



Volume 22: Issue 3  
July, 2011



# LINES & POINTS

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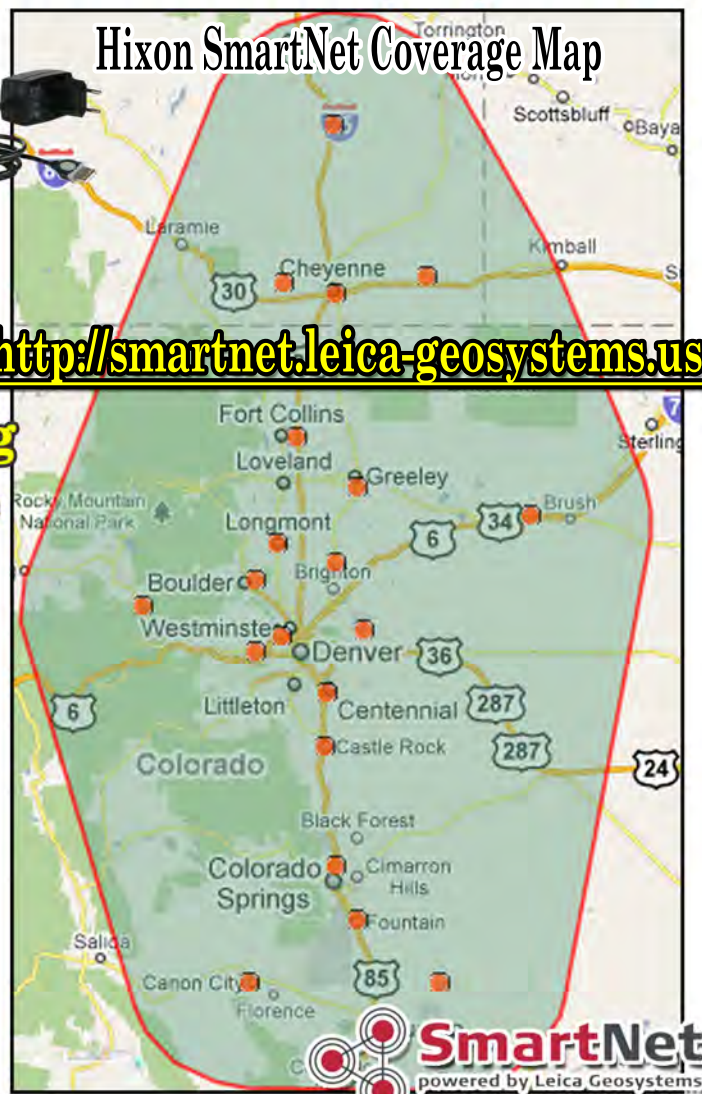
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On The Cover

Looking down Capitol Ave. from UPRR Depot, street car & Burlington Depot, ca 1888-1892  
(Photo provided by Wyoming State Archives, Dept. of State Parks and Cultural Resources)

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Advertising rates are as follows:	Year	Issue
Full Page	\$810	\$210
Half Page	\$540	\$140
Quarter Page	\$310	\$80
Business Card	\$160	\$40
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Special Rates apply for PLSW Chapters and cover placements.

For more information please contact Pete Hutchison or Jack Studley.

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PLSW (Professional Land Surveyors of Wyoming) is a statewide organization of Registered Land Surveyors licensed 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).



## PRESIDENT'S MESSAGE

Greetings Ladies and Gentlemen,

As summer has finally arrived so has the construction season along with all those projects your clients thought about starting a couple of months earlier but held off until now and need them yesterday. It's a good problem and job security.

The results from the Survey U.S.A. day in March had somewhat limited participation here in Wyoming. The Southeast Chapter had a good turnout but the rest of the chapters had limited or no participation. If someone did participate and I didn't get your information please send me your data so it can

be compiled and sent on to Debi Anderson, the chairperson, for the overall project.

The summer meetings for ACSM/NSPS begin Friday, July 8 and run through Tuesday, July 12 in conjunction with ESRI in San Diego (The Survey Summit). Obviously the hot topic will be the issues with ACSM and whether or not NSPS should continue with its withdrawal. There have been numerous teleconferences between the Governors and the Directors to try to find a solution that works best for all. The Western Governors will have one final teleconference June 30 in an effort to be prepared for the meetings in San Diego. I hope there will be a viable solution following the meetings but I'm not holding my breath.

On another note, I would like to congratulate our Lines & Points staff for their First Place award in the NSPS 2011 Excellence in Professional Journalism in the State Society Newsletter Category. I believe a pat on the back and a thank you is in order for these gentlemen for reviving our publication from near dead to national recognition. Thanks guys!!

Our next Board of Directors meet will be teleconferenced on August 27 at 8 a.m. Please contact your Directors with any topics, comments, questions and/or concerns so they can be placed on the agenda.

That's all I have for now, I hope everyone has a good and safe summer.

Respectfully,

Cotton D. Jones, President

Professional Land Surveyors of Wyoming

## ANNOUNCEMENTS/MISC.

- 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.

James Coutts, LS 13001, Roy, UT

Matthew Gotham, LS 13002, Jackson, WY

Derek Weidensee, LS 13031, Rapid City, SD

Jason Herden, LSIT 133, Laramie, WY

Chester Hitchens, LSIT 134, Loveland, CO

Joseph Messner, LSIT 135, Buffalo, WY

- The Wyoming Board of Registration is now offering Professional Land Surveyor candidates the opportunity to take the 2-hour State Specific Examination on a given day each month during the year.
- The University of Wyoming Land Surveying program is assembling an Advisory Board, and is looking for volunteer Board members. Interested parties should contact Mark Rehwaldt at (307) 766-1700.
- The Bureau of Land Management respectfully requests that readers of the Manual of Surveying Instructions (2009) report any errors found. Email with the details to [blmsurveymanual@blm.gov](mailto:blmsurveymanual@blm.gov). For information and to view postings of reported errata visit the BLM Manual website at: [www.blmsurveymanual.org](http://www.blmsurveymanual.org).
- Check out the educational resources available at the NGS Online Learning Center with Online Modules, Presentations with Audio, and the Upcoming and Past Classes at: [www.ngs.noaa.gov/corbin/online\\_learning.shtml](http://www.ngs.noaa.gov/corbin/online_learning.shtml)
- The NGS has announced that the CORS station WYSH has now been added to the national network. This station is in Sheridan, WY.



THURSDAY, JUNE 16, 2011 \* **Star Valley INDEPENDENT** \* Reprinted by permission.

## It's a wonderful life, Star Valley centurion Lloyd Baker celebrates 100 years

● ***From 1911 to 2011,  
Baker continues to build a  
lifetime of memories.***

By Sarah Hale

Lloyd Baker was born in Afton on May 17, 1911, the oldest son of William Alonzo Baker and Blanche Mayberry Braly. "There were eight children, six boys and two girls," he said. "I was the oldest, then Carl, Dennis, Margie, Wayne, Rex, Lester and Elcie. We were dairy farmers." It was a livelihood that had been passed down from father to son. "My grandfather brought a herd of cows with them when they settled in Star Valley in 1887," Baker said.

Lloyd and his brother, Carl, were responsible for milking 12 cows by hand each morning and night during their elementary school years. Their father and a hired hand milked another 24 head of cows twice a day.

For Lloyd, the responsibility of milking cows proved to be a motivating factor.

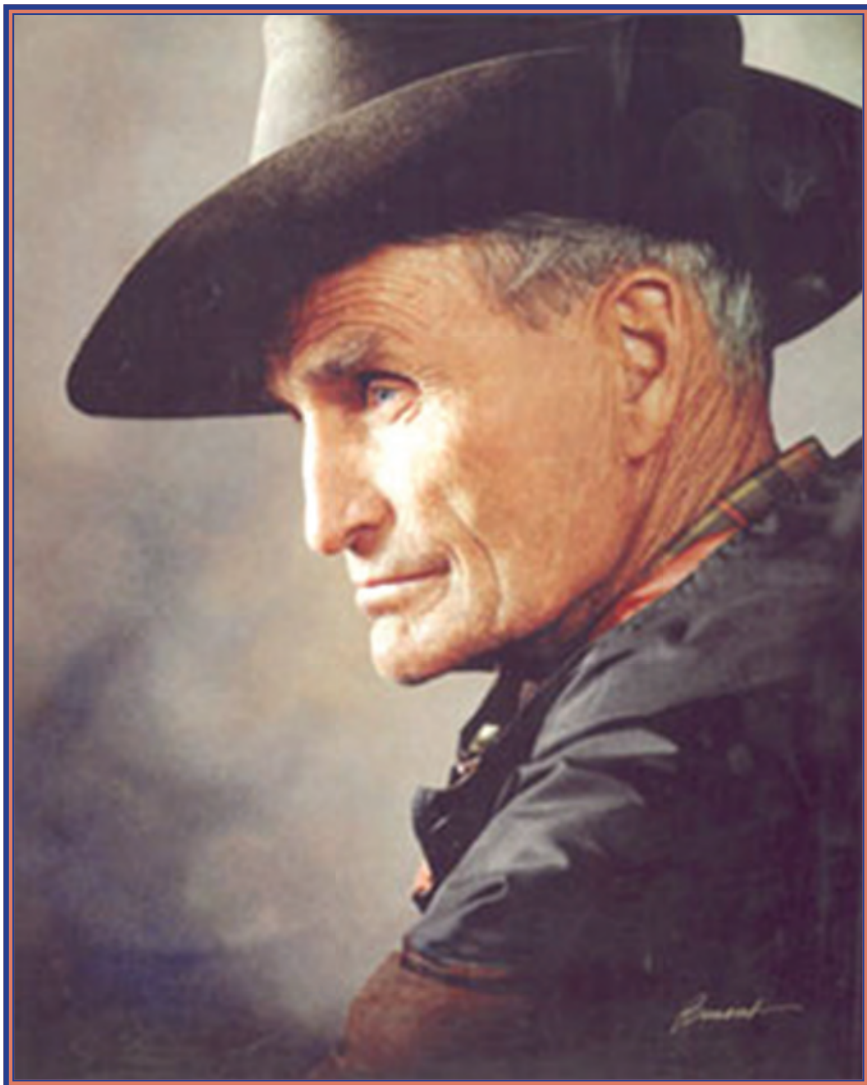
"I knew I didn't want to milk cows all my life by hand," he said.

