



# **INSTRUCTION MANUAL FOR TOPOGRAPHIC AND PLANIMETRIC MAPPING**

**OKLAHOMA STATE BOARD OF LICENSURE  
FOR PROFESSIONAL ENGINEERS  
AND LAND SURVEYORS**

**ADOPTED JANUARY 17, 2019  
PURSUANT TO REVISED OKLAHOMA MINIMUM STANDARDS  
FOR THE PRACTICE OF LAND SURVEYING  
EFFECTIVE SEPTEMBER 14, 2018**

**[WWW.PELS.OK.GOV](http://WWW.PELS.OK.GOV)**

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# **Manual for Topographic and Planimetric Mapping, Including Ground, Airborne, and Spaceborne Surveys**

## **INTRODUCTION**

In order to better serve the public in regulating the practice of land surveying in Oklahoma, these minimum standards of practice are established to achieve no less than minimum standard degrees of accuracy, completeness, and quality so as to assure that topographic and planimetric mapping surveys have been performed to a stated accuracy. When more stringent survey standards than those set forth herein are required, the survey shall comply with both those standards and with the Oklahoma Minimum Standards. Where the Professional Land Surveyor elects to follow or use a more thorough method of determining accuracy, it is not the intent of these standards to interfere. Licensees failing to comply with or meet these minimum standards will be subject to disciplinary action by the State Board of Licensure for Professional Engineers and Land Surveyors (the Board).

## **PURPOSE**

This manual sets out the minimum standards for production procedures for topographic and planimetric mapping surveys; and identifies and clarifies the operable sections of Part 3 of the Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standard. The standards set forth are to promote uniform requirements for and accurate surveys by surveyors practicing in the state of Oklahoma. These established guidelines will assist the surveyor preparing topographic and planimetric mapping surveys in knowing what is required; and will assist governmental authorities having jurisdiction over such products in knowing that the work has been prepared to the stated accuracy and can be relied upon with confidence.

## **CERTIFICATES OF SURVEY**

This manual contains sample certificates required by this Board to be included with each type of survey is shown on the sample surveys. In order for a boundary survey, control survey or topographic survey to be acceptable in terms of this rule, it must be complete and shall be certified or otherwise stated as meeting these minimum technical standards. If the survey is a boundary and topographic survey, both certifications will be required.

## **SAMPLE SURVEYS**

This manual contains a sample of a Boundary Survey prepared in accordance with the Minimum Standards for the Practice of Land Surveying, a Control Survey prepared in accordance the Control Survey Standards, and a Topographic and Control Survey prepared in accordance with Topographic and Control Survey Minimum Standards. These samples should help guide the PLS prepare surveys in accordance with appropriate standard.

## **ENGINEERING SURVEYS**

Licensed professional engineers practicing within their area of competence are allowed to prepare engineering surveys which are defined by Board rule as follows: "**Engineering surveys**" means all survey activities required to support the sound conception, planning, design, construction, maintenance and operation of engineered projects, but exclude the surveying of real property for the establishment of land boundaries, rights-of-way, easements and the dependent or independent surveys or resurveys of the public land survey system. Unless a Professional Land Surveyor has provided the Professional Engineer with geocentric/geodetic control coordinates which meet the accuracy standards set forth in OAC 245:15-13-2, the Professional Engineer shall only use a coordinate system based on assumed values for the project, and so state on the documents.

## **SPECIFICATIONS FOR TOPOGRAPHIC AND PLANIMETRIC MAPPING, INCLUDING GROUND, AIRBORNE, AND SPACEBORNE SURVEYS**

(a) General.

(1) "Topographic surveys" are defined as surveys that have as their major purpose the determination of the configuration (relief) of the earth (ground) and the location of natural or artificial objects thereon.

(2) "Planimetric mapping surveys" are defined as producing a map that presents the horizontal positions only for the features represented. This is distinguished from a topographic map by the omission of relief in measurable form.

(3) "Airborne and spaceborne surveys" are defined as the use of photogrammetry, LIDAR, IFSAR, or other similar measurement technologies for obtaining reliable information about physical objects and the environment, including terrain surface, through the process of recording, measuring, and interpreting images and patterns of electromagnetic radiant energy and other phenomena. This Rule establishes minimum allowable photogrammetric production procedures and standards for photogrammetric mapping and digital data production.

(b) Production procedures for topographic and planimetric mapping surveys shall be in accordance with the standards established by Part 3 of the Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standard and applicable extensions and revisions. These standards are incorporated by reference including subsequent amendments and editions. The material is available from the FGDC at [www.fgdc.gov](http://www.fgdc.gov) at no cost. Reporting accuracy shall be in accordance with Part 1 of the FGDC geospatial standards. The reporting methodology shall be in accordance with the Federal Geographic Data Committee, Geospatial Positioning Accuracy Standards, Part 1 Reporting Methodology. The Geospatial Position Accuracy shall be reported by positional accuracy as defined in two components: horizontal and vertical. Horizontal Positional Accuracy is the radius of the circle of uncertainty, such that the true or theoretical location of the point falls within that circle 95-percent of the time. Horizontal Accuracy may be tested by comparing the planimetric coordinates of surveyed ground points with the coordinates of the same points from an independent source of equal or higher order. Vertical Positional Accuracy is a linear uncertainty value, such that the true or theoretical location of the point falls within +/- of that linear uncertainty value 95-per cent of the time. Vertical Accuracy may be tested by comparing the elevation of surveyed ground points with the elevations of the same point determined from a source of equal or higher accuracy.

