

The Surveyor

Surveyors On Beacon Hill



Issues important to the profession discussed at Design Professionals Day at the State House

By Abbie Goodman, Executive Director, MALSCE

On Tuesday, May 11, 2010, MALSCE members, along with ACEC/MA and BSCES members, gathered at the Massachusetts State House for our Annual Design Professionals Day at the State House along with leaders from other engineering and design related associations. We arranged for meetings with our members' Massachusetts State Representatives and State Senators based on where our members live and vote. Members discussed several key issues with their legislators. For more

information on these issues, download the fact sheets at: <http://www.acecma.org/index.cfm?cid=10527&pid=10243>:

Here are brief summaries of the issues:

Infrastructure funding

Massachusetts should invest in maintaining, repairing and upgrading its infrastructure, and identify new sources of revenue to meet the Commonwealth's infrastructure needs. Both federal and state studies show that Massachusetts is falling behind in maintaining our bridges/roadways, water/wastewater systems, schools,

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UMaine's SVT Program Needs Recruits !!

The SVT program (Surveying Engineering Technology) at the University of Maine needs your help. The College of Engineering is working to increase program by ten percent. The SVT program is the only four year degree option for Land Surveying in New England. Your help with increasing enrollment can take many forms. Take the time to talk to high school students, community college students, and young adults about a career in surveying and the surveying program. Students can save money by attending their local two-year program then transfer to the University of Maine to earn an ABET accredited B.S. degree in surveying.

A MESSAGE FROM THE PRESIDENT

By Scott D. Cameron, PLS

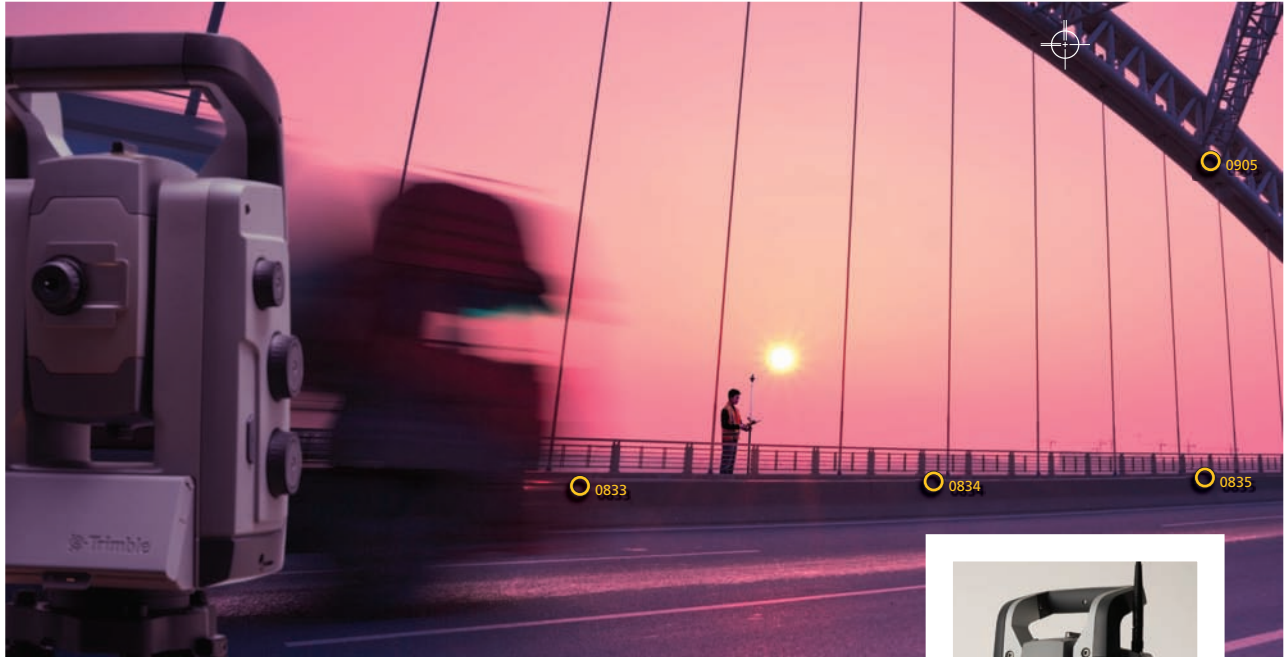
A sage baseball player once said, "It ain't over 'til it's over." I think of that oxymoron often when pondering the state of the economy as it pertains to the business of land surveying. Experts have claimed time and again the recession is over,

however from my viewpoint, until every surveyor who is willing and able to return to work has done so, then it's not over.

