NAME	STATION
PALM	1001
BERT & BERT 3	1002
NOLE	1003
PLAD PLAD 2	1004 A
SEAM	1005
GOLF	1006
PAPAGO	1007
GUN	1008
BATON	1009
CURB	1010
SCOTT & SCOTT 2	1011
MEAT Destroyed	1012
HAYDEN	1013
ROLA – ROLA 2	1014
PIMA	1015
GRIND	1016
BARK	1017
BALZ	1018
FINCH	1019
LEHI	1020
VAL VISTA	1021
STUART	1022
GRAM	1023
GANZ & Ganz 2	1024
GOMEZ – GOMEZ 2	1025
HUMM, HUMM 2, HUMM 1963 AZ MK	1026
TEMPE BUTTE	1027
TEMPE SALT RIVER PROJ. RADIO TOWER	1028
TEMPE BUTTE AIRWAY BEACON	1029
RURAL	1030
TT U 8 (AMS)	1030
BELL BUTTE (AMS)	1031
ANGELO	1032
GUADALUPE RADIO STA.KUPD CENTER MAST	1033
HIGH	1034

NAME	STATION
HIGH	1034
PORT	1035
GOODYEAR	1036
GOODYEAR 2	1036
CHANDLER OLD MUNICIPAL WATER TK.	1048
CHANDLER NEW MUNICIPAL WATER TK.	1049
RNG PHOENIX TX	1050
PHOENIX PRODUCERS COTTON OIL CO WATER TANK	1051
PHOENIX CUDAHY PACKING CO W. T.	1052
PHOENIX RADIO STA KOOL S. MAST	1053
SCOTTSDALE MOTOROLA WATER TANK	1054
GOVERNOR HUNTS TOMB	1055
TEMPE SALT RIVER PROJ. RADIO MAST	1056
MESA MUNICIPAL WATER TANK NO. 1	1057
MESA MUNICIPAL WATER TANK NO 2	1058
MESA MUNICIPAL WATER TANK NO 3	1059
FALFA	1063
MESA	1067
RAY	1070
WHITEM	1076
PHOENIX TUCSON AIRWAY BCN O	1078

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

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

168B

QUAD 331113 STATION 1001
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

1.09

33°15'
111°45'

DESCRIPTION OF ~~RECOVERY~~ STATION

TRAVERSE

NAME OF STATION: PALM STATE: Arizona COUNTY: Maricopa

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

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 2.9 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 3 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 00.00
Phoenix, KTAR Radio Tower	(NW)	approx. 1 1/2 m.		72 13 56.1
11b R.M. No. 1	N	45.26	13.798	91 46 41
desc. TT Q 3 (AMS) (Azimuth Mark)	N	approx. 0.45 mile		93 56 51.8
Phoenix, KOOL Radio Mast (SW of 4)	NE	approx. 1 mile		126 29 41.3
R.M. No. 2	S	54.34	16.562	272 33 56

Detailed description:

Station is located about 4.5 miles east of Phoenix, about 0.45 mile south of East Mc Dowell Road and on the west right-of-way of North 40th Street.

To reach from the junction of East Mc Dowell Road and North 40th Street in the east section of Phoenix, go south on North 40th Street for 0.45 mile to station on right as described.

Station mark, a standard traverse disk stamped PALM 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 46 feet south-southwest of a power and telephone pole with a transformer, 30 feet west of center of North 40th Street, 4 feet southeast of the witness post and 2 feet east of fence.

Reference mark 1, a standard reference disk stamped PALM NO 1 1963, is set in the top of a concrete cylinder which is set flush with the ground. The mark is 41.5 feet north of the witness post, 31 feet west of center of North 40th Street, 7 feet west of power and telephone pole and 1.5 feet east of fence.

Reference mark 2, a standard reference disk stamped PALM NO 2 1963, is set in the top of a concrete cylinder which projects about 1 inch above the ground. The mark is 58 feet south of the witness post, 31 feet west of center of North 40th Street, 7 feet west of a telephone pole and 1.5 feet east of the fence.

Azimuth mark, is a Corps. of Engineers Army Map Service mark. The mark is a bronze disk stamped TT Q3 1948 and is set in a drill hole in the north end of a irrigation gate which is located in the southeast corner of intersection at East Mc Dowell Road and North 40th Street. The mark is 28.5 feet south of the center of East Mc Dowell Road and 28 feet east of the center of North 40th Street.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: PALM
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: 4 1/2 miles east 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, KTAR Radio Tower 1963 (south 1 of 2)(approx. 1 1/2 miles)	NW			0 00 000
RM 1	N	45.26	13.795	19 32 40
Azimuth mark (1970)(0.25 mile)	N			24 08 42.4
RM 2	S	54.36	16.569	200 20 52
RM 1 to RM 2		99.60	(30.358)	

The station mark and reference marks 1 and 2 were recovered as described and found in good condition. The azimuth mark was distroyed during construction along 40th Street. A new azimuth mark was established at this time.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PALM 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.	x 476,251.79	182° 54' 00"	AZIMUTH MARK = TT Q 3 AMS
ZONE: C	y 894,585.21	- 0 02 35	
CODE: 0202		185 19 40	AZIMUTH MARK 1970
STATE:	x		
ZONE:	y		
CODE:			

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 33".1367 NORTH		351.09 METERS
	LONGITUDE: 111 59 40.3226 WEST		1151.9 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = TT Q 3 AMS	THIRD-ORDER	
AZIMUTH MARK 1970	182°51'24".9	
	185 17 04.7	

The azimuth mark is stamped, PALM 1963 1970. It is set in a drill hole in the east curb of 40th Street at the intersection of Belleview Street, 39 feet east of the center line of 40th Street, 27 feet south of the center line of Belleview Street, 7 feet south of the north end of the curb and 2feet southeast of a lamp pole.

FORM 251 (1-22-68) USCOMM-DC 14284-P71

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JUN 1972

USCOMM—NOAA—ASHEVILLE

B 168

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

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1002 -1002A
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: BERT STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1953 DESCRIBED BY: H.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.7 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 ° ′ ″
	NOLE				0 00 00.00
desc	R.M. No. 2	W	57.14	17.416	180 09 04
16b	Azimuth Mark	N	approx. 0.45 mile		268 13 19.31
	1/4 Corner (Phoenix City Survey)	N	approx. 0.45 mile		268 55 36.95
11b	R.M. No. 1	N	53.70	16.368	269 23 19

Detailed description:

The station is located about 5 miles east of the center of Phoenix and about 1/2 mile south of East Mc Dowell Road on the east right-of-way of North 44th Street.

To reach the station from the intersection of East Mc Dowell Road and North 44th Street(azimuth mark in the southwest corner of intersection as described), go south on North 44th Street for 0.45 mile to the station on left.

Station, a standard traverse disk set in the top of a round concrete post which projects 1 inch and stamped BERT 1963. The mark is 22 feet east of center of North 44th Street, 12 feet southwest of center of manhole cover, 4.3 feet north of a power pole and 3.3 feet south of witness post.

Reference mark 1, a standard reference disk set in the top of a round concrete post which projects 1 inch and stamped BERT NO 1 1963. The mark is 58 feet north of a power pole, 50.4 feet north of witness post, 47 feet north-northwest of center of manhole cover and 20 feet east of center of North 44th Street.

Reference mark 2, a standard reference disk set in a drill hole in the west wing-wall of the south end of culvert. The mark is 68 feet west of witness post, 16 feet east of fence and 8 feet south of center of driveway.

Azimuth mark, a standard azimuth disk set in the top of a round concrete post which is flush and stamped BERT 1963. The mark is 46 feet south of the center of East Mc Dowell Road, 28 feet west of center of North 44th Street, 7 feet east of east edge of canal and 2.4 feet southeast of witness post.

1/4 Corner, is a Phoenix City Survey Mark located in the center of the intersection of East Mc Dowell Road and 44th Street. Station is a 3 inch bronze disk set in concrete with punch hole in center about 8 inches below the surface of the street and is under a round metal handhole cover.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: BERT
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☒
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 ° ′ ″
NOLE 1963	E			0 00 00.0
BERT 3 RM 5 1967	NE	68.10	(20.757)	297 12 06.0

Station BERT 1963, reference marks 1 & 2, along with station BERT 2 1966 and its two reference marks were found in good condition. New construction on North 44th Street is now in progress and all of these marks will be destroyed shortly.

The azimuth mark was also visited and found in good condition, but is in construction zone. The mark was not moved at this time. It is not visible from the new station BERT 3 1967.

BERT 3 1967 was set on line between stations BERT 1963 and NOLE 1963. Reference marks 5 and 6 were also set at this time.

NOTE: According to records in the Rockville office no computations or description have been received for station BERT 2 1966.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BERT 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 (FOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 478,746.60 y 894,598.17	179° 03′ 52″ - 0 02 18	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

AZIMUTH MARK IS A BENCH MARK

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27′ 33.2824 NORTH LONGITUDE: 111 59 10.8743 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 179°01'33".7	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BERT 2
STATE: ARIZONA YEAR: 1966 FIRST —ORDER
LOCALITY: ARIZONA HWY. SURVEY, PAPAGO FREEWAY
SOURCE: G-10749 FIELD SKETCH:
(NO OBSERVATIONAL CHECK ON THIS POSITION)

GEODETIC LATITUDE:	33 27 33.27875	ELEVATION:	355.31 METERS 1165.7 FEET
GEODETIC LONGITUDE:	111 59 10.57030		

STATE COORDINATES (Feet)

STATE & ZONE	CODE	x	y	Φ (OR Δα) ANGLE
ARIZ. C	0202	478,772.35	894,597.78	- 0 02 18

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
NOLE	270 48 14.2	270 50 32	0202
POSITION DETERMINED BY TRAVERSE FROM STATION BERT 3			

JUN 1972

USCOMM—NOAA—ASHEVILLE

168 B

MARCH 1972 **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 331113 ARIZ STATION 1002B
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BERT 3 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.

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	DIRECTIONS ° ' "
	NOLE 1963	E			0 00 00.0
11b	BERT 3 RM 6 1967	W			173 00 38.4
1b	BERT 1963	W	28.85	(8.793)	180 00 02.2
11b	BERT 3 RM 5 1967	N	60.61	(18.474)	272 09 26.9

Detailed description:

The station is located about 5 miles east of the center of Phoenix and about 0.5 mile south of the intersection of East McDowell Road and North 44th Street aon the east right-of-way of North 44th Street.

To reach the station from the intersection of East McDowell Road and North 44th Street, go south on North 44th Street for 0.45 mile to the station on left as described.

The station mark is a standard disk stamped " BERT 3 RESET 1967 BM " and is set in the top of a circular concrete monument flush with the ground. It is 50.85 feet east of the center line of North 44th Street, 13.2 feet north of the middle palm tree in a row of five and is 6.08 feet north-northeast of a metal witness post.

Reference mark 5 is a standard reference mark disk stamped " BERT 3 NO 5 1967 " and is set in the top of a round concrete monument flush with the ground. It is located 54.29 feet east of the center line of North 44th Street and 11.70 feet north-northeast of the second palm tree from the north in a row of five.

Reference mark 6 is a standard reference mark disk stamped " BERT 3 NO 6 1967 " and is set in the top of a round concrete monument flush with the ground. It is 81.45 feet west of the center line of North 44th Street, 24.35 feet south of the center line of a private road leading west off North 44th Street and is directly across the street from the station mark.

No azimuth mark was set.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: BERT 3
ESTABLISHED BY: Ariz. HWY Dept. YEAR: 1967 STATE: Arizona BENCH MARK ALSO ☒
RECOVERED BY:* L.F. Smith YEAR: 1971 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 ° ' "
NOLE 1963				0 00 00.0
Phoenix, Cudahy Packing Co. Water Tank (1 mile southeast)				64 12 10.5
Phoenix, Producters Cotton Oil Co. Water Tank (1 mile SE)				65 40 31.8
RM 6 (BERT 3)	W	not measured		173 00 53
BERT 2 (traverse)	W	(3.089)	0.9417	179 52 57
RM 1 (BERT 2 1966)	N	60.37	18.400	266 50 29
RM 5 (BERT 3)	N	60.605	18.472	272 09 33

The station mark, reference marks 5 and 6, BERT 2 1966 and BERT 2 reference mark 1 were recovered and found in good condition. The station was occupied at this time and a traverse was made to BERT 2 1966.

The station is along the east side of 44th Street, 0.45 mile south of East McDowell Road.