After completing the ninth grade in Etna, Lloyd traveled to Afton to attend his sophomore and junior years of high school. In between school and work on the farm, there was always a little time for baseball.

"We used a woodshed as the backstop and played during recess at school. By the time I was 16 I was playing on the Etna team. We had leagues set up and I played in the field but ended up being pitcher for the team. Everybody took Saturday afternoon off to play baseball."

Lloyd was also involved in the 4-H program raising hogs and calves. In 1924 and 1926 he traveled to the Utah State Fair.

During the fall of his senior year, Lloyd took



Lloyd Baker was born in Afton on May 17, 1911, the oldest son of William Alonzo Baker and Blanche Mayberry Braly. He completed his studies at the University of Wyoming in 1940 and has been involved in engineering and surveying ever since.

a job selling musical instruments throughout eastern Idaho.

"I sold Ukelines," he said. "I sold them mostly in Idaho. That is when I bought my first automobile, a model A Ford."

By the spring of his senior year, 1930, Lloyd had returned to high school to complete his education, graduating with the SVHS Class of 1930.

"Through the 4-H program the Union Pacific Railroad offered a scholarship that would pay the fees for the University of Wyoming. I was the

(Continued on Page 19)

# LETTERS TO THE EDITOR<sup>(s)</sup>

*During the annual Wyoming Engineering Society Convention in February, 2011, the Professional Land Surveyors of Wyoming presented a posthumous award honoring my father, Malcolm D. Martin. On behalf of my sisters and myself, I would like to thank all the members of the organization for the very nice award plaque. A special thanks goes to Larry Perry for his efforts researching Malcolm's contributions to Wyoming while serving as Laramie County Surveyor and for managing the administrative tasks required to have the presentation happen. Thanks to our niece Kathy Kranz, who was able to attend the presentation and accept the award honoring her grandfather. Malcolm loved surveying and he loved Wyoming and would be very proud of the award.*

*Sincerely,*

*Stephen T. Martin*

Dear Ms. Grahl (Editor of POB):

I am writing today to remind all surveyors that they have a National Museum in Springfield, Illinois that is dedicated to their profession and its noble and illustrious history.

American surveyors, stung by the recent economic turndown, may have forgotten the existence of the Museum or they may have felt that they could not afford to support it under the current economic climate. I would urge them to re-consider becoming a member, and also strongly encourage them to actually visit the Museum.

The story of surveying is, in many ways, the story of America. From the laying out of the original colonial boundaries, roads, and railroads, to the western expansion that inspired the unique Public Land Survey System, land surveyors were at the forefront of a developing and pioneering nation. Surveying has a very rich historical heritage in America, and as we well know, many of our Presidents and statesmen were also surveyors at one point in their careers. It is a fitting tribute for this profession to have a National Museum that honors all surveyors, both past and present.

It is also fitting that this Museum be located in Springfield, Illinois, near the center of the nation and in the hometown of one of our famous surveyor-presidents, Abraham Lincoln. The Museum meshes well with the other Lincoln attractions and sites: The Lincoln Home National Historic Site, The Abraham Lincoln Presidential Museum and Library, New Salem State Historic Site (where Lincoln learned his surveying skills), and many others. The sites tell a critically important story in the history of the United States leading up to and beyond the Civil War and the abolition of slavery.

Springfield is also the Capitol of Illinois, and attractions related to that status also await the visiting public. In short, I encourage all surveyors to put a visit to Springfield on their travel "to do" list. I'm sure they will not be disappointed. I would also encourage all surveyors to support their National Museum as well in any way they can. It's an undertaking that's worthy of their support.

Thank You,

Marc Anderson - Past President

Illinois Professional Land Surveyors Association



## 2011 Excellence in Professional Journalism Contest

The National Society of Professional Surveyors, Inc. has the pleasure of announcing the winners of the 2011 Excellence in Professional Journalism Contest. Submissions from state societies in three publication categories were judged: newsletter, magazine, and website. The winners are:

### State Society Newsletter

First Place	<i>Lines &amp; Points</i> (Wyoming)
Second Place	<i>The TBM</i> , Newsletter of the NHLA (New Hampshire)
Third Place	<i>L'Arpenteur Louisiana</i> (Louisiana)

### State Society Magazine

First Place	<i>The Californian Surveyor</i> (California)
Second Place	<i>The Benchmark</i> (New Hampshire)
Third Place	<i>The Florida Surveyor</i> (Florida)

Honorary Mention	<i>The Minnesota Surveyor</i> (Minnesota)
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### State Society Website

First Place	<a href="http://www.californiasurveyors.org">www.californiasurveyors.org</a> (California)
	<a href="http://www.fsms.org">www.fsms.org</a> (Florida)
Third Place	<a href="http://www.ohiosurveyor.org">www.ohiosurveyor.org</a> (Ohio)

The names of the winners will be posted on [www.nspsmo.org](http://www.nspsmo.org). All 2011 awards will also be announced at the Survey Summit in San Diego, California, as part of a PowerPoint presentation. Please provide cover images for inclusion in the presentation.

Congratulations!

Ilse Genovese  
 NSPS Excellence in Journalism Contest, chair  
[ilse.genovese@acsm.net](mailto:ilse.genovese@acsm.net)  
[www.nspsmo.org](http://www.nspsmo.org)





*MG Grenville M. Dodge in 1864 as Commander of the XVI Corps of the Union Army during the Civil War under Gen William T. Sherman.*

