



Direct Point Positioning Surveys For State of Alaska Patents

CACFA Meeting – January 29, 2016

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Comparison of the Statutory Language

Statehood Act

".....the Secretary of the Interior shall survey the exterior boundaries of the area requested without any interior subdivision thereof and shall issue a patent for such selected area in terms of the exterior boundary survey"

VS.

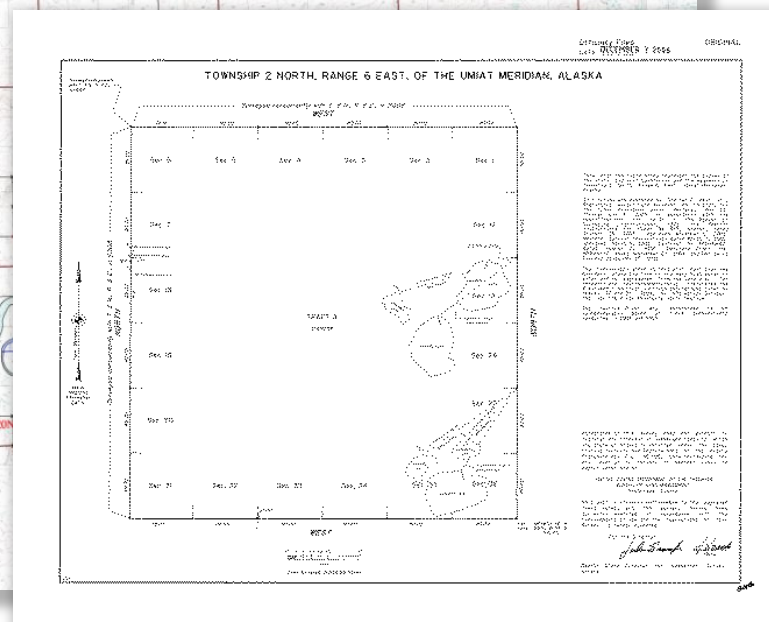
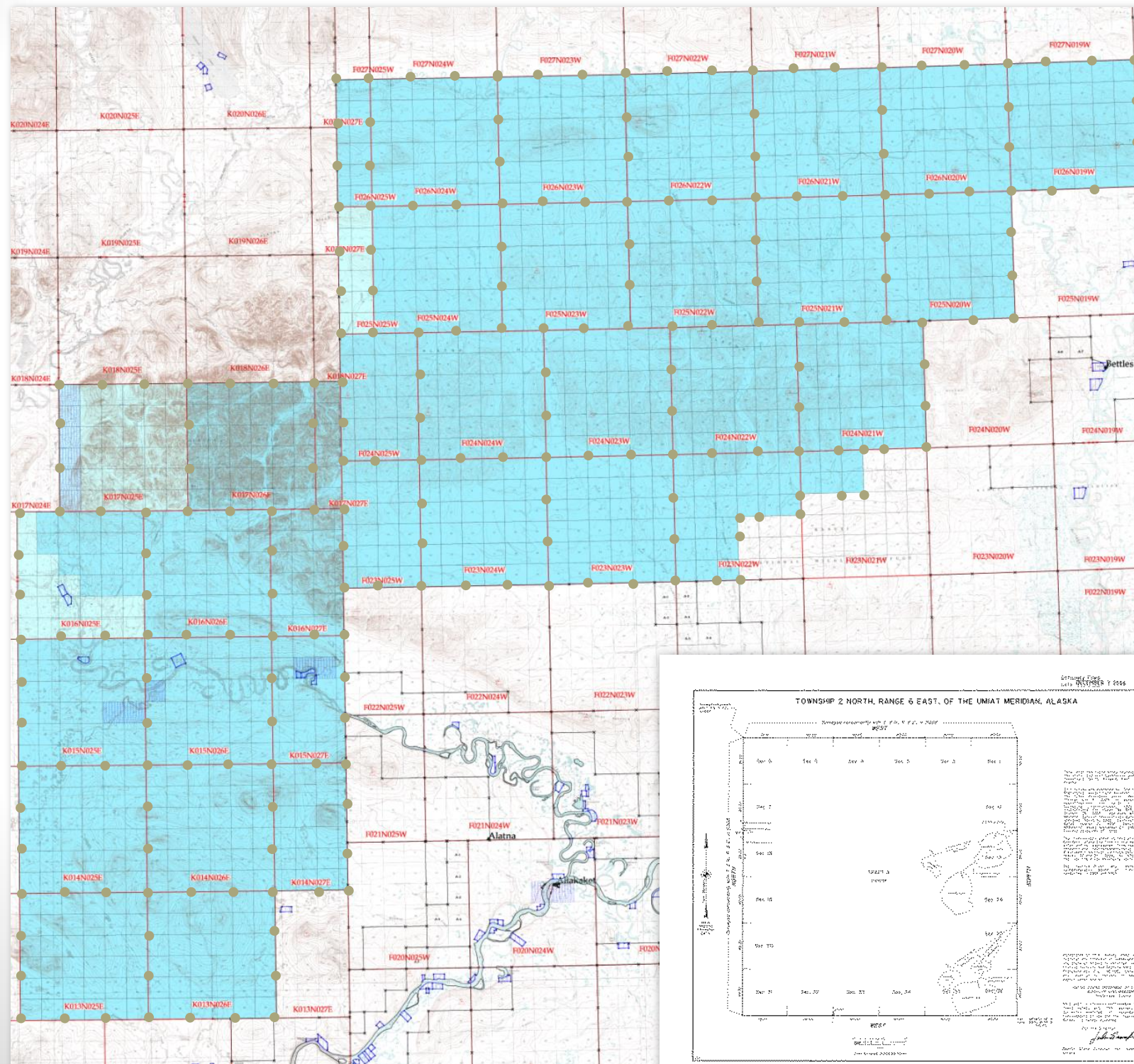
ANCSA