ESSA FORM 76-31A
(3-70)

ADJUSTED HORIZONTAL CONTROL DATA

OBS BY A H D

NAME OF STATION: BERT 3

STATE ARIZONA YEAR: 1967 FIRST —ORDER

LOCALITY ARIZONA HWY SURVEY, PAPAGO FREEWAY

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

GEODETIC LATITUDE	33 27 33.27839	ELEVATION:	355.34 METERS
GEODETIC LONGITUDE	111 59 10.53384		1165.8 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ C	0202	478,775.44	894,597.74	- 0 02 18

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
NOLE	270 48 15.4	270 50 33	0202

POSITION DETERMINED BY TRAVERSE FROM STATION BERT

The station mark is a standard disk stamped, BERT 3 BM RESET 1967. It is set in the top of a concrete monument which is about flush with the ground surface. It is 13 feet north of the 3rd 1 of 5 palm trees and 3 1/2 feet east of the sidewalk.

Reference mark 5 is a standard disk stamped, BERT 3 NO 5 1967. It is set in the top of a concrete monument which is about flush with the ground surface. It is 12 feet north of the 4th 1 of 5 palm trees and 7 feet east of the sidewalk.

Reference mark 6 is a standard disk stamped, BERT 3 NO 6 1967. It is set in the top of a concrete monument which projects about 4 inches. It is 81 feet west of the center line of 44th Street and 24 feet south of a private driveway.

BERT 2 1966 reference mark 1 is a standard disk stamped, BERT 2 NO 1 1966. It is set in the top of a concrete monument which is flush with the ground surface. It is 13 feet north of the 4th palm tree and 1/2 foot east of the sidewalk.

BERT 2 1966 is a standard disk which is set in the top of a concrete monument. It is 13 feet north of the 3rd palm tree and 1/2 foot east of the sidewalk.

Note; The disk will be removed from BERT 2 1966 in the near future.

FILE COPY

JUN 1972

USCOMM—NOAA—ASHEVILLE

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

168c

QUAD 331113 STATION 1003
ARI2
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33° 15'
111° 45'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: NOLE STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C. A. Annis YEAR: 1963 DESCRIBED BY: G. A. Jahn

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 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†
	BERT				° ' "
desc.	Azimuth Mark	(N)	Approx. 0.3 mile		91 22 10.20
11b	R. M. No. 1	(E)	37.58	11.454	179 59 08
11b	R. M. No. 2	(S)	36.53	11.135	269 20 23

Detailed description:

The station is located about 5 1/2 miles northeast of the center of Phoenix, 1/2 mile south of East Mc Dowell Road,,on the west right-of-way of North 46th Street, and at the south edge of the Lone Palm Trailer Park.

To reach the station from the intersection of East Mc Dowell Road and North 46th Street, go south on North 46th Street for 0.15 mile to azimuth mark on right as described, continue south on North 46th Street for 0.3 mile to station on right 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 NOLE 1963. The mark is 20 feet west of the center of North 46th Street, 19 feet south of the center of a drive, 6 feet south-southeast of a fence corner, 2 feet east of a fence, and 1.4 feet southeast of a witness post.

Reference mark 1, a standerd reference disk set in the top of a round concrete post which projects about 2 inches and is stamped NOLE NO 1 1963. The mark is 51 feet north of a power pole, 39.7 feet east of a witness post, and 17 feet east of the center of North 46th Street.

Reference Mark 2, a standard reference disk set in the top of a round concrete post which projects 1 inch and is stamped NOLE NO 2 1963. The mark is 42 feet west of a power pole, 39.5 feet south of a witness post, 20 feet west of the center of North 46th Street, and 2.5 feet east of a fence.

Azimuth mark, a standard azimuth disk set in a drill hole in the southwest corner of the headwall of the west gate of an underground irrigation duct and is stamped NOLE 1963. The mark is 32 feet west of the center of North 46th Street, 16 feet west of a water hydrant, and 5 feet southeast of a fence corner.

*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: NOLE 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 480,033.46 y 894,579.24	182° 12' 44" - 0 02 10	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 33".1034 NORTH LONGITUDE: 111 58 55.6840 WEST		358.35 METERS 1175.7 FEET Az. Mk.=B.M.

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 182°10'33".5	

FORM 281 (7-28-66) USCOMM-DC 10251-P61

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AUG 1971

USCOMM—NOAA—ASHEVILLE

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.
REVISED APR 1971

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

168b

QUAD 331113 STATION 1004
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: PLAD 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 1.3 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 °	'	"
	SEAM				0	00	00.00
desc	Azimuth Mark	SW	Approx. 0.15 mile		119	48	12.19
11b	R. M. No. 2	W	42.94	13.089	178	32	10
11b	R. M. No. 1	E	37.76	11.509	359	04	50

Detailed description:

The station is located about 6 miles east-northeast of the center of Phoenix, 1/2 mile south of East McDowell Road, about 250 feet east of North 48th Street, and on the south side of East Roosevelt Street.

Station mark, a standard traverse disk set in the top of a round concrete post which projects about 1 inch from the ground and is stamped PLAD 1963. The mark is 55 feet southeast of the center of a gate, 24 feet east of a lone tree, 23 feet south of the center of East Roosevelt Street, and 3.4 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 1 inch from the ground and is stamped PLAD NO 1 1963. The mark is 49 feet south-southwest of power pole number 4830, 40.7 feet east of the witness post, and 23 feet south of the center of East Roosevelt Street.

Reference mark 2, a standard reference disk set in the top of a round concrete post which projects about 2 inches from the ground and is stamped PLAD NO 2 1963. The mark is 50 feet south-southwest of the center of a gate, 40 feet west of a witness post, 25 feet south of the center of East Roosevelt Street, and 18 feet west of a lone tree.

Azimuth mark, a standard azimuth disk set in a drill hole in the west curb of North 48th Street and is stamped PLAD 1963. The mark is 35 feet east of the northeast corner of house number 814, 27 feet west of the center of North 48th Street, and 6 feet south of the center of a drive.

To reach the azimuth from the station, go west on East Roosevelt Street for 0.05 mile to North 48th Street, turn left and go south on North 48th Street for 0.1 mile to azimuth mark on the right as described.

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

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PLAD Quad. 331113

ESTABLISHED BY: C. A. Annis YEAR: 1963 STATE: Arizona

RECOVERED BY:* Arizona Highway Department YEAR: 1966 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 1, reference mark 2, and the azimuth mark were recovered by the Arizona State Highway Department and found to be in good condition. It was determined by the highway department that the station mark and reference marks 1 and 2 would soon be destroyed by Interstate Highway construction, so they established PLAD 2, with new reference marks, and destroyed all of the original marks with the exception of the azimuth mark. The azimuth mark was incorporated into the new station.

The original station mark and reference mark 1 and 2 disks were returned to the Los Angeles Field office by the Arizona State Highway Department.

J. L. Gummow

*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'
111°45'

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PLAD 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 (HOR ∠ at) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 481,710.57 y 894,238.01	29° 36' 48" - 0 01 59	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 29".7371 NORTH LONGITUDE: 111 58 35.8852 WEST		Az. Mk.= METERS B.M. FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 29°34'49".4	

FORM 251 (7-28-61) USCOMM-DC 15281-P61

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AUG 1971

USCOMM—NOAA—ASHEVILLE

168 RP

ARIZONA

APR 1971

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

33° 15'
111° 45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1004A
ARIZ
LATITUDE 33 °00' TO 33 °30'
LONGITUDE 111 °30' TO 112 °00'
DIAGRAM NI 12-8 MESA

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 526
Rev. Aug. 1946

DESCRIPTION OF TRIANGULATION STATION

Quad. 331113

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

CHIEF OF PARTY: P. A. Weber YEAR: 1966 Described by: J.L.G.

NOTE,*	HEIGHT OF TELESCOPE ABOVE STATION MARK 1 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	
7a			

	OBJECT	BEARING	DISTANCE feet	DISTANCE meters	DIRECTION‡ ° ′ ″
Desc	PLAD Azimuth Mark, 1963	SW	0.15	mile	0 00 00.0
11b	R.M. 2	WNW	35.665	(10.871)	60 27 40
11b	R.M. 1	ESE	45.120	(13.753)	240 21 29

Detailed description:

The station is located 6 miles east-northeast of the center of Phoenix, 1/2 mile south of East McDowell Road, about 250 feet east of North 48th Street, and on the south side of East Roosevelt Street.

The station mark is a standard disk, stamped PLAD 2 1966, set in the top of a cylindrical concrete post which is 10 inches in diameter and projects 4 inches above the surface of the ground. It is 5 feet east of a metal witness post with sign attached.

Reference mark 1, a standard disk stamped PLAD 2 NO 1 1966, is set in the top of a cylindrical concrete monument which is 10 inches in diameter and projects 3 inches above the surface of the ground.

Reference mark 2, a standard disk stamped PLAD 2 NO 2 1966, is set in the top of a cylindrical concrete monument which is 10 inches in diameter and projects 3 inches above the surface of the ground.

The azimuth mark is a standard disk, stamped PLAD 1963, cemented in a drill hole in the west curb of North 48th Street. It is 35 feet east of the northeast corner of house number 814, 27 feet west of the center of North 48th Street, and 6 feet south of the center of a drive.

NOTE: This station was established by the Arizona State Highway Department and the above description was written from their notes.

*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.

16-46302-1 U. S. GOVERNMENT PRINTING OFFICE

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION PLAD 2 OBS BY ARIZ H D

STATE ARIZONA YEAR 1966 FIRST —ORDER

LOCALITY ARIZONA HWY SURVEY PAPAGO FREEWAY

SOURCE G-10749 FIELD SKETCH
NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE	33 ° 27 ′ 29.61201 ″	ELEVATION	361.53 METERS
GEODETIC LONGITUDE	111 58 35.96987	NO CHECK	1186.1 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	β IOR△ 61 ANGLE*
ARIZ. C.	0202	481,703.39	894,225.37	- 0 ° 01 ′ 59 ″

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE β IOR△ 61 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From South)	PLANE AZIMUTH* (From South)	CODE
AZIMUTH MARK	29 ° 34 ′ 49.4 ″	29 ° 36 ′ 49 ″	0202

POSITION DETERMINED BY TRAVERSE FROM STATION PLAD

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AZ 168 B

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 331113 STATION 1005
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 15
111 45

FORM 525
(9-10-58)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: SEAM STATE: Arizona COUNTY: Maricopa

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

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 3.3 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 3 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 1962				00 00 00.00
11b	R.M. No. 1	E	41.95	12.786	33 33 00
	Phoenix, KOOL Radio Mast				
	(S† of Four)	NW	approx.	1 1/2 m.	253 20 12.2
desc	Azimuth Mark	NNW	approx.	0.3 mile	291 18 16.02
	R.M. No. 2	NNW	45.19	13.772	298 34 24

Detailed description:

Station is located about 6 miles east of the center of Phoenix, between North 52nd Street and North 53rd Street and on East Roosevelt Street.

To reach from the junction of East Mc Dowell Road and North 52nd Street in the east section of Phoenix, go south on North 52nd Street for 0.2 mile to the azimuth mark on left as described, continue south on North 52nd Street for 0.3 mile to East Roosevelt Street, turn left and go east on East Roosevelt Street for 0.1 mile to the station on left as described.

Station mark, is a standard traverse disk stamped SEAM 1963, is set in a drill hole in bedrock about 6 inches below the surface of the ground. The mark is 175.5 feet west-northwest of North 53rd Street and East Roosevelt Street sign post, 111 feet east-northeast of power pole with transformer No. 114, 39 feet north-northeast of power pole, 22.5 feet north of center of East Roosevelt Street and 4.7 feet north of witness post.

Reference mark 1, a standard reference disk stamped SEAM NO 1 1963, is set in the top of a concrete cylinder which projects about 3 inches. The mark is 42.4 feet east of the witness post, 24 feet north of center of East Roosevelt Street and 5.5 feet north of fence.

Reference mark 2, a standard reference disk stamped SEAM 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 64 feet north of the center of East Roosevelt Street and 49.5 feet north of the witness post.

Azimuth Mark, is a standard azimuth disk stamped SEAM 1963, is set in a drill hole in the east curb of North 52nd Street. The mark is 102.5 feet east of the east side of PHEMCO Engineering and Manufacturing Company and 4 feet south-southwest of power pole No. 21.

The distance between Reference Mark No. 1 and Reference Mark No. 2 is 64.2 feet.