## ANOTHER TALE OF TWO CITIES: PART – I

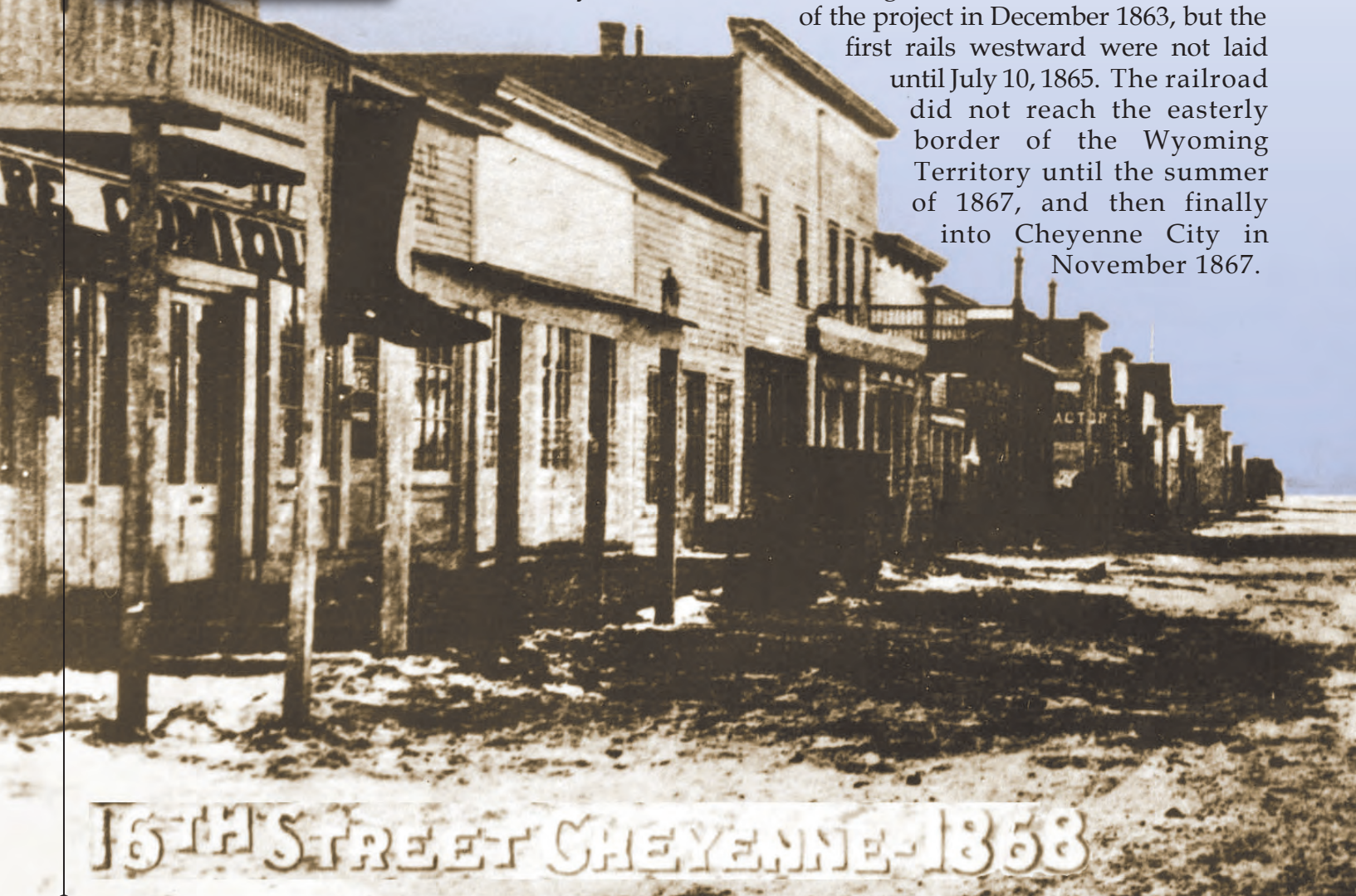
By: Jack Studley, PLS

Where in the world could that corner be?

Now that is the sort of challenge a Land Surveyor likes to get, when they have the time and resources to devote to the task. Over the past approximately twenty years, the members of the S.E. Chapter of Professional Land Surveyors of Wyoming have found the time and resources to near completion of this project. It has been fun and interesting to accomplish.

The establishment of the City of Cheyenne is directly linked to the development of the first transcontinental railroad across the North American Continent. Several routes for the proposed transcontinental railroad were surveyed and explored, and debated back and forth by the Washington politicians. But with the outbreak of the Civil War, the sitting U.S. Congress took advantage of the existing political alignment in Congress to select the more northerly route starting in Omaha City, Nebraska Territory, with the passing of the “PACIFIC RAILROAD ACT of 1862”. With the end of the Civil War in sight our nation was ready and willing to begin the process of healing and reuniting the Nation, and the Transcontinental Railroad project was just such a means to help in bringing a sense of unity back to the Nation. So ground was broken for the start

of the project in December 1863, but the first rails westward were not laid until July 10, 1865. The railroad did not reach the easterly border of the Wyoming Territory until the summer of 1867, and then finally into Cheyenne City in November 1867.



16TH STREET CHEYENNE-1868



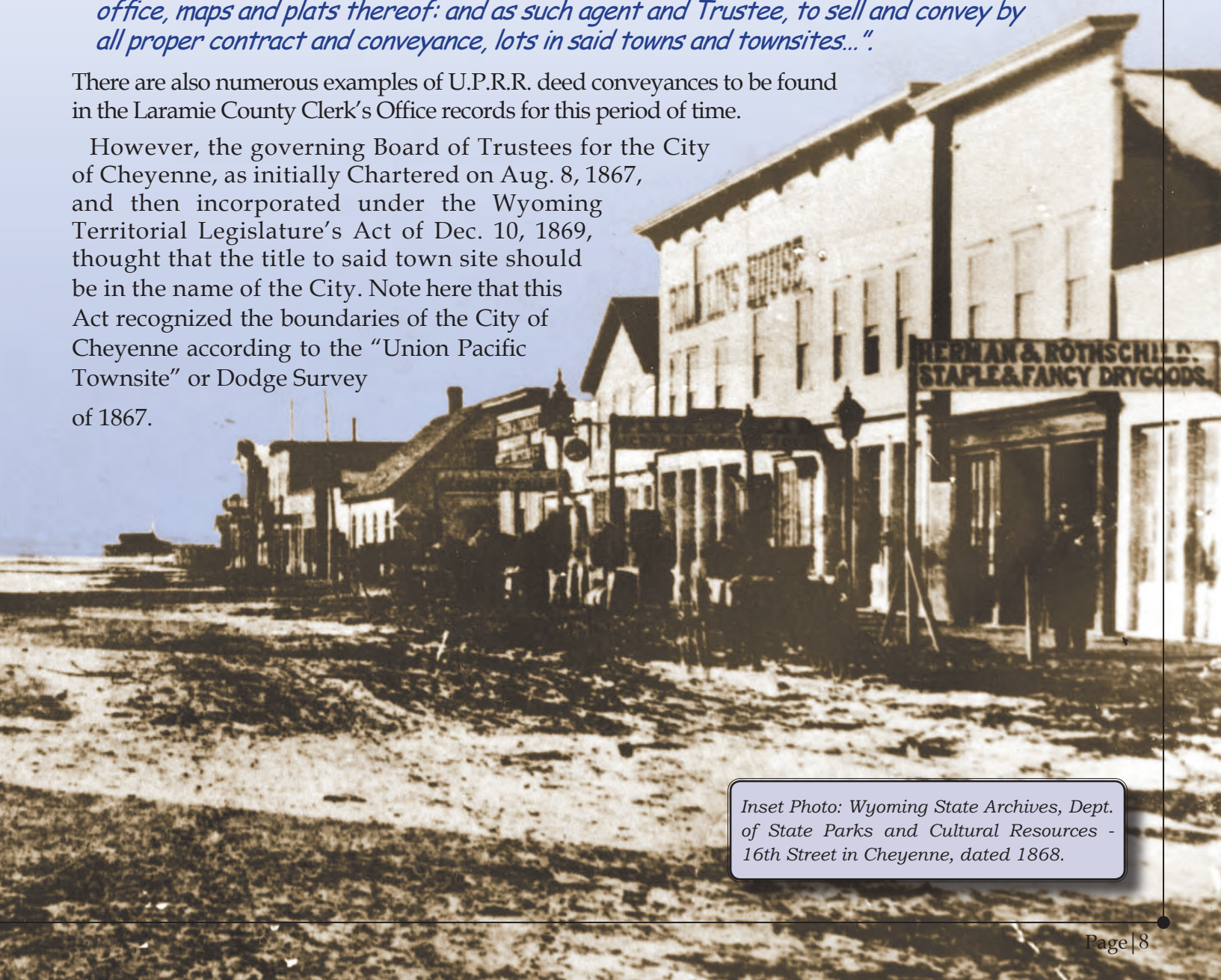
We start with the first Original City of Cheyenne being surveyed and laid out July 12-25 1867 under the direction of Gen. Grenville M. Dodge as the Chief Engineer for the Union Pacific Railroad (U.P.R.R.) during the development and construction of the transcontinental railroad. Unfortunately, we have been unable to acquire copies of Dodge's survey notes of "Cheyenne City" from either the U.P.R.R. or City of Cheyenne records. But the search will continue. The site for Cheyenne City was selected at the point of crossing Crow Creek at the base of the mountains, in preparation for the ascent. The alignment of the railroad was surveyed as an approach to the Crow Creek crossing, and the city was laid out parallel to said alignment. Unlike the speculation of some that the city was laid out on an angle in relation to the Sun's position in the winter. We have found no written evidence in support of this speculation, and any benefit derived in relationship to the Sun's position in the winter months is coincidental.