Despite the slow economy MALSCE marches on. The most recent seminar featured a mock trial with the



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Design Prof. Day

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and other infrastructure. Lack of adequate maintenance is contributing to a continuing increase in the backlog of unmet infrastructure needs. In addition, there is limited capacity to fund capital programs. Adequate investment in our infrastructure will have long-term benefits by improving the quality of life for our citizens, promoting future growth and development, and creating needed jobs.

Qualifications Based Selection (QBS)

When procuring design services, government agencies should award contracts based on the qualifications of the firms. This is known as Qualifications Based Selection (QBS). Selection of design professionals using qualifications accomplishes the goals of delivering quality projects at competitive costs while safeguarding the public. The language in Sections 40-45 of Chapter 25 of the Acts of 2009 makes this the law in Massachusetts for horizontal public works projects. It is already the law for vertical public building projects in Massachusetts.

ACTION UPDATE: The MA legislature passed an FY2010 Supplemental budget on May 13, 2010, which included our QBS clarification language. Please see sections 4, 6 and 22 in http://www.acecma.org/acecma/file/Supp_Budget_5_13_10--including_QBS_clarification_language.pdf for reference. Section 22, in particular, repeals the requirement that MassHighway (now MassDOT) select land surveyors by low bid.

Fixing the Dam Problem

Supporting SB 427: There are about 3000 dams in the Commonwealth. About 1700 of

these dams are judged to pose some level of risk; 303 are High Hazard dams. Eighteen percent (18%) do not have an Emergency Action Plan (EAP). Individual owners responsible for their dams and 56% of dams in the state are privately owned. Many of these dams have not been maintained at all and do not have EAPs. SB 427 establishes a state revolving loan fund, reduces some regulatory obstacles to removing unsafe, obsolete dams, increases fines for non-compliance and increases frequency of dam inspections. It requires DCR (Department of Conservation and Recreation) to inventory dams annually and ensure EAPs (Emergency Action Plans) in place for Significant/High Hazard dams. The bill also encourages fish-friendly hydro electric dams and requires review of homeland security issues relative to dams.

Mechanics Lien Law for Design Professionals

A consensus amendment to the existing Mechanic's Lien Law, supported by design professionals, contractors and subcontractors, would allow licensed design professionals, architects, engineers, land surveyors and licensed site professionals, to lien property when the owner and/or developer fails to pay for agreed-upon services. Many of these design firms are small businesses whose day to day operations are severely impacted when owners and developers fail to pay invoices.

Maximizing Private Sector Innovation

The engineering industry plays an essential role in helping state agencies deliver services to taxpayers. From designing

solutions to address congestion on roadways, ensuring continued access to safe drinking water, to putting green technologies to work to make industry and government more sustainable, engineering firms in Massachusetts are working to solve public policy challenges and improve the quality of life for residents. Unfortunately, efforts have been made in the past to prevent state agencies from taking advantage of the value and technical innovation that the private sector engineering and land surveying community in Massachusetts offers. Delivery of critical infrastructure improvements requires a close partnership between public and private resources. The public sector has a key role to play in this process, providing the overall management and oversight of public projects, while the private sector brings the innovation, expertise, on-time delivery and long-term cost savings to ensure that taxpayer dollars are well invested.

Support for Treatment of Chronic Lyme Disease

For a variety of reasons, the medical community and insurance companies in Massachusetts have been reluctant to diagnose and treat chronic Lyme disease. Doctors fear negative repercussions from medical associations and regulators. Insurance companies refuse to cover long-term antibiotic treatments. Controversy continues as to the best diagnosis and treatment of the disease with antibiotics proving the most

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Design Prof. Day

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successful. Although the disease was first identified in Connecticut, Massachusetts is second only to New York in the number of cases reported in 2008 (4,582). This brings the total number of confirmed cases in Massachusetts to 21,818. The Center for Disease Control records show a 242% increase in the annually reported cases from 2000 to 2008. Field personnel from engineering and land surveying companies are at risk of contracting Lyme on a regular basis. Several bills have been consolidated into HB 4480 that was favorably reported out of Committee on Health Care to the Joint Committee on Health Care Financing.