RECOVERY NOTE, TRIANGULATION STATION

QUAD 331113

R

NAME OF STATION: SEAM
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK(S) ALSO [X]
RECOVERED BY: L.P. Smith YEAR: 1970 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 6 miles east of Phoenix

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

All marks were were recovered and found in good condition. The route to the station is adequate.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SEAM 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 484,441.37 y 894,247.06	166° 15' 31" - 0 01 41	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 29".8411 NORTH LONGITUDE: 111 58 03.6514 WEST		372.75 METERS 1222.9 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 166°13'49".9	

FORM 281 (7-23-58) USCOMM-DC 16281-P61

AZ 168
B

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COAST AND GEODETIC SURVEY
WASHINGTON D.C.
Revised AUG 1974

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1006
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 15
111 45

FORM 525 (8-15-68)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: GOLF STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: H.B. Ellis

NOTE: * HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS. † HEIGHT OF LIGHT ABOVE STATION MARK 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
PAPAGO 1962				0 00 00.00
Governor Hunt's Tomb 1936	SE			68 54 02.1
Phoenix, Cudahy Packing Co. Water Tank	SW	approx. 1.0 mile		173 29 33.5
Center Section (Phoenix City Survey)	SW	approx. 0.5 mile		184 30 50.4
11b R.M. No. 2	W	26.30	8.017	206 47 42
Azimuth Mark	W	approx. 0.4 mile		215 24 00.52
11b R.M. No. 1	NE	40.32	12.289	332 14 31

Detailed description:

The station is located about 7 miles east of the center of Phoenix, about 1/2 mile south of East Mc Dowell Road on a small hill northwest of the northwest corner of a golf course in Papago Park.

To reach the station from the intersection of East Mc Dowell Road and North 52nd Street, go south on North 52nd Street for 0.2 mile to azimuth mark on left, continue south for 0.1 mile to a oiled road left, turn left, go northeast and east on oiled road for 0.4 mile to where oiled road turns right, continue straight ahead for 0.05 mile to the station on left.

Station, a standard traverse disk set in the top of a round concrete post which projects 1 inch and stamped GOLF 1963. The mark is 104 feet east-northeast of oiled road, 5.5 feet north of witness post and fence and 4 feet west of a power pole.

Reference mark 1, a standard reference disk set in the top of a round concrete post which projects 1 inch and stamped GOLF NO 1 1963. The mark is 45.7 feet north-northeast of witness post, 39.5 feet north-northeast of a power pole and 43 feet north of fence.

Reference mark 2, a standard reference disk set in the top of a round concrete post which projects 1 inch and stamped GOLF NO 2 1963. The mark is 30.5 feet west of a power pole, 25 feet west of witness post and 9.5 feet north of fence.

Azimuth mark, a standard azimuth disk set in a drill hole in the east curb of North 52nd Street and stamped GOLF 1963. The mark is 23.5 feet north of power pole number 22, 23 feet east of center of North 52nd Street and 7.5 feet west of fence.

Center Section, a City of Phoenix Survey Point located in the intersection of East Roosevelt Street and North 52nd Street, is a small rock set in asphalt in center of a white cross and four nails. The mark is 47.8 feet northwest of power pole number 115, 33.6 feet southwest of street E. Roosevelt and N. 52nd and 3.1 feet east of the west edge of blacktop.

The distance from R.M. No. 1 to R.M. No. 2 is 59.58 feet or 18.162 meters.

RECOVERY NOTE, TRIANGULATION STATION 331113 R

NAME OF STATION: GOLF
ESTABLISHED BY: C.A. Annis YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY: * Charles Novak YEAR: 1974 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 7 miles east 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, Producers Cotton Oil Co. Water Tank 1963				0 00 00.0
Phoenix, Cudahy Packing Co. Water Tank 1963				6 57 25.8
RM 2	W	26.31	8.020	35 11 03
RM 3 0.4 mile	W			42 10 56.0
RM 1	NE	40.32	12.289	160 42 16

The station mark and reference marks 1 and 2 were recovered and found in good condition. The azimuth mark was destroyed when curbing was removed for a new entrance to the armory and reference mark 3 was established at this time.

The station mark is a standard disk stamped, GOLF 1963. It is set in top of a 12 inch concrete monument which projects about 2 inches. It is 24 feet north of the center of the road, 6 feet north of witness post and 4 feet west of power pole number 535.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GOLF 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 486,330.70 y 895,589.50	90° 40' 22" - 0 01 29 88 59 24	AZIMUTH MARK AZIMUTH MARK RM 3
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 43".1325 NORTH LONGITUDE: 111 57 41.3569 WEST		387.15 METERS 1270.2 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 90°38'53".4	
AZIMUTH MARK RM 3	88 57 54.7	

Reference mark 1 is a standard disk stamped, GOLF NO 1 1963. It is set in top of a 12 inch concrete monument which projects about 1 1/2 inches. It is 45 feet north of the witness post, 61 feet north of the center of the road and about the same elevation as the station.

Reference mark 2 is a standard disk stamped, GOLF NO 2 1963. It is set in top of a 12 inch concrete monument which projects about 1 1/2 inches. It is 25 feet west of the witness post, 22 feet north of the center of the road and about the same elevation as the station.

Reference mark 3 is a standard disk stamped, GOLF 1963 NO 3 1974. It is set in a drill hole in the curbing along the west side of 52nd Street. At an intersection with a traffic light. The cross street leading to the National Guard Armory to the east and to a Motorola plant west. The mark in in the southwest corner of the intersection, 6 feet south of a crosswalk, 4 feet east of a fire hydrant and in the same area as the 1963 azimuth mark.

The route to the station remains unchanged.

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JUN 2 1975

ARIZONA 168 B

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 331113 STATION 1007
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

ELEV=422.06

33° 15'
111° 45'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: PAPAGO STATE: Arizona COUNTY: Maricopa

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

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS.1 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 ° ' "
	BELL BUTTE (AMS)				00 00 00
12a	R. M. No. 1	SSW	18.47	5.630	19 02 34
	Phoenix, Producers Cotton Oil Co., Water Tank	SW	approx.	2 miles	39 10 21.0
	Phoenix, Cudahy Packing Co., Water Tank	SW	approx.	2 miles	44 25 51.6
	Azimuth Mark (Corps of Eng.)	W	approx.	0.25 mile	70 03 10.6
12a	R. M. No. 2	WNW	32.09	9.781	89 03 06

Detailed description:

The station is located about 7 miles east-northeast of the center of Phoenix, at the north edge of Papago Park, on the south side of the fence of the Phoenix National Guard and is on a small rocky knoll on the north side of East McDowell Road.

To reach the station from the junction of East McDowell Road and North Central Avenue in Phoenix, go east on East McDowell Road for 5.85 mile to 52nd Street, continue east on East McDowell Road for 0.5 mile to the Azimuth Mark (Corps of Eng.) on right. Continue east for 0.25 mile to the station on top of a small rocky knoll on the left.

Station mark, a standard triangulation station disk set in a drill hole in out cropping bedrock and is stamped PAPAGO 1962. The mark is approximately 150 feet north of McDowell Road and 11.4 feet south of fence.

Reference mark 1, a standard reference disk set in a drill hole in outcropping bedrock which is about 15 feet below the station, the disk is stamped PAPAGO NO 1 1962. The mark is 27 feet south of fence.

Reference mark 2, a standard reference disk set in a drill hole in outcropping bedrock which is about 7 feet lower than the station and is stamped PAPAGO NO 2 1962. The mark is 3 feet south of fence.

Azimuth mark, a U.S. Corps of Engineers bronze disk set in top of a round concrete post which projects about 2 inches and is s tamped TT S3 1948. The mark is 86 feet south of McDowell Road and is encircled by white painted rocks.

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

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PAPAGO
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:

The station mark, azimuth mark, reference marks number 1 and 2 were recovered as described and found to be in good condition.

The description of to reach the station was found to be adequate.

Described by Richard S. Slaght

FILE COPY
JAN 1967

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PAPAGO YEAR: 1962, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (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 (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 488,423.03 y 897,039.77	79° 46' 25" - 0 01 15	AZIMUTH MARK = TT S 3 AMS
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 57".4904 NORTH			421.7 METERS
	LONGITUDE: 111 57 16.6646 WEST			1384 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = TT S 3 AMS	THIRD-ORDER 79°45'09".8	

FORM 251 (7-23-63)

USCOMM-DC 1828-P63

USCOMM—ESSA—ASHEVILLE

168

B

ARIZONA

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33°15'
111°45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1008
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

-1k

NAME OF STATION: GUN STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: H.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.4 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 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°	DIRECTION'	DIRECTION"
	PAPAGO 1962				0	00'	00.00
desc	R.M. No. 1	E	17.47	5.327	59	37	23
	Governor Hunt's Tomb 1936	SSE	approx. 1.0 mile		177	42	03.5
	Phoenix, KTAR Radio Tower(south 1 of 2	NW	approx. 3.0 miles		322	12	55.8
desc	R.M. No. 2	NW	24.81	7.563	335	24	21

Detailed description:

The station is located about 7 1/2 miles east of the center of Phoenix, about 2 1/2 miles northwest of Tempe, about 1 1/2 miles southwest of Scottsdale and about 1/2 mile south of East Mc Dowell Road on a small knoll in Papago Park.

To reach the station from the intersection of East Mc Dowell Road and 52nd Street; go east on East Mc Dowell Road for 0.8 mile to a track road right and station Papago 1962 on left, turn right, go south and west for 0.15 mile to fork, take left fork, go south and east for 0.15 mile to a crossroad, continue south for 0.1 mile to station on right.

Station, a standard traverse disk set in the top of a round concrete post which projects 1 inch and stamped GUN 1963. The mark is 22 feet west of center of track road and 4.8 feet east of witness post.

Reference mark 1, a standard reference disk set in a drill hole in outcropping rock which projects 1 inch and stamped GUN NO 1 1963. The mark is 27.1 feet northeast of witness post and 7 feet west of center of track road.

Reference mark 2, a standard reference disk set in a drill hole in outcropping bedrock which is flush and stamped GUN NO 2 1963. The mark is 31 feet west of center of track road and 23.3 feet north-northwest of witness post.

Station PAPAGO 1962 to be used for azimuth mark is approximately 0.5 mile north
The distance from R.M. No. 1 to R.M. No. 2 is 28.84 or 8.790 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.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GUN 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.	x 489,379.16	148° 35' 17"	AZIMUTH MARK Δ PAPAGO
ZONE: C	y 895,474.11	- 0 01 09	
CODE: 0202			
STATE:	x		
ZONE:	y		
CODE:			

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 42".0023 NORTH		BENCH MARK METERS / FEET
	LONGITUDE: 111 57 05.3714 WEST		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
PAPAGO	SECOND-ORDER 148°34'08".2	

FORM 251 (7-52-60) USCOMM-DC 1851-P61

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COAST AND GEODETIC SURVEY
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HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

168 B

QUAD 331113 STATION 1009
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: BATON STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.L. Wright 1966.

HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS.‡ HEIGHT OF LIGHT ABOVE STATION MARK 1 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†	
	GUN (V.G.)				° 00' 00.00"	
11b	Reference Mark 2	NW	35.35	10.773	33 51 45.8	
16b	Azimuth Mark	N	Approx.	0.25 Mi.	101 08 25.74	
11b	Reference Mark 1	NE	32.83	10.007	162 14 27.2	
	Scottsdale, Motorola Water Tank	E			177 32 34.5	

Detailed description:

The station is located in the north central section of Desert Botanical Gardens, 0.3 mile south of East McDowell Road, 2.5 miles south-southwest of Scottsdale and on property owned by the Desert Botanical Gardens managed by Mr. W. Hubert Earle.

To reach the station from the intersection of Scottsdale Road and East McDowell Road, go west on East McDowell Road for 0.5 mile to the intersection of North 68 th Street, continue west on East McDowell Road for 0.5 mile to the entrance of Botanical Gardens on the left and the azimuth mark on the left, turn left through the park entrance and go south on the park road for 0.3 mile to the corner of a parking lot, turn left and go about 130 feet on a narrow road between stones to the corner of another parking lot, bear left at the corner of the parking on a dim track road for about 80 feet to the station on the left as described.

The station is a standard traverse disk stamped BATON 1963, set in top of a 12-inch concrete cylinder which projects 2 inches above the ground surface. It is 3.1 feet north-northeast of a standard metal witness post and marker, 8.5 feet north-northwest of the approximate center of the dim track road, 53.0 feet northeast of north edge of parking lot and 154 paces east-northeast of the northeast corner of park office.

Reference mark 1 is a standard disk stamped BATON NO 1 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 12.0 feet northwest of the approximate center of the dim track road, 35.0 feet northeast of the witness post and 80.0 feet north of the north edge of the parking lot.

Reference mark 2 is a standard disk stamped BATON NO 2 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 35.0 feet northwest of the approximate center of the dim track road, 36.1 feet northwest of the witness post and 53.0 feet north of the north edge of the parking lot.

