

the *American* Surveyor

MARCH 2015

DOWN ON THE CORNER

Geodetic Preppers

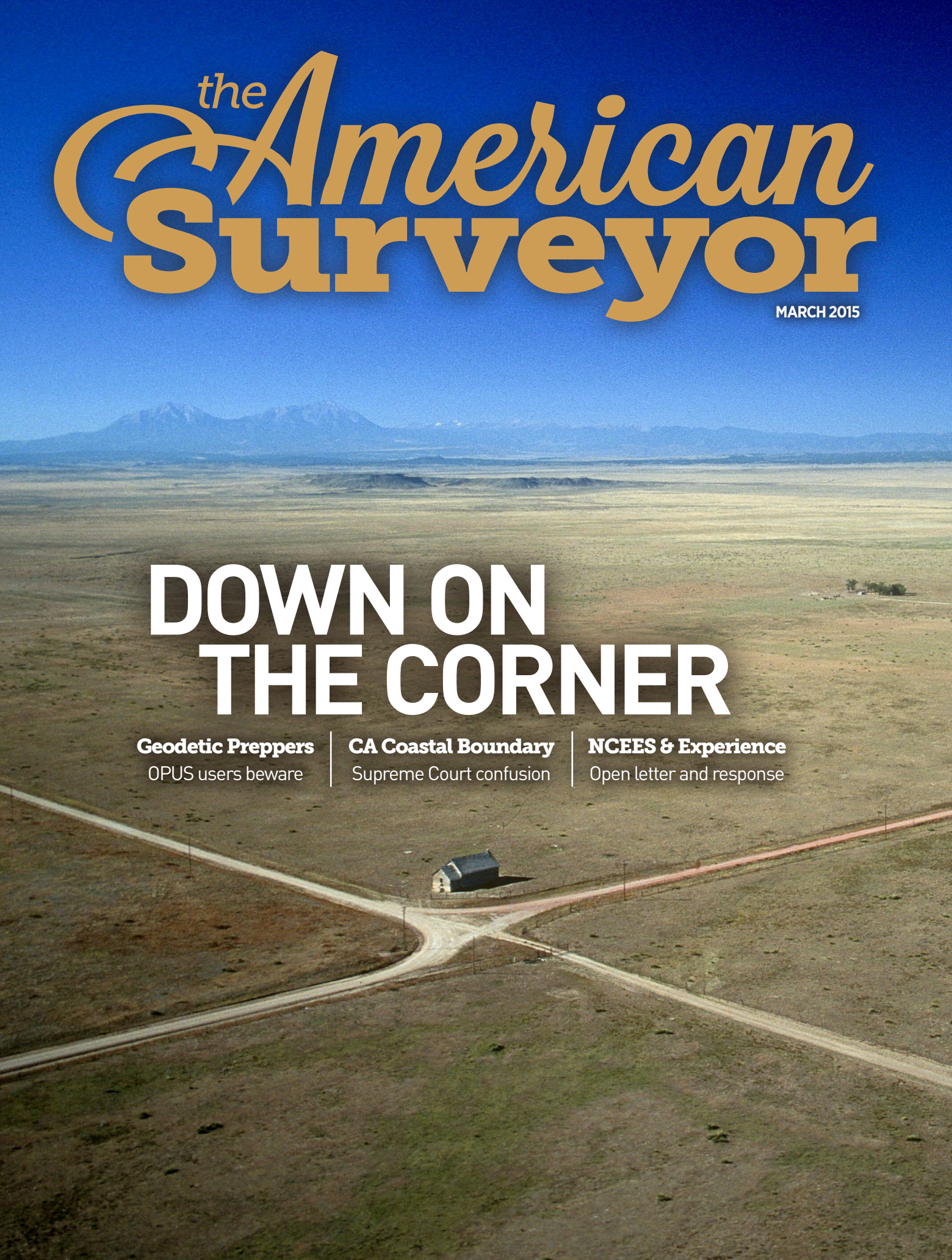
OPUS users beware

CA Coastal Boundary

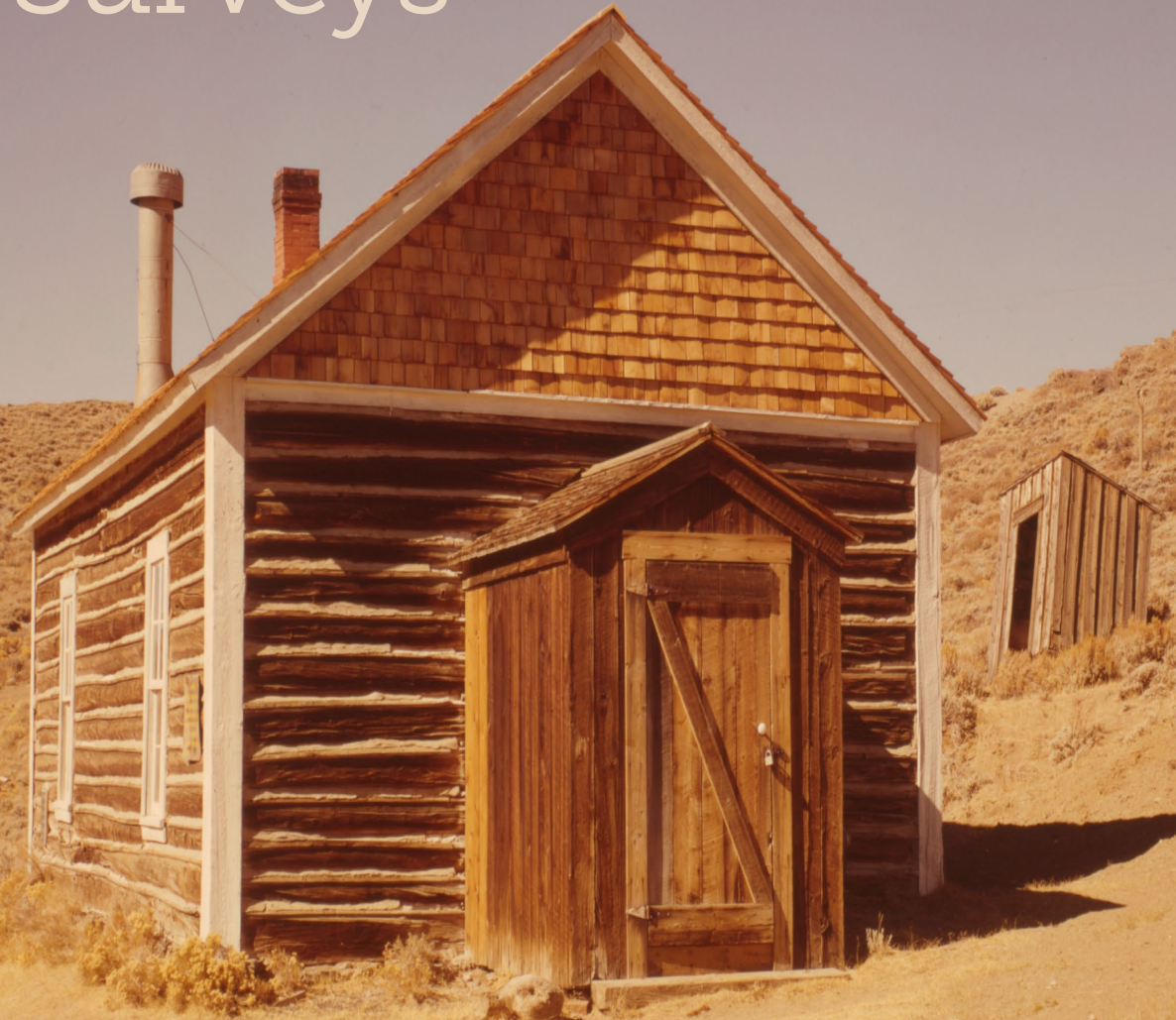
Supreme Court confusion

NCEES & Experience

Open letter and response



ONE-ROOM SCHOOLS, Aerial Photos, & Hokey Pokey Surveys



Schools as Metaphors

We found a blurb about the Idaho State School Board in the 1900's making the decree that sunlight coming over the left shoulder made the students more intelligent, or something like that, and all windows in one-room schools had to be moved to that side. This rule is preserved for all to see in some of the old school relics with all the windows on one side of the building and siding repairs on the other.

In going through school house images we did find a similar image for a school back east.

When the sun was shining on the other side of the building, the Stony Point schoolmarm must have wondered if there was a way to make state boards more intelligent.

Can we say that we have outgrown such foibles when we hear surveyors say: "*Boundary Surveying is all just a matter of opinion anyway.*"

Schools as Collateral Evidence

