

Volume 24: Issue 1
January, 2013



LINES & POINTS

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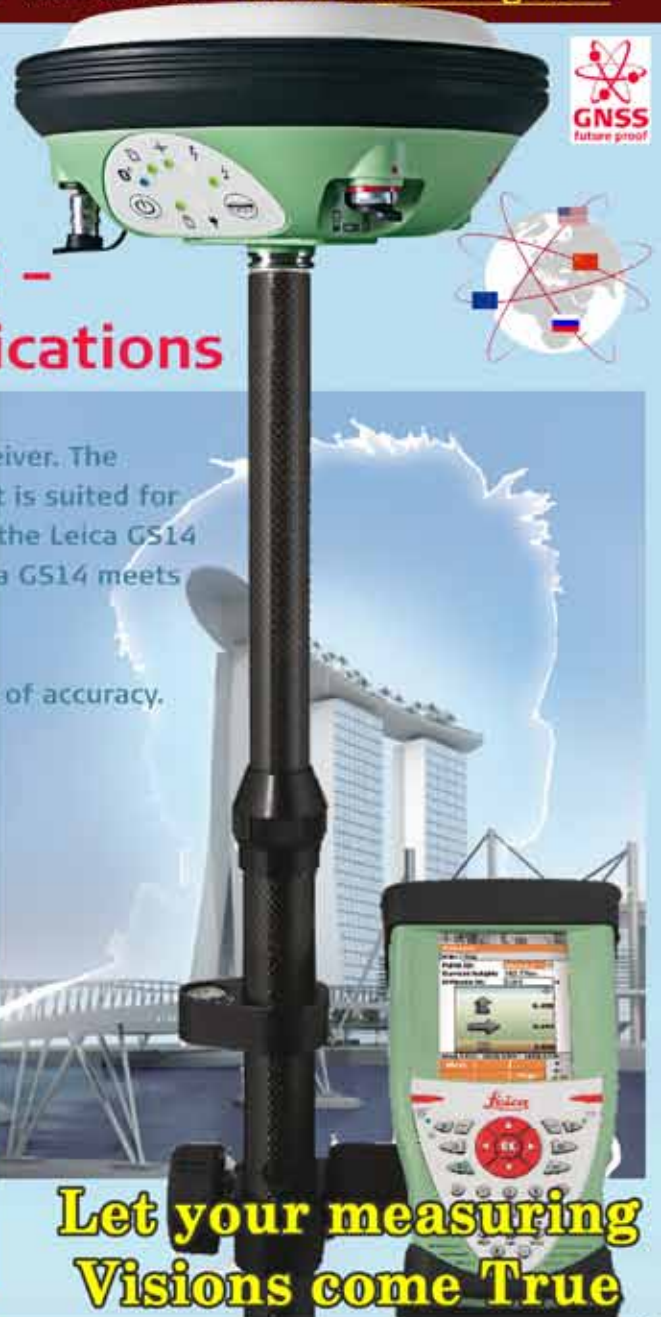


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LINES & POINTS EDITORIAL COMMITTEE

Committee Chair ● Larry Perry, PLS
arpentator@yahoo.com

Editor in Chief ● Michael Flaim, PELS
mike.flaim@bresnan.net

Treasurer ● John "Jack" Studley, PLS
jklz0318@gmail.com

Circulation ● Joel Ebner, PLS
joel_ebner@blm.gov

Advertising ● Pete Hutchison, PELS
peteh@bresnan.net

Copy Editor ● Herbert W. Stoughton, PhD, PELS, CP
hws.geod.engr@bresnan.net

Editor at Large ● Steven "Dennis" Dawson, PLS
denniemdbarb@aol.com



On The Cover

REMONUMENTED SOUTHEAST
CORNER OF THE 1890 - FRED
BOND SURVEY OF CHEYENNE
(Photo by Jack Studley, PLS)

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By: WY PE & PLS Board

2012 PLSW SUSTAINING MEMBERS

- John Baffert - Surv-KAP, LLC
- Troy Langston - Monsen Engineering
- Richard Monsen - Monsen Engineering
- Bryan Baker - Frontier Precision Inc.
- Chris Farnsworth - RDO Integrated Controls

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Special Rates apply for PLSW Chapters and cover placements.

For more information please contact Pete Hutchison or Jack Studley.

PLSW (Professional Land Surveyors of Wyoming) is a statewide organization of Land Surveyors registered to practice in the Equality State of Wyoming. PLSW is dedicated to improving the technical, legal, and business aspects of surveying in the State of Wyoming. PLSW is affiliated with the National Society of Professional Surveyors (NSPS) and the Western Federation of Professional Land Surveyors (WestFed).

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PRESIDENT'S MESSAGE



Greetings all,

I hope everyone had a great holiday season!! As we head into 2013 this will be my final note to the association as President. I would like to thank everyone that has served alongside me as Board members the past two years. I would especially like to thank Marlowe Scherbel for all the hard work as Secretary/Treasurer during my tenure and those before.

With that said, I hope everyone has a very successful and prosperous New Year and look forward to seeing everyone in Casper for the Annual Meeting the 7th of February. I would also like to encourage everyone to complete their ballots and return them as soon as possible. It is my hope that you see the value in the modest dues increase which will allow us all to be members of PLSW as well as NSPS.

As it stands now, there are 13 states that are in and 9 others waiting on a membership vote, Wyoming included. The membership in NSPS has already increased tenfold and continues to grow. Remember there is strength in numbers, so please vote yes on the dues increase, to help provide a strong backbone for our profession nationwide.

As a good friend always says "It's a great day to be a surveyor!" I hope everyone has a prosperous and safe New Year.

Respectfully,

Cotton D. Jones, P.L.S., President
Professional Land Surveyors of Wyoming

ANNOUNCEMENTS

Changes to CORS Stations in Wyoming

This note is to notify the Wyoming surveying community of changes to the BLM managed CORS stations in Casper and Cheyenne.

Station CASP in Casper is being replaced by a new station named WYRF. WYRF is located on the Casper College campus. WYRF will log GNSS data using a Trimble NetR5 GNSS receiver and Zephyr 2 GNSS antenna. Data is being logged at 5 second rate in hourly files. In cooperation with the local surveyors a RTK radio broadcast is also being run off this station. The signal is currently providing GNSS correctors in the CMR+ format. However it is planned to change this in the future to output a GPS only corrector in a format to be determined.