The azimuth mark is a standard disk stamped BATON 1963, set in top of a 12-inch concrete cylinder which projects 2 inches above the ground surface. It is 2.5 feet north of an east and west fence line, 2.8 feet north-northeast of a standard metal witness post and marker, 62.5 feet east of the approximate center of the park entrance and 45 paces south of the centerline of East McDowell 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.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BATON 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 491,824.24 y 895,471.97	191° 11' 25" - 0 00 53	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 41".9883 NORTH LONGITUDE: 111 56 36.5090 WEST			BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 191°10'32".4	

FORM 251 17-23-011 USCOMM-DC 14291-P61

USCOMM—ESSA—ASHEVILLE

168

B

ARIZONA

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

33°15'
111°45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1010
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: CURB STATE: Arizona COUNTY: Maricopa

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

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.66 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‡
	BATON				00 00 00.00
desc.	R.M. No. 2	W	77.03	23.479	00 27 25
desc.	Azimuth Mark	N	approx.	0.25 mile	89 57 28.49
desc.	R.M. NO. 1	S	41.55	12.667	273 26 36
	Tempe, S.R.P. Radio Tower	S	approx.	3 miles	273 34 07.3

Detailed description:

Station is located about 2 miles south-southwest of Scottsdale, about 1/4 mile south of East Mc Dowell Road and in residential area at the intersection of East Bellview Road and North 68th Street.

To reach from Scottsdale Road and East Mc Dowell Road in Scottsdale, go west on East Mc Dowell Road for 0.5 mile to North 68th Street, (Azimuth mark is located in the southwest corner of intersection as described), turn left and go south on North 68th Street for 0.25 mile to East Belleview Street and station on left as described.

Station mark, a standard traverse disk stamped CURB 1963, is set in a drill hole in the northeast street curb of intersection of North 68th Street and East Belleview Street. The mark is 34.4 feet northeast of the center of intersection.

Reference mark 1, a standard reference disk stamped CURB NO 1 1963, is set in a drill hole in the southeast street curb of intersection of North 68th Street and East Belleview Street. The mark is 42.5 feet southeast of the center of intersection.

Reference mark 2, a standard reference disk stamped CURB NO 2 1963, is set in a drill hole in the northwest street curb of intersection at North 68th Street and East Belleview Street. The mark is 43.2 feet northwest of center of intersection.

Azimuth mark, a standard azimuth disk stamped CURB 1963, is set in a drill hole in the west street curb of North 68th Street. The mark is 151 feet south of center of East Mc Dowell 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.

C.B.W.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CURB 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 Δal ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 494,685.74 y 895,578.20	177° 49' 55" - 0 00 35	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 43".0454 NORTH LONGITUDE: 111 56 02.7312 WEST		BENCH MARK METERS / FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 177°49'20".2	

FORM 261 (7-28-61) USCOMM-DC 19317-P61

FILE COPY

JAN 1967

AZ 168

JULY 1966

U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
Revised DEC 1974

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1011
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 15
111 45

FORM 525
10-15-591

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: SCOTT 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.

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
HEAT				00 00 00.00
Scottsdale Motorola Water Tank	E	approx 1 1/2 m.		02 26 09.1
desc. R.M. No. 2	W	61.30	18.684	187 18 25
desc. Azimuth Mark	N	approx. 0.25 m.		281 32 01.60
desc. R.M. No. 1	N	59.69	18.194	283 33 00

Detailed description:

Station is located about 2 1/4 miles south of Scottsdale and on the southwest corner of Scottsdale Road and Belleview Street.

To reach from Scottsdale Road and East Mc Dowell Road in Scottsdale, go south on Scottsdale Road for 0.25 mile to Belleview Street and station on right.

Station mark, a standard traverse disk stamped SCOTT 1963, is set in a drill hole in the southwest street curb at Scottsdale Road and Belleview Street. The mark is 42.5 feet west of center of Scottsdale Road, 23 feet south of the center of Belleview Road and 20.5 feet east of a power pole No. 1424.

Reference mark 1, a standard reference disk stamped SCOTT NO 1 1963, is set in a drill hole in the northwest street curb at the intersection of Scottsdale Road and Belleview Street. The mark is 36 feet north of the center of Belleview Street, 35.5 feet west of center of Scottsdale Road and 5 feet south of a power pole.

Reference mark 2, a standard refernce disk stamped SCOTT NO 2 1963, is set in a drill hole in the south street curb of Belleview Street. The mark is 64 feet north of the northeast corner of Richfield Service Station Building, 41.5 feet west of power pole No. 1424 and 20 feet south of center of Belleview Street.

Azimuth mark, a standard azimuth disk stamped SCOTT 1963, is set is a drill hole in the southeast street curb of East Mc Dowell Road and Scottsdale Road. The mark is 72 feet east of the center of Scottsdale Road and 33.5 feet south of center of East Mc Dowell Road.

To reach the azimuth mark from the station, go north on Scottsdale Road for 0.25 mile to East Mc Dowell Road and azimuth mark in southeast corner of intersection as described.

✓ R

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION SCOTT
ESTABLISHED BY: Ariz. Hwy. Dept. YEAR 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY:* YEAR: 1971 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
SCOTT Azimuth Mark 1963				0 00 00.00
SCOTT 2				265 07 17.4
CURB 1963				263 41 12.0

This station and reference marks and azimuth mark were recovered in good condition, in 1968. The widening of Scottsdale Road will destroy the station and reference marks.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SCOTT 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 (IOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 497,237.58 y 895,598.91	185° 51' 06" - 0 00 18	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 43".2536 NORTH LONGITUDE: 111 55 32.6085 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 185°50'48".3	

FORM 261 (7-23-591) USCOMM-DC 14261-P61

USCOMM—NOAA—ASHEVILLE

AZ 168

DECEMBER 1974
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 331113 STATION 1011
ARIZ
LATITUDE 33°00′ TO 33°30′
LONGITUDE 111°30′ TO 112°00′
DIAGRAM NI 12-8 MESA

33 15
111 45

NOAA FORM 76-39
(12-74)
(FORMERLY C&GS FORM 525)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL GEODETIC NETWORKS

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION SCOTT 2 STATE Arizona COUNTY: Maricopa
NEAREST TOWN: Scottsdale QUADRANGLE NO. 331113
CHIEF OF PARTY Arizona Hwy. Dept. YEAR: 1960 DESCRIBED BY:

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 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	DIRECTIONS ° ′ ″
CURB 1963				0 00 00.00
SCOTT 2 Azimuth Mark				0 59 39.3
SCOTT Azimuth Mk. 1963				99 45 24.0
R.M. 4	NE	39.54	12.052	132 27 27
SCOTT 1963, trav.		78.33	23.875	181 28 52.4
R.M. 3	W	58.47	17.822	359 01 53

Detailed description

Station is located about 2½ miles south of Scottsdale and on the southwest corner of Scottsdale Rd. and Belleview Street. To reach from Scottsdale Rd. and East McDowell Rd. in Scottsdale, go south on Scottsdale Rd. for 0.25 mile to Belleview Street, turn right on Belleview and station on left.

Station mark, a standard disk stamped SCOTT 2 1968 is set in a drill hole in the southwest street curb at Scottsdale Road and Belleview Street. The mark is 121.1 feet west of centerline of Scottsdale Road, 19.7 feet south of center of Belleview Street, 58.5 feet west-northwest of power pole No. 1424, and 17.35 feet west of edge of first driveway leading into a Richfield Service station on Belleview.

Reference mark 3, a standard reference disk stamped SCOTT 2 No. 3 1968, is set in a drill hole in the south street curb of Belleview Street. The mark is 136.80 feet west of centerline of No. Scottsdale Rd. 58.47 feet west along curb from SCOTT 2 1968 and 10.6 feet northeast of a SRP power pole.

Reference mark 4, a standard reference disk stamped SCOTT 2 No. 4 1968, is set in a drill hole in the north street curb of Belleview Street. The mark is 39.54 feet north of SCOTT 2 1968, 19.84 feet north of center of Belleview Street, and 56.3 feet east of a SRP power pole.

Azimuth mark, a standard azimuth disk stamped SCOTT 2 1968 is set in a drill hole in the Northeast street curb of East Belleview and North 70th Street. The mark is 29.45 feet southwest of corner of house, 13.35 feet south of a fire hydrant, 48.60 feet north of a vertical irrigation box which is located on southeast corner of East Belleview, and 83.30 feet northeast of a street light pole which is located on southwest corner of East Belleview Street.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: SCOTT 2
ESTABLISHED BY: YEAR: 1968 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY:* L.F. Smith YEAR: 1970 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 1/4 miles south of Scotsdale
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 ° ′ ″
CURB 1963				0 00 00.0
Azimuth mark (1968)(approx. 0.25 mile west)				0 59 41.4
RM 4	N			87 27 49
Azimuth mark No. 2 (approx. 0.25 mile north)				99 30 26.9
Scottsdale, Motorola Water Tank (stand pipe)1963 (1 1/2 miles east)				177 18 43.2
Stem (old RM 2)	E	17.025	5.190	179 07 50
RM 3	W	58.47	17.822	359 01 53

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION SCOTT 2 Obs by AZHD
STATE Arizona YEAR 1968 First ORDER
LOCALITY
SOURCE G-10749 FIELD SKETCH

GEODETIC LATITUDE	33 °27 ′43.″26665	ELEVATION	373.75 METERS
GEODETIC LONGITUDE	111 55 33.53151		1226.2 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	φ (OR △ α) ANGLE ° ′ ″
Ariz. C	0202	497,159.39	895,600.24	- 0 00 18

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

TO STATION OR OBJECT	GEODETIC AZIMUTH (From South) ° ′ ″	PLANE AZIMUTH* (From South) ° ′ ″	CODE
AZIMUTH MARK	90 28 43.8	90 29 02	0202

The station mark, reference marks 3 and 4 and the 1968 azimuth mark were recovered and found in good condition. A number 2 azimuth mark was established at this time.

The station mark is a standard disk stamped, SCOTT 2 1968. It is set in a drill hole in the south curb of East Belleview Street, 57.3 feet west of a stop sign on the southwest corner of East Belleview Street and North Scottsdale Road and 12 1/2 feet northeast of power pole number FR-70 WP-G 47-40.

Reference mark 3 is a standard disk stamped, SCOTT 2 NO 3 1968. It is set in a drill hole in the south curb of East Belleview Street, 18 1/2 feet south of the center line of East Belleview Street and 10 feet northeast of a power pole with a transformer.

Reference mark 4 is a standard disk stamped, SCOTT 2 NO 4 1968. It is 63 feet north of a fire hydrant, 18 feet north of the center line of East Belleview Street and set in a drill hole in the north curb.

Stem (old RM 2) is what appears to be the stem of old reference mark 2 with the cap removed. It is set in a drill hole in the south curb about 17 feet east of the station.

Azimuth mark (1968) is a standard disk stamped, SCOTT 2 1968. It is set in a drill hole in the curb in the northeast intersection of North 70 Street and East Belleview Street. It is 3 feet west of a stop sign.

Azimuth mark Number 2 is a standard disk stamped, SCOTT 2 NO 2 1968 1970. It is at the southeast corner of the intersection of East Mc Dowell Road and Scottsdale Road. The mark is set in a drill hole in the concrete support of a man hole, 22 feet south of a traffic light, 9 1/2 feet south west of a fountain under an arch and 5 feet east of the sidewalk.

To reach the station from the intersection of East Mc Dowell Road and North Scottsdale Road in Scottsdale, go south along North Scottsdale Road for 0.25 mile to the station on the right.

AZ 168 B

JULY 1966

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

REV: MAY 1971

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1012
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 15
111 45

FORM 525 (9-10-69)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRAVERSE STATION

NAME OF STATION: MEAT 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.

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 ° ' "
	SCOTT				0 00 00.00
Desc.	Azimuth Mark	NNW	Approx.	0.25 Mi.	62 03 31.74
Desc.	1/4 Section Corner Mark (P.C.S.)	N	Approx.	0.2 Mi.	96 16 20.76
11b	Reference Mark No. 1	N	34.47	10.507	92 25 33.1
11b	Reference Mark No. 2	S	39.77	12.123	278 56 26.0

Detailed description:

The station is located along the east side of 76 th Street, 0.2 mile south of East McDowell Road, 2.2 miles south-southeast of Scottsdale and on highway property.

To reach the station from the junction of Scottsdale Road and East McDowell Road, go east on East McDowell Road for 0.5 mile to 76 th Street, turn right, go south on 76 th Street for 0.2 mile to the station on the left as described.

The station mark is a standard traverse disk stamped MEAT 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 6.0 feet east-northeast of a standard metal witness post and marker, 9.0 feet west of a north and south fence line, 32.5 feet east of the approximate center of 76 th Street and 98.0 feet southeast of a powerline pole number 313.

Reference mark 1 is a standard disk stamped MEAT NO 1 1963, set in top of a 12-inch concrete cylinder which is flush with the ground surface. It is 12.0 feet west of the north and south fence line, 30.0 feet east of the approximate center of 76 th Street, 34.8 feet north-northeast of the witness post and is about the same elevation as the station mark.