"The Secretary.....shall monument only exterior boundaries of the selected or designated areas at angle points and at intervals of approximately two miles of straight lines."

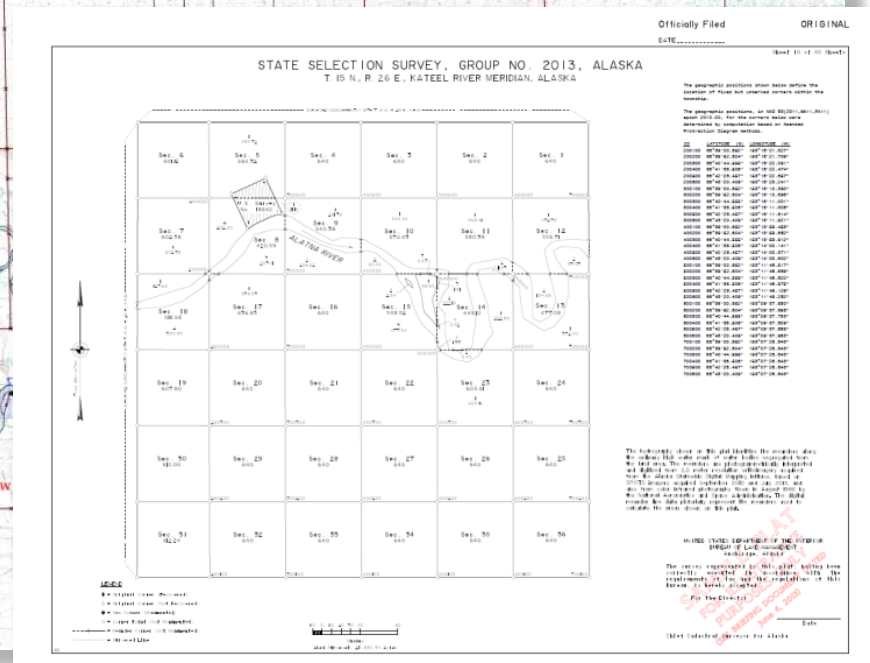
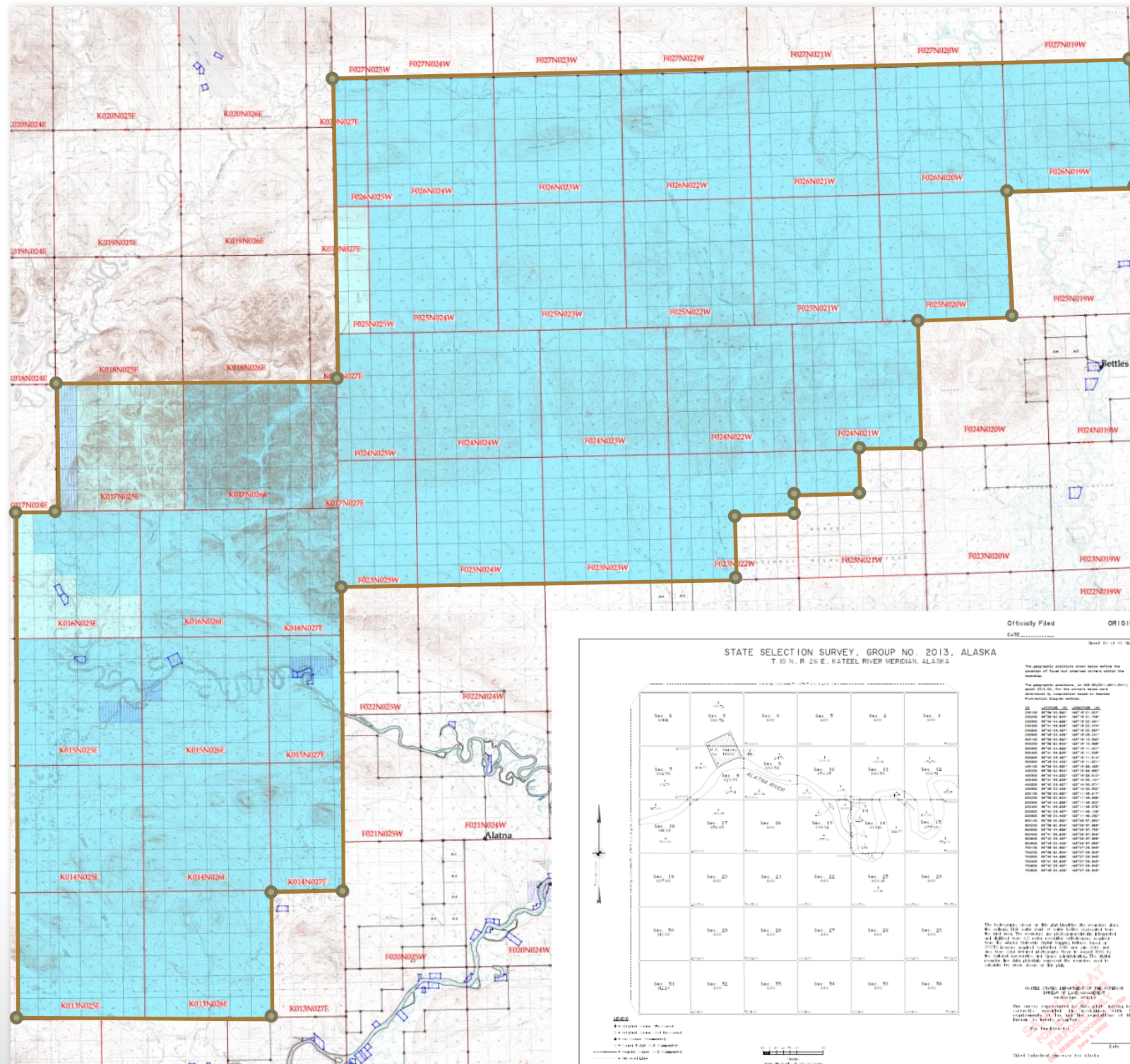
"Status Quo" Method of Survey and Platting



- Set monuments approx. every two miles on all township lines
- Produce a plat with no sections or section corner coordinates



DPPS Approach of Survey and Platting



- Survey only the exterior boundary of the ownership pattern
- Set necessary control (monuments)
- Monument the angle points
- Produce a plat with coordinates for all section corners using DPPS methods

