

**Specialist Report**  
**George McKay, Access, Lands, and Boundary Management Staff, Coronado National Forest**

**Rosemont Mine Boundary Management Mitigation**

The configuration of the proposed Rosemont Copper Operations (RCO) used for the following discussion regarding boundary management and the mitigation thereof is based on the maps provided in the proposed mine plan of operation provided by the Rosemont Copper Company (RCC). The final configuration of the RCO within the Coronado National Forest will be made by the deciding official upon completion of the Final Environmental Impact Statement and Record of Decision documents.

**Background**

The current fragmented and irregularly shaped landownership configuration in the proposed RCO area is based on numerous patented lode mining ( $\pm 20$  acres each) and millsite ( $\pm 5$  acres each) claims (non-rectangular shaped parcels)<sup>i</sup> under the Mining Act of July 26, 1866 (14 Stat. 251)<sup>ii</sup> and the General Mining Law of May 10, 1872 (17 Stat. 91)<sup>iii</sup> as well as lands patented under the Homestead Act of May 20, 1862 (12 Stat. 392)<sup>iv</sup> and Organic Administration Act of 1897 (30 Stat. 11)<sup>v</sup> (rectangular shaped parcels). Patents<sup>vi</sup> were granted for these lands by the United States between 1882 and 1995.

Approximately 202 mineral survey<sup>vii</sup> corner<sup>viii</sup> monuments<sup>ix</sup> (150 wood posts, 13 stones, and 33 iron pipes) control  $\pm 19.5$  miles of property boundary<sup>x</sup> between National Forest System (NFS) lands and private land owned by the RCC within or very near the footprint of the proposed RCO (pit, roads, plant site, truck shop, waste rock pile, dry-stack tailings, pollution management area, and security fencing) in the Coronado National Forest. The mineral survey corner monuments were originally set between 1881 and 1978.

In addition, there are  $\pm 81$  section<sup>xi</sup> and quarter-section<sup>xii</sup> corner monuments (Rectangular System of Surveys)<sup>xiii</sup> within or very near the footprint of the proposed RCO that either control  $\pm 7.5$  miles of property boundaries between NFS and private land patented under the Homestead Act or may be needed for future administrative or management purposes. The section and quarter-section corner monuments were originally set between 1874 and 1926.

There are also 29 intersection points where patented mineral surveys overlap controlled by mineral survey corner monuments and 9 intermediate corner monuments controlled by section and quarter-section corner that need to be located and corner monuments set to identify the property boundary between NFS lands and the private land<sup>xiv</sup>.

Because of the vintage of the original survey and corner monuments, many may be in some stage of obliteration (or are completely lost) and difficult to identify and recover (especially the wood post and stone monuments). There are also numerous unpatented claim corner monuments that can easily be misidentified as a patented corner monument (especially the wood post monuments) that add to the complexity of identifying the corner monuments that control property boundaries between NFS and private lands.

Because of the complexities involved regarding the dependent resurvey of patented mineral surveys, the mineral survey chapter in the "*next edition*" of the Manual of Instructions for the Survey of the Public

Lands of the United States<sup>1</sup> has been expanded to include more instructions on retracement and restoration of patented mineral surveys.

### **Perpetuation of Corner Monuments**

The perpetuation of corner monuments in their original location is important for both the protection of private property rights and the sound management of the NFS land (currently and in the future). The Forest Service Manual (FSM 7152.3 – Land Line Location Program Priorities) provides direction regarding property corners and boundary lines: "Where significant resource values exist and utilization or manipulation of those resources is planned, property corners and boundary lines shall be located, monumented, posted, and maintained"<sup>2</sup>.

In addition, the United States Code [Title 18 USC Sec. 1858 (62 Stat. 789)]<sup>xv</sup> and Arizona Revised Statutes [ARS 33-103 (D)<sup>xvi</sup> and (E)]<sup>xvii</sup> both address damage, destruction, or removal of any survey monuments and assigns both criminal and civil penalties thereof, including being held liable for all costs associated with the restoration or replacement of any monument destroyed, disfigured, removed or disturbed.

The feasibility and cost of reestablishing obliterated or lost corner monuments after the pit and the ultimate configuration of the proposed RCO is in place and reclamation begins would be extremely difficult, quite expensive, and should not be borne by the Forest Service. Therefore, no corner monuments shall be damaged, destroyed, or obliterated without prior consultation with the Forest Service and discussion as to how subject corner monument positions will be perpetuated.