Reference mark 2 is a standard disk stamped MEAT NO 2 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 9.0 feet west of the north and south fence line, 30.9 feet east of the approximate center of 76 th Street, 39.7 feet south-southeast of the witness post and is about the same elevation as the station mark.

The azimuth mark is a standard disk stamped MEAT 1963, cemented in a drill hole in the south curb of East McDowell Road located at the extreme northeast corner of a Shopping Center, parking lot. It is 5.2 feet north of the northeast corner of the parking lot, 34.2 feet south of the center line of East McDowell Road and 81.0 feet northeast of a flood light pole.

The 1/4 section corner mark is located at the intersection of 76 th Street and McDowell Road. It is a 5/8 inch rod located in a 10-inch hand hole with a steel lid, in the center of the intersection of 76 th Street and McDowell Road.

To reach the azimuth mark from the station, go north on 76 th Street for 0.2 mile to McDowell Road, turn left, go east on McDowell Road for 0.15 mile to the northeast corner of a Shopping Center parking lot on the left and the azimuth on left as described above.

RECOVERY NOTE, TRIANGULATION STATION

QUAD 331113 **R**

NAME OF STATION: MEAT
ESTABLISHED BY: C.AA. YEAR: 1963 STATE: Arizona BENCH MARK(S) ALSO [X]
RECOVERED BY: L.F. Smith YEAR: 1970 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 2 1/4 miles south-southeast of Scottsdale

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

The station mark and reference mark 1 and 2 are buried or destroyed. The azimuth mark is destroyed. A thorough search was made for the station and reference marks.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MEAT 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 499,935.67 y 895,867.36	146° 22' 36" 0 00 00	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 45".9110 NORTH LONGITUDE: 111 55 00.7594 WEST		367.21 METERS 1204.7 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 146°22'36".1	

FORM 201 (7-23-69) USCOMM-DC 10251-P71

FILE COPY

JUN 2 1975

USCOMM—NOAA—ASHEVILLE

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

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

168 B

QUAD 331113 STATION 1013
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

DESCRIPTION OF TRIANGULATION STATION
TRAVERSE

NAME OF STATION: HAYDEN STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: H.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 4.2 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK METERS.

15 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 ° ' "
	ROLA				0 00 00.00
desc.	R.M. No. 2	SSE	40.68	12.402	108 25 44
	Scottsdale, KWBY Radio Tower	NW	approx. 2.5 miles		244 55 36.3
desc.	Azimuth Mark	N	approx. 0.4 mile		299 39 57.39
desc.	R.M. No. 1	NNE	39.00	11.889	311 44 42

Detailed description:

The station is located about 3 miles southeast of Scottsdale and about 1/2 mile south of East Mc Dowell Road on the west side of Hayden Road.

To reach the station from the intersection of Scottsdale Road and East Mc Dowell road, go east on East Mc Dowell Road for 1.0 mile to Hayden Road(azimuth mark in the southwest corner of intersection), turn rirht, go south on Hayden Road for 0.4 mile to the station on right.

Station, a standard traverse disk set in the top of a round concrete post which projects 1 inch and stamped HAYDEN 1963. The mark is 39 feet west of center of Hayden road, 7.5 feet west-northwest of power pole number 15 and 3.8 feet west of west edge of sidewalk.

Reference mark 1, a standard reference disk set in a drill hole in the west curb of Hayden Road and stamped HAYDEN NO 1 1963. The mark is 41.5 feet north of power pole number 15, 31 feet west of center of Hayden Road and 17 feet south of center of drive-way.

Reference mark 2, a standard reference disk set in a drill hole in the west curb of Hayden Road and stamped HAYDEN NO 2 1963. The mark is 32 feet west of center of Hayden Road and 37 feet south of power pole number 15.

Azimuth mark, a standard azimuth disk set in a drill hole in the southwest curb of the intersection of East Mc Dowell Road and Hayden Road and stamped HAYDEN 1963. The mark is 34 feet west of center of Hayden Road, 21 feet north-northwest of a power pole and 10.2 feet north of the northwest corner of a irrigation gate wall.

RECOVERY NOTE, TRIANGULATION STATION
TRAVERSE R

NAME OF STATION: HAYDEN
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona
RECOVERED BY: L.F. Smith YEAR: 1970 COUNTY: Maricopa BENCH MARK ALSO [X]
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles southeast of Scottsdale
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 ° ' "
Scottsdale, Radio Tower KWBY 1963	(approx. 2 1/2 miles NW)			0 00 00.0
Azimuth mark 0.4 mile North				54 44 27.2
RM 1	NNE	39.00	11.889	46 49 39
RM 2	SSE	40.675	12.398	223 31 05

The azimuth mark and reference marks 1 and 2 were recovered as described and were found in good condition. The station mark was distroyed during construction of a sewer line and was replaced on the origional position at this time using the old angles and distances to the marks and cuts.

The station mark is a standard disk stamped, HAYDEN 1963 1970. It is set in the top of a 12 inch concrete monument which is flush with the ground surface. It is 39 feet west of the center of Hayden Road, 7 1/2 feet west-northwest of power pole number 15 and 3.8 feet west of the west edge of the sidewalk.

Reference mark 1 is a standard disk stampod, HAYDEN NO 1 1963. It is set in a drill hole in the west curb of Hayden Road. it is 41 1/2 feet north of power pole number 15 and 31 feet west of the center line of Hayden Road.

8-44152

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HAYDEN 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 502,502.47 y 894,683.63	181° 08' 10" + 0 00 16	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 34".1975 NORTH LONGITUDE: 111 54 30.4609 WEST		369.02 METERS 1210.7 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 181°08'25".5	

Reference mark 2 is a standard disk stamped, HAYDEN NO 2 1963. It is 37 feet south of power pole nomber 15 and 32 feet west of the center of Hayden Road.

The azimuth mark is a standard disk stamped, HAYDEN 1963. It is set in a drill hole in the southeast curb of the intersection of East Mc-Dowell Road and Hayden Road. It is 21 feet north-northwest of a power pole and 10.2 feet north of the northwest corner of an irrigation gate wall.

To reach the station from the intersection of East Mc Dowell Road and Sottsdale Road in Scottsdale, go east along East Mc Dowell Road for 1.0 mile to Hayden road and the azimuth mark on the right. Turn right and go south along Hayden Road for 0.4 mile to the station on the right in front of St Daniels Catholic Church.

REPORT ON CONDITION OF SURVEY MARK

Form Approved Budget Bureau No. 41-R1923

Name or Designation: HAYDEN Year Established: 1963

State: Arizona County: Maricopa Organization Established by: U.S.C.&G.S.

Distance and direction from nearest town: 3 mi. S.E. from Scottsdale

Description published in: (Line, book, or quadrangle number) Quad 331113 Station 1013

Mark searched for or recovered by: Name - Earl M. Bratcher

Organization - U.S. Army Engineer District, Los Angeles

Date of report 4 June 1971 Address - 300 N. Los Angeles St. Los Angeles C.A.U.S. P.O. Box 2711 Los Angeles 90053

Condition of marks: List letters and numbers found stamped in (not cast in) each mark.

Mark stamped:	Condition:
HAYDEN 1963 1970	Good (Appears to have been reset in 1970 in same position)
HAYDEN NO 2 1963	Good
HAYDEN NO 1 1963	Good

Marks accessible? [X] Yes [ ] No Property owner contacted? [ ] Yes [X] No

Please report on the thoroughness of the search in case a mark was not recovered, suggested changes in description, need for repairing or moving the mark, or other pertinent facts:

Description is adequate. The station mark is now about 1inch below ground

JUN 1972

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USCOMM—NOAA—ASHEVILLE

A 168 B

JULY 1966

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REVISED MAR 1972 AUG 1974

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

sheet 1 of 2

QUAD 331113 STATION 1014
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 15
111 45

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: ROLA STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.L. Wright

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 3 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 3 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 ° ' "
	BELL BUTTE (AMS) 1962 (V.C.)				0 00 00.00
	Scottsdale, Motorola Water Tank	W	Approx.	0.2 Mile	38 20 45.6
Desc	Azimuth Mark	N	Approx.	0.35 Mi.	135 12 55.0
11b	Reference Mark 1	N	45.31	13.811	138 18 10
11b	Reference Mark 2	S	38.11	11.617	313 30 45

Detailed description:

The station is located along the east fence line of the Motorola Plant, 0.15 mile south of East McDowell Road, 3 miles southeast of Scottsdale and on property of the Motorola Plant.

To reach the station from the intersection of Scottsdale Road and East McDowell Road, go east on East McDowell Road for 1.5 miles to the east entrance to the Motorola Plant, turn right and go south on the macadam street for about 0.1 mile to where the macadam turns right, continue straight ahead on a dim graveled road along the west side of a north and south fence line for about 150 feet to the station as described.

The station mark is a standard traverse disk stamped ROLA 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 3.1 feet west of a standard metal witness post and marker, 3.5 feet west of a north and south fence line and 36.5 feet southeast of a powerline pole.

Reference mark 1 is a standard disk stamped ROLA NO 1 1963, set in top of a 12-inch concrete cylinder which projects 2 inches above the ground surface. It is 1.5 feet west of the north and south fence line, 45.7 feet north of the witness post and 42.0 feet northeast of the power line pole.

Reference mark 2 is a standard disk stamped ROLA 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 the north and south fence line and 38.0 feet south of the witness post.

The azimuth mark is a standard disk stamped ROLA 1963, cemented in a drill hole in the northwest curb of Hubbell Street and Granite Road (84 th Street). It is 26.0 feet west of the centerline of Granite Road, 30.0 feet north of the centerline of Hubbell Street, 37.0 feet southeast of the southeast corner of a yellow cinderblock house and 39.5 feet northwest of the center of the intersection.

To reach the azimuth mark from the station, go north on the graveled and macadam road for 0.15 mile to East McDowell Road, continue north on Granite Road and 84 th Street for 0.2 mile to the intersection of Granite Road and Hubbell Street and the azimuth mark is located on the northwest curb of the intersection.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: ROLA
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☒
RECOVERED BY: Ariz. Hwy. Dept. YEAR: 1966 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 ° ' "
Azimuth Mark ROLA 2 1966	N	(approx.	0.35 mile)	0 00 00.0
	NE	82.095	(25.023)	41 26 45.2

The station mark, reference mark 1 and reference mark 2 were destroyed and a new station mark ROLA 2, reference mark ROLA 2 # 1 1966 and reference mark ROLA 2 # 2 1966 were established.

The original azimuth mark was recovered as described and found in good condition. This mark was used for the new station.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: ROLA YEAR: 1963

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

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 505,132.33 y 896,113.31	179° 58' 13" + 0 00 33	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 48".3403 NORTH LONGITUDE: 111 53 59.4153 WEST		369.47 METERS 1212.2 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 179°58'45".9	

FORM 251 (7-23-69) USCOMM-DC 14251-P61

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JUN 2 1975

USCOMM—NOAA—ASHEVILLE

AZ 168 B

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

QUAD 331113 ARIZ STATION 1014
LATITUDE 33° 00′ TO 33° 30′
LONGITUDE 111° 30′ TO 112° 00′
DIAGRAM NI 12-8 MESA

33 15
111 45

FORM 525 (9-18-69)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

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

CHIEF OF PARTY: Ariz. Hwy. Dept. YEAR: 1966 DESCRIBED BY:

NOTE.*	HEIGHT OF TELESCOPE ABOVE STATION MARK METERS.† HEIGHT OF LIGHT ABOVE STATION MARK METERS.					
1a 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 ° ′ ″	
	ROLA 1963 (destroyed)	SW	82.095	(25.023)	0 00 00.0	
desc	Azimuth mark 1963	N	(approx.	0.3 mile	137 06 17.5	
11a	RM 1 1966	N	33.665		137 28 28.3	
11a	RM 2 1966	S	46.270		320 16 37.6	

Detailed description:

The station is located along the east fence line of the Motorola Plant, 0.15 mile south of East McDowell Road, 3 miles southeast of Scottsdale and on property of the Motorola Plant.

To reach from the intersection of McDowell Road and Scottsdale Road, go east on McDowell Road for 1.5 miles to the east entrance (Granite Road) of the Motorola Plant, turn right, south and go about 0.2 mile to the turn in to Motorola.

The station mark is a standard disk stamped " ROLA 2 BM RESET 1966 " set in a 10-inch diameter concrete block projecting 1-inch. It is located 10 feet east of the east curb and 103 feet north of the Motorola entrance. It is 3 feet east of a standard metal witness post.

Reference mark 1 is a standard reference mark disk stamped " ROLA 2 # 1 1966 ", set in the top of a 10-inch concrete post projecting 1-inch.

Reference mark 2 is a standard reference mark disk stamped " ROLA 2 # 2 1966 ", set in the top of a 10-inch concrete post projecting 1-inch.