Sample Plat Using DPPS

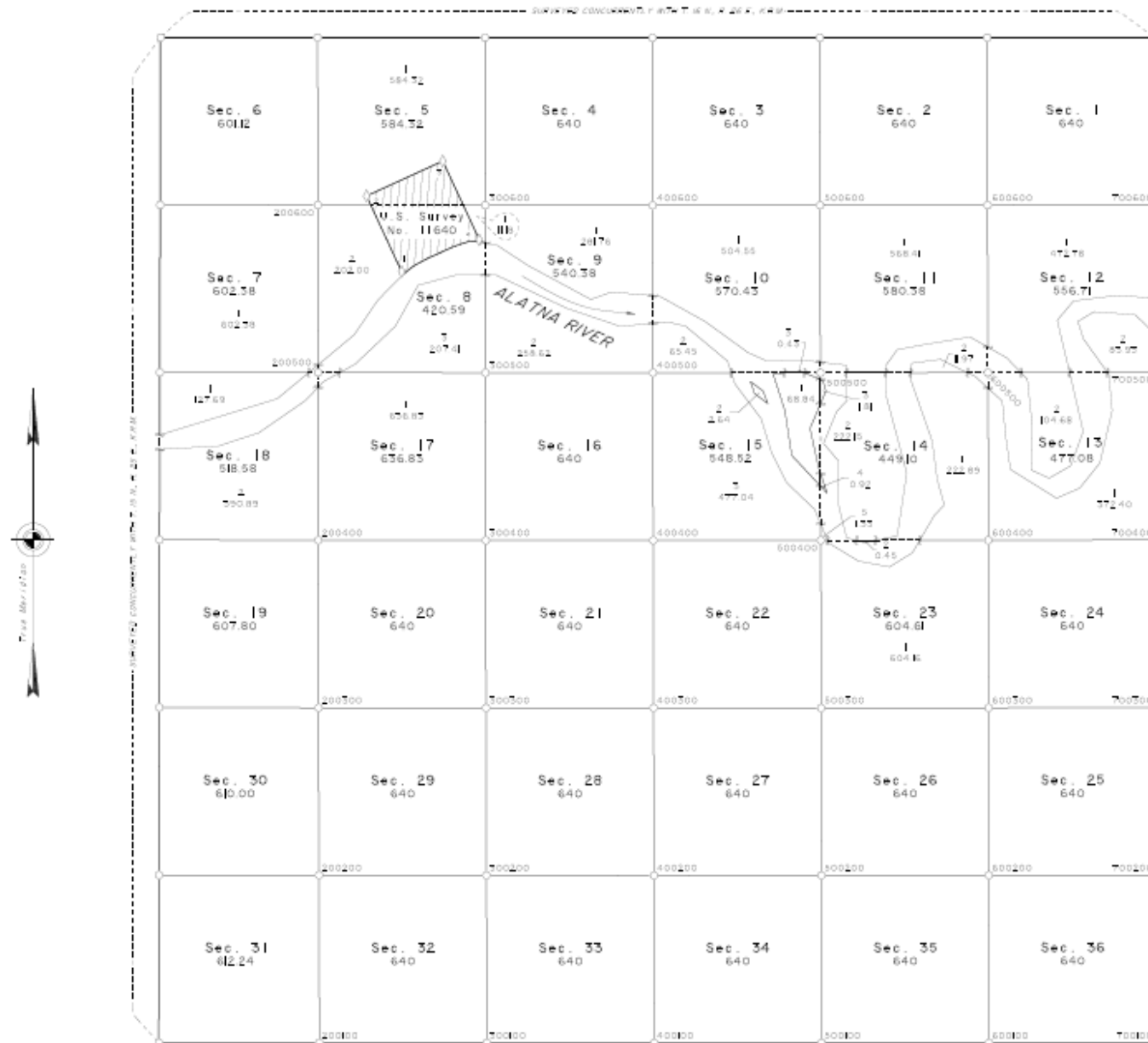
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DATE.....

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STATE SELECTION SURVEY, GROUP NO. 2013, ALASKA T. 15 N., R. 26 E., KATEEL RIVER MERIDIAN, ALASKA



The geographic positions shown below define the location of fixed but unmarked corners within the township.

The geographic positions, in NAD 83(2011,NA11,PA11) epoch 2010.00, for the corners below were determined by computation based on Amended Protraction Diagram methods.

