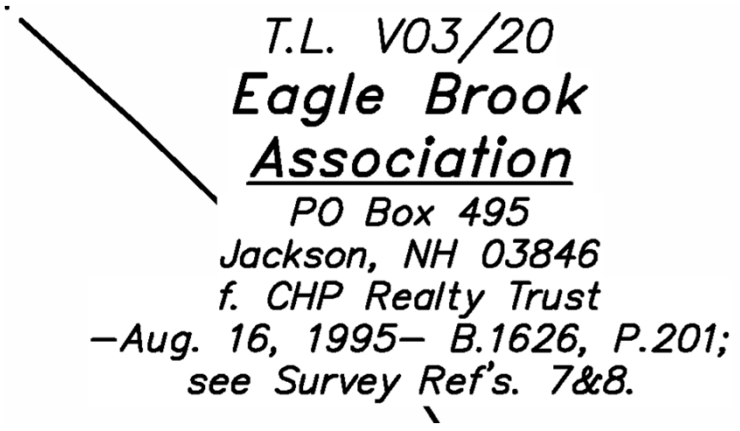
(13) Lines of possession where they affect the surveyed boundaries;

(14) Abutters with title reference and assessor's parcel number;

Monument labels



Abutter label



Plat Rules (cont.)

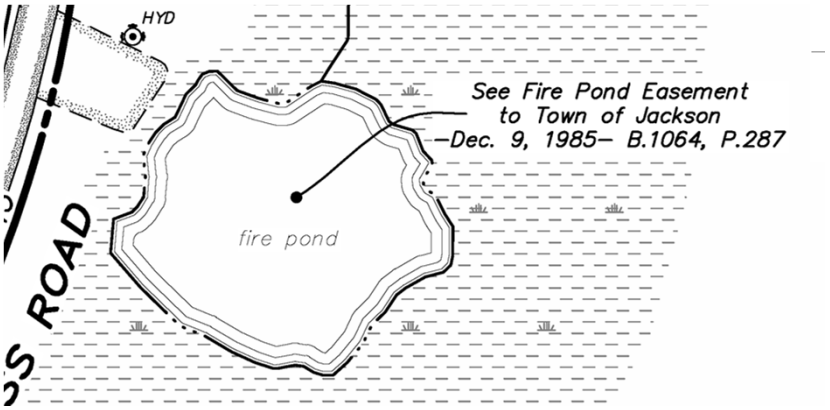
(15) Easement and right-of-way limits, references to easements and encumbrances of record, whether private or public, and evidence of any unwritten interests observed; to the extent that they have a physical effect on the land;

(16) Revision dates and purposes;

(17) Legend, unless symbols are clearly identified within the plat;

(18) Man-made structures pertinent to the purpose of the surveyed project;

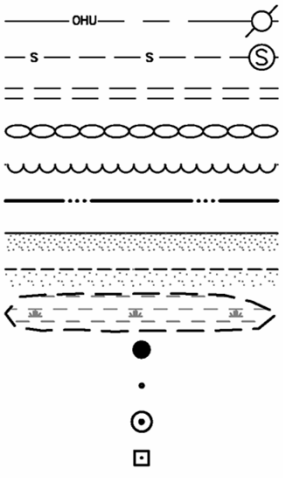
Easement of record



Revision Block

Copyright	2014	HEB Engineers, Inc.	
1	REVISIONS PER TNC REVIEW	09/26/14	KLT
No.	Revision	DATE	BY

Legend



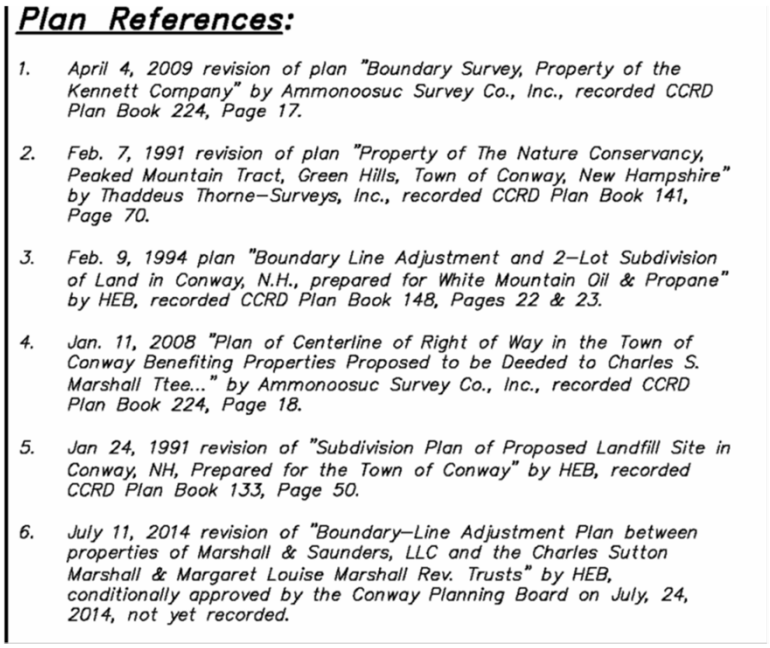
- Overhead utility wires/pole
- Sewerline/septic tank
- Culvert
- Stone wall
- Vegetation line
- Stream
- Edge of pavement
- Edge of gravel
- Delineated wetland
- HEB disk on rebar set
- Intersection point
- Iron pipe / rebar found
- Granite post found

Plat Rules (cont.)

