Navajo Cadastral Survey Program

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Background

NAVAJO CADASTRAL SURVEY PROJECT

Navajo Cadastral Survey Project was established in June 1982 by a Memorandum of Agreement (MOA) between the Navajo Nation Land Department, Bureau of Indian Affairs Navajo Area Office and the US Bureau of Land Management State of Arizona to conduct cadastral survey on the Navajo Nation.
What is a Cadastral Survey?

- Cadastral Surveys are official U.S. Government surveys within the United States to identify land status including Indian lands;
- Cadastral Surveys create a framework to describe real property and create legal descriptions for land;
- We survey townships, boundaries and subdivided sections for aliquot part for legal land descriptions;
- In coordination with AZ, NM, UT and Navajo Nation, Cadastral Surveys is performed on the Navajo Nation in a joint effort to complete all surveys on Navajo Nation for future development of residential leases, community and economic development.

conducted on Navajo Nation?

- 1883 – Southern portion of the Navajo reservation.
- At the time approximately 5% of the Navajo Nation was cadastral survey back in 1800.
- The first survey was conducted under the MOA in the Burnham, NM on June 21, 1982 on the Navajo Nation.
  - Residential leases (Homesite Leases)
  - Boundary of the Coal mines
  - Navajo Nation Forestry
What is a Township and Range?

- A Township is 36 square miles (approximately 23,000 acres);
- A Township is further subdivided into 1 square mile;
- 36 Sections within a Township (1 square mile is equal to 640 acres)

- The Original Section corner was surveyed in 1927 and resurveyed in 2009 by the General Land Office (BLM) and Navajo Nation.
Surveyed in the 1883 / 1910 /1964
Stones were marked to identify section and quarter corners.
Tree were marked if they were available.

Tree markings in the early 1964.

NW Corner of Navajo Partition Land (NPL).
Surveyed in the 2000. Set two feet below the surface due to highway.

2009 Grand Canyon National Park Services (NPS) and Navajo Nation boundaries.
Navajo Nation Cadastral Survey’s Priorities

- 10 Year Plans
- 68 Townships
  - Cadastral survey will provide legal description for land conveyances (Land Withdrawals)
  - Comprehensive CLUP for the Chapters.
  - Chapter service boundaries and District boundaries.
- Major Corridors
  - Navajo Nation Roads
  - Highways (State & BIA)
  - County Roads
  - Navajo Nation Local Governance (Chapters)
  - Community Schools
  - Community and Economic Development
  - Etc.

October 2010
November 2011

2012
2015

Accomplishments

- Completed Original Cadastral surveys since 2009.
  - 2010 – 6 and 35 Protracted townships (Cameron)
  - 2011 - 7
  - 2012 - 7
  - 2013 - 6
  - 2014 – 6
  - 2015 – 3 in progress
- Pending survey – 58 Townships
BLM Cadastral Survey
Land Surveys for the Navajo Nation

Bureau of Land Management
Gerald Davis, Chief Cadastral Surveyor for Arizona

PLSS and Why Cadastral Survey...?!

• Where did the Public Land Survey System (PLSS) come from?

• Why are BLM Cadastral Surveys based on the PLSS?

• Why do we need surveys at all?
The Land Ordinance Act of 1785 defined the Public Land Survey System of surveying public land into townships.

Where did the Public Land Survey System come from?

Why are BLM Cadastral Surveys based on the PLSS?
Why do we need surveys at all?

- To create accurate and identifiable legal descriptions
- Accurate legal descriptions are necessary for efficient land management
- Land management includes economic development
- Certainty of location adds value

Why BLM Cadastral Survey?

25 USC § 176 states:

"Whenever it becomes necessary to survey any Indian or other Reservations, or any lands, the same shall be surveyed under the direction and control of the Bureau of Land Management, and as nearly as may be in conformity to the rules and regulations under which other public lands are surveyed."
Cadastral Survey Process

or

What do Cadastral Surveyors do every day?

