PHOENIX

Lat. 33°15'
Long. 112°00'

ARIZONA 169

C&GS 33 112 21

See Ariz. Hwy. - Job 269

No USGS Control

192

146

CONTINUED

NAME	STATION
PHOENIX ARIZONA PUBLIC SERVICE CO. WATER TANK	1072
POWER PLANT, WEST OF PHOENIX, SHIMNEY	1073
PHOENIX WESTERN COTTON PROD CO WATER TANK	1074
ALHAMBRA	1081
CATHERINE	1085
CRUZ	1086
MISSION	1092
PHOENIX BASELINE WEST	1094
SALT	1099
PHOENIX EAST RADIO TOWER	1104
PHOENIX WESTWARD HO HOTEL FLAGPOLE	1105
HARVESTER (AMS)	1109

NAD 83 VALUES AVAILABLE

PHOENIX

NAME	STATION
DURANGO	1001
GRAND	1002
PHOENIX SKY HARBOR MUNI AP CONTROL TOWER	1003
TWIN	1014
HAUL	1015
TT D7 (USE)	1015
LOWER	1016
TT F6 (USE)	1016
COURT HOUSE	1017
PHOENIX — PHOENIX 2	1018
HILTON	1019
WILSON	1020
POT	1021
PHOENIX BASELINE EAST	1022
RIVER	1023
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PHOENIX TV STA KTVK TOWER	1025
PHOENIX TV STA KTAR TOWER	1026
PHOENIX TV STA KOOL TOWER	1027
PHOENIX TV STA KPHO TOWER	1028
SOUTH MOUNTAIN STATE HIGHWAY PATROL TOWER	1029
EDGE	1030
EVANS	1031
EVANS AZIMUTH MARK	1031
VAN VAN 2	1032
SECTION CORNER W MC COWELL RD AND 67TH AVE	1032
WILL	1033
WILL AZIMUTH MARK	1033
CART	1034
MACK	1035
MACK AZIMUTH MARK	1035
HOPS	1036
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SUTTON	1041
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SVEUM	1048
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HOWE	1053
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PHOENIX BUREAU OF RECLAMATION WATER TANK	1071

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JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169A

QUAD 331122 STATION 1001
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
Form 526
Rev. Aug. 1948

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: DURANGO STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: S.L.Hollis Jr. YEAR: 1959 Described by: N.C.S.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 20 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK METERS.

1b Surface-station mark; Underground-station mark

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE feet	DISTANCE meters	DIRECTION ° ' "
	GRAID				0 00 00.0
	COURT HOUSE 1935	NE	(Approx.2.5 miles)		61 00 57.7
11a	RM 1	S	76.18	23.220	182 13 44
11a	RM 2	W	99.41	30.297	283 08 03

Detailed descriptions

The station is located in the lawn of the caretaker's house, in the northeast corner of the fenced-in area of the Arizona State Highway Department Durango Yard, at the intersection of 22nd Avenue and Apache Street in the southwest part of Phoenix and north of the Salt River.

The station mark is a standard disk stamped DURANGO 1959, set in the top of a concrete cylinder that is 1 inch below the level of the lawn. It is 11.0 feet south of the east-west fence and 6.6 feet west of the north-south fence.

RM 1 is a standard disk stamped DURANGO NO 1 1959, set in a square concrete monument that is flush. It is 14 feet north of a gate and 1 foot west of the north-south fence, at the edge of the grass at the southeast corner of the lawn.

RM 2 is a standard disk stamped DURANGO NO 2 1959, set in the top of a square concrete monument that is flush. It is 5.6 feet west of a narrow gate and 0.7 feet south of the east-west fence.

Triangulation station COURT HOUSE 1935 may be used as an azimuth mark.(See description thereof.)

FORM 526a (8-10-49) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY

R

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DURANGO
ESTABLISHED BY: S. L. Hollis YEAR: 1959 STATE: Arizona
RECOVERED BY: C. A. Annis YEAR: 1962 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 20.3 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 22.7 METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION ° ' "
COURT HOUSE 1935				00 00 00.00
R.M. No. 1	S	76.17	23.218	121 11 08
R.M. No. 2	W	99.33	30.276	222 06 03
Phoenix, Western Compress Co., Water Tank	NW	approx. 1 1/2 miles		273 17 41.2
Phoenix, KRIZ Radio Mast	NNW	approx. 3/4 mile		281 48 54.5

The station was recovered as described and all marks were found to be in good condition. A difference was found in the direction to both reference marks. The distance to reference mark 1 checked and a difference was found in the distance to reference mark 2.

To reach the station from the junction of West Buckeye Road (U.S. Highway 80) and Black Canyon Highway (23 rd. Avenue) in the southwest part of Phoenix, go south on 23 rd. Avenue (along the west side of Black Canyon Highway) for 0.5 mile to a "T" road, turn left, go east on West Durango Street for 0.05 mile to the station on the right at the northeast corner of the State Highway Department yard.

Station mark, a standard triangulation station disk set in a concrete post which is about 2 inches below the surface of the ground and is stamped DURANGO 1959. The mark is 11 feet south of fence and 6.6 feet west of fence.

Reference mark 1, a standard reference disk set in a 12 inch square concrete post which is set flush with the surface of the ground and is stamped DURANGO NO 1 1959. The Mark is 14.5 feet north of gate and 1 foot west of fence.

Reference mark 2, a standard reference disk set in a 12 inch square concrete post which is set flush with the surface of the ground and is stamped DURANGO NO 2 1959. The mark is 5.6 feet west of west end of gate and 0.7 foot south of fence.

No Azimuth Mark was set, objects visible from the ground could be used for azimuth.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DURANGO YEAR: 1959, 1962

STATE: Arizona LOCALITY: Phoenix to Flagstaff

Second -ORDER Triangulation SOURCE: G-11954, G-12917, G-13304 FIELD SKETCH: Ariz. 38-II, 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 442,310.73 y 883,652.26	234° 11' 09" - 0 06 15	AZIMUTH MARK Δ COURT HOUSE
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 44".5296 NORTH LONGITUDE: 112 06 20.7253 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
COURT HOUSE	SECOND-ORDER 234°04'53".6	

G&S Line 116

FORM 251 (7-23-51) USCOMM-DC 16251-P51

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JAN 1967

USCOMM—ESSA—ASHEVILLE

JULY 1966
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169A

QUAD 331122 STATION 1002
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
Form 526
Rev. Aug. 1948

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: GRAND STATE: Arizona. COUNTY: Maricopa

CHIEF OF PARTY: S.L. Hollis Jr. YEAR: 1959 Described by: L.O.Y.

NOTE: 1a 7a HEIGHT OF TELESCOPE ABOVE STATION MARK 19.5 METERS. HEIGHT OF LIGHT ABOVE STATION MARK METERS.

Surface-station mark, Underground-station mark

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE feet	DISTANCE meters	DIRECTION ° ' "
STELLA	N	(3.95 miles)		00 00 00.0
R.M. No. 1	S	113.72	(34.662)	172 41 05
R.M. No. 2	N	113.18	(34.497)	350 23 00

Detailed description:

The station is in the northwest section of Phoenix, 2.4 miles south of the intersection of Camelback Road and Arizona State Highway 69,(Black Canyon Highway), 0.5 mile south of the overpass of U.S. Highways 60, 70, and 89,(Grand Avenue), and in the center of the center divider of State Highway 69.

To reach the station from the intersection of Camelback Road and State Highway 69, go south on State Highway 69 for 2.55 miles to the station on the left, east.

The station is a standard disk, stamped GRAND 1959, set in a 12-inch square concrete monument which is flush and in the center of the road divider.

Reference mark 1 is a standard disk, stamped GRAND NO 1 1959, cemented in a drill hole in the west curb of the highway divider.

Reference mark 2 is a standard disk, stamped GRAND NO 2 1959, cemented in a drill hole in the west curb of the highway divider.

Triangulation station STELLA can be used for an azimuth mark. (see description thereof)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

Rev. R

NAME OF STATION: GRAND
ESTABLISHED BY: S.L. Hollis Jr. YEAR: 1959 STATE: Arizona
RECOVERED BY: C.A. Annis YEAR: 1962 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
CAMELS BACK 2 1947				00 00 00.0
Azimuth Mark	SSE	approx.	0.55 mile	91 30 05.1
Phoenix, KTAR TV Mast (W of Four)	SSE	approx.	12 miles	91 42 43.3
R.M. No. 1	SSE	113.65	34.641	100 36 12
Phoenix, KHAT Radio Mast	SW	approx.	1.0 mile	140 23 43.1
R.M. No. 2	NNW	113.11	34.478	278 15 23
Phoenix, Arizona Public Service Co. Microwave Mast	N	approx.	10 miles	298 20 47.4

Station was recovered and all marks were found to be in good condition. An azimuth mark was established at this time. A slight difference was found in the distance to the reference marks. No data was available at this time to check the direction to the reference marks.

Due to road changes a complete new description follows:

Station is located about 3 miles northwest of the business section of Phoenix, 0.45 mile south of Thomas Road, 0.55 mile north of Mc.Dowell Road and in median of State Route 69 (Black Canyon Highway).

(Continue on next page)

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GRAND YEAR: 1959, 1962, 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix (Phoenix to Flagstaff)

Second -ORDER Triangulation SOURCE: G-10749 G-11954, G-13304 FIELD SKETCH: Ariz. 38-II, 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 440,367.88 y 899,871.40	343° 36' 59" - 0 06 28	AZIMUTH MARK 1962
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 28' 24".9734 NORTH; LONGITUDE: 112 06 44.0106 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK 1962	THIRD-ORDER 343°30'31".0	

C&GS Line 116

FORM 251 (7-23-65) USCOMM-DC

FILE COPY
JAN 1967

USCOMM—ESSA—ASHEVILLE

169

JULY 1966

ARIZONA

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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1002
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

GRAND (Continued)

To reach the station from State Route 69 and W. Van Buren Street in Phoenix, go north on State Route 69 for 1.0 mile to W. Mc Dowell Road and the Azimuth Mark in the northwest corner of overpass of State Route 69, continue north on State Route 69 for 0.55 mile to station in center of median as described.

Station mark, a standard triangulation disk stamped GRAND 1959, is set in the top of a square concrete post which is set flush with the surface of median. The mark is 24 feet east of center of south bound lane, 24 feet west of the center of north bound lane, in the center of median and is surrounded by white paint.

Reference mark 1, a standard reference disk stamped GRAND NO 1 1959, is set in a drill hole in the west curb of median. The mark is 28 feet west of center of north bound lane, 20 feet east of center of south bound lane and 3.8 feet west of center of median.

Reference mark 2, a standard reference disk stamped GRAND NO 2 1959, is set in a drill hole in the west curb of median. The mark is 28 feet west of center of north bound lane, 20 feet east of center of south bound lane and 3.8 feet west of center of median.

Azimuth mark, a standard azimuth disk stamped GRAND 1959, is set in a drill hole in top of concrete overpass rail which projects about 2 feet above the side walk. The mark is in the northwest corner of overpass of State Route 69, 97 feet west of center of State Route 69, 50 feet north of the center of McDowell Road, 33 feet east of center of (Black Canyon Highway) service road and 25 feet west of a street light.

Station mark is as described in note 1a7a.

Form 528
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: GRAND
ESTABLISHED BY: S.L. Hollis Jr. YEAR: 1959 STATE: Arizona
RECOVERED BY:* C. A. Annis YEAR: 1963 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station was recovered as described in 1962 and all marks were found to be in good condition.

Station was not occupied at this time.

R. C. Jones

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
NOTE.—One of these forms must be used for every station recovered.

FILE COPY

JAN 1967

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1003
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 526 b

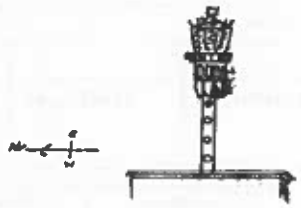
DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: PHOENIX, SKY HARBOR AIRPORT CONTROL TOWER.

CHIEF OF PARTY: S.L.Hollis, Jr. YEAR: 1959 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Located at the Sky Harbor Municipal Airport, Phoenix, just east of the administration buildings.

Object observed is the rotating beacon in the center of the roof of the control tower, the tallest structure in the immediate vicinity, resting on a single cylindrical support.



Described by N.C.S.

Comm-DC 57800

Form 526
(11-9-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION (INTERSECTION)

R

NAME OF STATION: PHOENIX, SKY HARBOR AIRPORT CONTROL TOWER
ESTABLISHED BY: S.L.H. YEAR: 1959 STATE: Arizona
RECOVERED BY:* M.K.M. YEAR: 1960 COUNTY: Maricopa

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:

Station recovered as described.

Form 525b
(11-9-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY DESCRIPTION OF TRIANGULATION INTERSECTION STATION

R

NAME OF STATION: Phoenix, Sky Harbor Municipal Airport Control Tower 1959
Recovered By:
CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located in the east part of Phoenix and is near the main terminal building at the Sky Harbor Municipal Airport.

Station is a round steel tube 9 feet in diameter with a glass enclosed control room on top and is 107 feet high.

Point intersected was the beacon on top of the control tower.

Form 526
(11-9-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

R

NAME OF STATION: PHOENIX, SKY HARBOR AIRPORT CONTROL TOWER
ESTABLISHED BY: S.L.H.J. YEAR: 1959 STATE: Arizona
RECOVERED BY:* E. Pursel Jr. YEAR: 1967 COUNTY: Maricopa

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:

This station was recovered as described. This is the same position as the airport beacon, as this was the pointing used in the 1962,63 survey.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX SKY HARBOR MUNI AP CONTROL TOWER YEAR: 1959, 1962 1963
STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Phoenix to Flagstaff)
Third-ORDER Triangulation SOURCE: G-11954 G-12917, G-13304 FIELD SKETCH: Ariz. 38-II, 49-II *

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 470,036.28 y 885,939.50	- 0 03 15	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 07".540 NORTH		METERS
	LONGITUDE: 112 00 53.594 WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: RIVER, TELEGRAPH PASS USGS, WILSON, HILTON, DURANGO, COURT HOUSE, STRONG, CAMELS BACK 2, PAPAGO, GOMEZ *, BELL BUTTE AMS (* Ariz. 50)		

FORM 261 (7-23-68) USCOMM-DC 10261-P61

FILE COPY
AUG 1969

USCOMM—ESSA—ASHEVILLE

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REVISED JUNE 1969

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1004
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7, PHOENIX

Estrella (Maricopa County, J.Bowie, Jr. 1936)--On the highest point in the main mountain range lying about 3 1/2 miles northwest of the village of Estrell on the Southern Pacific Railroad, about 15 miles east-northeast of Gila Bend and about 45 miles west-northwest of Casa, Grande. The station is on the highest part of the south end of a hogback, and the station mark, note 4 projects about 3 inches above the ground. Reference mark No. 1, a standard bronze reference disk, note 12c, is 2,570 meters (8.43 feet) from station in azimuth 278°52'. Reference mark No. 2, a standard bronze reference disk, note 12c, is 4.544 meters (14.91 feet) from station in azimuth 141°10'. The azimuth mark, a standard bronze disk, note 12a, is on the southeast slope of a small hill on the west side of the wash that extends from the mountain, 66 feet southeast of a giant cactus with 12 inch square blazed on it, set flush with the ground and about 1 mile from station in azimuth 304°13'38".

Form 524a
(9-5-58)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION

R

Name of Station: ESTRELLA
Established By: J. Bowie Jr. Year: 1936 State: Arizona
Recovered By: * W.W.H. Year: 1960 County: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station, reference and azimuth mark were recovered and found to be in good condition.

A complete description follows,

The station is on a high rocky point in the Maricopa Mountains, 15 1/4 miles east-northeast of Gila Bend, 4 miles northwest of Estrella on the Southern Pacific Railroad, 1 mile south of the old Butterfield Stage Line route and on the highest point between the Southern Pacific Railroad and the Butterfield Stage Line route.

To reach from the junction of U.S. Highway 80 and State Highway 84, 1.0 mile east of Gila Bend, go east on U.S. Highway 80 about 75 yards to a gravel road right. Turn right, south then east, per sign "Maricopa" along the north side of the Southern Pacific Railroad and go 16.9 miles to Estrella; continue easterly on main traveled road for 0.2 mile to a side road left. Turn left, northerly, on track road and go 1.7 miles to a dim track road on the left. Turn left, westerly, on dim tracks along the south side of a wash and go 1.3 miles to the end of truck travel at a deep wash. The azimuth mark is at this point. Pack northwest up the bottom of a sandy wash to a low saddle, thence west up the crest of a ridge to a rocky point, thence northwest along the top of a rocky ridge to the highest point and the station. A 2 hour pack.

The station mark, stamped ESTRELLA 1936, is a standard disk cemented in a drill hole in a boulder projecting 3 inches. Note 4

Reference mark No. 1, stamped ESTRELLA NO 1 1936, is a standard disk cemented in a drill hole in a large boulder and about the same elevation as the station. Note 12 c

Reference mark No. 2, stamped ESTRELLA NO 2 1936, is a standard disk cemented in a drill hole in a large boulder and about 3 feet lower than the station. Note 12 c

The azimuth mark, stamped ESTRELLA 1936, is a standard disk cemented in a drill hole in a boulder projecting 2 feet, about 100 yards southwest of a wash, 61 feet east-southeast of a 25 foot cactus with a square blaze on it, 4.5 feet southwest of a metal witness post with sign, on the northeast slope of a rocky hill and about 6 feet lower than the summit of the hill.

1960 OBSERVATIONS

OBJECT	Bearing	Feet	Meters	DIRECTION
BIG HORN 1936				00 00 00.00
Gila Bend Vortac	WSW	(15 miles)		89 25 04.4 ✓
R.M. 2	NNW	14.89 ✓	4.539 ✓	165 06 15 ✓
R.M. 1	E	8.425 ✓	2.568 ✓	302 56 ✓
Azimuth Mark	ESE	(1.0 mile)		328 10 51.5 ✓

Height of telescope above station mark 1.47 meters.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ESTRELLA

STATE: ARIZONA YEAR: 1936 SECOND ORDER

LOCALITY: PAPAGO INDIAN RESERVATION

SOURCE: G-3083 FIELD SKETCH: ARIZ 14

GEODETIC LATITUDE:	33 01 56.69132	ELEVATION:	843.3 METERS
GEODETIC LONGITUDE:	112 28 33.58730		2767 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ. C.	0202	328,582.02	739,754.99	- 0 18 18

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
AZIMUTH MARK	304 13 37.9	304 31 56	0202

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ARIZONA 169

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WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1013
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: PUMP STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1962 DESCRIBED BY: H. D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 3.9 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1.2 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION†	
1b 7a	TT Z W 9 (AMS)				0 00' 00.0	
11b	R. M. No. 2	W	34.71	10.580	54 09 27	
	Azimuth Mark (AHD)	W	approx. 0.5 mile		55 24 55.0	
	Goodyear, Goodyear Aircraft Corp. Water Tank	WNW	approx. 3 miles		75 02 18.2	
11b	R. M. No. 1	E	39.34	11.991	233 25 53	

Detailed description:

The station is located about 2 1/2 miles south-southeast of Cashion, about 2 miles south of U. S. Highway 80 on the south right-of-way of West Broadway.

To reach the station from the post office in Cashion, go east on U. S. Highway 80 for 0.55 mile to crossroad (107th Ave.), turn right, go south on 107th Avenue for 2.0 miles to crossroad (W. Broadway) and azimuth mark on right, turn left, go east on West Broadway for 0.5 mile to station on right.

Station mark, a standard traverse disk set in the top of a round concrete post which projects 4 inches and stamped PUMP 1962. The mark is 32 feet south of center of West Broadway, 9 feet southwest of a power pole, 5.6 feet north of north edge of canal and 3.8 feet south of witness post.

Reference mark 1, a standard reference disk set in the top of a round concrete post which projects 4 inches and stamped PUMP NO 1 1962. The mark is 39.5 feet east-southeast of witness post, 32 feet east-southeast of a power pole, 31 feet south of center of West Broadway and 6 feet north of north edge of canal.

Reference mark 2, a standard reference disk set in the top of a round concrete post which projects 2 inches and stamped PUMP NO 2 1962. The mark is 43 feet west-southwest of a power pole. 34.9 feet west of witness post, 32 feet south of center of West Broadway and 5.6 feet north of north edge of canal.

Azimuth mark, a Arizona Highway Department bronze traverse disk set in the top of a 6 inch square concrete post which is flush with the surface of the ground and stamped 101 Z 1962. The mark is 38 feet north of center of West Broadway, 36 feet west of center of South 107th Avenue, 19 feet northwest of a brace pole and 1.7 feet east of witness post.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
‡To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P66

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PUMP YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Second-ORDER Traverse SOURCE: G-12917 FIELD SKETCH: Ariz. 49-II
G-13304

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH FROM (Grid) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 388,946.90 y 875,515.32	91° 13' 36" - 0 12 01	AZIMUTH MARK 101 Z AHD
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 24' 22"6156 NORTH LONGITUDE: 112 16 50.0667 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK 101 Z AHD	THIRD-ORDER 91°01'34".5	

FORM 251 (7-25-61)

USCOMM—ESSA—ASHEVILLE

ARIZONA

169B

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33° 15'
112° 00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1014
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: TWIN STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1962 DESCRIBED BY: E. P. B.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡ °	'	"
1b	PUMP				00	00	00.00
11b	R. M. No. 1	N	21.94	6.683	75	31	07
11b	Phoenix, Ariz. Pub. Serv. Co. Water Tank R. M. No. 2	E	21.32	6.497	138	47	35.8
desc	Azimuth mark (TL 8 (USE))	S	approx. 0.6 mile		261	54	48.6

Detailed description:

The station is located about 4 1/2 miles southeast of Cashion, about 10 miles west-southwest of Phoenix, and on the east side of a north and south road at a fence corner and irrigation ditch.

To reach the station from the post office in Cashion, go east on U.S. Highway 80 for 3.5 miles to South 83 rd. Ave., turn right and go south on South 83 rd. Ave. for 2 miles to West Broadway, turn left and go east for 0.05 mile to a side road right, turn right and go south on dirt road for 0.55 mile to a track road left and irrigation ditch and station on left. Continue south for 0.6 mile to azimuth mark on right.

Station mark, a standard traverse disk set in the top of a 12 inch round concrete post which projects about 2 inches and stamped TWIN 1962. The mark is 29 feet east of the center of road, 27 feet north of the center of irrigation road, 3.5 feet north-northeast of witness post and 2.8 feet east of fence.

Reference mark 1, a standard reference disk set in the top of a 12 inch round concrete post which projects about 3 inches and stamped TWIN NO 1 1962. The mark is 27 feet east of the center of road, 25 feet north of the witness post and 1 foot east of fence.

Reference mark 2, a standard reference disk set in the top of a 12 inch round concrete post which projects about 3 inches and stamped TWIN NO 2 1962. The mark is 23 feet east of fence, 22.6 feet east of the witness post and 22 feet north of the center of irrigation road.

Azimuth mark, a Corps of Engineers Survey disk set in the top of a 10 inch round concrete post which is about flush with the ground and stamped TL-8 1960 ARMY MAP SERVICE. The mark is 24 feet west of the center of road, 13 feet east of fence, 6.6 feet northeast of center of gate in irrigation ditch and 1 foot east of witness post.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to adjacent station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TWIN YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Second-ORDER Traverse SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 402,481.63 y 873,236.30	1° 28' 17" - 0 10 33	AZIMUTH MARK TL-8 USE
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
LATITUDE: 33° 24' 00"5058 NORTH LONGITUDE: 112 14 10.3206 WEST			BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK TL-8 USE	THIRD-ORDER 1°17'43"6	

FORM 261 (7-10-58) USCOMM-DC 16261-P61

FILE COPY
JAN 1967

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169B

QUAD 331122 STATION 1015
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

R.P.B.

DESCRIPTION OF [redacted] STATION
TRAVERSE

NAME OF STATION: HAUL STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1962 DESCRIBED BY: R. D. S.

NOTE*	HEIGHT OF TELESCOPE ABOVE STATION MARK 19.7 METERS,† HEIGHT OF LIGHT ABOVE STATION MARK 22.1 METERS.						
1b	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
7a	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION°	'	"
	TWIN Phoenix, Western Cotton Co., Water Tank Products	NE	approx.	2 miles	128	54	30.6
16b	Azimuth Mark	NE	approx.	0.5 mile	130	12	37.1
11b	Reference Mark No. 1	ENE	75.92	23.140	162	02	20
11b	Reference Mark No. 2 (TT D7 USE)	SE	59.63	18.177	264	00	08

Detailed description:

The station is located about 7 miles west-southwest of Phoenix, about 4 miles east-southeast of Avondale, 2 miles south of U. S. Highway 80, at the intersection of South 59th Avenue and West Buckeye Road and is at the south end of cattle feeding pens.

To reach the station from the junction of Black Canyon Highway and U. S. Highway 80 (West Buckeye Road) in Phoenix, go west on U. S. Highway 80 for 4.5 miles to crossroad, turn left, go south on 59th Avenue for 1.0 mile to crossroad (Lower Buckeye Road), continue south on 59th Avenue for 1.0 mile to the station on the right.

Station mark, a standard traverse disk set in top of a round concrete post which projects about 4 inches and is stamped HAUL 1962. The mark is 41 feet west of center of South 59th Avenue, 28 feet northwest of center of West Broadway Road, 11 feet southeast of edge of a canal and 3.8 feet northwest of witness post.

Reference mark 1, a standard reference disk set in top of a round concrete post which projects about 8 inches and is stamped HAUL NO 1 1962. The mark is 57.4 feet northeast of witness post, 45 feet north of a power line pole, 24 feet east of center of road and 1 foot west of fence.

Reference mark 2, a U. S. Army Corps of Engineers bronze disk set in a drill hole in the northwest corner of a concrete irrigation gate and is stamped TT D7 1948. The mark is 56.3 feet southeast of witness post, 25 feet west of center of South 59th Avenue and 23 feet southeast of center of West Broadway Road.

Azimuth mark, a standard azimuth disk set in top of round concrete post which projects about 6 inches and is stamped HAUL 1962. The mark is 13 feet south of center of dirt road, 4.8 feet north of the north edge of canal, 4.5 feet west of power line pole and 3.0 feet east of witness post.

To reach the azimuth mark from the station, go north on South 59th Avenue for 0.45 mile to a dirt side road right, turn right, go east on dirt road for 0.25 mile to the mark on the right.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction angle measured clockwise, referred to initial point. ‡To nearest meter only, when no trigonometric leveling is being done.

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JAN 1967

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HAUL YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey Ehrenberg to Phoenix to Casa Grande

Second-ORDER Traverse SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (HOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 417,828.79 y 876,257.04	209° 04' 31" - 0 08 54	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 24' 30".8240 NORTH LONGITUDE: 112 11 09.3806 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	THIRD-ORDER 208°55'37".0	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TT D7 USE YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey Ehrenberg to Phoenix to Casa Grande

Second-ORDER Traverse SOURCE: G-12917 FIELD SKETCH: Ariz. 49-II

(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (HOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 417,846.35 y 876,200.05	° ' " -0 08 54	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33°24'30".2606 NORTH LONGITUDE: 112 11 09.1716 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
HAUL (TAPED LENGTH)	SECOND-ORDER (162°43')	18.177

USCOMM—ESSA—ASHEVILLE

1693 ARIZONA

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1016
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

1 RPK

TRAVERSE

NAME OF STATION: LOWER STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1962 DESCRIBED BY: R. D. S.

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS.‡ HEIGHT OF LIGHT ABOVE STATION MARK 1.3 METERS.

NOTE.*	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
	DURANGO 1959				° ' " 00 00 00
11b	R. M. No. 1	E	25.31	7.715	07 14 42
	R. M. No. 2 (TT F6 USE)	W	120.97	36.869	185 44 13
7a	Phoenix, Western Cotton Products Co., Water Tank	NW	approx.	1 mile	237 27 26.8
	Phoenix, Public Service Co., Water Tank	N	approx. 1 1/2 miles		271 12 40.2

Detailed description:

The station is located in the southwest part of Phoenix, 1 mile south of Buckeye Road (U.S. Highway 80) and at the junction of Lower Buckeye Road and 43rd Avenue.

To reach the station from the junction of Buckeye Road (U.S. Highway 80) and Black Canyon Highway (23rd Avenue) in the southwest part of Phoenix, go west on Buckeye Road for 2.5 miles to 43rd Avenue, turn left, go south on 43rd Avenue for 1.0 mile to Lower Buckeye Road and the station on the left.

Station mark, a standard traverse disk set in top of a round concrete post which projects about 2 inches and is stamped LOWER 1962. The mark is 146 feet east of the center of 43rd Avenue, 108 feet west of a power pole, 28.5 feet north of the center of Lower Buckeye Road and 1.8 feet east of witness post.

Reference mark 1, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped LOWER NO 1 1962. The mark is 171 feet east of the center of 43rd Avenue, 83 feet west of a power pole, 28 feet north of the center of Lower Buckeye Road and 27.1 feet east of witness post.

Reference mark 2, a standard U.S. War Department Corps of Engineers bronze disk set in a drill hole in the south end of a concrete headwall of culvert and is stamped TT F6 1948. The mark is 25 feet east of the center of 43rd Avenue, 23 feet north of the center of Lower Buckeye Road and 16 feet southwest of a power pole.

No Azimuth mark set, objects visible from the ground could be used as azimuth.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial B.M.
†To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P66

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LOWER YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Second-ORDER Traverse SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 428,597.54 y 881,323.00	137° 49' 02" - 0 07 44	PHOENIX WESTERN COTTON PROD CO WATER TANK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 21".2067 NORTH LONGITUDE: 112 09 02.4761 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
PHOENIX WESTERN COTTON PROD CO WATER TANK	THIRD-ORDER 137°41'18".0	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TT F6 USE YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Second -ORDER Traverse SOURCE: G-12917 FIELD SKETCH: Ariz. 49-II

(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 428,476.88 y 881,314.76	° ' " -0 07 45	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33°25'21".1225 NORTH LONGITUDE: 112 09 03.8996 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
LOWER (TAPED LENGTH)	SECOND-ORDER (265°58'	36.869

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JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169A

QUAD 331122 STATION 1017
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

Court House (Maricopa County, E. B. Latham, 1935; 1936).—In Phoenix, on the roof of the Maricopa County Courthouse, at South First Avenue and West Washington Street. Permission to visit the station must be obtained from the sheriff's office where the key to the penthouse may be secured. The county jail is on the top floor. Station mark and reference marks No. 1 and No. 2 are standard bronze disks set in the cement roof of the building. Reference mark No. 1 is 10.490 meters (34.42 feet) from station in azimuth 272°01'. Reference mark No. 2 is 9.870 meters (30.74 feet) from station in azimuth 182°45'. The azimuth mark (reference mark No. 3) is a standard bronze disk set in the southwest curb at West Jefferson and South Eighth Streets and is in azimuth 83°58'43" from station.

TRIANGULATION STATION RECOVERY

R

NAME OF STATION: Court House — STATE: Arizona — COUNTY: Maricopa
ESTABLISHED BY: E B Latham — YEAR: 1935 — LOCALITY: Phoenix
RECOVERED BY: Lewis A McArthur — YEAR: 1941 — October.

Detailed statement as to the fitness of the original description:

Station not visited, but following additional information is submitted: Building is at southwest corner of South First Avenue and West Washington Street. The azimuth mark (Ref 3) is at southwest corner of South Eighth Avenue and West Jefferson Street. It is about 15 feet west of west curb of South Eighth Avenue, in south curb of West Jefferson Street. This disk is stamped "COURTHOUSE NO 3 AZIMUTH 1935."

Stamping of name on disk appears to be in one word. City engineer of Phoenix might be willing to check stamping on station disk and refs 1 and 2. Printed name of station in SP 224 is in two words. South Eighth is Avenue, not Street.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 526

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: COURT HOUSE 1935 — STATE: Arizona — COUNTY: Maricopa
ESTABLISHED BY: E.B.L. — YEAR: 1935 — LOCALITY: Phoenix
RECOVERED BY: D.H.Konichek — YEAR: 1947

Detailed statement as to the fitness of the original description: The station and all reference marks was found in good condition as described with the exception of the description of the azimuth mark which is located at the intersection of Jefferson Street and 8th Avenue instead of Jefferson and 8th Street as mentioned in origional description, Distances and Directions listed below.

OBJECT	HOR. DISTANCE	DIRECTION
BASELINE WEST 1947	Meters	00 00 00.00
R.M. No. 1 1935 E	10.485	229 39 32.
R.M. No. 2 1935 NW	9.371	90 24 00.
Az.Mk. 1935 WSW Approx. 0.3 mile.		41 37 20.2

The station mark a bronze disk is located on the top of The Maricopa County, Court House, 4 feet south of a raised section of roof, 6 feet west-northwest of a ventilator, set flush in concrete roof and is stamped "COURTHOUSE 1935".

Reference mark No. 1 is 9 feet west-northwest of the southeast corner of roof, 2 feet north of the south edge of roof, a bronze disk set flush in concrete roof and stamped "COURTHOUSE NO 1 1935".

Reference mark No. 2 is 7 feet east-southeast of the northwest corner of roof, 14 inches east-northeast of a pipe sticking up from roof, a bronze disk set flush in concrete roof and stamped "COURTHOUSE NO 2 1935".

The azimuth mark is a standard reference mark set in curb of the southwest corner of West Jefferson and 8th Avenue in Phoenix, 7 feet west-northwest of a telephone pole, set flush in concrete curb and stamped: "COURTHOUSE NO 3 AZIMUTH 1935".

Observations made from a 1.26 m tripod.

(Continued on next page)

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: COURT HOUSE — YEAR: 1935, 1947, 1959, 1962, 1963
STATE: Arizona — LOCALITY: Yuma to Stewart Dam
First -ORDER Triangulation — SOURCE: G-3022, G-8347, G-3083; G-11954, G-12917, G-13304 — FIELD SKETCH: Ariz. 8-II, 9, 26, 14; 38-II, 49-II, 50; 51

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Adj ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 451,685.97 y 890,417.44	84° 03' 57" - 0 05 14	AZIMUTH MARK RM 3
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	WYE LEVELING ELEVATION
	LATITUDE: 33° 26' 51".6225 NORTH LONGITUDE: 112 04 30.2208 WEST			365.75 METERS 1200.0 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK RM 3	THIRD-ORDER 83°58'43".4	

FORM 251 (7-23-56) — USCOMM-DC 14281-P61

FILE COPY

USCOMM—ESSA—ASHEVILLE

JAN 1967

169

JULY 1966 ARIZONA
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1017
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

COURTHOUSE (Continued)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 526
(Rev. Feb. 1942)

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: COURT HOUSE
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY:* L.W.Q. YEAR: 1953 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station, reference marks and the azimuth mark were recovered in good condition. The distances to the reference marks were not checked. The description is adequate.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: COURTHOUSE
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY:* A.M.S. YEAR: 1955 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Reference marks 1 and 2 found.
Azimuth mark found.
The station is set flush in the roof of the City Hall in downtown Phoenix, stamped COURT HOUSE 1935. It is located on top of the City Hall which is in the SW corner of the intersection of First Avenue and Washington Street, 30 feet E of W edge of roof; 44 feet W of E edge of roof; 23 feet S of N edge of roof; 11 feet N of S edge of roof; 8 feet NE of corner on roof; 22 feet WNW of corner on roof; 10 feet SSW of small radio antenna; 8 feet WNW of center of an air vent. Stations Salt, Telegraph, River, Belle Butte, Tempe Butte, Barnes Butte, Camelsback 2, are all visible from this station. Partly blocked NNE, NE, ESE.
NOTE: See Custodian in engine room for permission and keys to penthouse. Stamping on station indicates two separate words.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: COURT HOUSE
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY:* S.L.Hollis YEAR: 1959 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station was recovered as described and all marks found in good condition. The original description is adequate.
RM 2 is now obstructed by a small metal building that houses some radio equipment. The azimuth mark is now obstructed by some new construction on Jefferson St. The Phoenix, Sky Harbor Airport Control Tower can be used as an azimuth. (See description thereof)

OBJECT	BEARING	DISTANCE	DIRECTION
CAMELS BACK 2 1947			00 00 00
RM 1	E	34.40 ft 10.485 m.	37 03 47
Phoenix, Sky Harbor Airport Control Tower	E	(3.6 miles)	48 39 58.4

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: COURTHOUSE
ESTABLISHED BY: YEAR: 1935 STATE: Arizona
RECOVERED BY:* A.M.S. YEAR: 1960 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station mark, reference marks and the azimuth mark were recovered in good condition.

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: COURT HOUSE
ESTABLISHED BY: E. L. B. YEAR: 1935 STATE: Arizona
RECOVERED BY:* O. A. Annis YEAR: 1962 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.7 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1.4 METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
RIVER 1935				00 00 00.00
Phoenix, KIFN Radio Tower	S	approx. 2 miles		18 24 35.1
Azimuth Mark	W	approx. 0.45 mile		109 16 53.9
B.M. No. 3	W	28.00	8.534	117 49 38
B.M. No. 1	E	34.40	10.485	297 19 43
Phoenix, Sky Harbor Municipal Airport Control Tower Beacon	SE	approx. 4 miles		308 55 43.0

The station, azimuth and reference mark number 1 were recovered as described in the 1935 description. Reference mark number 2 is beneath the wall of a small aluminum building. A new reference mark number 3 was established. The distance to reference mark 1 checked, but a slight difference was found in the direction (mark is partially obstructed by a small radio tower).

A new description follows.

Station mark, a standard triangulation station disk set in a drill hole in top of the Court House roof and is stamped COURT HOUSE 1935. The mark is 11.3 feet north of the south edge of roof, 44 feet west of the southeast corner of roof, 30 feet east of the west edge of roof and 16.5 feet east-southeast of the southeast corner of a small aluminum building.

Reference mark 1, a standard reference disk set in a drill hole in roof and is stamped COURT HOUSE NO 1 1935. The mark is 9.6 feet west-southwest of the southeast corner of roof, 6.3 feet east-southeast of a 4 inch drain and 2.6 feet north of the south edge of roof.

Reference mark 3, a standard reference disk set in a drill hole in roof and is stamped COURT HOUSE NO 3 1935. The mark is 5.3 feet north-northeast of the southwest corner of roof, 1.9 feet east of the west edge of roof and 1 foot south of the south edge of a small aluminum building.