### **Mitigation Measures Needed**

The responsibility and cost of perpetuating and protecting all survey monuments and other corner accessories from ground disturbing activity as well as the reestablishment or restoration of survey monuments disturbed or destroyed during mining operations and any ground disturbing activity within the RCO area belongs with the RCC.

1. A realistic and factual evaluation of the status of corner monuments (existent<sup>xviii</sup>, obliterated<sup>xix</sup>, or lost<sup>xx</sup>) that control property boundaries between NFS and private lands or are needed for current and future administrative or management purposes as well as the location and preservation of said corner monuments in the proposed RCO area shall be performed. Because of the vintage of the original surveys and corner monuments (late 1800's—early 1900's), the status and location of corner monuments shall be determined during the course of a dependent resurvey<sup>xxi</sup> performed by the Bureau of Land Management (BLM) under federal survey authority<sup>xxii</sup>. The purpose of the dependent resurvey is to protect and perpetuate the original corner positions that control property boundaries between NFS and private lands as well as corners needed for current and future administrative or management purposes within the proposed RCO area<sup>3</sup>.

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<sup>1</sup> The next edition of the Manual of Instructions for the Survey of the Public Lands of the United States became official on September 24, 2009.

<sup>2</sup> The Secretary of Agriculture, under the authority granted in the Organic Administration Act of 1897 (16 U.S.C. 474), has delegated to the Chief of the Forest Service the authority to identify, define, administer, and manage National Forest System lands and resources.

<sup>3</sup> Federal survey authority is required because the original township and mineral surveys were conducted under federal survey authority. There will be an extensive loss of original corner monuments within the proposed Rosemont Mine Complex area,

2. The BLM dependent resurveys<sup>4</sup> shall be completed prior to any ground-disturbing management activities occurring on NFS lands. Costs shall be borne by the RCC.

The BLM also has the authority<sup>xxiii</sup> to make cadastral surveys<sup>xxiv</sup> of public domain lands when the cost of the survey is defrayed (reimbursed) by an adjoining landowner (non-Federal source) to assist in obtaining needed surveys of benefit to themselves and the United States.

3. A well-monumented control network<sup>xxv</sup> set outside of the disturbance area using survey grade Global Positioning System (GPS) referenced to the property corner monuments or positions (mineral survey, section, and quarter, quarter-section, and property controlling corners) shall be established by the BLM during the dependent resurvey prior to any ground-disturbing management activities occurring on NFS lands. Costs shall be borne by the RCC.

The purpose of the control network is to protect and perpetuate corners, monuments, and property boundaries, and information concerning the location of such corners, monuments, and property boundaries within the proposed RCO area. The control network will ensure the easy recovery of any corner position or property boundary of the dependent resurvey at any time in the future and mitigate the difficulty and future expense to reestablish lost corner positions and property boundaries during reclamation.

The dependent resurvey will serve as the base for locating the control network. The control network will essentially act as reference monuments for the corner monuments or calculated corner positions determined during the dependent resurvey. Corners (existent, obliterated, or lost) identified during the BLM dependent resurvey within the RCO area will only be assigned coordinate positions referenced to the control network monuments and will not be remonumented during the dependent resurvey.

The official record of a cadastral survey (original, dependent, or independent)<sup>xxvi</sup> ordinarily consists of a graphical representation of the field survey, "the plat"<sup>xxvii</sup> and a written narrative description of the field work, "field notes"<sup>xxviii</sup>. The plats and field notes submitted for a field survey are not official until approved and accepted by the delegated authority and filed in the official public records<sup>5</sup>.

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and the potential for future litigation regarding the property boundaries between the National Forest and private lands will be greatly reduced [Forest Service Land Surveying Guide (EM-7150-3), Survey Authority, page 39)].

<sup>4</sup>The Act of March 3, 1909, (35 Stat. 845), as amended June 25, 1910, (36 Stat. 885: 43 U.S.C. 772) authorized the Secretary of the Interior to make such resurveys as, after full investigation, he may deem essential to properly mark the boundaries of the remaining public lands. The BLM has the authority to survey the boundaries of land owned by the United States, including the boundaries that separate the National Forest from patented (private) land [ *Robert W. Delzell*, 158 IBLA 238 (2003); *Theodore J. Vickman*, 132 IBLA 317 (1995)].