(c) Topographic or planimetric maps, orthophotos, and related electronic data, unless marked as "Preliminary Map," shall meet one of the below accuracies, as contractually specified to FGDC Standards, or National Agriculture Imagery Program of the US Department of Agriculture (NAIP) Standards, or to State adopted base mapping standards for horizontal and vertical accuracies. The NAIP imagery standards are incorporated by reference including subsequent

amendments and editions and may be accessed free of charge at [http://www.fsa.usda.gov/Internet/FSA\\_File/naip\\_info\\_sheet\\_2013.pdf](http://www.fsa.usda.gov/Internet/FSA_File/naip_info_sheet_2013.pdf).

(1) Planimetric Horizontal Accuracy: The horizontal accuracy is based upon the American Society of Photogrammetry and Remote Sensing (ASPRS) Standard for Class 2 and reported in agreement with the National Standard for Spatial Data Accuracy. The NSSDA Horizontal Positional Accuracy Statistic at the 95% confidence level is determined by multiplying the Root Mean Square Error (RMSE) of the data set by 1.7308.

NSSDA example Mapping Scale of Survey Data	Positional Accuracy Statistic
1"= 10 ft.	0.3 feet
1"= 20 ft.	0.7 feet
1"= 30 ft.	1.0 feet
1"= 40 ft.	1.4 feet
1"= 50 ft.	1.7 feet
1"= 60 ft.	2.1 feet
1"= 80 ft.	2.8 feet
1"= 100 ft.	3.5 feet
1"= 200 ft.	6.9 feet
1"= 400 ft.	13.8 feet
1"= 500 ft.	17.3 feet
1"= 1000 ft.	34.6 feet
1"= 2000 ft.	69.2 feet

The above accuracies shall be subservient to the significant figures graphically shown with annotations of planimetric features.

(2) Vertical Accuracy: The vertical accuracy is based upon the ASPRS Standard for Class 1 and reported in agreement with the National Standard for Spatial Data Accuracy. The NSSDA Vertical Positional Accuracy Statistic at the 95% confidence level is determined by multiplying the Root Mean Square Error (RMSE) of the data set by 1.9600.

NSSDA example Mapping Contour Interval of Survey Data	Positional Accuracy Statistic
1 foot	0.7 feet
2 feet	1.3 feet
5 feet	3.2 feet
10 feet	6.5 feet
15 feet	9.7 feet

(d) When the resulting product is a digital (electronic) data set, or a map or document that consists of more than one sheet or otherwise cannot be certified, a project report shall be certified. The report shall be marked "Preliminary" if applicable.

(e) A minimum of two ground control point (Bench Marks) shall be shown for topographic and planimetric mapping projects.

(f) The project map or report shall contain the following information:

- (1) Date of original data acquisition;
- (2) Altitude of sensor and sensor focal length, as applicable;
- (3) Date of document or data set compilation;
- (4) If hard copy product is produced, the maps shall contain a north arrow, map legend, final document scale, including bargraph, and contour interval, as applicable;
- (5) Coordinate system for horizontal and vertical denoting US Survey Feet or meters (i.e., NAD83, assigned, or other coordinate system);
- (6) A list or note showing the control points used for the project. The minimum data shown for each point shall include: physical attributes (e.g. iron rod, railroad spike), latitude and longitude (or X and Y Grid coordinates), and elevation, as applicable;
- (7) If other data is included, the source and accuracy of those items shall be indicated.
- (8) For topographic maps or data sets, contours in areas obscured by man-made or natural features shall be uniquely identified or enclosed by a polygon identifying the obscured area and shall be shown as [broken lines]. The accuracies of the contours or of features in this obscured area shall be noted "No reliance is to be placed on the accuracy of these contours;"
- (9) A vicinity map depicting the project location on the first sheet of all hard copy maps or in the report accompanying digital files; and

(10) The surveyor shall devise a method of reporting which topographic or planimetric features were intended to be surveyed and mapped, the style of cartographic representation employed for each, and the degree of intended completeness in the surveying and mapping of each feature. As with abbreviations, and any symbols, line types, etc. shown on the survey map shall be explained and/or defined in the legend.

(g) Nothing in this Rule shall be construed to negate or replace the relative accuracy standards found in Rules **Minimum technical standards for land or boundary surveys - OAC 245:15-13-2(c)**.

(h) A certificate, substantially in the following form, shall be affixed to all maps or reports:

" I, \_\_\_\_\_, certify that this project was completed under my direct and responsible charge from an actual survey made under my supervision; that this \_\_\_\_\_ (insert as appropriate: ground, airborne or spaceborne) survey was performed at the \_\_\_ percent confidence level to meet Federal Geographic Data Committee Standards; that this survey was performed to meet the requirements for a topographic/planimetric survey meets the Oklahoma Minimum Technical Standards for the practice of land surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors. The original data was obtained on \_\_\_\_\_ (date) \_\_\_\_\_; that the survey was completed on \_\_\_ (date) \_\_\_\_\_; that contours shown as [broken lines] may not meet the stated standard; and all coordinates are based on \_\_\_\_\_ 'NAD 83' and realization (date of adjustment of coordinate system) or 'NAD 27' and all elevations are based on \_\_\_\_\_ (NGVD 29, NAVD 88, or other)."