As we understand it, at this point in time the U.P.R.R. claimed title to the properties within the Dodge survey of the Cheyenne City town limits. A "RESOLUTION APPOINTING G.M. DODGE, AGENT AND TRUSTEE" dated May 23, 1867 from the U.P.R.R. is recorded in Book 49, Page 45 - 46 of the Laramie County Clerk's Office. This document authorizes G.M. Dodge:

*"...to lay out and locate on behalf of said Company, towns and townsites along the line of said road at such place or places as shall be deemed most practicable. To cause the same to be surveyed to make, acknowledge and cause to be recorded in the proper office, maps and plats thereof: and as such agent and Trustee, to sell and convey by all proper contract and conveyance, lots in said towns and townsites..."*

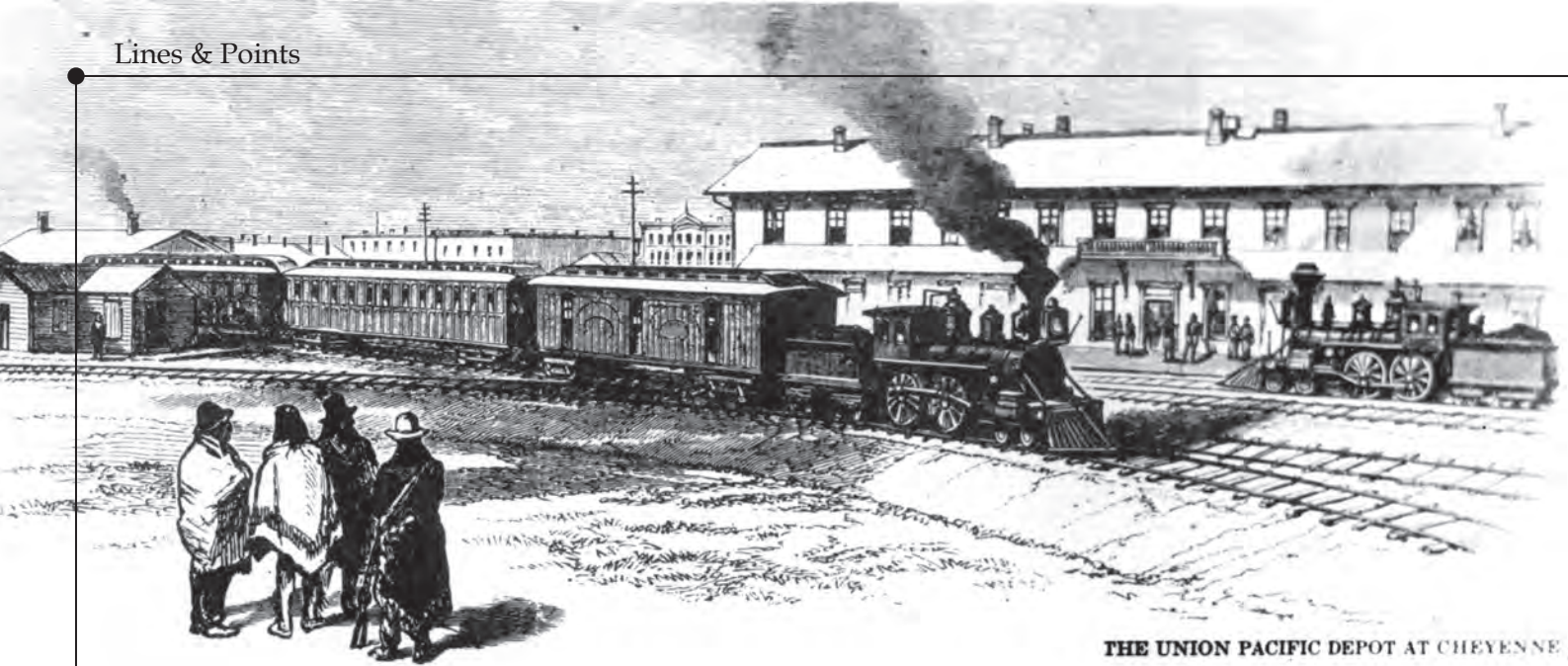
There are also numerous examples of U.P.R.R. deed conveyances to be found in the Laramie County Clerk's Office records for this period of time.

However, the governing Board of Trustees for the City of Cheyenne, as initially Chartered on Aug. 8, 1867, and then incorporated under the Wyoming Territorial Legislature's Act of Dec. 10, 1869, thought that the title to said town site should be in the name of the City. Note here that this Act recognized the boundaries of the City of Cheyenne according to the "Union Pacific Townsite" or Dodge Survey of 1867.



Inset Photo: Wyoming State Archives, Dept. of State Parks and Cultural Resources - 16th Street in Cheyenne, dated 1868.





THE UNION PACIFIC DEPOT AT CHEYENNE

Wyoming State Archives, Dept. of State Parks and Cultural Resources –  
Cheyenne Depot – Frank Leslie's Illustrated Newspaper - etching dated 1877.

The existing Federal Town Site Acts of the U.S Congress provided for such conveyance of the public lands for the purpose of providing a funding source to develop the infrastructure of the newly forming municipal governments. However, a requirement of the town site acts of that period, was that the town sites be identified and surveyed in relationship to the Public Land Survey System (PLSS). Cheyenne City authorities were delayed in accomplishing this since the area had not as yet been surveyed under the PLSS. To make matters worse, the U.S. Congress failed to properly fund the appointment of a Surveyor General for the Wyoming Territory in 1869, creating a further delay in beginning the establishment of the PLSS in the newly created Wyoming Territory.

Then J.H. Martin, President of the Board of Trustees & Ex-Officio Mayor of Cheyenne on May 4, 1870, wrote the Commissioner of the General Land Office (GLO) concerning the ownership status of the townsite of Cheyenne that the U.P.R.R. had laid out. The response by letter dated May 13, 1870 from the Commissioner advised the Mayor that no application had been received to enter the townsite, and as the land was unsurveyed, no information was available as to the status. The Commissioner further advised the Mayor that the procedures for establishing said ownership rights were dependent upon first completing the Public

Land Surveys in the area.

In May 1870, Dr. Silas Reed was finally appointed and funded as the first Surveyor General for the Wyoming Territory, and he arrived in Cheyenne shortly thereafter to open the General Land Office (GLO). With his arrival, the Cheyenne City Board of Trustees on July 14, 1870 passed a Resolution:

*"...to obtain a survey of a tract of land consisting of fifteen hundred and sixty two and 85/100 (1562 85/100) acres situate upon the unsurveyed lands of the United States and at a point on the line of the Union Pacific Rail Road and in the County of Laramie in Wyoming Territory, known as the City of Cheyenne."*

Per letter dated July 15, 1870 this application from the City of Cheyenne, Reed issued Contract No.4 for the execution of a "Survey of the Exterior Boundaries of the City of Cheyenne, Wyoming Territory" to Henry G. Hay, Deputy Surveyor. With completion of this survey on July 30, 1870, and approval by Reed on August 11, 1870, we have the **second** Original City of Cheyenne survey, further referred to as the "GLO Survey of 1870". This application and completion of the survey were reported in Reed's "Report of the Surveyor General Of Wyoming Territory for the Fiscal Year



Ending June 30, 1870", reciting the following:

*"The city (Cheyenne) authorities have procured a survey of the boundaries this summer, under the townsite law of March 2, 1867, and are striving to have the question of title speedily adjusted."*

In 1871 the U.P.R.R. instituted Contest Proceedings before the General Land Office against the Trustees of the City of Cheyenne to determine ownership of the lands within said City. On Oct. 13, 1871 by decision of the Commissioner, the U.P.R.R. was awarded all of the odd numbered sections and reserved decision with reference to the claims of the City of Cheyenne Board of Trustees. The U.P.R.R. appealed this decision, and on Sept. 27, 1872 the decision was upheld by the Secretary of the Interior.

It was in Reed's "Report of the Surveyor General Of Wyoming Territory for the Fiscal Year Ending June 30, 1872" that we read the following:

*"City title, - The question of title now settled between the railroad company and the town; the railroad takes a square mile which includes most of the town; but a survey of the town boundary, under the town site law of 1867, gives the city nearly 700 acres adjoining the railroad section."*

This report was obviously written before the final appeal was upheld.

The Commissioner of the GLO in Oct.