ID	LATITUDE (N)	LONGITUDE (W)
200100	66°39'00.662"	153°15'21.327"
200200	66°39'02.604"	153°15'21.709"
200300	66°40'44.666"	153°15'22.091"
200400	66°41'36.606"	153°15'22.474"
200500	66°40'28.427"	153°15'22.857"
200600	66°43'20.409"	153°15'23.241"
300100	66°39'00.662"	153°15'10.390"
300200	66°39'02.604"	153°15'10.769"
300300	66°40'44.666"	153°15'11.001"
300400	66°41'36.606"	153°15'11.308"
300500	66°40'28.427"	153°15'11.614"
300600	66°43'20.409"	153°15'11.921"
400100	66°39'00.662"	153°15'09.453"
400200	66°39'02.604"	153°15'09.852"
400300	66°40'44.666"	153°15'09.912"
400400	66°41'36.606"	153°15'10.141"
400500	66°40'28.427"	153°15'10.371"
400600	66°43'20.409"	153°15'10.602"
500100	66°39'00.662"	153°15'15.517"
500200	66°39'02.604"	153°15'15.869"
500300	66°40'44.666"	153°15'15.822"
500400	66°41'36.606"	153°15'15.975"
500500	66°40'28.427"	153°15'15.975"
500600	66°43'20.409"	153°15'15.282"
600100	66°39'00.662"	153°09'37.550"
600200	66°39'02.604"	153°09'37.550"
600300	66°40'44.666"	153°09'37.703"
600400	66°41'36.606"	153°09'37.509"
600500	66°40'28.427"	153°09'37.550"
600600	66°43'20.409"	153°09'37.963"
700100	66°39'00.662"	153°07'26.543"
700200	66°39'02.604"	153°07'26.543"
700300	66°40'44.666"	153°07'26.543"
700400	66°41'36.606"	153°07'26.543"
700500	66°40'28.427"	153°07'26.543"
700600	66°43'20.409"	153°07'26.543"

The hydrography shown on this plat identifies the meanders along the ordinary high water mark of water bodies segregated from the land area. The meanders are photogrammetrically interpreted and digitized from 2.5 meter resolution orthorectified imagery acquired from the Alaska Statewide Digital Mapping Initiative, based on SPOTS imagery acquired September 2010 and July 2013, and also from color infrared photography flown in August 1986 by the National Aeronautics and Space Administration. The digital meander line data pictorially represent the meanders used to calculate the areas shown on this plat.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Anchorage, Alaska

The survey represented by this plat, having been carefully checked for accuracy with the requirements of law and the regulations of this Bureau, is hereby accepted.

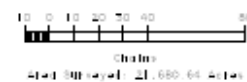
For the Director

Date

Chief Cadastral Surveyor for Alaska

LEGEND

- ◆ Original Corner (Recovered)
- Original Corner (Not Recovered)
- New Corner (Monumented)
- Corner Fold (Not Monumented)
- Meander Corner (Not Monumented)
- Striped Line



