

REFERENCE TITLE: standards; Arizona plane coordinate system

State of Arizona
Senate
Fifty-seventh Legislature
Second Regular Session
2026

SB 1756

Introduced by
Senator Shope

AN ACT

AMENDING SECTIONS 33-131, 33-132, 33-133, 33-134, 33-135, 33-136, 33-137
AND 33-138, ARIZONA REVISED STATUTES; RELATING TO LANDMARKS AND SURVEYS.

(TEXT OF BILL BEGINS ON NEXT PAGE)

Be it enacted by the Legislature of the State of Arizona:

Section 1. Heading change

The article heading of title 33, chapter 1, article 3, Arizona Revised Statutes, is changed from "ARIZONA COORDINATE SYSTEM, 1983" to "ARIZONA PLANE COORDINATE SYSTEM".

Sec. 2. Section 33-131, Arizona Revised Statutes, is amended to read:

33-131. Arizona plane coordinate system; zones; composition

A. The Arizona PLANE coordinate system, ~~1983~~, is the system of plane coordinates ~~which~~ THAT has been established by the national geodetic survey for defining and stating the positions or locations of points on the surface of the earth in this state. THE ARIZONA PLANE COORDINATE SYSTEM IS A SUBSET OF THE NATIONAL STATE PLAN COORDINATE SYSTEM AND IS DIVIDED INTO ZONES OF GEOGRAPHIC SIMILARITY ACROSS THIS STATE.

B. The Arizona PLANE coordinate system, ~~1983, contains three zones as follows:~~

- ~~1. The west zone, composed of La Paz, Mohave and Yuma counties.~~
- ~~2. The central zone, composed of Coconino, Maricopa, Pima, Pinal, Santa Cruz and Yavapai counties.~~
- ~~3. The east zone, composed of Apache, Cochise, Gila, Graham, Greenlee and Navajo counties.~~ IS A COMPONENT OF THE NATIONAL SPATIAL REFERENCE SYSTEM AS UPDATED AND PUBLISHED BY THE NATIONAL GEODETIC SURVEY. THE NATIONAL SPATIAL REFERENCE SYSTEM IS A NATIONAL COORDINATE SYSTEM THAT DEFINES THE ELEMENTS OF LATITUDE, LONGITUDE, HEIGHT, SCALE, GRAVITY AND ORIENTATION THROUGH THE UNITED STATES.

C. In any ~~land description~~ MAP, REPORT OF SURVEY OR GEOSPATIAL DOCUMENT in which the Arizona PLANE coordinate system, ~~1983~~, is ~~utilized~~ USED, the system shall be designated AS THE "Arizona PLANE coordinate system", ~~1983, _____ zone", with the name of the appropriate zone inserted~~ AND APPROPRIATE METADATA SHALL BE INCLUDED, WHICH MUST INCLUDE THE NATIONAL SPATIAL REFERENCE SYSTEM REFERENCE FRAME, EPOCH DATE AND NAME OF THE APPROPRIATE ARIZONA PLANE COORDINATE SYSTEM ZONE.

Sec. 3. Section 33-132, Arizona Revised Statutes, is amended to read:

33-132. Coordinates of system

A. The plane coordinates of a point on the earth's surface, to be used in the position or location of such point in the appropriate zone of the ARIZONA PLANE COORDINATE system, shall consist of two distances, expressed in feet and decimals of a foot (foot value 0.3048 meter exact). One of these distances, to be known as the "X-coordinate", OR "EASTING", shall give the position in an east-and-west direction, and the other, to be known as the "Y-coordinate", OR "NORTHING", shall give the position in a north-and-south direction. ~~These coordinates shall depend on and conform to the coordinates on the Arizona coordinate system, 1983, of the horizontal control stations of the national geodetic survey in this~~

~~state, as these coordinates have been determined by the survey.~~
COORDINATES IN THE ARIZONA PLANE COORDINATE SYSTEM SHALL BE COMPUTED FROM
THE NATIONAL SPATIAL REFERENCE SYSTEM LATITUDE AND LONGITUDE OR VICE VERSA
USING ALGORITHMS AND MATHEMATICAL FORMULAS CONSISTENT WITH THOSE PUBLISHED
BY THE NATIONAL GEODETIC SURVEY. THE USE OF THE TERM "ARIZONA PLANE
COORDINATE SYSTEM" OR "AZPCS" ON ANY MAP, REPORT OF SURVEY OR GEOSPATIAL
DOCUMENT MUST BE LIMITED TO DATA THAT IS REFERENCED AS PRESCRIBED BY THIS
ARTICLE AND MUST NOT HAVE ANY ADDITIONAL SCALING, ROTATING OR TRANSLATING
OR ANY OTHER MODIFICATIONS.