Years ago John Elsbury, our area's State Survey Contract Administrator-cum-RLS, hammered home the concept that quasi government parcels, such as those for cemeteries and one room schools, were often adjacent to, or tied by legal description to, sectional corners. Thus these parcels and their legal descriptions are exceptionally reliable evidence of the original position of GLO corners. This article is a story of such an application.

Now, On With The Story

In 1977, one of our better local surveyors, PE/LS Carl Edwards, re-established the SW corner of Section 24, T30N, R3E, Boise Meridian utilizing a found basalt stone with two typical notches. The distance north to the recovered stone at the NW corner of Section 24 was a conforming 5290 feet. Ominously, the area around Edwards' stone is known as Stony Point.

In 2008 an affected land owner bordering the south line of the SW ¼ of Section 24 contacted us with a complaint that her neighbor to the south, in Section 25, was

claiming property 150' into her hayfield.

Our client had the defense of an ancient east-west fence line, but she wanted more. Based on an initial review of the GLO topo calls and USGS quads we predicted to our client that the 1977 stone was in error by hundreds of feet and ended that prediction with Mr. Elsbury's truism; "Because there is a one-room school property involved, the resolution of the SW corner of Section 24 will probably hinge upon the location of that property."

Actually there were two ½ acres school parcels involved, split by the north-south

South Pass School,
Wyoming, 1974
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» CHAD & LINDA ERICKSON



Mustang School, 15 miles NE of Walsenburg, Colorado demonstrates the typical placement of schools and the resiliency of those boundaries even after the fences have long since been removed.

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section line. The 1915 legal description of the parcel on the west is typical of the two:

A tract of land commencing at the SW corner of Section 24...and running thence North 272 feet to Corner #1; the true place of beginning, thence West 104 feet...thence North 208 feet... Thence East 104 feet to Corner #4 on the section line; thence South along the Section line 208 feet to Corner #1, the place of beginning;

Notice the 272' tie south to the sec. corner, which was down a steep rock face. The Stony Point School building was closed about 1950, moved and the area used as a rock quarry.

From a 1959 aerial photo we can see that all the school fences had been removed and what was still level was under cultivation.

We gave our client the assignment of rounding up as much Stony Point School evidence and testimony as she could. It wasn't much. She would escort classmates to the site and they would all go into vertigo over the changes wrought by the quarry site; what was once high was now low; it did not compute.



Carl Edwards' Stone. Are these GLO notches or disc notches?