(i) Engineers shall use assigned coordinate values, unless a Professional Surveyor provides Geocentric/Geodetic Coordinates on site.



GEOSPATIAL POSITIONING ACCURACY STANDARDS  
PART 3: National Standard for Spatial Data Accuracy

Subcommittee for Base Cartographic Data  
Federal Geographic Data Committee

Link located at: <http://www.fgdc.gov/standards/projects/accuracy/part3/chapter3>



# **SAMPLE BOUNDARY AND CONTROL CERTIFICATIONS**

# SAMPLE CERTIFICATIONS

## Boundary Survey Certification

This plat of survey meets the Oklahoma Minimum Standards for the Practice of Land Surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.

## Control Survey Certification

I, *INSERT NAME OF SURVEYOR*, certify that this horizontal/vertical control survey was completed under my direct and responsible charge from an actual survey made under my supervision and meets the Oklahoma Minimum Standards for the Practice of Land Surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.

Control Notes:

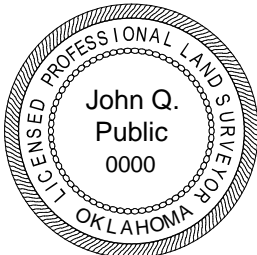
1. All horizontal coordinate values shown are U.S. Survey feet and all vertical elevation values are shown in feet.
2. All control points are based on initial control (*list control points*). Control point (*list control points and procedure used*) as a basis for base horizontal and vertical control. Control point (*list control points and procedure used*) to be used a basis of bearing.
3. All bearings are [*state datum used (assumed bearings, OPUS solutions, NAD 83)*] as determined by (*procedure used*). All distances are [*state distance type (grid or ground)*] as determined by (*state procedure used*) and adjusted by field measurements to ground distances in U.S. survey feet. All field measurements and angles applied to control points were made with a (*insert make, model, and accuracy of equipment*).
4. All elevations of control points are based on initial elevation of (*list control point and procedure used*), the datum is (*list vertical datum used*). All elevations are determined by performing a (*list procedure performed*) with a (*insert make, model, and accuracy of equipment*), adjusted to (*define accuracy*) accuracy.
5. All control points were set and observed on (*insert date observed*) and adjusted to final coordinates on (*insert date adjusted*).

## Topographic Survey Certification

I, *NAME OF LAND SURVEYOR*, certify that this project was completed under my direct and responsible charge from an actual survey made under my supervision; that this (*insert as appropriate: ground, airborne or spaceborne*) survey was performed at the \_\_\_ percent confidence level to meet Federal Geographic Data Committee Standards; that this survey was performed to meet the Specifications for Topographic and Planimetric Mapping contained in the Oklahoma Minimum Standards for the Practice of Land Surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors. The original data was obtained on (*insert date*); that the survey was completed on (*insert date of completion*); that contours shown as (*description of obscure contour lines*) may not meet the stated standard; and all coordinates are based on (*list horizontal data projection*) and adjusted to (*list final adjustment values*) and all elevations are based on (*list vertical projection*).

Original Signature  
Name of Surveyor and PLS #

Date  
Date of signature



**COMPANY or INDIVIDUAL'S NAME**  
ADDRESS, TELEPHONE NUMBER,  
Certificate of Authorization # (if applicable)

**SAMPLE CERTIFICATION**  
MINIMUM STANDARDS

Date of any revisions

# Control Certification

Control for a tract of land lying in the SW/4 of Section 5- T2N-R20W of the Indian Meridian, Jackson County, Oklahoma. Methodology described as follows:

**Control Notes:**

1. All horizontal coordinate values shown are U.S. Survey feet and all vertical elevation values are shown in feet.
2. All control points are based on initial control (*list control points*). Control point (*list control points and procedure used*) as a basis for base horizontal and vertical control. Control point (*list control points and procedure used*) to be used a basis of bearing.
3. All bearings are [*state datum used (assumed bearings, OPUS solutions, NAD 83)*] as determined by (*procedure used*). All distances are [*state distance type (grid or ground)*] as determined by (*state procedure used*) and adjusted by field measurements to ground distances in U.S. survey feet. All field measurements and angles applied to control points were made with a (*insert make, model, and accuracy of equipment*).
4. All elevations of control points are based on initial elevation of (*list control point and procedure used*), the datum is (*list vertical datum used*). All elevations are determined by performing a (*list procedure performed*) with a (*insert make, model, and accuracy of equipment*), adjusted to (*define accuracy*) accuracy.
5. All control points were set and observed on (*insert date observed*) and adjusted to final coordinates on (*insert date adjusted*).