Why Reverse Auctions are a Bad Idea for A/E/C Services

During the spring of 2010, the legislature has been working on Municipal Relief bills, designed to help cities and towns by streamlining certain laws pertaining to municipalities. Section 19 of HB 4631, the House version of the bill, would have a harmful affect on the design and construction of public municipal projects and on public safety. This section provides that municipalities may enter into procurement contracts in the amount of \$25,000 or more utilizing reverse auctions for the acquisition of supplies and services. HB 4631 defines reverse auctions as "An internet based process used to buy supplies and services whereby sellers of the supply or service being auctioned anonymously bid against each other until time expires and until

the governmental body determines from which sellers it will buy based on the pricing obtained as a result of the reverse auction."

ACTION UPDATE: During Design Professionals Day, engineers and land surveyors successfully advocated for excluding the services of engineers and land surveyors from procurement via reverse auctioning in the Senate version of the Municipal Relief bill. We're working on have the House accept the Senate version of this language in the final bill that will be sent to Governor's desk (may have an update by press time.)

You can download the Fact Sheets we used in the meetings with State Representatives and State Senators at the link above (or maybe a call-out box with link?)

You can download the Infrastructure Reports on the Status of Freight Rail, Bridges, Roadways, Water and Wastewater at: <http://www.engineers.org/resources/news.htm>. Future reports on public buildings, dams, freight, and other infrastructure elements are in development. Please feel free to contact your legislators about these issues and to contact me if you need any more information. We certainly were not able to see people from all 200 legislators' offices on May 11, but with your help, we can reach many more of them.

Why do we do Design Professionals Day?

Professional engineers, land surveyors, and other design professionals are important resources for public policy makers at all levels of government. We bring problem solving skills, insights and expertise needed by our elected and appointed officials. They may not always agree with our views on specific

laws or regulations, but they are always interested in listening to what professionals from their home districts have to say. This is how legislators educate themselves—and they want to hear from us.

The Massachusetts Association of Land Surveyors and Civil Engineers (MALSCE) promotes professional land surveying and engineering registration and provides professional development programs for surveyors, engineers and related professionals throughout the state. MALSCE also promotes the land surveying profession to State House leaders and the public. We work for passage of legislation and policies that create a favorable climate in which the land surveying and engineering community and related sectors can help Massachusetts grow and improve the quality of life for its citizens.



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President's Message

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Honorable Leon J. Lombardi, associate judge for Land Court (retired) and two generous attorneys representing REBA, the Real Estate Bar Association. The topic of the trial centered around a simple adverse property claim but upon examination opened up numerous topics including legal precedent regarding evidence, lack luster surveys, forty foot busts and scriveners error. It represented the best of what our Professional Development Committee has to offer and they should be commended.

MALSCE members attended Design Professionals Day at the State House. This is an activity every MALSCE member should take advantage of. It is an opportunity to have your voice heard above all others, albeit for a brief moment, with your State Representative and Senator. MALSCE had a contingent of volunteers at Construction Careers Day in Hopkinton and the Proprietors' Council held a meeting with more planned this summer. The convention committee is working diligently on the fall program which will be of interest to all MALSCE members. The other important work of our association is to support the



*Scott Cameron,
President of MALSCE*

educational efforts of programs like the land surveying certificate program at Wentworth Institute and Technology and the University of Maine School of Engineering Technology. By encouraging young people to explore surveying as a profession we can aid in the recruiting efforts of surveying based programs. Our profession is being chipped away from the outside by title companies, the GIS community and others. The need to have educated, experienced and qualified individuals following in the future our profession will be relegated to trade status. Part of the education of any surveyor includes an understanding of the role of surveying in society. The most important responsibility is with the family. The next on the list is your work, but let's not forget the need to give back to our professional organizations whose primary purpose is to protect the public but also represent the needs of the members. The road to a leadership role in MALSCE can be as simple as serving on a committee. Please consider attending the next chapter meeting in your area and see what you can contribute.