1909 Co. Surveyor's W1/16th Stone. Notice the rounding effect of electrolysis.

Here is what did compute:

1. The volume of the Edwards stone is only 50% of what was reported in the Field Notes.
2. The stone has two notches, not the three of 1873 record, and these might have been caused by field discing.
3. The two notches are relatively fresh and distinct, whereas the notches on other 140 year old iron rich basalt corner stones in northern Idaho have notches and grooves that are rounded and dimmed, if not disappeared entirely into an outer shell of thick oxide.
4. The Edwards legal description scrieved in 1977 has the common south corner of the two school properties at the 1977 stone rather than 272' north of.
5. All of the exterior corners of Section 24 have been recovered in the form of reliable stones or fence/road intersections, except for the SW corner.
6. The 1897 GLO survey reports Sec. 24 to be 250' short east-west with near cardinal lines. The recovered GLO corners on the east side of the section confirm the 250' shortfall but show that they are displaced 230' south of the recovered NW and W₁/₄ corners. Therefore, there is either an odd bearing on the south line of Section 24 or a long distance on the west line of the SW₁/₄. Carl Edwards' solution conforms to the first scenario.
7. Contrarily, the 1909 County Surveys that retraced and subdivided Section 24 set a W₁/16th county stone on the south section line which establishes



Erin & Sam notching stones with a disk.

PHOTO AND PERMISSION FROM BETSEY WITTICK, LAUGHING CROW FARM, BAINBRIDGE ISLAND, WA.

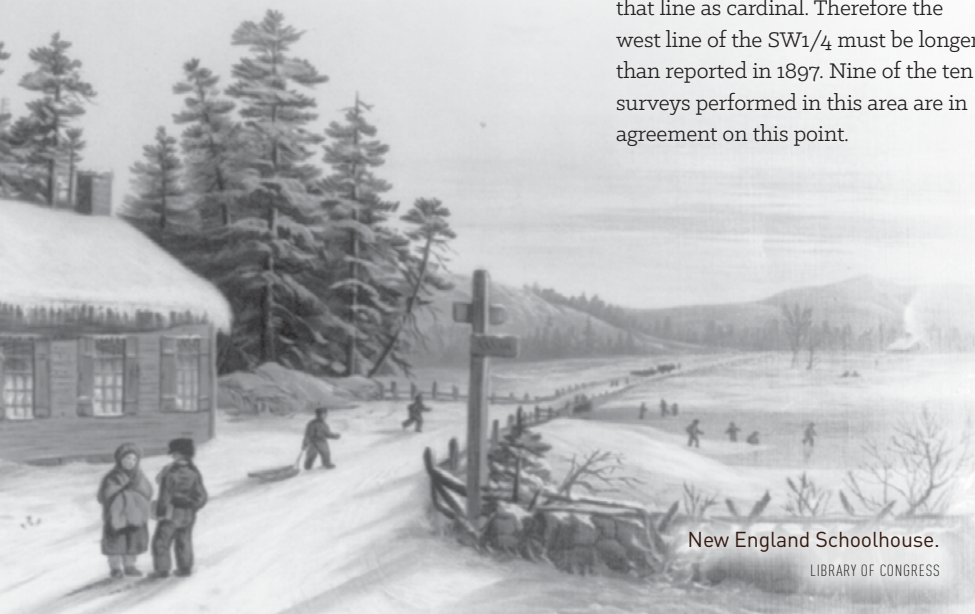
“Boundary surveying is not just a matter of opinion.”

that line as cardinal. Therefore the west line of the SW₁/₄ must be longer than reported in 1897. Nine of the ten surveys performed in this area are in agreement on this point.

8. Last, but not least, is the 1897 GLO topo call from the SW corner of Section 24: “North - 6.00 Chains (398') - Summit of ridge, 150 feet above sec. cor., bears E and W. Thence over rolling land...” While GLO notes have the same non-reliability as a Chevy Vega, Ford Edsel and Metropolitan Nash combined (two of which we cringe to admit we have owned), and the summit is rounded, still the measured distance from the 1977 stone to the top is only 150'± and the rise is only 14'. This is alarming from the get go and suggests that Mr. Edwards' corner should be 250'± to the south down the steep rock face.