CASP will be turned off at some point after Jan. 7, 2013. CASP has been in operation since 1994. It started out as a mapping base station and was upgraded to a GPS CORS station in 2000 and was the first non-UNAVCO CORS station in Wyoming.

Station WYLC in Cheyenne is also being upgraded. The current Trimble 5700 GPS only receiver will be upgraded to a Trimble NetR9 GNSS receiver. This station will also be set to log GNSS data. The RTK radio will also be upgraded to be narrow band compliant. This change over was done on Dec. 20 and 21, 2012 and the station should be back in operational on December 22, 2012.

Contact Mike Londe, Ph.D., at 307-775-6209 or mlonde@blm.gov if you have any questions.

~•~

The Wyoming Engineering Society is soliciting applications for the 2012 President's Project of the Year Award. The award increases the public's recognition of engineering and surveying projects in Wyoming. The guidelines for submission of a project may be found at www.eng.uwyo.edu/societies/wes. Please keep the guidelines in mind during this construction season as the projects progress and are completed so that all necessary documents and photos are compiled. Entries must be received in Laramie on or before Thursday, January 3, 2013. It is encouraged that the guidelines and application form be reviewed to determine a project worthwhile for statewide recognition.

The background of the page is a photograph of several tall evergreen trees. In the center, a flagpole is visible with the American flag at the top and a blue and yellow flag below it. The text is overlaid on this image.

GREETINGS FROM THE PREXY PASTURE PARTY CHIEF

I would like to welcome two new instructors to the Land Surveying Program.

Danny Swain will be teaching CE 3760 – Applied Least Squares Adjustments. This class is being offered for the first time and contains two parallel tracks for obtaining solutions, an algebraic approach and a differential equations approach within the same class. The differential equation method is geared for those who have a calculus and differential equation background. The algebra approach will be used by surveying students who have an algebra and a trigonometry background. This class is a prerequisite for Photogrammetry and Remote Sensing. This is a new course that Danny will be teaching for the Land Surveying Program next fall.

Leslie Lukasik will be teaching CE 2050 – Real Property Law for the Land Surveying Program. Leslie taught MGT 3340 – Real Estate Law via Outreach for the Business College. The Business College was no longer interested in offering MGT 3340. Leslie graciously accepted an offer from the Land Surveying Program to modify the content of the class from a property management emphasis to

include topics which provide essential background for understanding boundary issues. Leslie is a UW Alumni and teaches for Skagit College.

The Land Surveying Program is an entrepreneurial program meaning that instructor salaries are paid from the tuitions collected. The tuition increase that began this fall replaced subsidies which ended last spring from the Outreach Credit Program, the Civil and Architectural Engineering Department, and the College of Engineering and Applied Science. I realize that the tuition increases are a burden on the students, but without the tuition increases the program was not sustainable and would have been terminated. I am thankful for the students and businesses who have supported the program in the past and continue to support the program, and for the generous subsidies which kept the program going.

Thank you all for your support, it is greatly appreciated.

Sincerely,

Mark Rehwaldt
The Prexy Pasture Party Chief



8 November 2012

National Oceanic & Atmospheric Administration
National Geodetic Survey
Attn.: Mr. David R. Doyle, Geodesist
1315 East-West Highway
Silver Spring, Maryland 20910

Dear Dave:

It has come to my attention that you will be retiring from Federal service as a geodesist with the NGS after over forty years of service in the US Army, USC&GS, and NGS. At the Fall PLSW Board of Directors meeting conducted on Thursday, 1 November, I have been directed by the PLSW Board of Directors to extend to you our warmest greetings and wishes for a long and enjoyable retirement

Your willingness to provide the land surveying profession much needed technical information and guidance as we technologically migrated from the transit and chain to sophisticated terrestrial surveying instrumentation and later the space based positioning systems is greatly appreciated. Your workshops and seminars have provided a wealth of information concerning our roles in the spacial reference networks being developed by NGS and others. Also, we would like to thank you for the time you have spent providing one-on-one assistance as we attempted to address the many nuances of surveying in the twenty-first century.

Again, on behalf of the PLSW Board of Directors I would like to say thank you and many happy moments with your antique automobiles and other hobbies.

Sincerely,

Cotton D. Jones, P.L.S.

President
Professional Land Surveyors of Wyoming
6750 Fay Kally Road
Cheyenne, Wyoming 82009

CONGRATULATIONS!

The members of the Professional Land Surveyors of Wyoming would like to recognize the achievement of the following new registrants and encourage you to join our society.

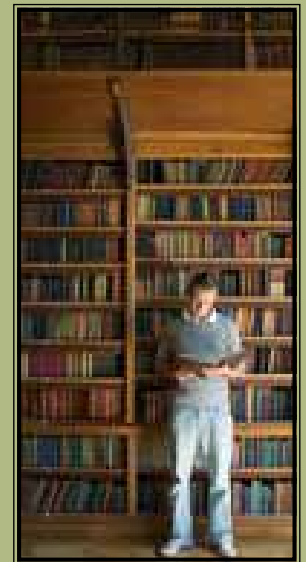
Rex R. Jones, Youngsville, LA, LS 13256
Albert V. Valletta, Jr., Kiowa, CO, LS 13261
Douglas W. Pezoldt, Bozeman, MT, LS 13324
Don M. Brady, Texarkana, TX, LS 13342
Vernon C. Little, Las Vegas, NV, LS 13343
Douglas Chinn, Johnstown, CO, LS 13345
Paul A. Heintz, Casper, WY, LS 13346
Todd W. Norton, Bismarck, ND, LS 13347
Alan R. Benham, Albuquerque, NM, LS 13418
Michael C. Lock, Rock Springs, WY, LS 13419
Jonathan Patterson, Wilson, WY, LS 13629
Michael B. Brown, Granbury, TX, LS 13652
Timothy J. Fox, Boise, ID, LS 13653
David Delgadillo, Rock Springs, WY, LSIT 140
William L. Hensel, Cheyenne, WY, LSIT 141
Ryan D. Wells, Gillette, WY, LSIT 142
Bradley F. Dillon, Rawlins, WY, LSIT 143
Aaron L. Money, Buffalo, WY, LSIT 144
Stephen I. Pence, Vernal, UT, LSIT 145
Brian Ritz, Ft. Collins, CO, LSIT 146
Tad Rosenlund, Gillette, WY, LSIT 147

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If you are attending college with the intent of pursuing a career in Land Surveying in Wyoming, we want to give you money!