This spring, at my son's first little league practice he asked me, "What should I say if they ask me who my favorite ball player is?" I remarked, "tell them it's Yogi Berra."

INFORMATION REQUESTED ON CIVIL ENGINEER FROM BROOKLINE, MASSACHUSETTS

Being a retired project superintendent, I really appreciate a good Civil Engineer. My motto was "if in doubt, call 'em" Well I'm in doubt, so I thought I would call. I am looking for any information on a Civil Engineer named Robert Lawrence Junkin. The problem is he was from Brookline, Mass..... in 1926. You folks are used to working with historical documents, right? The story is that he married a long lost cousin of mine named Lois Loring Scatcherd (widow) in 1926. They

were married in Ontario, Ca Mr. Junkin was born in Canada. He may have been educated in Canada too. I am trying to hunt down who his new bride's deceased husband was. My brother and I have been working on an extensive Family Tree for the Scatchards and Scatcherds of North America (<http://scatchtree.tripod.com>) and would like to place Mr. Junkin's new bride in her proper place. We would, of course, place her second husband in a prominent place as is

befitting a Civil Engineer! I am hoping you might be aware of some historic records that could lead me to some approach to finding out about what happened after the wedding. Your assistance would be greatly appreciated.

Sincerely,

Jay B Scatchard
Arcadia, Calif.

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STRAITSMOUTH ISLAND LIGHTHOUSE

A BOUNDARY RETRACEMENT SURVEY

**By Richard J. Leslie, P.L.S.
Vice President
BAY COLONY GROUP, INC.
4 School Street
Foxborough, MA**

Massachusetts. The island was purchased by the United States of America in November 1834 for the erection of a lighthouse to mark the entrance to Pigeon Cove. The lighthouse was built in 1835 with the tower later replaced by the present tower in 1896. Powered by solar panels, the lighthouse currently remains a fully operational lighthouse. The original boundary survey of the island, prepared on April 15, 1937, divided the island into two parcels. Parcel No.2, a 29.2 acre parcel, which was sold by the United States of America in April 1944, and Parcel No.1, a 1.8 acre parcel housing the lighthouse, which remained under the ownership of the United States of America. In response to a Request for Proposal issued by the U.S.

General Services Administration, Bay Colony Group was hired to perform a boundary retracement survey and an ALTA/ACSM Land Title Survey in support of transferring the ownership of Parcel No.1 to the Town of Rockport.

There are numerous problems that can arise whenever performing a boundary survey and although you can never know when they will present themselves you can be sure that they will. The first problem we encountered came early on, in the research phase. Although the deed descriptions for Parcels 1 & 2 were very detailed, we really needed to

Straitsmouth Island is a 31+/- acre parcel of land located off the easterly coast of Rockport,

obtain a copy of the original plan in order to have a visual reference of the location of the lighthouse and other structures in relation to the property lines. Per the deed, copies of the survey were filed at the Essex County Registry of Deeds as well as in the office of the Commander, Boston District, United States Coast Guard, Boston, MA. Searches of the on-line database of the Registry of Deeds as well as phone inquiries into the Boston Commander's office and the U.S. Coast Guard Real Property Division in Providence, RI in hopes of attaining a copy of the original plan were unsuccessful. Unable to obtain a

copy of the original plan we resorted to the next best thing which was to reproduce the property lines using the deed descriptions. Although we did not have a plan depicting the location of the lighthouse and structures on the parcels, we did have a graphical representation of the property lines with the location of the original monuments. As previously mentioned, the original plan was prepared in 1937 which meant the



Straitsmouth Island Lighthouse

reference bearings from the triangulation stations, as given in the deeds, would be based on the North American Datum of 1927 (NAD27). Since we intended to use Global Position System (GPS) equipment to perform the survey the bearings would have to be converted to North American Datum of 1983 (NAD83). By searching the National Geodetic Survey (NGS) database we were able to obtain copies of the data cards for the three triangulation stations called for in the deed. The data cards contained latitude and longitude data in both NAD27 and NAD83 datums. Using the U.S. Army Corps of

Engineer's Corpscon program the latitude and longitude data was used to develop coordinates in both datums for the triangulation stations. In order to obtain approximate bearings and coordinates for the property lines and corners on NAD83 datum, the original property lines and triangulation stations using the NAD27 datum were rotated onto the triangulation stations using the NAD83 datum. This provided us with the approximate positions for the property corners which would be used to help locate the actual corner monuments. Armed with this data and state of the art survey equipment we were ready to conduct the field survey.