B. For the purpose of more precisely defining the Arizona PLANE
coordinate system, the ~~following~~ definitions OF THE NATIONAL SPATIAL
REFERENCE SYSTEM of the national geodetic survey ON THE EFFECTIVE DATE OF
THIS AMENDMENT TO THIS SECTION are adopted. ~~:-~~

~~1. The Arizona coordinate system, 1983, west zone, is a transverse
mercator projection of the North American datum, 1983, having a central
meridian 113 o 45' 00" west of Greenwich, on which meridian the scale is
set one part in fifteen thousand too small. The origin of the coordinates
is at the intersection of the meridian 113 o 45' 00" west of Greenwich and
the parallel of 31 o 00' 00" north latitude. This origin is given the
coordinates of "X" equals seven hundred thousand feet and "Y" equals zero
feet.~~

~~2. The Arizona coordinate system, 1983, central zone, is a
transverse mercator projection of the North American datum, 1983, having a
central meridian 111 o 55' 00" west of Greenwich, on which meridian the
scale is set at one part in ten thousand too small. The origin of the
coordinates is at the intersection of the meridian 111 o 55' 00" west of
Greenwich and the parallel of 31 o 00' 00" north latitude. This origin is
given the coordinates of "X" equals seven hundred thousand feet and "Y"
equals zero feet.~~

~~3. The Arizona coordinate system, 1983, east zone, is a transverse
mercator projection of the North American datum, 1983, having a central
meridian 110 o 10' 00" west of Greenwich, on which meridian the scale is
set at one part in ten thousand too small. The origin of coordinates is
at the intersection of the meridian 110 o 10' 00" west of Greenwich and
the parallel of 31 o 00' 00" north latitude. The origin is given the
coordinates of "X" equals seven hundred thousand feet and "Y" equals zero
feet.~~

C. WHEN REPORTED, ORTHOMETRIC HEIGHTS MUST CONFORM TO STANDARDS
ADOPTED BY THE NATIONAL GEODETIC SURVEY FOR POINTS INCLUDED IN THE
NATIONAL SPATIAL REFERENCE SYSTEM. ADDITIONAL METADATA MUST BE INCLUDED
TO DOCUMENT THE ORTHOMETRIC HEIGHTS, WHEN DETERMINED AND REPORTED ON THE
MAP, REPORT OF SURVEY OR GEOSPATIAL DOCUMENT IN WHICH THE ARIZONA PLANE
COORDINATE SYSTEM IS USED.

1 Sec. 4. Section 33-133, Arizona Revised Statutes, is amended to
2 read:

3 33-133. Ground markings of system; accuracy standards;
4 geodetic control stations

5 A. The position of the Arizona PLANE coordinate system shall be
6 marked on the ground by ~~horizontal~~ GEODETIC control stations, which have
7 been established in conformity with standards ~~adopted by the federal~~
8 ~~geodetic control committee for first order, second order class I or second~~
9 ~~order class II surveys or equivalent standards adopted by successors, at~~
10 ~~the time the surveys were made and computed on the North American datum,~~
11 ~~1983~~ AND SPECIFICATIONS ADOPTED BY THE NATIONAL GEODETIC SURVEY FOR POINTS
12 INCLUDED IN THE NATIONAL SPATIAL REFERENCE SYSTEM.