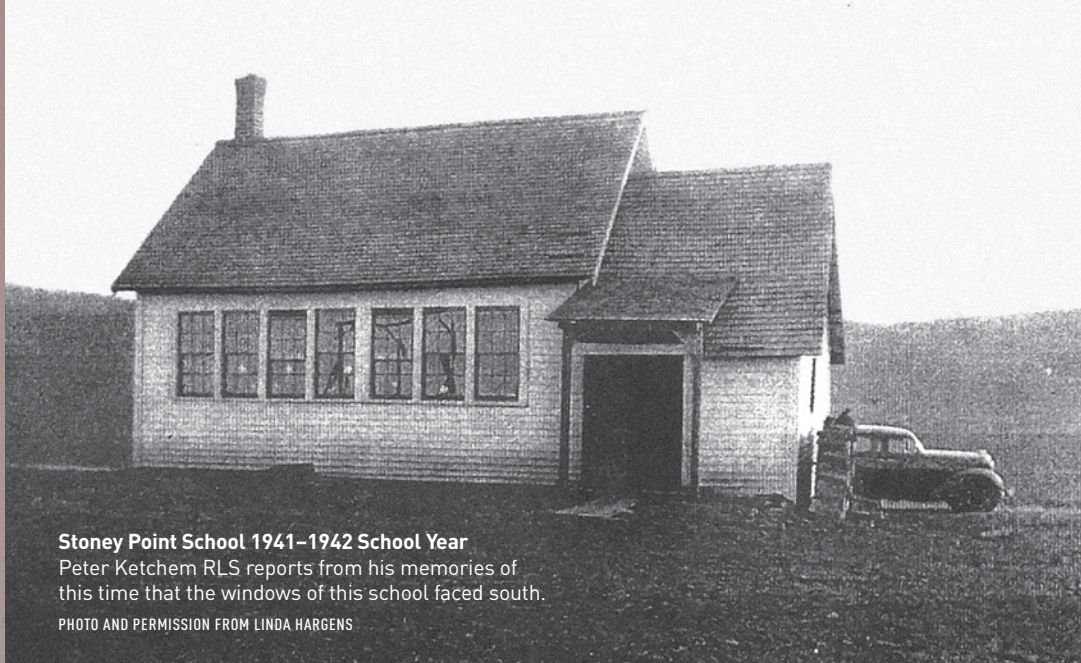
There is much more to this survey than these eight items, our original Survey Report itself was 24 pages long, but suffice it to say that of the eight exterior sectional corners and the center 1/4 corner, five of these Edwards corners were moved by me an average distance of 125 feet to the three original stones and two fence/road intersections. One of the consequences was that the 150' encroachment vanished.

So, where does the One Room School play into all this? After all, the school was the “nearest” credible evidence to the



New England Schoolhouse.

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Stoney Point School 1941–1942 School Year
 Peter Ketchem RLS reports from his memories of this time that the windows of this school faced south.
 PHOTO AND PERMISSION FROM LINDA HARGENS

missing SW corner of Section 24. Alas, it is anti-climatic to have to report that the school was not the “best” evidence. The SW corner was restored, not by the school, but by a projection from the recovered 1909 County W1/16th stone. In confirmation, the projected position fell on the extended centerline of the north-south road but in so doing proved the school’s 272’ north-south tie distance to be about 30 feet too long.