Point#	Northing	Easting	Elevation	Description
1	488324.1737	1568897.7765	1412.8000	CONTROL POINT # 1 SET 1/2" IRON
2	488340.8084	1569114.1463	1413.2500	CONTROL POINT # 2 SET 1/2" IRON
3	488005.4162	1569234.3887	1458.7500	CONTROL POINT # 3 SET 1/2" IRON

Point#	Latitude (DMS)	Longitude (DMS)	Convergence	Combined Scale (Gnd->Grd)
1	N34°40'04.61963"	W99°19'44.43563"	N 00°45'16" E	0.99986943626054
2	N34°40'04.81233"	W99°19'41.84797"	N 00°45'14" E	0.99986941610018
3	N34°40'01.51061"	W99°19'40.35566"	N 00°45'13" E	0.99986721694047

I, INSERT NAME OF SURVEYOR, certify that this horizontal/vertical control survey was completed under my direct and responsible charge from an actual survey made under my supervision and meets the Oklahoma Minimum Standards for the Practice of Land Surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.

Original Signature  
Name of Surveyor and PLS #

Date  
Date of signature



<b>COMPANY or INDIVIDUAL'S NAME</b> ADDRESS, TELEPHONE NUMBER, Certificate of Authorization # (if applicable)
<b>SAMPLE CONTROL CERT.</b> MINIMUM STANDARDS
Date of any revisions

# **SAMPLE MINIMUM STANDARD SURVEYS**

- **UPDATED SAMPLE MINIMUM STANDARDS SURVEY**
- **SAMPLE MINIMUM STANDARDS SURVEY WITH CONTROL STANDARDS ADDED**
- **SAMPLE MINIMUM STANDARDS SURVEY WITH CONTROL AND TOPOGRAPHIC STANDARDS ADDED**

**LEGAL DESCRIPTION:**

A tract of land lying in the SW/4 of Section 5- T2N-R20W of the Indian Meridian, Jackson County, Oklahoma, more particularly described as follows:

Commencing at the SW Corner of said Section 5, THENCE S89°11'53"E along the south line of said Section 5 a distance of 1325.66 feet to the POINT OF BEGINNING;

THENCE N13°11'15"E a distance of 170.76 feet;  
 THENCE N27°23'59"W a distance of 129.20 feet;  
 THENCE N01°46'50"E a distance of 119.98 feet;  
 THENCE N76°22'43"E a distance of 120.71 feet to a point of curvature;  
 THENCE along a tangent curve to the right having a radius of 200.00 for an arc distance of 169.78 (having a chord of S79°18'09"E - 164.73);  
 THENCE S54°59'01"E a distance of 238.15 feet;  
 THENCE S14°26'02"W a distance of 276.24 feet to a point on the South line of said Section 5;  
 THENCE N89°11'53"W along said south line a distance of 388.63 feet to the POINT OF BEGINNING.

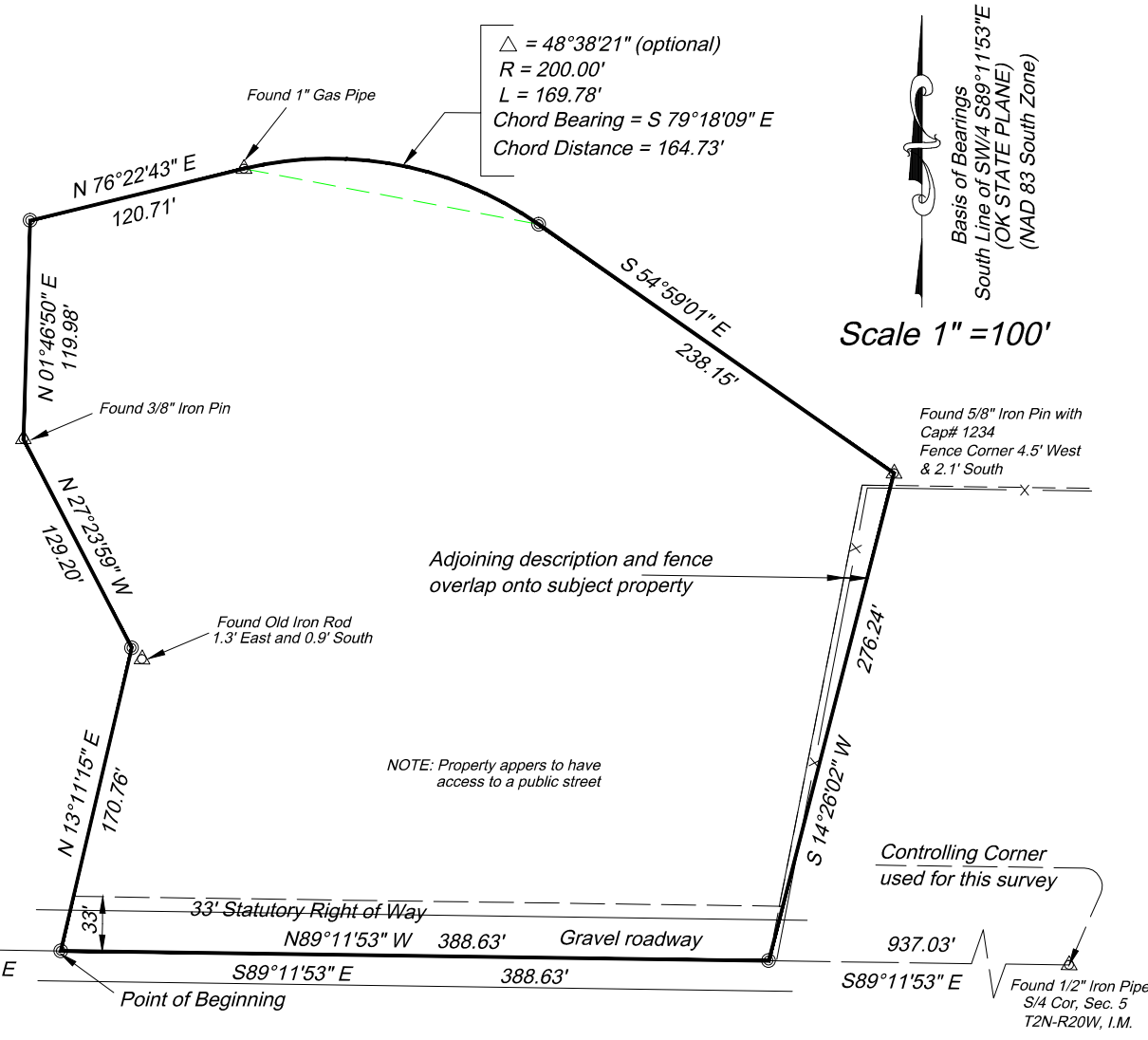
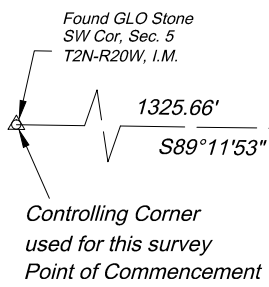
Basis of Bearings of Property Description is Oklahoma State Plane Bearings (NAD 83 South Zone) the South Line of the SW/4 of said Section 5 = S89°11'53"E