13 B. A ~~horizontal~~ GEODETIC control station ~~normally~~ consists of, ~~if~~
14 ~~practicable,~~ a group of bronze, or brass discs OR OTHER METAL DISC
15 imbedded in concrete ~~posts nearly flush with the ground surface~~ or
16 cemented into ~~holes~~ A HOLE drilled into A rock ~~outcrops~~ OUTCROP, or ledges
17 ~~in such a configuration that the station is referenced by a subsurface~~
18 ~~mark in a precise vertical register with the surface mark, two reference~~
19 ~~marks, similar to the surface mark accurately located by azimuth and~~
20 ~~horizontal distance in respect to the horizontal control station and not~~
21 ~~more than one hundred fifty feet distant and an azimuth mark which may be~~
22 ~~similar to the horizontal control station not less than one thousand feet~~
23 ~~distant, or optionally, an object not less than three thousand feet~~
24 ~~distant such as a church spire, water tank, radio or television~~
25 ~~transmitting antenna, by which azimuth mark subsequent surveys may be~~
26 ~~accurately oriented~~ STAINLESS STEEL RODS DRIVEN TO REFUSAL AND CASED IN
27 GROUND ACCESS LIDS, MEASURING PIERS OR ANTENNA MASTS FOR DIRECT PLACEMENT
28 OF SURVEYING INSTRUMENTS OR OTHER STABLE OBJECTS SUITABLE FOR LONG-TERM
29 PERPETUATION OF COORDINATES.

30 C. ~~Horizontal~~ NOTWITHSTANDING LIMITATIONS TO PHYSICAL ACCESS
31 PRESCRIBED BY SECTION 33-104, GEODETIC control stations shall be
32 established, if practicable, ~~in proximity to road intersections, hill or~~
33 ~~mountain tops and similar locations as an aid in the field searches for~~
34 ~~the horizontal control stations~~ AT PUBLICLY ACCESSIBLE LOCATIONS, WITH
35 PUBLIC ACCESS TO DATA AND RAW OBSERVABLES FROM AUTOMATED OBSERVATION SITES
36 IN ACCORDANCE WITH NATIONAL GEODETIC SURVEY GUIDELINES WHEN APPLICABLE.

37 Sec. 5. Section 33-134, Arizona Revised Statutes, is amended to
38 read:

39 33-134. Map data located in more than one zone

40 If ~~a tract of land~~ DATA to be defined by a single description
41 extends ~~from one into another of the coordinate~~ INTO ONE OR MORE ADJACENT
42 zones ~~established by this article~~, the position of all points ~~on its~~
43 ~~boundaries may~~ MUST be referred EXCLUSIVELY to ~~as either of the two zones,~~
44 ONE ZONE, WITH the zone ~~which~~ THAT is used being specifically named in the

1 ~~description~~ MAP, REPORT OF SURVEY OR OTHER DOCUMENT IN WHICH THE ARIZONA
2 PLANE COORDINATE SYSTEM IS USED.

3 Sec. 6. Section 33-135, Arizona Revised Statutes, is amended to
4 read:

5 33-135. Reliance of purchaser or mortgagee not required

6 ~~Nothing contained in~~ This article ~~requires~~ DOES NOT REQUIRE any
7 purchaser or mortgagee to rely on any land description, any part of which
8 depends exclusively on the Arizona PLANE coordinate system, ~~1983~~.

9 Sec. 7. Section 33-136, Arizona Revised Statutes, is amended to
10 read:

11 33-136. Public lands survey descriptions; conflicts; control

12 If coordinates based on the Arizona PLANE coordinate system, ~~1983~~,
13 are used to describe a tract of land ~~which~~ THAT in the same document is
14 also described by reference to a subdivision, line or corner of the United
15 States public land surveys, the description by coordinates shall be
16 construed as supplemental to the basic description of the subdivision,
17 line or corner contained in the official field notes and plat filed of
18 record, and in the event of a conflict the description by reference to the
19 subdivision, line or corner of the United States public land surveys
20 prevails over the description by coordinates.

21 Sec. 8. Section 33-137, Arizona Revised Statutes, is amended to
22 read:

23 33-137. Recording, filing, publishing extensions and
24 densifications of the ground marking system

25 A. Extensions and densifications of the ground marking system of
26 the Arizona PLANE coordinate system, ~~1983~~, shall be executed in conformity
27 with the standards and specifications of the ~~federal geodetic control~~
28 ~~committee for first order, second order class I and second order class II~~
29 ~~surveys and computed on the North American datum, 1983~~ NATIONAL GEODETIC
30 SURVEY FOR DATA TO BE INCLUDED IN THE NATIONAL SPATIAL REFERENCE SYSTEM.