A Scholarship Application is available on our website
<http://www.plsw.org>



State of Wyoming Corner Record

(In compliance with the CORNER PERPETUATION AND FILING ACT, Wyoming Statutes, 1997, Section 33-29-140, et seq., and the Rules and Regulations of the Board of Registration for Professional Engineers and Professional Land Surveyors)

Reverse side of this form may be used if more space is needed.

Record of original survey and citation of source of historical information (if corner is lost or obliterated). Description of corner monumentation evidence found and/or monument and accessories established to perpetuate the location of this corner. Sketch of relative location of monument, accessories, and reference points with course and distance to adjacent corner(s) (if determined in this survey). Method and rationale for reestablishment of lost or obliterated corner.

COMMITTEE REPORT

To
Professional Land Surveyors of Wyoming

By
"Save our Surveyor" (SOS) Corner Recordation Committee
Dated: November 03, 2012

2012 SOS Competition

The 2012 SOS competition was conducted during the 2012 PLSW Fall Technical Session in Casper, November 1 and 2, 2012. This year there were four submittals and the ballot results of the competition are as follows:

First Place: Lyle Casciato for his corner record of Corner 3 of the Homestead Entry Survey No. 174 in T.55N., R. 105W., 6th P.M., Park County, Wyoming

Second Place: Rick Hudson for his corner record of the quarter corner common to Sections 18 and 19, T.44N., R.94W., 6th P.M., Hot Springs, County, Wyoming.

Third Place: Kevin Jones for his corner record for the SW 1/16, Section 5, T.51N., R.102W., 6th P.M., Park County, Wyoming.

2013 SOS Competition

The 2013 competition will be conducted in conjunction with the 2013 PLSW Fall Technical Session.

Respectfully submitted,

Paul Reid, PLS
SOS Committee Chairman

Date of Field Work: _____ Office Reference: _____



STATE OF WYOMING CORNER RECORD
Cross-Index No. "N - 3",
Twp. 44 North, Rge. 94 West



499308
STATE OF WYOMING
Hot Springs County
Filed for record at
JAN 2 2013
Land Corner Records
JAN 2 2013
BENNETT, B. A.

STATE OF WYOMING CORNER RECORD

(In compliance with the CORNER PERPETUATION AND FILING ACT, Wyoming Statutes, 1997, Section 33-29-140, et seq., and the Rules and Regulations of the Board of Registration for Professional Engineers and Professional Land Surveyors)

Reverse side of this form may be used if more space is needed.

Record: 1987 U.S. Department of Agriculture Forest Service Survey of Homestead Entry Survey No. 174 by W. Crowder Campbell, Surveyor General Service. "Yu" Cor. No. 6 of the 1987 survey, which is a limestone 8 x 8 x 8 in. above ground, mid. And witness as described in the field notes of the 1987 survey. I destroy this cap and its accessories, and in its place set a granite stone, 24 x 14 x 9 in., 34 in. in the ground, over a stone mid. with a cross, with a cross (10 in. top) for each cor. point for cor. No. 3 of this survey, mid. 3 HES 174 on the N. side facing the claim, and near a mound of stone, 3 ft. base, 3 ft. high, 3 ft. to 4 ft. dist. within the claim. No bearings available.

Found: The granite stone, broken in several pieces as shown below, the base piece still firmly in place. When put back together, the side comprising 3 HES 174 was facing north. Underneath the stone, a piece of limestone was found with what appeared to be a 3 above the letters HES. No stone marked with a cross was recovered.

Rehabilitation: A 3-1/4" Brass Cap on 3-1/2" x 3/8" fire-and-galvanized pipe was set in place of the broken stone. The broken stone was found directly east of the brass cap.

Geographic Position (GPS Derived)
NAD83 (2011) XEPOCH 2010 0000
Latitude: 44°44'36.56" North
Longitude: 109°30'10.82" West
Elevation: 8743 feet

Date of Field Work: 8/20/12

CROSS INDEX DIAGRAM

County Clerk's Office Use Only

Professional Land Surveyor

Surveyor Certification
This corner record was prepared by me or under my direction and supervision
SEAL & SIGNATURE

TECHNICAL NOTES

THE ORIGINAL CORNER SERVICE SURVEY OF 1987 174 WAS A 1/4 COR. MONUMENT. THE CORNER SERVICE SURVEY OF 1987 174 WAS A 1/4 COR. MONUMENT. THE CORNER SERVICE SURVEY OF 1987 174 WAS A 1/4 COR. MONUMENT. THE CORNER SERVICE SURVEY OF 1987 174 WAS A 1/4 COR. MONUMENT.



ANOTHER TALE OF TWO CITIES – PART IV

By: Jack Studley, PLS,
Cheyenne City Surveyor

In this concluding article we shall examine the final three corners associated with the original Cheyenne City surveys of 1870 and 1890. All three of these remaining original corners having been lost or destroyed and required research and analysis for reestablishment.

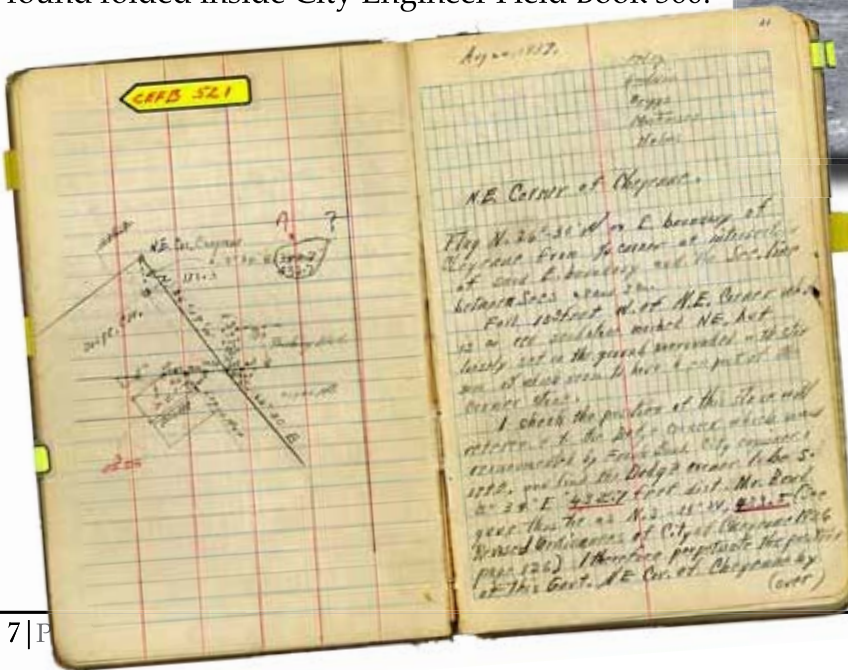
The first being the northeasterly corner of the General Land Office (GLO) Townsite Survey of 1870. Two direct survey ties from the northeasterly corner of the Bond Survey of 1890 to the northeasterly corner of the GLO Survey of 1870 were found in the City Engineer Field Books. The first being in Book 501, Page 2, dated April 1932; and the second being in Book 521, Page 21, dated Aug. 24, 1937.