This property description was prepared on [insert date] by John Q. Public, Licensed Professional Land Surveyor No. 0000.

**CERTIFICATE OF SURVEY:**

This plat of survey meets the Oklahoma Minimum Standards for the practice of land surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.

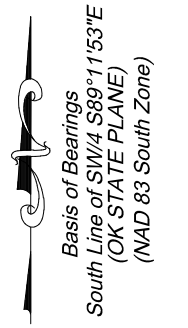
Original Signature \_\_\_\_\_  
 Name of Surveyor and PLS # \_\_\_\_\_  
 Date \_\_\_\_\_  
 Date of signature \_\_\_\_\_  
 Date \_\_\_\_\_  
 Date of last site visit \_\_\_\_\_



NOTE: Property appears to have access to a public street

Adjoining description and fence overlap onto subject property

Scale 1" = 100'



- LEGEND**
- ⊙ = Set 1/2" Iron Pin w/ Cap #0000
  - △ = Found Existing Monument
  - x — = Existing Fence

**COMPANY or INDIVIDUAL'S NAME**  
 ADDRESS, TELEPHONE NUMBER,  
 Certificate of Authorization # (if applicable)

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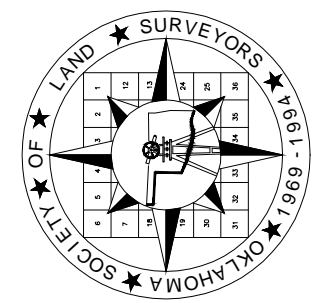
**SAMPLE SURVEY**  
 MINIMUM STANDARDS

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Date(or range of dates) of site visit (field work)  
 Date of any revisions

OKLAHOMA MINIMUM STANDARDS  
 FOR THE PRACTICE OF LAND SURVEYING  
 Published and Distributed as a Public Service  
 Oklahoma Society of Land Surveyors  
 13905 Twin Ridge Road, Edmond, OK 73034  
 or visit our web site [www.osls.org](http://www.osls.org)

**ATTENTION:**  
 This sample plat of survey represents the minimum standards for boundary surveys in the State of Oklahoma as adopted May 11, 2009 by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors. Local governing requirements, title company, or client specifications, if more stringent, shall be adhered to.



**LEGAL DESCRIPTION:**

A tract of land lying in the SW/4 of Section 5- T2N-R20W of the Indian Meridian, Jackson County, Oklahoma, more particularly described as follows:

Commencing at the SW Corner of said Section 5, THENCE S89°11'53"E along the south line of said Section 5 a distance of 1325.66 feet to the POINT OF BEGINNING;

THENCE N13°11'15"E a distance of 170.76 feet;  
 THENCE N27°23'59"W a distance of 129.20 feet;  
 THENCE N01°46'50"E a distance of 119.98 feet;  
 THENCE N76°22'43"E a distance of 120.71 feet to a point of curvature;  
 THENCE along a tangent curve to the right having a radius of 200.00 for an arc distance of 169.78 (having a chord of S79°18'09"E - 164.73);  
 THENCE S54°59'01"E a distance of 238.15 feet;  
 THENCE S14°26'02"W a distance of 276.24 feet to a point on the South line of said Section 5;  
 THENCE N89°11'53"W along said south line a distance of 388.63 feet to the POINT OF BEGINNING.