In performing the field survey there were several obstacles that needed to be overcome, not the least of which was access to the island. The original boat slip/dock, which was located at the exact opposite end of the island from the lighthouse, had been destroyed and no longer existed. Since the island is surrounded by large boulders and rock faces access would be made by boat, preferably during high tide, with entry being made by scaling the boulders and rock face. Detailed planning and execution were necessary in monitoring tidal cycles and surges in order to facilitate entry onto and exit off the island. As expected the lighthouse was located



Straitsmouth Island as seen from Lighthouse

on the portion of the island most facing the open ocean thereby experiencing the strongest tidal surges. As a result of these surges, entry onto and exit off the island would have to be made at locations that provided the most protection from tidal surges, basically the opposite end of the island near the location of the former boat slip/dock.

Entry onto the island was no easy task, especially when

you take into account that entry included not only survey personnel but all of the equipment, food and water that was needed for the day. Once entry had been accomplished the hard part came, the carrying of food/water, survey instruments/equipment, GPS units/equipment, laptop computer and sufficient battery power to operate and recharge the equipment as necessary from the entry point to the lighthouse parcel. As if the weight of the supplies and equipment wasn't enough, it would have to be carried

over rock faces and debris resulting from

years of storm surges and

through

vegetation

ranging from

knee to chest

deep, there

were no paths.

At this point it

should be noted

that the

vegetation

consisted almost

entirely of poison

ivy and I should

also mention the

island was infested

with RATS! After a

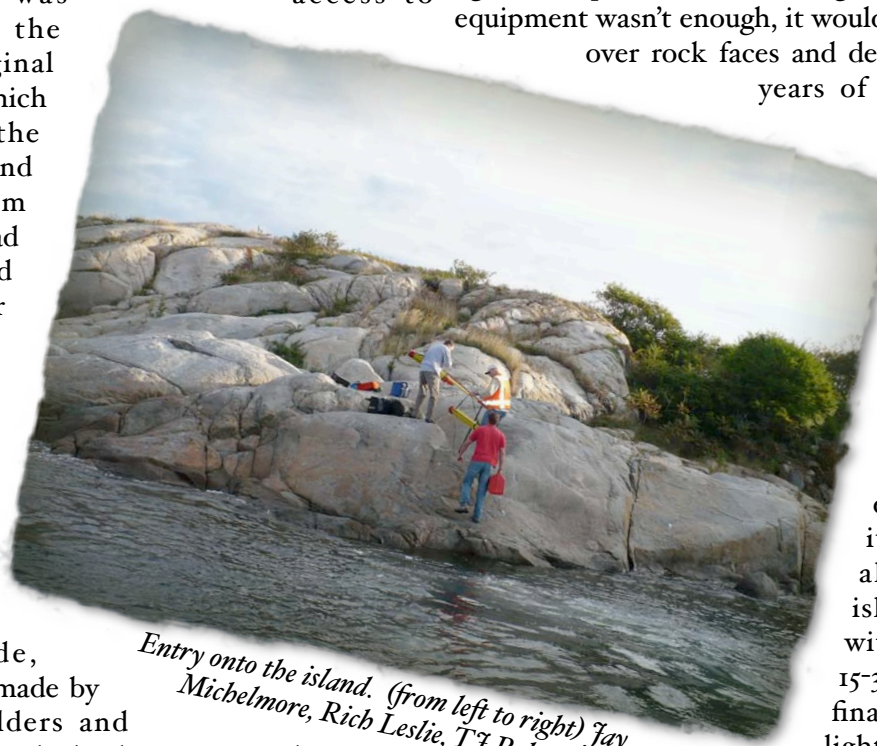
15-30 minute hike we

finally arrived at the

lighthouse parcel and

could begin the survey.