The reestablished northeasterly corner of the Bond Survey of 1890 is considered to be a good reliable position; and using these survey ties, the two positions fell within 0.20' of one another. I averaged the two positions, and then surveyed to the GLO South Quarter Corner for Section 29, T14N, R66W, 6th PM and found this tie to be within 0.19' of the tie provided on an undated map found folded inside City Engineer Field Book 360.

I also had a parole evidence report from Phil McBride of the Cheyenne Regional Airport, who helped supervise the construction of Airport Parkway in 1990, wherein he recalled graders having hit and destroying a survey stone during topsoil stripping for said project. The construction plans, dated 9/14/1990, for the building of Airport Parkway also show a 4.7 foot fill for this site. This type of excavation, to look for remnants of the stone, was not deemed justified due to the cost associated with excavation and repair to the existing road. I did excavate 18" at the site and probed another 4' with an iron rod into the ground, and did not strike a solid stone object.



I reset a $\frac{3}{4}$ inch diameter iron pipe, three feet long, with a 3-1/4 inch diameter brass cap, in a six inch diameter cast iron street box, at a depth of six inches below the street surface, with "SURVEY" logo lid. A Wyoming Corner Recordation form has been prepared and filed in the Laramie County Clerk's Office.



Next we go to the southeasterly corner of the General Land Office (GLO) Townsite Survey of 1870. Direct survey tie found in City Engineer Field Book 501, Page 6, dated April 1932, from a City Engineer waterline brass cap (existing today) to this corner; TRACT SEGREGATIONS plat by Z.E. Sevison, City Engineer, dated August 1937; and direct survey tie in City Engineer Field Book 413, Page 52, dated April 12, 1941; then numerous other dimensional ties to features from City Engineer Field Books confirmed reestablishment of this point. All of these survey ties and dimensional ties agreed within 0.20' of one another. I averaged the positions, and then tied to the GLO North Quarter Corner for Section 32, T14N, R66W, 6th PM and found this tie to be within 0.19' of the tie provided in City Engineer Field Book 501, Page 6.

This position fell in a sidewalk on the south side of 9th Street, where I removed the sidewalk and excavated about 18" down, then probed with a steel rod another 3' and found nothing. City Engineer Field Book 501, Page 6 also described how this corner had been remonumented with a $\frac{3}{4}$ " iron pipe, 3' long with a waterline brass cap; metal locator signals in the area only revealed trash.

The position is now remonumented with a $\frac{3}{4}$ " dia. iron pipe, 3' long, and a 3 1/4" dia. survey brass cap, in a 4" dia. concrete cylinder set flush with the concrete sidewalk. A Wyoming Corner Recordation form has been prepared and filed in the Laramie County Clerk's Office.



Last, but most certainly not least, we have the southeasterly corner of the Bond Survey of 1890. This corner as reestablished, is located southerly of the evaporation ponds for Frontier Refinery in the SW1/4NW1/4 of Section 4, T13N, R66W, 6th PM. A 3 1/4" dia. brass cap was set in a 52" long, $\frac{3}{4}$ " iron pipe with 8" dia. concrete collar in a mound of stones.

This position did not have monumented, historic survey tie data of record in close proximity (2,000' or less) to the original position. So I decided to use the Cheyenne City Street Monument control points established in the early 1900s to project the most reasonable original record position of the easterly boundary of the City, and then to intersect with existing evidence found on the southerly boundary to re-establish the S.E. Corner.

In doing so I discovered that the east-west streets (5) located north of the Union Pacific Railroad (UPRR) had a bearing range of 24 arc seconds, with an average bearing of N63°32'00"E, same as the record bearing; and that the east-west streets (4) located south of the UPRR had a bearing range of 12 arc seconds with an average bearing of N63°35'05"E. In a similar manner, the north-south streets (5) located north of the UPRR had a bearing range of 28 arc seconds, with an average bearing of N26°28'39"W; and that the north-south streets (3) located south of the UPRR had a bearing range of 01 minute 05 arc seconds, with an average bearing of N26°25'23"W. This indicated a 39 arc seconds deviation from a 90° relationship of the streets north of the UPRR and a 28 arc seconds deviation from a 90° relationship of the streets south of the UPRR. However, both sets of averaged bearings consistently showed a nearly 0°03' significant misalignment between the two segments of the City, north and south of the UPRR, in relation to one another. So I sought an explanation for this discrepancy.

The latest survey of record to be found was in City Engineer Field Book No. 517, page 15, wherein the easterly line of the Original City from 10th Street south, and respective block corners were surveyed and monumented on Aug. 2, 1938, with a specific reference to missing the "Stone Mon." 2.45' to the west.

SM
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N 67°36'38" W, 1,715.60' (B)
 65°37'21" W, 1,634.02' (M)
 N 3°35' W, 433.50' (B)
 N 3°31'26" W, 432.92' (M)
 Sec. 29
 S 26°30' E 7,580.00' (G)
 S 26°28'29" E 7,584.55' (M)
 S 26°28'29" E 7,584.55' (M)
 S 26°28'29" E 7,584.55' (M)
 10,362.10' (M)
 10,362.10' (M)

CITY ENGINEER - FRED BOND SURVEY OF 1890
 BEGINNING AT THE SOUTHWESTERLY CORNER OF CHEYENNE CITY, FROM WHICH THE TOWNSHIP CORNER FOR TOWNSHIPS 13 AND 14 NORTH, AND RANGES 66 AND 67 WEST, OF THE 6TH PRINCIPAL MERIDIAN, BEARS N53°17'08"W A DISTANCE OF 2,457.38 FEET;
 THENCE N26°28'29"E A DISTANCE OF 10,362.10 FEET;
 THENCE N63°32'11"E A DISTANCE OF 10,585.13 FEET;
 THENCE S26°28'29"E A DISTANCE OF 10,362.10 FEET;
 THENCE S63°32'11"W A DISTANCE OF 10,584.18 FEET TO THE POINT OF BEGINNING.
 SAID PARCEL CONTAINING 2517.9 ACRES MORE OR LESS.

