

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

34 109 44  
DIAGRAM St. Johns  
USGS QUAD NO. 295

2nd Order  
 Triangulation  Electronic - Distance Traverse  Intersected Object   
 Station BUTTE USGS County Navajo State AZ  
 Established by USGS Year 1933 Project D 944

Check one:  
 New Station: Write full description below  
 Recovery of Old Station: Recovered by \_\_\_\_\_ Year \_\_\_\_\_ Project \_\_\_\_\_

Object	Bearing	Distance		AZIMUTH
		Feet	Meters	
FLATTOP USGS				335°59'43.0"
RM 1		26.31		47 13 38
RM 2		25.62		141 47 13

Described in National Geodetic Survey Description List 34 109 4, station 1002, dated 1959.

Located about 15 mi E. of Holbrook, 6.2 mi S. of thence 2.1 mi W. of Adamana, 2.5 mi E. of Ortegass Tank and 1.2 mi SE. of another tank; on highest point and 150 ft from northeast angle of flat-topped butte which rises about 100 ft above general level of plateau.

To reach take U.S. Hwy. 260 to point about 8 mi E. of Holbrook, thence N. on pasture rd. to short distance S. of Ortegass Tank, thence E. through pasture to west toe of butte and station.

Station mark: Standard bronze tablet stamped "BUTTE 1933", cemented in solid rock under 4-ft cairn.

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

RM No. 2: Standard reference mark tablet stamped "NO 2", cemented in sandstone post.

NGS Adjusted Coordinates

ARIZONA EAST ZONE  
 X= 591860.72  
 Y= 1418447.28  
 MAPPING ANGLE=+0 10 31

ELEV

QUAD 34 109 44

BUTTE USGS

LAT 34 53 54.5721

LONG 109 51 37.1129

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

34 109 44  
DIAGRAM St. Johns  
USGS QUAD NO. 295

1st Order  
 Triangulation  Electronic - Distance Traverse  Intersected Object   
 Station BM F 35 County Navajo State AZ  
 Established by NGS Year 1936 Project

Check one  
 New Station: Write full description below  
 Recovery of Old Station: Recovered by USGS Year 1954 Project PH 358

Object	Bearing	Distance		AZIMUTH
		Feet	Meters	
FLATTOP USGS RMs not observed in 1954				283°06'43.3"

Described in National Geodetic Survey Description List 34 109 4, station 1008. All marks in good condition.

NGS Adjusted Coordinates

ARIZONA EAST ZONE  
 X= 551444.48 ELEV 5433.496 FT  
 Y= 1403349.22  
 MAPPING ANGLE=+0 5 53 QUAD 34 109 44

BM F 35 LAT 34 51 26.1740 LONG 109 59 42.6610

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

34 109 44  
DIAGRAM St. Johns  
USGS QUAD NO. 295

1st Order  
 Triangulation  Electronic - Distance Traverse  Intersected Object   
 Station FLATTOP USGS Country Apache State AZ  
 Established by USGS Year 1933 Project D 942

Check one:  
 New Station: Write full description below NGS 1936  
 Recovery of Old Station: Recovered by USGS 1955 Project PH 358

Object	Bearing	Distance		AZIMUTH
		Feet	Meters	
BUTTE USGS				156°01'06.3"
RM 1		27.79		173 04 51
RM 2		51.86		254 11 28

RMs not observed in 1955

Located about 2.8 mi NE. of Petrified Forest National Monument Headquarters, 120 ft N. of extreme southern end of top, 10 ft E. of west edge of rim rock; on top of southernmost of Flattops.

Reached from main rd. through Petrified Forest.

Station mark: Standard tablet stamped "FLATTOP 1933", cemented in flat exposed sandstone.

RM No. 1: Standard reference mark tablet cemented in sandstone near west rim.

RM No. 2: Standard reference mark tablet cemented in sandstone near east rim.

Note by USGS, 1954: Station and RMs were found in good condition as described.

NGS Adjusted Coordinates

ARIZONA EAST ZONE  
 X= 604104.19 ELEV 5853.0 FT  
 Y= 1391178.66  
 MAPPING ANGLE=+0 11 53 QUAD 34 109 44

FLATTOP USGS LAT 34 49 24.4350 LONG 109 49 11.2520

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

34 109 44  
DIAGRAM St. Johns  
USGS QUAD NO. 295

3rd Order

Triangulation

Electronic - Distance Traverse

Intersected Object

Station RANGE LINE USGS

County Navajo

State AZ

Established by USGS

Year 1933

Project D 942

Check one:

New Station: Write full description below

Recovery of Old Station: Recovered by \_\_\_\_\_ Year \_\_\_\_\_ Project \_\_\_\_\_

Object	Bearing	Distance		AZIMUTH
		Feet	Meters	
FLATTOP USGS				258°29'53.5"
RM 1 12 1/4E/16N/22E		117.1		127 38 40
RM 2		50.0		198 59 37

Located about 17.5 mi SE. of Holbrook, 6.5 mi NE. of Woodruff, 3.5 mi S. of U.S. Hwy. 260, 117 ft from GLO iron stake with cap marking 1/4 corner between sections 7 and 12, T16N, R22-23E, 91 ft E. of N.-S. fence line; on open ridge.