Future Survey with Legacy survey record

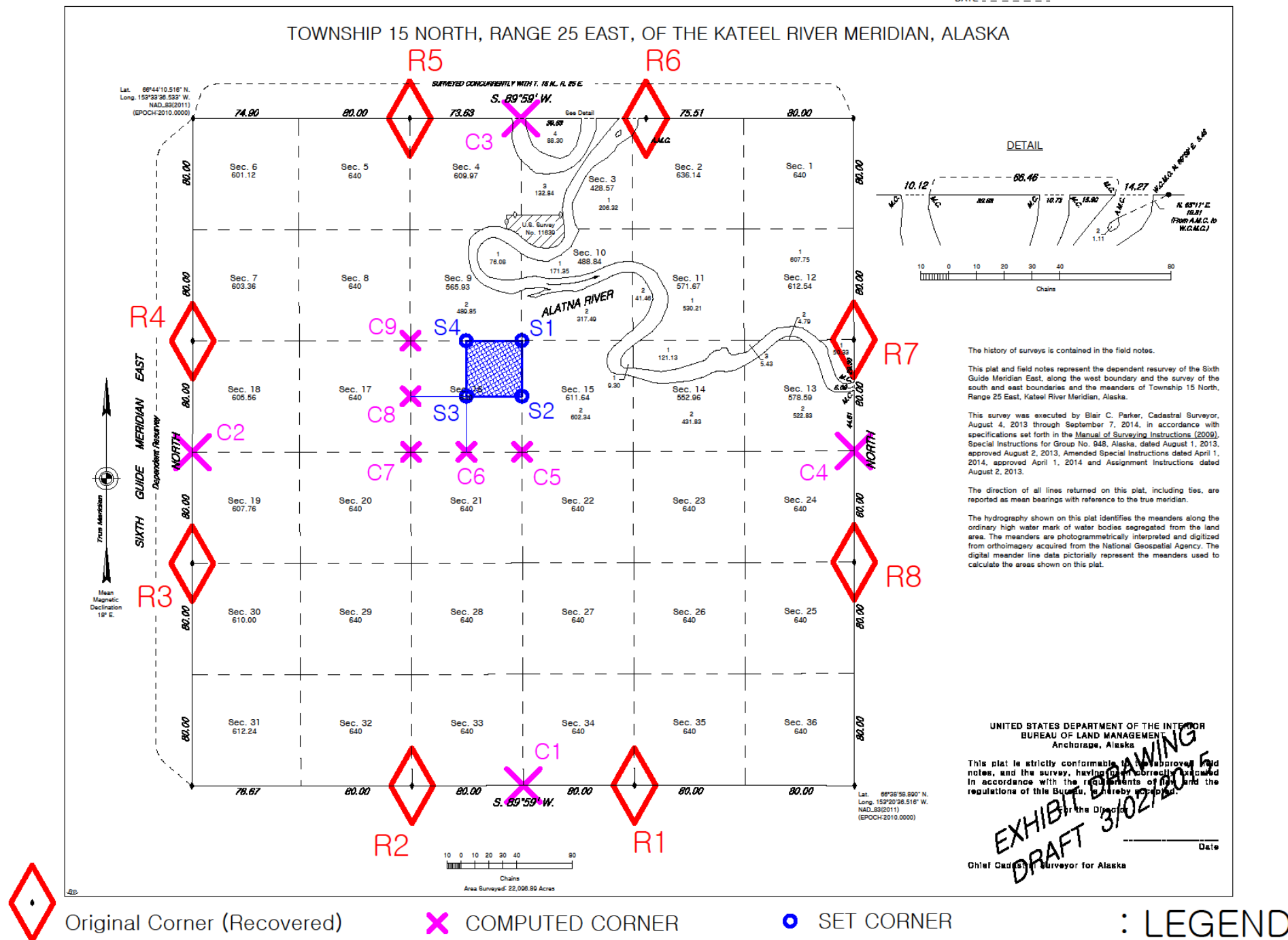
Traditional Twp. (1973 MOU) Survey Work Subsequent to ORIGINAL SURVEY Approval