GENERAL LAND OFFICE TOWNSITE SURVEY OF 1870
 BEGINNING AT THE SOUTHWESTERLY CORNER OF THE GENERAL LAND OFFICE TOWNSITE SURVEY, FROM WHICH THE TOWNSHIP CORNER FOR TOWNSHIPS 13 AND 14 NORTH, AND RANGES 66 AND 67 WEST, OF THE 6TH PRINCIPAL MERIDIAN, BEARS S45°11'14"W A DISTANCE OF 3,041.63 FEET;
 THENCE N26°28'29"E A DISTANCE OF 7,603.97 FEET;
 THENCE N63°32'11"W A DISTANCE OF 8,955.56 FEET;
 THENCE S26°28'29"E A DISTANCE OF 7,584.55 FEET;
 THENCE S63°32'11"W A DISTANCE OF 8,955.02 FEET TO THE POINT OF BEGINNING.
 SAID PARCEL CONTAINING 1561.3 ACRES (RECORD 1567.3) MORE OR LESS.

LEGAL DESCRIPTIONS

0 1,000
 SCALE IN FEET
 1" = 1,000'

LEGEND
 FOUND ORIGINAL STONE SURVEY MONUMENT OF RECORD - SEE SURVEYOR'S REPORTS ON SHEET 2 OF 2 OF THIS RECORD OF SURVEY.
 SET A 3 1/4" DIAMETER BRASS CAP WITHIN A 4" IRON PIPE AND SET IN A CONCRETE BASE, STAMPED L.S. NO. 4828, WITH DESCRIPTION OF CORNER - SEE SURVEYOR'S REPORTS ON SHEET 2 OF 2 OF THIS RECORD OF SURVEY.
 FOUND PUBLIC LAND SURVEY SYSTEM CORNER PER "CORNER RECORDATION FORM" FILED IN THE LARAMIE COUNTY CLERK'S OFFICE.
 MEASURED DATA PER THIS SURVEY.
 RECORD DATA PER THE GENERAL LAND OFFICE TOWNSITE SURVEY OF 1870.
 RECORD DATA PER THE CITY ENGINEER - FRED BOND SURVEY OF 1890. APPROVED AND ACCEPTED UNDER ORDINANCE OF THE CITY OF CHEYENNE, ARTICLE 1-100.
 CITY OF CHEYENNE - CONTROL MONUMENTS, PUBLISHED 10/19/1994, USED AS BASIS OF BEARING FOR THIS SURVEY. EG.: CP BILLY JOE; CP MARGARITA, ETC.

COORDINATE TABULATION

ALL COORDINATES (IN AMERICAN SURVEY FEET) PROVIDED ARE GEODROID DATUM COORDINATES FROM TIES TO CITY CONTROL NETWORK STATIONS BILLY JOE; MEYER; FINCHER; ROLLINS; OVERPASS; AND MARGARITA, AS PUBLISHED IN THE CITY OF CHEYENNE CONTROL MONUMENT BOOK DATED 10/19/1994.

GENERAL LAND OFFICE TOWNSITE SURVEY OF 1870
 SW CORNER - N-66,348.02 E-595,409.16
 NW CORNER - N-73,174.43 E-592,019.00
 NE CORNER - N-77,165.30 E-600,016.17
 SE CORNER - N-70,376.03 E-603,417.17

CITY ENGINEER - FRED BOND SURVEY OF 1890
 SW CORNER - N-62,741.12 E-595,207.08
 NW CORNER - N-72,016.14 E-590,586.79
 NE CORNER - N-76,733.20 E-600,062.78
 SE CORNER - N-67,457.76 E-604,682.24

RECORD OF SURVEY

ORIGINAL CITY OF CHEYENNE

GENERAL LAND OFFICE TOWNSITE SURVEY OF 1870;

being situate in portions of the N1/2 of Section 5, and N1/2 of Sections 31 and 32, T.14N., R.66W.; and portions of the E1/2 of Section 30, T.14N., R.67W., all of the 6TH P.M., Laramie County, Wyoming.

CITY ENGINEER - FRED BOND SURVEY OF 1890

(Theoretical retracement of the Gen. Grenville Dodge survey for the U.P.R.R. in 1867); being situate in portions of the NW1/4 of Section 4, Sections 5 and 6, and N1/2 of Section 7, T.13N., R.66W.; portions of the SW1/4 of Section 29, S1/2 of Section 30, Sections 31 and 32, T.14N., R.66W.; portions of the NE1/4 of Section 1, T.13N., R.67W.; and portions of the E1/2 of Section 36, T.14N., R.67W., of the 6TH P.M., Laramie County, Wyoming.

PREPARED 2012

CITY OF CHEYENNE
 2101 CIVIL AVENUE
 CHEYENNE, WYOMING 82001
 (307) 637-6274



ORIGINAL CITY OF CHEYENNE MAP

Burlington
 Route.



Original Land Survey
 J. S. STOUT ET AL
 4828



DESIGNED BY:	JES	DATE	
CHECKED BY:	MD		
APPROVED BY:	JES		
SCALE:	1" = 1,000'		
REVISIONS			
Original City Map Filed			

SHEET 1 OF 2

No notation was made to explain why the misclosure on the "Stone Mon.", or any indication that the block corners along the easterly boundary were adjusted. The misclosure of 2.45 divided by the distance on this survey line of 3,520', results in an angular misclosure of $0^{\circ}02'24''$, which is nearly the $0^{\circ}03'$ misalignment of the street monuments between segments located north and south of the UPRR, as discussed above.