Although a previous recon of the site, in preparation of the proposal, had failed to uncover



Entry onto the island. (from left to right) Jay Micheltore, Rich Leslie, TJ Roberts

As is often the case when you make a mistake or overlook something it usually happens early on in the project, that way it can haunt you throughout the entire length of the project...

any of the original monuments or occupation, we felt our chances were much better this time. True we still didn't have a copy of the original plan, but we did have coordinates based on our fancy survey calculations and we had just scaled the rocks, humped this state of the art equipment across the entire length of the island, through the poison ivy, with rats scurrying around our feet at almost every step. No such luck! After 10 hours on the island looking, digging through debris and clearing groves of poison ivy we found nothing, nada, not a single piece of evidence. Disheartened it was time to head home and figure out where we went wrong.

As is often the case when you make a mistake or overlook something it usually happens early on in the project, that way it can haunt you throughout the entire length of the project, in our case it was with the research. We needed to dig deeper to find a copy of the original plan. Parcel No.2 had changed hands several times since first being deeded out by the U.S. Government and ownership was now with the Audubon Society. Although a call and subsequent record search of the Audubon's plan archives failed to produce the plan copy, I was given the name of a local gentleman who was working on the committee that wrote the grant for the Town of Rockport to purchase the lighthouse parcel. Since I had heard this gentleman's name mentioned in previous discussions, with the boat captain who was transporting us to and from the

island, I decided I'd better give him a call. After all I had nowhere else to go and many years ago while taking a survey course the professor said that you should never underestimate the value of information that can be obtained by checking local archives or speaking to local historians. Boy was he right! While talking to the gentleman on the phone, as he sifted through his grant paperwork, he informed me he actually had a copy of the plan I had been looking for. Eureka we struck gold! We made arraignments to meet at the dock to pick up the plan and head back out to the island.

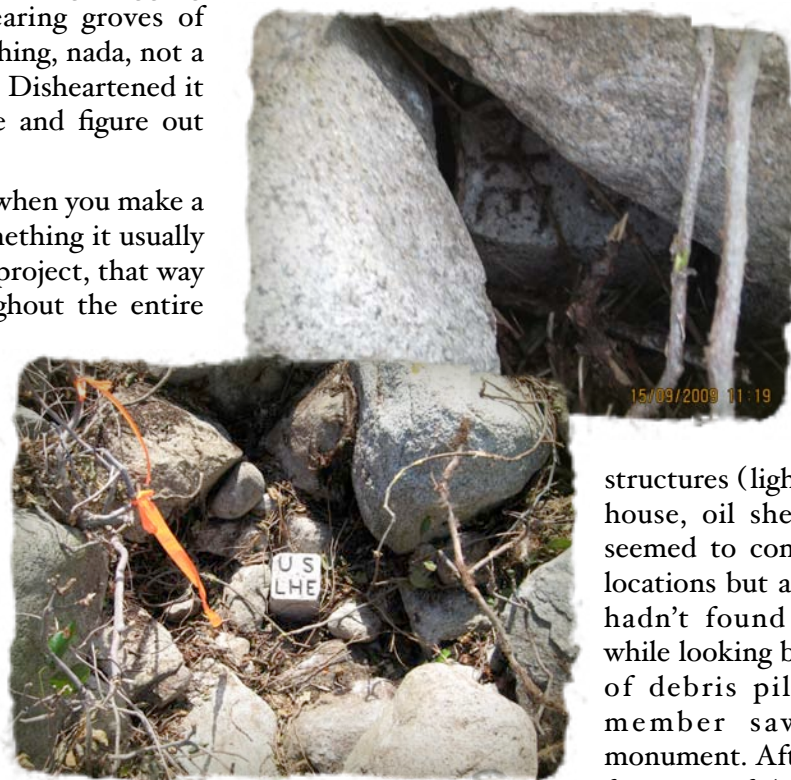
So we loaded the boat and went back to the island for the third time. After all, the third time is a charm right? Well it was! Although the plan did not

provide any additional information that would cause us to revise our previous calculations, it did provide us with a visual representation of the original property corners in relation to the existing

structures (lighthouse, innkeeper's house, oil shed ...etc). The plan seemed to confirm our calculated locations but after 4 hours we still hadn't found anything. Finally while looking between the crevices of debris piles a survey crew member saw the top of a monument. After clearing out four foot area of debris and large rocks we were able to completely

uncover the original survey monument and to make things better it was the monument marking the point of beginning in the deed description. Upon