NE $\frac{1}{4}$, Sec. 16

Officially Filed

ORIGINAL

DATE - - - - -



Future Survey with DPPS survey record

Proposed Twp. Survey Work Subsequent to ORIGINAL SURVEY Approval

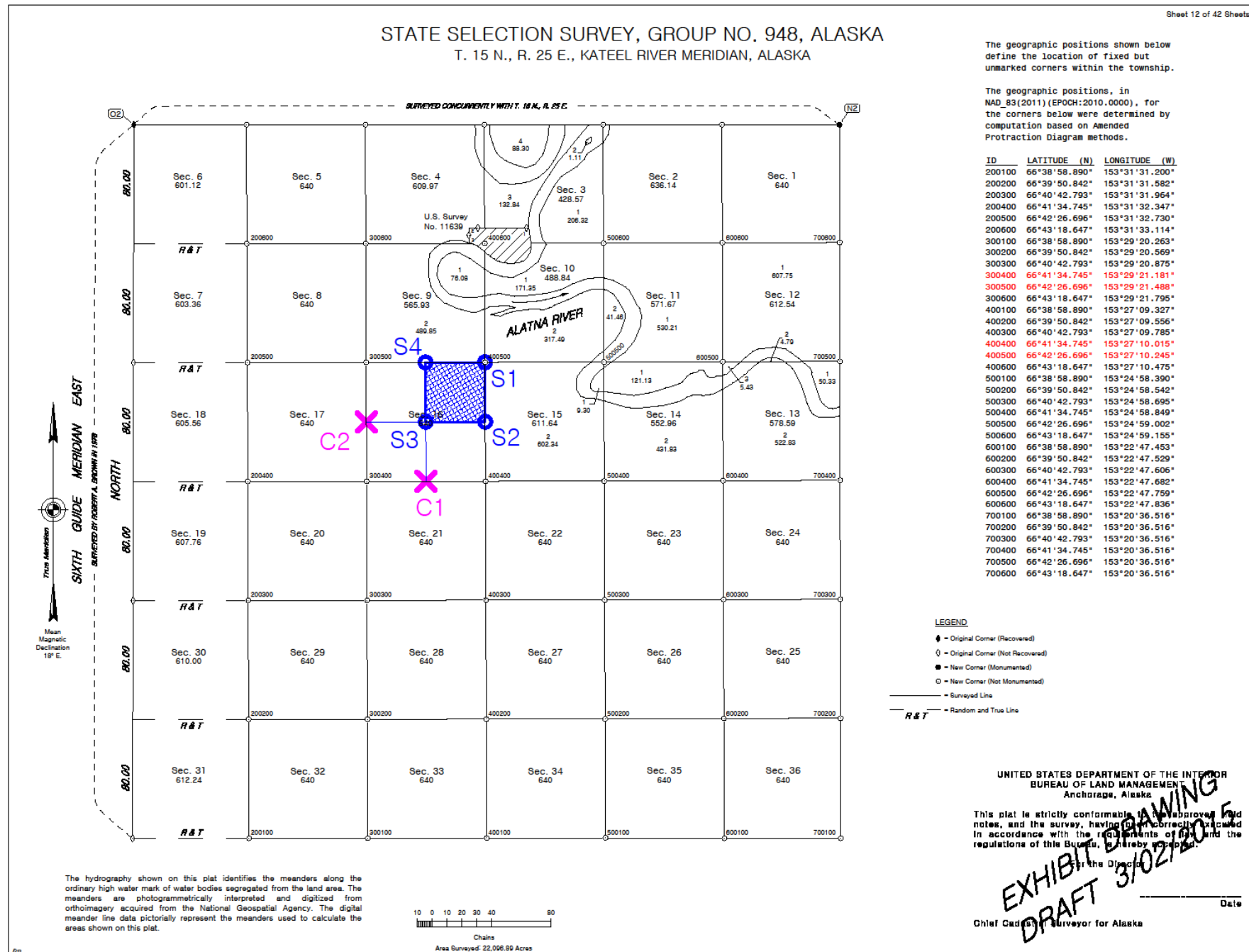
NE $\frac{1}{4}$, Sec. 16

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✖ COMPUTED CORNER

SET CORNER

: LEGEND



Considerations

- There are no technical issues with BLM's DPPS Approach
- The approach is not unproven and un-tested. The State DOT&PF has been performing similar surveys and records for legal highway ROWs for over 10 years: examples are DPPS-like surveys for Denali Highway, Taylor Highway, Dalton Highway
- Maintenance and destruction of monuments a long –term liability and future expense for the State
- The GNSS system (more than just GPS) is mature and will be supported in the future. The demand for accurate location by satellite systems is insatiable.



Opportunities

- **The State has the opportunity to leverage the DPPS approach in future legal land surveys and parcel descriptions for the State by following the lead of BLM's DPPS to provide advantages such as:**
 - Ease of unofficial location of boundaries on the ground by using satellite positioning in mobile devices for groups like miners, oil and gas lessees, recreational users, prospective land owners, etc.
 - More economical future legal surveys when the need arises to mark the corners of property boundaries
 - A clear plan for future surveys that will allow efficient procedures for private land surveyors.
 - Reduced boundary uncertainty and costs due to monument destruction or disturbance..
 - Compatible and accurate boundary framework for GIS and other geospatial databases.

Quotes from Governor Walker's 2016 State of the State address closing

- We must take Bold Steps
- We the people can create solutions
- We are all in the same boat.
- We have the guts to take ahold of the wheel with 2 strong hands
- We need to put aside the politics of usual
- We must pull Alaska into the prosperous and sustainable future

Questions?