The azimuth mark is a standard azimuth mark disk stamped " ROLA 1963", cemented in a drill hole in the northwest curb of Hubbell Street and Granite Road (84th Street). It is 26.0 feet west of the center line of Granite Road, 30.0 feet north of the center line of Hubbell Street, 37.0 feet southeast of the southeast corner of a yellow cinder block house and 39.5 feet northwest of the center of the intersection.

To reach the azimuth mark from the station, go north on the graveled and macadam road for 0.15 mile to East McDowell Road, continue north on Granite Road and 84th Street for 0.2 mile to the intersection of Granite Road and Hubbell Street and the azimuth mark located on the northwest curb of the intersection.

TRAVERSE
RECOVERY NOTE, ~~TRIANGULATION~~ STATION R

NAME OF STATION: ROLA 2
ESTABLISHED BY: Ariz. HWY Dept. YEAR: 1966 STATE: Arizona BENCH MARK ALSO [X]
RECOVERED BY:* L.F. Smith YEAR: 1971 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles southeast of Scottsdale
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					
* 1963 OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION	
*Scottsdale, Motorola Water Tank(approx. RM 3	WNW	0.2 mile 27.51	west, 8.385	0 00 00.0 27 33 12	
Azimuth mark (1963) 0.35 mile	N			98 15 02.7	
Salt River Water Tank (approx. 2.0 miles			East-northeast)	178 33 29.0	
RM 2	S	46.28	14.106	281 24 52	
RM 2 to RM 3		60.04	18.300		

The station mark, ROLA 2 RM 2 and the 1963 azimuth mark were recovered and found in good condition. ROLA 2 RM 1 was distroyed and reference mark 3 was established at this time.

ESSA FORM 76-31A (1-70)

ADJUSTED HORIZONTAL CONTROL DATA

OBS BY ARIZ H D

NAME OF STATION ROLA 2

STATE: ARIZONA YEAR: 1966 SECOND —ORDER

LOCALITY: ARIZONA HWY SURVEY, PAPAGO FREEWAY

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

GEODETIC LATITUDE:	33 27 48.94932	ELEVATION:	369.42 METERS
GEODETIC LONGITUDE:	111 53 58.77419		1212.0 FEET

STATE COORDINATES (Fwt)				
STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ C	0202	505,186.63	896,174.86	+ 0 0 34

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
AZIMUTH MARK 1963	178 31 44.7	178 31 11	0202

POSITION DETERMINED BY TRAVERSE FROM STATION ROLA

C&GS FORM 6402

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JUN 2 1975

USCOMM—NOAA—ASHEVILLE

AZ 168

AUGUST 1974
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 331113 STATION 1014
ARIZ
LATITUDE 33 °00′ TO 33 °30′
LONGITUDE 111 °30′ TO 112 °00′
DIAGRAM NI 12-8 MESA

ROLA 2 (continued)

The station mark is a standard disk stamped, ROLA 2 1966 BM RESET. It is set in the top of a 10 inch concrete monument which projects 4 inches. It is 26 feet east of the east curb of Granite Reef Road, 5 feet southwest of a 12 inch corner post and witness sign and 4 feet northwest of a long concrete slab which was formerly a feeding pen.

Reference mark 2 is a standard disk stamped, ROLA 2 no 2 1966. It is set in the top of a 10 inch concrete monument which projects 2 inches. It is 50 feet south of the witness sign, 23 feet east of the east curb and 2 1/2 feet west of the concrete slab.

Reference mark 3 is a standard disk stamped, ROLA 2 NO 3 1966 1971. It is set in a drill hole in the east curb of Granite Reef Road. It is on line with the north wall of the power sub-station. It is 30 feet west of the witness sign and 21 feet east of the center line of Granite Reef road.

The azimuth mark is a standard disk stamped, ROLA 1963. It is set in a drill hole in the curb at the northwest intersection of East Hubbell Street. 24 feet southeast of the southeast corner of the home at 8348 East Hubbell Street and 9 feet southeast of a fire hydrant. The mark is 0.2 mile north of East McDowell Road.

To reach the station from the intersection of Scottsdale Road and East McDowell Road in Scottsdale go east along East McDowell Road for 1.5 miles to Granite Reef Road. Turn right and go south for about 0.2 mile to the station on the left.

RECOVERY NOTE, TRIANGULATION STATION 331113 R

NAME OF STATION: ROLA 2
ESTABLISHED BY: Ariz. Hwy Dept. YEAR: 1966 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY: Charles Novak YEAR: 1974 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles southeast of Scottsdale
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	
Azimuth mark 1963 0.33 mile	N			0 00 00.0
Salt River water Tank 2.0 miles	Na			80 18 26.0
RM 2	S	46.29	14.110	183 10 46
RM 3	W	27.50	8.381	289 17 58

Reference marks 2 and 3 and the 1963 azimuth mark were recovered in good condition and as described in 1971. The station mark was found broken off about 1 foot below the ground surface. A new station mark was set over the underground station at this time. The old disk was used and 1974 was added to the stamping. A new witness post was set 1 foot northwest of the station.

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 168

QUAD 331113 STATION 1015
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: PIMA STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.L. Wright XDE

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‡ ° ' "
	ROLA				0 00 00.00
11b	Reference Mark 1	N	39.41	12.014	84 46 31.6
Desc	Azimuth Mark	N	Approx. 0.2 Mile		90 33 52.74
11b	Reference Mark 2	S	36.54	11.137	268 46 21.5

Detailed description:

The station is located along the west side of a graveled road, 0.2 mile south of East McDowell Road, 3.2 miles southeast of Scottsdale, 3.5 miles northeast of Tempe and on road right-of-way.

To reach the station from the intersection of Scottsdale Road and East McDowell Road, go east on East McDowell Road for 2.0 miles to a graveled crossroads and the azimuth mark is located on the left, turn right and go south on the graveled road for 0.2 mile to the station on the right as described.

The station mark is a standard traverse disk stamped PIMA 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 3.2 feet east of a north and south fence line, 3.5 feet northeast of a standard metal witness post and marker, 7.9 feet south-southwest of a powerline pole number 4 and 22.5 feet west of the approximate center of the graveled road.

Reference mark 1 is a standard disk stamped PIMA NO 1 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 1.8 feet east of the north and south fence line, 25.0 feet west of the approximate center of the graveled road, 32.3 feet north of the powerline pole number 4, 42.2 feet north of the witness post and is about the same elevation as the station mark.

Reference mark 2 is a standard disk stamped PIMA NO 2 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 4.0 feet northeast of the southeast fence corner, 24.5 feet west of the approximate center of the graveled road, 33.7 feet south of the witness post, 43.9 feet south of the powerline pole number 4 and is about the same elevation as the station mark.

The azimuth mark is a standard disk stamped PIMA 1963, cemented in a drill hole in the west end of a concrete culvert abutment. It is 36.0 feet north of the centerline on East McDowell Road, 45.0 feet east of the approximate center of Pima Road and 11.3 feet west of the east end of the culvert abutment.

*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: PIMA 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 (IOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 507,741.90 y 895,954.61	184° 02' 42" + 0 00 50	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 46".7648 NORTH LONGITUDE: 111 53 28.6110 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 184°03'31".7	

FORM 251 (1-23-61) USCOMM-GC 70251-P61

USCOMM—ESSA—ASHEVILLE

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JAN 1967

168B

ARIZONA

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

33° 15'
111° 45

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1016
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION
TRAVERSE

NAME OF STATION: GRIND 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 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‡ ° ' "
	PIMA	(V.G.)				0 00 00.00
Desc.	Azimuth Mark		N	Approx.	0.3 Mi.	76 59 11.96
11b	Reference Mark 1		N	31.42	9.575	79 42 39
	BARK	(V.G.)	E	Approx.	0.5 Mi.	181 16 49.74
11b	Reference Mark 2		S	32.48	9.898	256 59 59

Detailed description:

The station is located along the east side of a graveled road, 0.3 mile south of East McDowell Road, 3 1/2 miles southeast of Scottsdale, 4.0 miles northwest of Mesa and on the road right-of-way.

To reach the station from the intersection of Scottsdale Road and East McDowell Road, go east on East McDowell Road for 2.0 miles to a crossroads; (Pima Road), continue east on McDowell Road for 0.5 mile to a graveled side road right and the azimuth mark is located in the southwest corner of the intersection, turn right and go south on the graveled road for 0.3 mile to the station on the left as described.

The station mark is a standard traverse disk stamped GRIND 1963, set in top of a 12-inch concrete cylinder which projects 2 inches above the ground surface. It is 2.6 feet west of a standard metal witness post and marker, 28.5 feet east of the approximate center of the graveled road and 46.0 feet east-northeast of a powerline pole.

Reference mark 1 is a standard disk stamped GRIND NO 1 1963, set in top of a 12-inch concrete cylinder which projects 4 inches above the ground surface. It is 2.0 feet west of a north and south fence line, 27.0 feet east of the approximate center of the graveled road, 31.9 feet north of the witness post and 63.5 feet northeast of the powerline pole.

Reference mark 2 is a standard disk stamped GRIND NO 2 1963, set in top of a 12-inch concrete cylinder which is flush with the ground surface. It is 2.0 feet west of the north and south fence line, 27.0 feet east of the approximate center of the graveled road, 32.1 feet south of the witness post and 48.0 feet southeast of the powerline pole.

The azimuth mark is a standard disk stamped GRIND 1963, cemented in a drill hole in the northwest corner of a concrete irrigation canal control gate. It is 8.0 feet southeast of a powerline pole, 49.5 feet south of the center line of East McDowell Road and 25.5 feet west of the approximate center of the graveled 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.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GRIND 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 510,425.39 y 895,407.99	178° 30' 00" + 0 01 08	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 41".3487 NORTH LONGITUDE: 111 52 56.9360 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 178°31'08".4	

FORM 281 (7-23-58)

FILE COPY

JAN 1967

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

168

QUAD 331113 STATION 1017
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

FORM 525
(9-10-65)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION
TRAVERSE

NAME OF STATION: BARK STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: H.D.Ellis

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS. 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 ° 00 00:00
	GRIND				
desc	Section Corner (Phoenix City Survey)	N	approx. 0.35 mile		72 21 08.02
desc	Azimuth Mark	N	approx. 0.35 mile		72 50 49.19
11b	R.M. No.1	N	32.00	9.755	79 15 33
11b	R.M. No. 2	S	32.80	9.997	256 34 34
	Scottsdale, Motorola Water Tank	WSW	approx. 2.0 miles		354 39 57.6

Detailed description:

The station is located about 4 miles southeast of Scottsdale, about 3 1/2 miles northwest of Mesa and about 1/2 mile south of East Mc Dowell Road.

To reach the station from the intersection of East Mc Dowell Road and Scottsdale Road, go east on East Mc Dowell Road for 3.0 miles to a side road right, azimuth mark and section corner as described, turn right, go south on dirt road for 0.35 mile to station on right.

Station mark, a standard traverse disk set in the top of a round concrete post which projects 1 inch and stamped BARK 1963. The mark is 20 feet west of center of dirt road, 7 feet east of the east edge of a concrete irrigation ditch, 2.7 feet west of fence and 3.5 feet west-southwest of witness post.

Reference mark 1, a standard disk set in the top of a round concrete post which projects 2 inches and stamped BARK NO 1 1963. The mark is 32.1 feet north of witness post, 20 feet west of center of dirt road, 8 feet east of the east edge of a concrete irrigation ditch and 1.5 feet west of fence.

Reference mark 2, a standard disk set in the top of a round concrete post which projects 1 inch and stamped BARK NO 2 1963. The mark is 32.6 feet south of witness post, 20 feet west of center of dirt road, 7.5 feet east of the east edge of a concrete irrigation ditch and 2 feet west of fence.

Azimuth mark, a standard disk set in a drill hole in a concrete culvert abutment and stamped BARK 1963. The mark is 50.7 feet south of center line of East Mc Dowell Road, 36 feet south of the north culvert abutment, 13.7 feet southwest of a fence corner and 17 feet east of center of dirt road.

Section Corner, a Phoenix City Survey Mark located in the center of East Mc Dowell Road 3 miles east of Scottsdale Road and 0.35 mile north of the station. The mark is a 5/8 inch rod set in concrete about 6 inches below the surface of the road in a 10 inch hand hole with a metal cover.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: BARK
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK(S) ALSO [X]
RECOVERED BY: L.P. Smith YEAR: 1970 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 1/2 miles northwest of Mesa

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

All marks were recovered and found in good condition. A new route to the station follows.