Using record distances from found street monuments closest to the easterly boundary of the City, and then using the average east-west bearing (either north or south of the UPRR) I calculated positions on the theoretical easterly boundary. Inversing these calculated coordinates for the easterly boundary to the N.E. Corner of the City as re-established, I found that north of the UPRR, each of the calculated positions resulted in an azimuth range of 04 arc seconds (extremely close), with an average bearing of $S26^{\circ}28'29''E$. However, the calculated points south of the UPRR, when inversed to the N.E. Corner, were bearings progressively further west as you proceeded south. So I looked at how the calculated points south of the UPRR laid in relation to one another and found that they had an azimuth range of 1 minute 04 arc seconds with an average bearing of $S26^{\circ}25'33''E$. This led me to believe that the survey of Aug. 2, 1938, in some manner or form, was used as baseline for the street monument placements by the City Engineer on the south side of the City as we find them today.

With two possible easterly boundary alignments, one using the position established north of the UPRR and the other using the position established south of the UPRR, I computed two possible positions for the S.E. Corner.

For the first calculated position I used the northerly average bearing of $S26^{\circ}28'29''E$ for the easterly boundary of the City, and the record distance from 18th Street southerly to the S.E. Corner of the City. I then inversed from this "Point 1" to the found stone at the S.W. Corner, which resulted in a tie of $S63^{\circ}32'11''W$, 10,584.20' (record distance of 10,584'), and the re-established N.E. Corner, which resulted in a tie of $N26^{\circ}28'29''W$, 10,362.10' (precisely the same as the measured distance for the west line of 10,362.10' between found stones, with a record distance call of 10,360').

For the second calculated position I used the southerly average bearing of $S26^{\circ}25'33''E$ for the easterly boundary of the City, and the record distance from 3rd Street southerly to the S.E. Corner of the City. I then inversed from this "Point 2" to the found stone at the S.W. Corner, which resulted in a tie of $S63^{\circ}33'23''W$, 10,579.67' (record distance of 10,584'), and the re-established N.E. Corner, which resulted in a tie of $N26^{\circ}26'59''W$, 10,365.79' (record distance of 10,360').

I do not have an explanation as to why the City Engineer's survey of Aug. 2, 1938, in City Engineer Field Book No. 517, page 15, clearly misclosed on the Bond Stone of 1890 but was then used for the establishment of block and street control south of the UPRR. Therefore, calculated "Point 2" is suspect.

My conclusion is that calculated "Point 1" resulted in bearings much closer to the Original Survey calls, and consistent with observed bearings in the north segment of the city; and distances closer to record calls, which were consistently a little long, as with the measured north and west lines, and with distance measurements between street monuments in both the north and south segments of the City; and this calculated position as inversed for the southerly boundary of the City, when tied into only a few (5) existing survey monuments theoretically on said line, resulted in maximum misalignments of less than two feet, whereas calculated "Point 2" positions resulted in maximum misalignments of three to four feet. So this "Point 1" position most reasonably re-creates the bearings and distances of the Original City positions of the Bond Survey of 1890, and manifest the least amount of error when tied into modern day survey monuments of record. Calculated "Point 1" was used for resetting the S.E. Corner of the Bond Survey of 1890.

In conclusion, we have found that many of the mysteries surrounding historic discrepancies can be explained. With this foundation we have a reasonable outline within which to work in our efforts to further research the historic evidence available and analysis of the reasoning applied to authoritative surveys. We venture on!

(See previous installments:

Part I: Volume 22, Issue 3, July 2011;

Part II: Volume 22, Issue 4, October 2011;

Part III: Volume 23, Issue 2, April 2012.)



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Rocky Mountain Regional Office
316 North 26th Street
Billings, Montana 59101



Regional Policy Memorandum

Bureau of Indian Affairs
Rocky Mountain Region
Office of the Regional Director

Number: RES-RM-TRUS-1

Effective: 10/1/12

Title: Cadastral Survey Policy - Certified Federal Surveyor Policy

1. Purpose

In accordance with 303 DM 7, 521AM 2 - H

The purpose is to implement a uniform policy to provide beneficial trust land owners with a roster of qualified surveyors, specifically trained to provide boundary services in the Rocky Mountain Region. These are state licensed surveyors who have successfully completed the certification process established by the Bureau of Land Management (BLM) Cadastral Survey Program. These surveyors may perform survey services under the direction and control of BLM; provide more avenues for accomplishing cadastral services for trust boundary surveys in compliance with Federal standards.

2. Scope

To assure that all cadastral surveys executed in the Rocky Mountain Region are performed in accordance with BLM standards. This certification program is to satisfy the Secretary's trust responsibilities involving trust lands.

3. Policy

The Rocky Mountain Regional Director, Superintendents, and Field Representative shall only accept non-Federal boundary surveys from only private licensed surveyors who are CFedS certified.

4. Roles and Responsibilities

The Rocky Mountain Regional Director, Superintendents and Field Representative agree to:

- Provide a list of CFedS surveyors to all entities needing a boundary survey affecting trust lands;
- Accept non-Federal boundary surveys from only private licensed surveyors who are CFedS certified.

5. Approval


Rocky Mountain Regional Director

8-29-12
Date

CHOOSE YOUR PATH, MAKE YOUR MARK

BY, RUSSELL BLOUGH, PLS



Many of us followed in a family business, knew someone in the business that got us that first “rod man” job or just happened into it. Most probably didn’t even know what land surveying was during their high school or college career, let alone thought this was something they dreamed of doing. How many of you are asked questions in the field by neighbors, passers by, or even clients that are shockingly ignorant of what it is that we actually do? From wondering what kind of pictures the total station takes to whether the GPS equipment is used for tracking bears. Many people realize that surveyors tend to arrive before some sort of construction or that they deal with locating property boundaries. However, they typically don’t understand why they are paying for you to wander the neighbors property when they hired you to survey their property.

Surveyors need to be proactive in educating their clients, as well as the other people we work with such as attorneys, title companies, and realtors. We also need to be proactive in giving our profession exposure to middle school, high

school and college students. I don’t know if you have noticed, but the majority of people in our profession aren’t getting any younger. When I first started going to the state conventions, I felt like a boat in a sea of graying and balding heads across the room. In recent years, it seems to be getting better although it may be because I’ve become part of the waves.

Martin Pedersen also noticed this trend, and the need for getting new people into the profession. He researched the current educational and promotional materials produced by the NCEES and other organizations. After viewing an informational video and supporting materials created by the California Land Surveyors Association (CLSA), Mr. Pedersen contacted them and requested the use of their materials within the survey education tool box here in Wyoming. The Professional Land Surveyors of Wyoming (PLSW) was given rights to the content of the video and the board of directors resolved to have the required edits completed to reflect the needed Wyoming specific information within the video and accompanying materials.