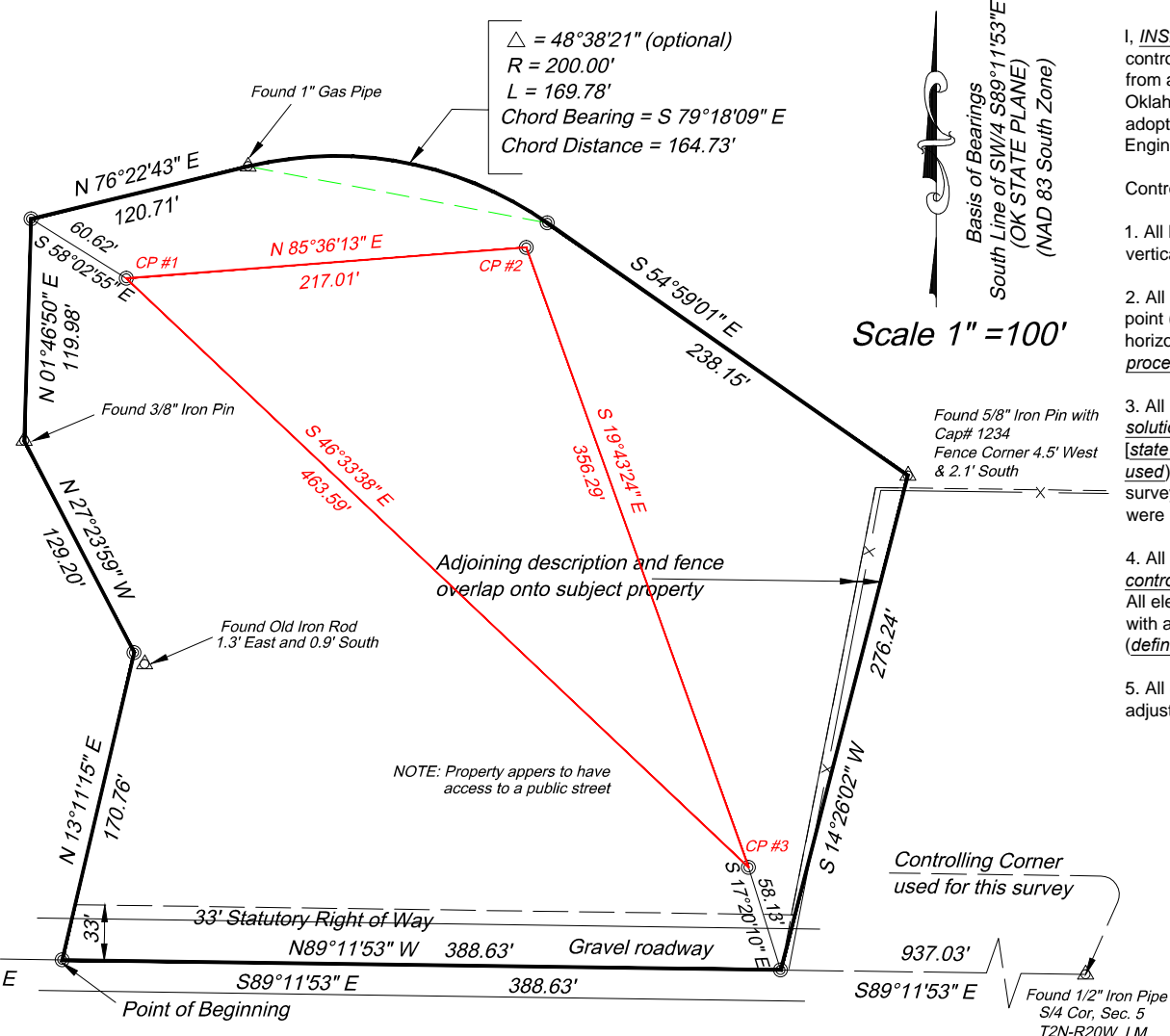
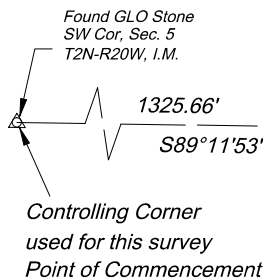
Basis of Bearings of Property Description is Oklahoma State Plane Bearings (NAD 83 South Zone) the South Line of the SW/4 of said Section 5 = S89°11'53"E

This property description was prepared on [insert date] by John Q. Public, Licensed Professional Land Surveyor No. 0000.

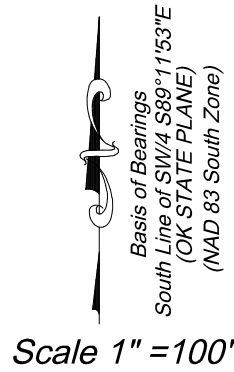
**CERTIFICATE OF SURVEY:**

This plat of survey meets the Oklahoma Minimum Standards for the practice of land surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.

Original Signature  
 Name of Surveyor and PLS #  
Date  
 Date of signature  
Date  
 Date of last site visit



△ = 48°38'21" (optional)  
 R = 200.00'  
 L = 169.78'  
 Chord Bearing = S 79°18'09" E  
 Chord Distance = 164.73'



**Control Survey Certification**

I, INSERT NAME OF SURVEYOR, certify that this horizontal/vertical control survey was completed under my direct and responsible charge from an actual survey made under my supervision and meets the Oklahoma Minimum Standards for the Practice of Land Surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.