Azimuth mark, a standard reference disk set in a drill hole in the concrete curb of street in the southwest angle of West Jefferson Street and South 8th. Avenue. The mark is 24 feet northeast of the northeast corner of the Salvation Army Building and 18 feet east of a fire hydrant. The disk is stamped COURT HOUSE NO 3 AZIMUTH 1935.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

1949
R

NAME OF STATION: COURT HOUSE 1935
ESTABLISHED BY: E.L.B. YEAR: 1935 STATE: Arizona
RECOVERED BY:* C.A. Annis YEAR: 1963 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station was recovered as described in the 1962 description, all marks were found to be in good condition. The distance to the reference marks were checked and found to be correct. The directions to reference marks and azimuth mark was not checked at this date.
1963 Observations follows:

TELEGRAPH PASS (USGS) 1935	0	00	00.0
Phoenix, KPHO Relay Tower	195	24	36.8
Phoenix. Greater Arizona Saving Radio Tower	220	49	16.4

JAN 1967

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REVISED MAR 1972

HORIZONTAL CONTROL DATA

Sheet 1 of 2

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169A

QUAD 331122 STATION 1018
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

Phoenix (Maricopa County, E. B. Latham, 1935).—About 0.2 mile east of the south end of Seventh Avenue in the northeast corner of the city of Phoenix dumping grounds, on the north bank of the Salt River. Marked by standard bronze disks as described in notes 1a and 7a. Reference mark No. 1, a standard bronze reference disk, note 11a, is 29.508 meters (97.01 feet) from station in azimuth 269°32'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 31.518 meters (103.41 feet) from station in azimuth 133°06'. No azimuth mark established. Other stations visible from the ground.

PHOENIX

(W.W.H.,1947)--The station and reference marks were recovered and found in good condition.

New description follows: In the northwest corner of Sec.20, T 1 N, R 3, and about 350 yards east from the section corner, outside of the corporate limits of the city of Phoenix, where Fifth Avenue South extended ends at the section line. The section line between section line between sections 17 and 20 passes between the reference marks and the station mark.

PHOENIX (Maricopa County,Ariz.,E.B.L.,1935;L.W.Q.,1953)

The station and reference marks were recovered in good condition. The description is adequate. The distances to the reference marks were not checked.

FORM 526a (6-10-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

R

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: PHOENIX
ESTABLISHED BY: E.B. Latham YEAR: 1935 STATE: Arizona
RECOVERED BY: C.A. Annis YEAR: 1962 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 19.83 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 22 METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
HILTON				00 00 00".0
Phoenix, KTAR TV Mast	SSE	approx. 7 miles		98 37 44.8
R.M. No. 2	NW	103.29	31.482	240 28 25
R.M. No. 1	NNE	96.97	29.559	316 53 22
Phoenix, KIFN Radio Tower	[illegible]E	approx. 1/2 mile		349 39 41.4
Azimuth Mark	ENE	approx. 0.4 mile		351 03 59.4

Station was recovered and all marks were found to be in good condition. A difference was found in the distance to reference marks. A azimuth mark was established at this time. No data was available at this time to check the direction to the reference marks. A complete new description follows.

Station is located about 2 miles south-southwest of the center of downtown business section of Phoenix, about 1/2 mile west of bridge on S. Central Avenue which is over the Salt River and on area which is cleared now and is no longer used for a dumping ground.

To reach the station from the intersection of W. Jefferson Street and S 7th Avenue in Phoenix, go south on S. 7th Avenue for 1.2 miles to a overpass of Interstate Highway, continue south on S 7th Avenue for 0.25 mile to W. Watkins Road, continue south on S 7th Avenue for 0.25 mile to the Maricopa Packing Co. on right and dirt road on left, turn left and go east on dirt road for 0.15 mile to where road curves to north and station on right as described.

Station mark, a standard triangulation disk stamped PHOENIX 1935, is set in top of a 12 inch square concrete post which is set flush with the ground. The mark is 82 feet south of center of curve in road, 66 feet south of street lamp pole No. PS-44179 and 32 feet west-southwest of the witness post.

Reference mark 1, a standard reference disk stamped PHOENIX NO 1 1935, is set in top of a 12 inch square concrete post which projects about 6 inches above the ground. The mark is 96 feet northeast of the witness post, 49 feet east of center of curve in road and 40.8 feet east-northeast of street lamp pole No. PS-44179.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX YEAR: 1935, 1962
STATE: Arizona LOCALITY: Yuma to Stewart Dam
Second -ORDER Triangulation SOURCE: G-3022, G-12917, G-13304 FIELD SKETCH: Ariz. 8-II, 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Adj ANGLE)	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 450,273.36 y 881,100.02	243° 47' 22" - 0 05 23	AZIMUTH MARK 1962
STATE: ZONE: CODE:	x y		

AZIMUTH MARK IS ALSO A BENCH MARK

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 19".4097 NORTH		326.24 METERS
	LONGITUDE: 112 04 46.7205 WEST		1070.3 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK 1962	THIRD-ORDER 243°41'58".9	

Reference mark 2, a standard reference disk stamped PHOENIX NO 2 1935, is set in top of a 12 inch square concrete post which projects about 7 inches above the ground. The mark is 104 feet northwest of the witness post, 87 feet west of street lamp pole No. Ps-44179, 34.4 feet east-northeast of utility pole No. PS-448 and 10 feet north of center of road.

Azimuth mark, a standard azimuth disk stamped PHOENIX 1935, is set in a drill hole in northwest corner of bridge, 20.2 feet south of the northwest corner of bridge, 35 feet west of center of meridian and is about 4 feet higher than bridge floor.

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.

NOTE - One of these forms must be used for every station recovered.

Robert P. Kennedy
USCOMM-DC 57163-P65

(continued on next page)

169

ARIZONA

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINSTRATION
COAST AND GEODETIC SURVEY
REVISED MAR 1972

HORIZONTAL CONTROL DATA

Sheet 1 of 2

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1018
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX
ESTABLISHED BY: E.B. Latham YEAR: 1935 STATE: Arizona
RECOVERED BY:* C.A. Annis YEAR: 1962 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

To reach the azimuth mark from station, go west on dirt road 0.15 mile to S 7th Avenue. turn right and go north on S 7th Avenue for 0.25 mile to W Watkins Road, turn right on W. Watkins Road and go east 0.5 mile to S Central Avenue, turn right on S Central Avenue and go south 0.05 mile to bridge and azimuth mark on right as described.

Station mark and reference marks are as described in notes 1a, 7a and 11a.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX
ESTABLISHED BY: E.B,L. YEAR: 1935 STATE: Arizona BENCH MARK ALSO [X]
RECOVERED BY:* Ariz.Hwy. Dept. YEAR: 1967 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:
HEIGHT OF TELESCOPE ABOVE STATION MARK FEET HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION ° ' "
TELEGRAPH PASS (USGS) 1935	S			0 00 00.0
PHOENIX 2	N	94.25		179 59 57.8

The station was found in good condition but in immediate danger of being destroyed by excavation by a commercial rock company. Reference mark 1 had already been destroyed but reference mark 2 and the azimuth mark were found to be in good condition and not disturbed. The old reference mark disk No.2 was removed and the new reference mark No. 4 1967 was reset in the same concrete monument.

A new station PHOENIX 2 RESET 1967 was set on line with PHOENIX 1935 and station TELEGRAPH PASS (USGS) 1935.

The published description was adequate to locate the station.

MARCH 1972
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

Sheet 2 of 2

ARIZONA

169A

QUAD 331122 ARIZ STATION 1018 A
LATITUDE 33° 00' TO 33° 30'
LONGITUDE 112° 00' TO 112° 30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: PHOENIX 2 STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: Ariz. Hwy. Dept. YEAR: 1967 DESCRIBED BY:

NOTE.*	HEIGHT OF TELESCOPE ABOVE STATION MARK METERS.† HEIGHT OF LIGHT ABOVE STATION MARK METERS.				
1b 7a	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡ ° ' "
	TELEGRAPH PASS (USGS) 1935				0 00 00.0
11a	RM 4 1967	W	64.34	19.611	78 49 11.1
desc	Azimuth mark 1935	E	(approx	0.4 mi.)	255 13 50.4
11b	RM 3 1967	E	76.70	23.378	255 45 15.6

Detailed description:

The station is located about 2 miles south-southwest of the center of downtown section of Phoenix, about 0.5 mile west of bridge on South Central Avenue which is over the Salt River and on a cleared area.

To reach the station from the intersection of West Jefferson Street and South 7th Avenue in Phoenix, go south on South 7th Avenue 1.2 miles to an overpass of Interstate Highway , continue south on South 7th Avenuefor 0.25 mile to West Watkins Road, continue south on South 7th Avenue 0.25 mile to the Maricopa Packing Company on right and dirt road on left, turn left and go east on dirt road for 0.15 mile to where road curves to north and station on left as described.

The station mark is a standard triangulation disk stamped " PHOENIX 2 1967 BM RESET " set in top of a 10-inch circular concrete monument projecting 5 inches. It is located 36.51 feet northwest of street lamp pole No. PS-44179, 15 feet north-northwest of center of curve in dirt road and 3.5 feet north-northwest of a witness post.

Reference mark 3 is a standard reference mark disk stamped " PHOENIX NO 3 1967 RESET BM " set in top of a 10- inch circular concrete monument projecting 4 inches. It is east of a dirt road that runs north from curve.

Reference mark 4 is a standard reference mark disk stamped " PHOENIX NO 4 1967 RESET BM " set in top of a 12-inch square concrete post which projects 7 inches. It is 87 feet west of street lamp pole NO. PS-44179, 34.4 feet east-northeast of Utility pole No. PS-448 and 10 feet north of center of dirt road.

The azimuth mark is a standard azimuth disk stamped " PHOENIX 1935 " set in a drill hole in northwest corner of bridge, 20.2 feet south of northwest corner of bridge, 35 feet west of center of meridian and is about 4 feet higher than bridge floor.

To reach the azimuth mark from the intersection of South 7th Avenue and West Watkins Road, go east on West Watkins Road 0.5 mile to South Central Avenue, turn right on South Central Avenue and go south 0.05 mile to bridge and azimuth mark on right as described.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

OBS BY ARIZ HWY DEPT

NAME OF STATION: PHOENIX 2

STATE: ARIZONA YEAR: 1967 SECOND —ORDER

LOCALITY: YUMA TO STEWART DAM

SOURCE: G-10749 FIELD SKETCH:
(NO OBSERVATIONAL CHECH ON THIS POSITION)

GEODETIC LATITUDE:	33 25 20.33014	ELEVATION: METERS FEET
GEODETIC LONGITUDE:	112 04 46.89828	

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ C	0202	450,258.44	881,193.07	- 0 05 23

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
AZIMUTH MARK 1935	246 01 44.5	246 07 08	0202

POSITION DETERMINED BY TRAVERSE FROM STATION PHOENIX

USCOMM—NOAA—ASHEVILLE

JULY 1966
U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169A

QUAD 331122 STATION 1019
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

FORM 525
10-10-631

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ TRAVERSE STATION

NAME OF STATION: HILTON STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1962 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 19.6 METERS.‡ HEIGHT OF LIGHT ABOVE STATION MARK 22 METERS.

SURFACE-STATION MARK, UNDERGROUND-STATION MARK

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION°	'	"
	PHOENIX 1935				00	00	00.0
	Phoenix, KIFN Radio Tower	W	approx.	1/2 mile	06	23	05.6
desc. 11b	R.M. No. 1	NE	57.59	17.553	150	59	36.8
	R.M. No. 2	SSE	79.79	24.320	255	49	55.8
	Phoenix, KTAR TV Mast	S	approx.	7 miles	290	06	56.4

Detailed description:

Station is located about 1 1/2 miles southwest of the center of business section of Phoenix, at the junction of E. Hilton St. and S 11 th St. and on the grounds of St. Mary Magdalene Catholic Church.

To reach from the intersection of E. Buckeye Road and S. 7 th Street in Phoenix, go south on S. 7 th Street for 0.5 mile to overpass, turn left just after passing under overpass and go east on one-way street for 0.35 mile to St. Mary Magdalene Catholic Church on right and station in southwest corner of property.

Station mark, a standard traverse disk stamped HILTON 1962, is set in top of a concrete cylinder which projects about 2 inches above the ground. The mark is 46.6 feet southwest of the southwest corner of church, 52.6 feet northwest of street sign post, 30 feet northwest of junction of S. 11 th Street and E. Hilton Street and 6.5 feet east of the witness post and fence.

Reference mark 1, a standard reference disk stamped HILTON NO 1 1962, is set in a drill hole in the northeast corner of a concrete slab, 38 feet north of a utility pole No. 14N-7 and 20 feet east of the southwest corner of church.

Reference mark 2, a standard reference disk stamped HILTON NO 2 1962, is set in the top of a concrete cylinder which projects about 4 inches above the ground. The mark is 84 feet southeast of the witness post, 29.5 feet south-southeast of street sign post and 4.5 feet north of a utility pole.

No azimuth mark was set at this station.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P65

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HILTON YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Ehrenberg to Phoenix to Casa Grande)

Second-ORDER Traverse SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 456,899.78 y 883,160.97	79° 06' 28" - 0 04 40	Δ PHOENIX RADIO STATION KIFN TOWER
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 39".8977 NORTH LONGITUDE: 112 03 28.5692 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
PHOENIX RADIO STATION KIFN TOWER	THIRD-ORDER 79°01'48".0	

C+GS Bm

FORM 261 (7-23-58)

USCOMM-DC 16251-P61

FILE COPY
NOV 1970

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REVISED MAY 1970

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169A

QUAD 331122 STATION 1020
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

DESCRIPTION OF ~~TRIANGULATION~~ TRAVERSE STATION

NAME OF STATION: WILSON STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1962 DESCRIBED BY: R. D. S. MOF

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 19.6 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 22.0 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION		
					°	'	"
	HILTON				00	00	00
11b	Reference mark No. 2	NNW	139.67	42.572	87	53	08
	Phoenix, Arizona State Hospital Water Tank	NNE	approx.	2 miles	99	10	26.8
	Phoenix, Sky Harbor Muni. Airport Cintrol Tower Beacon	NE	approx.	1 mile	148	52	04.8
	Reference mark No. 1	E	92.69	28.250	193	02	19

Detailed description:

The station is located in the southeast part of Phoenix, just southwest of the southwest corner of the Sky Harbor Municipal Airport and is on the west side of 24 th Street.

To reach the station from the intersection of East Buckeye Road and 24th Street, go south on 24th Street for 0.5 mile to a side street left (Hess Street), continue south on 24th Street for 0.05 mile to the station on the right.

Station mark, a standard traverse station disk set in top of a round concrete post which projects abo t 3 inches and is stamped WILSON 1962. The mark is 127 feet south-southeast of fence corner, 51 feet west of center of 24th Street, 3 feet east of fence and 2.9 feet west-northwest of witness post.

Reference mark 1, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped WILSON NO 1 1962. The mark is 91.0 feet east of witness post, 40 feet east of the center of 24th Street and 1 foot west of fence.

Reference mark 2, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped WILSON NO 2 1962. The mark is 141.5 feet north-northwest of witness post, 59 feet west of center of 24 th Street, 13 feet north of fence corner and 2.5 feet southwest of a utility pole.

No azimuth mark, objects visible from the ground could be used as azimuth.

RECOVERY NOTE, ~~REDESCRIPTION~~ STATION TRAVERSE

R

NAME OF STATION: WILSON
ESTABLISHED BY: C.A.A. YEAR: 1962 STATE: Arizona BENCH MARK(S) ALSO [X]
RECOVERED BY: E. Pursel Jr. YEAR: 1967 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4.0 miles southeast of Phoenix

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

This station was recovered with all marks as described, except that there is no longer a fence next to the station or RM # 1. The concrete post that the disk is in is badly battered but does not appear to have been disturbed.

(Continued on next page)

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WILSON YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Ehrenberg to Phoenix to Casa Grande)

Second-ORDER Traverse SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 465,469.57 y 883,172.66	189° 05' 43" - 0 03 44	Δ PHOENIX STATE HOSPITAL WATER TANK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 40".1171 NORTH LONGITUDE: 112 01 47.4487 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
PHOENIX STATE HOSPITAL WATER TANK	THIRD-ORDER 189°01'59".3	

C+GS Bm

FORM 251 07-23-063 USCOMM-DC 11251-P51

FILE COPY
NOV 1970

MAY 1970

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1020
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

WILSON (Continued)

(5-10-65)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

R

RECOVERY NOTE, TRIANGULATION STATION
TRAVERSE

Quad No. 33/122
Sta. No. 1020

NAME OF STATION: WILSON
ESTABLISHED BY: C.A.A. YEAR: 1962 STATE: Arizona
RECOVERED BY:* L.F. Smith YEAR: 1970 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS. HEIGHT OF LIGHT ABOVE STATION MARK METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION °	'	"
Phoenix, Arizona State Hospital Water Tank 1962				0	00	00.0
Phoenix Sky Harbor Muni. Airport Control Tower Beacon 1962				49	41	34.0
R.M. 3	W	21.47	6.544	260	48	54
R.M. 2	NNW	139.69		348	42	42

The station and reference marks were recovered and found in good condition. 24TH Street will be made wider in the near future and the construction will destroy reference mark NO. 1. Reference mark number 3 was established at this time.

The station is located in the southeast part of Phoenix. It is along the west side of 24 th Street, 0.05 mile north of Interstate Highway 10.

The station mark is a standard traverse disk stamped, WILSON 1962. It is set in the top of a 12 inch round concrete monument which projects about 1 inch. It is 28 feet south-southwest of the east leg of a sign board, 26 feet south of the west leg of the sign board and 1 1/2 feet west of the witness post.

Reference mark 2, is a standard disk stamped WILSON NO 2 1962. It is set in the top of a 12 inch round concrete monument which is about 2 inches below the ground surface. It is 13 feet north of the south end of the concrete wall which is a base for a chain link fence line, 3 feet southwest of a power pole and 1 1/2 feet east of the fence line. It is in the cactus garden in front of 2024 24th Street.

Reference mark 3, is a standard disk stamped, WILSON 1962 NO 3 1970. It is set in the top of a 12 inch round concrete monument flush with the ground surface. It is 41.7 feet southwest of the east leg of the sign board, 31.7 feet southwest of the west leg of the sign board and 23 feet west of the witness post.

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.

NOTE - One of these forms must be used for every station recovered.

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169A

QUAD 331122 STATION 1021
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TR'V [illegible]

NAME OF STATION: POT STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1962 DESCRIBED BY: B. P. B.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

SURFACE-STATION MARK, UNDERGROUND-STATION MARK: 1b, 7a

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

NOTE	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡ °	'	"
	BELL BUTTE (AMS)				00	00	00.00
11b	R. M. No. 2	S	14.92	4.547	80	43	34
	Pheonix, KPHO TV Tower	SSW	approx. 6.0 miles		111	34	12.2
	Pheonix, KTAR TV Mast	SSW	approx. 6.0 miles		112	28	34.5
11b	R. M. No. 1	N	15.29	4.659	258	53	25

Detailed description:

The station is located in the southeast part of Pheonix, and about 1/4 mile north of the intersection of E. Broadway Street and S. 32nd Street.

To reach the station from the intersection of E. Broadway Street and S. 32nd Street, go north on 32nd Street for 0.25 mile to E. Jones Street, continue north for 0.05 mile to station on left just before crossing a small irrigation ditch.

Station mark, a standard traverse disk set in the top of a 12 inch round concrete post which projects about 3 inches is stamped POT 1962. The mark is 49 feet west of the edge of canal, 18 feet south of a small ditch, 17 feet west of center of road, 2 feet east of fence and 1.9 feet east of witness post.

Reference mark 1, a standard reference disk set in the top of a 12 inch round concrete post which projects about 3 inches is stamped POT NO 1 1962. The mark is 22 feet west of the center of road, 15.4 feet north of witness post and 1 foot east of fence.

Reference mark 2, a standard reference disk set in the top of a 12 inch round concrete post which projects about 3 inches is stamped POT NO 2 1962. The mark is 15 feet south of witness post, 15 feet west of the center of road and 1 foot east of fence.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: POT YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Ehrenberg to Phoenix to Casa Grande)

Second-order Traverse SOURCE: G-12917, G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 470,944.60 y 877,131.60	28° 07' 18" - 0 03 09	Δ PHOENIX TV STATION KPHO TOWER
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 24' 40".3978 NORTH		BENCH MARK METERS
	LONGITUDE: 112 00 42.7799 WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
PHOENIX TV STATION KPHO TOWER	THIRD-ORDER 28°04'09".4	

C+GS Line 117

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ARIZONA 169A

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1022
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00

DESCRIPTION OF TRIANGULATION STATION

PHOENIX

NAME OF STATION: BASELINE EAST 1947 STATE: Arizona COUNTY: Maricopa
CHIEF OF PARTY: D.H.Konichek YEAR: 1947 LOCALITY: Phoenix

Surface-station mark,	Note,*1a
Underground-station mark,	Note,*1a
Reference mark, No. 1	Note,*
Reference mark, No. 2	Note,*11a
Azimuth mark,	Note,*11a
Witness mark,	Note,*
Height of light above station mark	meters.
Height of telescope above station mark	198 meters.†

DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND

OBJECT	HOR. DISTANCE Meters	DIRECTION ° ' "	AZIMUTH ° ' "
RIVER 1935		00 00 00.00	
R.M. No. 1 1947 ENE	97.981	328 10 05.	
R.M. No. 2 1947 SW	13.952	137 09 27.	
Az.Mk.1947 N approx.1	0 mile		
airline.		247 31 37.2	

Detailed description:

The station is located approximately 5 miles airline south of Phoenix on Baseline Road, 0.4 mile west of its intersection with South Central Avenue, 107 paces west of intersection of Baseline Road and Western Canal, approximately 50 feet south of center line of Baseline Road, about 27 feet north of the north edge of canal, 3 feet north of a east-west fence line, 12 inches below the ground surface and is stamped " BASELINE EAST 1947".

Reference mark No. 1 is set flush in the south headwall of a concrete bridge across Western Canal, approximately in center of canal, about 2 feet higher than center-line of road and is stamped "BASELINE EAST NO 1 1947".

Reference mark No. 2 is approximately the same elevation as station, 25 feet north of the north edge of canal, 1 foot north of a east-west fence line, flush with the ground surface and is stamped "BASELINE EAST NO 2 1947".

The azimuth mark is located on Southern Avenue, 28 feet north of and approximately the same elevation as Southern Avenue, 3 feet west-southwest of a 2 foot tree, 1 foot south of a east-west fence line, projects 3 inches and is stamped "BASELINE EAST 1947".

To reach from the intersection of Van Buren and Central Avenue in Phoenix; go south on South Central Avenue for 5.2 miles to the intersection of South Central Avenue with Baseline Road; turn right (W) and go 0.4 mile to station on left, as described above. The azimuth mark is reached by turning right (W) on Southern Avenue 1.0 mile before reaching the intersection of Baseline Road, continue west on Southern Avenue for 0.25 mile to azimuth mark as described above.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX BASELINE EAST
ESTABLISHED BY: D.H.K. YEAR: 1947 STATE: Arizona
RECOVERED BY:* L.W.Q. YEAR: 1953 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station and reference marks were recovered in good condition. Description is adequate. The distances to the reference marks were not checked. The azimuth mark was not searched for.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX BASELINE EAST
ESTABLISHED BY: YEAR: 1947 STATE: Arizona
RECOVERED BY:* A.M.S. YEAR: 1960 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station mark and reference marks recovered as described and in good condition.

Azimuth mark is 31 ft N of centerline of Southern Ave and 26ft. E of extended centerline of S 5th Ave. Tree and fence line of original description no longer exist. Line of sight between Azimuth mark and station is blocked.

(Continue on next page)

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX BASELINE EAST YEAR: 1947, 1962
STATE: Arizona LOCALITY: Phoenix to Parker (Vicinity of Phoenix)
Second-ORDER Triangulation SOURCE: G-8347, G-12917, G-13304 FIELD SKETCH: Ariz. 26, 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 450,267.51 y 864,891.56	181° 57' 41" - 0 05 23"	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 22' 39".0342 NORTH LONGITUDE: 112 04 46.4902 WEST		354.8 METERS 1164 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	THIRD-ORDER 181°52'17".6	

FORM 251 (7-23-65) USCOMM-ESSA 16251-P65

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USCOMM—ESSA—ASHEVILLE

169

ARIZONA

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1022
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

PHOENIX BASELINE EAST (Continued)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

R

RECOVERY NOTE, TRIANGULATION STATION

PHOENIX
NAME OF STATION: BASELINE EAST
ESTABLISHED BY: D.H . E. YEAR: 1947 STATE: Arizona
RECOVERED BY:* C. A. Annis YEAR: 1962 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 20.3 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 22.7 METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
RIVER 1935				00 00 00
Phoenix, KPHO TV Tower	SSE	approx.	3 miles	45 55 16.7
Phoenix, KOOL TV Tower	SSE	approx.	3 miles	46 35 36.0
R. M. No. 2	SW	45.76	13.948	137 08 37
R. M. No. 3	W	102.27	31.173	166 14 45
R. M. No. 1	ENE	321.43		328 10 15

The station was recovered as described in the 1947 description and station mark, R. M. No. 1 and R. M. No. 2 were found to be in good condition, the direction to R. M.No. 1 and R. M. No. 2 checked and a slight difference in the distance was found. The azimuth mark was not recovered. R. M. No. 3 was established at this time.

A complete new description follows.

To reach the station from the intersection of Van Buren Street and Central Avenue in the central part of Phoenix, go south on Central Avenue for 5.05 miles to Base Line Road, turn right, go west on Base Line Road for 0.4 mile to the station on the left.

Station is a standard triangulation station disk set in top of a concrete post which is about 12 inches below the surface of the ground and is stamped BASELINE EAST 1947. The mark is 57 feet south of center of West Base Line Road, 32.5 feet south of power line pole, 28.5 feet north of the north edge of canal and 3.1 feet west-southwest of witness post.

Reference mark 1, a standard reference disk set in a drill hole in the approximate center of headwall of small concrete bridge over the Western Canal and is stamped BASELINE NO 1 1947. The mark is 10 feet south of center of West Base Line Road.

Reference mark 2, a standard reference disk set in top of a concrete post which is about 8 inches below the surface of the ground and is stamped BASELINE EAST NO 2 1947. The mark is 69 feet south of West Base Line Road, 48.8 feet west-southwest of witness post and 26 feet north of the north edge of canal.

Reference mark 3, a standard reference disk set in a drill hole in the concrete base of a light pole and is stamped BASELINE EAST NO 3 1947. The mark is 84 feet north of the north edge of canal, 36 feet south of center of West Base Line Road and 19 feet southwest of power pole.

Distance from R. M. No. 2 to R. M. No. 3 is 66.16 feet or 20.165 meters.

No Azimuth mark set.

R. D. Sveum

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.

NOTE - One of these forms must be used for every station recovered.

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REVISED JUNE 1969

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1023
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

River (Maricopa County, E. B. Latham, 1935).—About 6 miles, air line, south of Phoenix in the Phoenix Mountains, on the higher and more northeastern of two hills from the road, the other hill being about 300 yards to the south and west. Marked by a standard bronze disk as described in note 2. Reference mark No. 1, a standard bronze reference disk, note 12a, is 4.784 meters (15.70 feet) from station in azimuth 261°40'. Reference mark No. 2, a standard bronze reference disk, note 12a, is 13.585 meters (44.57 feet) from station in azimuth 312°40'. No azimuth mark established. Other stations visible from the ground.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
FORM 526

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: RIVER
ESTABLISHED BY: E.B.Latham YEAR: 1935 STATE: Arizona LOCALITY: Phoenix COUNTY: Maricopa
RECOVERED BY: D.H.Konichek YEAR: 1947

Detailed statement as to the fitness of the original description: The station and reference marks was found in in good condition as described with the exception of distances to both reference marks, the previous measurements appears to be a slope distance from instrument and never converted. An azimuth mark was established. The correct distances and directions listed below.

OBJECT	HOR. DISTANCE Meters	DIRECTION
SALT 1935		00 00 00.00
R.M. No. 1 1935 ENE	4.689	177 42 39.
R.M. No. 2 1935 SE	13.047	238 42 03.
Az.Mk. 1947 N	Approx. 0.25 mile airline.	103 01 02.6

The station is located about 6 miles airline south of Phoenix, in the Salt River Mountains, on the higher and more northeastern of two hills visable from road, the other hill being about 300 yards to the south and west. Marked by a bronze disk as described in note 2, and stamped "RIVER 1935".

Reference mark No. 1 is a bronze disk as described in note 12a, on the north side of ridge and approximately 18 inches lower than station, set flush and stamped "RIVER 1935".

Reference mark No. 2 is a bronze disk as described in note 12a, is approximately 4 feet lower than station, 6 feet north of the south side of ridge, projects 3 feet and is stamped "RIVER NO 2 1935".

The azimuth mark is a bronze disk, located approximately 0.25 mile north of station, 250 yards north of a low ridge where trail goes into a small basin, 5 feet east of trail, 5 feet north of a 3-foot rock cairn, set flush in outcropping bedrock and stamped: "RIVER 1947".

To reach from the intersection of Van Buren and Central Avenue in Phoenix, go south on Central Avenue to its intersection with Baseline Road; turn left, east, on Baseline Road for 2.5 miles to its intersection with 24th Street and sign: "Michell Lodge"; turn right, south, and go 0.6 mile to a crossroad; continue straight ahead 0.1 mile to a fork; take right fork and follow road for 0.4 mile into canyon and up canyon to a small basin, picnic site and the end of truck travel. From this point, take trail which leads easterly around mountain side for approximately 1.3 mile to a small basin, (Azimuth Mark is approximately 250 yards before reaching this basin). Station is due south from this point. Leave trail and go up steep slope to the sharper pointed one of the twin peaks and station site as described above. A 45-minute pack.

Observations made from a 1.3 m tripod.

Form 526
(11-5-68)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: RIVER
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY: A.M.S. YEAR: 1952 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station recovered as described.
Reference mark 1 not recovered.
Reference mark 2 recovered as described.
The station is cemented in outcropping bedrock on N easternmost of two buttes and is stamped RIVER 1935.
Azimuth mark was not searched for.

(continued on next page)

ADJUSTED HORIZONTAL CONTROL DATA

33°15'
112°00'

NAME OF STATION: RIVER
STATE: ARIZONA YEAR: 1935 FIRST ORDER
LOCALITY: YUMA TO STEWART DAM
SOURCE: G-3022 FIELD SKETCH: ARIZ 8

GEODETIC LATITUDE:	33 21 22.40118	ELEVATION:	668.9 METERS
GEODETIC LONGITUDE:	112 01 24.79423		2195 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	φ (OR Δ α) ANGLE
ARIZ. C.	0202	467,362.75	857,124.51	- 0 03 32

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
AZIMUTH MARK 1947	176 59 07.6	177 02 40	0202
TEMPE AIRWAY BEACON	225 50 46.3	225 54 18	0202

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36-913
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JULY 1966 ARIZONA

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1023
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Form 526
(11-8-65)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

Name of Station: RIVER
Established by: E.B.L. Year: 1935 State: Arizona
Recovered by:* A.M.S. Year: 1959 County: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station recovered as described.
Reference marks 2 and 3 and the azimuth mark were recovered.
Reference mark 1 was not found.

R

Form 526a
(9-5-56)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

Name of Station: RIVER
Established by: E.B.Lathham Year: 1935 State: Arizona
Recovered by: * S.L.Hollis Jr. Year: 1959 County: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station was found as described, and all marks were in good condition with the exception of Reference Mark No.1 which showed evidence of having been forced from the rock and was not found. A new mark stamped RIVER 1935 NO 3 1959 was cemented in a drill hole in bedrock that is flush with the ground. (Note 12a) It is 1 foot lower than the station mark and 4 feet south of the north edge of the rim.

OBJECT	BEARING	DISTANCE feet	DISTANCE meters	DIRECTION
CAMELS BACK 2 1947				0 00 00.0
RM 3	NE	14.27	4.348	41 05 32
RM 2	SE	42.82	13.051	114 20 25
Azimuth mark	N	(Approx.0.25 mile)		338 39 43.5

Form 526
(11-8-65)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

Name of Station: RIVER
Established by: E.B. Latham Year: 1935 State: Arizona
Recovered by:* C.A. Annis Year: 1962 County: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station was recovered as described in original description and 1959 recovery note and all marks were found to be in good condition. The distance to all marks checked with 1959 recovery note. A difference was found in the direction to reference marks. Original to reach is adequate.
1962 observations follow:

OBJECT	BEARING	DISTANCE		DIRECTION
TELEGRAPH PASS (USGS) 1935				00 00 00.0
Phoenix, KTAR TV Mast	SW	approx. 3.0 miles		00 03 51.9
Azimuth Mark	N	approx. 0.25 mile		121 38 45.5
R.M. No. 3	NE	14.27	4.348	184 02 46
R.M. No. 2	SE	42.81	13.050	257 20 18

Robert P. Kennedy

* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
Note.—One of these forms must be used for every station recovered.

Comm-DC 54316

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ARIZONA 169

JULY 1966
U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REVISED JUNE 1969

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1024
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Jackson (Maricopa County, E. B. Latham, 1935; 1936).—About 12 miles, air line, west by south from the town of Chandler; about 5 miles, air line, northeast of the Gila River; on a low lone butte locally known as Jackson Butte. Marked by a standard bronze disk as described in note 2. Reference mark No. 1, a standard bronze reference disk, note 12a, is 7.464 meters (24.49 feet) from station in azimuth 245°34'. Reference mark No. 2, a standard bronze reference disk, note 12a, is 3.633 meters (11.92 feet) from station in azimuth 139°40'. The azimuth mark, a standard bronze disk, note 11a, is 11 paces east of the centerline of the graded road at the junction of the graded road with an unimproved road that runs to the station, and is about 0.4 mile from station in azimuth 343°47'21".

FORM 526a (5-18-69) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY

R

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: JACKSON
ESTABLISHED BY: R. B. L. YEAR: 1935 STATE: Arizona
RECOVERED BY:* C. A. Annis YEAR: 1962 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1.3 METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION ° ' "
TELEGRAPH PASS 1935 (USGS)				00 00 00
R. M. No. 1	ENE	24.49	7.463	85 17 39
Azimuth Mark	ESE	approx.	0.4 mile	163 38 33.4
R. M. No. 2	NNW	11.95	3.644	339 31 23
Phoenix, KTAR TV Mast (west of 4)	N	approx.	0.4 mi.	359 25 06.9

The station was recovered as described and all marks were found to be in good condition. The direction to the azimuth mark and reference mark 2 were checked and found to be correct, a difference was found in the direction to reference mark 1. The distance to reference mark 1 and 2 checked and was found to be correct.

To reach the station from the junction of Arizona Avenue and Cleveland Avenue in Chandler, go west on Cleveland Avenue for 6.85 miles to a side road left, just before reaching the railroad tracks, turn left, go southerly for 1.65 miles to a track road right, turn right, go west on track road for 0.3 mile to forks, keep left fork, continue

southwest for 0.85 mile to forks, continue straight ahead on the main track road for 0.75 mile to a cross-road, turn left, go south 0.15 mile to forks, keep right fork, southwest on track road for 2.35 miles to power line and the Azimuth Mark on the left, turn sharp right, cross ditch, go north for 0.4 mile to forks, keep right fork, continue northerly around the east side of hill to the north side and the end of track travel. Pack south up rocky hill to the station as described.

Station mark, a U.S. Army Corps of Engineers disk set in a drill hole in rock in the approximate center of hill, is encircled by white painted rocks and is stamped USC&GS JACKSON 1935 RESET BY AMS 1948.

Reference marks 1 and 2 are both set in drill hole in rock and were recovered as described.

Azimuth mark, a standard azimuth disk set in top of a 6 inch square concrete post which projects about 4 inches and is stamped JACKSON 1936. It is 90 feet southeast of the edge of irrigation ditch, 82 feet south of center of dirt road and 36 feet east of center of dirt road.

The distance from R. M. No. 1 to R. M. No. 2 is 30.04 feet.

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.

NOTE - One of these forms must be used for every station recovered.

USCOMM-DC 27178-P66

ADJUSTED HORIZONTAL CONTROL DATA

33°15'
112°40'

NAME OF STATION: JACKSON
STATE: ARIZONA YEAR: 1935 FIRST ORDER
LOCALITY: AJO TO TUCSON TO PHOENIX TO WINKELMAN
SOURCE: C-3058 FIELD SKETCH: ARIZ 9

GEODETIC LATITUDE:	33 15 43.08578	ELEVATION:	383.8 METERS
GEODETIC LONGITUDE:	112 01 54.37799		1259 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	φ (OR Δ α) ANGLE
ARIZ. C.	0202	464,815.70	822,834.64	- 0 03 47

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
CATHERINE	93 17 23.0	93 21 10	0202
AZIMUTH MARK	343 47 27.2	343 51 14	0202

C&GS FORM 6402

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AUG 1969

36-915
USCOMM—ESSA—ASHEVILLE

ARIZONA 169

JULY 1966

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REVISED JUNE 1969

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1025
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Telegraph Pass (U. S. G. S.) (Maricopa County, E. B. Latham, 1935).—On the highest point of the range of hills, about 10 miles, air line, south of Phoenix, and one-half mile south of Telegraph Pass. The U. S. Geological Survey mark was found out of place, and the Coast and Geodetic Survey mark was set in the same position as the original mark had occupied. Marked by a standard bronze disk as described in note 2a. Reference mark No. 1, a standard bronze reference disk, note 12a, is 23.742 meters (77.89 feet) from station in azimuth 203°13'. Reference mark No. 2, a standard bronze reference disk, note 12a, is 16.521 meters (54.20 feet) from station in azimuth 348°15'.

Form 526
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: TELEGRAPH PASS (U.S.G.S.)
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY:* YEAR: 1955 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station is set in rock outcrop on highest peak in South Mountains and is stamped TELEGRAPH 1935.

To reach from the intersection of S. Central Avenue and Baseline Road in Phoenix, go S on paved road into South Mountain Park for 2.6 miles to road forks; go left fork around curve E and up long grade (Summit Drive) for 3.4 miles to road fork; take right fork and go E for 0.85 miles to road forks; turn right and go approximately 1.5 miles to highest peak and largest TV tower and station site.

Form 526a
10-10-631

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

s.f.b.
R

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: TELEGRAPH PASS (USGS)
ESTABLISHED BY: E.B. Latham YEAR: 1935 STATE: Arizona
RECOVERED BY:* C.A. Annis YEAR: 1962 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
				00 00 00.0
Z=9 (AMS)				
R.M. No. 1	NNE	77.21	23.533	101 04 37
R.M. No. 3	ENE	31.83	9.703	145 41 07
Azimuth Mark	SS	approx.	0.3 mile	219 11 19.5
Phoenix, KTVK TV Tower	NE	18.69	5.699	124 38 34.0

Station mark and reference mark No. 1 were recovered and found to be in good condition. Reference mark No. 2 has been destroyed due to construction of a television transmitting building. Reference mark No. 3 and azimuth mark were established at this time. A difference was found in the distance to reference mark No. 1.