(19) Plats and data relevant to the survey;

(21) The area of the subject tract or parcel, expressed in acres, unless the area is less than 2 acres, in which case the area may be expressed in square feet;

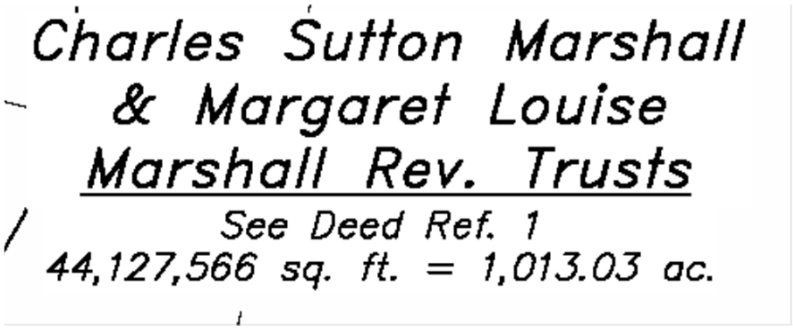
(22) If a boundary, easement, or right-of-way shown on the tract is an elevation, the referenced datum shall be noted on the plat along with at least one permanent benchmark with reference elevation;



Plan References:

1. *April 4, 2009 revision of plan "Boundary Survey, Property of the Kennett Company" by Ammonoosuc Survey Co., Inc., recorded CCRD Plan Book 224, Page 17.*
2. *Feb. 7, 1991 revision of plan "Property of The Nature Conservancy, Peaked Mountain Tract, Green Hills, Town of Conway, New Hampshire" by Thaddeus Thorne–Surveys, Inc., recorded CCRD Plan Book 141, Page 70.*
3. *Feb. 9, 1994 plan "Boundary Line Adjustment and 2–Lot Subdivision of Land in Conway, N.H., prepared for White Mountain Oil & Propane" by HEB, recorded CCRD Plan Book 148, Pages 22 & 23.*
4. *Jan. 11, 2008 "Plan of Centerline of Right of Way in the Town of Conway Benefiting Properties Proposed to be Deeded to Charles S. Marshall Ttee..." by Ammonoosuc Survey Co., Inc., recorded CCRD Plan Book 224, Page 18.*
5. *Jan 24, 1991 revision of "Subdivision Plan of Proposed Landfill Site in Conway, NH, Prepared for the Town of Conway" by HEB, recorded CCRD Plan Book 133, Page 50.*
6. *July 11, 2014 revision of "Boundary–Line Adjustment Plan between properties of Marshall & Saunders, LLC and the Charles Sutton Marshall & Margaret Louise Marshall Rev. Trusts" by HEB, conditionally approved by the Conway Planning Board on July, 24, 2014, not yet recorded.*

Area of subject tract



Plat Rules (cont.)

(24) A certification by the land surveyor stating the method and classification of the survey or the precision and accuracy attained; and

(25) If coordinates of positions are shown the following shall also be included: a. The units of reported coordinates; b. The horizontal datum and coordinate system of the horizontal coordinates; c. Vertical datum of the vertical coordinates; and d. Basis of bearings.

Surveyor certification

2. *Boundary evidence, site features, and topography are per field surveying performed June & July 2014; under the direct supervision of Seth E. Burnell, LLS #985; using a Leica TCRP1203+ robotic total station and Leica GS15 GPS/GLONASS geodetic receivers; and conforming with the technical standards for urban property surveys per the NH Code of Administrative Rules of the Board of Licensure for Land Surveyors. Existing ski trails and minor water courses shown are per aerial photography and Survey Ref. 9.*

Coordinate system

4. *Bearings are grid and coordinate grid is N.H. State Plane Coordinate System NAD83 (CORS) datum, established with GPS observations tied to the NGS CORS network.*

COMMON ISSUES

- Deceased surveyors records
- Boundary maintenance – legal roles and responsibilities
- Hiring a surveyor to set monuments and blaze lines for a property with an existing survey plan and little field evidence.
- What to do if an existing survey says that pins were set, but it's clear that they never were?