To reach the station from the intersection of East McDowell Road and Scottsdale Road in Scottsdale, go east along East McDowell Road for 3.0 miles to a side road on the right. Turn right and go south for 0.4 mile to the station on the right about 50 yards past a green home on the left. The station mark and reference marks 1 and 2 are slightly below flush. A witness post was set at the west side of the station monument.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BARK 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 (IOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 513,012.39 y 894,820.52	181° 38' 27" + 0 01 25	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 35"5265 NORTH			366.32 METERS
	LONGITUDE: 111 52 26.4012 WEST			1201.8 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 181°39'51"9	
Azimuth Mark is also a Bench Mark.		

FORM 201 (7-23-65) USCOMM-DC 16251-P65

FILE COPY
SEP 1971

USCOMM—NOAA—ASHEVILLE

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 168A

QUAD 331113 STATION 1018
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

FORM 525
(10-10-69)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: BALZ STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: R.L. Wright

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK] METERS,† 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†
					° ′ ″
	BALZ				0 00 00.00
Desc	Azimuth Mark	N -	Approx. 0.4 Mile		91 23 31.49
Desc	1/4 Corner (Phoenix City Survey)	N -	Approx. 0.4 Mile		92 19 42.29
11b	Reference Mark 1	N -	43.28 -	13.193 -	92 42 45
11b	Reference Mark 2	S -	43.71 -	13.325 -	272 11 20

Detailed description:

The station is located along the east side of a north and south graveled road, 0.4 mile south of East McDowell Road, 3.2 miles north-northwest of Mesa, 4.2 miles southeast of Scottsdale and on road right-of-way.

To reach the station from the intersection of Scottsdale Road and East McDowell Road, go east on East McDowell Road for 3.5 miles to a crossroad and the azimuth mark is located in the southwest corner of the intersection and the 1/4 section mark is located in the center of the intersection. Turn right and go south on the graveled road for 0.4 mile to the station on the left as described.

The station mark is a standard traverse disk stamped BALZ 1963, set in top of a 12-inch concrete cylinder which projects 1 inch above the ground surface. It is 3.0 feet west of a north and south fence line, 3.8 feet northwest of a standard metal witness post and marker and 28.0 feet east of the approximate center of the graveled road.

Reference mark 1 is a standard disk stamped BALZ NO 1 1963, set in top of a 12-inch concrete cylinder which is flush with the ground surface. It is 3.5 feet west of the north and south fence line, 28.5 feet east of the approximate center of the graveled road and 46.7 feet north of the witness post.

Reference mark 2 is a standard disk stamped BALZ NO 2 1963, set in top of a 12-inch concrete cylinder which projects 4 inches above the ground surface. It is 3.0 feet west of the north and south fence line, 28.0 feet east of the approximate center of the graveled road and 40.3 feet south of the witness post.

The azimuth mark is a standard disk stamped BALZ 1963, cemented in a drill hole in the southwest corner of an irrigation ditch control box which projects 3 feet above the ground surface. It is 2.7 feet north of a fence line, 11.0 feet west-northwest of a fence corner, 20.5 feet southwest of a powerline pole, 31.0 feet west of the approximate center of the graveled road and 51.0 feet south of the centerline of East McDowell Road.

The 1/4 section mark is located in the center of the intersection about 60.0 feet north-northeast of the azimuth mark. It is a 5/8 inch rod set in concrete located about 6 inches below the road surface in a 10-inch hand hole with a steel lid.

*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

(continued on next page)

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BALZ 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 515,703.83 y 894,941.18	178° 49' 30" + 0 01 42	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 36"7084 NORTH LONGITUDE: 111 51 54.6307 WEST		367.41 METERS 1205.4 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 178°51'12"2	
Azimuth Mark is also a Bench Mark.		

FORM 381 (7-28-69)

USCOMM-DC 16861-P69

FILE COPY

SEP 1971

USCOMM—NOAA—ASHEVILLE

168

ARIZONA

JULY 1971
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 331113 STATION 1018
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-5 MESA

TRAVERSE STATION
RECOVERY NOTE, ~~TRIANGULATION STATION~~ R

NAME OF STATION BALZ
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY: *L.P. Smith YEAR: 1971 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3.2 miles north-northwest of Mesa
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) 0.4 mile	N			0 00 00.00
RM 1	N	43.33	13.207	1 17 38
Salt River Water Tank 1/2 mile	N			6 33 40.1
RM 3	NW	106.45	(32.446)	318 30 09
RM 1 to RM 3		80.23	24.455	

The underground station mark, the azimuth mark and reference mark 1 were recovered. The azimuth mark was repaired in place, reference mark 1 has been struck by michinery but appears to be in good condition. A new station mark and reference mark 3 were established at this time. Due to the overlapping of farm work and road maintenance over the station mark and reference mark 1 a reference mark 3 recovery point was established.

The station mark is a standard disk stamped, BALZ 1963 1971. It is set in the top of a 12 inch concrete monument which is about 1 foot below the ground surface at the top of the grader ditch. It is 25 feet east of the center of Agency Road and 1 foot west of the witness post and sign.

Reference mark 1 is a standard disk stamped, BALZ NO 1 1963. It is set in the top of a 12 inch concrete monument which is about flush with the ground surface. It is set at the top of the east grader ditch, 24 feet east of the center of Agency Road and 43 1/2 feet north of the witness post.

Reference mark 3 is a standard disk stamped, BALZ NO 3 1963 1971. It is set in the top of a 12 inch concrete monument which projects 1 inch. It is 40 feet west of the center of Agency Road, 18 feet east of the southeasterly most of several trees and 1 foot east of a witness post and sign.

The azimuth mark is a standard disk stamped, BALZ 1963. It is set in a drill hole in the top of a concrete headwall in the southwest intersection of East McDowell Road and Agency Road.

To reach the station from the intersection of Scottsdale Road and East McDowell Road in Scottsdale, go east along East McDowell Road for 3 1/2 miles to Agency Road and the azimuth mark on the right. Turn right and go south along Agency Road for 0.4 mile to the station on the left.

REFERENCE MARK 3 RECOVERY POINT

Salt River Water Tank	0	00	00.0
RM 1	109	04	35
BALZ 1963 1971	130	34	59

*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. L.P. Smith

FILE COPY
SEP 1971

ARIZONA 168A

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

QUAD 331113 STATION 1019
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

FORM 325
10-16-691

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: FINCH STATE: Arizona COUNTY: Maricopa

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

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.52 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	LEHI				00 00 00.00
11b	R.M. No. 2	S	45.44	13.850	104 38 43
	Scottsdale Motorola Water Tank	W	approx. 3 miles		198 22 43.5
desc	Azimuth Mark	N	approx. 0.4 mile		282 51 21.54
	TT Y3 (AMS) 1960	N	approx. 0.4 mile		283 30 47.3
11b	R.M. No. 1	N	41.87	12.762	285 18 51
	Section Corner on East Mc Dowell Road (Phoenix City Survey)	N	approx. 0.4 mile		289 31 49.69

Detailed description:

Station is located about 4 1/2 miles southeast of Scottsdale, about 3 miles north-northwest of Mesa, about 0.4 mile south of East Mc Dowell Road and on the east right-of-way of north-south gravel road.

To reach from the intersection of Scottsdale Road and East Mc Dowell Road about 1 mile south of Scottsdale, go east on East Mc Dowell Road for 3.5 miles to stop light and Salt River Project on left, continue east on East Mc Dowell Road for 0.5 mile to a side road right, (Azimuth Mark and TT Y3 (AMS) Mark is in southwest corner of this intersection), turn right and go south for 0.4 mile to station on left as described.

Station mark, a standard traverse disk stamped FINCH 1963, is set in the top of a concrete cylinder which projects about 2 inches above the ground. The mark is 99 feet southeast of a power pole with a transformer, 22 feet east of center of gravel road, 4.3 feet north-northwest of witness post and 3 feet west of fence.

Reference mark 1, a standard reference disk stamped FINCH 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 63.5 feet southeast of a power pole with a transformer, 45.5 feet north of the witness post, 22 feet east of center of road and 2.5 feet west of fence.

Reference mark 2, a standard reference disk stamped FINCH NO 2 1963, is set in the top of a concrete post which is set flush with the surface of the ground. The mark is 66 feet northeast of a power pole, 42 feet south of the witness post, 22 feet east of center of road and 3 feet west of fence.

Azimuth mark, a standard azimuth disk stamped FINCH 1963, is set in a drill hole in the southeast retaining wall of water reservoir. The mark is 89 feet south of center of East Mc Dowell Road, 50 feet west of center of gravel road, 22 feet north-northwest of transformer cabinet and 19.5 feet north of water pump.

TT Y3, is a Corps of Engineers Army Map Service disk stamped TT Y3 1960, is set in the top of a concrete cylinder which is set below the surface of the ground about 6 inches. The mark is 35.5 feet south of center of East Mc Dowell Road, 29 feet west of center of gravel road, 3 feet north of fence and 2 feet north of the witness post.

Section Corner, is a Phoenix City Survey Mark located on East Mc Dowell Road. The mark is a 3/8 inch rod which is about 6 inches below the surface of the road under a hand hole cover. The mark is in the center of road.

To reach the Section corner from Scottsdale Road and East Mc Dowell Road about 1 mile south of Scottsdale, go east on East Mc Dowell Road for 4.0 mile to a side road right, continue east on East Mc Dowell Road for about 200 feet to a side road north. Section Corner is at this intersection.

Detailed description:

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FINCH 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 518,338.43 y 895,050.70	178° 14' 27" + 0 01 59	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 37".7780 NORTH LONGITUDE: 111 51 23.5309 WEST		369.39 METERS 1211.9 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 178°16'25".8	

RECOVERY NOTE, TRIANGULATION STATION

QUAD 331113 R

NAME OF STATION: FINCH
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK(S) ALSO [X]
RECOVERED BY: L.F. Smith YEAR: 1971 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles north-northwest of Mesa

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

Only the azimuth mark was recovered. The station mark was found in a broken monument. A search was made for the underground station without success.

FILE COPY

SEP 1971

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

USCOMM—NOAA—ASHEVILLE

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

1684

QUAD 331113 STATION 1020
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

FORM 525
(8-15-66)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION
TRAVERSE

NAME OF STATION: LEHI STATE: Arizona COUNTY: Maricopa

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

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 3.85 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 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‡
	BELL BUTTE (AMS) 1962					00 00 00.00"
	Scottsdale, Motorola Water Tank		W	approx. 3 miles		28 45 19.1
desc	Azimuth Mark		NW	approx. 0.25 m.		72 21 23.88
	1/4 Corner (Phoenix City Survey)		NW	approx. 0.25 m.		80 18 25.90
11a	R.M. No. 1		N	37.78	11.515	113 30 23
	Unidentified Water Tank		E	approx. 4 miles		214 52 45.4
	Mesa, Municipal Water Tank No.2		SSE	approx. 2 miles		282 29 48.2
11a	R.M. No. 2		S	43.12	13.143	302 59 35

Detailed description:

Station is located about 5 1/2 miles east of Scottsdale, about 3 miles north of Mesa, about 0.2 mile south-southwest of the junction of State Highway 87 and East Mc Dowell Road and on the west side of service road.

To reach from the junction of Scottsdale Road and East Mc Dowell Road in Scottsdale, go east on East Mc Dowell Road for 4.3 mile to the Azimuth Mark on right at Golf Driving Range and irrigation gate, (1/4 Corner is about 200 feet east of Azimuth Mark in center of East Mc Dowell Road), continue east on East Mc Dowell Road for 0.1 mile to a one way black top road south, turn right and go south on one-way service road for 0.2 mile to station on right.

Station mark, a standard traverse disk stamped LEHI 1963, is set in the top of a concrete cylinder which projects about 5 inches. The mark is 92 feet west of center of road, 4 feet east of fence and 3.5 feet east of the witness post.

Reference mark 1, a standard reference disk stamped LEHI NO 1 1963, is set in the top of a square concrete post which projects about 2 inches. The mark is 86 feet west of the center of road, 37.4 feet north of the witness post and 1 foot east of the fence.

Reference mark 2, a standard reference disk stamped LEHI NO 2 1963, is set in the top of a square concrete post which projects about 2 inches. The mark is 109 feet west of the center of road, 43 feet south of the witness post and 1 foot east of the fence.

Azimuth mark, a standard azimuth disk stamped LEHI 1963, is set in a drill hole in the southwest retaining wall of irrigation gate. The mark is 45 feet west of center of driveway entrance to Golf Driving Range, 44 feet south of center of East Mc Dowell Road and 15 feet west of irrigation gate.

1/4 Corner, is a Phoenix City Survey Mark located on East Mc Dowell Road about 3 1/2 miles east of the Motorola Corporation in Scottsdale. Station is a 3/8 inch rod driven in the blacktop about 5 inches below the road surface and is under a round metal handhole 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: LEHI 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 (NOR Δα) ANGLE	MARK
STATE: Ariz.	x 521,966.30	133° 34' 26"	AZIMUTH MARK
ZONE: C	y 895,996.74	+ 0 02 23	
CODE: 0202			
STATE:	x		
ZONE:	y		
CODE:			

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 47".1158 NORTH		370.91 METERS
	LONGITUDE: 111 50 40.6993 WEST		1216.9 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 133°36'48".7	
Azimuth Mark is also a Bench Mark.		