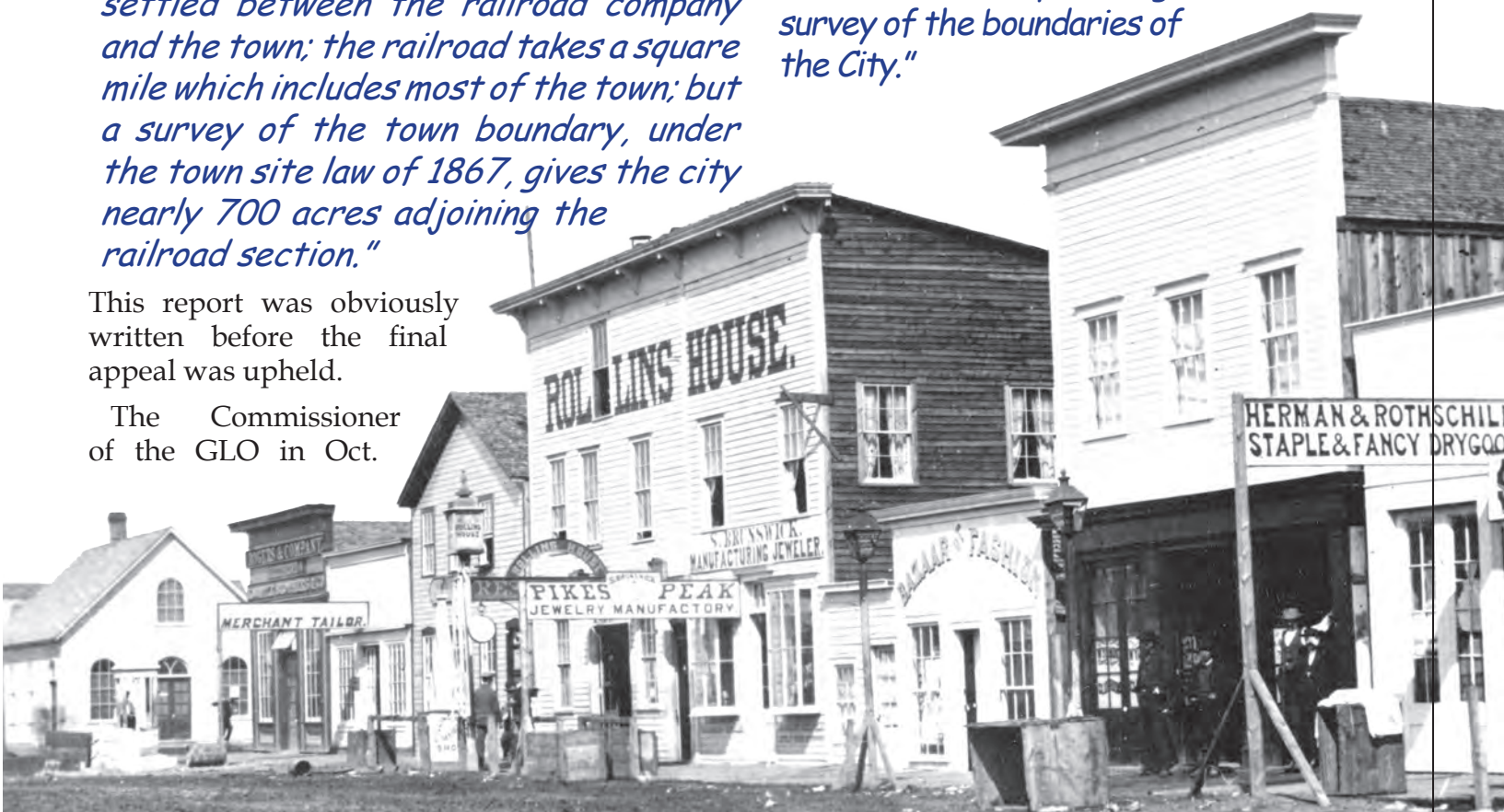
1870 then directed Reed to extend the lines of the PLSS through the City in order that the railroad company may be enabled to select the odd numbered sections granted them. This survey was completed and approved in Dec. 1870.

Patents for the lands, as shown in the Atherly map on the following page, are readily available in the Laramie County Clerk's Office.

But at this point, keep in mind, that title conveyances within the GLO Survey of 1870 for the City of Cheyenne (2nd survey) were still based upon the layout of lots and blocks as established under the Dodge Survey of 1867 (1st survey). So we have a unique intertwining of the two surveys. Both being dependent to recognize and maintain a direct relationship with the other. Unfortunately, this direct relationship to one another was not always fully understood and maintained in surveys throughout the years, as will be discussed later in more detail.

On March 18, 1890, the Cheyenne City Board of Trustees passed an ordinance titled:

*"An ordinance providing for a survey of the boundaries of the City."*





And goes on to state:

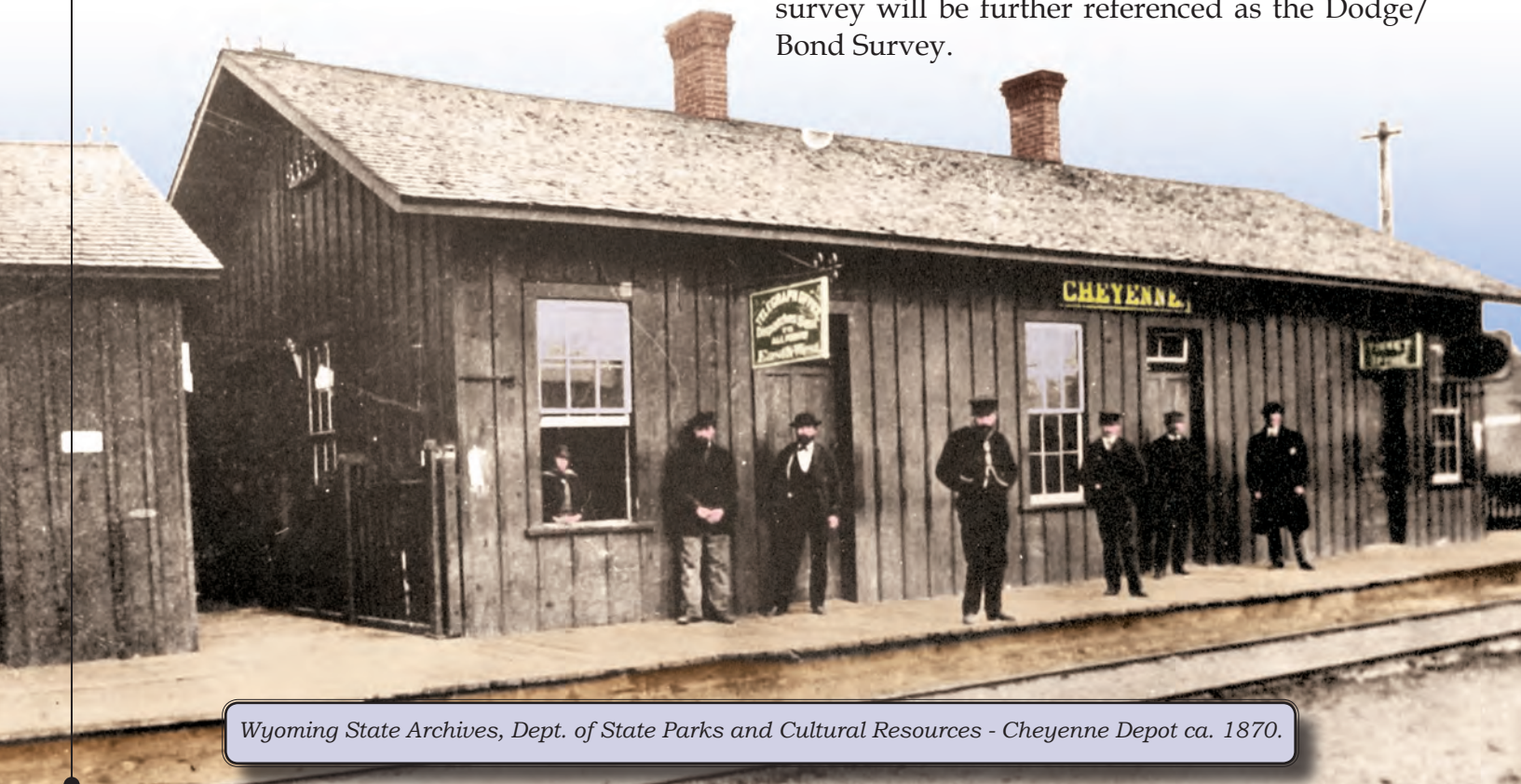
*"Whereas the exact location of the boundaries of the City of Cheyenne is uncertain and incapable of ascertainment by reason of the destruction of monuments of former surveys and by reason of the fact that where the boundaries were originally surveyed and located the lands were unsurveyed public lands."*

*This was all done under "... the provisions of an act of the Eleventh Legislative Assembly of the Territory of Wyoming entitled 'An act concerning the location of the boundaries, and providing for the extension of the limits of cities and towns, approved March 14th A.D. 1890.'*

From April 3rd to May 10th, 1890 Cheyenne City Engineer, Fred Bond resurveyed the boundaries of the City and set new substantial stone monuments at the four corners of the City. This survey was theoretically a retracement of the Dodge Survey of 1867. Two of these four corner monuments are known to still exist at the southwesterly and northwesterly corners.

An examination of the field notes of Fred Bond's survey show that he started from two centerline-centerline interior, intersection monuments at 9th Street and Warren Ave. and backsighted 23rd Street and Warren Ave. He then proceeded to measure out record distances to the southerly boundary of the City, and then through record right angles and distances around the perimeter of the City. At no time does he recite having found any physical evidence of the original corners of the Dodge Survey of 1867, whatever they may have been. What we do know is that many of the block and lot corners of the Dodge Survey of 1867 were in fact wood hubs, but it is presently speculation to say that the City Corners were as well. Without the original survey notes of the Dodge Survey of 1867, we don't know with any certainty.