<sup>5</sup> The terms "approved survey" and "official survey" are often incorrectly used as being synonymous with "accepted survey." Strictly speaking an "approved survey" is a survey which has the field notes approved and the plat accepted by the BLM official who has been delegated the authority for such action. The proper term is now "accepted survey" (a survey accepted by the official having "Cadastral Survey Approval Authority"). Prior to 1910, the field notes and plats were "approved" by the Surveyor's General, which action was equivalent to the present acceptance of the plat. After 1910 they were approved by the Surveyor General, or Supervisor of Surveys, and after examination accepted by the Commissioner of the General Land Office. The field notes and plat become "official" records of the BLM when filed in the appropriate land office. The field notes and the plats of Mineral Surveys are both "approved" at the State Office level.

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<sup>xxix</sup>. The Chief Cadastral Surveyor for the state accepts the survey by signing the field notes and plat. Once the survey has been accepted, the acceptance and filing notice is advertised in the Federal Register. Once filed, they become official records in the public land records system. The Bureau of Land Management is the official depository for the public land survey records, along with the other public land records.

4. Corners shall be remonumented under the direct supervision of an Arizona Registered Land Surveyor (approved by the Forest Service) during reclamation of the RCO, or as needed during operation, and to a standard satisfactory to the Coronado National Forest Supervisor.

At a minimum, the location, relocation, or reestablishment of corner monuments shall comply with the following:

- Applicable land surveying principles, procedures, and standards as set forth in the appropriate GLO and BLM Manual of Surveying Instructions, publications, and circulars.
- Current USDA Forest Service and USDI BLM Standards and Guidelines for Cadastral Surveys using GPS Methods.
- Current Arizona Boundary Survey Minimum Standards.
- Appropriate local and state laws and regulations.
- Monument specifications provided by the Forest Service.

### **Mineral Survey Fractions**

The current fragmented and irregularly shaped landownership configuration in the proposed Rosemont Mine area has created numerous "*mineral survey fractions*"<sup>xxx</sup> that are difficult to manage efficiently because of their size and location (5571.12 - Mineral Survey Fractions) resulting in a somewhat undesirable landownership pattern.

The Small Tracts Act (P.L. 97-465) set forth procedures to mitigate future management problems associated with irregularly shaped mineral survey fractions that will more or less become an integral part of the adjoining private land [36 Code of Federal Regulations (CFR) 254, Subpart C--Conveyance of Small Tracts]<sup>6</sup>. The Forest Service has the discretionary authority under the Small Tracts Act (STA) to dispose of NFS lands or interest in NFS lands to resolve management problems associated with mineral survey fractions through sale, exchange, or interchange to the adjoining private landowner(s) (FSM 5571.1 - Small Tracts Act of 1983).

Currently, there are 7 parcels ranging in size from 0.14 to 3.02 acres of NFS lands ( $\pm 5.53$  total acres) that are completely surrounded by patented (private) mineral surveys owned by the RCC. Conveyance of the NFS parcels completely surrounded by private land via STA would improve future management efficiency and reduce management costs by eliminating the need to maintain, establish, or reestablish 32 corner monuments and  $\pm 0.85$  miles of property boundary between NFS and private lands. Any

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<sup>6</sup>36 CFR 254.34(a)(3)--Mineral Survey Fractions and 36 CFR 254.35(c)--Limitations limits the acreage and value of tracts involved in any single STA transaction under the mineral survey fraction category to 40 acres or less and an appraised fair-market value of not more than \$150,000. However, they do not limit the number of tracts involved in a single STA transaction or the number of STA transactions that may be processed with any single individual or entity.

conveyance made would be made subject to valid existing rights as a result of the discovery and location of a valuable mineral deposit in accordance with the General Mining Law of May 10, 1872, as amended.

Additional parcels of NFS lands completely surrounded by private land may also be identified upon completion and approval of the BLM dependent resurvey. There may be opportunities to block up ownership boundaries along section, quarter-section, and quarter-quarter section lines to further mitigate boundary management issues via STA.

Any STA application made would be evaluated on a case by case basis to determine whether the NFS lands involved meet the qualifying requirements for mineral survey fractions (36 CFR 254.34), are not affected by the limitations under 36 CFR 254.35, and conveyance is in the public interest (36 CFR 254.36).