To reach leave U.S. Hwy. 260 about 1 mi E. of concrete culvert over Carr Lake Draw; go S. about 0.5 mi to prairie rd. running SW.; follow this rd. SW. and W. to gate in N.-S. fence line; turn S. along east side of fence and follow 1.3 mi to station.

Station mark: Standard tablet stamped "RANGE LINE 1933", cemented in sandstone rock imbedded in ground.

RM No. 1: GLO iron stake with cap marking the 1/4 corner 12 1/4E/16N/22E.

RM No. 2: Standard reference mark tablet cemented in sandstone post.

USGS Adjusted 1966 Coordinates

ARIZONA EAST ZONE

X= 562246.9

Y= 1382571.2

MAPPING ANGLE=+0 7 6

ELEV 5506.2 FT

QUAD 34 109 44

RANGE LINE USGS

LAT 34 48 0.432

LONG 109 57 33.547

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DESCRIPTION

34 109 44

## Supplementary Horizontal Control Station

Station 5/17N/24E County Navajo State AZ Quad No. 295Project D 944 Year 1933Surveyed by checked ( x ) or unchecked ( ) methods

## Description:

Located about 1 mi W. of Agate Bridge.

Station mark: Standard GLO iron post marked "T17N R24E SECTIONS 4 5  
8 & 9".Note: Not third-order. 3 direct and 3 reverse sets turned with  
repeating instrument.

ARIZONA EAST ZONE

X= 607778.3

Y= 1417253.5

MAPPING ANGLE=+0 12 20

ELEV

QUAD 34 109 44

SC 5/17N/24E

LAT 34 53 42.240

LONG 109 48 26.060

STATION NOT OCCUPIED

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DESCRIPTION

34 109 44

Supplementary Horizontal Control Station

Station 33/17N/23E County Navajo State AZ Quad No. 295

Project D 944 Year 1933

Surveyed by checked ( x ) or unchecked ( ) methods

Description:

Located at west boundary of Petrified Forest National Monument, about 150 ft S. of U.S. Hwy. 260 and 500 ft E. of curio store and filling station; at corner of wire fence lines N. and E.

New Desc. 176

Station mark: GLO iron pipe with cap.

Note: Not third-order. 3 direct and 3 reverse sets turned with repeating instrument.

ARIZONA EAST ZONE

X= 580912.6

Y= 1390746.0

MAPPING ANGLE=+0 9 14

ELEV

QUAD 34 109 44

SC 33/17N/23E

LAT 34 49 20.860

LONG 109 53 49.450

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DESCRIPTION

Supplementary Horizontal Control Station

Station 1-2 A County Navajo State AZ Quad No. 295

Project PH 1526 Year 1971

Surveyed by checked ( ) or unchecked (X) methods

Description:

To reach from south gate of Petrified Forest National Park proceed NW. on U.S. Highway 180 for 2.3 mi to T-rd. S.; turn left S. for 1.8 mi to jct. of new hwy. under construction; continue S. on main rd. for 0.3 mi to gate and T-rd. E.; pass through gate and continue S. for 2.5 mi to T-rd. E.; turn left on rd. E. for 1.3 mi to deep wash (4-wheel drive required to cross wash); cross wash and continue 0.4 mi; turn right and travel S. cross country for 0.4 mi to top of ridge and station.

Station mark: Reinforcing bar in small bush, projecting about 0.6 ft above ground.

Natural Panel.

ARIZONA EAST ZONE

ELEV 5356.7 FT

X= 587549.1

Y= 1365956.6

MAPPING ANGLE=-0 9 57

1-2 A

LAT 34 45 15.454

LONG 109 52 30.709

STATION	OBSERVED DIRECTION	DISTANCE	A-O	A-O FT
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STATIONS OBSERVED BY THIRD ORDER METHODS

BEAVER 2	295 46 44.1	38181.6	1.4	
HAY USGS	4 43 27.3	62212.1	-0.9	

REPORT ON PERMANENT SURVEY MARK

295  
AREA OFFICE

STATE AZ COUNTY Navajo QUADRANGLE Petrified Forest SW.  
QUOTE PRIMARY REFERENCE located at W. boundary of Petrified Forest natl. mon.  
(Direction and distance)

DESIGNATION { LISTED Sec. Cor. 33, 34, T17N, R23E, GLO  
STAMPED \_\_\_\_\_ TYPE OF MARK: BM \_\_\_\_\_ TT \_\_\_\_\_ TRIANG. X

Lat. 34 ° 49 ' 20.86 "      CONDITION      ESTABLISHED BY  
Long. 109 ° 53 ' 49.45 "      Disturbed       USGS       USBR   
Elev. \_\_\_\_\_ feet      Destroyed       USC&GS       State GS   
Not Found       USNPS       USNFS   
USGLO }      USBLM }      (Other)

REMARKS OR REVISED DESCRIPTION:

Holbrook, 13.0 miles SE. of along U.S. hwy. 180 from the A.T. & S.F. Railway station, thence SE. 3.7 miles along old hwy. to end of old hwy. at Petrified Forest Natl. Park boundary fence; 150 ft S. of old hwy at fence cor.

SUBMITTED BY S.L. Guthary  
TITLE Cart. Tech.  
AGENCY U.S.G.S.

DATE 5/76

Marks found in good condition need not be reported.

FILL IN ALL AVAILABLE INFORMATION

Please prepare in triplicate.

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MAY 27 1980