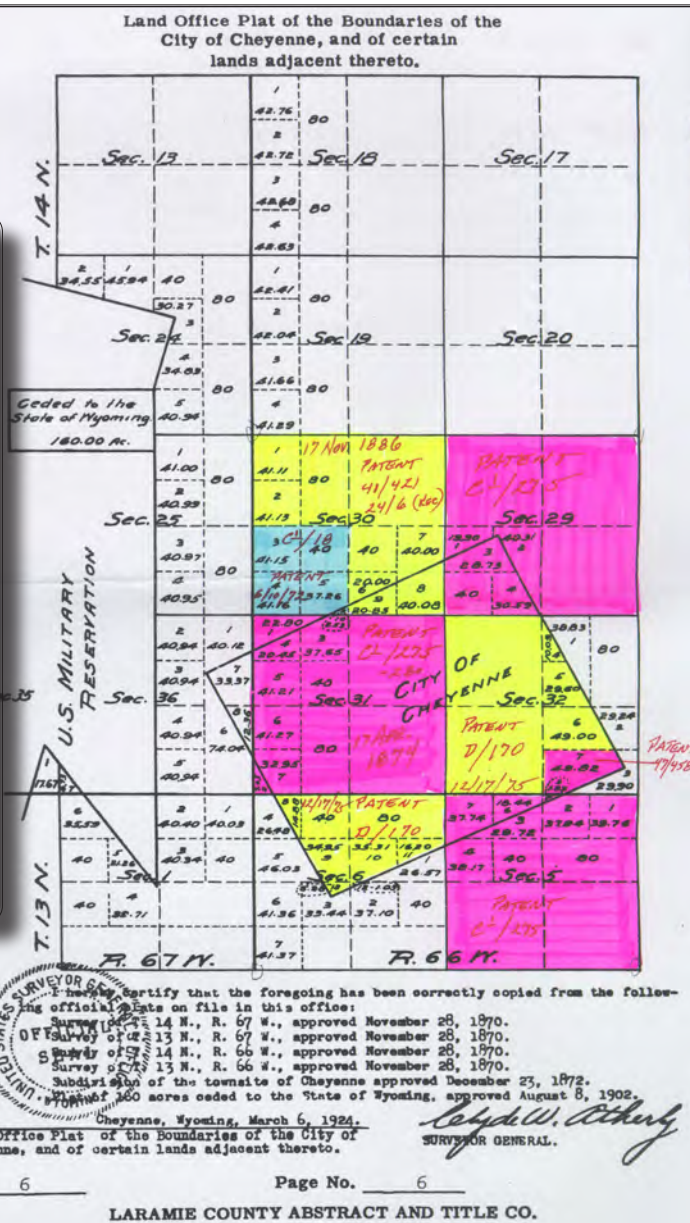
With this method of resurveying the Cheyenne City boundaries, it is uncertain that it was in fact a retracement of the Dodge Survey of 1867, and is instead a third, independent boundary survey of the City of Cheyenne. But it was the Bond Survey of 1890 that was recited and used for incorporation of the City of Cheyenne under the new State of Wyoming statutes in 1890. And for all practicable purposes was recognized and used as a retracement of the Dodge Survey of 1867. This survey will be further referenced as the Dodge/Bond Survey.



Wyoming State Archives, Dept. of State Parks and Cultural Resources - Cheyenne Depot ca. 1870.



Consolidation of GLO surveys of the area with hi-lites of ownership. Pink - UPRR; Yellow - City of Cheyenne; Blue - Private; and Sec.36 being a State School Section. Note that this base map was prepared and certified by Clyde W. Atherly, the last Surveyor General for the State of Wyoming in March 1924. This base map was found recently in an old Title Abstract.



**CORNER MARKERS OF TOWNSITE OF  
CHEYENNE IN REMOTE LOCALITIES**

Comparatively few Cheyenneites are familiar with the location of the four corner markers of the original townsite of their city.

These markers, low sandstone monuments, were set when the Union Pacific engineers laid out the townsite in 1867. They all now are inconspicuous because of remoteness from courses of general travel.

The northeast marker is in the Sunshine Dairy pasture about 600 yards northeast of the junction of Pershing Boulevard and so-called "Division Street." The latter is the broad street at the extreme edge of the city, where the original townsite and the western limits of Kelley, Alta Vista and Logan Heights joint.

The southeast marker is in the Cross Creek valley on the Lummis farm, east of the abandoned grade of the old Denver Pacific railroad. It is about a quarter-mile southeast of the site of the old Ham-

mond Packing Company plant, now occupied by an oil refinery.

The northwest marker is in an enclosure adjacent to the Colorado and Southern stockyards, south of the railroad and a few yards east of the county road which parallels the east boundary of the Fort Warren reservation. It is nearly disintegrated from time and weather.

The southwest marker is in the Van Tassell pasture southwest of the Union Pacific and east of the Colorado and Southern's Denver line. It is about a half-mile southwest of the Union Pacific and a somewhat less distance east of the Colorado and Southern. Until comparatively recently the marker was in better condition than any of the others but it has been used as a target by boys and others and its inscription now is barely legible.

*Wyoming Tribune-Leader; June 6, 1936*

The southwesterly corner of the Dodge/Bond Survey is a well set stone that has been preserved with a 15 foot square parcel developed with concrete retaining walls and a surrounding concrete pad within a wrought iron fence enclosure. This preservation was done in cooperation with the Laramie County Chapter of the Wyoming Historical Society and is an excellent example of a joint historical preservation project. A Historical Sign is posted on the wrought iron fence explaining the origin and history of the stone monument (correctly or incorrectly). This corner appears to be as originally set by Fred Bond in 1890, with the top of the stone chiseled to make a two line intersection for the true point, which now has a Philips head screw (origin unknown) set at the intersection point.

Now the question arises concerning the two easterly corners of the Dodge/Bond Survey. Both stone monuments are no longer known to exist, and the areas in close proximity to these corners were replatted and realigned with the development of the city.

Our next issue will talk about the research and physical evidence developed to identify and reestablish the missing corners of both the Dodge/Bond Survey and the GLO Survey of 1870.



*S.W. Cornerstone of the Dodge/Bond Survey.*



April 10, 2011

Press Release: NSPS Surveying USA Event

Although I am still waiting for some states to send me their data I think I am safe in saying that the NSPS Surveying USA Event was a great success on many different levels. Not only did it give surveyors across the nation an opportunity to participate in a simultaneous effort with all of their peers it also gave the public an opportunity to ask questions and in many cases observe first-hand the experience of surveying. There were events held that had only one person set up on a lonely hillside and events that gathered over 300 surveyors in one place (Tennessee). I hope to start compiling all the data and printing out all the pictures the week of April 11. Once all the points are entered into a spreadsheet it will be sent to Donny Sosa of ESRI. He will put it on a map and that site will be available to everyone so you can observe all the points occupied across the nation.

I hope to be able to compile the following data:

- Number of States participating
- Number of Participants
- Furthest North, South, East and West points occupied
- States with most participants
- Weirdest point occupied (probably at my discretion)
- Oldest Point Occupied
- Most Historical Point Occupied

I hope everyone has a little patience since this has been a huge undertaking and if there are any volunteers in my area that wants to start downloading and printing out all the emails and pictures I would sure welcome you!

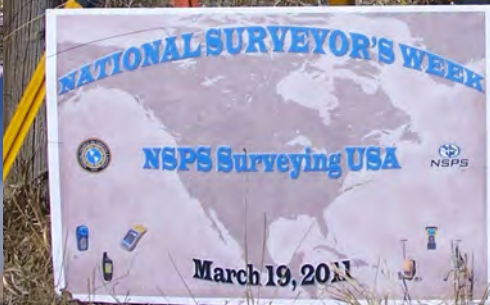
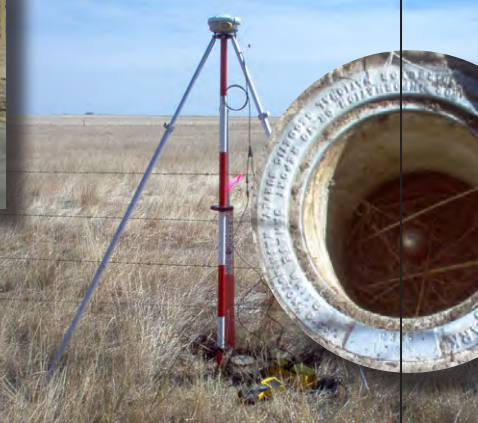
Best Regards and I thank all of you who participated and helped to make this event a success.

Debi Anderson, PLS

NSPS Governor Montana/Surveying USA Chair







19/03/2011



## NORTHWEST CHAPTER: 2011 NSPS SURVEYING USA AT WORLAND

The front page of the Saturday, March 19, 2011, edition of the "Northern Wyoming Daily News" posted an article announcing:

**"Local Surveyors to check GPS systems today . . . Beginning at 11 a.m. local surveyors Stanton Abell, of Worland, and Rick Hudson, of Thermopolis, will be available to check your GPS systems . . ."**

Standing in the parking lot of the Washakie Museum and Cultural Center, under a clearing sky an hour before the event, we reviewed our detailed plan for crowd control; confident in our abilities to multi-task, or call for backup, if necessary. We had volunteered for this mission - and it would be accomplished!



Two days prior, we had constructed a cast-in-place concrete monument with brass disk as the official 2011 NSPS Surveying USA station, chose the top of the solid granite Earth sculpture as the GPS calibration station, and vowed to obtain a direct observation on the . . . Nose; the latter being the tip of the life-size, bronze mammoth's trumpeting trunk.