Due to construction of television transmitting building, a complete new description follows:

Station is located about 10 miles south of Phoenix, on top of South Mountain which has 3 television towers and 1 television mast built on top of mountain and is under KTVK Television Tower.

To reach from the intersection of S. Central Avenue and Baseline Road in Phoenix, go south on S. Central Avenue for 2.45 miles to a toll gate, continue ahead 0.15 mile to crossroad and sign "Dobbins Lookout Point", continue straight ahead and follow main road for 1.3 miles to fork, keep left fork and follow winding main road for 3.35 mile to reverse fork, keep right and go 0.8 mile to fork, turn right and follow main winding road for 1.25 miles to side road right, (To reach the azimuth mark from here continue south and easterly for 0.2 mile to parking area and azimuth mark as described), to station turn right and go 0.05 mile to fork, keep right and go 0.15 mile to summit of ridge, turn left and go westerly along ridge for 0.05 mile to KTVK Television Tower and station as described.

(Continue on next page)

ADJUSTED HORIZONTAL CONTROL DATA

33°15'
112°00'

NAME OF STATION: TELEGRAPH PASS USGS
STATE: ARIZONA YEAR: 1935 FIRST —ORDER
LOCALITY: AJO TO TUCSON TO PHOENIX TO WINKELMAN
SOURCE: G-3058 FIELD SKETCH: ARIZ 8

GEODETIC LATITUDE:	33 20 00.85289	ELEVATION:	823.2 METERS
GEODETIC LONGITUDE:	112 03 45.24793		2701 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	ϕ (OR Δ α) ANGLE
ARIZ. C.	0202	455,438.28	848,897.32	- 0 04 49

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
RAY	285 00 21.1	285 05 10	0202
AZIMUTH MARK 1962	321 19 18.4	321 24 07	0202

36-914
USCOMM—ESSA—ASHEVILLE

169

JULY 1966 ARIZONA

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

33° 15'
112 00

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1025
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

TELEGRAPH PASS (U.S.G.S.) (Continued)

Station mark, a standard triangulation disk stamped TELEGRAPH 1935, is set in a drill hole in outcropping bedrock and is reinforced by concrete which measures 1 1/2 feet by 2 feet and projects about 8 inches. The mark is 38 feet west of the northwest corner of transmitting building, 33 feet north of the southwest corner of transmitting building and 5.5 feet south of the south leg of tower.

Reference mark 1, a standard reference disk stamped TELEGRAPH NO 1 1935, is set in a drill hole in outcropping bedrock which projects about 3 inches above the ground. The mark is 85 feet north-northwest of the northwest corner of transmitting building, 59 feet north of the northeast leg of tower and 51 feet north-northeast of the northwest leg of tower.

Reference mark 3, is a cross chiseled in top of a 1 inch leg bolt which secures the northeast leg of television tower to a concrete foundation and is about 4 feet higher than the surface of the ground. The mark is 27 feet north of the northwest corner of transmitting building.

Azimuth mark, a standard azimuth disk cemented in a drill hole in top of outcropping bedrock which projects about 6 inches above the surface of the ground. The mark is 186 feet southwest of a small concrete building and 6 feet south of the south edge of the parking area.

OBJECT	BEARING	DIRECTION
TT ZW 9 (AMS)		00 00 00.00
Phoenix, KPHO Relay Tower	N	73 33 26.2
Phoenix, Sky Harbor Municipal Airport Control Tower Beacon	NE	99 17 43.6

Form 526 (11-8-58)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

Name of Station: TELEGRAPH PASS (USGS)
Established by: E. B. L. Year: 1935 State: Arizona
Recovered by:* C. A. A. Year: 1963 County: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station mark, reference mark 1, reference mark 3 and the Azimuth mark were recovered as described in the 1962 description and all marks were found to be in good condition. The direction to the azimuth mark was checked. A difference in the distance to reference mark 1 was found and the distance to reference mark 3 was checked. The direction to the reference marks was not taken at this time.

The 1962 description and the to reach station and all marks is adequate.

The 1963 observations follow:

OBJECT	BEARING	DISTANCE feet	DISTANCE meters	DIRECTION
TT ZW 9 (AMS) 1962				00 00 00
Azimuth Mark	SE	approx. 0.3 mile		219 11 16.0
R. M. No. 1	NNE	77.26	23.550	
R. M. No. 3	ENE	31.82	9.701	

(Army Map Service,1966)--Station mark recovered in good condition.

R. D. Sveum

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
Note.—One of these forms must be used for every station recovered.

Comm-DC 34314

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX TV STATION KTVK TOWER YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey Ehrenberg to Phoenix to Casa Grande

Third -ORDER Traverse SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 455,451.92 y 848,910.10	- 0 04 48	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 20' 00.980" NORTH		METERS
	LONGITUDE: 112 03 45.087" WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
Position determined by traverse from station TELEGRAPH PASS USGS and checked by additional observations from DURANGO, PHOENIX BASELINE EAST, PHOENIX, COURT HOUSE, HILTON, WILSON, BELL BUTTE AMS		

ECO

Form 525b (11-8-58)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Phoenix, TV Station KTVK, Tower

Chief of Party: C. A. Annis Year: 1962 State: Arizona County: Maricopa

Description, including sketch of object: The station is located about 8 miles south of the center of Phoenix and is on a high hill in South Mountain Park.

To reach the station from the intersection of South Central Avenue and Baseline Road in the south edge of Phoenix, go south on South Central Avenue for 2.45 miles to a toll gate and the entrance to South Mountain Park, continue south for 0.15 mile to a crossroad, continue southerly for 1.3 miles to forks, keep left fork and easterly up grade for 3.35 miles to a side road right, turn right, go southeasterly for 0.8 mile to a side road right, turn right, go southwesterly for 1.25 miles to a side road right, turn right, go northerly for 0.15 mile to the station.

Station is the 2nd tower from the east of four, is painted red and white with a red light on top and is 258 feet high.

Point intersected was the red light on top.

Form 526 (11-8-58)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION / INTERSECTION

R

Name of Station: PHOENIX TV STATION , KTVK TOWER
Established by: C.A. A. Year: 1962 State: Arizona
Recovered by:* E. Pursel Jr. Year: 1967 County: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

This station recovered as described.

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169

QUAD 331122 STATION 1026,1027
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX TV STATION KTAR TOWER YEAR: 1962, 1963 *

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third -ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Axl ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 455,193.81 y 848,748.94	° ' " - 0 04 50	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 19' 59"381 NORTH LONGITUDE: 112 03 48.127 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: DURANGO, PHOENIX BASELINE EAST, PHOENIX, COURT HOUSE, HILTON, WILSON, POT, BELL BUTTE AMS, RIVER, PORT, JACKSON, with additional observations from GRAND, LINDEN *, STELLA, PEORIA *, MARY *, LEE *, GOMEZ *, HUMM *			

Form 523h (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, TV Station KTAR, Tower

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located about 8 miles south of the center of Phoenix and is on a high hill in South Mountain Park.

To reach the station from the intersection of South Central Avenue and Baseline Road in the south edge of Phoenix, go south on South Central Avenue for 2.45 miles to a toll gate and entrance to South Mountain Park, continue southerly for 0.15 mile to crossroad, continue south and follow the main road for 1.3 miles to forks, keep left fork and follow the main road for 3.35 miles to a side road right, turn right and follow the main road southeasterly for 0.75 miles to a side road right, follow surfaced road southwesterly for 1.25 mile to a side road right, turn right, go northerly for 0.15 mile to the station.

Station is the west one of four TV towers, is painted red and white with a red light on top and is 350 feet high.

Point intersected was the red light on top center of mast.

Described by R.D. Sveum

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX TV STATION KOOL TOWER YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third -ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Axl ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 455,705.50 y 849,073.70	° ' " - 0 04 47	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 20' 02"602 NORTH LONGITUDE: 112 03 42.101 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: DURANGO, PHOENIX BASELINE EAST, PHOENIX, COURT HOUSE, HILTON, WILSON, BELL BUTTE AMS			

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, TV Station KOOL, Tower

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located about 8 miles south of the center of Phoenix and is on top of a high hill in South Mountain Park.

To reach the station from the intersection of South Central Avenue and Baseline Road in the south part of Phoenix, go south on South Central Avenue for 2.45 miles to a toll gate and entrance to South Mountain Park, continue south for 0.15 mile to a crossroad, continue south for 1.3 miles to forks, keep left fork and go easterly up grade for 3.35 miles to a side road right, turn right, go southeasterly for 0.8 mile to a side road right, turn right, go westerly for 1.25 miles to a side road right, turn right, go northerly for 0.15 mile to the station.

Station is a steel tower painted red and white with a red light on the top center and is 264 feet high.

Point intersected was the red light on top center.

Described by R. D. Sveum

JAN 1967

USCOMM—ESSA—ASHEVILLE

169

JULY 1966 ARIZONA
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1028,1029
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX TV STATION KPHO TOWER YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (HOR ∠α) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 455,928.09 y 849,033.76	- 0 04 46	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 20' 02".210 NORTH LONGITUDE: 112 03 39.477 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: DURANGO, PHOENIX BASELINE EAST, PHOENIX, COURT HOUSE, HILTON, WILSON, POT, BELL BUTTE AMS, RIVER			

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, TV Station KPHO, Tower

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located about 8 miles south of the center of Phoenix and is on top of high hill in South Mountain Park.

To reach the station from the intersection of South Central Avenue and Baseline Road in the south edge of Phoenix, go south on South Central Avenue for 2.45 miles to the a toll gate and entrance to South Mountain Park, continue south for 0.15 mile to crossroad, continue south for 1.3 miles to forks, keep left and follow the main road easterly up grade for 3.35 miles to a side road right, turn right, go southeasterly for 0.8 mile to a side road right, turn right, go westerly for 1.25 miles to a side road right, turn right, go northeasterly for 0.2 mile to the station.

Station is the east one of four TV towers, is painted red and white and is 386 feet high.

Point intersected was the red light on the top center.

Described by R. D. Sveum

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SOUTH MOUNTAIN STATE HIGHWAY PATROL TOWER YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

Third ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 51

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (HOR ∠α) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 454,344.32 y 848,543.40	- 0 04 56	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 19' 57".336 NORTH LONGITUDE: 112 03 58.136 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: COOL, GLENDALE 2, SANTA, STELLA, GUARANTY, STRONG			

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: South Mountain, State Highway Patrol Tower

CHIEF OF PARTY: C.A. Annis YEAR: 1963 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object:

Station is located on top of South Mountain which is about 10 miles south of Phoenix and is the west tower of 5.

Station is a steel cylinderical structure painted silver, is approx-80 feet high and has two antenas on top.

Point intersected was top and center of structure.

Described by Robert P. Konrade

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 16 9B

QUAD 331122 STATION 1030
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00

FORM 525 (9-10-63)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~HORIZONTAL~~ STATION
TRAVERSE

NAME OF STATION: EDGE STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.*	HEIGHT OF TELESCOPE ABOVE STATION MARK METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.						
1b 7a	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION						
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡		
	COOL				00	00	00.00
	Phoenix, KPHO Relay Tower	E	approx. 8	miles	08	52	41.7
	Phoenix, Arizona Public Service Water Tank	ESE	approx. 4	miles	21	21	36.5
desc	Azimuth Mark	SE	approx. 0.25	m.	53	02	35.99
11b	R.M. No. 2	S	18.47	5.632	100	37	42
11b	R.M. No. 1	N	27.59	8.411	280	28	08

Detailed descriptions:

Station is located about 8 miles west of the center of Phoenix, about 3/4 mile south of West Mc Dowell Road, about 1/4 mile north of West Van Buren Street and on the east right-of-way of 75th Avenue.

To reach from the junction of West Buckeye Road and 75th Avenue in the southwest section of Phoenix, go north on 75th Avenue for 1.0 mile to West Van Buren Street, continue north on 75th Avenue for 0.3 mile to station on right as described.

Station mark, a standard traverse disk stamped EDGE 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 36.5 feet east of center of 75th Avenue, 35.3 feet west of a fence, 23.5 feet north of a power pole and 2.6 feet south-southeast of the witness post.

Reference mark 1, a standard reference disk stamped EDGE NO 1 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 51 feet north of a power pole, 36.5 feet east of the center of 75th Avenue, 35.3 feet west of a fence and 25 feet north of the witness post.

Reference mark 2, a standard reference disk stamped EDGE NO 2 1963, is set in the top of a concrete cylinder which projects about 1 inch. The mark is 36.5 feet east of the center of 75th Avenue, 35.3 feet west of a fence, 21 feet south of the witness post and 5 feet north of a power pole.

Azimuth mark, a standard azimuth disk stamped EDGE 1963, is set in a drill hole in the west curb of a bridge over a canal. The mark is in the southwest corner of bridge, 80 feet north of the northeast edge of house, 40.6 feet south of the center of West Van Buren Street, 6.5 feet west of center of driveway and 1.5 feet north of the southwest corner of bridge.

To reach the azimuth mark from station, go south on 75th Avenue for 0.3 mile to West Van Buren Street, turn left and go east for 0.25 mile to the azimuth mark in concrete bridge over canal on right.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction—angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P66

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: EDGE YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 407,415.96 y 893,122.65	314° 12' 02" - 0 10 02	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 17".4156 NORTH LONGITUDE: 112 13 12.8009 WEST		315.46 METERS 1035.0 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 314°01'59".9	

FORM 251 (7-23-65) USCOMM-DC 18261-P61

USCOMM—NOAA—ASHEVILLE

FILE COPY

SEP 1971

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REVISED: JULY 1971

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169 B

QUAD 331122 STATION 1031
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

DESCRIPTION OF ~~XXXXXXXXXX~~ TRAVERSE STATION

NAME OF STATION: EVANS STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION° ' "
1b 7a	EDGE				00 00 00.0
11b	R.M. No. 2	NW	61.29	18.680	59 13 12
desc.	R.M. No. 1	NNE	54.75	16.687	142 28 50
16b	Azimuth Mark	NNE	approx. 0.5 mile		145 28 45.34
	Phoenix, Arizona Public Service Co. Water Tank	ESE	approx. 3 miles		224 50 55.3
	Phoenix, Western Cotton Products Co. Water Tank	SE	approx. 2 1/2 m.		235 37 27.8

Detailed description:

Station is located about 7 1/2 miles west of the center of Phoenix, 1/2 mile north of W. Van Buren Street, 1/2 mile south of W. McDowell Rd., 1/2 mile east of 75th Avenue, 1/2 mile west of 67th Avenue and in the approximate center of section 1 on property of Mrs. Evans.

To reach from the junction of W. Buckeye Road (U.S. Highway 80) and 75th Avenue in the southwest section of Phoenix, go north on 75th Avenue for 1.0 mile to W. Van Buren Street, continue north on 75th Avenue for 0.5 mile to driveway on right, turn right and go east along south side of Mrs. Evans farm buildings for 0.2 mile to a slight jog to left, continue east on the north side of concrete irrigation ditch for 0.3 mile to power line at fence corner and station on right.

Station mark, a standard traverse disk stamped EVANS 1963, is set in the top of a concrete cylinder which projects about 1 inch above the surface of the ground. The mark is 55 feet southwest of the south edge of irrigation gate, 30 feet west of the west edge of irrigation ditch, 27 feet south of the south edge of a concrete irrigation ditch and 2.2 feet north of power pole No. 109 and the witness post.

Reference mark 1, a standard reference disk stamped EVANS NO 1 1963, is set in a drill hole in the southeast corner of a concrete irrigation gate. The mark is 57 feet northeast of a power pole No. 109, 9 feet north of center of road and 3.5 feet west of fence.

Reference mark 2, a standard reference disk stamped EVANS NO 2 1963, is set in the top of a concrete cylinder which projects about 1 inch. The mark is 76 feet west-southwest of a irrigation gate, 63 feet northwest of power pole No. 109 and the witness post, 32 feet southwest of a tree, 9 feet south of center of track road and 1 foot north of the north edge of concrete irrigation ditch.

Azimuth Mark, a standard azimuth disk stamped EVANS 1963, is set in the top of a concrete cylinder which projects about 3 inches. The mark is 28 feet north of the center of W. McDowell Road, 19 feet east-northeast of a utility pole No. 60E-6, 2.3 feet south of fence and 2.1 feet west of witness post.

To reach the azimuth mark from driveway to Mrs. Evans farm, go north 0.5 mile to W. McDowell Road, turn right and go east for 0.7 mile to the azimuth mark on left.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
‡To nearest meter only, where no trigonometric leveling is being done.

USCOMM-DC 27171-P59

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: EVANS YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 410,064.95 y 894,444.03	208° 58' 05" - 0 09 45	Δ EVANS AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 30".5653 NORTH LONGITUDE: 112 12 41.5786 WEST		317.94 METERS 1043.1 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
EVANS AZIMUTH MARK	SECOND-ORDER 208°48'19".8	

FORM 281 (7-23-59)

USCOMM-DC 15281-P61

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SEP 1971

USCOMM—NOAA—ASHEVILLE

(continued on next page)

169B JULY 1971

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

ARIZONA

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1031
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

EVANS (Continued)

Form 526a (5-10-65) U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY

R

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: EVANS
ESTABLISHED BY: C. A. A. YEAR: 1963 STATE: Arizona
RECOVERED BY: G.L.Short YEAR: 1969 COUNTY: Maricopa

HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS. HEIGHT OF LIGHT ABOVE STATION MARK METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
VAN 1963				0 00 00.0
R.M. 2	NW	61.305	18.686	218 32 18
R.M. 3	NE	53.935	16.441	298 43 02
Azimuth mark	NE	about 1/2 mile		304 48 00.8

The station mark, azimuth mark, and reference mark 2 were recovered, found to be as described and in good condition. Reference mark 1 was not recovered and is either buried or destroyed by new irrigation headgate construction at the described site. Reference mark 3 was established at this time.

The station is located about 7 1/2 miles west of the center of Phoenix, 1/2 mile north of W. Van Buren Street, 1/2 mile south of W. McDowell Road, 1/2 mile west of 67th Avenue, 1/2 mile east of 75th Avenue, in the southwest corner of the T-intersection of irrigation ditches, and in the approximate center of Section 1 on property of Mrs. Evans.

To reach the station from the junction of W. Buckeye Road (U.S. Highway 80), and 75th Avenue, drive north on the avenue for 1.0 mile to W. Van Buren Street. Continue north on 75th Avenue for 0.5 mile to a farm house driveway on the right. Turn right, drive east on a farm road along the south side of Mrs. Evans buildings to a slight jog to the left. continue east along the north side of a concrete irrigation ditch for 0.3 mile to the junction of irrigation ditches, a north-south powerline, and the station.

The station mark, a standard traverse disk stamped EVANS 1963, is set in the top of a concrete cylinder which is 5 inches below the surface of the ground. It is 55 feet southwest of the south edge of a concrete irrigation headgate, 30 feet west of the west edge of a north-south irrigation ditch, 27 feet south of the south edge of a east-west irrigation ditch, and 2.2 feet north of powerline pole # 109 and a metal witness post with sign attached.

Reference mark 2, a standard disk stamped EVANS NO 2 1963, is set in the top of a concrete cylinder which is flush with the ground surface. It is 76 feet west-southwest of the irrigation headgate, 63 feet northwest of powerline pole # 109 and the witness post, 9 feet south of the center of a field road, and 1 foot north of the north edge of a concrete lined irrigation ditch.

Reference mark 3, a standard disk stamped EVANS NO 3 1963 1969, is cemented in a drill hole in the top of the west end of the concrete irrigation headgate for Latteral # 2-19-26. It is 55 feet northeast of powerline pole # 109, 1.5 feet west of the center of the headgate, and 0.5 foot south of a 3 inches in diameter iron pipe that projects 18 inches.

The azimuth mark, a standard disk stamped EVANS 1963, is set in the top of a concrete cylinder that projects 1 inch above the ground surface. It is 28 feet north of the center of W. Mc Dowell Road, 19 feet east-northeast of utility pole # 60E-6, 2.3 feet south of a fence, and 2.1 feet west of a metal witness post with sign attached.

To reach the azimuth mark from the driveway into Mrs. Evans farm, drive north on 75th Avenue for 0.5 mile to Mc Dowell Road. Turn right and continue east on the Road for 0.7 mile to the mark on the left.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: EVANS AZIMUTH MARK YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

Second-ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: *
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 411,544.27 y 897,116.31	- 0 09 36	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 57".0470 NORTH LONGITUDE: 112 12 24.2052 WEST	'	METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: EVANS, VAN (* Ariz. 50) NOTE: Observations made using eight positions		

FORM 251 (7-69-68) USCOMM-DC 10261-P71

FILE COPY
SEP 1971

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY
REV: MAR 1973 ;OCT 1973

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169B

QUAD 331122 STATION 1032
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: VAN STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: R. D. S.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION	
	EVANS				00° 00' 00"	
16b desc.	Azimuth mark (EVANS AZ MK) West Mc Dowell Rd. & 67th Ave.	NW	approx. 0.5 mile		68 08 08.09	
	Sec. Corner (Phoenix City Survey)	N	approx. 0.45 mile		95 35 52.46	
11b	R. M. No. 1 Phoenix, Western Cotton Products Co., Water Tank	N	60.31	18.380	97 05 55	
		SE	approx. 2 miles		221 48 11.9	
11b	R. M. No. 2	S	79.17	24.129	276 26 40	

Detailed description:

Station is located about 7 miles west of the center of Phoenix, about 1/2 mile north of West Van Buren Street, about 1/2 mile south of West Mc Dowell Road and is on the east side of 67th Avenue.

To reach the station from the junction of West Buckeye Road (U. S. Highway 80) and 67th Avenue in the southwest part of Phoenix, go north on 67th Avenue for 1.0 mile to West Van Buren Street, continue north on 67th Avenue for 0.55 mile to the station on the right.

Station is a standard traverse disk set in top of a round concrete post which projects about 3 inches and is stamped VAN 1963. The mark is 39.5 feet north of a field entrance, 22.5 feet east of center of 67th Avenue, 3.4 feet north-northwest of power pole # 10 and 2.5 feet south-southeast of a witness post.

Reference mark 1, a standard reference disk set in top of a round concrete post which is set flush with the ground and is stamped VAN NO 1 1963. The mark is 64 feet north of power pole # 10, 57.8 feet north of a witness post and 23 feet east of center of 67th Avenue.

Reference mark 2, a standard reference disk set in top of round concrete post which projects about 3 inches and is stamped VAN NO 2 1963. The mark is 81.7 feet south of a witness post, 71.5 feet south of power pole # 10 and 22 feet east of center of 67th Avenue.

Azimuth mark, a standard azimuth disk set in top of a round concrete post which projects about 3 inches and is stamped EVANS 1963. The mark is 28 feet north of center of West Mc Dowell Road, 19 feet east-northeast of utility pole # 60E-6, 2.3 feet south of fence and 2.1 feet west of a witness post.

West Mc Dowell Road and 67th Avenue Section Corner, is a punch mark in the center of a chisled cross in the concrete which is about 1 inch below the blacktop surface of road.

To reach the Azimuth mark from the station, go north on 67th Avenue for 0.45 mile to the intersection of West Mc Dowell Road (Section Corner mark is in center of this intersection), turn left, go west on West Mc Dowell Road for 0.25 mile to the azimuth mark on the right.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: VAN

ESTABLISHED BY: C. A. A. YEAR: 1963 STATE: Arizona BENCH MARK(S) ALSO [X]

RECOVERED BY: G. L. Short YEAR: 1969 COUNTY: Maricopa

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 7 miles west of phoenix

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:

The station mark and azimuth mark were recovered, found to be as described in 1963, and in good condition. Reference mark 1 was found with the top 6 inches of its top broken off and reference mark 2 was recovered lying horizontally upon the surface of the ground.

The Arizona Highway Department has advised that this station will be destroyed by future widening of 67TH Avenue, and a complete new triangulation replacement station was established 9.57 feet east of the original mark.

Triangulation station VAN 1963 was left undisturbed at this time so that its horizontal and vertical position may be used, until such time that it is destroyed by construction.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: VAN YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 412,800.39 y 894,723.46	152° 18' 11" - 0 09 28	AZIMUTH MARK Δ EVANS AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 33".4057 NORTH LONGITUDE: 112 12 09.2993 WEST		319.63 METERS 1048.7 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
EVANS AZIMUTH MARK	SECOND-ORDER 152°08'42".6	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SECTION CORNER W McDOWELL RD AND 67TH AVE YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

Second -ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: *
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 412,790.65 y 897,101.90	° ' " - 0 09 28	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 56".9386 * NORTH LONGITUDE: 112 12 09.4916 * WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: WILL, VAN (* Ariz. 50) NOTE: Observations made using eight positions		

FILE COPY

NOV 8 1974

USCOMM—NOAA—ASHEVILLE

ARIZONA

16913

330 15'
112° 00'

OCTOBER 1973
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1032
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

FORM 525 (9-15-69)
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

CARD 1 OF 2

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: VAN 2 STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: G. L. Short YEAR: 1969 DESCRIBED BY: J.L.G.

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS.1 HEIGHT OF LIGHT ABOVE STATION MARK METERS.

NOTE	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
	EVANS 1963				°0 00'00.0"
	EVANS Azimuth mark 1963	NW	about 1/2 mile		67 56 48.5
11b	R.M. 3	N	38.110	11.616	96 51 16
	Phoenix, Western Cotton Products Co., Water Tank 1963	SE	about 2 miles		221 49 52.6
11b	R.M. 4	S	62.950	19.187	278 06 58
1b-7a	VAN 1963	WSW	9.570	2.917	359 59 28.4

Detailed description:

The station is located about 7 miles west of the center of Phoenix, about 1/2 mile north of West Van Buren Street, about 1/2 mile south of West Mc Dowell Road, and on the east side of 67TH Avenue.

To reach the station from the junction of West Buckeye Road (U.S. Highway 80) and 67TH Avenue in the southwest part of Phoenix, drve north on 67TH Avenue for 1.0 mile to West Van Buren Street. Continue north on the avenue for 0.55 mile to the station on the right.

The station is marked by a standard triangulation station disk, stamped VAN 2 1969, set in the top of a 12 inches in diameter cylindrical concrete post that projects 1 inch above the ground surface. It is 42 feet north of the center of a farm entrance road, 32.5 feet east of the center of the avenue, 9.5 feet northeast of telephone-powerline pole number 10, 5.0 feet east of a small irrigation ditch, and 2.5 feet south and 2.5 feet north of two metal witness posts.

The underground-station mark is a standard disk, stamped VAN 2 1969, set in the top of a mass of concrete 3 feet beneath the surface of the ground.

Reference mark 3 is a standard disk, stamped VAN 2 NO 3 1969, set in the top of a 12 inches in diameter cylindrical concrete post that projects 2 inches above the ground surface. It is 44.0 feet north-northeast of powerline-telephone pole number 10, 33.0 feet east of the center of the avenue, 5.0 feet east of the center of the small irrigation ditch, and 0.8 foot south of a metal witness post.

Reference mark 4 is a standard disk, stamped VAN 2 NO 4 1969, set in the top of a 12 inches in diameter cylindrical concrete post that projects 8 inches above the ground surface. It is 59.0 feet south-southeast of the powerline-telephone pole number 10, 31.5 feet east of the center of the avenue, 21.0 feet south of the center of a private farm entrance from the avenue, 4.0 feet east of the irrigation ditch, and 0.5 foot east of a metal witness post.

The azimuth mark is a standard disk, stamped EVANS 1963, set in the top of a 10 inches in diameter concrete post that projects 3 inches above the ground surface. It is 28.0 feet north of the center of West Mc Dowell Road, 19.0 feet east-northeast of utility pole number 60E-6, 2.3 feet south of the north right-of-way fence, and 2.1 feet west of a metal witness post.

To reach the azimuth mark from the station, drive north on 67TH Avenue for 0.45 mile to West Mc Dowell Road. Turn left and drive west on the Road for 0.25 mile to the mark on the right.

NOTE: The station mark and reference marks 3 and 4 are also bench marks.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION VAN 2

STATE: Arizona YEAR 1969 First -ORDER

LOCALITY: Arizona Hwy Survey, Papago Freeway

SOURCE: G-10749 FIELD SKETCH:

GEODETIC LATITUDE	33°27'33.41559	ELEVATION	319.73 METERS
GEODETIC LONGITUDE	112 12 09.18696		1049.0 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	x	y	φ (OR Δ α) ANGLE *
Ariz. C	0202	412,809.91	894,724.43	- 0 09 27

* PLANE AZIMUTH WAS BEEN COMPUTED BY THE φ (OR Δ α) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
EVANS AZIMUTH MARK	151°57'25.7	152°06'53"	0202

USCOMM—NOAA—ASHEVILLE

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169B

QUAD 331122 STATION 1033
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

FORM 525 (9-15-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION
TRAVERSE

NAME OF STATION: WILL STATE: Arizona COUNTY: MARICOPA

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: R. D. S.

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.7 METERS,1 HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION°	'	"
	VAN						
desc	Section Corner (Phoenix City Survey)	NW -	approx.	0.4 mile	54	40	10.31
11b	R. M. No. 1	N -	37.12	11.316	130	03	55
desc	1/4 Corner (Phoenix City Survey)	NNE -	approx.	0.1 mile	159	00	25.43
16b	Azimuth Mark	ENE -	approx.	0.5 mile	205	26	04.36
	Phoenix, Bureau of Reclamtion Water Tank	SE -	approx.	3 miles	249	34	36.2
	Phoenix, Arizona Public Service Co., Water Tank	SE -	approx.	3 miles	251	48	53.4
11b	R. M. No. 2	S -	20.19	6.155	310	44	09

Detailed description:

Station is located about 6 1/2 miles west of the center of Phoenix, about 1/2 mile east of 67th Avenue, about 1/2 mile west of 59th Avenue, 0.1 mile south of West Mc Dowell Road and is on the property of Mr. William Birmingham.

To reach the station from the junction of West Buckeye Road (U.S. Highway 80) and 59th Avenue in the southwest part of Phoenix, go north on 59th Avenue for 1.0 mile to West Van Buren Street, continue north on 59th Avenue for 1.0 mile to West Mc Dowell Road, turn left, go west on West Mc Dowell Road for 0.15 mile to the azimuth mark on the right, continue west for 0.45 mile to the 1/4 Corner mark in the center of West Mc Dowell Road, continue west for 0.05 mile to a driveway on left, turn left, go south passing between buildings for 0.1 mile to the station on the left.

Station mark, a standard traverse disk set in top of a round concrete post which projects about 3 inches and is stamped WILL 1963. The mark is 10 feet east of the center of a field road, 2.4 feet southeast of a witness post and 1 foot east of fence.

Reference mark 1, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped WILL NO 1 1963. The mark is 35 feet north of witness post, 10 feet east of the center of a field road and 1 foot east of fence.

Reference mark 2, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped WILL NO 2 1963. The mark is 22.3 feet south of a witness post, 10 feet east of the center of a field road and 1 foot east of fence.

1/4 Corner, between 59th Avenue and 67th Avenue on West McDowell Road, is a large punch mark in the concrete which is about 4 inches below the blacktop surface of road. The mark is 42.5 feet northeast of power pole # 60P-8 and 1 foot south of the center line of West Mc Dowell Road.

Azimuth mark, a standard azimuth disk set in top of a round concrete post which projects about 2 inches and is stamped WILL 1963. The mark is 29 feet north of center of West Mc Dowell Road, 24 feet west of center of driveway and gate, 2.6 feet west of witness post and 1 foot south of fence.

Section Corner, at the intersection of West Mc Dowell Road and 67th Avenue, is a punch mark in the center of a chisled cross in the concrete which is about 1 inch below the blacktop surface of road.

To reach the Section Corner from the station, go north for 0.1 mile to West Mc Dowell Road, turn left, go west on West Mc Dowell Road for 0.4 mile to the mark in the intersection of West Mc Dowell Road and 67th Avenue.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WILL YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 414,964.06 y 896,522.53	255° 41' 30" - 0 09 14	Δ WILL AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 51".2645 NORTH LONGITUDE: 112 11 43.8167 WEST		322.49 METERS 1058.0 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
WILL AZIMUTH MARK	SECOND-ORDER 255°32'15".6	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WILL AZIMUTH MARK YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

Second ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: *
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 417,451.09 y 897,156.86	- 0 08 57	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 57".6059 NORTH LONGITUDE: 112 11 14.4781 WEST		324.35 METERS 1064.1 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: WILL, CART (* Ariz. 50) NOTE: Observations made using eight positions		

FILE COPY

USCOMM—NOAA—ASHEVILLE

NOV 8 1974

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY
REV: MAR 1973;OCT 1973

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169B

QUAD 331122 STATION 1034
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

DESCRIPTION OF ~~TRIANGULATION~~ TRAVERSE STATION

NAME OF STATION: CART STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.45 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
1b 7a	MACK				00 00 00.0
	Phoenix, Bureau of Reclamation Water Tank	SE	approx.	2 1/2 m.	59 06 26.6
	Phoenix, Arizona Public Service Co. Water Tank	SE	approx.	2 1/2 m.	62 02 41.2
11b	R.M. No. 1	S	29.25	8.916	117 52 47
11b	R.M. No. 2	W	29.66	9.041	213 21 35
16b	Azimuth Mark	NNW	approx.	0.4 mile	287 17 42.54

Detailed description:

Station is located about 6 miles west of the center of Phoenix, about 0.6 mile north of West Van Buren Street, about 0.4 mile south of West Mc Dowell Road and on the west side of 59th Avenue at irrigation gate.

To reach from the junction of West Buckeye Road and 59th Avenue in the southwest section of Phoenix, go north on 59th Avenue for 1.0 mile to West Van Buren Street, continue north on 59th Avenue for 0.6 mile to irrigation gate on left and station.

Station mark, a standard traverse disk stamped CART 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 39 feet west of the center of 59th Avenue, 9 feet northwest of a irrigation gate, 6.5 feet west of the west edge of canal, 5 feet north of the north edge of irrigation ditch and 3 feet west of the witness post.

Reference mark 1, a standard reference disk stamped CART NO 1 1963, is set in the top of a concrete cylinder which projects about 1 inch above the surface of the ground. The mark is 38.5 feet west of center of 59th Avenue, 23 feet south-southwest of irrigation control gate, 20.5 feet south of south edge of a irrigation ditch and 6.5 feet west of west edge of canal.

Reference mark 2, a standard reference disk stamped CART NO 2 1963, is set in the top of a concrete cylinder which projects about 2 inches above the surface of the ground. The mark is 36.5 feet west-northwest of irrigation control gate, 33 feet west of the witness post and 4 feet north of north edge of a irrigation ditch.

Azimuth mark, a standard azimuth disk stamped WILL 1963, is set in top of a concrete cylinder which projects about 2 inches. The mark is 29 feet north of the center of West Mc Dowell Road, 24 feet west of center of driveway, 2.6 feet west of the witness post and 1 foot south of the fence.

To reach the azimuth mark from station, continue north on 59th Avenue for 0.4 mile to West Mc Dowell Road, turn left and go west on West Mc Dowell Road for 0.1 mile to Azimuth Mark on right.

The distance between reference mark 1 and reference mark 2 is 43.61 feet or 13.291 meters.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: CART
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO
RECOVERED BY: L.P. Smith YEAR: 1972 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 6 miles west center of Phoenix
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
HOPS 1963 1972				° 0 00 00.0
Phoenix, Bureau of Reclamation Co. Water Tank 1963				27 26 05.4
Phoenix, Arizona Public Service Co. Water Tank 1963				30 22 19.0
RM 2	W	29.83	9.090	181 01 42
RM 4	W	24.52	7.472	182 45 49
RM 3	N	27.07	8.251	266 16 42

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CART YEAR: 1963
STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway
First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 417,896.62 y 894,965.82	168° 30' 22" - 0 08 54	AZIMUTH MARK Δ WILL AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 35"9384 NORTH LONGITUDE: 112 11 09.1518 WEST		322.72 METERS 1058.8 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
WILL AZIMUTH MARK	SECOND-ORDER 168°21'28"1	

FORM 251 (7-22-63) USCOMM-DC 14251-P67

FILE COPY

NOV 8 1974

33° 15'
112° 00'

ARIZONA 169

OCTOBER 1973
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1034
ARIZ
LATITUDE 33° 00' TO 33 30 '
LONGITUDE 112° 00' TO 112 30 '
DIAGRAM MI 12-7 PHOENIX

CART (continued)

The station mark was recovered exposed about 2 feet due to street construction in the area and curbing was poured within 6-inches of the monument. Reference mark 2 was recovered and found to miss the old values by 0.17 foot and 35 minutes. The surface mark was removed and found plumb over the underground station. Reference marks 3 and 4 were established at this time in the new curbing. The plans are to reestablish the station on original position when curbing is poured over the underground station.

The underground station can be used at this time. It is 1 foot south of the end of the curbing and 1 foot below the ground surface.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: CART
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY: * Charley Novak YEAR: 1973 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: At Western Phoenix
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION °	'	"
RM 2 1972 measurment						
Phoenix, Boreau of Reclamation Water Tank 1963				0	00	00.0
Phoenix, Az. Public Service Water Tank 1963				2	56	15.7
RM 2	W	(29.83)	(9.090)	153	31	34
RM 4	W	24.52	7.472	155	19	32
RM 3	N	27.07	8.251	238	50	38

The underground station mark and reference marks 3 and 4 were found in good condition. Reference mark 2 which was at the edge of construction was disturbed slightly and is behind a wooden post at this time. A short section of curbing was poured over the underground mark at this time and a surface station mark was placed in the concrete on the original position.

The station mark is a standard disk stamped, CART 1963 1973. It is set in top of the concrete curbing along the east side of a frontage street. It is about 20 inches above the underground station mark which is undisturbed. The mark is 50 paces south of West Latham Street, 36 feet west of the center line of 59th Avenue and 10 feet north of an irrigation gate.

Reference mark 2 is a standard disk stamped, CART NO 2 1963. It is set in top of a 12 inch concrete monument which projects about 3/4 inch above a side street and even with the south edge of the street and 4 feet west of sidewalk. This mark has been disturbed several times during construction and is now saftly behind the construction area.

Reference mark 3 is a standard disk stamped, CART 1963 NO 3 1972. It is set in a drill hole in the top of the east curbing along the frontage road. It is 40 paces south of the center of West Latham Street and 36 feet west of the center line of 59th Avenue.

Reference mark 4 is a standard disk stamped, CART 1963 NO 4 1972. It is set in a drill hole in an east-west sidewalk at the southeast end of the sidewalk.

Station HOPS 1963 will serve for an azimuth mark.

To reach the station from the intersection of West McDowell Road and 59th Avenue in the western part of Phoenix, go south along 59th Avenue 0.4 mile to West Latham Street on the right. Turn right and then left on the frontage street for about 100 feet to the station on the left.

* Name of chief of party should be inserted here. The person who actually visited the station should sign his name at the end of the recovery note.