- Locating reservation boundaries
- Identifying allotments
- Locating home sites
- Locating hospitals, schools and housing developments
- Defining lease boundaries
- Defining resource boundaries (example: coal mining or timber sales)

The Need for a Survey is Determined
The Request is Received and Acted Upon

Research:
- Official public land records
- Other federal agencies
- State and local governments
- Non-governmental sources

Evaluation of research

Plan the survey (original or retracement)

A Surveyor is Assigned

Assignment and Special Instructions are prepared and issued to the surveyor. These instructions provide the following information:

Assignment Instructions:
- Written authorization for the surveyor to perform the survey

Special Instructions:
- History of surveys in the area
- Proper authorization for survey
- Scope of work
- Method and order of procedure
- Supporting field data
Notification

The surveyor will contact the local chapter houses to provide:

- Notice to the community that there will be survey crews working in the area
- Contact information in case questions should arise

Additional Research

Through their search for any information that may prove or disprove the position of a property corner or line, the surveyor will:

- Interview local residents, if possible
- Visit local surveyors (county, private, NNLD, etc.)
- Check other common sources of information
The Survey is Executed

- The survey is conducted according to the *Manual of Surveying Instructions: For the Survey of the Public Lands of the United States (2009)*

- The survey is tied to current published datums, which provides a direct relationship to other surveys and mapping programs.

The Survey is Executed

Two Types of Cadastral Surveys:

- The object of an original survey is to:
  - Extend the PLSS into areas that have never been surveyed

- The object of a resurvey is to provide:
  - Adequate protection of existing rights (allotments)
  - Proper marking of the boundaries of tribal lands
The Survey is Executed

Proper execution of a resurvey is to “follow the footsteps” of the previous survey. This is an art not easily mastered… A surveyor must:

- Interpret field notes and plats for essential information
- Gather evidence through:
  - Diplomatic interviewing skills
  - Keen observations of manmade physical changes intended for the purpose of locating or preserving the position of the property line.
- Confidently and logically interpret the facts and data obtained to determine or perpetuate the property line.

The Corner is Monumented

Monumentation:

- Establishes a permanent marking of the lines
- Fixes corner positions to locate the surveyed lands
- Perpetuates found or identified corners

Monuments are constructed of durable material and magnets are buried to help relocate the position in case the monument is destroyed.
Field Note and Plat Preparation

- Field Notes represent the survey in text form, and:
  - Contain the written record describing monuments found or set and related information
  - Report the direction and length of lines
- Plats represent the survey in pictorial form, and:
  - Accurately depict the boundaries surveyed in direction and length

Note and Plat Review

The field notes and plats, are examined and reviewed by experienced land surveyors to ensure:

- Official records are accurate
- Detailed documentation of the survey
- Rational for decisions is documented
- Dimensions and measurements are verified
- Evidence found or recovered is accurately recorded
- Assurance of proper methods and procedures
- A thorough, independent verification of results
The Survey is Approved

The authority to approve cadastral surveys has been delegated to the Chief Cadastral Surveyors of the various state offices on behalf of the Director of the Bureau of Land Management:

“The secretary of the Interior or such officer as he may designate shall perform all executive duties appertaining to the surveying and sale of the public lands of the United States…” (43 USC 1).

The Chief Cadastral Surveyor for the state accepts the survey by signing the field notes and plat.

The Plat and Field Notes are Filed

Until the plat is filed in the official public records, the survey is not considered official. The United States Supreme Court in Cox v. Hart Cal. 1922, 43 S Ct. 154, stated:

“The running of lines in the field and the laying out and platting of townships, sections, and legal subdivisions, are not alone sufficient to constitute a survey, and until all conditions as to filing in the proper land office, and all requirements as to approval have been complied with, the lands are to be regarded as unsurveyed, and not subject to disposal as surveyed lands.”
The Plat and Field Notes are Filed

Once the survey has been accepted, the:
- Acceptance and filing notice are advertised in the Federal Register.
- The field notes and plat are filed on the date advertised.
- The survey becomes an official land record in the BLM’s records system.

Challenges

- Multiple records
- Lack of records
- Condition or lack of boundary evidence
- Conflicting records

As time goes on, more and more records are being scanned. This can be a challenge because sometimes important information is not discovered until years or decades after a survey is completed.
Protraction Diagrams

Protraction diagrams have been used since about the 1950's to delineate unsurveyed public lands. The Manual of Surveying Instructions (Manual) defines a protraction diagram as:

“A diagram representing the plan for the extension of the rectangular system over unsurveyed public lands, based upon computed values for the corner positions .... ”

Protraction Diagrams are not surveys, except when they are...

5 Corner Townships:

- A “Plat Only” survey of the Township exterior is performed
- Amended Protraction Diagrams controlled by monuments at Township corners and interior control points
- Areas of uncertainty, protraction blocks, are eliminated
- GPS or conventional survey methods could be employed to determine accurate legal descriptions within the new protraction diagrams
How can you help?

If you see surveyors working in your area, please share with them your knowledge of:

- Monuments (brass caps, stones, posts, etc)
- Locations of boundary lines
- Whether fences were built to mark boundaries
- Access to remote areas

This information is incredibly important, especially in allotment areas.

Questions

Thank you.