With the appointed time approaching, Stan left the Trimble 4800 for Rick to set up over the station, temporarily designated Sargent Point for owner Newell Sargent Foundation, and sped off to occupy another station across



**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.

**WASHAKIE MUSEUM AND CULTURAL CENTER, 2200 Big Horn Avenue, Worland, WY 82401**

**"NEWELL'S HALF ACRE" (Left) "TOP OF GLOBE" (Right) "MAMMOTH NOSE" (Below, Left)**




**Observed Positions - NAD 83 (CORS96) Epoch 2002.0**

**Half Acre:** Lat. 44°00'59.690" N (44.016581°)  
(OPUS) Lon. 107°56'22.948" W (107.939708°)  
(NAVD 88) Elev. 4077.3 US feet (1242.8 meters)

**Top of Globe:** Lat. 44°00'59.700" N (44.016583°)  
(DGPS) Lon. 107°56'22.907" W (107.939696°)  
(NAVD 88) Elev. 4078.6 US feet (1243.2 meters)

**Mammoth Nose:** Lat. 44°00'59.73" N (44.01659°)  
(By actual occupation) Lon. 107°56'22.91" W (107.93970°)  
Elev. 4099 US feet (1249 meters)





**NEWELL'S HALF ACRE MONUMENT**

Land Surveyor / Firm / Address  
**PLSW - NORTHWEST CHAPTER**  
Stanton J. Abell, Jr., President  
R.L. "Rick" Hudson, Secretary / Treasurer

This corner record was prepared by us, the date shown below.

**SEAL & SIGNATURE**

Corner Name: \_\_\_\_\_ Section: \_\_\_\_\_ T \_\_\_\_\_ R \_\_\_\_\_ P.M. Cross-Index No.: \_\_\_\_\_

SBRPEPLS/PLSW: March 1994; PLSW January 1998

town; -informing him "If I'm not back by 11, push the green button." With the receiver set up, our chapter banner and NSPS sign suspended from a range pole, and our two-faced monument board displayed, Rick taped one second of latitude south (101 feet) and one second of longitude east (73½ feet) from the globe, placing traffic cones there for visualization of screen readouts to real world distances. (Geodetically sound but ultimately too optimistic.) In a vest pocket he carried a 2 cm. dia. by 5 cm. long socket, waiting for the opportunity to tutor some innocent child or wary adult about local and network accuracy and how efficiently we surveyors can now measure with GPS / OPUS methodology. (Before day's end he got his chance.)





Stan returned to the largely vacant parking lot and was informed “the snowmobile with the for sale sign” (along Big Horn Avenue) was getting a lot of attention. Undaunted, they recovered a nearby corner monument, observed WAAS and DGPS positions on it and on the top of the globe then, in true surveyor fashion, became fascinated with the geographic detail etched into the polished rock surface. Stan had been told the orb will be lifted an inch and spun by a hidden one-horsepower motor while being bathed in cascading water; quite an impressive engineering and construction project for the sake of artistic endeavor.

Later in the day we did offer assistance to a gentleman with a hand-held (navigation grade) GPS receiver; providing him with the ability to ascertain and transmit an accurate geographic position to his hunting buddies, emergency responders or some hapless tourist who becomes “lost” on the mountain.

Near the end of our four-hour occupation, opportunity presented itself with a husband and wife who stopped to partake of our activities. The conversation turned to the globe and its future as a rotating fountain and speculation as to its weight. Being hard-wired for mathematical and scientific problem-solving the two pseudo-geodesists taped the globe’s major axis (hips), divided by pi and again by two, and announced a radius of 1.42 foot. In unison they recited the permanently memorized value, 20,906,000 feet, and determined the globe to be a 1/15,000,000 model of Earth. Stan proclaimed 145 pounds per cubic foot to be a close approximation for the weight of concrete and rock. Both called upon retired brain cells for the volume of a sphere, mumbling 4 and pi and unspecified powers of our radius. Stan headed for his vehicle while Rick retained our visitors. He returned, not with a reference book, but with a “googled” formula on his PDA. (Who needs memorization or books when you can grab numbers out of thin air.) Finally the weight, about  $\frac{3}{4}$  ton; days later refined by Rick (using reference book data for the weight of granite) at about 2,015 pounds.

By early afternoon the wind, which is widely reported to almost never blow in Worland, commenced with sustained velocity experienced in Cody and Casper. One last direct GPS observation, by two old veterans possessing four score years of surveying experience, and - mission accomplished! Unless someone photographed us with a cell phone camera, how we did it is for us to know and five-digit registrants to marvel. Stan pushed the green button, we loaded up our toys, and bade farewell to NSPS Surveying USA.

MONUMENTATION		NEWELL'S HALF ACRE	
<p>The station is marked by a 3 in. dia. brass disk set in the 4 in. dia. top of a cast-in-place concrete monument approximately 7 ins. dia. by 32 ins. long. The monument contains several #4 rebar driven into the ground below the enlarged base. The station is situate in the center of a sand-filled circle to be covered with cobblestones and is flush with the encircling concrete. The monument was set on 17 March 2011 and occupied on 19 March 2011 during NSPS Surveying USA at the Washakie Museum and Cultural Center by the Northwest Chapter of the Professional Land Surveyors of Wyoming. The disk is stamped as requested by the owner, the Newell B. Sargent Foundation, as depicted by the photo on the front of this form.</p>			
			
POSITIONING		NGS OPUS SOLUTION REPORT	
<p>All computed coordinate accuracies are listed as peak-to-peak values. For additional information: <a href="http://www.ngs.noaa.gov/OPUS/about.html#accuracy">http://www.ngs.noaa.gov/OPUS/about.html#accuracy</a></p>			
<p>DATE: April 04, 2011 RINEX FILE: 1876078r.11o TIME: 22:11:13 UTC</p>			
<p>SOFTWARE: page5 1009.28 master11.pl 121510 EPHEMERIS: igs16276.eph [precise] NAV FILE: brdc0780.11n ANT NAME: TRM4800 NONE ARP HEIGHT: 1.4334</p>		<p>START: 2011/03/19 17:31:00 STOP: 2011/03/19 22:02:00 OBS USED: 10966 / 11129 : 99% # FIXED AMB: 47 / 52 : 90% OVERALL RMS: 0.013(m)</p>	
<p>REF FRAME: NAD_83(CORS96)(EPOCH:2002.0000)</p>		<p>ITRF00 (EPOCH:2011.2132)</p>	
<p>X: -1415358.505(m) 0.048(m) Y: -4371673.239(m) 0.056(m) Z: 4410271.134(m) 0.079(m)</p>		<p>-1415359.285(m) 0.048(m) -4371671.980(m) 0.056(m) 4410271.076(m) 0.079(m)</p>	
<p>LAT: 44 0 59.69011 0.010(m) E LON: 252 3 37.05215 0.032(m) W LON: 107 56 22.94785 0.032(m) EL HGT: 1229.676(m) 0.104(m) ORTHO HGT: 1242.750(m) 0.177(m) [NAVD88 (Computed using GEOID09)]</p>		<p>44 0 59.71032 0.010(m) 252 3 37.00143 0.032(m) 107 56 22.99857 0.032(m) 1228.947(m) 0.104(m) (Computed using GEOID09)</p>	
<p>UTM COORDINATES STATE PLANE COORDINATES</p>			
<p>UTM (Zone 13) Northing (Y) [meters] 4877916.568 Easting (X) [meters] 264373.498 Convergence [degrees] -2.04364142 Point Scale 1.00028290 Combined Factor 1.00009006</p>		<p>SPC (4902 WYEC) 490770.285 351381.570 -0.42135749 0.99996656 0.99977379</p>	
<p>US NATIONAL GRID DESIGNATOR: 13TBJ6437377916(NAD 83)</p>			
<p>BASE STATIONS USED</p>			
PID	DESIGNATION	LATITUDE	LONGITUDE
DG9745	MTEI ENG INC CORS ARP	N454447.035	W1083600.737
DJ8992	P033 TENSLEEP CORS ARP	N435710.415	W1072315.121
AI5435	CASP CASPER CORS ARP	N424908.998	W1062302.614
		DISTANCE(m)	
		199215.5	
		44870.0	
		183249.6	
<p>NEAREST NGS PUBLISHED CONTROL POINT</p>			
PW0330	W 23	N440056	W1075711
		1074.6	



## Requirements for Being a Good Supervisor

Herbert W. Stoughton, Ph.D., P.E., P.L.S., C.P.  
Geodetic Engineer

In 1970, an employee asked the senior vice president of a large manufacturing corporation (listed on the New York Stock Exchange) to list the basic attributes of a good supervisor (foreman). On 4 February 1970, the vice president responded. Herein, with a couple of minor editorial modifications, is the response (in its entirety).

A few days ago you asked me to write you a letter outlining some of the basic attributes of a good supervisor.