**Original Survey History and Information**

<u>Mineral Surveys</u>			
Mineral Survey and Surveyor	Year Originally Surveyed	Corner Monuments Controlling Property Boundary Between NFS & Private Lands	Property Boundary Between NFS & Private Lands
General Number 286 (Roskrige)	1881	6 wood posts  An Intersection Point Needs To Be Set Via Survey	0.35 Miles
General Number 287 (Roskrige)	1881	3 wood posts	0.45 Miles
Survey Number 426 (Chillison)	1882	3 wood posts	0.39 Miles
Mineral Survey 1297 A (Roskrige)	1898	41 wood posts  5 Intersection Points Need To Be Set Via Survey	3.94 Miles
Mineral Survey 1297 B (Roskrige)	1898	13 wood posts	1.13 Miles
Mineral Survey 1299	1898	10 wood posts	1.27 Miles

(Roskruge)			
Mineral Survey 1301 (Roskruge)	1898	6 wood posts	0.8 Miles
Mineral Survey 1302 (Roskruge)	1898	6 wood posts	0.58 Miles
Mineral Survey 1303 (Roskruge)	1898	6 wood posts  2 Intersection Points Need To Be Set Via Survey	0.31 Miles
Mineral Survey 1308 (Roskruge)	1898	33 wood posts  An Intersection Point Needs To Be Set Via Survey	3.25 Miles
Mineral Survey 1311 (Roskruge)	1898	3 wood posts  An Intersection Point Needs To Be Set Via Survey	0.35 Miles
Mineral Survey 1312 (Roskruge)	1898	4 wood posts  An Intersection Point Needs To Be Set Via Survey	0.25 Miles
Mineral Survey 1388 A & B (Roskruge)	1899	22 wood posts (within Forest Boundary) 6 Intersection Points Need To Be Set Via Survey (within Forest Boundary)	1.53 Miles
Mineral Survey 2444 (Alexander)	1907	4 stone monuments  2 Intersection Points Need To Be Set Via Survey	0.59 Miles
Mineral Survey 3954 (Stevens)	1924	9 stone monuments	1.11 Miles

		2 Intersection Points Need To Be Set Via Survey	
Mineral Survey 4716 (Smith)	1973 --1977	3 iron pipe monuments	0.26 Miles
Mineral Survey 4718 (Smith)	1972 --1978	22 iron pipe monuments 3 Intersection Points Need To Be Set Via Survey	2.28 Miles
Mineral Survey 4792 (Smith)	1977 --1978	2 iron pipe monuments 2 Intersection Points Need To Be Set Via Survey	0.21 Miles
Mineral Survey 4793 (Smith)	1977 --1978	6 iron pipe monuments 3 Intersection Points Need To Be Set Via Survey	0.47 Miles
Total Mineral Survey Corner Monuments Within the National Forest in the Rosemont Mine Area		Total Property boundary Between NFS and Private Lands Controlled by Mineral Survey Corner Monuments	
202 Mining Claim Corner Monuments (156 Wood Posts: 1881 - 1889) (13 Stones: 1907 - 1924) (33 Iron Pipes: 1973 -1978)  29 intersection points need to be set via survey		±19.5 Miles	
<u>Township Surveys</u>			
Township Survey and Surveyor	Year Originally Surveyed	Corner Monuments Controlling Property Boundary Between NFS & Private Lands & Needed for Administrative or Management Purposes	Property Boundary Between NFS & Private Lands within Rosemont Area
T. 19 S., R. 16 E.	1874	±9 Wood Post Monuments	

(White) Dependent Resurvey (secs. 3, 8, 9, 10, 15, 22, 27, & 34) & Section Subdivision (secs. 8 & 9) (Hansen)	1996-1997	±3 Brass Capped Iron Pipe Monuments	0.50 mi
T. 18 S., R. 16 E. (Contzen)	1904	52 Stone Monuments	±7.0 mi
T. 18 S., R. 15 E. (Wright/Elliot)	1911	13 Brass Capped Iron Pipe Monuments	
Total Section & Quarter Corners Controlling Property Boundary Between NFS & Private Lands & Needed for Administrative or Management Purposes			Property Boundary Between NFS & Private Lands within Rosemont Area
84 (±9 Wood Post) (±52 Stone) (±16 Brass Cap Iron Pipes)			±7.5 mi

<sup>i</sup> **Lode:** Mineralized rock lying within boundaries clearly separating it from the neighboring rock and extending longitudinally in a continuous zone or belt. In mining law, and in popular usage in the Western States, it is synonymous with “ledge” and “vein” (Glossaries of BLM Surveying and Mapping Terms).