**Control Notes:**

- All horizontal coordinate values shown are U.S. Survey feet and all vertical elevation values are shown in feet.
- All control points are based on initial control (list control points). Control point (list control points and procedure used) as a basis for base horizontal and vertical control. Control point (list control points and procedure used) to be used a basis of bearing.
- All bearings are [state datum used (assumed bearings, OPUS solutions, NAD 83)] as determined by (procedure used). All distances are [state distance type (grid or ground)] as determined by (state procedure used) and adjusted by field measurements to ground distances in U.S. survey feet. All field measurements and angles applied to control points were made with a (insert make, model, and accuracy of equipment).
- All elevations of control points are based on initial elevation of (list control point and procedure used), the datum is (list vertical datum used). All elevations are determined by performing a (list procedure performed) with a (insert make, model, and accuracy of equipment), adjusted to (define accuracy) accuracy.
- All control points were set and observed on (insert date observed) and adjusted to final coordinates on (insert date adjusted).

**CONTROL DATA:**

CONTROL POINT # 1 SET 1/2" IRON PIN WITH CAP N:488324.1737 E:1568897.7765 ELEV. 1412.80'	CONTROL POINT # 2 SET 1/2" IRON PIN WITH CAP N:488340.8084 E:1569114.1463 ELEV. 1413.25'	CONTROL POINT # 3 SET 1/2" IRON PIN WITH CAP N:488005.4162 E:1569234.3887 ELEV. 1458.75'
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**LEGEND**

- ⊙ = Set 1/2" Iron Pin w/ Cap #0000
- △ = Found Existing Monument
- x — = Existing Fence
- = Control Line

**COMPANY or INDIVIDUAL'S NAME**  
 ADDRESS, TELEPHONE NUMBER,  
 Certificate of Authorization # (if applicable)

**SAMPLE SURVEY**  
 MINIMUM STANDARDS

Date(or range of dates) of site visit (field work)  
 Date of any revisions

**LEGAL DESCRIPTION:**

A tract of land lying in the SW/4 of Section 5- T2N-R20W of the Indian Meridian, Jackson County, Oklahoma, more particularly described as follows:

Commencing at the SW Corner of said Section 5, THENCE S89°11'53"E along the south line of said Section 5 a distance of 1325.66 feet to the POINT OF BEGINNING;

THENCE N13°11'15"E a distance of 170.76 feet;  
 THENCE N27°23'59"W a distance of 129.20 feet;  
 THENCE N01°46'50"E a distance of 119.98 feet;  
 THENCE N76°22'43"E a distance of 120.71 feet to a point of curvature;  
 THENCE along a tangent curve to the right having a radius of 200.00 for an arc distance of 169.78 (having a chord of S79°18'09"E - 164.73);  
 THENCE S54°59'01"E a distance of 238.15 feet;  
 THENCE S14°26'02"W a distance of 276.24 feet to a point on the South line of said Section 5;  
 THENCE N89°11'53"W along said south line a distance of 388.63 feet to the POINT OF BEGINNING.

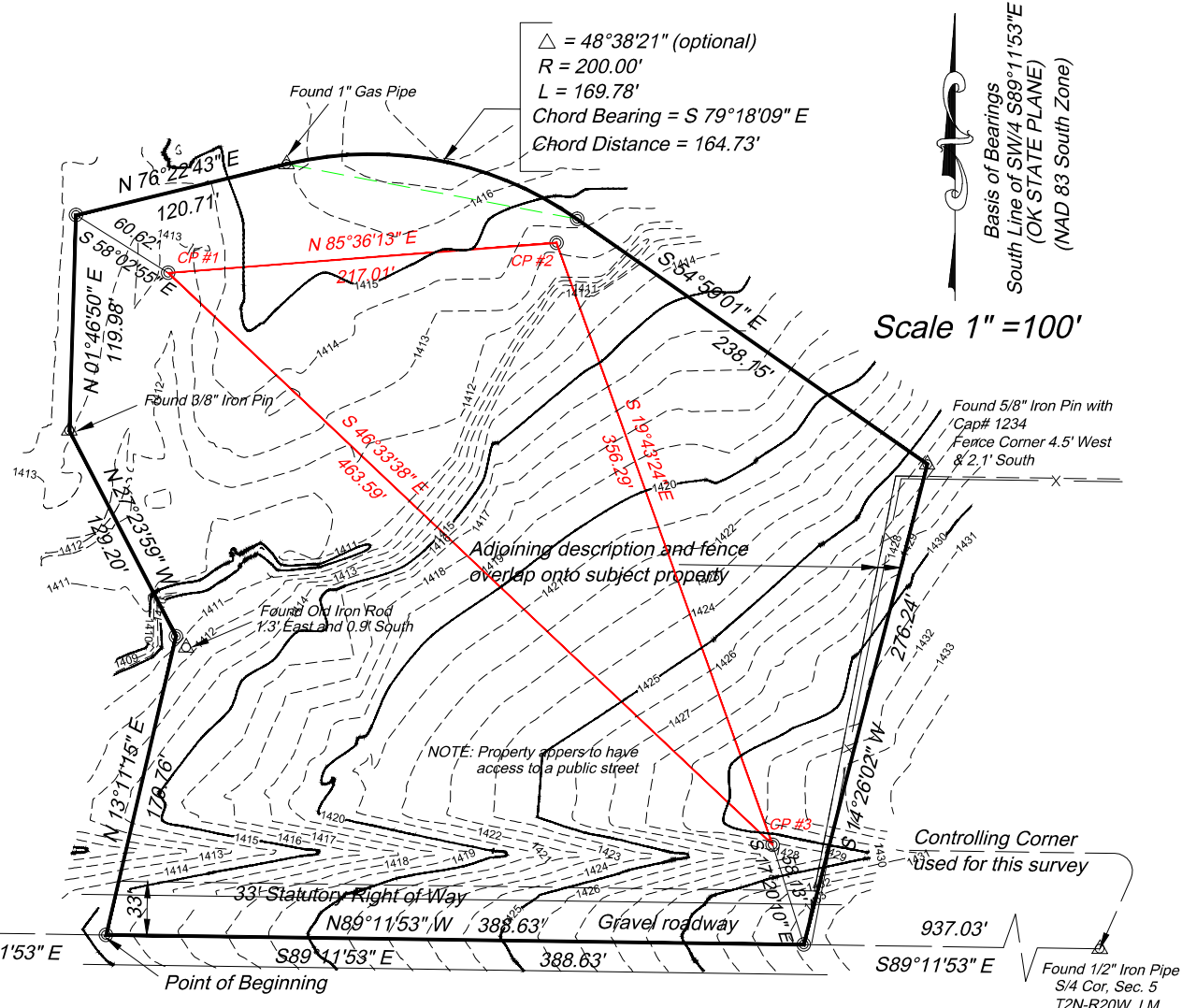
Basis of Bearings of Property Description is Oklahoma State Plane Bearings (NAD 83 South Zone) the South Line of the SW/4 of said Section 5 = S89°11'53"E