I think a good supervisor should:

1. Look, act, sound, dress, etc., like a supervisor.
2. Accept responsibility for efficiency in his/her area of operations.
3. Know his/her machines/instruments, their setup/operation, repairs/maintenance. etc.
4. Know the processes for use, time required to achieve the specified results, expected results, optimum quality of achievable results, acceptable rates of failure, supply costs, etc.
5. Know the subordinates as individuals, their background, their attitudes, degrees of skill, ambitions, abilities, education, values and/or potential value to the organization.
6. Be able to praise, encourage, help, train, motivate, discipline, and evaluate the good or potentially of good personnel.
7. Be able to correct or eliminate the sub-standard personnel.
8. Be alert to shades of opinion and attitude not only of individuals but of whole groups and departments.
9. Project an image of objectivity, fairness, sympathy, etc., but also be regarded as a patient but stern disciplinarian.
10. Know the basic facts of labor law.
11. Know and be able to interpret, apply, and explain basic organization policies as regards to rules, regulations, transfers, pay methods,

and various other matters.

12. Be aware of earnings potentials and earnings records of his/her personnel.
13. Be constantly searching for profitable personnel.
14. Be constantly searching for changes/improvements in methods currently used.
15. Know the organization of and learn to use, communicate with, and cooperate with the staff departments such as Project Management, Accounting, Personnel, Payroll, etc.
16. Always listen carefully to people and always answer them honestly and promptly.
17. Regard himself/herself as a true and full member of Management of the Organization.

A good supervisor has one other attribute that is a little difficult to describe. He/she must have enough independence and enough feeling of security to be able to achieve a good give-and-take working relationship with his/her boss. A good supervisor should be of the opinion that he/she probably knows more about the detailed operation of his/her department than his/her boss does on a day-to-day basis and must feel that it is perfectly legitimate for him/her to suggest alternate courses of action when he/she feel that they will achieve better results than simply routinely following the orders that are handed down. He/she should never change or disobey an order on his/her own initiative, but he/she should certainly feel free to go back to his/her boss and argue his/her position if he/she feel that an order or a course of action being recommended is not in the best way to get the job done/accomplished.

As you of course realize, this is a pretty broad field to cover in a simple set of ground rules, but I do rather feel that the above attributes constitute the ABC's of good supervision and certainly a person who got good marks in all the above requirements would be one hell of a fine supervisor/foreman.

Sincerely,

the senior vice president

cc.: chairman of the board



(HWS Comment): A copy of this letter was received by me from the recipient of the original letter. Before the original author became the senior vice president, he was employed in labor relations in the automotive industry for over two decades, and held senior positions in production management for nearly another decade. For nearly forty-five years he oversaw labor relations (work rules, wages, benefits, etc.) for the companies in which he was employed.

PLSW: Board of Directors

Conference Call

7 May 2011

Outline of Discussion Items

After the minutes of the 3Feb. 2011 Board meeting and the treasurers report was accepted, the list of non-dues payment drop and suspension list was reviewed and action taken. Several members on the suspension list were to be contacted for dues payment.

An item not on the original agenda was the difference between a life member and an honorary member. The by-laws and constitution allowed that the life member designation may be acted on by the Board of Directors. Lloyd Baker of Thayne was approved as a Life Member of the Professional Land Surveyors of Wyoming. It comes in time for Lloyd's 100 birthdays in the month of June.

Paul Reid noted that the S.O.S competition is scheduled for the Fall Technical Program in Casper.

Mark Rehwaldt requested funds to utilize the IT students at UW to update the PLSW web page and keep it current. Mark will work with Will Dolinar to complete the update.

The National Museum of Surveying in Springfield, IL executive director requested a review of placing a check-off box on the PLSW dues notice and the funds are in addition to the annual dues. The request was approved for the 2012 dues notice invoice.

The PLSW Directory will be transmitted electronically during the month of June. If a member (or associate, life or honorary member) wishes a hard copy, a request needs to be made to the Secretary/Treasurer.

Mark Rehwaldt is interested in starting a student professional chapter on the UW campus. If anyone has some ideas concerning this idea please contact Mark.

New Board of Registration Members:

Gerald Jessen, PE & PLS

Skylar Wilson, PLS


Shelley Macy, PE



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(Continued from Page 4)

runner up for that scholarship. It was given to a boy in Grover but he didn't want to go to college and I did. So they gave me the scholarship."

The scholarship paid rail fare from the nearest station (Kemmerer) to Laramie and \$100 for school expenses. Doing odd jobs in Laramie in addition to the scholarship provided Lloyd with enough funds to complete two quarters of study.

"The first six months I studied agriculture because that was a requirement of the scholarship," said Lloyd.

"I went the fall and spring semester and then I was out of money so I came home."

Over the next four years, Lloyd worked a variety of jobs in an effort to save funds to continue his studies.

"In 1935 I was stacking hay for the Roberts brothers in Etna for \$2 a day and a noon meal," he said.

When a family friend stated that he'd always believed Lloyd would finish his studies at the university, Lloyd made the decision

to return to Laramie that very fall. He had a total of \$9.06 to meet his collegiate expenses and had no idea how things would work out.

Lloyd traveled with Ruell Call to Kemmerer, shipped his luggage to Laramie and then hopped a train.

"I rode on top of the train," he said. "I arrived in Laramie with a black face because trains were powered by coal at the time. I had to get off the train as it started to slow down outside of Laramie because if they found you riding on top of the train they'd put you in jail. So I got off the train and walked into town."

He met some Star Valley boys along the way who had a house for the year and were renting rooms.

"So I rented the top floor of the house," Lloyd said.

The top floor had two bedrooms and a third, small room with a desk and couch in it. Lloyd stayed in the third room and rented out the bedrooms to help meet his school expenses.

In the fall of 1935, he made the decision to study Business Administration.

"The best offers for graduates in that field at the time was \$16 a week," he said. "So I changed to engineering in the fall of 1936."

During that time, Lloyd also began working for the express company. The company handled mail and express shipments for the railroad.

"We changed mail and some of the freight," he said.

As part of his engineering studies, Lloyd completed a surveying course. During summer months, he began doing surveys for Lincoln County of farmland.



Lloyd Baker returned to Wyoming in 1973. Today he still gets up to go to work every day and finds time to stay involved in community events and organizations.

In June 1940, Lloyd graduated with a bachelors degree in civil engineering from the University of Wyoming. His first job was with the Bureau of Reclamation in Farson, Wyoming.

"I married Edna Marie Welborn on Christmas Eve in 1940 in Denver," Lloyd said.

When the Bureau of Reclamation project was completed in Farson, Lloyd was transferred to Arizona and then on to California.

With the arrival of World War II, the demand for shipyards along the California coast was high and Lloyd went to work designing shipyards where liberty ships would be constructed. The ships



were used in transporting goods for the war.

When the shipyards were complete, Lloyd moved to Clearfield, Utah and worked on Hill Air Force Base.

"In the fall of 1943 I was teaching in Logan at the college there," he said. "They had just organized the air force and were teaching physics."

When a position opened at the college in Boise for a math teacher, Lloyd took the job.

"The head of the engineering college at Boise was called into the war and I replaced him," Lloyd said. "It was a one year contract from 1944-1945.

There were only nine boys in the college at that time. We had enough for a baseball team but not a football team. So they played baseball."

Following his year in Boise, Lloyd began working for the soil and conservation service in Montpelier.

"We were surveying and engineering canals and putting together topography maps. I did a lot of training in California and other places during that time and was away from my family six weeks at a time. They wanted

to transfer me to California but I was already away from home so much that I didn't want to do that."

Lloyd took a job working for a phosphate mine east of Montpelier instead.

"I was mapping the phosphate beds," he said.

When the job was completed, Lloyd and his family moved to California where Lloyd took an engineering job with the City of Hawthorne.

He then worked as a city engineer for Mountain View, California.

Deciding that going into business for himself was

the best future, Lloyd opened his own surveying company.

In 1963, Bechtel Corporation, the company Lloyd had worked for on shipyard projects, hired him to help with a number of different projects. He surveyed the Carlin Gold Mine in Nevada, worked on a reservoir project north of Las Vegas, helped with designs on the Bay Area Rapid Transit (BART) system and eventually transitioned into the field of nuclear power plants.

While working in nuclear energy, Lloyd worked on nuclear plants in Massachusetts, Maryland and Connecticut.

"I retired in 1973 and returned to Wyoming," he said. "In 1974 my surveyor business license for Wyoming came through and I have been working here every since then."

In addition to his impressive career, Lloyd is also the father of five children, Judy, Lloyd, Kathy, Ruthie and Steve.

"I have 17 grandchildren and more than 40 great grandchildren.

Now as he looks back over a lifetime, Lloyd finds that he misses the quiet

evenings of his childhood.

"When the milking was done and we could spend the evening chasing June bugs, I reminisce about that," he said.

But when the reminiscing is over, it is time for another day's work.


"Do things that are worthwhile," Lloyd said. "Work is not only fun, but it is good for you. It's useful and good and it gets me by fairly well."

For a man whose profession has taken him from one coast to the other for 71 years, work is a way of life.



Skylar Wilson presents Lloyd with engraving in appreciation for his many years of service to the surveying community on behalf of the Professional Land Surveyors of Wyoming. Lloyd has been granted "Life Membership" status within the PLSW organization.





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