FORM C&GS-526a (12-69)
USCOMM-DC 56281-P69

U.S. DEPARTMENT OF COMMERCE
C&GS
COAST AND GEODETIC SURVEY

FILE COPY

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JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 1691B

QUAD 331122 STATION 1035
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

Form 525
10-10-65

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: MACK STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.69 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

SURFACE-STATION MARK, UNDERGROUND-STATION MARK | DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
	CART				00 00 00.0
11b	R.M. No. 2	N	33.67	10.262	116 24 06
16b	Azimuth Mark	NE	approx. 0.5 mile		193 20 12.30
desc.	Section Corner (Phoenix City Survey)	NE	approx. 0.5 mile		194 34 56.84
	Phoenix, Western Cotton Products	SE	approx. 1 mile		281 54 39.0
11b	R.M. No. 1 /Water Tank	S	33.27	10.142	298 14 09
desc.	¼ Corner (Phoenix City Survey)	SW	approx. 0.5 mile		353 00 04.39

Detailed description:

Station is located about 6 miles west of the center of Phoenix, about 0.1 mile south of West Mc Dowell Road, on the west side of a irrigation ditch and in a row of large cottonwood trees.

To reach from the junction of West Buckeye Road and 51st Avenue in the southwest section of Phoenix, go north on 51st Avenue for 1.0 mile to West Van Buren Street, continue north on 51st Avenue for 1.0 mile to West Mc Dowell Road and the section corner mark in approximate center of intersection. The Azimuth Mark is in the northwest section as described. Turn west on West Mc Dowell Road and go 0.5 mile to track road left just west of canal, turn left and go south along west side of irrigation ditch for 0.1 mile to station on left as described.

Station mark, a standard traverse disk stamped MACK 1963, is set in the top of a concrete cylinder which projects about 1 inch. The mark is 13 feet east of center of road, 6 feet west of west edge of irrigation ditch, 6 feet southwest of a triangle blazed tree and 3.5 feet northwest of the witness post.

Reference mark 1, a standard reference disk stamped MACK NO 1 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 30 feet south of the witness post, 13 feet east of the center of road and 5 feet west of the west edge of irrigation ditch.

Reference mark 2, a standard reference disk stamped MACK NO 2 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 37 feet north of the witness post, 13 feet east of center of road and 5 feet west of west edge of irrigation ditch.

Azimuth mark, a standard azimuth disk stamped MACK 1963, is set in the top of a concrete cylinder which projets about 2 inches. The mark is 85 feet northwest of center of intersection of 51st Avenue and West Mc Dowell Road, 28.5 feet north of center of West Mc Dowell Road, 3.6 feet west of the witness post and 1 foot south of fence.

Detailed description:

Section Corner, is a Phoenix City Survey Mark which is the top and center of a 3/4 inch square bolt about 12 inches below the surface of the road under a 10 inch metal cover. The mark is located at the intersection of West Mc Dowell Road and 51 st Avenue. The mark is in the approximate center of intersection.

1/4 Corner , is a Phoenix City Survey Mark which is the top and center of a 3/4 inch square bolt about 8 inches below the surface of the road under a 10 metal cover. The mark is located between West Mc Dowell Road and West Van Buren Street and on 59th Avenue. The mark is 49 feet north-northwest of driveway to H.C. Baries home and 3 feet west of center line of road.

To reach 1/4 Corner mark from 59th Avenue and West Mc Dowell Road, go south 0.5 mile to mark as described.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MACK YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 420,599.84 y 896,451.26	254° 32' 52" - 0 08 37	Δ MACK AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 50".7040 NORTH LONGITUDE: 112 10 37.2870 WEST		325.01 METERS 1066.3 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
MACK AZIMUTH MARK	SECOND-ORDER 254°24'14".7	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MACK AZIMUTH MARK YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

Second -ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: *
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 423,150.85 y 897,156.43	- 0 08 20	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 57".7435 NORTH LONGITUDE: 112 10 07.1938 WEST		327.18 METERS 1073.4 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: MACK, HOPS (* Ariz. 50)		

NOTE: Observations made using eight positions

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USCOMM—NOAA—ASHEVILLE

NOV 8 1974

ARIZONA 169 B

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY
REV: MAR 1973

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1036
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: HOPS STATE: Arizona COUNTY: Maricopa
CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: R. D. S.

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.7 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

NOTE	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
		MACK				00 00 00
1b	desc.	1/4 Corner (Phoenix City Survey)	NW	approx. 0.5 mile		08 54 06.92
7a	16b	Azimuth Mark	N	approx. 0.45 mile		54 17 42.86
	11b	R. M. No. 1	N	38.57	11.755	62 24 44
	11b	R. M. No. 2	S	38.07	11.604	230 59 08
		Phoenix, Western Cotton Prouducts Co., Water Tank	S	approx. 1 1/2 miles		234 40 56.8

Detailed description:

Station is located about 5 miles west of the center of Phoenix, about 1/2 mile south of West Mc Dowell Road, about 1/2 mile north of West Van Buren Street and is on the east side of 51st Avenue.

To reach the station from the junction of West Buckeye Road (U.S. Highway 80) and 51st Avenue in the southwest part of Phoenix, go north on 51st Avenue for 1.0 mile to West Van Buren Street, continue north on 51st Avenue for 0.6 mile to the station on the right.

Station mark, a standard traverse disk set in top of a round concrete post which projects about 3 inches and is stamped HOPS 1963. The mark is 37 feet east of the center of 51st Avenue, 6 feet west of fence, 5 feet north-northeast of power pole # 58 and 4.7 feet west of a witness post.

Reference mark 1, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped HOPS NO 1 1963. The mark is 43.5 feet north of power pole # 58, 40.5 feet east of center of 51st Avenue, 38.6 feet north of a witness post and 2 feet west of fence.

Reference mark 2, a standard reference disk set in top of round concrete post which projects about 3 inches and is stamped HOPS NO 2 1963. The mark is 40.5 feet east of center of 51st Avenue, 37.7 feet south of a witness post, 34 feet south of power pole # 58 and 1.7 feet west of fence.

Azimuth mark, a standard azimuth disk set in top of a round concrete post which projects about 3 inches and is stamped MACK 1963. The mark is 73 feet west of the center of 51st Avenue, 34 feet west of a traffic light pole, 28 feet north of the center of West Mc Dowell Road, 3.7 feet east of a witness post and 1.5 feet south of fence.

To reach the azimuth mark from the station, go north on 51st Avenue for 0.45 mile to West Mc Dowell Road and the azimuth mark in the northwest angle of intersection.

1/4 Corner, is a bolt set in top of a round concrete post which is set in an 8 inch manhole with cover and is 1 foot below the surface of road. Mark is located 0.5 mile west of 51st Avenue, 0.5 mile east of 59th Avenue and is on West Mc Dowell Road, 29 feet east-northeast of center of a dirt road leading south, 14 feet north of north edge of irrigation ditch and control gate and 11 feet south of center of West Mc Dowell Road.

RECOVERY NOTE, TRIANGULATION STATION — R

NAME OF STATION: HOPS
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY: L.P. Smith YEAR: 1972 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 5 miles west of Phoenix
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
Phoenix, TV Station KPHO Relay Tower 1962 1963 RM 3	S	38.03	11.588	0 00 00.0 81 11 49
Phoenix, Western Cotton Products Co Water Tank 1963 RM 4	N	38.53	11.742	85 06 09.0 273 04 08

S-6413-2

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HOPS YEAR 1963
STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway
First -ORDER Traverse SOURCE: C-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Δal ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 423,241.64 y 894,696.64	177° 53' 11" - 0 08 20	AZIMUTH MARK Δ MACK AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 33".4075 NORTH LONGITUDE: 112 10 06.0517 WEST		BENCH MARK METERS / FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
MACK AZIMUTH MARK	SECOND-ORDER 177°44'51".0	

The surface station mark, Reference mark 1 and the azimuth mark were destroyed. Reference mark 2 was found disturbed and was stamped HOPS NO 3 1963 1972 and used at this time. The underground station was found and the station was rebuilt.

The station mark is a NGS disk stamped, HOPS 1963 1972. It is set in the top of a 12 inch concrete monument which is 10 inches below the ground surface. It is 37 feet east of the center of 51st Avenue, 7 feet west of a north-south fenceline and 6 feet west of a witness post.

Reference mark 3 is a USC&GS disk stamped HOPS NO 3 1963 1972. It is set in the top of a 12 inch concrete monument which is flush with the ground. It is 41 feet east of the centerline of 51st Avenue and 3 feet west of a witness sign in the fence line.

Reference mark 4 is a NGS disk stamped, HOPS NO 4 1963 1972. It is set in the top of a 12 inch concrete monument which is flush with the ground surface. 37 feet east of the center of 51st Avenue and 3 feet west of a witness sign in the fenceline.

The cuts shown in the box score will serve as azimuth marks.

The 1963 route to the station is adequate.

USCOMM—NOAA—ASHEVILLE

#169B

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1037
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

Form 525
(9-18-63)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

M.E.D.

DESCRIPTION OF [redacted] STATION
TRAVERSE

NAME OF STATION: EATON STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.55 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡		
	HOPS				00	00	00.00
11b	R.M. No. 1	N	22.04'	6.718	110	35	13
16b	Azimuth Mark	NE	approx.	0.25 mile	133	05	14.94
desc.	Section Corner (Phoenix City Survey) Phoenix, Arizona Public Service Co. Water Tank	SE	approx.	0.75 mile	259	11	36.12
		SSE	approx.	1 1/2 mi.	279	38	57.3
11b	R.M. No. 2	S	36.53'	11.136	295	36	10

Detailed description:

Station is located about 5 miles west of the center of Phoenix, 1/2 mile east of North 51st Avenue, 1/2 mile west of North 43rd Avenue, 1/4 mile south of West Mc Dowell Road and on the east side of feeding pens for cattle.

To reach from the junction of West Buckeye Road and 43rd Avenue in the southwest section of Phoenix, go north on 43rd Avenue for 1.0 mile to West Van Buren Street, (Section Corner mark West Van Buren Street and North 43rd Avenue in this intersection as described), continue north on North 43rd Avenue for 1.0 mile to West Mc Dowell Road, turn left and go west on West Mc Dowell Road for 0.4 mile to the Azimuth Mark on left as described, continue west for 0.1 mile to a track road left at 3 small gray brick houses, turn left and go south along the east side of a irrigation ditch for 0.25 mile to station on right.

Station mark, a standard traverse disk stamped EATON 1963, is set in the top of a concrete cylinder which projects about 2 inches. The mark is 25 feet north of a large cottonwood tree, 39 feet west of center of power line, 23 feet west of center of field road, 3.6 feet south-south east of the witness post and 2 feet east of a fence.

Reference mark 1, a standard reference disk stamped EATON NO 1 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 39 feet west of the center of power line, 23 feet west of center of field road, 18.5 feet north of the witness post and 1 foot east of the fence.

Reference mark 2, a standard reference disk stamped EATON NO 2 1963, is set in the top of a concrete cylinder which projects about 4 inches above the ground. The mark is 40 feet west of center of power line, 39.9 feet south of the witness post, 24 feet west of the center of field road and 6 inches east of a fence.

Azimuth Mark, a standard azimuth disk stamped EATON 1963, is set in the top of a concrete cylinder which projects about 3 inches. The mark is 33.5 feet south of the center of West Mc Dowell Road, 3.5 feet southeast of a power pole, 2.3 feet north of the fence and 2 feet south of the witness post.

Section Corner, is a Phoenix City Survey Mark located at the intersection of West Van Buren Street and North 43rd Avenue. Mark is a 3/8 inch rod about 6 inches below the surface of the road under a round metal cover. Mark is in approximate center of intersection.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial point.
†To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P65

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: EATON YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 425,865.13	200° 26' 54"	AZIMUTH MARK
	y 895,790.78	- 0 08 02	
STATE: ZONE: CODE:	x		
	y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 44".2952 NORTH LONGITUDE: 112 09 35.1146 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 200°18'51".8	

Form 881 (7-12-61)

USCOMM-DC 18851-P61

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SEP 24 1974

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169B

QUAD 331122 STATION 1038
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112° 00'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: COOL STATE: Arizona COUNTY: MARICOPA

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: R. D. S.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 20.1 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 22.4 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION†
					° ' "
	ETTA				00 00 00
11b	R. M. No. 2	SE	98.81	30.119	27 29 16
	Phoenix, Western Cotton Products Co., Water Tank	SW	approx. 2 miles		117 33 16.0
	1/4 Corner (County Engr Dept)	WSW	approx. 1 mile		159 13 53.54
11b	R. M. No. 1	NE	107.47	32.756	324 37 01
16b	Azimuth Mark	NE	approx. 0.3 mile		333 22 30.19

Detailed description:

Station is located about 4 miles west of the center of Phoenix, 0.9 mile north of West Van Buren Street, 0.1 mile south of West Mc Dowell Road and is on the west side of 43rd Avenue.

To reach the station from the junction of West Buckeye Road (U.S. Highway 80) and 43rd Avenue in the southwest part of Phoenix, go north on 43rd Avenue for 1.0 mile to West Van Buren Street, Continue north on 43rd Avenue for 0.9 mile to the station on the left.

Station mark, a standard traverse disk set in top of a round concrete post which is about 14 inches below the surface of ground and is stamped COOL 1963. The mark is 57 feet west of center of 43rd Avenue, 50.6 feet south-southwest of center of a small wooden bridge over an irrigation ditch, 14 feet west of the west edge of irrigation ditch and 12 feet west of a witness post.

Reference mark 1, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped COOL NO 1 1963. The mark is 67 feet south-southeast of a power pole, 82 feet south of fire hydrant, 32 feet east of center of 43rd Avenue and 0.6 foot west of fence.

Reference mark 2, a standard reference disk set in top of a round concrete post which projects about 3 inches and is stamped COOL NO 2 1963. The mark is set in the fence line and is 32 feet east of the center of 43rd Avenue.

Azimuth mark, a standard azimuth disk set in top of a round concrete post which is set flush with the surface of ground and is stamped COOL 1963. The mark is 45 feet west of center of 41st Avenue, 41.5 feet south of center of West Mc Dowell Road, 25.5 feet west-northwest of fire hydrant and 13.5 feet north-northwest of palm tree.

To reach the azimuth mark from the station, go north on 43rd Avenue for 0.1 mile, turn right, go east on West Mc Dowell Road for 0.25 mile to the mark on the right.

1/4 Corner, is a brass disk set in top of concrete inside a manhole with cover in the center of 51st Avenue and the disk is stamped MARICOPA COUNTY ENGINEER DEPT. Mark is located 0.6 mile south of West Mc Dowell Road, 0.4 mile north of West Van Buren Street and is on 51st Avenue. It is 35 feet west-northwest of power pole # 57.

*Refers to notes in manuals of triangulation and some publications of triangulation. †Direction-angle measured clockwise, referred to initial direction.
‡To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P69

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: COOL YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

First-ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 50, 51

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 428,449.87 y 896,394.93	243° 39' 58" - 0 07 46	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 50".3317 NORTH LONGITUDE: 112 09 04.6198 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 243°32'11".6	

FORM 251 (7-23-69) USCOMM-DC 16251-P71

FILE COPY

JAN 1967

169
B

ARIZONA

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
112°00

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1039
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ TRAVERSE STATION

NAME OF STATION: LATH STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: H.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1.3 METERS.

SURFACE-STATION MARK, UNDERGROUND-STATION MARK: 1b, 7a

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

Note	Object	Bearing	Distance Feet	Distance Meters	Direction‡
	COOL				0° 00 00.00
11b	R.M. No. 2	NNW	54.98	16.758	47 07 53
11b	R.M. No. 1	E	41.01	12.500	156 26 52.9
dec	Azimuth Mark	SSW	approx.	.15 mile	248 23 34.64

Detailed description:

The station is located about 4 miles west of the center of Phoenix, about 1/2 mile south of West Mc Dowell Road and about 1/2 mile west of 35th Avenue on the south side of West Latham Street.

To reach the station from the junction of West Buckeye Road (U.S. Highway 80) and 35th Avenue in the southwest part of Phoenix, go north on 35th Avenue for 1.0 mile to West Van Buren Street, continue north for 0.5 mile to West Roosevelt Street, continue north for 0.15 mile to West Latham Street, turn left, go west on West Latham Street for 0.5 mile to the station on left.

Station, a standard traverse disk set in the top of a round concrete post which is flush with the surface of the ground and stamped LATH 1963. The mark is 34 feet east of the east edge of a irrigation ditch, 37 feet south of the center of West Latham Street, 13.5 feet east of fence corner and 2.6 feet north of fence.

Reference mark 1, a standard reference disk set in the top of a round concrete post which is flush with the surface of the ground and stamped LATH NO 1 1963. The mark is 75 feet east of fence corner, 28 feet south of the center of West Latham Street and 1 foot north of fence.

Reference mark 2, a standard reference disk set in the top of a round concrete post which is flush with the surface of the ground and stamped LATH NO 2 1963. The mark is 24 feet north of the center of West Latham Street, 19 feet east of the east edge of a irrigation ditch and 2 feet south of a light pole.

Azimuth mark, a standard azimuth disk set in a drill hole in the southwest corner of a concrete headwall at the end of a irrigation ditch and stamped LATH 1963. The mark is 58 feet north of center of West Roosevelt Street, 36.5 feet northwest of a fire hydrant and 27 feet west of fence.

To reach the azimuth mark from the station go east on West Latham Street for 0.1 mile to 38th Avenue, turn right, go south on 38th Avenue for 0.15 mile to West Roosevelt Street, turn right, go west on West Roosevelt Street for 0.1 mile to the mark on right.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LATH YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 431,189.97 y 895,079.02	4° 02' 43" - 0 07 28	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 37".3716	NORTH		BENCH MARK METERS
	LONGITUDE: 112 08 32.2405	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 3°55'15".1	

FORM 551 (7-23-53)

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

1693

QUAD 331122 STATION 1040
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: FALCON STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: R. D. S.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.7' METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1' METERS.

1b SURFACE-STATION MARK. 7a UNDERGROUND-STATION MARK. DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
SUTTON				00 00' 00"
Azimuth Mark	SE	approx.0.2 mile		52 17 16.26
1/4 Corner (Phoenix City Survey)	S	approx.0.15 mile		97 05 58.61
Phoenix, Reynolds Aluminum Co., Water Tank	SW	approx. 1 mile		109 45 23.9
11b R. M. No. 2	SW	51.69	15.757	125 23 05
R. M. No. 1	ENE	26.44	8.059	334 07 55

Detailed description:

Station is located about 3 1/2 miles west of the center of Phoenix, 0.65 mile north of West Van Buren Street, 0.35 mile south of West McDowell Road, on the east side of 35th Avenue and at the west edge of Falcon Park.

To reach the station from the junction of West Buckeye Road (U. S. Highway 80) and 35th Avenue in the southwest part of Phoenix, go north on 35th Avenue for 1.0 mile to West Van Buren Street, continue north on 35th Avenue for 0.5 mile to West Roosevelt Street, continue north on 35th Avenue for 0.15 mile to the station on the right.

Station mark, a standard traverse disk set in top of a round concrete post which is set flush with the surface of the ground and is stamped FALCON 1963. The mark is 78 feet east of the center of 35th Avenue, 43 feet northwest of the south end of backstop fence, 30.5 feet west of backstop fence and 8.5 feet southwest of a light pole.

Reference mark 1, a standard reference disk set in a drill hole in the southeast corner of concrete foundation of bleachers and is stamped FALCON NO 1 1963. The mark is 20.5 feet east of a light polo and 7 feet west of the backstop fence.

Reference mark 2, a standard reference disk set in top of a round concrete post which is set flush with the ground and is stamped FALCON NO 2 1963. The mark is 61.5 feet west of the south end of backstop fence, 60 feet southwest of a light pole and 48 feet east of the center of 35th Avenue.

Azimuth mark, a standard azimuth disk set in a drill hole in the concrete sidewalk and is stamped FALCON 1963. The mark is 104 feet north of the north side of Carl Hayden High School Building, 67 feet northnortheast of flagpole, 38 feet south of the center of West Roosevelt Street and 14 feet east of the center of a driveway.

To reach the azimuth mark from the station, go south on 35th Avenue for 0.15 mile, turn left, go east on West Roosevelt Street for 0.1 mile to the mark on the right.

1/4 corner, is a city survey point, a brass disk set in concrete inside an 8 inch handhole which is in the intersection of West Roosevelt Street and 35th Avenue, disk has no stamping and the mark is 0.15 mile south of the station.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FALCON YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 433,869.59	322° 39' 41"	AZIMUTH MARK
	y 895,108.36	- 0 07 10	
STATE: ZONE: CODE:	x		
	y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 37".7183 NORTH		BENCH MARK METERS FEET
	LONGITUDE: 112 08 00.6110 WEST		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 322°32'30".9	

FORM 251 (7-23-66) USCOMM-DC 16251-P67

FILE COPY

JAN 1967

169 ARIZONA

B

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
112°00

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1041
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: SUTTON STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 15.8 METERS,† HEIGHT OF LIGHT ABOVE STATION MARK 18 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT		BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
		COOL				° ' " 00 00 00.00
11b	R.M. No. 2		N	97.97	29.863	77 57 09
desc.	Azimuth Mark		N	approx. 0.35 mile		80 00 34.38
desc.	1/4 Corner (Phoenix City Survey)		N	approx. 0.35 mile		80 38 14.97
	Phoenix, KHAT Radio Mast		NE	approx. 1/2 mile		125 31 54.3
	Phoenix, KPHO Relay Tower		ESE	approx. 3 miles		177 58 06.6
11b	R.M. No. 1		S	74.64	22.748	266 38 30

Detailed description:

Station is located about 3 miles west-northwest of the center of Phoenix, 0.6 mile north of West Van Buren Street, 0.4 mile south of West Mc Dowell Road and on the Sutton School Grounds on the east side of North 31st Avenue in the west section of Phoenix.

To reach from the Black Canyon Highway and West Mc Dowell Road in the west section of Phoenix, go west on West Mc Dowell Road for 0.9 mile to the intersection of North 31st Avenue, (Azimuth Mark and 1/4 Corner Mark are located at this intersection as described.), turn left and go south on North 31st Avenue for 0.4 mile to the Sutton School on left and station as described.

Station mark, a standard traverse disk stamped SUTTON 1963, is set in the top of a concrete cylinder which is set flush with the ground. The mark is 194.5 feet northwest of the northwest corner of the Sutton School Library, 30.5 feet east of the center of North 31st Avenue, 13.2 feet southwest of the north end of a small back stop, 11.8 feet northwest of the south end of the small back stop and 7.5 feet east of fence.

Reference mark 1, a standard reference disk stamped SUTTON NO 1 1963, is set in the top of a concrete cylinder which is set flush with the ground. The mark is 69 feet south-southwest of the south end of small back stop, 22.5 feet east of center of North 31st Avenue and 1 foot east of fence.

Reference mark 2, a standard reference disk stamped SUTTON NO 2 1963, is set in the top of a concrete cylinder which is set flush with the ground. The mark is 89.5 feet north-northwest of the north end of a small back stop, 23 feet east of the center of North 31st Avenue and 1.5 feet east of the fence.

Azimuth mark, is a standard azimuth disk stamped SUTTON 1963, is set in a drill hole in the west curb of North 31st Avenue. The mark is 49.5 feet south of the center of West Mc Dowell Road, 20.5 feet east of the northeast corner of the Valley Of The Sun School and 20 feet west of the center of North 31st Avenue.

1/4 Corner, is a Phoenix City Survey Mark located at the intersection of West Mc Dowell Road and North 31st Avenue. The mark is in the approximate center of intersection and is a 2 1/2 inch cap with a cross on top. The mark is about 5 inches below the surface of the road and is under a round metal cover.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial point.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SUTTON YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (ION Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 436,439.95 y 895,091.59	179° 16' 25" - 0 06 54	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 37".6045 NORTH LONGITUDE: 112 07 30.2699 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 179°09'31".4	

FORM 521 (7-12-61) RECOMMENDED

FILE COPY

JAN 1967

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY
REV: MAR 1973;OCT 1973

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169A

QUAD 331122 STATION 1042
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

Form 525 (5-10-61)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION

TRAVERSE

NAME OF STATION: CULVER STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 4.00 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 4 METERS.

1b SURFACE-STATION MARK, UNDERGROUND-STATION MARK
7a DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION °	'	"
	SUTTON				00	00	00.0
	Phoenix, KHAT Radio Mast	N	approx.	0.25 mile	102	09	04.8
desc.	Section Corner (Phoenix City Survey)	N	approx.	0.15 mile	108	25	13.25
11b	R.M. No. 1	N	27.18	8.285	112	24	08
11b	R.M. No. 2	S	35.67	10.871	288	58	52
desc.	1/4 Corner (Phoenix City Survey)	S	approx.	0.3 mile	291	58	20.88
desc.	Azimuth Mark	S	approx.	0.25 mile	294	09	03.46

Detailed description:

Station is located about 2.5 miles west of the center of Phoenix, about 0.8 mile north of West Van Buren Street, about 0.2 mile south of West Mc Dowell Road, on the east right-of-way of North 27th Avenue and just north-northeast of the intersection of North 27th Avenue and West Culver Street.

To reach from the intersection of Black Canyon Highway and West Mc Dowell Road in the west section of Phoenix, go west on West Mc Dowell Road for 0.4 mile to North 27th Avenue,(Section Corner Mark is located at this intersection as described), turn left and go south on North 27th Avenue for 0.15 mile to West Culver Street and station on left.

Station mark, a standard traverse disk stamped CULVER 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 89.4 feet east of the east edge of house No. 1300, 65 feet north of extended center line of West Culver Street, 29 feet east of center of North 27th Avenue and 3 feet west of the witness post and fence.

Reference mark 1, a standard reference disk stamped CULVER NO 1 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 30.3 feet east of the center of North 27th Avenue, 26.8 feet north of the witness post and 1.5 feet west of the fence.

Reference mark 2, a standard reference disk stamped CULVER NO 2 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 35.8 feet south of the witness post, 30.5 feet east of the center of North 27th Avenue, 29 feet north of extended center line of West Culver Street and 2 feet northwest of fence corner and dividing line.

Azimuth mark, a standard azimuth disk stamped CULVER 1963, is set in a drill hole in the south curb of West Portland Street. The mark is 48 feet west of center of North 27th Avenue, 18 feet south of center of West Portland Street and 3.7 feet east-northeast of street and stop sign.

To reach the azimuth mark from the station, go south on North 27th Avenue for 0.25 mile to West Portland Street and the azimuth mark as described.

Section Corner, is a Phoenix City Survey mark located at the intersection of West Mc Dowell Road and North 27th Avenue in the west section of Phoenix. The mark is the center of a 1 1/2 inch pipe filled with concrete which is about 6 inches below the surface of the road under a round metal cover.

1/4 Corner, is a Phoenix City Survey mark located at the intersection of North 27th Avenue and West Roosevelt Street in the west section on Phoenix. The mark is the center of a 1/4 inch nail head which is located in the approximate center of the intersection.

To reach the 1/4 Corner mark from the station, go south on North 27th Avenue for 0.3 mile to West Roosevelt Street and mark as described.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CULVER YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (HOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 439,094.22 y 896,015.17	4° 57' 54" - 0 06 36	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 46"7943 NORTH LONGITUDE: 112 06 58.9598 WEST		328.68 METERS 1078.3 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 4°51'18"3	

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: CULVER
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☒
RECOVERED BY: L.F. Smith YEAR: 1970 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: In northwest part of Phoenix
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION °	'	"
Phoenix, KHAT Radio Mast	N	(approx.	1 mile)	0	00	00.0
CULVER 2 RM 5 (azi. mark)	E	(approx.	0.5 mile	99	26	35.9
CULVER 2 traverse dist.	ESE		209.4295	120	16	31.0
R.M. 2	S	35.690	10.870	186	47	06
Azimuth mark (approx. 0.25 mile)	S			191	59	57.7

The underground station mark, reference mark 2 and the azimuth mark were recovered and found in good condition. Reference mark 1 and the surface station mark have been destroyed by construction in the area. The remaining marks are expected to be destroyed soon due to the widening of 27TH Avenue and laying a new pipe line. CULVER 2 was established at this time in co-operation with the Arizona Highway Department.

USCOMM—NOAA—ASHEVILLE

ARIZONA

OCTOBER 1973
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

33° 15'
112° 00'

169 A

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 AkIZ STATION 1042
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

C&GS FORM 525
10-69

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

QUAD 331122

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CULVER 2 STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: L.P. Smith YEAR: 1970 DESCRIBED BY: L. Wakefield

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS,† HEIGHT OF LIGHT ABOVE STATION MARK 1.5 METERS.

1b SURFACE-STATION MARK, UNDERGROUND-STATION MARK
7a DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTIONS ° ' "
Phoenix, KHAT Radio Mast 1963	NNW	(1/2 mile)		0 00 00.0
desc. R.M. 3	NNE	24.91	7.524	54 37 05
desc. R.M. 5 (azi. mark)	NE	APPROX.	0.15 mi.	93 22 12.8
desc. R.M. 4	W	31.68	9.652	312 15 32
CULVER 1963 traverse dist. R.M. 3 to R.M. 4		687.10	209.429	317 29 43.2
		44.285	13.500	

Detailed description:

The station is located in Phoenix, 1/2 mile west of the Black Canyon Highway, 0.25 mile south of McDowell Road and 0.15 mile east of 27TH Avenue. It is on property owned by Mr. Gomez.

To reach the station from 27TH Avenue and West McDowell Road go south along 27TH Avenue for 0.25 mile to a dirt street on the left. Turn left and go east for 0.25 mile to the azimuth mark on the right. Turn right in to a field just before reaching 25TH Avenue and go southwest for about 0.15 mile to the station.

The station mark is a standard disk stamped, CULVER 2 1970. It is set in the top of a 12 inch concrete monument which projects 1 inch. It is 31 feet east of a power pole with witness sign, 22 feet south of a 12 inch tree and 5 feet south of a fence line. The mark is on top of a 4 foot fill at the site of some old Indian Ruins.

Reference mark 3 is a standard disk stamped, CULVER 2 NO 3 1970. It is set in the top of a 12 inch concrete monument which projects 1 inch. It is 17 feet north of the fence line, 10 feet east of the 12 inch tree and 3 1/2 feet lower than the station.

Reference mark 4 is a standard disk stamped, CULVER 2 NO 4 1970. It is set in the top of a 12 inch concrete monument which is about flush with the ground surface. It is 6 1/2 feet north of the power pole, 5 1/2 feet north of the fence line and 3 1/2 feet lower than the station.

Reference mark 5 is a short azimuth mark which is stamped, CULVER 2 NO 5 1970. It is set in the top of a 12 inch concrete monument which projects 2 inches. It is 81 feet west of 25TH Avenue and 37 feet south of the south west corner of a cinder block building. It is 3 feet south of a power pole which has 2 transformers.

ANGLES AT R.M. 5 AZIMUTH MARK

CULVER 2	0 00 00.0
CULVER 1963	23 17 34.7

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION CULVER 2

STATE Arizona YEAR 1970 First ORDER

LOCALITY Arizona Hwy Survey, Papago Freeway

SOURCE G-10749 FIELD SKETCH

GEODETIC LATITUDE	33 27 44.12381	ELEVATION	329.56 METERS
GEODETIC LONGITUDE	112 06 51.50178		1081.2 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	φ (or Δ) TO AZIMUTH
Ariz. C	0202	439,725.50	895,744.06	- 0 06 32

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE φ (or Δ) TO AZIMUTH FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From inverse) ° ' "	PLANE AZIMUTH* (From inverse) ° ' "	CODE
AZIMUTH MARK RM 5	249 00 25.5	249 06 58	0202

Position determined by traverse from station CULVER and checked by additional observations.

FILE COPY

NOV 8 1974

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169A

QUAD 331122 STATION 1043
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

FORM 525
(8-10-65)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: BLACK STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: R. H. Finch

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 4.57 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 4.28 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION†
1b 7a	CULVER				00 00' 00.00"
	Phoenix, KHAT Radio Mast	NW			17 48 02.7
Desc.	T 084 15 (AHD)	N	Approx. 0.45 mile		50 03 02.28
Desc.	Azimuth Mark	N	Approx. 0.45 mile		50 56 27.22
Desc.	R.M. No. 1	NNE	64.86	19.768	90 28 07
Desc.	R.M. No. 2	SE	63.21	19.266	214 49 59

Detailed description:

The station is located about 2 miles west of the center of downtown Phoenix, about 0.05 mile north of the intersection of Roosevelt Street and Black Canyon Highway and on the west side of the north bound lane of Black Canyon Highway.

To reach the station from the intersection of West Van Buren Street and Black Canyon Highway in the west part of Phoenix, go north on Black Canyon Highway for 0.55 mile to the station on the left as described below.

Station mark, a standard traverse disk stamped BLACK 1963, is set in a round concrete post which is flush with the surface of the ground. The mark is 4 feet east of a cyclone fence and the edge of an embankment above the Black Canyon Freeway, 5 feet northeast of a witness post and 43 feet west of the centerline of the north bound lane of Black Canyon Highway.

Reference mark number 1, a standard disk stamped BLACK NO 1 1963, is set in a drill hole in the west curb of the north bound lane of the Black Canyon Highway. The mark is 12.8 feet west of the centerline of Black Canyon Highway, 33.5 feet east of a cyclone fence and the edge of an embankment above the Black Canyon Freeway and 70 feet northeast of a witness post.

Reference mark number 2, a standard disk stamped BLACK NO 2 1963, is set in a drill hole in the west curb of the north bound lane of the Black Canyon Highway. The mark is 12.6 feet west of the centerline of Black Canyon Highway, 33 feet east of a cyclone fence and the edge of an embankment above the Black Canyon Freeway and 61 feet southeast of a witness post.

Azimuth mark, a standard disk stamped BLACK 1963, is set in a drill hole in the southeast bridge abutment at the intersection of Black Canyon Highway and West Mc Dowell Road. The mark is 1.5 feet east of the west end of the abutment and 8.8 feet west of the east end of the abutment. Recovered in 1.2968 by JJ

Arizona Highway Department Mark stamped T 084 15 is set in a drill hole in the north curb at the main footing of the bridge at the intersection of Black Canyon Highway and West McDowell Road. The mark is 34.3 feet west of the east end of the bridge abutment.

To reach the azimuth mark and the Arizona Highway Department mark from the station, go north on Black Canyon Highway for 0.45 mile to the marks as described.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial direction.
‡To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P65

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BLACK YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FROM South) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 441,924.55 y 894,577.48	167° 52' 11" - 0 06 18	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 32"6217 NORTH LONGITUDE: 112 06 25.5183 WEST		328.03 METERS 1076.2 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 167°45'53"0	

FORM 201 (7-22-65)

USCOMM-DC 15151-P65

FILE COPY

USCOMM—NOAA—ASHEVILLE

NOV 9 1934

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 16 9A

QUAD 331122 STATION 1044
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~IRREGULATION~~ STATION
TRAVERSE

NAME OF STATION: LINDEN STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 19.6METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 22 METERS.

NOTE.*	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION* °	'	"
	BLACK				00	00	00.00
16b	Azimuth Mark	N	approx. 0.2 mile		92	32	17.01
11b	R.M. No. 1	N	88.12	26.858	94	06	48
11b	R.M. No. 2	SE	73.54	22.415	218	48	39
	Phoenix, KTAR TV Mast (W of 4)	S	approx. 11 miles		257	40	31.1

Detailed description:

Station is located about 1 1/2 miles northwest of Phoenix, about 1/2 mile north of West Van Buren Street, about 1/2 mile south of West Mc Dowell Road and on a vacant lot on west side of North 18th Avenue.

To reach from the junction of West Roosevelt Street and North 18th Avenue in the west section of Phoenix, go north on North 18th Avenue for 200 feet to station on left as described.

Station mark, a standard station traverse disk stamped LINDEN 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 119 feet south of the center of West Linden Street, 93.5 feet south of a fire hydrant, 30 feet west of the center of North 18th Avenue and 5 feet north of a witness post.

Reference mark 1, a standard reference disk stamped LINDEN NO 1 1963, is set in the top of a concrete cylinder which is set flush. The mark is 93 feet north of the witness post, 31 feet south of the center of West Linden Street, 26 feet west of the center of North 18th Avenue and 11.6 feet southeast of a fire hydrant.

Reference mark 2, a standard reference disk stamped LINDEN NO 2 1963, is set in the top of a concrete cylinder which is set flush. The mark is 70.3 feet southeast of the witness post, 29 feet east of center of North 18th Avenue, 4 feet south-southeast of a power pole and 3 feet southwest of a fence corner.

Azimuth Mark, is a standard azimuth disk stamped LINDEN 1963, is set in the top of a concrete cylinder which projects about 5 inches above the surface of the ground. The mark is 29 feet east-northeast of a fire hydrant, 27 feet north of the center of West Spruce Street, 27 feet west-northwest of a power pole and 1.7 feet west of the witness post.

To reach the azimuth mark from station, go north on North 18th Avenue for 0.2 mile to West Spruce Street and the azimuth mark as described.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LINDEN YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (HOR ∠al ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 444,924.11 y 894,593.28	182° 14' 09" - 0 05 58	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 32".8311 NORTH LONGITUDE: 112 05 50.1122 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 182°08'10".9	

C&GS Line 115

FORM 251 (7-23-65) USCOMM-DC 14551-P65

FILE COPY

JAN 1967

USCOMM—ESSA—ASHEVILLE

169A

JULY 1966 ARIZONA

PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33° 15'
112° 00

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1045
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: ETTA STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: R. D. S.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 15.9 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 19.7 METERS.

1b SURFACE-STATION MARK, UNDERGROUND-STATION MARK
7a DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
STRONG 1962				00 00 00
R. M. No. 1	WSW	52.98	16.148	141 36 55
Azimuth Mark A	W	approx.0.15 mile		168 08 03.99
R. M. No. 2	N	54.39	16.578	256 05 09
Azimuth Mark B	N	approx.0.15 mile		258 41 24.63
Intersection Point (Phoenix C.S.)	N	approx.0.15 mile		260 37 43.71

Detailed description:

Station is located just northwest of the central park of Phoenix, at the corner of North 13th Avenue and West Willetta Street.

To reach the station from the intersection of West Mc Dowell Road and North 13th Avenue (Azimuth Mark B is set in the curb of the southwest angle of this intersection) (Intersection Point is in the center of this intersection), go south on North 13th Avenue for 0.15 mile to the station on the left.

Station mark, a standard traverse disk set in top of a round concrete post which is set flush and is stamped ETTA 1963. The mark is 42 feet north of the center of West Willetta Street , 29.5 feet southwest of the southwest corner of house #1146 and 21 feet east of the center of North 13th Avenue.