31 B. The results of these surveys shall be published by a competent
32 department of the federal government, such as the national geodetic
33 survey, or a surveyor OR ENGINEER WHO IS qualified to practice in this
34 state, in which case the survey results shall bear a certification to the
35 effect that the STANDARDS, specifications AND GUIDELINES of the ~~federal~~
36 ~~geodetic control committee~~ NATIONAL GEODETIC SURVEY have been followed,
37 AND THE DESIGNATION AND INFORMATION PRESCRIBED BY SECTION 33-131 SHALL BE
38 INCLUDED ON THE FACE OF THE PUBLISHED MAP, REPORT OF SURVEY OR GEOSPATIAL
39 DOCUMENT IN WHICH THE ARIZONA PLANE COORDINATE SYSTEM IS USED.

40 C. Extensions and densifications of the ground marking system ~~by~~
41 ~~first order, second order class I or second order class II methods only~~
42 ~~shall be used~~ MUST USE RELEVANT NATIONAL GEODETIC SURVEY STANDARDS,
43 SPECIFICATIONS, GUIDELINES AND RECOMMENDATIONS FOR DATA TO BE INCLUDED IN
44 THE NATIONAL SPATIAL REFERENCE SYSTEM. Such extensions and densifications
45 shall be integrated with previously established ~~horizontal~~ GEODETIC

1 control stations ~~of equal or higher order to form a matrix or network no~~
2 ~~part of which shall have positional errors exceeding those specified for~~
3 ~~class II second order. The spacing intervals shall not exceed three miles~~
4 THAT ARE CONNECTED TO AND CONSISTENT WITH THE NATIONAL SPATIAL REFERENCE
5 SYSTEM. COORDINATES THAT ARE DETERMINED FOR NEW STATIONS MUST HAVE
6 POSITIONAL ACCURACIES THAT ARE CONSISTENT WITH THOSE PUBLISHED BY THE
7 NATIONAL GEODETIC SURVEY FOR NATIONAL SPATIAL REFERENCE STATIONS IN THE
8 VICINITY OF NEW STATIONS.

9 D. The results of ~~these~~ GEODETIC CONTROL STATION surveys are public
10 domain and shall be duly recorded in the office of the county recorder of
11 the county where the ~~horizontal~~ GEODETIC control station is situated OR
12 THE PUBLICLY ACCESSIBLE DATABASE OF THE NATIONAL GEODETIC SURVEY, OR BOTH.
13 NOTWITHSTANDING THAT THE SURVEY RESULTS AND DATA ARE PUBLIC DOMAIN,
14 PHYSICAL ACCESS TO GEODETIC CONTROL STATIONS IS GOVERNED BY SECTION
15 33-104.

16 Sec. 9. Section 33-138, Arizona Revised Statutes, is amended to
17 read:

18 33-138. Recording prerequisite

19 Coordinates based on the Arizona PLANE coordinate system, ~~1983,~~
20 shall not be presented to be recorded in any public land records, MAP,
21 REPORT OF SURVEY OR GEOSPATIAL DOCUMENT unless the recording document also
22 contains the descriptions of not less than two ~~horizontal~~ GEODETIC control
23 stations ~~of first order, second order class I or second order class II~~
24 ~~positional accuracy~~ WITHIN THE NATIONAL SPATIAL REFERENCE SYSTEM AS
25 PUBLISHED BY THE NATIONAL GEODETIC SURVEY AND which shall not exceed six
26 miles from the nearest point or line of the land survey.

27 Sec. 10. Conditional enactment; notice

28 A. This act does not become effective unless the national geodetic
29 survey of the national ocean service, national oceanic and atmospheric
30 administration, United States department of commerce publishes a notice in
31 the federal register that the modernized national spatial reference system
32 is approved.

33 B. The state board of technical registration shall notify the
34 director of the Arizona legislative council in writing on or before August
35 1, 2029 either:

- 36 1. Of the date on which the condition was met.
- 37 2. That the condition was not met.