**Lode Claim:** a mining claim embracing public lands which contain minerals occurring in a vein or lode (Glossaries of BLM Surveying and Mapping Terms).

**Millsite Claim:** a mining claim embracing up to 5 acres of public land for the purpose of processing minerals. Mill sites are limited to lands that do not contain valuable minerals (Glossaries of BLM Surveying and Mapping Terms).

**Mining Claim:** A possessory interest in land, the right to explore for and extract minerals, obtained by physically locating certain lands on the ground under the authority of the Mining Law of 1872, as amended. There are four types of mining claims or sites that can be located on any vacant unappropriated public lands: lode claims, placer claims, millsites, and tunnel sites. A valid lode or placer claim contains a discovery of a valuable mineral deposit that requires filing a Notice of Location document under the Act. A valid millsite is used for the support of a mining or milling operation. A valid tunnel site must be diligently worked and maintained and may result in the location of lode claims. Only tunnel sites may not be patented.

**Note:** All mining claims are initially *unpatented* claims, which give the right only for those activities necessary to exploration and mining, and last only as long as the claim is worked every year. The original mining law gave miners the opportunity to obtain patent, much as homesteaders could obtain title under the Homestead Act. The owner of a patented mining claim can put it to any legal use.



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**Patented Mining Claim:** A person may mine and remove minerals from a mining claim without a patent; however, a mineral patent gives the owner exclusive title to the minerals, surface and other resources (timber, vegetative). A patented mining claim is one for which the federal government has passed title out of federal ownership into private ownership and the claimant.

**Patented Millsite Claim:** A person may use a valid millsite for the support of a mining or milling operation without a patent; however, a millsite patent gives the owner exclusive title to the surface and other resources (timber, vegetative).

<sup>ii</sup> **Mining Act of 1866:** The Mining Act declared minerals on public land, both surveyed and unsurveyed, free and open to exploration and occupation by all citizens of the United States, legalized rules and regulations established within a mining district that were not in conflict with the laws of the United States, and made it possible to acquire a title in fee simple to the claimed lands. The Mining Act was the first attempt the United States to regulate the mining of lode claims.

<sup>iii</sup> **General Mining Law of 1872, as amended:** The principal Federal law governing locatable minerals in the United States. The purpose of the 1872 Act was to “codify private citizens’ right of access to mineral deposits, for purposes of exploration, occupation, and purchase. The law provides U.S. citizens with an opportunity to explore, discover, and purchase certain valuable metallic and nonmetallic minerals on Federal lands that are not closed to mineral entry. The law establishes standards and guidelines to claim mineral rights, and includes provisions for local rules to be developed consistent with Federal laws (DOI/MMS Glossary of Mineral Terms).

<sup>iv</sup> **Homestead Act of May 20, 1862 [Public Law 37-64 (12 STAT 392)]:** An act passed by Congress in 1862 provided for the transfer of a 160-acre tract of public land to a citizen or head of a family who had resided on and cultivated the land for five years after the initial claim and on payment of a nominal fee. The land could also be acquired after six months of residence at \$1.25 an acre.

<sup>v</sup> **Organic Administration Act of 1897 (30 Stat. 11):** The 1897 Act included a "forest in lieu selection" provision, whereby an owner of an unperfected bona fide claim or tract of land within a designated national forest reservation could relinquish the claim or re-convey the land to the United States, and then select in lieu thereof an equal acreage of vacant public land ("lieu land") then open to settlement. In 1905, Congress repealed the 1897 Act, but preserved contracts entered into, and applications for lieu lands that had been submitted, prior to the repeal, leaving selection rights unimpaired (Act of March 3, 1905, 33 Stat. 1264).

<sup>vi</sup> **Patent:** A legal document by which the United States conveys, to those entitled thereto, legal title to some portion of the public lands (Glossaries of BLM Surveying and Mapping Terms).

<sup>vii</sup> **Mineral Survey:** A cadastral survey of a lode claim, placer claim or millsite with all its notes and plats. This type of survey is executed by a U.S. Mineral Surveyor for the purpose of marking the legal boundaries of mining claims on the public domain prior to conveyance of by patent. The location and estimated value of mining improvements are returned by the survey but no reference is made to mineral deposits (Glossaries of BLM Surveying and Mapping Terms).