Reference mark 1, a standard reference disk set in a drill hole in the curb and is stamped ETTA NO 1 1963. The mark is 27 feet west of the center of North 13th Avenue and 15 feet north of the center of Willetta Street.

Reference mark 2, a standard reference disk set in a drill hole in the curb and is stamped ETTA NO 2 1963. The mark is 96 feet north of the center of West Willetta Street and 14 feet east of the center of North 13th Avenue.

Azimuth Mark A, a standard azimuth disk set in a drill hole in the curb and is stamped ETTA A 1963. The mark is 76 feet west of the center of 15th Avenue, 15 feet south of the center of Willetta Street and 10 feet east of the center of a driveway.

Azimuth Mark B, a standard azimuth disk set in a drill hole in the curb and is stamped ETTA B 1963, The mark is 39 feet south of the center of West Mc Dowell Road, 36 feet northeast of the northeast corner of the Dorann Apartment building and 22 feet west of the center of north 13th Avenue.

Intersection point, is a city survey bronze disk set in top of concrete post which is set inside a handhole in the center of the intersection of West Mc Dowell Road and North 13th Avenue.

To reach azimuth mark A from the station, go west on West Willetta Street for 0.15 mile to the mark on left.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ETTA YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

First -ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 50, 51

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (IOR Δα) ANGLE	MARK
STATE: Ariz.	x 447,622.84	85° 28' 13"	AZIMUTH MARK A
ZONE: C	y 896,297.60	176 01 34	AZIMUTH MARK B
CODE: 0202		- 0 05 41	
STATE:	x		
ZONE:	y		
CODE:			

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
LATITUDE: 33° 27' 49".7397 NORTH			BENCH MARK METERS
LONGITUDE: 112 05 18.2899 WEST			FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
	SECOND-ORDER	
AZIMUTH MARK A	85°22'32".2	
AZIMUTH MARK B	175 55 52.8	

C&GS Line 115

FORM 251 (1-1-66)

UNCLASSIFIED

FILE COPY

JAN 1967

ARIZONA 169A

JULY 1966
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1046
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15
112°00

FORM 525
10-18-891

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: MORE STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.8 METERS.‡ HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION† ° ' "	
1b 7a	CENTRAL				00 00 00.00	
desc.	R.M. No. 2	W	53.46	16.296	170 18 55	
desc.	Azimuth Mark	W	approx. 0.5 mile		177 12 59.55	
desc.	R.M. No. 1	NE	47.02	14.332	301 55 14	

Detailed description:

Station is located about 1 mile north-northwest of the center of business section of Phoenix, about 200 feet southeast of the Kenilworth School, in the southeast corner of the intersection of North 5th Avenue and West Moreland Street and on the right-of-way in front of the residence of 353 West Moreland Street.

Station mark, a standard traverse disk stamped MORE 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 53.5 feet east of the east curb of North 5th Avenue, 44 feet north of the north edge of house No. 353, 8.5 feet south of the south curb of West Moreland Street and 1.9 feet north of the north edge of sidewalk.

Reference mark 1, a standard reference disk stamped MORE NO 1 1963, is set in a drill hole in the north curb of West Moreland Street. The mark is 52.7 feet south of the southeast corner of house No. 342 and 16 feet north of the center of West Moreland Street.

Reference mark 2, a standard reference disk stamped MORE NO 2 1963, is set in a drill hole in the east curb of North 5th Avenue. The mark is 48 feet northwest of the northwest corner of house No. 353 and 32 feet south of the center of West Moreland Street.

Azimuth mark, a standard azimuth disk stamped MORE 1963, is set in a drill hole in the west curb of North 13th Avenue. The mark is 32 feet south of the center of West Moreland Street, 15.5 feet west of the center of North 13th Avenue and 8.5 feet south of a power pole.

To reach the azimuth mark from the station, go west on West Moreland Street for 0.5 mile to North 13th Avenue and the azimuth mark in southwest corner of intersection as described.

The distance between Reference mark No. 1 and Reference Mark No. 2 is 91.69 feet and 27.951 meters.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
‡To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 29171-P69

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MORE YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: 0-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH &OR Δal ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 450,407.43 y 895,489.15	89° 54' 26" - 0 05 23	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 41".7848 NORTH LONGITUDE: 112 04 45.4042 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 89°49'03".3	

G&S Line 115

FORM 281 (9-22-65)

USCOMM-DC 10261-P65

USCOMM—ESSA—ASHEVILLE

FILE COPY

JUL 1967

8-4011.2

169A

ARIZONA

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.
REVISED MAY 196[illegible]

33 15
112 00

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1047
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

FORM 525 (9-15-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CENTRAL STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: Carl A. Annis YEAR: 1963 DESCRIBED BY: R. H. Finch

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 19.6 METERS. † HEIGHT OF LIGHT ABOVE STATION MARK 22.1 METERS.

1a SURFACE-STATION MARK. 7a UNDERGROUND-STATION MARK. DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION† ° ' "
	NORE				00 00 00.00
Desc.	R.M. NO. 1	NE	62.78	19.134	20 03 00
	Center Corner (PCS)				263 58 41.75
	Phoenix First Congregational Spire	NE			130 41 01.06
Desc.	R. M. No. 2	SW	69.10	21.064	299 26 52
Desc.	Azimuth Mark	W	Approx. 0.2 mile		358 09 04.88

Detailed description

The station is located in the northwest corner of the intersection of North Central Avenue and Moreland Street, in the central part of Phoenix.

Station mark, a standard traverse disk stamped CENTRAL 1963, is set in the top of a square concrete post which is flush with the surface of the ground. The mark is 28 feet north of the center of Moreland Street, 32 feet south of a large sign (Coulter Cadillac) and 60 feet west of the centerline of North Central Avenue.

Reference mark number 1, a standard disk stamped CENTRAL NO 1 1963 is set in a drill hole in the west curb of North Central Avenue. The mark is 7.5 feet southeast of a Palm Tree and 80 feet north of the center of Moreland Street.

Reference mark number 2, a standard disk stamped CENTRAL NO 2 1963, is set in a drill hole in the south curb of Moreland Street. The mark is 27 feet south of the center of Moreland Street and 70 feet west of the west curb of North Central Avenue.

Azimuth Mark, a standard disk stamped CENTRAL 1963, is set in a drill hole in the north curb of Moreland Street. The mark is 17.6 feet south of a sidewalk leading to house, 36 feet north of the center of Moreland Street, 58.6 feet south of the southwest corner of the house (84 Moreland Street) and 78.5 feet east of a fire hydrant.

To reach the azimuth mark from the station, go west on Moreland Street for 0.2 mile to the mark as described, on the right.

Center Corner, is a Phoenix City Survey Mark located at the center of the intersection of North Central Avenue and Roosevelt Street. The point observed on is a slight indention in a mass of concrete which is about 5 inches below the surface of the road.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station. ‡To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 29171-P59

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CENTRAL YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 452,225.29 y 895,403.72	90° 50' 31" - 0 05 11	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 40".9672 NORTH LONGITUDE: 112 04 23.9442 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 90°45'19".5	

GGS Line 115

FORM 261 (9-15-59) USCOMM-DC 1935-P61

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

16 9A

QUAD 331122 STATION 1048
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: SVEUM STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: Carl A. Annis YEAR: 1963 DESCRIBED BY: R. H. Pinch

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.96 METERS,† HEIGHT OF LIGHT ABOVE STATION MARK 1.67 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION°	'	"
	CLYDE				00	00	00.00
desc	R. M. No. 2	W	42.43	12.932	179	54	01
desc	Azimuth Mark	W	Approx.	0.50 mile	180	29	54.34
desc	R. M. No. 1	NNE	49.47	15.078	313	55	19

Detailed description:

Station is located just west of the intersection of North 7th Street and East Portland Street in the north central part of Phoenix.

To reach the station from the intersection of North 7th Street and East Portland Street, go west on East Portland Street to the third house on the left (535 East Portland Street) and the station in the curb as described.

Station mark, a standard traverse disk stamped SVEUM 1963, is set in a drill hole in the south curb of East Portland Street in front of house number 535. The mark is 7.3 feet north-northeast of the east one of two Palm Trees in front of the house, 15.4 feet west of the center of the driveway, 18 feet south of the center of East Portland Street and 57.5 feet north of the northeast corner of the house.

Reference mark number 1, a standard disk stamped SVEUM NO 1 1963, is set in a drill hole in the north curb of East Portland Street in front of house number 546. The mark is 18 feet east of the center of a driveway, 18 feet north of the center of East Portland Street, 19.4 feet west of a sidewalk and 57.5 feet south-southwest of the southwest corner of the house.

Reference mark number 2, a standard disk stamped SVEUM NO 2 1963, is set in a drill hole in the south curb of East Portland Street in front of house number 535. The mark is 2 feet north of the west one of two Palm Trees in front of the house, 8 feet east of the center of a driveway, 18 feet south of the center of East Portland Street and 57.4 feet north of the northwest corner of the house.

Azimuth mark, a standard disk stamped SVEUM 1963, is set in a drill hole in the west curb of North Central Avenue at the intersection of North Central Avenue and Portland Street. The mark is in the northwest corner of the intersection, 42 feet north of the center of Portland Street and 66.7 feet southeast of the southeast corner of the Galleries National Bulding.

To reach the azimuth mark from the station, go west on East Portland Street for 0.50 mile to North Central Avenue and the mark as described.

*Refers to notes in Annals of triangulation and more publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SVEUM YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: C-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 454,738.18 y 894,851.60	91° 03' 23" - 0 04 55	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 35".5407 NORTH LONGITUDE: 112 03 54.2723 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 90°58'28".2	

C&GS Line 115

FORM 281 (7-25-58) USCOMM-DC 15251-P61

FILE COPY

JAN 1967

USCOMM—ESSA—ASHEVILLE

169A JULY 1966 ARIZONA
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33015'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1049
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: CLYDE STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: H.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 15.7 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 18.1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION† °	'	"
1b	ARM				0	00	00.00
desc	R.M. No. 1	SSE	70.15	21.382	67	07	18
desc	Azimuth Mark	W	approx. 0.3 mile		179	35	33.72
desc	R.M. No. 2	W	66.03	20.129	184	47	36
7a	1/4 Corner (Phoenix City Survey)				269	30	08.05

Detailed description:

The station is located in the city of Phoenix, about 1.0 mile east of Central Avenue and about 1/2 mile south of East Mc Dowell Road on the side of East Portland Street.

To reach the station from the intersection of East Mc Dowell Road and North 12th Street, go south on North 12th Street for 0.4 mile to East Portland Street and station on right.

Station, a standard traverse disk set in the top of a round concrete post which projects 1 inch above the surface of the ground and stamped CLYDE 1963. The mark is 41 feet west of center of North 12th Street, 25 feet south of center of East Portland Street, 8 feet south of curb and 6 feet north of sidewalk.

Reference mark 1, a standard reference disk set in a drill hole in the west curbing of North 12th Street and stamped CLYDE NO 1 1963. The mark is 31 feet north of a power pole, 17 feet west of the center of North 12th Street and 6 feet east of sidewalk.

Reference mark 2, a standard reference disk set in a drill hole in the south curbing of East Portland Street and stamped CLYDE NO 2 1963. The mark is 21 feet west of center of driveway, 19 feet south of center of East Portland Street and 14 feet north of sidewalk.

Azimuth mark, a standard azimuth disk set in a drill hole in the north curbing of East Portland Street and stamped CLYDE 1963. The mark is 75 feet east of a power pole, 30 feet south of the southwest corner of the Ukrainian Orthodox Church and 18 feet north of center of East Portland Street.

1/4 Corner, a Phoenix City Survey Mark located in the center of the intersection of East Mc Dowell Road and North 12th Street. The mark is a drill hole in a rock which is about 8 inches below the surface of the street and encased in a small manhole.

To reach the azimuth mark from the station go west on East Portland Street for 0.3 mile to the mark on right.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
‡To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CLYDE YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (from S) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 457,548.09 y 894,824.24	91° 57' 24" - 0 04 36	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
LATITUDE: 33° 27' 35".3084 NORTH LONGITUDE: 112 05 21.1037 WEST			BENCH METERS MARK FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 91°52'48".3	

C&GS Line 115

FORM 261 (7-15-58) USCOMM-DC 71251-P61

FILE COPY

JAN 1967

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169

QUAD 331122 STATION 1050
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: ARM STATE: Arizona COUNTY: Maricopa M.E.P.

CHIEF OF PARTY: C. . Annis YEAR: 1963 DESCRIBED BY: H.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 4.3 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 4.0 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION°	′	″
1b 7a	STRONG 1962				0	00	00.00
desc	R.M. No. 2	NW	49.30	15.029	225	46	07
desc	R.M. No. 1	NE	51.70	15.760	292	38	14
	Phoenix, Church of Jesus Christ of Latter Day Saints Church Spire	NE	approx. 0.5 mile		295	00	09.3
desc	Azimuth Mark	E	approx. 0.5 mile		351	32	21.38

Detailed description:

The station is located in the city of Phoenix, about 1 1/2 miles east of Central Avenue and 1/2 mile south of East Mc Dowell Road on the south side of East Diamond Street.

To reach the station from the intersection of East Mc Dowell Road and North 16th Street, go south on North 16th Street for 0.45 mile to East Diamond Street and station.

Station, a standard traverse disk set in the top of a round concrete post which is flush with the surface of the ground and stamped ARM 1963. The mark is 54 feet north of the northeast corner of house, 59 feet west of center of North 16th Street, 22 feet south of center of East Diamond Street, 14.5 feet west of a fire hydrant and 3.6 feet south of curb.

Reference mark 1, a standard reference disk set in a drill hole in the north curbing of East Diamond Street and stamped ARM NO 1 1963. The mark is 32 feet west of center of North 16th Street, 23 feet north of center of East Diamond Street and 6 feet south-southwest of a power pole.

Reference mark 2, a standard reference disk set in a drill hole in the north curbing of East Diamond Street and stamped ARM NO 2 1963. The mark is 24.5 feet west of center of driveway, 17 feet north of center of East Diamond Street and 6.5 feet south of sidewalk.

Azimuth mark, a standard azimuth disk set in a drill hole in the north curbing of East Diamond Street and stamped ARM 1963. The mark is 34 feet east of center of North 20th Street, 23 feet south-southeast of power pole number 7358, 21 feet southeast of a fire hydrant and 18 feet north of center of East Diamond Street.

To reach the azimuth mark from the station, go south on North 16th Street for 0.05 mile to East Roosevelt Street, turn left, go east on East Roosevelt Street for0.5 mile to North 20th Street, turn left, go north on North 20th Street for 0.05 mile to East Diamond Street and mark on right.

*Refers to notes in manuals of triangulation and more publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ARM YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FROM △α) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 460,212.19 y 894,714.24	269° 40' 46" - 0 04 19	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 34".2543 NORTH LONGITUDE: 112 02 49.6550 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 269°36'27".3	

C&GS Line 115

FORM 261 (7-63-561) USCOMM-ESSA (REVERSE)

USCOMM—ESSA—ASHEVILLE

FILE COPY
JAN 1967

169 ARIZONA

JULY 1966
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33 01 51
112 00 00

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1051
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~XXXXXXXXXX~~ STATION

TRAVERSE

NAME OF STATION: STRONG STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Amis YEAR: 1962 DESCRIBED BY: R.P.K.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 19.8 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 22.1 METERS.

	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION° ' "
	PAPAGO				00 00 00.0
16b	Azimuth Mark	E	approx. 0.3 mile		04 07 39.9
desc.	R.M. No. 1	SE	70.22	21.402	52 58 41
desc.	R.M. No. 2	WNW	56.02	17.077	206 35 54

Detailed description

Station is located in the northeast section of Phoenix and in the southwest corner of N 20th and E. Roosevelt Street.

To reach from the junction of Central Avenue and Jefferson Street in the business section of Phoenix, go east on E. Jefferson Street (one way street east) for 2.0 miles to N 20th Street, turn left and go north 0.85 mile to E. Roosevelt Street and station as described.

Station mark, a standard triangulation disk stamped STRONG 1962, is set in the top of a concrete cylinder which is set flush with the ground. The mark is 70 feet west of the center of N 20th Street, 41.5 feet south of the center of E. Roosevelt Street, 25.2 feet west-south

west of the southwest corner of irrigation control gate and 22 feet west of a 15 inch tree.

Reference mark 1, a standard reference disk stamped STRONG NO 1 1962, is set in a drill hole in the west curb of N 20th Street, 28 feet west of the center of N 20th Street, 6.7 feet north-northeast of a bus stop sign and 5.1 feet east of the west side of sidewalk.

Reference mark 2, a standard reference disk stamped STRONG NO 2 1962, is set in a drill hole in the south curb of E. Roosevelt Street, 22.5 feet south of the center of E. Roosevelt Street and 5.1 feet north of the south side of sidewalk.

Azimuth mark, a standard azimuth disk stamped STRONG 1962, is set in the top of a concrete cylinder which projects about 3 inches. The mark is 25 feet north of the center of E. Roosevelt Street, 19 feet west of the center of driveway to house No. 2204, 3 feet west of power pole No. 3207 and 2.9 feet south of the witness post.

To reach the azimuth mark from the junction of N 20th Street and E. Roosevelt Street at station, go east on E. Roosevelt Street for 0.3 mile to azimuth mark on left.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: STRONG
ESTABLISHED BY: C.A. Annis YEAR: 1962 STATE: Arizona
RECOVERED BY:* C.A. Annis YEAR: 1963 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station was recovered as described in the 1962 description and all marks were found to be in good condition. The distance to all marks checked. The direction to the azimuth mark checked, but because this station was occupied less than one year ago the direction to the reference marks was not observed.

1963 Observation follows;

OBJECT	BEARING	DISTANCE	DIRECTION ° ' "
TELEGRAPH PASS (USGS) 1935			00 00 00.00
Azimuth Mark	E	approx. 0.3 mile	258 51 59.95

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: STRONG YEAR: 1962, 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix (Ariz. Hwy. Sur. Ehrenberg to Phoenix to Casa Grande)

First -ORDER Triangulation SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II, 50, 51

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR ∆α) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 462,830.17 y 894,339.76	268° 06' 21" - 0 04 02	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 30".5805 NORTH LONGITUDE: 112 02 18.7472 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	THIRD-ORDER 268°02'18".7	

C&GS Line 115

FORM 281 (1-28-58) USCOMM-DC 19815-P67

FILE COPY

JAN 1967

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169A

QUAD 331122 STATION 1052
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°/51
112°06

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: GUARANTY STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.L. Wright

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

Desc. SURFACE-STATION MARK, UNDERGROUND-STATION MARK — DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
	SUNNY SLOPE 2 U.S.G.S.				0 00 00.00
Desc.	Azimuth Mark	N	Approx. 0.5 mile		04 12 36.09
Desc.	Reference Mark 1	SW	15.68	4.776	238 05 10
Desc.	Reference Mark 2	NW	15.98	4.870	303 40 24

Detailed description:

The station is located in the approximate center of the highest part of the Guaranty Bank Building, 2 1/2 miles north of the central section of Phoenix along the west side of North Central Avenue.

To reach the station from Van Buren and North Central, go north on North Central for 2.6 miles to the Guaranty Bank Building on the left and the station located on the extreme top as described.

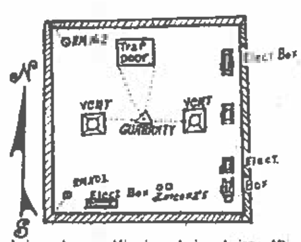
The station mark is a standard disk stamped GUARANTY 1963, cemented in a drill hole in the approximate center on the top part of the bank. It is 6.78 feet southeast of the southwest corner of the trap door, 6.88 feet southwest of the southeast corner of the trap door, 5.5 feet west of west edge of vent and 4.7 feet east of east edge of vent.

Reference mark 1 is a standard disk stamped GUARANTY NO 1 1963, cemented in a drill hole in the southwest corner of the roof. It is 2.75 feet northeast of the southwest corner of the roof.

Reference mark 2 is a standard disk stamped GUARANTY NO 2 1963, cemented in a drill hole in the northwest corner of the roof. It is 2.65 feet southeast of the northwest corner of the roof.

The azimuth mark is a standard disk stamped GUARANTY 1963, cemented in a drill hole in the inside part of the sidewalk, located in the southeast corner of North Central Avenue and Indian School Road. It is 15.6 feet south-southwest of a signal light pole and 19.1 feet west of the northwest corner of a building.

To reach the azimuth mark from the Guaranty Bank Building, go north on North Central Avenue for 0.5 mile to Indian School Road and the azimuth mark is located on the right as described above.



*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GUARANTY YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

First -ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 51

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 452,174.82 y 905,480.17	185° 15' 51" - 0 05 12	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 29' 20".6672 NORTH		413.5 METERS
	LONGITUDE: 112 04 24.7196 WEST		1357 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 185°10'38".7	

FORM 201 (7-23-64)

USCOMM-DC

FILE COPY

JAN 1967

USCOMM—ESSA—ASHEVILLE

169A ARIZONA

JULY 1966

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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1053
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ TRAVERSE STATION

NAME OF STATION: HOWE   STATE: Arizona   COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis   YEAR: 1963   DESCRIBED BY: G. A. J.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 4.6 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK METERS.

1b 7a SURFACE-STATION MARK, UNDERGROUND-STATION MARK

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
	SEAP				00 00 00.0
desc.	R. M. No. 2	SSE	48.77	14.866	77 03 33
desc.	TT N 3 (AMS) (Azimuth Mark)	N	Approx. 0.35 mile		272 19 40.22
desc.	R. M. No. 1	NNE	54.99	16.759	281 06 13

Detailed description:

The station is located about 3 miles northeast of the center of Phoenix, at the intersection of North 24th Street and East Portland Street.

To reach from the intersection of East Roosevelt Street and North 24th Street, go north on North 24th Street for 0.15 mile to the intersection of East Portland Street and the station on the left.

Station mark, a standard traverse disk set in the top of a round concrete post which is set flush with the ground and is stamped HOWE 1963. The mark is 43 feet west of the center of North 24th Street, 14 feet northeast of the corner of building 1052, 13 feet southwest of power pole, and 11 feet west of the curb.

Reference mark 1, a standard reference disk set in a drill hole in the west curb of North 24th Street and is stamped HOWE NO 1 1963. The mark is 44.5 feet north of a power pole, 32 feet west of the center of North 24th Street, and 14 feet south of the center of the drive to house number 1108.

Reference mark 2, a standard reference disk set in a drill hole in the west curb of North 24th Street and is stamped HOWE NO 2 1963. The mark is 57 feet south of the power pole, 37.5 feet south-southeast of the northeast corner of building 1052, and 32 feet west of the center of North 24th Street.

TT N 3 (AMS), a bronze Army Map Service disk set in a drill hole in the south curb of East Mc Dowell Road and is stamped TT N 3 1948 RESET A M S 1955. The mark is 48 feet east of the center of North 24th Street, 30.5 feet south of the center of East Mc Dowell Road, 4.5 feet northeast of traffic signal post, and 1 foot northwest of a street light post.

To reach TT N 3 (AMS) from station go north on North 24th Street for 0.35 mile to East Mc Dowell Road and mark in th southeast corner of the intersection.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HOWE   YEAR: 1963

STATE: Arizona   LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse   SOURCE: G-13304   FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 465,543.03 y 895,030.33	182° 19' 23" - 0 03 44	AZIMUTH MARK = TT N 3 AMS
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 37".4436 NORTH LONGITUDE: 112 01 46.7340 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = TT N 3 AMS	SECOND-ORDER 182°15'39".4	

C&GS Line 115

FORM 321

FILE COPY

JAN 1967

ARIZ. 169A

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REV: SEPT 1972

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1054
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00'

FORM 525
(6-70-66)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: SEAP STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: G. A. John

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK METERS.

16 SURFACE-STATION MARK, UNDERGROUND-STATION MARK
7a DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION °	'	"
	LEE						
desc	Azimuth Mark	(S)	Approx. 0.15 mile		86	06	18.44
16b	R. M. No. 2	(W)	45.76	13.948	168	04	54
16b	R. M. No. 1	(N)	46.04	14.033	273	35	41
	Phoenix, KTAR Radio Tower	(NE)			314	44	45.9

Detailed description:

The station is located about 3 1/2 miles northeast of the center of Phoenix, 3/4 mile south of East McDowell Road, and in the northeast corner of the intersection of East Portland Street and North 28th Street.

To reach from the intersection of East Roosevelt Street and North 28th Street, (azimuth mark in the southeast corner of the intersection as described) go north on North 28th Street for 0.15 mile to East Portland Street and station as described.

Station mark, a standard traverse disk set in the top of a round concrete post which projects about 2 inches and is stamped SEAP 1963. The mark is 22 feet west of the center of North 28th Street, 19 feet north of East Portland Street, and 10.5 feet southeast of a witness post.

Reference mark 1, a standard reference disk set in the top of a round concrete post which projects about 2 inches and is stamped SEAP NO 1 1963. The mark is 42.5 feet north-northwest of a power pole, 36 feet north of a witness post, and 20 feet west of the center of North 28th Street.

Reference mark 2, a standard reference disk set in the top of a round concrete post which projects about 1 inch and is stamped SEAP NO 2 1963. The mark is 69 feet west of North 28th Street, 42.9 feet west of a witness post, and 24 feet north of East Portland Street.

Azimuth mark, a standard azimuth disk set in a drill hole in the south curb of East Roosevelt Street and is stamped SEAP 1963. The mark is 40 feet south of the center of East Roosevelt Street, 24 feet east of the center of North 28th Street, and 22 feet west of the center of the drive to house number 913.

RECOVERY NOTE, TRIANGULATION STATION 4UQA 331122 R

NAME OF STATION: SEAP
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY:* L.P. Smith YEAR: 1970 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: At Phoenix
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION °	'	"
Azimuth mark (1963) 0.15 mile	S			0	00	00.00
City of Phoenix disk	W	296.36	(90.331)	92	29	54.9
Azimuth mark (new) 0.15 mile	W			93	03	37.3
RM 2	W	45.79	13.953	202	01	08
RM 1	N	46.03	14.031	187	29	04
RM 1 to RM 2		62.28	18.982			

The station mark, Reference marks 1 and 2 and the azimuth mark were recovered and found in good condition. The azimuth mark was in the way of street construction and was moved at this time.

The station mark which is located at the northeast corner of the intersection of East Portland Street and North 28th Street is a standard disk stamped, SEAP 1963. It is set in the top of a 12 inch concrete monument which is flush with the ground. It is 18 feet north of the center line of North Portland Street, 18 feet southwest of a fire hydrant, 21 feet west of the center line of North 28th Street and 5 feet east of the prolongation of the side walk.

Reference mark 1 is a standard disk stamped, SEAP NO 1 1963. It is set in the top of a 12 inch concrete monument which projects 2 inches. It is 27 feet north-northwest of the fire hydrant, 19 feet west of the center line of North 28th Street and 2 feet east of a wire fence.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SEAP YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: C-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz.	x 468,185.80	353° 48' 06"	AZIMUTH MARK
ZONE: C	y 895,030.53	- 0 03 27	
CODE: 0202		86 51 43	AZIMUTH MARK 1970
STATE:	x		
ZONE:	y		
CODE:			

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 37".4729 NORTH		BENCH MARK METERS
	LONGITUDE: 112 01 15.5384 WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
	SECOND-ORDER	
AZIMUTH MARK	353°44'38".7	
AZIMUTH MARK 1970	86 48 16.0	

Reference mark 2 is a standard disk stamped, SEAP NO 2 1963. It is set in the top of a 12 inch concrete monument which is , inch below the ground surface. It is 55 feet west-southwest of the fire hydrant, 23 feet north of the center line of East Portland Street and 2 1/2 feet north of the north edge of the side walk.

The new azimuth mark is a standard disk stamped, SEAP 1963 1970. It is set in a drill hole in the side walk at the southeast part of the intersection of East Portland Street and North 27th Street. The mark is 34 feet west of the center line of 27th Street and 18 1/2 feet south of the center line of East Portland Street.

City of Phoenix disk is unstamped. The disk is set in the top of a 12 inch concrete monument which is flush with the street surface in the center of the intersection of East Portland Street and North 27th St.

USCOMM—NOAA—ASHEVILLE

16 9A ARIZ.

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1055
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

FORM 525
10-10-63

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: LEE STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 20.0 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 22.5 METERS.

1b SURFACE-STATION MARK. UNDERGROUND-STATION MARK
7a DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKES AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTIONS °	'	"
	DRILL				0	00	00.00
11b	R.M. No. 2	SSE	95.39	29.050	75	07	57
	Phoenix, KTAR TV Mast	SSW	approx. 6.0 miles		105	45	58.2
desc	Azimuth Mark	SSW	approx. 0.15 mile		161	45	49.79
11b	R.M. No. 1	NNE	69.53	21.195	201	25	27
desc	Intersection Point (Phoenix City Survey)				47	20	45.41

Detailed description:

The station is located about 4 miles east of the center of Phoenix, about 1/2 mile south of East McDowell Road and 100 feet north of East Portland Street.

To reach the station from the intersection of East Roosevelt Street and North 32nd Street, go north on North 32nd Street for 0.15 mile to East Portland Street and azimuth mark on left as described, turn right, go east on East Portland Street for 0.1 mile to the station on left as described.

Station, a standard traverse disk set the top of a round concrete post which is 16 inches below the surface of the ground and stamped LEE 1963. The mark is 104 feet north of center of East Portland Street, 20 fert west-northwest of fence corner and 2 feet north of witness post and fence.

Reference mark 1, a standard reference disk set in the top of a round concrete post which projects 3 inches and stamped LEE NO 1 1963. The mark is 72 feet north-northeast of witness post, 8 feet south of fence corner and 2 feet west of fence.

Reference mark 2, a standard reference disk set in the top of a round concrete post which projects 3 inches and stamped LEE NO 2 1963. The mark is 87 feet south-southeast of witness post, 10 feet north of East Portland Street and 1.5 feet west of fence.

Azimuth mark, a standard azimuth disk set in a drill hole in the southwest headwall of a irrigation gate and stamped LEE 1963. The mark is 41 feet west of the Center of North 32nd Street, 20 feet south of center of East Portland Street and 16 feet west-northwest of a fire hydrant.

Intersection point, a Phoenix City Survey Mark located in the intersection of East Roosevelt Street and North 34th Street. The station is a 1 inch pipe driven in the ground, is 6 inches below the surface of the street beneath a small metal hand hole cover.

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

USCOMM-DC 27171-P69

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LEE YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 471,503.30 y 895,163.97	75° 23' 00" - 0 03 06	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 38.8245 NORTH LONGITUDE: 112 00 36.3797 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 75°19'54".0	

FORM 261 (7-22-63)

USCOMM-DC 1925-P71

FILE COPY

JAN 16 1973

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169A

QUAD 331122 STATION 1056
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION
THAVERSE

NAME OF STATION: DALL STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.L. Wright

NOTE.*	HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.				
1b 7a	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
	LEE				° ' " 0 00 00.00
11b	Reference Mark No. 1	N'	40.645'	12.387'	87 24 46'
	Phoenix, KTAR Radio Tower	NE'			90 19 19.8'
Desc.	Azimuth Mark	NE'	Approx.	0.35 mi.	104 11 23.22'
	PAIM (V.G.)				185 47 12.86'
11b	Reference Mark No. 2	S'	41.235'	12.568'	264 37 10

Detailed description:

The station is located about 4.0 miles east of the central section of Phoenix at the corner of East Portland Street and North 36 th Street.

To reach the station from the intersection of McDowell Road and 35 th Street, go south on 35 th Street for 0.35 mile to Portland Street, turn left and go east on Portland Street for 0.1 mile to the end of Portland Street and the station as described.

The station mark is a standard traverse station disk stamped DALL 1963 set in top of 12-inch concrete cylinder which projects 2 inches above the ground surface. It is 3.0 feet west of a north and south fence line, 3.3 feet southwest of a standard metal witness post and marker and 20.0 feet east of the approximate center of North 36 th Street.

Reference mark 1 is a standard disk stamped DALL NO 1 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 2.0 feet east of a north and south fence line, 22.0 feet east of the approximate center of North 36 th Street, 38.6 feet north of the witness post and is about the same elevation as the station mark.

Reference mark 2 is a standard disk stamped DALL NO 2 1963, set in top of a 12-inch concrete cylinder which projects 2 inches above the ground surface. It is 2.0 feet west of a north and south fence line, 15.0 feet east of 36 th Street, 23.3 feet south of the witness post and is about the same elevation as the station mark.

The azimuth mark is a standard disk stamped DALL 1963, cemented in a drill hole in the northwest curb of 37 th Street and McDowell Road. It is 3.8 feet west of the center of a 10-inch hand hole, 4.0 feet south of McDowell Road and 37 th Street marker, 7.0 feet west of the center of a man hole, 28.0 feet west of the center line of 37 th Street and 37.0 feet north of the center line of McDowell road.

To reach the azimuth mark from the station, go west on East Portland Street for 0.1 mile to 35 th Street, turn right and go north on 35 th Street for 0.35 mile to McDowell Road, turn right and go east on McDowell Road for 0.25 mile to the junction of 37 th Street and the azimuth located on the left as described above.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DALL YEAR: 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

First -ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 473,519.70 y 895,037.01	197° 47' 33" - 0 02 52	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 37".5856 NORTH LONGITUDE: 112 00 12.5766 WEST		BENCH MARK METERS / FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 197°44'41".4	

C+GS Line 115

FORM 261 (7-29-66) USCOMM-DC 14285-P67

FILE COPY

JAN 1967

USCOMM—ESSA—ASHEVILLE

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1057,1058
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX STATE HOSPITAL WATER TANK YEAR: 1962, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

Third-ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: *

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 467,007.15 y 892,776.95	- 0 03 35	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 15".163 NORTH LONGITUDE: 112 01 29.424 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: WILSON, STRONG, HOWE (* Ariz. 49-II, 50) No description available		

FORM 261 (7-23-51) USCOMM-DC 1825-P61

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX RADIO STATION KTAR SOUTH TOWER OF 2 YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

Third-ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 50, 51

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 473,951.70 y 901,334.86	- 0 02 50	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 28' 39".903 NORTH LONGITUDE: 112 00 07.538 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: DALL, LEE, SEAP, STRONG, GUARANTY, TAN, SQUAW PEAK, GUN, GOLF, SEAM, STUART, PALM		

Form 325b (11-8-65) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Radio Station KTAR, South Tower of 2

CHIEF OF PARTY: C.A. Annis YEAR: 1963 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object:

Station is located about 5 miles northeast of the center of the business section of Phoenix and in the southeast corner of the intersection at East Thomas Road and North 36th Street.

Station is a red and white radio tower, is 404 feet high and has a red light on top.

Point intersected was red light on top.

Described by R.P. Kowal

USCOMM—ESSA—ASHEVILLE

169

JULY 1966 ARIZONA
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1059,1060
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX RADIO STATION KIFN TOWER YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third -ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH @(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 452,649.46 y 882,343.09	- 0 05 08	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 31".745 NORTH LONGITUDE: 112 04 18.707 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: PHOENIX BASELINE EAST, PHOENIX, DURANGO, COURT HOUSE, HILTON, with additional observations from WILSON		

Form 525b (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Radio Station KIFN, Tower

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is located in the south part of Phoenix, approximately 300 yards south of the Black Canyon Highway and approximately 150 yards east of the intersection of South Central Avenue and Watkins Street.
Station is a steel tower painted red and white and is approximately 255 feet high.
The point intersected was the red light on top.

Described by R. D. Sveum
Coast-DC 34113

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX SAFEWAY FOODS WATER TANK YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third -ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH @(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 446,599.52 y 882,856.32	- 0 05 47	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 36".728 NORTH LONGITUDE: 112 05 30.103 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: LOWER, DURANGO, COURT HOUSE, HILTON, WILSON, PHOENIX		

Form 525b (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Safeway Foods, Water Tank

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is located in the south part of Phoenix, 0.1 mile south of Black Canyon Highway and at the intersection of South 15 th. Avenue and West Hilton Street.
Station has 4 legs, painted silver and is approximately 120 feet high.
The point intersected was the top and center of tank.

Described by R. D. Sveum
Coast-DC 34113

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1061,1062
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX GREATER ARIZ SAVINGS BLDG RAD TOWER YEAR: 1962, 1963 *

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third-ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 452,214.52 y 891,153.95	- 0 05 11	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 58".918 NORTH LONGITUDE: 112 04 23.996 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: PHOENIX BASELINE EAST, PHOENIX, DURANGO, WILSON, HILTON, with additional observations from ETTA *		

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Greater Arizona Savings Bldg.,Radio Tower

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is located in the center part of Phoenix, at the intersection of North Central Avenue and West Adams Street and is on top of the Greater Arizona Savings Building.

Station is a steel tower painted red and white and is approximately 275 feet high. The point intersected was the red light on top.

Described by R. D. Svetum

R.D.S.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX TV STATION KPHO RELAY TOWER YEAR: 1962, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway
(Ehrenberg to Phoenix to Casa Grande)

Third -ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II, 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 452,169.98 y 893,095.09	- 0 05 11	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 18".124 NORTH LONGITUDE: 112 04 24.556 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: COURT HOUSE, BLACK, CENTRAL, CLYDE, STRONG, HILTON with additional observations from BASE LINE EAST, PHOENIX, DURANGO, LOWER, TT ZW 9 AMS, EDGE, SUTTON, PAPAGO, PALM, WILSON, TELEGRAPH PASS USGS		

Form 525b (11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, TV Station KPHO, Relay Tower

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is located in the central part of Phoenix, at the intersection of North Central Avenue and West Fillmore Street and is on top of the Westward Ho Hotel.

Station is a steel tower painted red and white and is approximately 457 feet high. The point intersected was the red light on top.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: Phoenix, KPHO Relay Tower
ESTABLISHED BY: C. A. Annis YEAR: 1962 STATE: Arizona
RECOVERED BY:* C. A. Annis YEAR: 1963 COUNTY: Maricopa

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:

Station was recovered as described.

169

JULY 1966 **ARIZONA**

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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33015'
112000

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1063,1064
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX INDIAN SCHOOL BOILER ROOM STACK YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

Third ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 51
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (IOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 453,062.15 y 908,372.41	° ' " - 0 05 06	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 29' 49".297 NORTH LONGITUDE: 112 04 14.293 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: GUARANTY, STELLA			

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Indian School Boiler Room, Stack

CHIEF OF PARTY: C.A. Annis YEAR: 1963 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object:

Station is located in the northeast corner of North Central Avenue and East Indian School Road and on the Indian School Grounds in Phoenix.

Station is the top of a silver painted smoke stack that has a black top and is approximately 65 feet high.

Point intersected was the top and center of stack.