New Problem

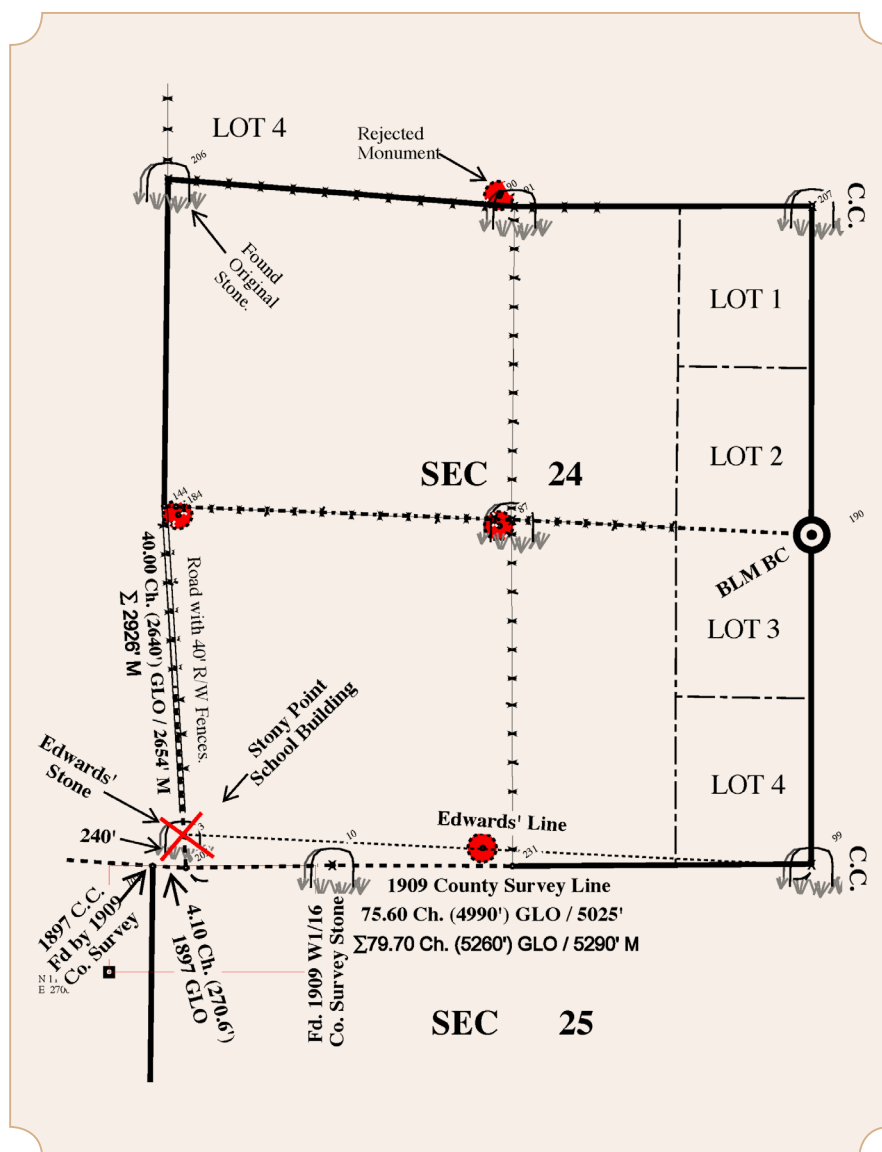
The Stoney Point School would have continued its way into oblivion if it were not for a new problem.

Our client thought that we were workers of miracles. But the client wanted more. She always wanted more and she came to think that a surveyor could do anything the client asked. Inevitably we parted company over this issue. Since then she has, in sequence, found two paladins who have moved the SW corner of Section 24 further west into what appears to be her neighbor’s property. They and their “opinions” are now 80’ further south and 270 feet west and still going, apparent next stop, Pismo Beach, California.

(What we really need to do is remove the boundary experience requirement from licensure so we can have lots more of these surveyors with first amendment opinions.)

School To The Rescue

Surveyors nine and ten are adamant that they can see, in the fuzzy aerial photos, in the area of the closing corner for Sections 25 and 26, an outline of the school property.



“Property boundary surveyors will find these tools ever useful against surveyors who believe ‘its all just a matter of opinion.’”

Further, nine and ten claim that what I see as a school building in the fuzzy aerial photos is a rock crusher.