This property description was prepared on [insert date] by John Q. Public, Licensed Professional Land Surveyor No. 0000.

**CERTIFICATE OF SURVEY:**

This plat of survey meets the Oklahoma Minimum Standards for the practice of land surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors.

Original Signature \_\_\_\_\_  
 Name of Surveyor and PLS # \_\_\_\_\_  
 Date \_\_\_\_\_  
 Date of signature \_\_\_\_\_  
 Date \_\_\_\_\_  
 Date of last site visit \_\_\_\_\_

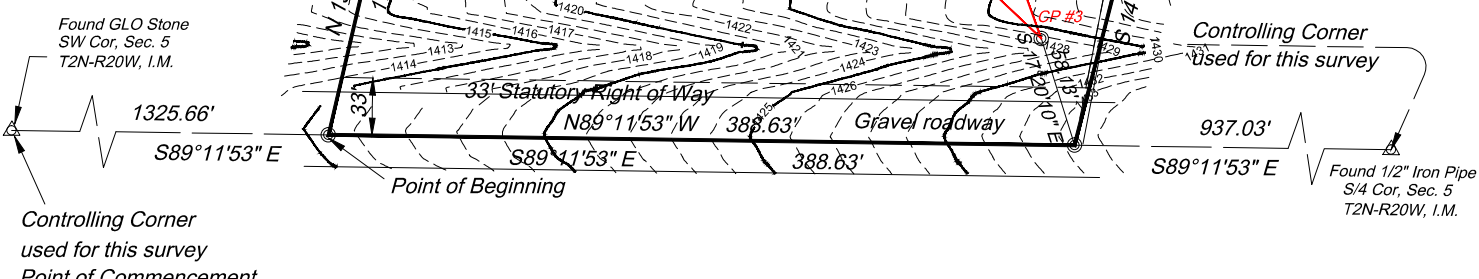


**Topographic Survey Certification**

I, NAME OF LAND SURVEYOR, certify that this project was completed under my direct and responsible charge from an actual survey made under my supervision; that this (insert as appropriate: ground, airborne or spaceborne) survey was performed at the \_\_\_ percent confidence level to meet Federal Geographic Data Committee Standards; that this survey was performed to meet the Specifications for Topographic and Planimetric Mapping contained in the Oklahoma Minimum Standards for the Practice of Land Surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors. The original data was obtained on (insert date); that the survey was completed on (insert date of completion); that contours shown as (description of obscure contour lines) may not meet the stated standard; and all coordinates are based on (list horizontal data projection) and adjusted to (list final adjustment values) and all elevations are based on (list vertical projection).

**CONTROL DATA:**

CONTROL POINT # 1 SET 1/2" IRON PIN WITH CAP N:488324.1737 E:1568897.7765 ELEV. 1412.80'	CONTROL POINT # 2 SET 1/2" IRON PIN WITH CAP N:488340.8084 E:1569114.1463 ELEV. 1413.25'
	CONTROL POINT # 3 SET 1/2" IRON PIN WITH CAP N:488005.4162 E:1569234.3887 ELEV. 1428.75'



- LEGEND**
- ⊙ = Set 1/2" Iron Pin w/ Cap #0000
  - △ = Found Existing Monument
  - x — = Existing Fence
  - = Control Line

**COMPANY or INDIVIDUAL'S NAME**  
 ADDRESS, TELEPHONE NUMBER,  
 Certificate of Authorization # (if applicable)

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**SAMPLE SURVEY**  
 MINIMUM STANDARDS

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Date(or range of dates) of site visit (field work)  
 Date of any revisions