Mr. Pedersen then donated funds to get the project started, and the Northwest Chapter of the PLSW was given the charge to have the video edited and reproduced, as well as, the accompanying 8.5" x 11" folders and a small poster size brochures created to complete a packet that followed the CLSA's model.

The previous director of the Northwest Chapter launched the project and when his term ended the task of completing it was passed to me. We received several different quotes for making the folders and brochures and chose the services of *Color World Printers* out of Cody, WY and Bozeman, MT.

Utilizing the template that the California Association had provided, I applied pictures that our office had taken over the years, as well as, photos from our recent Northwest Chapter/Northwest College/Wyoming Workforce Development partnership land surveying class. I worked through a few different renditions with the staff at *Color World* as we incorporated the PLSW logo and contact information, as well as, internet addresses to the PLSW website,

scholarship information, and the original website for "Choose your Path, Make your Mark" into the folder and brochure; and finally arrived at the finished literature for the packet.

The DVD was not quite as simple. After searching locally and around the world wide web for a company that could produce the duplicates of our DVD, I discovered and contacted *SF Video* in California. Unfortunately, our initial online order, that included modified PLSW logo art for the disc, could not be completed due to errors on the DVD master I had submitted. Further investigation yielded an additional master copy that was provided to PLSW by, coincidentally, *SF Video*. Every organization has communication problems at times, and ours had obscured the fact that *SF Video* had not only created the original DVD for the California Association, but also completed the edits for use by PLSW. Once this fact was brought to light; we resolved the issue and changed how they were duplicating the DVD's. Everything finally came together and we ended up with a finished product to go in our shiny new folders.



When you think of how you got your start in the profession of land surveying, what inspired it?

The DVD folder package is intended to be given out at high school and college guidance counselor offices, career day events and other opportunities.

The TrigStar program is one of the places to use the DVD and flyers to work together to build awareness of surveying as a profession. The TrigStar contest is an annual high school mathematics competition sponsored by the National Society of Professional Surveyors based on the practical application of trigonometry. One of the ways we can all be involved is to contact Mark Corbridge (markc@wyocoffey.com) and he can assist your chapter in bringing the program to your local schools. Visit www.nsps.us.com to read more about the TrigStar program.

Mr. Corbridge is also working to expand another program called TwiST (Teaching with Spatial Technology). It is designed for K-12 educators to learn how to incorporate GIS and GPS into the classroom. The National Council of Examiners for Engineering and Surveying (NCEES) has helped sponsor teachers with the cooperation

of the Western Federation of Professional Land Surveyors (WestFED). The Oregon Institute of Technology has put on a 5 day seminar educating teachers about GIS and GPS. State organizations such as the PLSW can help sponsor teachers to attend these seminars. Any teacher attending could be given the DVD and flyers for handing out in the classroom.

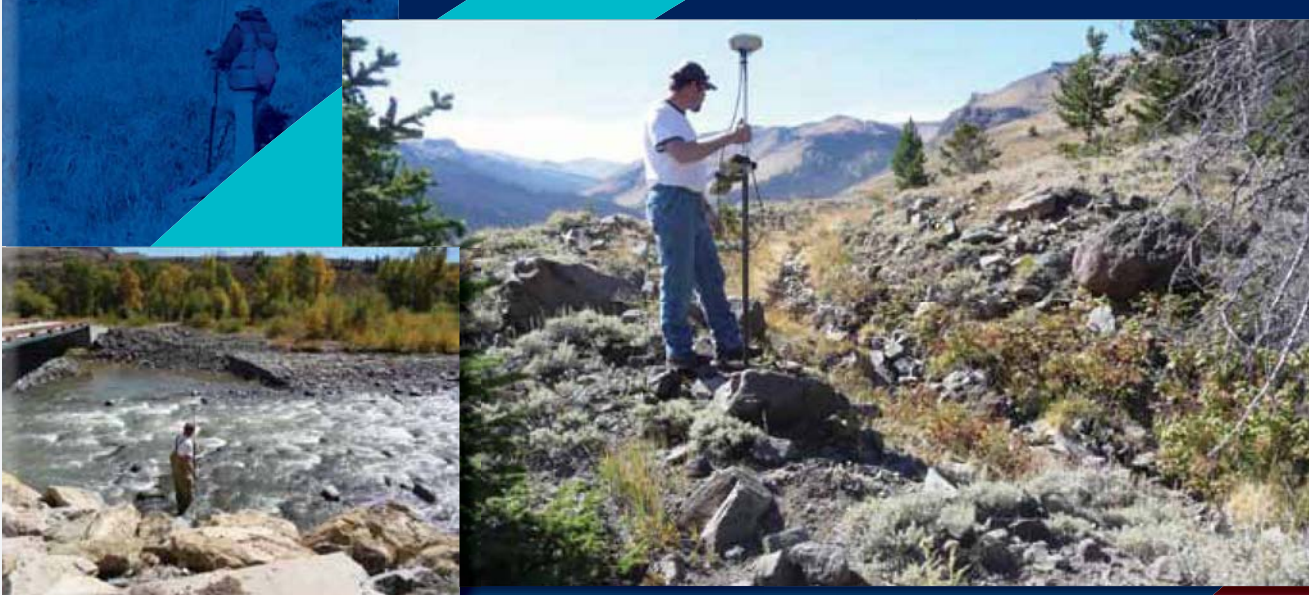
If anyone is considering a career day type event at local schools or community colleges, or helping the Boy Scouts of America with surveying merit badges, or any other public exposure events please contact me at rblough@hbco.us or call 307-587-6281.

You can also contact your PLSW chapter director or president for copies of the folder, DVD, and flyer to hand out. I am encouraging each chapter to have a small stockpile of these materials so distribution will be quick and easy and opportunities will not be missed. The effort has been put forth to create this great looking new tool for the benefit of inspiring future professionals...let's go Make *Our* Mark!