Of course the rock crusher and school cannot occupy the same point at the same time, so we needed a means to demonstrate to surveyors number nine and ten where the Stony Point School was located. (Like Galileo and his gravity demonstration, the 30' school error did not preclude using the school evidence against an 80' x 270' error.) We needed a pre-1950 hi-resolution aerial photo. We needed a miracle.

One Miracle Coming Up—Wet Drum Scanning

Wet drum scanning of photographs dates from the 1960's and for thirty years was the only way to get an image into the digital realm. Wet drum scanning is still the premier way to get the most out of old images. For drum scanning we used Eiger Studios at 7 Raffles Court, Petaluma, CA, 94954, 707-763-5922, or www.eigerstudios.com. The aerial photo is carefully taped to a drum and as the drum turns a tiny aperture picks up a very fine line of detail. The trick is to get the opening of the aperture to match the grain of the photograph. If the aperture is too large the resulting image will be blurry. If the aperture is too small it will produce a good image but produce a lot of “noise”, making the file much larger than can be handled. The proper aperture width is determined by trial and error, and when it is obtained the new enlargement is so clear its...well, its a miracle.

The resulting file size of a drum scan for a square mile area will be about 1.25 gigabytes and take about 40 minutes of scan time. This work starts by ordering a high-resolution negative (not contact print) from a National Archive vendor, such as the National Air Survey Center Corp. at Silver

Spring, Maryland, 301-927-7177, nasccinfo@aol.com and delivering it to a studio for drum scanning.

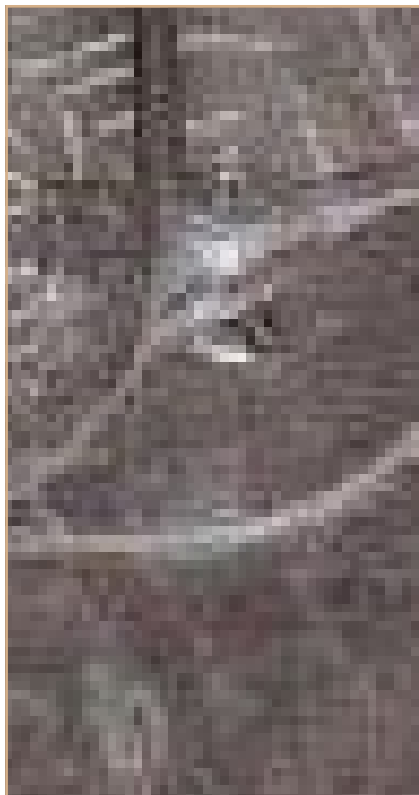
On the left is the enlarged contact print of the July 20, 1946 USDA photo, notice...almost nothing. Whereas, in the drum scan to the right you can even see trails running from the back door of the school building to the two outhouses. Though you can't see the fences themselves you can see the edge of cultivation of adjoining fields on the north and west. We identified lone pine trees on the 1946 aerial photographs and used these to developed photo scales north-south and east-west and

drew 104' x 208' boxes. They fit. A 1921 highway drawing shows the south edge of the school building to be located 35' north of the south school boundary. Check. The section corner position developed from the 1909 County Survey is also in general agreement, plus or minus 30' in northing. Equally significant is the lack of conveyors and stockpiles.

In hindsight, it would be eminently more convincing if another drum scan from a stereo pair was obtained and the two viewed in 3D. However, we can say that John Elsbury is correct, property boundary surveyors will find one room schools and old aerial photos ever useful against hokey pokey surveyors who believe “it's all just a matter of opinion”. Facts trump opinions, even where the facts are locked up as pixels in 70 year old aerial photographs. ■

Chad Erickson PS has been surveying since 1970; using chain and transit for the first four of those. After his Land Surveying degree he performed original township surveys in Alaska. He is licensed and operates boundary survey firms in Idaho and Arizona.

Linda Erickson—Editor.



Contact Print Of 7-20-46 Usda Photo.



Wet-Drum Scanned Image Of Same Photo.