Described by R.P. Konrady

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX STATE CAPITAL BUILDING DOME YEAR: 1962, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (IOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 445,206.52 y 890,573.60	° ' " - 0 05 56	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 53".063 NORTH LONGITUDE: 112 05 46.697 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: DURANGO, COURT HOUSE, PHOENIX, with additional observations from CAMELS BACK 2 *			

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, State Capital Building, Dome

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is 1 1/2 miles west of Central Avenue, is on the west side of 17 th. Avenue and is between W Jefferson Street and W Adams Street.

Station is the copper dome on top of the main building and is approximately 100 feet high.

The point intersected was the top and center of dome just under the white statue on top of dome.

Described by R. P. Strum

Coss-DC 34113

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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1065,1066
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112° 00

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX RADIO STATION KRIZ MAST YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third -ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH @(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 441,168.15 y 886,218.75	- 0 06 22	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 09".903 NORTH LONGITUDE: 112 06 34.264 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: COURT HOUSE, HILTON, PHOENIX, DURANGO			

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Radio Station KRIZ, Mast

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is located in the south-southwest part of Phoenix, 0.4 mile east of the intersection of West Buckeye Road (U.S. Hwy. 80) and 27 th. Avenue, 0.1 mile west of the Black Canyon Highwey and in the southeast angle of the intersection of West Buckeye Road and 24 th. Avenue.

Station is a steel structure, painted red and white and is approximately 203 feet high.

The point intersected was the red light on top.

Described by R. D. Sveum

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX RADIO STATION KHAT MAST YEAR: 1962 *, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway

Third -ORDER Triangulation SOURCE: G-10749
G-13304 FIELD SKETCH: Ariz. 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH @(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 438,902.15 y 897,571.47	- 0 06 38	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 28' 02".189 NORTH LONGITUDE: 112 07 01.262 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: SUTTON, GRAND *, LINDEN, BLACK, CULVER			

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

/ RPK.

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Radio Station KHAT, Mast

CHIEF OF PARTY: C. A. Annis YEAR: 1963 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is located about 2 1/2 miles northwest of the center of Phoenix, 0.1 mile north and 300 feet west of the intersection of West Mc Dowell Road and North 27th. Avenue.

It is a steel structure painted red and white, and approximately 175 feet high.

The point intersected was the light on top.

Described by R. C. Jones

169

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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

ARIZONA

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1067
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 526
Rev. Oct., 1952

DESCRIPTION OF TRIANGULATION STATION

INTERSECTION

NAME OF STATION: Phoenix, Reynolds Al
STATE: Arizona COUNTY: Maricopa
CHIEF OF PARTY: Co. Tank D.H.Konichek
YEAR: 1947 LOCALITY: Phoenix

Surface-station mark,	Note,*
Underground-station mark,	Note,*
Reference mark,	Note,*
Reference mark,	Note,*
Azimuth mark,	Note,*
Witness mark,	Note,*
Height of light above station mark	meters.
Height of telescope above station mark	meters.†

DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND

OBJECT	DISTANCE	DIRECTION	AZIMUTH
		° ' "	° ' "

Detailed description:

In Phoenix, at the Reynolds Aluminum Plant on the 3400 block of West Van Buren Street, an aluminum painted, metal water tank, 60 feet southeast of the power plant and approximately 135 feet high. The point observed on was the small ball atop center of tank.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 526
(Rev. Feb. 1952)

RECOVERY NOTE, TRIANGULATION STATION

INTERSECTION

R

NAME OF STATION: Phoenix, Reynolds Alum.Co., Tank
ESTABLISHED BY: D.H.K. YEAR: 1947 STATE: Arizona
RECOVERED BY: L.W.Q. YEAR: 1953 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station was recovered in good condition. Description adequate.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

R

NAME OF STATION: Phoenix, Reynolds Aluminum Co., Water Tank 1947

Recovered By:
CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located in the southwest part of Phoenix, 0.65 mile north of West Buckeye Road (U.S. 80), 0.3 mile west of 35th Avenue, 0.1 mile north of the railroad tracks and is on the south side of the buildings.

Station has 4 legs, painted silver and is approximately 120 feet high.

Point intersected was the top and center of tank.

Described by R. D. Sveum

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX REYNOLDS ALUMINUM CO WATER TANK YEAR: 1947, 1962, 1963
STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Phoenix to Parker, Vicinity of Phoenix)
Third -ORDER Triangulation SOURCE: G-8347, G-12917, G-13304 FIELD SKETCH: Ariz. 26, 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 431,896.32 y 889,724.85	° ' " - 0 07 23	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 44".410 NORTH LONGITUDE: 112 08 23.767 WEST		367 * METERS 1204 * FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: LOWER, HAUL, HOPS *, EATON *, COOL *, FALCON *, DURANGO (* Ariz. 50)		

FORM 251 (7-58-60)

FILE COPY

JAN 1967

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169

QUAD 331122 STATION 1068
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00'

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
FORM 526
Rev. Oct., 1953

DESCRIPTION OF TRIANGULATION STATION

INTERSECTION

NAME OF STATION: Phoenix, Reynolds Al. Co. Stack
STATE: Arizona COUNTY: Maricopa
YEAR: 1947 LOCALITY:
CHIEF OF PARTY: D.H.Konichek

Surface-station mark,	Note,*
Underground-station mark,	Note,*
Reference mark,	Note,*
Reference mark,	Note,*
Azimuth mark,	Note,*
Witness mark,	Note,*
Height of light above station mark	meters.
Height of telescope above station mark	meters.†

DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND

OBJECT	DISTANCE	DIRECTION	AZIMUTH
		° ′ ″	° ′ ″

Detailed description:

In Phoenix, at the Reynolds Aluminum Plant on the 3400 block of West Van Buren Street, 25 feet north of the power plant, a red brick, circular stack about 175 feet high. The point observed on was the center of the top.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
FORM 526
(Rev. Feb. 1948)

RECOVERY NOTE, TRIANGULATION STATION

INTERSECTION

R

NAME OF STATION: Phoenix, Reynolds Alum.Co., Stack
ESTABLISHED BY: D.H.K. YEAR: 1947 STATE: Arizona
RECOVERED BY:* L.H.Q. YEAR: 1953 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station was recovered in good condition. Description adequate.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX, REYNOIDS AL. (INTERSECTION) CO. STACK 1947
ESTABLISHED BY: D.H.K. YEAR: 1947 STATE: Arizona
RECOVERED BY:* M.K.M. YEAR: 1960 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station recovered as described.

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
NOTE.—One of these forms must be used for every station recovered.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX REYNOLDS ALUMINUM CO., STACK YEAR: 1947
STATE: Arizona LOCALITY: Phoenix to Parker (Vic. of Phoenix)
Third -ORDER Triangulation SOURCE: G-8347 FIELD SKETCH: Ariz. 26

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH FROM SOUTH	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 431,814.20 y 889,839.62	- 0 07 24	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE: 33°26'45".544	NORTH		376	METERS
	LONGITUDE: 112 08 24.739	WEST		1234	FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
17 Station computed from PHOENIX BASELINE WEST, GLENDALE 2, CAMES BACK 2		

FORM 301 17-33-503

FILE COPY

JAN 1967

169 JULY 1966

ARIZONA

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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

330151
112000

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1069
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 525

DESCRIPTION OF INTERSECTION STATION

Name of Station: Phoenix, (Westing) Western Compress Tank 1947
State: Arizona County: Maricopa
Chief of Party: D.H.Konichek Year: 1947 Locality: Phoenix

Surface-station mark, Note.*
Underground-station mark, Note.*
Reference mark, Note.*
Reference mark, Note.*
Azimuth mark, Note.*
Witness mark, Note.*
Height of light above station mark meters.
Height of telescope above station mark meters.

DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND

OBJECT	DISTANCE	DIRECTION	AZIMUTH

Detailed description:
In Phoenix, 0.5 mile south of West Van Buren Street, 200 feet west of 27th Avenue, at the Westing Compress Warehouse, an aluminum painted, metal water tank approximately 120 feet high. The point observed upon was the small ball atop center of tank.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

Name of Station: PHOENIX WESTING COMPRESS TANK
Established by: Year: 1947 State: Arizona
Recovered by: A.M.S. Year: 1960 County: Maricopa

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:
The water tank located at the described site is on the property of the Western Compress Company which has occupied the site since considerable time prior to the year 1947. No other tanks are in the immediate area.
It is believed that the term "Westing" as used in this station designation is in error.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY OF TRIANGULATION INTERSECTION STATION

R

Name of Station: Phoenix, Western Compress Co., Water Tank 1947
Recovered By: C. A. Annis Year: 1962 State: Arizona County: Maricopa

Description, including sketch of object: Station is located in the southwest part of Phoenix, 0.55 mile north of west Buckeye Road (U.S. 80), 0.1 mile south of the intersection of 27th Avenue and West Jackson Street, approximately 250 feet west of 27th Avenue and approximately 200 feet north of the railroad tracks.
Station has 4 legs is painted silver and is approximately 120 feet high.
Point intersected was the top and center of tank.

NOTE: Probably the same as PHOENIX, WESTING COMPRESS CO., WATER TANK, 1947.

Described by R. D. Sveum

ADJUSTED HORIZONTAL CONTROL DATA

Name of Station: PHOENIX WESTERN COMPRESS CO WATER TANK Year: 1947, 1962, 1963
State: Arizona Locality: Arizona Hwy. Survey, Papago Freeway (Phoenix to Parker, Vicinity of Phoenix)
Third Order Triangulation Source: G-8347, G-12917, G-13304 Field Sketch: Ariz. 26, 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 438,768.90 y 889,208.00	- 0 06 38	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 39".435 NORTH LONGITUDE: 112 07 02.645 WEST		369 METERS 1211 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: LOWER, CULVER *, COURT HOUSE, HILTON, PHOENIX, DURANGO (* Ariz. 50)		

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JAN 1967

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 1693

QUAD 331122 STATION 1070,1071
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM 12-7 PHOENIX

33°15'
112°00

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX RADIO STATION KXIV MAST YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third-ORDER Triangulation SOURCE: G-12917 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 435,505.01 y 885,675.96	° ' " -0 06 59	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°26'04".423 LONGITUDE: 112 07 41.080	NORTH WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
	THIRD-ORDER	
LOWER	(57°39'54".5)	2,488.82
COURT HOUSE	(253 33 05.0)	5,139.84
DURANGO	(286 26 36.4)	2,164.36

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Radio Station KXIV, Mast

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object:
The station is located in the southwest edge of Phoenix, at 3237 West Yuma Street. It is a steel structure painted alternate red and white and approximately 180 feet high. The point intersected was the flashing red light on top of mast.

Described by R. O. Jones

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX BUREAU OF RECLAMATION WATER TANK YEAR: 1962, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway
(Ehrenberg to Phoenix to Casa Grande)

Third-ORDER Triangulation SOURCE: G-12917
G-13304 FIELD SKETCH: Ariz. 49-II, 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 428,925.85 y 888,516.00	° ' " - 0 07 42	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 32".385 LONGITUDE: 112 08 58.795	NORTH WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: LOWER, HAUL, WILL, CART, MACK, HOPS, EATON, COOL, DURANGO		

Form 3258
(11-6-58)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Bureau of Reclamation, Water Tank

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located in the southwest part of Phoenix, 0.3 mile north of West Buckeye Road (U.S. 80) and 0.1 mile east of 43rd Avenue.
Station has 4 legs is painted silver and is approximately 125 feet high.
Point intersected was the top and center of tank.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: Phoenix, Bureau of Reclamation Water Tank
ESTABLISHED BY: C. A. Annis YEAR: 1962 STATE: Arizona
RECOVERED BY: C. A. Annis YEAR: 1965 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station was recovered as described.

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JAN 1967

USCOMM—ESSA—ASHEVILLE

169

JULY 1966 ARIZONA
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

330151
112000

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1072
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 525
Rev. Oct., 1952

INTERSECTION

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: Power Plant West of Phoenix, Tank
STATE: Arizona COUNTY: Maricopa
CHIEF OF PARTY: D.H.Konichek
YEAR: 1947 LOCALITY: Phoenix

Surface-station mark,	Note,*
Underground-station mark,	Note,*
Reference mark,	Note,*
Reference mark,	Note,*
Azimuth mark,	Note,*
Witness mark,	Note,*
Height of light above station mark	meters.
Height of telescope above station mark	meters.†

DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND

OBJECT	DISTANCE	DIRECTION	AZIMUTH
		° ' "	° ' "

Detailed description:

About 4 miles west of Phoenix, on the 16th Lateral road, 0.5 mile south of West Van Buren Street, 100 feet southwest of the power plant, an aluminum painted, metal water tank approximately 115 feet high. The point observed on was the small ball atop the center of the tank.

(L.W.Q.,1953)—Station recovered in good condition. Description adequate.

(A.M.S.,1960)—Station was found in good condition. At this time the tank is painted a pale green color.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

R

NAME OF STATION: Phoenix, Arizona Public Service Co., Water Tank 1947

Recovered By:
CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: The station is located in the southwest part of Phoenix, 0.3 mile north of West Buckeye Road (U.S. Hwy. 80), 0.1 mile west of 43 rd. Avenue and is on the west side of the electric sub station.

Station has 4 legs is painted a light green and is approximately 120 feet high. Point intersected was the top and center of tank.

NOTE: the same as POWER PLANT WEST OF PHOENIX, TANK, 1947.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: Phoenix, Arizona Public Service Co., Water Tank
ESTABLISHED BY: C. A. Annis YEAR: 1962 STATE: Arizona
RECOVERED BY:* C. A. Annis YEAR: 1965 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station was recovered as described.

R. C. Jones

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
NOTE.—One of these forms must be used for every station recovered.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX ARIZONA PUBLIC SERVICE CO. WATER TANK YEAR: 1947, 1962 1963
STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Phoenix to Parker, Vicinity of Phoenix)
Third -ORDER Triangulation SOURCE: G-8347 G-12917, G-13304 FIELD SKETCH: Ariz. 26, 49-II, 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 427,509.81 y 888,661.77	° ' " - 0 07 52	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 33".795 NORTH LONGITUDE: 112 09 15.508 WEST		368 METERS 1207 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: HAUL, TWIN, PUMP, EDGE, EVANS, WILL, CART, MACK, HOPS, EATON, COOL, LOWER		

FORM 521 (11-13-59)

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

169

QUAD 331122 STATION 1073
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Power plant west of Phoenix, chimney (Maricopa County, E. B. Latham, 1934).-

RECOVERY NOTE, TRIANGULATION STATION

R

Name of Station: Power plant west of Phoenix, chimney — State: Arizona — County: Maricopa
Established by: E B Latham — Year: 1934 — Locality:
Recovered by:* L A MacArthur — Year: 1941, good condition.

Detailed statement as to the fitness of the original description:

Power plant west of Phoenix, chimney (Maricopa County, Arizona, E B Latham, 1934; 1941).—This intersection position is tall white concrete stack at power plant of Central Arizona Light & Power Company, situated about 4.5 miles west of busines section of Phoenix. Plant may be reached by several highways. Chimney is conspicuous landmark and is about 100 feet north of elevated steel tank.

Good point, excellent condition in summer of 1941.
Not described in Spl Pub.

DEPARTMENT OF COMMERCE — U. S. COAST AND GEODETIC SURVEY — FORM 526

RECOVERY NOTE, INTERSECTION STATION

R

Name of Station: Power Plant West of Phoenix, Chimney — State: Arizona — County: Maricopa
Established by: E.B.L. — Year: 1934 — Locality:
Recovered by:* D.H.Komichek — Year: 1947

Detailed statement as to the fitness of the original description:
About 4 miles west of Phoenix, on the 16th Lateral Road, 0.5 mile south of West Van Buren Street, 50 feet west of power plant, a metal stack about 150 feet high and painted white. Center of top of stack was point observed on.

DEPARTMENT OF COMMERCE — U. S. COAST AND GEODETIC SURVEY — FORM 526 (Rev. Feb. 1942)

RECOVERY NOTE, INTERSECTION STATION

R

Name of Station: Power Plant, West of Phoenix, Chimney
Established by: E.B.L. — Year: 1935 — State: Arizona
Recovered by:* L.N.Q. — Year: 1953 — County: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:
The station was recovered in good condition. Description adequate.-

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

Name of Station: POWER PLANT WEST OF PHOENIX CHIMNEY
Established by: — Year: 1934 — State: Arizona
Recovered by:* A.M.S. — Year: 1960 — County: Maricopa

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:
Station was found in good condition. At this time the chimney is painted a green color.

* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
NOTE.—One of these forms must be used for every station recovered.

33°15'
112°00

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: POWER PLANT WEST OF PHOENIX CHIMNEY — YEAR: 1934
STATE: Ariz — LOCALITY: Phoenix to Parker
Third -ORDER Triangulation — SOURCE: G-8347 — FIELD SKETCH: ARIZ 26

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH @ ION Δα ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 427,509.36 y 888,840.02	- 0 07 51	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
LATITUDE:	33°26'35".559	NORTH		381	METERS
LONGITUDE:	112 09 15.518	WEST		1,250	FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
Computed from stations GLENDALE 2,	CAMELS BACK 2,	PHOENIX BASELINE WEST	

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JAN 1967

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ARIZONA

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33015'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1074,1075
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX WESTERN COTTON PROD CO WATER TANK YEAR: 1962, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Ehrenberg to Phoenix to Casa Grande)

Third -ORDER Triangulation SOURCE: G-12917 G-13304 FIELD SKETCH: Ariz. 49-II, 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 423,474.46 y 886,976.39	° ' " - 0 08 18	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 17".026 NORTH LONGITUDE: 112 10 03.084 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: HAUL, TWIN, TT ZW 9 AMS, EVANS, VAN, MACK, HOPS, EATON, COOL, LOWER		

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Western Cotton Products Co., Water Tank

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located at the southwest part of Phoenix, approximately 200 yards northeast of the junction of West Buckeye Road and 51 st. Avenue.
Station has 4 legs is painted silver and is approximately 140 feet high.
The point intersected was the top and center of tank.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: Phoenix, Western Products Co., Water Tank 1962
ESTABLISHED BY: C. A. Annis YEAR: 1962 STATE: Arizona
RECOVERED BY: C. A. Annis YEAR: 1965 COUNTY: Maricopa

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:
Station was recovered as described.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GOODYEAR GOODYEAR AIRCRAFT CORP WATER TANK YEAR: 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey
Ehrenberg to Phoenix to Casa Grande

Third-ORDER Triangulation SOURCE: G-12917 FIELD SKETCH: Ariz. 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (NOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 364,335.65 y 884,884.28	° ' " -0 14 42	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33°25'54".369 NORTH LONGITUDE: 112 21 40.747 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
	THIRD-ORDER	
CANAL	16°31'22".3	4,295.99
BRADLEY	36 08 20.5	8,045.62
GIN	65 07 57.3	4,864.06
KING	83 52 14.2	10,903.45
COTTON	95 11 10.8	4,553.49
PUMP	290 36 12.8	8,024.50
TT ZW9 AMS	319 21 27.0	7,982.53

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Goodyear, Goodyear Aircraft Corp., Water Tank

CHIEF OF PARTY: C. A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: Station is located in the west edge of the town of Goodyear, 0.25 mile south of Western Ave., 0.2 mile west of Litchfield Rd., and west of the main buildings of the Goodyear Aircraft Corp.
The station has 4 legs and is painted white with GOODYEAR printed on it, and is approximately 100 feet high.
The point intersected was the top and center of tank.

FILE COPY

JAN 1967

Described by E. J. Jakes 20

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1081
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33°15'
112°00

Alhambra (Maricopa County, J. Bowie, Jr., 1936).—In the village of Alhambra, about 4 miles northwest of the main business district of Phoenix, 0.2 mile north of the point where a dirt street (north-south) intersects U. S. Highway No. 89 at Shady Lane Auto Court. The station is on the right-of-way of the dirt street, 8.9 meters east of its center line, 228 feet south of the center line of the T intersection of the north-south street with an east-west street, and 1.5 meters west of the east right-of-way fence. Marked by a standard bronze disk, note 6b, with the top of the concrete flush with the surface of the ground and the station mark projecting about 10 inches above the concrete. Reference mark No. 1 is 9.5 meters east of the center line of the road, 0.7 meter west of the right-of-way fence line, and about 3 meters south of an old driveway into the cultivated field. It is marked in a manner similar to the station mark, and is 12.004 meters (39.38 feet) from station in azimuth 356°42'. Reference mark No. 2 is 8.0 meters west of the center line of the road, and 1 meter east of the right-of-way fence line. It is marked in a manner similar to the station mark, and is 16.861 meters (55.32 feet) from station in azimuth 90°15'. The azimuth mark, a standard bronze disk, note 11a, is about one-half mile from station in azimuth 95°12'39", about 20 yards southeast of a small yellow railroad house, about 15 yards northeast of railroad tracks, about 25 yards southwest of the center line of paved Highway No. 89, about 15 yards west of the center line of the north-south road, and about 4 yards south of the center line of an east-west road.

ALHAMBRA (Maricopa Co., Ariz., J.B., Jr., 1936; H.B.A., 1942) —The station was found as described in good condition.

ALHAMBRA (Maricopa County, Aris., J.B., Jr., 1936; L.W.Q., 1953)

The station was recovered in good condition. The concrete base for reference mark 1 was recovered, but the standard bronze disk which projected 10 in. is destroyed. A search was made for reference mark 2, but it was not recovered, and it is believed to have been destroyed. The azimuth mark was recovered as described and in good condition. The azimuth mark is no longer visible from the station site.

(11-8-54) RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: ALHAMBRA
ESTABLISHED BY: J.B.Jr. YEAR: 1936 STATE: Arizona
RECOVERED BY:* A.M.S. YEAR: 1955 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station in fair condition. Pipe supporting disk has been bent.
Reference marks 1 and 2 probably destroyed.
Azimuth mark recovered as described.
The station is 32.5 feet E of centerline 33rd Avenue; 18 feet SW of house 4045.

Form 526 (11-8-54) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: ALHAMBRA
ESTABLISHED BY: J.B.,Jr. YEAR: 1936 STATE: Arizona
RECOVERED BY:* USGS YEAR: 1963 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station and reference marks have probably been destroyed.
Azimuth mark was found but the concrete post is loose and it may have been disturbed.

Form 526 (11-8-54) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: ALHAMBRA
ESTABLISHED BY: J.B. Jr. YEAR: 1936 STATE: Arizona
RECOVERED BY:* C. A. Annis YEAR: 1963 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

A search was made for the station and none of the marks were recovered. It is believed that all the marks were destroyed and the station lost.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ALHAMBRA YEAR: 1936
STATE: Ariz LOCALITY: Papago Indian Reservation
Second -ORDER Triangulation SOURCE: G-3083 FIELD SKETCH: ARIZ 14

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR ANGLE)	MARK
STATE: Ariz ZONE: C CODE: 0202	x 435,224.47 y 907,412.80	95°19'41" - 0 07 02	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE: 33°29'39"491	NORTH		341.11	METERS
	LONGITUDE: 112 07 44.915	WEST		1,119.1	FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
AZIMUTH MARK	THIRD-ORDER 95°12'39"3		

FILE COPY
AUG 1969

USCOMM—ESSA—ASHEVILLE

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REVISED JUNE 1969

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1082
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Bow (Maricopa County, J. Bowie, Jr., 1936).—About 5 miles west and 8 miles south of Rainbow Valley grocery store, about 18 miles south-southeast of the village of Buckeye on U. S. Highway No. 80, and about on the line between sections 29 and 30, T. 3 S., R. 2 W. It is on low brush-covered flats, about 2 miles north of a range of large mountains, and about 2 miles southeast of a range of smaller, rocky peaks. Marked by a standard bronze disk set in the top of a pipe which projects about 8 inches above the top of a circular mass of concrete. Both reference marks are standard disks in pipes set similar to the station mark. Reference mark No. 1 is 8.959 meters (29.39 feet) from station in azimuth 353°17'. Reference mark No. 2 is 9.218 meters (30.24 feet) from station in azimuth 108°14'. The azimuth mark, a standard bronze disk, note 11a, is about one-fourth mile from station in azimuth 41°25'45".

Form 326
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: BOW
ESTABLISHED BY: J.Bowie,Jr. YEAR: 1936 STATE: Arizona
RECOVERED BY:* J.Montell YEAR: 1944 COUNTY: Maricopa

Detailed statement as to the fitness of the original description, including marks found, stampings, changes made, and other pertinent facts:

Searched for but not recovered.

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note
NOTE.—One of these forms must be used for every station recovered.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOW ✓

STATE: ARIZONA YEAR: 1936 SECOND-ORDER

LOCALITY: PHOENIX TO CASA GRANDE

SOURCE: G-13957 FIELD SKETCH: ARIZ 14

GEODETIC LATITUDE:	33 08 10.35184	ELEVATION:	METERS
GEODETIC LONGITUDE:	112 29 34.80895		FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	ϕ (OR Δ α) ANGLE
ARIZ. C.	0202	323,577.47	777,546.11	- 0 18 54

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
AZIMUTH MARK	41 25 46.6	41 44 41	0202

THESE DATA OBTAINED FROM READJUSTMENT OF 12-67

36-026

JULY 1966
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1085
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

330 15'
112°00'

Catherine (Maricopa County, E. B. Latham, 1935).—To reach from St. Johns Indian Mission, go east 1.2 miles to a school, turn left off graded road and go north, passing a small sun dial, 0.1 mile to a six-point fork; take the road leading east and go 0.35 mile to another cross road; continue straight ahead for 0.3 mile (east); take right fork east for 0.1 mile; go straight ahead east for 0.3 mile to a log corral; at the northeast corner of corral, take the left fork, go 0.1 mile to a cross road; from this cross road, go straight ahead for 0.1 mile to the station on the left side of the road. Marked by standard bronze disks as described in notes 1a and 7a. Reference mark No. 1, a standard bronze reference disk, note 11a, is 8.728 meters (28.64 feet) from station in azimuth 48°50'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 10.442 meters (34.26 feet) from station in azimuth 138°59'.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CATHERINE YEAR: 1935

STATE: Ariz LOCALITY: Ajo to Tucson to Phoenix to Winkelman

Second ORDER Triangulation SOURCE: G-3058 FIELD SKETCH: ARIZ 9

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR Δα) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 430,025.91 y 824,872.80	- 0 07 32	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°16'02".686	NORTH		METERS
	LONGITUDE: 112 08 44.160	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS

169

JULY 1966
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U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

ARIZONA

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1086
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33015'
112000

Cruz (Maricopa County, E. B. Latham, 1935).—About 17 miles southwest of Phoenix on the highest part of a flat gravel ridge west of the Gila River. There are washes on the south, west, and east sides of the ridge. Marked by a standard bronze disk as described in note 5. Reference mark No. 1, a standard bronze reference disk, note 12a, is 10.120 meters (33.20 feet) from station in azimuth 245°36'. Reference mark No. 2, a standard bronze reference disk, note 12a, is 11.389 meters (37.37 feet) from station in azimuth 312°45'. The azimuth mark (reference mark No. 3), a standard bronze disk, note 12a, is in azimuth 272°07'50" from the station.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CRUZ — YEAR: 1935

STATE: Ariz — LOCALITY: Ajo to Tucson to Phoenix to Winkelman

First -ORDER Triangulation — SOURCE: G-3058 — FIELD SKETCH: ARIZ 9

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH @ IORÂ¤ ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 404,213.45 y 834,664.89	272°18'10" - 0 10 20	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
LATITUDE: 33°17'38".912	NORTH			METERS
LONGITUDE: 112 13 48.524	WEST			FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD-ORDER 272°07'50".5		

JULY 1966

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATION 1092
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00

Mission (Maricopa County, E. B. Latham, 1935).—About 3.5 miles northwest of St. Johns Indian Mission, on a graded dirt road, 100 feet west of the road, and 100 feet south of where the road turns west. Marked by standard bronze disks as described in notes 1a and 7a. Reference mark No. 1, a standard bronze reference disk, note 11a, is 16.803 meters (55.13 feet) from station in azimuth 295°48'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 10.880 meters (35.70 feet) from station in azimuth 171°16'. The azimuth mark (reference mark No. 3), a standard bronze disk, note 11a, is on the north side of the road about 30 feet from the center and 0.3 mile from station in azimuth 265°43'06".

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: MISSION
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY:* A.M.S. YEAR: 1959 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station recovered as described.
The distances from reference marks are reversed in description.
Station is located 35.70 feet from reference mark 1 and 55.13 feet from reference mark 2.

* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
NOTE.—One of these forms must be used for every station recovered.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MISSION YEAR: 1935
STATE: Ariz LOCALITY: Ajo to Tucson to Phoenix to Winkelman
Second -ORDER Triangulation SOURCE: G-3058 FIELD SKETCH: ARIZ 9

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & IGRĀM ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 412,900.01 y 849,008 .10	265°52'30" - 0 09 24	AZIMUTH MARK (RM NO 3)
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°20'01".079 NORTH LONGITUDE: 112 12 06.645 WEST			METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
AZIMUTH MARK (RM NO 3)	THIRD-ORDER 265°43'05".5		

USCOMM—ESSA—ASHEVILLE

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REVISED JUNE 1969 33° 00 / 112° 15

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN '927 DATUM

QUAD 331122 STATION 1093
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Ora (Maricopa County, J. Bowie, Jr., 1936).—About 14.5 miles, air line, south of Liberty, about 5.5 miles southwest of Rainbow Valley grocery store, in the southeast corner of sec. 9, T. 3 S., R. 2 W., on the highest point of a group of mountains in that vicinity. Marked by a standard bronze disk as described in note 2. Reference mark No. 1, a standard bronze reference disk, note 12a, is 2.878 meters (9.44 feet) from station in azimuth 156°56'. Reference mark No. 2, a standard bronze reference disk, note 12a, is 2.317 meters (7.60 feet) from station in azimuth 323°17'. The azimuth mark, "G. L. O. Section Corner 35–34–3–2", an iron pipe 45 yards southwest of a house, is 2 miles from station in azimuth 212°36'33".

Form 526
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: ORA
ESTABLISHED BY: J.B.Jr. YEAR: 1936 STATE: Arizona
RECOVERED BY:* U.S.G.S. YEAR: 1956 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station has been removed.
Both reference marks were found in good condition.

* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
NOTE.—One of these forms must be used for every station recovered.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ORA

STATE: ARIZONA YEAR: 1936 SECOND ORDER

LOCALITY: PHOENIX TO CASA GRANDE

SOURCE: G-13957 FIELD SKETCH: ARIZ 14

GEODETIC LATITUDE: 33 10 35.13217 GEODETIC LONGITUDE: 112 27 49.44015		ELEVATION:	METERS FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	FROM Δ α ANGLE
ARIZ. C.	0202	332,613.58	792,130.05	- 0 17 58

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
GLO PIPE 1916	212 36 33.9	212 54 32	0202

THESE DATA OBTAINED FROM READJUSTMENT OF 12-67

36-027

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169B

QUAD 331122 STATION 1094
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112° 00

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
Form 526
Rev. Oct., 1952

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: PHOENIX
CHIEF OF PARTY: BASELINE WEST
Surface-station mark, D.H.Konichek Note,* 1b
Underground-station mark, Note,* 7a
Reference mark, No.1 Note,* 11a
Reference mark, No.2 Note,* 11a
Azimuth mark, Note,* 11a
Witness mark, Note,*
Height of light above station mark meters.
Height of telescope above station mark 28. meters.)

STATE: Arizona COUNTY: Maricopa
YEAR: 1947 LOCALITY: Phoenix

DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND

OBJECT	Hor.	DISTANCE	DIRECTION	AZIMUTH
			° ′ ″	° ′ ″
SALT 1935			0 00 00	
R.M.No.2 1947 SSE		34.482m	19 27 39	
R.M.No.1 1947 ESE		49.734m	268 32 17	
Azi.Mk. 1947 ESE		1.0 Mi.	308 04 55.1	

Detailed description: The station is located 7 miles airline southwest of Phoenix in the southwest corner of an intersection of a north-south road and Baseline road. The station mark is a bronze disk set 14 inches below ground level, 60 feet southwest of a T road intersection, 25 feet south of a fence line and 14 feet west of a white witness post. Surface and underground marks are stamped,"BASELINE WEST 1947".

Reference mark No.1 is a bronze disk set 21 feet north of the center line of Baseline road, 1 foot south of a fence line, projects 2 inches, is 3 feet higher than the station mark and is stamped,"BASELINE WEST NO 1 1947".

Reference mark No.2 is a bronze disk set 22 feet west of center line of road, 1 foot west of a fenceline, projects 4 inches and is stamped,"BASELINE WEST NO 2 1947".

The Azimuth mark is a bronze disk set flush, 30 feet west of center line of road, 28 feet south of a lone cottonwood tree and 1 foot east of a fenceline. To reach the mark from station; go east on Baseline road 1.0 mile to a road right; turn right go 0.3 mile to mark on right.

To reach the station from the intersection of South Central Avenue and Baseline road south of Phoenix; go west on Baseline road 4.6 miles to a road left and station.

Form 526
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX BASELINE WEST
ESTABLISHED BY: D.H.K. YEAR: 1947 STATE: Arizona
RECOVERED BY:* A.N.S. YEAR: 1952 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station and reference marks were recovered as described. The azimuth mark was not recovered after a brief search.

The view from tripod height is clear to the following stations: SALT, POWER PLANT WEST OF PHOENIX, TANK & CHIMNEY.

Form 526
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX BASELINE WEST
ESTABLISHED BY: D.H.K. YEAR: 1947 STATE: Arizona
RECOVERED BY:*A.M.S. YEAR: 1960 COUNTY: Maricopa

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station mark, reference mark No. 2 and the azimuth mark were recovered as described and in good condition.

Reference mark No. 1 was searched for but could not be found.

* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.
Note.—One of these forms must be used for every station recovered.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX BASELINE WEST YEAR: 1947
STATE: Ariz LOCALITY: Phoenix to Parker
Second -ORDER Triangulation SOURCE: G-8347 FIELD SKETCH: ARIZ 26

GRID DATA		COORDINATES (Feet)	PLANE AZIMUTH & FOR ACS ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x y	428,339.61 864,890.56	281°26'11" - 0 07 45	AZIMUTH MARK
STATE: ZONE: CODE:	x y			

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE: 33°22'38".610	NORTH		315.6	METERS
	LONGITUDE: 112 09 05.082	WEST		1,035	FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD-ORDER 281°18'25".6		

FILE COPY
AUG 1969

USCOMM—ESSA—ASHEVILLE

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REVISED JUNE 1969

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1095
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Pile (Maricopa County, J. Bowie, Jr., 1936).—About 5 miles northwest of the village of Mobile, 30 miles northwest of Casa Grande, on a low pile of loose rocks at the north end of the first range of mountains northwest of Mobile, in the brush-covered flats, on the north end of the pile of rocks, in a rock that projects about 6 feet above the ground. Marked by a standard bronze disk as described in note 4. Reference mark No. 1, a standard bronze reference disk, note 12c, is 4.178 meters (13.71 feet), from station in azimuth 23°32'. Reference mark No. 2, a standard bronze reference disk, note 12c, is in a boulder projecting 2.5 feet above the ground and 11.872 meters (38.95 feet) from station in azimuth 133°04'. The azimuth mark, a standard bronze disk, note 12c, at the base of the mountain, about 100 yards south of the track road going to the station, in a rock projecting about 2 feet and set flush, is 0.25 mile from station in azimuth 302°04'30".

RECOVERY OF SURVEY STATION

AREA:	DESIGNATION OF STA:	TYPE OF MARK:
ARIZONA SOUTH CENT.	PILE 1936	DISK
QUAD: 331122 ARIZ 15' USC&GS PHOE 324-RS-141	STAMPING ON MARK: PILE 1936	CONDITION: GOOD
TOWN: MARICOPA ARIZONA.	AGENCY (CAST IN MARK): USC&GS	POS. BY (AGENCY): USC&GS

ADDITIONS AND/OR REVISIONS TO DESCRIPTION OR SKETCH:

STATION WAS RECOVERED AS DESCRIBED
RM Nº 2 WAS RECOVERED IN GOOD CONDITION,
RM Nº 1 IS ASSUMED DESTROYED.
DESCRIPTION IS ADEQUATE.

LISTED DIST RM Nº 1 = 4.178 METERS
RM Nº 2 = 11.872 METERS

CHECK DIST TO DRILL HOLE IN ROCK RM Nº 1 = 4.147 METERS } HOR.
CHECK DIST = RM Nº 2 = 11.872 METERS }

RECOVERED BY H.K. BRANDAU & B.W. CARRIER
AGENCY ARMY MAP SERVICE
DATE 2 JANUARY 1968 P.O. Nº 61821-100

RETURN TO ARMY MAP SERVICE, DEPARTMENT OF GEODESY, WASHINGTON 25, D. C.

AMS FORM 8 JUL 58 4401 - 3 REPLACES AMS FORM 3-4220, 2 APR 52, WHICH IS OBSOLETE

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PILE

STATE: ARIZONA YEAR: 1936 SECOND ORDER

LOCALITY: PHOENIX TO CASA GRANDE

SOURCE: G-13957 FIELD SKETCH: ARIZ 14

GEODETIC LATITUDE:	33 06 19.26879	ELEVATION: METERS / FEET
GEODETIC LONGITUDE:	112 20 12.84625	

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	F (OR A or) ANGLE
ARIZ. C.	0202	371,316.99	766,092.68	- 0 13 46

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
AZIMUTH MARK	302 04 31.0	302 18 17	0202

THESE DATA OBTAINED FROM READJUSTMENT OF 12-67

36-028

ARIZONA 169

JULY 1966

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REVISED JUNE 1969

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1098
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33° 15'
112°00

St. Johns (Maricopa County, E. B. Latham, 1935; 1936).—About 18 miles southwest of Phoenix, about 3 miles, air line, south-southwest of the St. John's Indian School about three-fourths mile southwest of the Santa Cruz River, on the west one of two ridges that extend into the valley to the north. This ridge overlooks a ridge to the eastward, or a fork of the same ridge, which forks about 200 yards south of the station. From canyon that forms the two ridges, the station is on the first bench below the head of the canyon and on the west ridge. Marked by a standard bronze disk as described in note 4. Reference mark No. 1, a standard bronze reference disk, note 12a, is 16.90 meters (55.45 feet) from station in azimuth 246°21'. Reference mark No. 2, a standard bronze reference disk, note 12a, is 16.405 meters (53.82 feet) from station in azimuth 335°43'. Azimuth mark (1936), a standard bronze disk, note 12a, is about 200 yards back from the extreme end of the rocky ridge just east of the station and one-fourth mile from station in azimuth 252°01'03".