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**SE CHAPTER HAS LOGO
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CONTACT JACK STUDLY FOR DETAILS**

2012 PLSW TECHNICAL SESSION

Another great technical session has come and gone! This year's tech. session was held at the Best Western Ramkota Hotel in Casper on November 1st and 2nd. A very successful event with 139 Land Surveyors from Wyoming, Colorado, Utah, Nebraska, South Dakota and North Dakota gathering to listen to one of our own, Dr. Herbert W. Stoughton. It was reported there was a lot of positive feedback from the attendees. Our thanks to Herb for putting together a great group of subjects and presenting them in a manner that was both interesting and entertaining.

In addition, we had a special guest appearance from Mr. Edward Tiffin, the first U.S. Surveyor General. Mr. Tiffin presented a brief history of his experience in establishing the U.S. General Land Office, which was a good introduction to Herb's presentation on the early history of the GLO. We thank Mr. Reid Miller, BLM Trails Center Employee, for his portrayal of Edward Tiffin.

We would also like to express our appreciation to Bill Fehringer and his committee, especially Katy Gustafson, WLC, and Sami Fauber, CEPI, for putting this thing together again. They do a fantastic job year after year, making this an enjoyable and affordable event!

Hope to see you all at next year's technical session which will again be held in Casper at the Ramkota. The dates are November 7th and 8th.

LINES AND POINTS ARTICLE ROTATION SUBMISSION SCHEDULE BY CHAPTER

Responsible Chapter	First Call Date	Last Call Date	Publication Date
Northwest Chapter	THANK YOU!! (SEE CHOOSE YOUR PATH, MAKE YOUR MARK IN THIS ISSUE)		
West Chapter	March 1, 2013	March 15, 2013	April 1, 2013
Central Chapter	June 1	June 15	July 1
South Central Chapter	September 1	September 15	October 1
Southeast Chapter	December 1	December 15, 2013	January 1, 2014
Laramie Valley Chapter	March 1	March 15	April 1
Upper Platte Chapter	June 1	June 15	July 1
Southwest Chapter	September 1	September 15	October 1
Northeast Chapter	December 1	December 15, 2014	January 1, 2015

As the Board of Directors discussed, any four page article (with pictures) may be from within the particular chapter membership (survey stories, or technical experiences) or after acquiring permission to use an article from another professional society publication or which provides information of interest to the PLSW members. The Board also approved assigning the responsibility for the article development and submission to each chapter's vice president. If a Chapter does not provide an article that same Chapter shall be obligated to provide an article for the next publish date.

ATTENTION!

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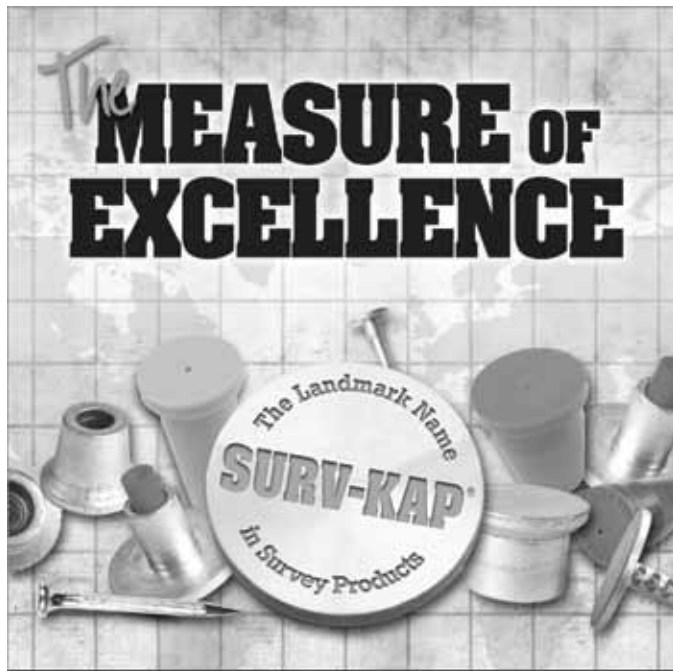


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LEGAL NOTICE

Michael Gronski, PLS, entered into a Settlement Agreement, Stipulation and Order for Voluntary Surrender of his certificate of registration No. 9063 as a Professional Land Surveyor which was approved by the Wyoming Board of Registration for Professional Engineers and Professional Land Surveyors on November 16, 2012, as a result of alleged violations of Wyo. Stat. Ann. § 33-29-132(b)(i) [act inconsistent with uniform and reasonable standards of professional conduct], Wyo. Stat. Ann. § 33-29-132(b)(ii)(C) [fraud and deceit - signing any document as a registered professional], Wyo. Stat. Ann. § 33-29-132(b)(iii) [unfit to practice by reason of incompetence, habitual or gross negligence or other misconduct], Wyo. Stat. Ann. § 33-29-132(b)(viii) [violation of this act or any provision of the Board's Rules]; Wyo. Stat. Ann. § 33-29-142 [completion of corner file]; and Wyo. Stat. Ann. § 33-29-146 [reconstruction or rehabilitation of monument], as well as corresponding rules. Mr. Gronski no longer has license to hold himself out as or provide services as a professional land surveyor in the State of Wyoming.

PUBLISHED:

Wyoming Tribune Eagle - Page C5, Friday, November 23, 2012.

Casper Star-Tribune - Page C9, Saturday, November 24, 2012.

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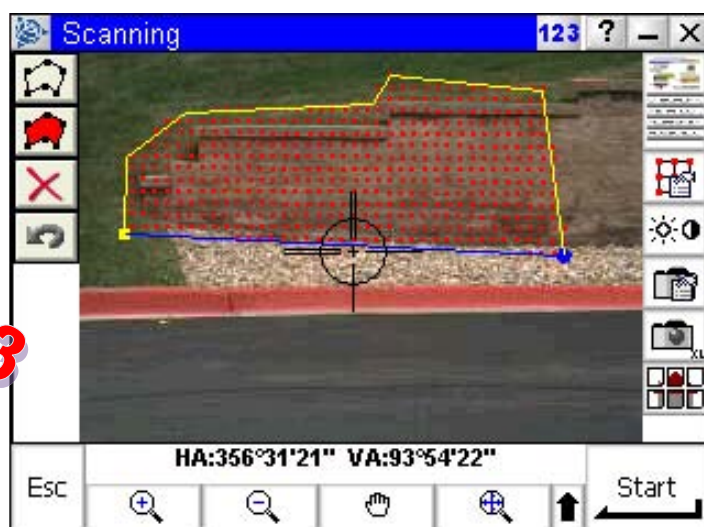
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