

**DESCRIPTION**  
**HORIZONTAL CONTROL STATION**

32 110 31  
DIAGRAM Tucson  
USGS QUAD NO. 69

1st Order  
Triangulation  Electronic - Distance Traverse  Intersected Object   
Station ALDER County Pima State AZ  
Established by NGS Year 1947 Project \_\_\_\_\_

Check one:  
 New Station: Write full description below USGS PH 446  
 Recovery of Old Station: Recovered by USGS Year 1976 Project PH 1778

Object	Bearing	Distance		AZIMUTH
		Feet	Meters	
PIETY USGS				344°29'14.5"

Described in National Geodetic Survey Description List 32 110 3, station 1037. All marks in good condition.

Note by USGS, 1976: Station reached by helicopter. Ship can land at station. Occupied only in EDVA traverses.

NGS Adjusted Coordinates

ARIZONA CENTRAL ZONE ELEV 3831.3 FT  
X= 909727.39  
Y= 540791.29  
MAPPING ANGLE=+0 42 49 QUAD 32 110 31  
ALDER LAT 32 28 47.0870 LONG 110 35 16.8610

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**DESCRIPTION**  
**HORIZONTAL CONTROL STATION**

DIAGRAM \_\_\_\_\_  
USGS QUAD NO. 69

1st order  
Triangulation  Electronic - Distance Traverse  Intersected Object   
Station CLUM County Pima State Arizona  
Established by NGS Year 1947 Project \_\_\_\_\_

Check one:

New Station: Write full description below  
 Recovery of Old Station: Recovered by USGS Year 1956 Project PH 446

Object	Bearing	Distance	
		Feet	Meters

Not occupied.

NGS Adjusted Coordinates

Elevation: 5369 ft

ARIZONA CENTRAL ZONE

ARIZONA EAST ZONE

UTM ZONE 12

X=886672.17

X=345916.98

X= 531511.13

Y=473334.27

Y=471436.31

Y=3573008.99

Mapping angle=+0 40 07

Mapping angle=-0 15 59

Mapping angle=+0 10 43

Latitude: 32°17'42.4390"

Longitude: 110°39'55.1620"

**DESCRIPTION**  
**HORIZONTAL CONTROL STATION**

32 110 31  
DIAGRAM Tucson  
USGS QUAD NO. 69

1st Order  
Triangulation  Electronic - Distance Traverse  Intersected Object   
Station KELLOGG USGS County Pima State AZ  
Established by USGS Year 1903 Project 3096-3108

Check one:  
 New Station: Write full description below NGS 1947  
 Recovery of Old Station: Recovered by USGS 1976 Project PH 1778

Object	Bearing	Distance		AZIMUTH
		Feet	Meters	
PIETY USGS				293°57'33.7"

Described in National Geodetic Survey Description List 32 110 3, station 1043. All marks in good condition. New to reach follows:

To reach is adequate to Palisades Ranger Station. From this point continue W. by truck along paved rd. for 0.8 mi and rd. right to Bigelow LOT; take right fork for about 1.1 mi and end of truck travel at LOT. Pack ESE into saddle and continue ESE to top and station. About a 20-minute pack.

Note by USGS, 1976: Occupied only to establish EDVA elevation.

NGS Adjusted Coordinates

ARIZONA CENTRAL ZONE  
X= 872851.90 ELEV 8401.4 FT  
Y= 516412.00  
MAPPING ANGLE=+0 38 52 QUAD 32 110 31  
KELLOGG USGS LAT 32 24 50.2200 LONG 110 42 30.4770

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**DESCRIPTION**  
**HORIZONTAL CONTROL STATION**

32 110 31  
DIAGRAM Tucson  
USGS QUAD NO. 69

2nd Order  
 Triangulation       Electronic - Distance Traverse       Intersected Object   
 Station MERCER      County Pima      State AZ  
 Established by NGS      Year 1936      Project \_\_\_\_\_

Check one:  
 New Station: Write full description below  
 Recovery of Old Station: Recovered by USGS      Year 1976      Project PH 1778

Object	Bearing	Distance	
		Feet	Meters

Described in National Geodetic Survey Description List 32 110 3, station 1045. All marks in good condition.

Note by USGS, 1976: Station reached by helicopter. Ship can land at station. Occupied only to establish EDVA elevation.

NGS Adjusted Coordinates

ARIZONA CENTRAL ZONE  
 X= 861674.31  
 Y= 479644.06  
 MAPPING ANGLE=+0 37 33

ELEV 3792.5 FT  
 QUAD 32 110 31

MERCER      LAT 32 18 47.6630      LONG 110 44 45.5370

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**DESCRIPTION**  
**HORIZONTAL CONTROL STATION**

32 110 31  
DIAGRAM Tucson  
USGS QUAD NO. 69

3rd Order

Triangulation

Electronic - Distance Traverse

Intersected Object

Station BIGELOW USGS Country Pima State AZ  
Established by USGS Year 1937 Project D 3095-3104

Check one  
 New Station: Write full description below USGS PH 6  
 Recovery of Old Station: Recovered by USGS Year 1976 Project PH 446  
USGS PH 1778

Object	Bearing	Distance		AZIMUTH
		Feet	Meters	
PIETY USGS RM 1		6.38		293°46'27.1" 357 17

Located about 30 mi S. of Oracle, 12 mi NE. of Tucson, on top of Bigelow Peak (a prominent pine-timbered peak in Santa Catalina Mountains). It is about 0.2 mi N. of Palisades Ranger Station.