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ST JOHNS

STATE: ARIZONA YEAR: 1935 FIRST — ORDER

LOCALITY: AJO TO TUCSON TO PHOENIX TO WINKELMAN

SOURCE: G-3058 FIELD SKETCH: ARIZ 9

GEODETIC LATITUDE:	33 14 35.49575	ELEVATION:	METERS
GEODETIC LONGITUDE:	112 11 44.15980		FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	FROM Δ α ANGLE
ARIZ. C.	0202	414,719.73	816,098.21	- 0 09 11

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
MISSION	176 40 55.2	176 50 06	0202

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36-916

USCOMM—ESSA—ASHEVILLE

169

JULY 1966 **ARIZONA**

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REVISED JUNE 1969

33°15'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1099
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

Salt (Maricopa County, E. B. Latham, 1935).—On the north range of hills south of Phoenix known locally as Salt Mountains. About 5 miles, air line, south of Phoenix on the highest point of the range which can be seen from the city as a sharp point. Marked by a standard bronze disk as described in note 2. Reference mark No. 1, a standard bronze reference disk, note 12a, is 5.762 meters (18.90 feet) from station in azimuth 217°13'. Reference mark No. 2, a standard bronze reference disk, note 12a, is 5.908 meters (19.38 feet) from station in azimuth 307°04'. No azimuth mark established. Other stations visible from the ground.

SALT (Maricopa Co., Ariz., E.B.L., 1935; N.B.A., 1942)
Station was found as described

in good condition

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
FORM 526

RECOVERY NOTE, TRIANGULATION STATION **R**

NAME OF STATION: SALT — STATE: Arizona — COUNTY: Maricopa
ESTABLISHED BY: E.B.L. — YEAR: 1935 — LOCALITY: Phoenix
RECOVERED BY: D.H.Konichek — YEAR: 1947

Detailed statement as to the fitness of the original description: The station mark and reference mark No. 2 were recovered and found in good condition. Reference mark No. 1 has been destroyed. Reference mark No. 3 and an azimuth mark were established. The correct distance to reference mark No. 2 is given below and does not agree with the old distance.

Located on the highest peak of the first range of the Salt River Mountains and about 5 miles southwest of the center of Phoenix. It is stamped: "SALT 1935" and is 7 inches below the surface of the ground. Note 2.

Reference mark No. 2 is located on the southeast slope of the peak and it is 4.7 feet lower than the station. It is stamped: "SALT NO 2 1935" and is flush with the ground. Note 12a.

Reference mark No. 3 is located 1.5 feet from the northwest face of the peak and 1.5 feet lower than the station. It is stamped: "SALT NO 3 1947". Note 12a.

The azimuth mark is located in the first outcropping above the valley floor on a ridge sloping to the southeast from the station site and about 0.15 mile from the highway. It is 3 feet northwest of a cairn and 5 feet southwest of a palo verde tree. It is stamped: "SALT 1947" and is flush with the ground. Note 12a.

To reach the station from Phoenix, go south on South Central Avenue to Baseline Road; continue south 2.3 miles to the headquarters of the Phoenix South Mountain Park; continue 0.35 mile to the Army Engineers headquarters; continue on main traveled road 1.0 mile to a "Y" and sign "San Juan Picnic Area"; keep right road between two ranges of mountains for 1.4 miles to the end of truck travel. From here pack up the ridge to the azimuth mark and the station. A 1-hour pack.

OBJECT		HOR. DISTANCE Meters	DIRECTION
GLENDALE 2 1947			00 00 00.00
R.M. No. 2 1935	SE	5.585	141 09 03.
Az. Mk. 1947	SE	0.3 mile	145 29 06.6
R.M. No. 3 1947	NW	3.876	353 37 38.

Observations made from a 1.3 m tripod.

R.D.Mayden

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SALT
STATE: ARIZONA — YEAR: 1935 — FIRST — ORDER
LOCALITY: YUMA TO STEWART DAM
SOURCE: G-3022 — FIELD SHEETS: ARIZ 8

GEODETIC LATITUDE:	33 19 54.94795	ELEVATION:	798.6 METERS
GEODETIC LONGITUDE:	112 07 26.71092		2620 FEET

STATE COORDINATES (Fm)

STATE & ZONE	CODE	X	Y	ϕ (OR Δ α) ANGLE
ARIZ. C.	0202	436,648.28	848,331.66	- 0 06 50

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
CASHION	126 35 33.7	126 42 24	0202

36-912

JULY 1966
PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 169

QUAD 331122 STATIONS 1102, 1103
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ESTRELLA MOUNTAINS HIGHEST SUMMIT YEAR: 1924

STATE: Ariz LOCALITY: Maricopa-Yavapai Co. Boundary

Third-ORDER Triangulation SOURCE: 81625 FIELD SKETCH: ARIZ 6

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR Δα) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 388,941.95 y 827,163.61	- 0 11 58	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE: 33°16'24".200	NORTH			METERS
	LONGITUDE: 112 16 48.137	WEST			FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS

Computed from stations WHITETANK, BUFORD, MAZATZAL

Estrella Mountains, highest summit (Maricopa County, W. Mussetter, 1924).—

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MARE YEAR: 1910

STATE: Ariz LOCALITY: Texas-California Arc

Third -ORDER Triangulation SOURCE: G-246 FIELD SKETCH: ARIZ 3-B

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR Δα) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 388,948.37 y 827,155.50	- 0 11 58	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE: 33°16'24".120	NORTH		1,373.9	METERS
	LONGITUDE: 112 16 48.061	WEST		4,508	FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS

Computed from stations WHITETANK, TABLE

Mare (Maricopa County, J. S. Hill, 1910)

USCOMM—ESSA—ASHEVILLE

169

JULY 1966 ARIZONA

PUBLISHED AND PRINTED BY:
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
112°00'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATIONS 1104, 1105
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX EAST RADIO TOWER YEAR: 1934

STATE: Ariz LOCALITY: Yuma to Stewart Dam

Third -ORDER Triangulation SOURCE: G-3022 FIELD SKETCH: ARIZ 8-II
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & (OR) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 452,325 y 890,925	- 0 05 10	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°26'56.65	NORTH		METERS
	LONGITUDE: 112 04 22.69	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
Computed from stations GLENDALE, RIVER			

Phoenix, east radio tower (Maricopa County, E. B. Latham, 1934)

PHOENIX, EAST RADIO TOWER (Maricopa County,Ariz.,E.B.L.,1934; L.W.Q.,1953)(No previous description)--The station was recovered in good condition.
This is an intersection station.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX WESTWARD HO HOTEL FLAGPOLE YEAR: 1934

STATE: Ariz LOCALITY: Yuma to Stewart Dam

Third -ORDER Triangulation SOURCE: G-3022 FIELD SKETCH: ARIZ 8-II
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & (OR) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 452,159 y 893,096	- 0 05 11	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°27'18".13	NORTH		METERS
	LONGITUDE: 112 04 24.69	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
Computed from stations GLENDALE, RIVER			

Phoenix, Westward Ho Hotel, flagpole (Maricopa County, E. B. Latham, 1934)

PHOENIX HOTEL WESTWARD HO FLAGPOLE (Maricopa Co., Ariz.. E.B.L., 1934; L.A.N., 1941)
--This intersection station is prominent metal pole at top of Hotel Westward Ho, situated at northwest corner of North Central Avenue and West Fillmore Street, Phoenix. Building is about 16 stories high and is very prominent. Pole lighted with vertical light at night. Should not be confused with small flagpole several stories lower, on south cornice of building.
Name of building is Hotel Westward Ho, and not as printed in S.P. 224. Mast is not strictly a flagpole. Flagpole is much lower. Mast is undoubtedly what was sighted on, as flagpole not visible from station GLENDALE. It is possible that mast on top was a flagpole in 1934, and vertical light added later.

PHOENIX, WESTWARD HO HOTEL, FLAGPOLE (Maricopa County,Ariz., E.B.L.,1934;L.W.Q.,1953) The station has been destroyed. A television antenna for station KPHO is now atop Westward HO Hotel.
This is an intersection station.

ARIZONA 169

JUNE 1969
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1108
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

3315
112°00

Form 525
(9-10-65)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: Montezuma Head(AMS) STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: Army Map Service YEAR: 1948 DESCRIBED BY:

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK METERS.† HEIGHT OF LIGHT ABOVE STATION MARK METERS.

DESCRIPTION

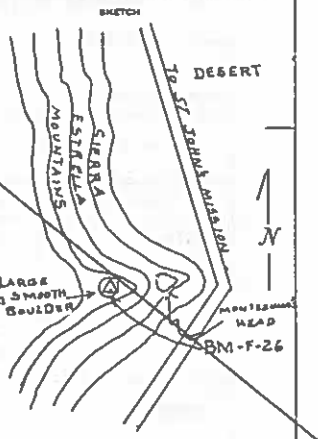
T-3-S; R-2-E; near southwest corner of section 27.

The station mark is a Corps of Engineers triangulation station disk cemented in the top of a large boulder and stamped "Montezuma Head 1948".

The station mark is located on second peak of an east-west ridge about 300 feet west of a prominent peak known as Montezuma's Head, and is about 20 minute pack on foot.

To reach from the post office at Laveen, Arizona go south along black top road for 6.5 miles to a fork. Take right fork and follow main road for 10.90 miles to a peak on the right side of the road and the station site.

SKETCH



1963
DATE

USERS OF THIS STATION ARE REQUESTED TO COMPLETE A RECOVERY OF SURVEY STATION CARD AND FORWARD TO COMMANDING OFFICER, ARMY MAP SERVICE, CORPS OF ENGINEERS, U.S. ARMY, WASHINGTON 25, D. C.

ARMY MAP SERVICE, CORPS OF ENGINEERS, U. S. ARMY

*Refers to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, where no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MONTEZUMA HEAD AMS OBSERVATIONS BY ARMY MAP SERVICE

STATE: ARIZONA YEAR: 1948 SECOND ORDER

LOCALITY: PHOENIX TO CASA GRANDE

SOURCE: G-13957 FIELD SKETCH:

GEODETIC LATITUDE:	33 07 59.91527	ELEVATION:	568.4 METERS
GEODETIC LONGITUDE:	112 08 56.60333		1865 FEET

STATE COORDINATES (Fm)

STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ. C.	0202	428,861.07	776,085.18	- 0 07 37

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
PIMA BUTTE	262 45 33.4	262 53 10	0202

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36-025

USCOMM—ESSA—ASHEVILLE

169

JUNE 1969 **ARIZONA**

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331122 STATION 1109
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 112°00' TO 112°30'
DIAGRAM NI 12-7 PHOENIX

33 15
112 00

FORM 529
10-10-691

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

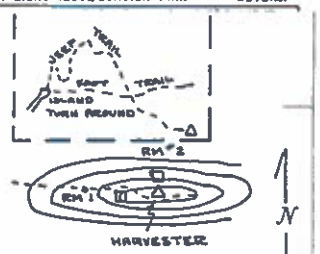
NAME OF STATION: Harvester (AMS) STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: A.M.S. YEAR: 1960 DESCRIBED BY:

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK METERS,† HEIGHT OF LIGHT ABOVE STATION MARK METERS.

T-1-S; R-3-E; in section 15.

The station is located on a high East - West ridge in the Pheonix South Mountain Park, about 400 feet South of the Hiddep Valley Trail, 1 foot North of a foot path and 160 feet East of the end of a jeep trail.



The station is a Corps of Engineers, U. S. Army disk stamped "HARVESTER 1960 ARMY MAP SERVICE", set in bedrock, flush with the ground.

To reach from the intersection of South Central Avenue and Baseline Road in Phoenix, Maricopa County, Arizona, go South on South Central Avenue, entering South Mountain Park, for 2.6 miles to road forks; take the middle road of three for 1.3 miles to a road fork; take the left fork and continue around curve and up a long grade on the Summit Drive for 3.4 miles to a road fork; take the right fork and go 0.75 mile to a fork; take the left fork and go easterly for 0.5 mile to the end of the paved road. Take a jeep trail North-East and South for 0.7 mile to a foot trail crossing (Hidden Valley Trail); continue on jeep trail generally Southeast for 0.3 mile to the end of the trail on top of a high ridge. From here walk about 160 feet East on a foot path to the highest point on the ridge and the station site.

R.M. NO. 1: A Corps of Engineers disk stamped "HARVESTER RM 1 1960 ARMY MAP SERVICE" set in a boulder 15.82 feet (slope distance) West of and about 0.5 foot higher than the station mark.

R.M. NO. 2: A Corps of Engineers disk stamped "HARVESTER RM 2 1960 ARMY MAP SERVICE" set in bedrock flush with the surrounding ground, 13.23 feet North of and about 2 feet lower than the station mark.

USERS OF THIS STATION ARE REQUESTED TO COMPLETE A RECOVERY OF SURVEY STATION CARD AND FORWARD TO COMMANDING OFFICER, ARMY MAP SERVICE, CORPS OF ENGINEERS, U.S. ARMY, WASHINGTON 25, D. C.

ARMY MAP SERVICE, CORPS OF ENGINEERS, U. S. ARMY

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to ist. al station.
†To nearest meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HARVESTER AMS OBSERVATIONS BY ARMY MAP SERVICE

STATE: ARIZONA YEAR: 1960 FIRST — ORDER

LOCALITY: PHOENIX TO CASA GRANDE

SOURCE: G-13957 FIELD SKETCH

GEODETIC LATITUDE:	33 20 32.44009	ELEVATION:	776.4 METERS
GEODETIC LONGITUDE:	112 02 04.76185		2547 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	ϕ OR Δ α1 ANGLE
ARIZ. C.	0202	463,967.08	852,078.87	- 0 03 54

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
RIVER	213 52 31.2	213 56 25	0202

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36-021

North American Datum Conversion
NAD 27 to NAD 83
NADCON Program Version 1.01

AZ169

Transformation #: 1 Region: Conus

Station name: T T 3 EEM 1956

	Latitude	Longitude	
NAD 27 datum values:	33 28 48.814	112 13 12.192	
NAD 83 datum values:	33 28 48.966	112 13 14.745	
NAD 83 - NAD 27 shift values:	.152	2.553	(secs.)
	4.676	65.901	(meters)
Magnitude of total shift:		66.067	(meters)

Transformation #: 2 Region: Conus

Station name: T T 4 EEM 1956

	Latitude	Longitude	
NAD 27 datum values:	33 28 49.446	112 11 8.667	
NAD 83 datum values:	33 28 49.598	112 11 11.215	
NAD 83 - NAD 27 shift values:	.153	2.549	(secs.)
	4.699	65.801	(meters)
Magnitude of total shift:		65.969	(meters)

Transformation #: 3 Region: Conus

Station name: THOMAS ROAD AND 83rd. AVENUE

	Latitude	Longitude	
NAD 27 datum values:	33 28 47.223	112 14 13.349	
NAD 83 datum values:	33 28 47.375	112 14 15.903	
NAD 83 - NAD 27 shift values:	.151	2.554	(secs.)
	4.665	65.951	(meters)
Magnitude of total shift:		66.115	(meters)

Transformation #: 4 Region: Conus

Station name: THOMAS ROAD AND 67th. AVENUE

	Latitude	Longitude	
NAD 27 datum values:	33 28 49.089	112 12 9.059	
NAD 83 datum values:	33 28 49.241	112 12 11.609	
NAD 83 - NAD 27 shift values:	.152	2.551	(secs.)
	4.688	65.850	(meters)
Magnitude of total shift:		66.017	(meters)

Transformation #: 5 Region: Conus

Station name: 59th. AVENUE AND INDAIN SCHOOL RD.

	Latitude	Longitude
NAD 27 datum values:	33 29 42.072	112 11 8.569
NAD 83 datum values:	33 29 42.224	112 11 11.118
NAD 83 - NAD 27 shift values:	.151	2.549(secs.)
	4.665	65.807(meters)
Magnitude of total shift:	65.972(meters)	

Transformation #: 6 Region: Conus

Station name: P P M 134-19A

	Latitude	Longitude
NAD 27 datum values:	33 29 41.799	112 10 52.275
NAD 83 datum values:	33 29 41.951	112 10 54.824
NAD 83 - NAD 27 shift values:	.152	2.549(secs.)
	4.669	65.794(meters)
Magnitude of total shift:	65.959(meters)	

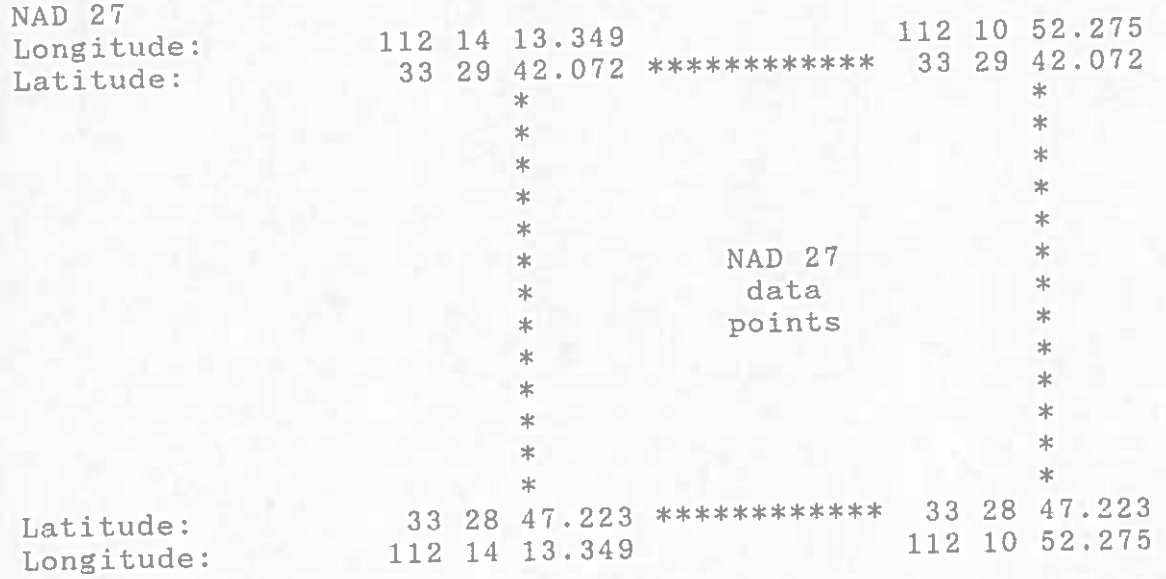
NAD 27 to NAD 83 Conversion

Statistics for Region

	Latitude MIN	Latitude MAX	Longitude MIN	Longitude MAX
Range of shift (meters)	4.665	4.699	65.794	65.951
Range of shift (seconds)	.151	.153	2.549	2.554
Mean shift (meters)	4.677		65.851	
Variance of mean shift	.000		.004	
Std. Dev. of mean shift	.014		.064	
Mean shift (seconds)	.152		2.551	
Variance of mean shift	.000		.000	
Std. Dev. of mean shift	.000		.002	

The total number of conversions: 6

Region of Conversions



ARIZONA TEST AREA

(PHOTO-IDENTIFICATION INFORMATION)

STATION: PP J-15, AMS 1963

169

LATITUDE	LONGITUDE
33° 17' 26.536"	112° 05' 52.788"
NORTHING	**EASTING**
3,683,860.84 M.	397,762.65 M.
NORTHING (Y)	**EASTING (X)**
833,318.40 Ft.	444,590.74 Ft.

DATUM: 1927 NORTH AMERICAN DATUM

GRID AND ZONE: U.T.M. 12

GRID AND ZONE: ARIZONA STATE PLANE-CENTRAL

ELEVATION: 1153.43 FEET, 351.566 METERS

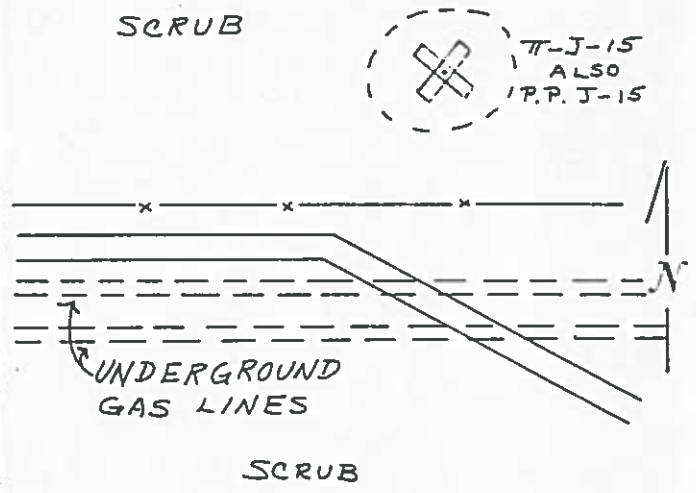
ORDER: THIRD — DATE ESTABLISHED: 1948

DATUM: SEA LEVEL DATUM OF 1929

DESCRIPTION

Geometric center of panel (white).

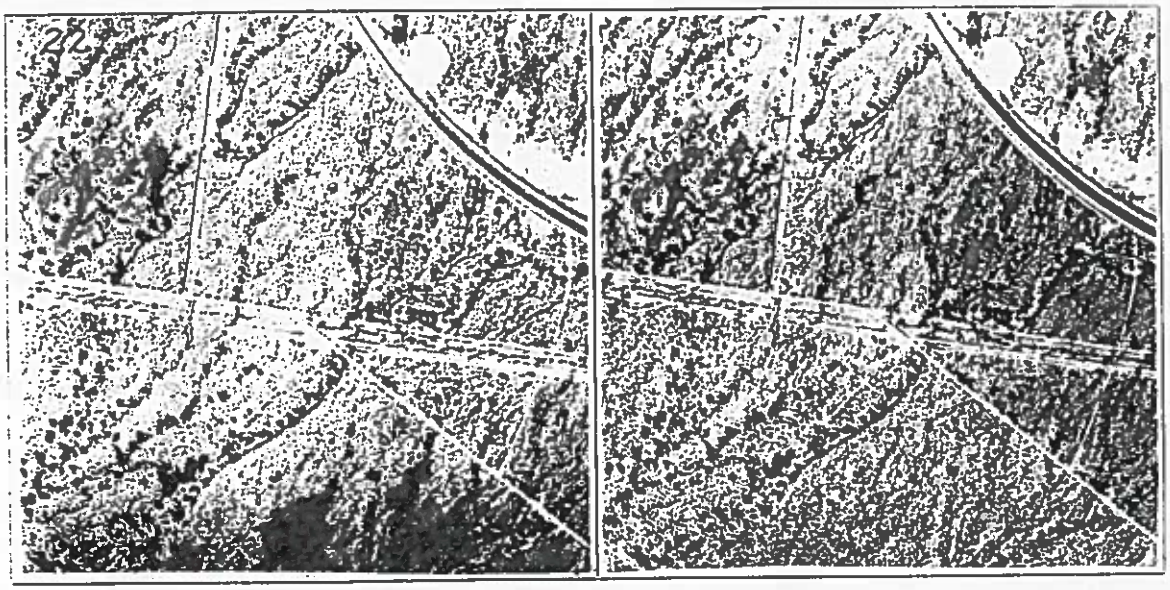
SKETCH



APPROX. SCALE OF PHOTOS: 1:10,000

DATE OF PHOTOGRAPHY: 15 SEPT 1961

STEREO-GRAM



DISTANCE	ELEVATION
24 FT. NE OF PANEL	1152.9 FT.
24 FT. SW OF PANEL	1152.5 FT.

DISTANCE	ELEVATION
24 FT SE. OF PANEL	1152.0 FT.
24 FT NW. OF PANEL	1153.1 FT.

1963
DATE

ARMY MAP SERVICE, CORPS OF ENGINEERS, U. S. ARMY

ARIZONA TEST AREA

(PHOTO-IDENTIFICATION INFORMATION)

169

STATION

PP N-14 B, AMS, 1962

LATITUDE 33° 18' 21.351"	LONGITUDE 112° 01' 50.112"
NORTHING 3,685,484.97 M.	EASTING 404,056.32 M.
NORTHING (Y) 838,829.08 Ft.	EASTING (X) 465,195.36 Ft.

DATUM: 1927 NORTH AMERICAN DATUM

GRID AND ZONE: U.T.M. 12

GRID AND ZONE: ARIZONA STATE PLANE-CENTRAL

ELEVATION 1248.4 FEET / 380.51 METERS

ORDER: FOURTH — DATE ESTABLISHED: 1967

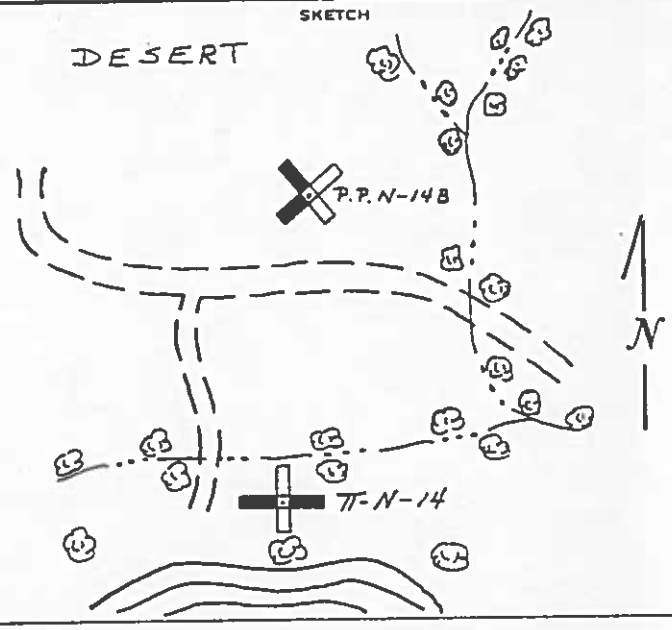
DATUM: SEA LEVEL DATUM OF 1929

DESCRIPTION

The geometric center of panel.

PP is 310.0 feet in geodetic azimuth 174° 19' 45" from N-14

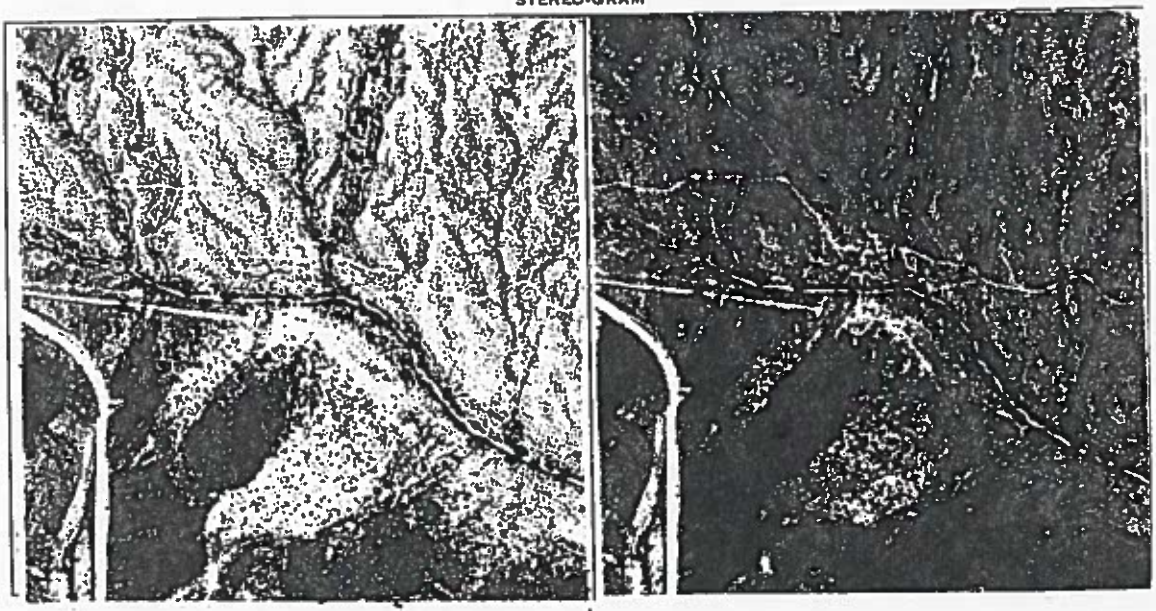
SKETCH



APPROX. SCALE OF PHOTOS: 1:10,000

DATE OF PHOTOGRAPHY: 15 Sept. 1961

STEREO-GRAM



DISTANCE	ELEVATION
24 FT. N.NW End of Panel	1248.2 FT.
24 FT. S.SE End of Panel	1247.9 FT.

DISTANCE	ELEVATION
24 FT. E.NE End of Panel	1249.5 FT.
24 FT. W.SW End of Panel	1246.6 FT.

1963

DATE

ARIZONA TEST AREA

(PHOTO-IDENTIFICATION INFORMATION)

STATION NOTHING IN FILE ON N-14

PP N-14 A, AMS 1962.

169

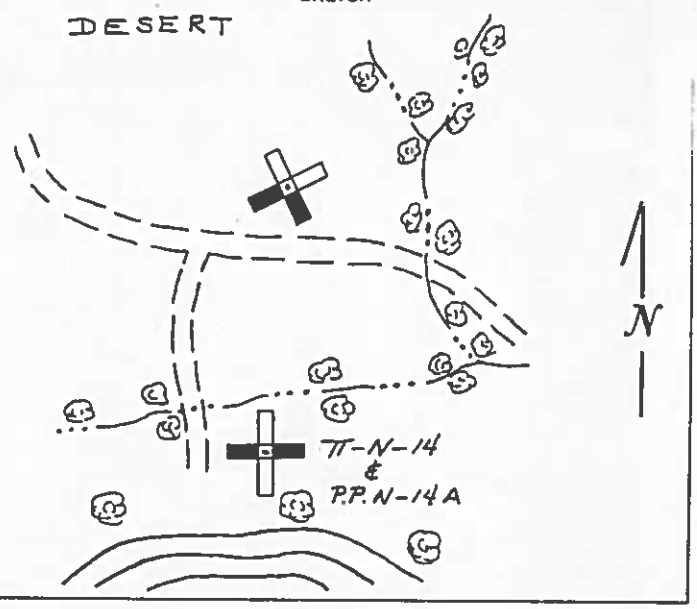
LATITUDE	LONGITUDE	DATUM	ELEVATION
33° 18' 18.299"	112° 01' 49.751"	1927 NORTH AMERICAN DATUM	1246.0 FEET / 379.78 METERS
NORTHING	**EASTING**	**GRID AND ZONE**	**ORDER** / **DATE ESTABLISHED**
3,685,390.89 M.	404,064.73 M.	U.T.M. 12	FOURTH / 1962
NORTHING (Y)	**EASTING (X)**	**GRID AND ZONE**	**DATUM**
838,520.60 Ft.	465,225.66 Ft.	ARIZONA STATE PLANE-CENTRAL	SEA LEVEL DATUM OF 1929

343/29

DESCRIPTION

The geometric center of panel.

SKETCH



123/14

APPROX. SCALE OF PHOTOS: 1:10,000

DATE OF PHOTOGRAPHY: 15 Sept 1961

STEREO-GRAM

DISTANCE	ELEVATION
24 FT. N. End of Panel	1245.1 FT.
24 FT. S. End of Panel	1246.6 FT.

DISTANCE	ELEVATION
24 FT. E. End of Panel	1245.3 FT.
24 FT. W. End of Panel	1246.7 FT.

1963

DATE

ARIZONA TEST AREA

(PHOTO-IDENTIFICATION INFORMATION)

169

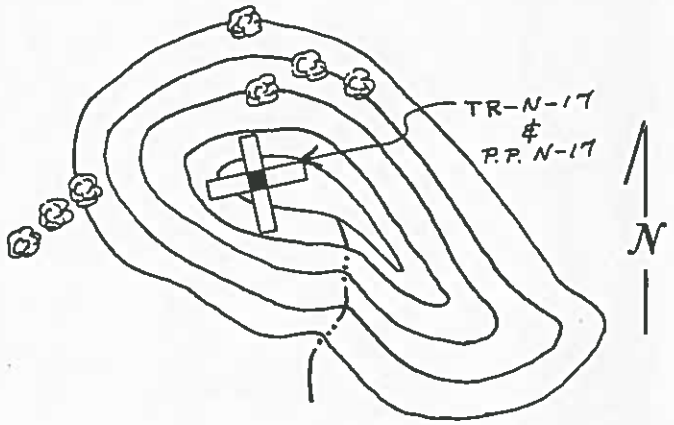
STATION: PP N-17, AMS, 1962

LATITUDE: 33° 15' 43.082"	LONGITUDE: 112° 01' 54.376"	DATUM: 1927 NORTH AMERICAN DATUM	ELEVATION: 1257.94 FEET / 383.421 METERS
NORTHING: 3,680,611.86 M.	EASTING: 403,897.88 M.	GRID AND ZONE: U.T.M. 12	ORDER: THIRD; DATE ESTABLISHED: 1948
NORTHING (Y): 822,834.26 Ft.	EASTING (X): 464,815.86 Ft.	GRID AND ZONE: ARIZONA STATE PLANE-CENTRAL	DATUM: SEA LEVEL DATUM OF 1929

DESCRIPTION

The geometric center of panel.

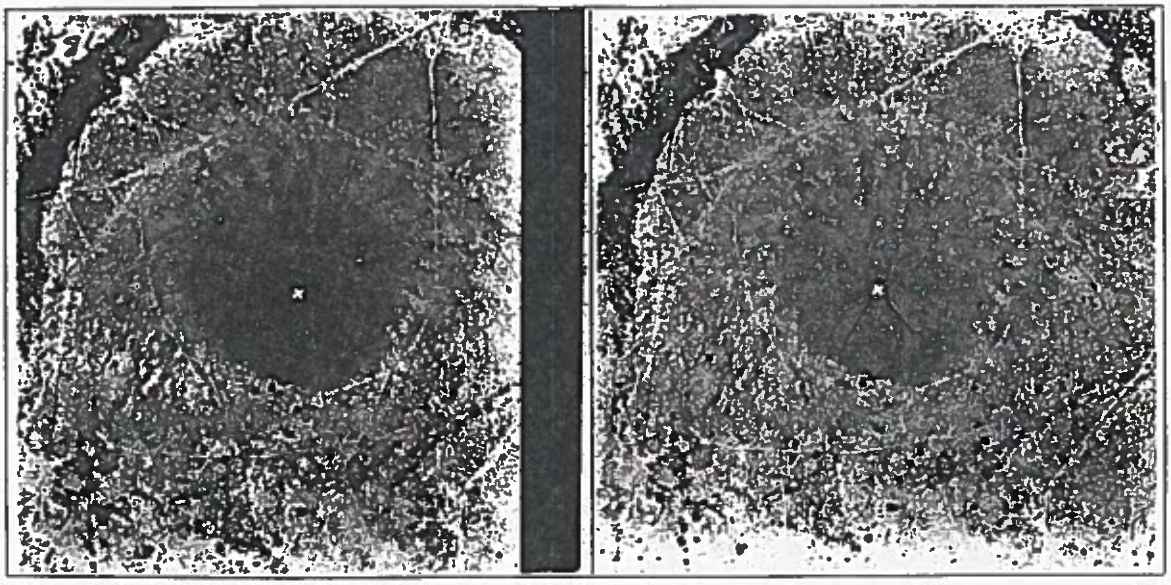
SKETCH



APPROX. SCALE OF PHOTOS: 1:10,000

DATE OF PHOTOGRAPHY: 14 June 1962

STEREO-GRAM



DISTANCE	ELEVATION
24 FT. NW End of Panel	1256.9 FT.
24 FT. SE End of Panel	1254.1 FT.

DISTANCE	ELEVATION
24 FT NE. End of Panel	1256.2 FT.
24 FT SW. End of Panel	1253.6 FT.

1963
DATE

ARIZONA TEST AREA

(PHOTO-IDENTIFICATION INFORMATION)

STATION

PP L-17, AMS 1963

LATITUDE 33° 15' 43.197"	LONGITUDE 112° 03' 52.523"
NORTHING 3,680,646.08 M.	EASTING 400,840.95 M.
NORTHING (Y) 822,858.51 Ft.	EASTING (X) 454,784.16 Ft.

DATUM: 1927 NORTH AMERICAN DATUM

GRID AND ZONE: U.T.M. 12

GRID AND ZONE: ARIZONA STATE PLANE-CENTRAL

ELEVATION 1097.4 FEET / 334.49 METERS

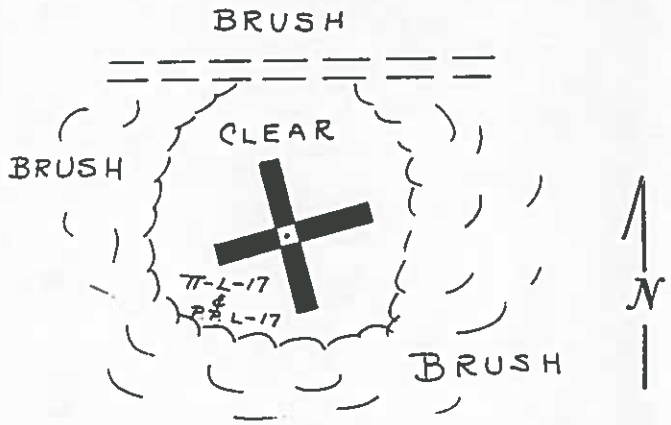
ORDER: FOURTH | DATE ESTABLISHED: 1963

DATUM: SEA LEVEL DATUM OF 1929

DESCRIPTION

Geometric center of panel.

SKETCH

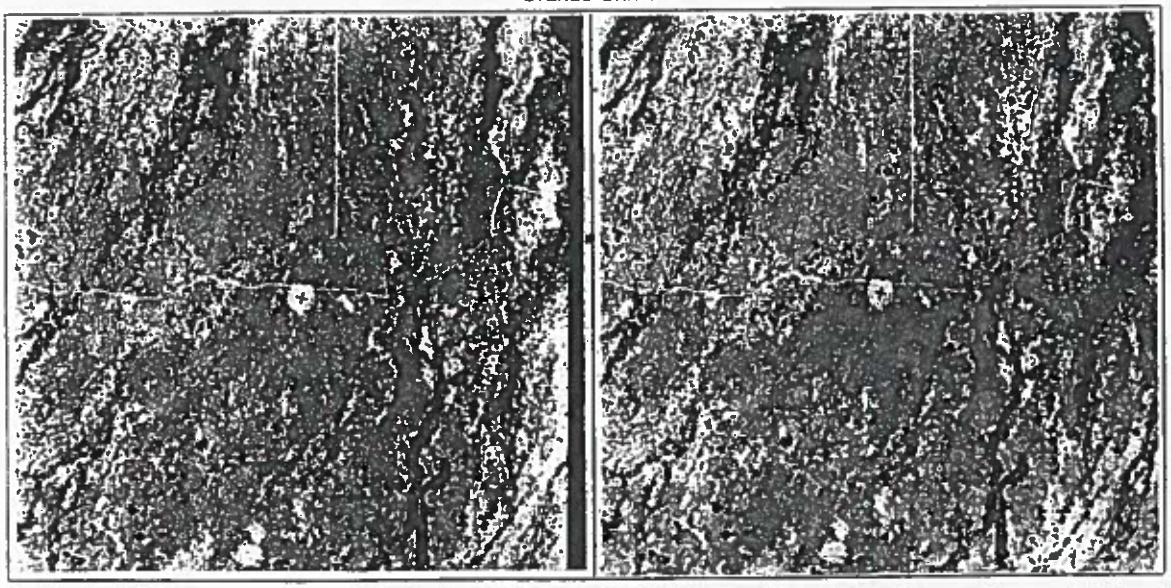


53.38

APPROX. SCALE OF PHOTOS: 1:10,000

DATE OF PHOTOGRAPHY: 14 JUNE 1962

STEREO-GRAM



420/35

DISTANCE	ELEVATION
24 FT. N. EDGE OF PANEL	1097.4 FT.
24 FT. S. EDGE OF PANEL	1097.0 FT.