<sup>viii</sup> **Corner:** A point on the surface of the earth, determined by the surveying process, which defines an extremity on a boundary of the public lands (Glossaries of BLM Surveying and Mapping Terms).

<sup>ix</sup> **Monument:** A physical structure, such as an iron post, marked stone or tree in place, which marks the location of a corner point established by a Cadastral Survey. Objects, to be ranked as monuments, should have certain physical properties such as visibility, durability and stability, and they must define location without resorting to measurements. “*Monument*” and “*corner*” are not synonymous, although the two terms are often used largely in the same sense (Glossaries of BLM Surveying and Mapping Terms).

<sup>x</sup> **Property Boundary:** A landownership division line between two parcels of land. A separation of real property rights (FSM 7151.05 – Definitions).

<sup>xi</sup> **Section Corner:** A corner at the extremity of a section boundary.

<sup>xii</sup> **Quarter-Section Corner:** A corner at an extremity of a boundary of a quarter section. Written as ¼ section

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corner, not as one fourth section corner.

<sup>xiii</sup> **Rectangular System of Surveys**: A system inaugurated by the Continental Congress on May 20, 1785, for the survey of the public lands of the United States. Its distinguishing characteristic is that in the main, and in all cases where practicable, its units are in rectangular form.

<sup>xiv</sup> **Property Controlling Corner**: A survey corner that is not on a property boundary, but which influences or fixes the location of one or more property corners (FSM 7151.05 – Definitions).

<sup>xv</sup> **Title 18, U.S.C. § 1858 (62 Stat. 789)**: Whoever willfully destroys, defaces, changes, or removes to another place any section corner, quarter-section corner, or meander post, on Government line of survey, or willfully cuts down any witness tree or any tree blazed to mark the line of a Government survey, or willfully defaces, changes, or removes any monument or bench mark of any Government survey, shall be fined not more than \$250, or imprisoned not more than six months, or both.

<sup>xvi</sup> **Arizona Revised Statute (ARS) 33-103(D)**: A person who knowingly or by gross negligence destroys, disfigures, removes or disturbs monuments described in subsection C or other permanent monuments set by the land surveyor which have the land surveyor's or public agency's cap or tag affixed to the monument is guilty of a class 2 misdemeanor.

<sup>xvii</sup> **Arizona Revised Statute (ARS) 33-103(E)**: A person acting independently or a person in responsible charge of another person who destroys, disfigures or disturbs monuments described in subsection C or other permanent monuments set by the land surveyor which have the land surveyor's or public agency's cap or tag affixed to the monument shall be civilly liable to the state, political subdivision or any other person for all costs associated with restoration or replacement of any monument destroyed, disfigured, removed or disturbed. The remedies under this subsection are in addition to any penalty which can be imposed under subsection D.

<sup>xviii</sup> **Existent Corner**: A corner whose position can be identified by verifying the evidence of the monument, or its accessories, by reference to the description that is contained in the field notes, or where the point can be located by an acceptable supplemental survey record, some physical evidence or testimony (Glossaries of BLM Surveying and Mapping Terms).

**Corner Accessories**: Nearby physical objects to which corners are referenced for their future identification or restoration. Accessories include bearing trees, mounds, pits, ledges, rocks and other natural features to which distances or directions (or both) from the corner or monument are known. Such accessories are actually a part of the monumentation (Glossaries of BLM Surveying and Mapping Terms).

<sup>xix</sup> **Obliterated Corner**: An obliterated corner is one at whose point there are no remaining traces of the monument, or its accessories, but whose location has been perpetuated, or the point for which may be recovered beyond reasonable doubt, but the acts and testimony of the interested landowners, competent surveyors, or other qualified local authorities, or witnesses, or by some acceptable record evidence (Glossaries of BLM Surveying and Mapping Terms).

<sup>xx</sup> **Lost Corner**: A corner whose position cannot be determined, beyond reasonable doubt, either from traces of the original marks or from acceptable evidence or testimony that bears on the original position, and whose location can be restored only by reference to one or more interdependent corners (Glossaries of BLM Surveying and Mapping Terms).

<sup>xxi</sup> **Dependent Resurvey**: A retracement and reestablishment of the lines of the original survey in their true original positions according to the best available evidence of the positions of the original corners. It includes the restoration of lost corners in accordance with procedures described in the Manual of Surveying Instructions (Glossaries of BLM Surveying and Mapping Terms).