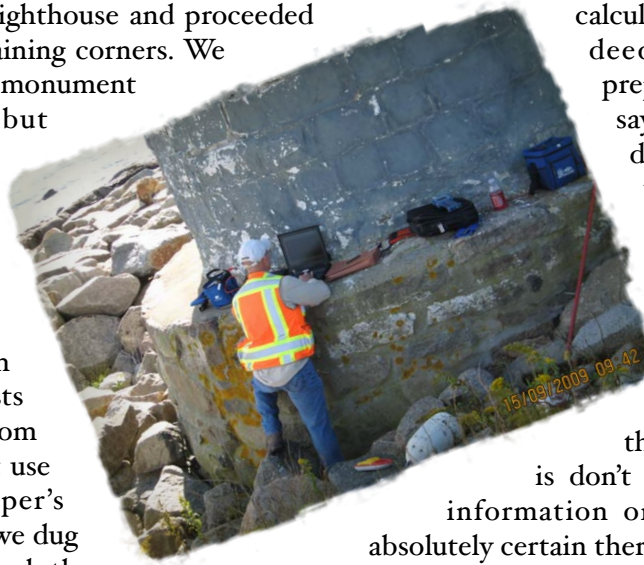
locating the monument and inputting the data into the laptop computer it was discovered that the initial tie distance from the spire of the lighthouse to the monument marking the point of beginning was off by over 3'. Now we had some solid evidence to work



Top: Original P.O.B. monument, buried by large rocks and debris

Bottom: Original P.O.B. monument as recovered

with so we re-rotated the record property lines using the monument and the lighthouse and proceeded to look for the two remaining corners. We were able to recover the monument at the second corner but discovered that the monument marking the third corner was either destroyed or buried under several feet of sand and debris. Since there was an abundance of granite posts on the island, leftover from an elevated walkway that use to connect the innkeeper's house to the lighthouse, we dug a hole and used one to mark the



location of third and final corner as calculated using the record plan and deed. Time to head home and prepare the final plan. Needless to say the 2 hour drive home that day was much more pleasant than the previous trips.

In my opinion what separates the good surveys from the great surveys is the knowledge you gain over the course of the project. Without a doubt the lessoned to be learned here is don't stop digging, whether it's for information or monuments, until you are absolutely certain there is nowhere else to look.

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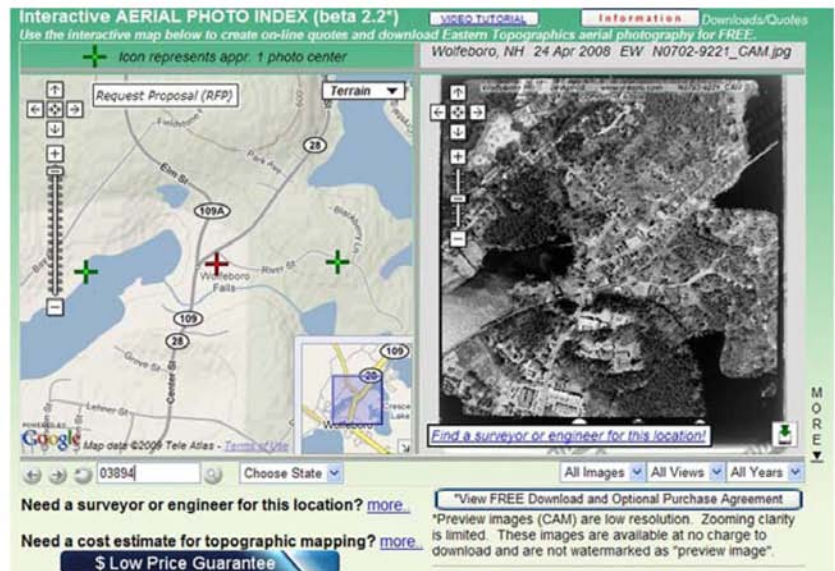
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