DISTANCE	ELEVATION
24 FT. E. EDGE OF PANEL	1097.1 FT.
24 FT. W. EDGE OF PANEL	1097.6 FT.

1963
DATE

ARIZONA TEST AREA

(PHOTO-IDENTIFICATION INFORMATION)

STATION

PP L-13, AMS, 1948, 1963

LATITUDE 33° 19' 07."133	LONGITUDE 112° 03' 39."954
NORTHING 3,686,923.40 M.	EASTING 401,230.02 M.
NORTHING (Y) 843,467.53 FT.	EASTING (X) 455,879.89 FT.

DATUM: 1927 NORTH AMERICAN DATUM

GRID AND ZONE: U.T.M. 12

GRID AND ZONE: ARIZONA STATE PLANE-CENTRAL

ELEVATION 1414.04 FEET, 431.000 METERS

ORDER: THIRD | DATE ESTABLISHED: 1948

DATUM: SEA LEVEL DATUM OF 1929

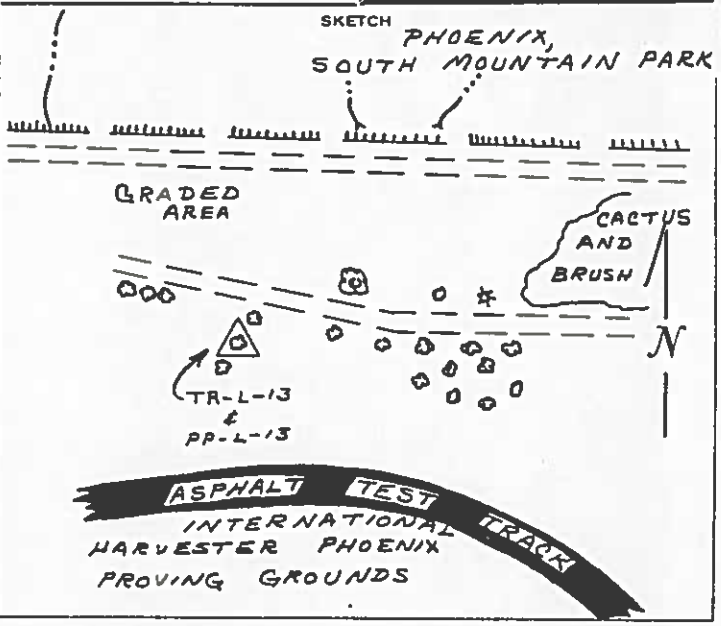
DESCRIPTION

Center of center bush of three in north-east - southwest alignment.

A rock panel 14 ft. in diameter with open center was constructed with its center at L-13 on 15 July 1963.

New photography will show this panel. All elevations remain the same.

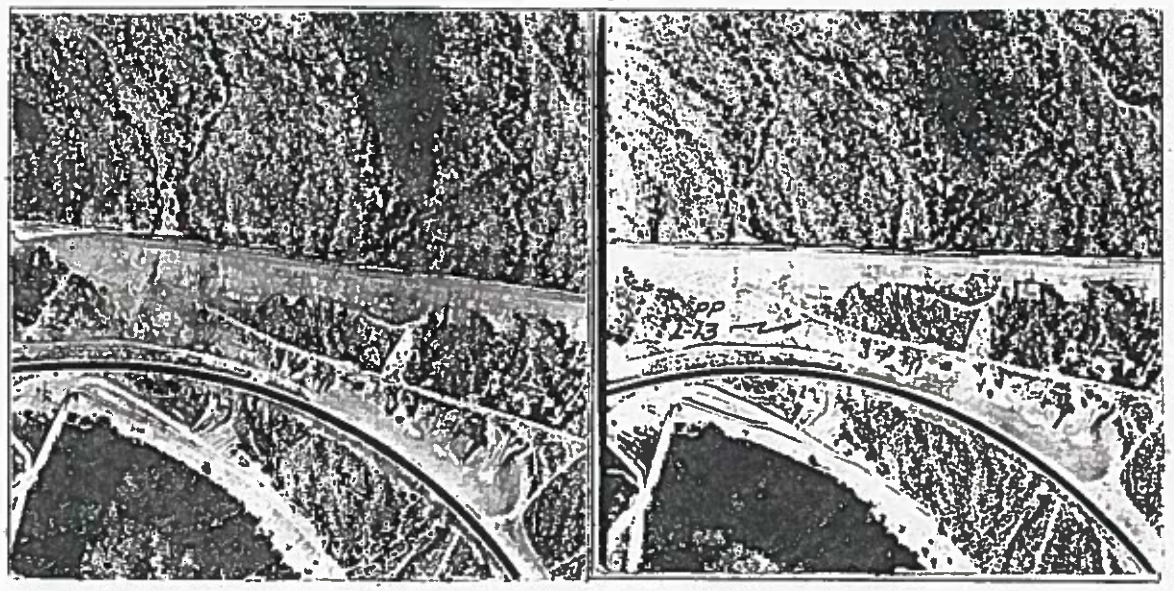
SKETCH



APPROX. SCALE OF PHOTOS: 1: 10,000

DATE OF PHOTOGRAPHY: 15 SEPT. 1961

STEREO-GRAM



DISTANCE	ELEVATION
25 FT. N. = ℄ RD	= 1412.2 FT.
233 FT. S. = ℄ TRACK	= 1407.5 FT.

DISTANCE	ELEVATION
137 FT. E. = S. EDGE BUSH	= 1409.3 FT.
100 FT. W. ℄ OF ROAD	1413.4 FT.

1963

DATE

ARIZONA TEST AREA

(PHOTO-IDENTIFICATION INFORMATION)

STATION: PP J-17, 1948, AMS 1962

LATITUDE: 33° 15' 46.105"	LONGITUDE: 112° 05' 50.045"
NORTHING: 3,680,767.10 M.	EASTING: 397,801.10 M.
NORTHING (Y): 823,168.09 Ft.	EASTING (X): 444,806.01 Ft.

DATUM: 1927 NORTH AMERICAN DATUM

GRID AND ZONE: U.T.M. 12

GRID AND ZONE: ARIZONA STATE PLANE-CENTRAL

ELEVATION: 1071.4 FEET, 326.56 METERS

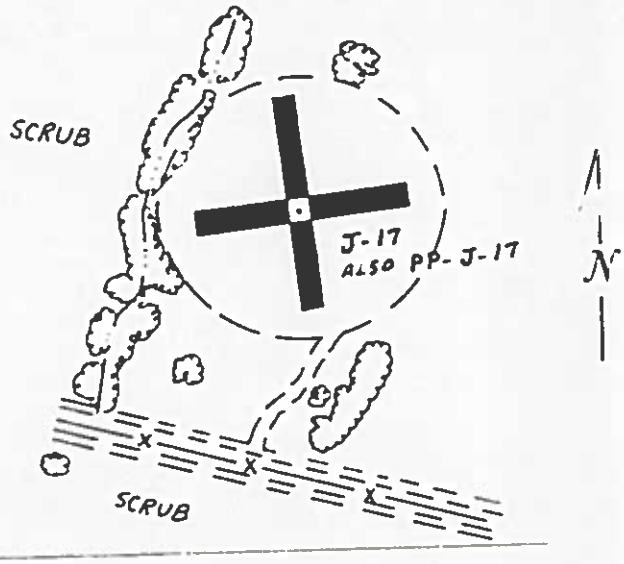
ORDER: FOURTH — DATE ESTABLISHED: 1948

DATUM: SEA LEVEL DATUM OF 1929

DESCRIPTION

The geometric center of a black asphalt panel.

SKETCH



5H
34

APPROX. SCALE OF PHOTOS: 1:10,000

DATE OF PHOTOGRAPHY: 14 JUNE 1962

STEREO-GRAM

DISTANCE	ELEVATION
24 FT. N.	1071.4 FT.
24 FT. S.	1071.5 FT.

DISTANCE	ELEVATION
24 FT. E.	1071.8 FT.
24 FT. W.	1072.9 FT.

1963
DATE

ARMY MAP SERVICE, CORPS OF ENGINEERS, U. S. ARMY

NAD 83 GEODETIC AND STATE PLANE COORDINATES

)IDQSN	STATION NAME	LATITUDE (NORTH)	LONGITUDE (WEST)	NORTHING METERS*	EASTING METERS*	ZONE	CONVERGENCE	SCALE FACTOR	ELEV. (M)	GEOID HGT (±1 M)	POS QUAL
331132310002	CODY USGS 1950	33 14 35.13445	113 20 36.45660	249617.132	80396.184	AZ C	-0 46 56.18	1.0001179	594	SC - 32.1	2
	CODY USGS 1950	33 14 35.13445	113 20 36.45660	248791.432	251245.528	AZ W	0 13 22.31	0.9999510	594	SC - 32.1	2
331133240001	CONICAL PEAK 24 MI NW OF HORN	33 10 2.64865	113 41 1.78314	240325.569	219531.810	AZ W	0 02 10.33	0.9999338			4
331122140024	COOL	33 27 50.48578	112 09 7.16318	273235.396	191486.301	AZ C	-0 07 47.14	0.9999059	326.14	- 31.4	1
331124440004	CORRAL	33 59 57.72532	112 56 37.25418	333059.272	118486.301	AZ C	-0 34 27.60	1.0000109	743.37	- 30.6	1
331124440005	CORRAL RM 1	33 59 57.28273	112 56 36.77768	333045.513	118498.392	AZ C	-0 34 27.33	1.0000109	743.	- 30.6	2
331132130001	CORTEZ	33 15 48.93860	113 13 43.61866	251750.843	91112.369	AZ C	-0 43 11.19	1.0000842	769.3	- 32.0	2
	CORTEZ	33 15 48.93860	113 13 43.61866	251112.513	261921.083	AZ W	0 17 9.20	0.9999624	769.3	- 32.0	2
331122220003	COTTON	33 03 15.96240	112 01 35.16916	227793.294	203109.041	AZ C	-0 03 35.54	0.9999013	359.4	- 32.0	1
331122440004	COTTON	33 26 7.84835	112 24 38.87866	270157.951	167414.261	AZ C	-0 16 20.18	0.9999260	296.8	- 31.8	2
331131220002	COUP	33 31 47.03091	113 06 51.30722	281139.877	102123.322	AZ C	-0 39 41.68	1.0000525	436.1	- 31.7	2
331132410003	COURT	33 27 29.78226	113 17 14.90434	273413.384	85928.006	AZ C	-0 45 21.13	1.0001001	540.7	- 31.8	1
	COURT	33 27 29.78226	113 17 14.90434	272677.605	256357.073	AZ W	0 15 18.03	0.9999561	540.7	- 31.8	1
331122110016	COURT HOUSE	33 26 51.78017	112 04 32.75563	271413.462	198568.726	AZ C	-0 05 15.69	0.9999027	365.75	- 31.3	1
331132410004	COURTHOUSE MOUNTAIN	33 27 50.84311	113 21 36.56468	273298.723	249597.848	AZ W	0 12 53.88	0.9999495			4
	COURTHOUSE MOUNTAIN	33 27 50.84311	113 21 36.56468	274153.780	79179.724	AZ C	-0 47 45.89	1.0001219			4
331133140001	COYOTE PEAK	33 29 5.66667	113 43 35.15337	275536.088	215550.280	AZ W	0 00 46.81	0.9999334	701.9	- 32.2	2
331123440002	CRACK	33 29 10.45247	112 56 12.63449	276139.793	118555.134	AZ C	-0 33 46.48	1.0000108	336.3	- 31.7	2
331121440003	CRATER	33 59 22.44424	112 29 1.79193	331641.795	160961.148	AZ C	-0 19 1.47	0.9999338	1391.4	- 30.2	2
331122130003	CRUZ	33 17 39.07803	112 13 51.06969	254419.889	184099.003	AZ C	-0 10 20.89	0.9999106	315	SC - 31.8	1
331122110001	CULVER	33 27 46.94914	112 07 1.50015	273119.643	194730.708	AZ C	-0 06 37.84	0.9999043	328.68	- 31.3	2
331122110009	CULVER 2	33 27 44.27884	112 06 54.04236	273037.012	194923.113	AZ C	-0 06 33.72	0.9999042	329.56	- 31.3	2
331121420006	CUT	33 50 8.64272	112 20 58.59311	314519.446	173289.733	AZ C	-0 14 27.86	0.9999198	565.6	- 30.4	2
331122110007	DALL	33 27 37.74322	112 00 15.10506	272821.506	205223.685	AZ C	-0 02 53.74	0.9999008	348.17	- 31.3	2
331122110042	DALL 2	33 27 37.50379	112 00 14.67350	272814.121	205234.822	AZ C	-0 02 53.50	0.9999008	348.01	- 31.3	2
331121220012	DALY	33 36 16.13551	112 00 17.16805	288791.335	205183.981	AZ C	-0 02 55.54	0.9999008	425.3	- 31.0	1
331132120001	DAVIS	33 19 11.31681	113 06 37.13361	257853.267	102221.817	AZ C	-0 39 20.71	1.0000522	574.1	- 31.9	1
331123140002	DEAD	33 25 59.51681	112 37 43.36463	270018.805	147150.070	AZ C	-0 23 32.37	0.9999540	432.5	- 31.8	2
331134310005	DESERT WELL	33 42 1.44763	113 51 53.34146	299441.770	202716.262	AZ W	-0 03 49.34	0.9999347	349.9	- 32.4	2
331123410002	DISH	33 27 57.01507	112 49 28.57365	273780.520	128966.092	AZ C	-0 30 2.53	0.9999878	331.35	- 31.7	2
331124440003	DIVIDE	33 59 57.87089	112 55 11.96781	333042.071	120674.928	AZ C	-0 33 39.90	1.0000059	748.64	- 30.6	2
331133230001	DOME SHAPED PK 14 MI WNW HORN	33 01 32.33910	113 40 30.92096	224605.905	220342.597	AZ W	0 02 26.65	0.9999339			4
331132420001	DOUBLE EAGLE	33 21 53.81653	113 17 15.24259	263062.646	85782.870	AZ C	-0 45 14.60	1.0001006	698.8	- 31.9	2
	DOUBLE EAGLE	33 21 53.81653	113 17 15.24259	262327.410	256394.338	AZ W	0 15 15.58	0.9999562	698.8	- 31.9	2
331121430006	DROP	33 50 2.65153	112 27 32.79909	314382.903	163153.913	AZ C	-0 18 7.32	0.9999311	604.0	- 30.6	2
331121230002	DUNLAP	33 34 1.20335	112 10 8.01966	284659.552	189942.747	AZ C	-0 08 22.06	0.9999068	363.	- 31.3	1
331122110023	DURANGO	33 25 44.68840	112 06 23.26446	269351.426	195711.087	AZ C	-0 06 16.41	0.9999038	321.67	- 31.3	2
331124140004	DUSTY 1924	33 59 15.85982	112 41 35.72012	331565.778	141611.037	AZ C	-0 26 2.92	0.9999634	730.9	- 30.3	1
331122220004	DUTY	33 01 43.70083	112 04 1.96073	224955.990	199297.092	AZ C	-0 04 55.40	0.9999024	363.06	- 32.1	2
331131140001	E 25	33 56 13.91475	113 12 15.66176	326435.382	94318.230	AZ C	-0 43 8.32	1.0000746	658.13	- 30.9	1
	E 25	33 56 13.91475	113 12 15.66176	325833.453	263803.707	AZ W	0 18 16.68	0.9999647	658.13	- 30.9	1
331132440002	EAGLE	33 28 35.69730	113 24 7.72157	274666.704	245690.206	AZ W	0 11 30.76	0.9999462	971.2	- 31.8	2
	EAGLE	33 28 35.69730	113 24 7.72157	275590.771	75296.133	AZ C	-0 49 10.25	1.0001349	971.2	- 31.8	2
331131140002	EAGLE EYE PEAK	33 53 26.66259	113 10 7.00000	321241.276	97559.575	AZ C	-0 41 53.43	1.0000653			4
331132410001	EAGLE TAIL PEAK	33 24 12.40013	113 18 16.38120	267353.229	84259.221	AZ C	-0 45 51.04	1.0001054			4
	EAGLE TAIL PEAK	33 24 12.40013	113 18 16.38120	266589.870	254795.615	AZ W	0 14 42.85	0.9999545			4

* For conversion of meters to U.S. Survey Feet multiply the meters by 39.37/12.0 which is 3.28083333333 to 12 significant figures

* For conversion of meters to International Feet multiply the meters by 100.0/30.48 which is 3.28083989501 to 12 significant figures

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DHII 2 1977

STATE: ARIZONA YEAR: 1977

1ST —ORDER

LOCALITY:

SOURCE: 10749

FIELD SKETCH:

(NO OBSERVATIONAL check on this position.)

GEODETIC LATITUDE: 33 27 37.34613 GEODETIC LONGITUDE: 112 00 12.14499	ELEVATION:	348.01 METERS 1141.76 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
AZ C	0202	473556.24	895012.78	− 0 02 52.1

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
DALL 1963	123 30 01.2	123 32 53	0202

IN 144

RECOVERY NOTE, TRIANGULATION STATION

3311-22 R

NAME OF STATION: DALL

ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO [X]

RECOVERED BY:* Charles Novak YEAR: 1977 COUNTY: Maricopa

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: At Phoenix

HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION		
		FEET	METERS			
PAPAGO 1962				0°	00′	00″.0
Phoenix, Cudahy Packing Co. Water Tank				36	54	53.4
DALL 2			13.3688*	41	12	11.8
RM 3	SE	(60.430*)	18.4191*	60	22	07.8
RM 1	N	40.645	12.348	278	40	04
Phoenix, KTAR Radio Tower South 1 of 2				281	34	34.4

The station mark, reference mark 1 and the azimuth mark were recovered and found in good condition. The azimuth mark is obstructed by a building and reference mark 2 is believed buried by a large mound of dirt. The station and both reference marks were in the route of construction and were moved by request of the city of Phoenix.

Larry W Wakefield

*Name of chief of party should be inserted here. The person who actually visited the station should sign his name at the end of the recovery note.

C&GS FORM 525
10-69)

IN 144

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

331122

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: DALL 2 STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: Charles Novak YEAR: 1977 DESCRIBED BY: L. Wakefield

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS,† HEIGHT OF LIGHT ABOVE STATION MARK 1.5 METERS.

SURFACE-STATION MARK, UNDERGROUND-STATION MARK	BEARING	DISTANCE		DIRECTION‡		
* Traverse distance		FEET	METERS	°	'	"
PAPAGO 1962				0	00	00.0
Phoenix, Cudahy Packing Co. Water Tank				37	00	03.8
RM 3	S	23.83	7.261	97	38	01
DALL 1963	NW		13.3688*	221	18	45.4
Phoenix, KTAR Radio Tower S.1 of 2				281	20	31.9

Detailed description:

The station is located in the city of Phoenix at the intersection of North 36th Street and East Portland Street in the southeast angle of the intersection. Due to street construction reference mark 4 was not set at this time and reference distances to the marks could not be made.

The station mark is a standard disk stamped, DALL 2 1977. It is set in top of a 10 inch concrete monument which projects 1 inch. It is 26 feet north of the first power pole southeast of the intersection and on line with the power poles. The mark is 1 foot west of a witness post.

Reference mark 3 is a standard disk stamped,DALL 2 NO 3 1977. It is set in top of a 10 inch concrete monument which projects 1 inch. It is 2 feet north of the first power pole southeast of the intersection and on line with the power poles.

One of the two intersection stations in the box score should be used for an azimuth mark untill such time as construction is completed and the station moving is complete.

*Refers to notes in manuals of triangulation and state publications of triangulation. ‡Direction-angle measured clockwise, referred to initial station.
†To nearest meter only, when no trigonometric leveling is being done.

PHOENIX

NAD 83 GEODETIC AND STATE PLANE COORDINATES

QIDQSN	STATION NAME	LATITUDE (NORTH)	LONGITUDE (WEST)	NORTHING METERS*	EASTING METERS*	ZONE	CONVERGENCE	SCALE FACTOR	ELEV. (M)	GEOID HGT (±1 M)	PC QL
331124410001	RAIL 1924	33 59 59.67176	112 48 36.95541	333003.717	130811.976	AZ C	-0 29 59.00	0.9999840	716	SC - 30.5	
331122340003	RAIN	33 14 48.69028	112 29 53.84330	249277.864	159162.363	AZ C	-0 19 7.97	0.9999362	326.15	- 32.1	
331132140001	RANDOM	33 26 7.73859	113 10 45.82534	270758.376	95944.994	AZ C	-0 41 45.03	1.0000699	347.0	- 31.8	
331134320002	RANE	33 33 54.02010	113 46 3.32234	284419.381	211726.867	AZ W	-0 00 35.01	0.9999334	415.95	- 32.3	
331134310004	RANEGRAS	33 42 54.17864	113 45 9.95592	301060.407	213103.674	AZ W	-0 00 5.53	0.9999333	543.2	- 32.1	
331121140008	RED	33 52 45.70518	112 10 46.59092	319305.039	189036.281	AZ C	-0 08 47.68	0.9999073	572.7	- 29.9	
331124130003	RED CLIFF	33 49 47.41798	112 39 57.16393	314033.690	144012.660	AZ C	-0 25 1.65	0.9999593	637.3	- 30.7	
331124130002	RED CLIFF USBR 1947	33 49 47.53994	112 39 56.97850	314037.412	144017.455	AZ C	-0 25 1.55	0.9999593	636.7	- 30.7	
331121130009	RIFLE	33 47 53.85431	112 08 9.19969	310304.219	193061.477	AZ C	-0 07 19.01	0.9999051	514.6	- 30.2	
331122120008	RIVER	33 21 22.56713	112 01 27.32129	261265.672	203347.042	AZ C	-0 03 32.97	0.9999012	668.9	- 31.4	
331124410007	ROAD 1924	33 59 58.25414	112 45 43.42042	332922.248	135264.700	AZ C	-0 28 21.92	0.9999752	692.2	- 30.4	
331123110005	ROAM	33 25 11.64100	112 32 20.48275	268490.405	155481.199	AZ C	-0 20 34.03	0.9999413	305.11	- 31.8	
331123330001	ROCK	33 06 59.98310	112 59 0.92781	235195.227	113791.532	AZ C	-0 34 58.65	1.0000222	656	SC - 32.1	
331121420005	ROCK	33 50 6.92446	112 19 23.87508	314456.575	175724.670	AZ C	-0 13 35.11	0.9999175	547.9	- 30.4	
331124320001	ROCKY	33 30 55.40162	112 45 51.66733	279228.839	134611.605	AZ C	-0 28 5.10	0.9999764	405.9	- 31.8	
331123430001	ROSE	33 20 12.53276	112 59 24.57004	259617.570	113429.320	AZ C	-0 35 23.99	1.0000231	461.5	- 31.8	
331134220002	RUST	33 36 12.01619	113 32 31.53460	288689.951	232654.996	AZ W	0 06 54.23	0.9999379	426.75	- 31.8	
331134430001	S17 S16 GLO 1956	33 51 44.81702	113 56 23.96240	317424.902	195780.775	AZ W	-0 06 21.11	0.9999371	329	SC - 32.3	
331132210002	SADDLE	33 14 45.53843	113 07 15.24394	249676.541	101141.644	AZ C	-0 39 36.98	1.0000552	586.2	- 32.0	
331134230002	SADDLE	33 36 36.78293	113 37 39.27571	289440.303	224720.703	AZ W	0 04 3.96	0.9999349	438.58	- 31.9	
331132110002	SADDLE MOUNTAIN	33 26 23.31412	113 02 24.53417	271089.639	108898.825	AZ C	-0 37 8.99	1.0000345	926.1	- 31.7	
331132110001	SADDLE MOUNTAIN CAIRN 1948	33 26 23.36820	113 02 24.63994	271091.335	108896.111	AZ C	-0 37 9.04	1.0000345	926	SC - 31.7	
331132210001	SADDLE WATER TANK	33 09 28.86130	113 04 48.26395	239877.476	104837.963	AZ C	-0 38 10.99	1.0000452			
331121130012	SAGU	33 47 50.50178	112 13 27.44301	310221.869	184875.800	AZ C	-0 10 16.03	0.9999100	475.9	- 30.3	
331134120003	SALOME	33 47 24.32031	113 36 0.48028	309393.152	227238.437	AZ W	0 05 0.06	0.9999357	568.1	- 31.5	
331134220004	SALOME FIELD	33 34 39.94180	113 35 15.23772	285845.801	228439.270	AZ W	0 05 23.41	0.9999361	410.11	- 31.9	
331134220003	SALOME FIELD AIRWAY BCN 27 B	33 34 39.19395	113 35 15.18571	285822.763	228440.648	AZ W	0 05 23.44	0.9999361		- 31.9	
331134130001	SALOME PEAK	33 50 22.82147	113 42 40.86089	314883.135	216937.105	AZ W	0 01 17.48	0.9999335			
331134120002	SALOME RAILROAD WATER TANK	33 46 55.20023	113 36 54.96986	308494.065	225837.936	AZ W	0 04 29.69	0.9999353			
331122120009	SALT	33 19 55.10745	112 07 29.24871	258585.607	193985.169	AZ C	-0 06 51.71	0.9999046	798.6	- 31.5	
331121230004	SANTA	33 30 33.42907	112 09 11.46280	278255.317	191386.717	AZ C	-0 07 50.07	0.9999060	346	SC - 31.4	
331131220004	SCOT	33 30 1.03722	113 01 37.02343	277784.140	110197.675	AZ C	-0 36 46.32	1.0000312	413.88	- 31.7	
331122110019	SEAP	33 27 37.62937	112 01 18.06797	272819.505	203597.917	AZ C	-0 03 28.45	0.9999012	341.68	- 31.3	
331122110041	SEAP 2 1977	33 27 37.67177	112 01 18.35569	272820.819	203590.490	AZ C	-0 03 28.61	0.9999012	341.72	- 31.3	
331122140014	SEC COR W MCDOWELL RD AND 67TH	33 27 57.09237	112 12 12.04016	273450.910	186713.336	AZ C	-0 09 29.11	0.9999088	322	SC - 31.5	
331122310002	SECTION	33 10 28.17449	112 18 21.73432	241169.437	177047.376	AZ C	-0 12 47.02	0.9999163	383.0	- 32.1	
331124110004	SELIN 1924	33 56 27.26645	112 30 29.25050	326257.405	158685.527	AZ C	-0 19 48.87	0.9999368	992	SC - 30.3	
331131110003	SEVEN MILE PEAK	33 55 45.05161	113 03 1.48961	325378.172	108540.058	AZ C	-0 37 58.36	1.0000354			
331122410003	SHOT	33 23 47.59049	112 20 25.26243	265808.243	173947.239	AZ C	-0 13 59.56	0.9999191	282.11	- 31.7	
331134230003	SIX	33 36 33.14507	113 37 39.88443	289328.210	224705.144	AZ W	0 04 3.62	0.9999349	453.11	- 31.9	
331121210002	SKUNK	33 43 32.38631	112 07 8.52136	302245.830	194606.338	AZ C	-0 06 44.49	0.9999043	447.69	- 30.5	
331131430003	SOCORRO PEAK	33 45 35.61216	113 27 20.02668	306072.859	240636.025	AZ W	0 09 49.05	0.9999425			
	SOCORRO PEAK	33 45 35.61216	113 27 20.02668	307087.789	70798.282	AZ C	-0 51 19.19	1.0001505			
331122120007	SOUTH MOUNTAIN ST HWY PAT TWR	33 19 57.49680	112 04 0.66845	258649.945	199378.960	AZ C	-0 04 57.10	0.9999024			
331123140003	SPIKE	33 29 38.72732	112 38 1.18611	276775.178	146736.346	AZ C	-0 23 44.48	0.9999547	488	SC - 31.8	

* For conversion of meters to U.S. Survey Feet multiply the meters by 39.37/12.0 which is 3.28083333333 to 12 significant figures

* For conversion of meters to International Feet multiply the meters by 100.0/30.48 which is 3.28083989501 to 12 significant figures

ADJUSTED HORIZONTAL CONTROL DATA

331122

NAME OF STATION: SEAP 2

STATE: ARIZONA

YEAR: 1977

SECOND —ORDER

LOCALITY:

SOURCE: G-10749

FIELD SKETCH:

No observational check on this position

GEODETIC LATITUDE:	33 27 37.51530	ELEVATION:	341.72 METERS
GEODETIC LONGITUDE:	112 01 15.82612		1121.1 FEET

STATE COORDINATES (Full)

STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ. C.	0202	468,161.43	895,034.84	- 0 03 27

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
SEAP 1963 AZ MK 1970	86 17 53.8	86 21 21	0202

IN 142

RECOVERY NOTE, TRIANGULATION STATION

R

331122

NAME OF STATION: SEAP
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☒
RECOVERED BY:* Charles Novak YEAR: 1977 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: In northeastern Phoenix
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION		
		FEET	METERS			
SEAP azimuth mark 1970 (0.15 mile)	W			0°	00′	00.″00
RM 2	W	45.78	13.952	8	59	15
SEAP 2		(24.74)	7.544	13	10	08.2
RM 1	N	46.04	14.033	94	25	02

The station mark, reference marks 1 and 2 and the azimuth mark were recovered in good condition as described in 1970. Due to street construction the station was moved at this time. The underground station mark was left in place. The azimuth mark set in 1970 and reference marks 1 and 2 serve the new station.

Larry W. Wakefield

* Name of chief of party should be inserted here. The person who actually visited the station should sign his name at the end of the recovery note.

FORM C&GS-526a (12-66)
USCOMM-DC 36291-P65

U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEY

NOAA FORM 76-39
(12-70)
(FORMERLY C&GS FORM 525)

IN142

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: SEAP 2
STATE: Arizona
COUNTY: Maricopa
NEAREST TOWN: Phoenix
QUADRANGLE NO.: 331122
CHIEF OF PARTY: Charles Novak
YEAR: 1977
DESCRIBED BY: L. Wakefield

NOTE.*	HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS,† HEIGHT OF LIGHT ABOVE STATION MARK 1.5 METERS.					
1b 7a	SURFACE-STATION MARK, UNDERGROUND-STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡ ° ′ ″	
	SEAP azimuth mark (1970) 0.15 mile west	W	(21.18)	6.4579	0 00 00.00	
11a	RM 2	N	48.83	14.884	4 36 26	
11a	RM 1	W	(24.74)	7.5444	124 58 54	
	SEAP 1963				193 40 17.4	

Detailed description:

The station is located in northeastern Phoenix, at the intersection of East Portland Street and North 28th Street.

The station mark is a standard disk stamped, SEAP 2 1977. It is set in top of a 10 inch round concrete monument which projects 1 inch. It is 2 feet north of the north edge of north sidewalk along East Portland Street, in the northwest angle formed by the 2 streets which are under construction at this time.

Reference mark 1 is a standard disk stamped, SEAP NO 1 1963. It is set in top of a 12 inch concrete monument which projects 2 inches. It is 27 feet north-northwest of a fire hydrant and 2 feet east of a wire fence. The mark will be just west of the sidewalk along the west side of North 28th Street when construction is completed.

Reference mark 2 is a standard disk stamped, SEAP NO 2 1963. It is set in top 12 inch concrete monument which is flush with the ground surface. It is 55 feet west-southwest of the fire hydrant and 2 1/2 feet north of the north sidewalk along the north side of East Portland street.

The azimuth mark is a standard disk stamped SEAP 1963 1970. It is set in a drill hole in the sidewalk in the southeast intersection of East Portland Street and North 27th Street. The mark is 34 feet west of the centerline of North 27th Street and 18 1/2 feet south of the center line of East Portland Street.

*Refers to notes in manuals of triangulation and state publications of triangulation.
†To nearest meter only, when no trigonometric leveling is being done.
‡Direction-angle measured clockwise, referred to initial station.

☆ U.S. GOVERNMENT PRINTING OFFICE 1972: 760-619

33°15'
112°00'

ARIZONA 169

Index

Station	Project
Cruz	- -
Telegraph Pass	- -
TT 1 (Davis-Monthan AFB)	- -
TT 2 (Davis-Monthan AFB)	- -
TT 3 (Davis-Monthan AFB)	- -
TT 3 EEM 1956	Luke Transit Traverse
TT 4 (Davis-Monthan AFB)	- -
TT 4 EEM 1956	Luke Transit Traverse

NOT IN THIS QUAD

NOT IN THIS QUAD

Luke Transit Traverse Project Master in ARIZONA 169 - Book: PH 440

AZ Box 413

439 ORIGINAL FIELD BOOK

Station: CRUZ County: Maricopa State: Ariz. (169)

Observer: E.B. Latham (C&GS) Year: 1935 Datum: 1927 N.A.

Description:

Described in C&GS Special Publications 224, page 116 as follows:

About 17 mi. SW of Phoenix on highest part of a flat gravel ridge west of Gila River. There are washes on south, west, and east sides of ridge. Marked by a standard bronze disk as described in note 5. Ref. mark No. 1, a standard bronze ref. disk, note 12a, is 10.120 meters (33.20 ft.) from station in azimuth 245°36'. Ref. mark No. 2, a standard bronze ref. disk, note 12a, is 11.389 meters (37.37 ft.) from station in azimuth 312°45'.. The azimuth mark (ref. mark No. 3) , a standard bronze disk, note 12a, is in azimuth 272°07'50" from the station.

NAD 83 VALUES AVAILABLE

[Latitude 33 17 38.912 Longitude 112 13 48.524]

To Station—	Azimuth ° ′ ″	Back Azimuth ° ′ ″	Distance Log. Meters	Distance Feet
Initial Monument	142 43 45.15	322 41 16.19	4.0633693	37962.4
Salt	246 58 45.08	67 02 14.78	4.0305567	35199.9
St. Johns	330 19 25.90	150 20 34.13	3.8131112	21335.1

7-30-54 am

FILE COPY

Cashion SE

33 15
1E 112 00

Station: TELEGRAPH PASS County: Maricopa State: Ariz. 167

Observer: A. H. Thompson Year: 1899 Datum: 1927 N.A.D. (Revised 1953)

Description: U.S.C.&G.S. 1935

See 33 112 2 -0025

Original description in 21st Annual Report, page 346.

NOTE: In 1935, the U.S.C.&G.S. occupied this station. Following is the U.S.C.&G.S. description from Special Publication 224, page 116:

"On the highest point of the range of hills, about 10 mi. airline, S. of Phoenix, and 1/2 mi. S of Telegraph Pass. The U.S. Geological Survey mark was found out of place and the Coast and Geodetic Survey mark was set in the same position as the original mark had occupied. Marked by a standard bronze disk. Reference mark No. 1, a standard bronze reference disk is 23.742 meters (77.89 ft.) from station in azimuth 203°13'. Reference mark No. 2,a standard bronze reference disk is 16.521 meters (54.20 ft.) from station in azimuth 348°15'.

Plane coordinates: (C) X=455,438.27 ft. Y=848,857.23 ft.

FILE COPY

NAD 83 VALUES AVAILABLE

* [Latitude 33 20 00.852 * Longitude 112 03 45.248]

To Station—	Azimuth ° ′ ″	Back Azimuth ° ′ ″	Distance Log. Meters	Distance Feet
Camels Back	205 11 04.8	25 14 26.4		72,839.27
Superstition Pt.	261 53 29.2	82 15 21.2		204,220.27
				3/23/53 cg

* = Values by U. S. Coast and Geodetic Survey. ✓

PHOENIX (169) Arizona E. E. Moe, 1956

Book: PH 439

Latitude 33°15' Longitude 112°00'

FROM INTERSECTION OF THOMAS ROAD AND 91ST AVENUE, GLENDALE, ARIZONA, TO FIELD ROAD AT SOUTH SIDE OF BLACKTOP HIGHWAY

Note: Line continues from Avondale quadrangle (170).

	(Y)	(X)
25+a. Center of intersection of Thomas Road and 83rd Avenue	902,214.67	402,314.22
29 = "T T 3 EEM 1956" - Glendale P.O., 4.1 mi. S. of along 59th Ave., thence 1.9 mi. W. along Thomas Road, 27 ft. N. of center of Thomas Road, 48 ft. W. of center of 75th Ave., on SE. corner of concrete irrigation structure; standard tablet stamped "T T 3 EEM 1956"	902,359.88	407,494.50
33+a. Center of intersection of Thomas Road and 67th Avenue	902,372.47	412,841.81
38 = "T T 4 EEM 1956" - Glendale, 4.1 mi. S. of, along 59th Ave., 25 ft. W. of center of 59th Ave., 41 ft. S. of center of Thomas Road, on SE. corner of concrete structure; standard tablet stamped "T T 4 EEM 1956"	902,394.88	417,956.94
42a. Center of intersection of 59th Avenue and Indian School Rd.	907,713.67	417,979.03
43. Center of field rd. at S. side of blacktop highway = P P M 134-19A	907,682.54	419,358.74

LINE ENTERS NEW RIVER NO. 4 QUADRANGLE (192)

NAD 83 VALUES AVAILABLE

FILE COPY OVER 5/11/61 hb

Conversion from state plane to geodetic coordinates

Station = THOMAS RD&83AVE
Lat = 33 28 47.2235
X = 402,314.2200

State Plane Zone = 202
Lon = 112 14 13.3486
Y = 902,214.6700

Station = T T'3 EEM 1956
Lat = 33 28 48.8142
X = 407,494.5000

State Plane Zone = 202
Lon = 112 13 12.1922
Y = 902,359.8800

Station = THOMAS RD&67AVE
Lat = 33 28 49.0888
X = 412,841.8100

State Plane Zone = 202
Lon = 112 12 09.0588
Y = 902,372.4700

Station = TT 4 EEM 1956
Lat = 33 28 49.4458
X = 417,956.9400

State Plane Zone = 202
Lon = 112 11 08.6668
Y = 902,394.8800

Station = 59AVE& I S RD
Lat = 33 29 42.0723
X = 417,979.0300

State Plane Zone = 202
Lon = 112 11 08.5687
Y = 907,713.6700

Station = P P M 134-19A
Lat = 33 29 41.7993
X = 419,358.7400

State Plane Zone = 202
Lon = 112 10 52.2752
Y = 907,682.5400

NAD 83 VALUES AVAILABLE

NAD 83 VALUES AVAILABLE