To reach from Speedway and U.S. Hwys. 80 and 89 in Tucson, drive E. on Speedway for 6.75 mi to T-rd.; take left fork and follow paved hwy. for 4.0 mi to fork; take left fork for 25.3 mi to Palisades Ranger Station; continue W. along paved rd. for 0.8 mi and rd. right to Mt. Bigelow; take right fork for about 1.1 mi to top and station.

Station mark: Standard tablet stamped "BIGELOW 1937", cemented in large boulder under center of tower. (Note: Tower is slightly out of plumb but mark is set directly under peak of roof.)

RM No. 1: Standard reference mark tablet cemented in boulder.

Note by USGS, 1956: Bigelow LOT recovered, no mention of tablet made.

Note by USGS, 1976: There is a new LOT at this point and station mark is no longer concentric. Due to timber, TV towers and buildings the station is no longer usable from the ground without building a tower about 35 to 50 feet high. Occupied only to establish EDVA elevation.

USGS Adjusted 1953 Coordinates

ARIZONA CENTRAL ZONE  
X= 871216.6  
Y= 516920.9  
MAPPING ANGLE=+0 38 42

ELEV 8549.1 FT  
QUAD 32 110 31

BIGELOW USGS LAT 32 24 55.438 LONG 110 42 49.483

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32 110 31

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Geological Survey  
Form No. 9-5123 Rev. 1964

# DESCRIPTION

## HORIZONTAL CONTROL STATION

DIAGRAM Tucson  
USGS QUAD NO. 69

1st Order  Investigation  Electronic - Distance Traverse  Intersected Object   
Station PIETY USGS County Pima Year 1937 Project D 3095-3103 State Arizona  
Established by USGS Year 1947 Project D 3884-91 PH 446  
Check one:  New Station: Write full description below  Recovery of Old Station Recovered by USGS Year 1973 Project PH 1626

Object	Bearing	Distance	
		Feet	Meters
RM's were not observed in 1973.			

Described in U.S. Coast and Geodetic Survey description 11st 32 110 3, station 1046. All marks in good condition.

Located about 8.2 mi N. thence 25.0 mi E. of Tucson; 5.0 mi S. thence 3.5 mi W. of Redington and 0.5 mi N. of Tucson-Redington Rd. at sharp bend; on top of bald knoll locally known as Sierra Palone and named Piety Hill on Tucson sheet.

New to reach as follows: To reach from Pomerene Post Office, drive W. for 0.25 mi to sharp bend in rd.; turn right and follow main-traveled rd. leading to Cascabal and Redington for 37.6 mi to Y-rd. fk. just SE. of conc. bridge (Note: Rd. fk. is just past sign reading "Redington"); take left fork leaving main rd. and go 0.6 mi to the center of the community of Redington; continue straight ahead for 0.55 mi to rd. fk.; turn left and follow main-traveled rd. for 6.1 mi to major rd. fk.; take right fork for 1.6 mi to rd. fk. just E. of saddle; leave main rd. and follow narrow graded rd. leading N. for 0.5 mi to saddle; leave truck and climb W. to highest point of hill and station. About a 20-minute pack.

Station mark: Standard tablet stamped "PIETY 1937" cemented in rock under a 6 ft cairn.

Reference mark No. 1: Standard reference mark tablet stamped "1", cemented in rock.

Reference mark No. 2: Standard reference mark tablet stamped "2", cemented in rock.

CKGS Adjusted Coordinates

ARIZONA EAST ZONE  
X= 382709.61  
Y= 492248.06  
MAPPING ANGLE--0 12 12

ELEV 4713.2 FT

PIETY USGS LAT 32 21 9.8850 LONG 110 32 47.3740

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## RECOVERY NOTE, HORIZONTAL STATION

32 110 31

STATION NAME: PIETY USGS COUNTY: Pima STATE: AZ  
RECOVERED BY: WEST, YEAH 1976 PH # 1778  
CENS. YEAR 69, 32 110 31 STA #  
OTHER YEAR  
CHECK ITEM REGISTERED ON MAPS: GEOMETRIC AND PLAIN COORDINATES ( ), DIST. ( X ), AZIMUTH TO INITIAL STATION ( ), LONG FROM V/V ( )  
VALIDATE THE EXISTING DESCRIPTION INCLUDING MARKS FROM AND STAMPINGS ON INDICATE CHANGE MARK.  
Note by USGS, 1976: Occupied only to establish EDVA elevation. 4714.2 ft

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