<sup>xxii</sup> **Federal Survey Authority**: Public Land Ordinance of May 20, 1785. The Public Land Ordinance of May 20, 1785, vested survey authority in the Department of the Interior (USDI), General Land Office (GLO), which is now the Bureau of Land Management (BLM). This federal agency creates, identifies, and maintains the Public Land Survey System and defines the limits of the public domain either by actual survey or protractors based on official surveys. NFS lands have been reserved by Congress for a special purpose and are set apart from public domain status.

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<sup>xxiii</sup> **43 U.S.C. § 2 (R.S. 453). Duties concerning public lands:** 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, or in anywise respecting such public lands, and, also, such as relate to private claims of land, and the issuing of patents for all grants of land under the authority of the Government.

**43 U.S.C. § 772. Resurveys or retracements to mark boundaries of undisposed lands:** The Secretary of the Interior may, as of March 3, 1909, in his discretion cause to be made, as he may deem wise under the rectangular system on that date provided by law, such resurveys or retracements of the surveys of public lands as, after full investigation, he may deem essential to properly mark the boundaries of the public lands remaining undisposed of: *Provided*, That no such resurvey or retracement shall be so executed as to impair the bona fide rights or claims of any claimant, entryman, or owner of lands affected by such resurvey or retracement.

**43 U.S.C. § 773. Resurveys or retracements of township lines, etc:** Upon the application of the owners of three fourths of the privately owned lands in any township covered by public-land surveys, more than 50 per centum of the area of which townships is privately owned, accompanied by a deposit with the Secretary of the Interior, or such officer as he may designate, of the proportionate estimated cost, inclusive of the necessary work, of the resurvey or retracement of all the privately owned lands in said township, the Secretary, or such officer as he may designate, shall be authorized in his discretion to cause to be made a resurvey or retracement of the lines of said township and to set permanent corners and monuments in accordance with the laws and regulations governing surveys and resurveys of public lands. The sum so deposited shall be held by the Secretary of the Interior or such officer as he may designate, and may be expended in payment of the cost of such survey, including field and office work, and any excess over the cost of such survey and the expenses incident thereto shall be repaid pro rata to the persons making said deposits or their legal representatives. The proportionate cost of the field and office work for the resurvey or retracement of any public lands in such township shall be paid from the current appropriation for the survey and resurvey of public lands, in addition to the portion of such appropriation otherwise allowed by law for resurveys and retracements. Similar resurveys and retracements may be made on the application, accompanied by the requisite deposit, of any court of competent jurisdiction, the returns of such resurvey or retracement to be submitted to the court. The Secretary of the Interior is authorized to make all necessary rules and regulations to carry this section into full force and effect.

<sup>xxiv</sup> **Cadastral Survey:** A survey which creates, marks, defines, retraces or reestablishes the boundaries and subdivisions of the public land of the United States.

<sup>xxv</sup> **Control Network:** A group or series of interconnected survey lines and monuments which provide position data for fixing the position of corners and monuments that control property boundaries between NFS and private lands or are needed for current and future administrative or management purposes.

<sup>xxvi</sup> **Official Cadastral Survey:** The public lands are deemed to be surveyed when the survey has been accepted and the plat thereof has been filed in the appropriate land office by direction of the Bureau of Land Management.

<sup>xxvii</sup> **Plat:** As used technically by the BLM, the drawing which represents the particular area included in a survey, such as a township, private land claim or mineral claim, and the lines surveyed, established, retraced or resurveyed, showing the direction and length of each such line; the relation to the adjoining official surveys; the boundaries, descriptions, and area of each parcel of land subdivided; and, as nearly as may be practicable, a representation of the relief and improvements within the limits of the survey (Glossaries of BLM Surveying and Mapping Terms).

<sup>xxviii</sup> **Field Notes:** The official written record of the survey, certified by the field surveyor and approved by proper authority. Originally, Field Notes were prepared by hand, but they are now typewritten (Glossaries of BLM Surveying and Mapping Terms).

<sup>xxix</sup> **Cadastral Survey Approval Authority:** Prior to becoming an official cadastral survey the field notes must be approved and the plat, field notes and survey must be accepted on behalf of the Director of the Bureau of Land Management by the officer to whom he has delegated this responsibility.

<sup>xxx</sup> **Mineral Survey Fractions:** Small parcels of National Forest System (NFS) lands interspersed with or adjacent to lands transferred out of Federal ownership under the mining laws (36 CFR 254.31 Definitions).