FORM 261 (7-23-58)

USCOMM-DC 15261-P71

(continued on next page)

USCOMM—NOAA—ASHEVILLE

168

ARIZONA

JULY 1971
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 331113 STATION 1020
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

RECOVERY NOTE, ~~TRIANGULATION~~ TRAVERSE STATION R

NAME OF STATION: LcHI
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO [X]
RECOVERED BY:* L.P. Smith YEAR: 1970 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 5 1/2 miles east of Scottsdale
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 (approx. 0.25 mile)	N			°0 00 00.0
RM 3	N	37.61	11.464	41 13 16
Unidentified water Tank (approx. 4 miles east)				142 31 34.4
RM 4	S	43.08	13.131	230 50 38
Scottsdale, Motorola Water Tank 1963 W (approx. 3 miles)				316 24 01.7

The surface station mark and reference marks 1 and 2 were graded out or badly disturbed. The underground station mark was recovered and found in good condition. The disks were restamped and the old monuments reused. The station is set on the origional position over the underground mark.

The station mark is a standard disk stamped, LcHI 1963 1970. It is set in the top of a 12 inch concrete monument which projects 6 inches. It is 106 1/2 feet north of power pole number S 62 over SPC-8 535, 91 feet west of the center of a paved road 3 1/2 feet east of a witness post set in a fence line and 1/2 foot west of a low witness post and sign.

Reference mark 3 is a standard disk stamped, LcHI NO 3 1963 1970. It is set in the top of a 12 inch concrete monument which projects about 12 inches. It is 14.1 feet north of the power pole and 1 foot east of a witness sign set in the fence line.

Reference mark 4 is a standard disk stamped, LcHI NO 4 1963 1970. It is set in the top of a 12 inch concrete monument which projects about 12 inches. It is 63.4 feet north of the power pole and 1 1/2 feet east of the fence line and witness sign.

The azimuth mark is a standard disk stamped, LcHI 1963. It is set in a drill hole in the southwest retaining wall of an irrigation gate. It is 45 feet west of the driveway leading to the golf course and 44 feet south of East Mc Dowell Road. The retaining wall projects several feet.

To reach the station from the intersection of East Mc Dowell Road and Scottsdale Road in Scottsdale, go east along East Mc Dowell Road for 4.3 miles to the azimuth mark on the right, continue ahead for about 0.1 mile to an intersection. Turn right on paved road leading south along the east side of the golf course for 0.2 mile to the station on the right in the fence line.

* 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. Lorayne W. Mayfield

ARIZONA 1684

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 331113 STATION 1021
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

Val Vista (Maricopa County, E. B. Latham, 1935).—About 6 miles, air line, northeast of Mesa, about 1 mile, air line, south of the Salt River, on the mesa south of the Salt River, about 200 feet south of the mesa rim, and about 200 yards west of the Roosevelt Conservation Canal, about 200 yards north of the house on the Munger property. Marked by standard bronze disks as described in notes 1a and 7a. Reference mark No. 1, a standard bronze reference disk, note 11a, is 18.932 meters (62.11 feet) from station in azimuth 3°23'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 27.004 meters (88.60 feet) from station in azimuth 80°04'. The azimuth mark is a 3-inch bronze disk with a cross marked in its center, set in the concrete headgate of an irrigation ditch that runs north and south, about 200 yards from station, and in azimuth 225°02'49".

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

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: VAL VISTA
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY: A.M.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 recovered as described.
Reference mark 1 found in good condition.
Reference mark 2 found in good condition.
Azimuth mark recovered as described.

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

R

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: VAL VISTA
ESTABLISHED BY: E.B. Latham YEAR: 1935 STATE: Arizona
RECOVERED BY: C.A. Annis YEAR: 1963 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 °	'	"
HELL BUTTE (AMS) 1962	W	88		0	00	00.00
R.M. 2	W	88.60	27.005	10	32	23
Azimuth Mark	NW	approx. 0.15 mile		155	33	05.2
R.M. 1	S	62.09	18.925	293	51	25
Mesa, Municipal Water Tank No. 3	SW	approx. 6.0 miles		328	32	49.3
Mesa, Municipal Water Tank No. 1	SW	approx. 6.0 miles		341	23	33.9
Mesa, Municipal Water Tank No. 2	SW	approx. 6.0 miles		341	39	06.2

The station was recovered and all marks were found to be in good condition. The distance to the references marks were checked, a slight difference was found to reference mark 1. No data was available to check the directions.

A complete new description follows.

The station is located about 6 miles northeast of Mesa, about 1.0 mile south of the Salt River and about 200 yards west of the Roosevelt Conservation Canal.

To reach the station from the junction of State Highway 87(Country Club Drive)and Mc Kellips Road about 2.5 miles north of Mesa, go east on Mc Kellips Road for 5.0 miles to Val Vista Drive, turn left, go north on Val Vista Drive for 1.5 miles to forks, take right fork, go east along north side of a white board fence for 0.05 mile to a track road left, turn left, go north on track road for 0.1 mile to the station on left.

Station, a standard triangulation disk set in the top of a 12 inch square concrete post which projects 6 inches and stamped VAL VISTA 1935. The mark is 96 feet south-southwest of track road intersection, 86 feet south of center of track road and 17.5 feet west of track road.

Reference mark 1, a standard reference disk set in the top of a 12 inch square concrete post which projects 8 inches and stamped VAL VISTA NO 1 1935. The mark is 22 feet west of center of track road.

Reference mark 2, a standard reference disk set in the top of a 12 inch square concrete post which projects 4 inches and stamped VAL VISTA NO 2 1935. The mark is 106 feet west of center of track road and 42 feet north of track road.

Azimuth mark, a 3 inch bronze disk with cross in center set in a drill hole in the west end of a concrete headwall of a canal gate.

To reach the azimuth mark from the station, go south on track road for 1.0 mile to "T" road, turn left, go east for 0.15 mile to "T" road and canal, turn left, go south along west side of canal for 0.2 mile to canal gate and mark.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: VAL VISTA YEAR: 1935, 1963

STATE: Arizona LOCALITY: Yuma to Stewart Dam

First-ORDER Triangulation SOURCE: G-3022 G-13304 FIELD SKETCH: Ariz. 8-II, 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 550,472.68 y 900,245.64	224° 57' 20" + 0 05 29	AZIMUTH MARK RM 3
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 28' 28.8339 NORTH LONGITUDE: 111 45 04.1172 WEST		409.8 METERS 1344 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK RM 3	THIRD-ORDER 225°02'49".1	

FORM 251 (7-23-58) USCOMM-DC 16251-P61

FILE COPY

JAN 1967

USCOMM—ESSA—ASHEVILLE

168

B

JULY 1966 ARIZONA

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

33°15'

111°45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1022
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION
TRAVERSE

NAME OF STATION: STUART STATE: Arizona COUNTY: Maricopa

CHIEF OF PARTY: C.A. Annis YEAR: 1963 DESCRIBED BY: H.D. Ellis

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 4.6 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‡ °	'	"
	GRAM				0	00	00.00
	Phoenix, KTAR Radio Tower(South of 2)	NW			136	59	28.0
desc	R.M. No. 2	NNW	40.73	12.411	171	44	31
desc	Azimuth Mark	SE	approx. 0.45 mile		299	59	49.78
	Tempe, S.R.P. Radio tower	ESE	approx. 2.0 miles		305	42	01.2
llb	R.M. No. 1	SE	48.17	14.684	318	17	56

Detailed description

The station is located about 6 miles east of the center of Phoenix, about 1/2 mile east of 48th Street and about 1/4 mile south of East Van Buren Street.

To reach the station from the intersection of East Van Buren Street and North 48th Street, go east on East Van Buren Street for 0.5 mile to 52nd Street on left and the Hilltop Motel on right, turn right, go south, passing through motel driveway thence track road for 0.2 mile to top of small knoll and station.

Station, a standard traverse disk set in the top of a round concrete post which projects 2 inches and stamped STUART 1963. The mark is 13 feet west of center of track road and 7 feet east of a concrete block fence.

Reference mark 1, a standard reference disk set in the top of a round concrete post which projects 3 inches and stamped STUART NO 1 1963. The mark is 40 feet east of a concrete block fence and 17 feet east of center of track road.

Reference mark 2, a standard reference disk set in a drill hole in outcropping bedrock which project 1 inch and stamped STUART NO 2 1963. The mark is 12 feet west of center of track road and 1 foot east of a concrete block fence.

Azimuth mark, a standard azimuth disk set in a drill hole in the south curbing of East Washington Street and stamped STUART 1963. The mark is 51 feet northeast of the northeast corner of the Allied Shoe Company Office building, 35 feet south of center of East Washington Street and 22.5 feet west of a power pole.

To reach the azimuth mark from the station, go south on track road for 0.15 mile to East Washington Street, turn left, go east on East Washington Street for 0.4 mile to the Allied Shoe Company Office building and mark on right.

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

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: STUART 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 483,986.89 y 890,684.96	299° 42' 26" - 0 01 44	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 54".5937 NORTH LONGITUDE: 111 58 08.9947 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 299°40'42".5	

FORM 251 (7-23-58)

FILE COPY

JAN 1967

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 168 B

QUAD 331113 STATION 1023
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 15
111 45

FORM 525 (10-10-57)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

TRAVERSE

NAME OF STATION: GRAM 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 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† °	′	″
	STUART				0	00	00.00
16b	Azimuth Mark	N	approx. 0.4 mile		01	26	17.54
11b	R.M. No. 1	ENE	83.11	25.332	71	19	37
11b	R.M. No. 2	W	55.68	16.973	266	23	37
	Phoenix, Producers Cotton Oil Co. Water Tank	NW	approx. 0.7 mile		304	56	50.8

Detailed description:

The station is located about 7 miles east-southeast of the center of Phoenix, about 2 1/2 miles northwest of Tempe and 1/2 mile east of South 48th Street just south of the Grand Canal.

To reach the station from the intersection of East Washington Street and 48th Street, go south on 48th Street for 0.4 mile to crossroad just after crossing canal, turn left, go east along the south side of canal for 0.5 mile to the station on right.

Station, a standard traverse disk set in the top of a round concrete post which projects 1 inch and stamped GRAM 1963. The mark is 29 feet south of the south edge of canal, 15 feet south of center of road and 1.8 feet north of witness post.

Reference mark 1, a standard disk set in the top of a round concrete post which projects 2 inches and stamped GRAM NO 1 1963. The mark is 84.0 feet east-northeast of witness post, 13 feet south of center of road and 2 feet north of fence.

Reference mark 2, a standard reference disk set in the top of a round concrete post which projects 1 inch and stamped GRAM NO 2 1963. The mark is 55.6 feet west of witness post, 13 feet south of center of road and 1 foot north of fence.

Azimuth mark, a standard azimuth disk set in the top of a round concrete post which projects 1 inch and stamped GRAM 1963. The mark is 58 feet south of center of East Washington Street, 57 feet east-southeast of power pole number 57, 3.2 feet northwest of witness post and 2.5 feet west of fence.

To reach the azimuth mark from the intersection of East Washington Street and 48th Street, go east on East Washington Street for 0.5 mile to Wall's Livestock Supply and 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.

USCOMM-DC 27171-P69

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GRAM 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 484,000.71 y 887,953.65	181° 08' 54" - 0 01 44	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 27".5687 NORTH LONGITUDE: 111 58 08.8154 WEST		BENCH MARK METERS / FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 181°07'10".0	

FORM 281 (7-53-60)

USCOMM-DC 14328-P61

FILE COPY

FEB 5 1975

USCOMM—NOAA—ASHEVILLE

JULY 1966
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY
REV: JUNE 1969, MAR 1973

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 168 P

QUAD 331113 STATION 1024
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 15
111 45

DESCRIPTION OF TRIANGULATION STATION
TRAVERSE

NAME OF STATION: GANZ 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 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 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 ° ' "
	GRAM				00 00 00.00
11b	R.M. No. 1	NE	33.83	10.310	30 33 11.4
16b	Azimuth Mark	WSW	approx.	0.5 mile	254 23 12.31
11b	R.M. No. 2	NW	42.08	12.824	323 27 32.3
	Phoenix, Cudahy Water Tank	NW	approx.	1.5 miles	334 46 52.9

Detailed description:

Station is located about 6 miles east-southeast of Phoenix, about 1.5 miles south of East Washington Street, about 1/2 mile east of South 48th Street and at the southeast corner of feeding pens of the Hughes and Ganz Cattle Company.

To reach from the junction of East Washington Street and South 48th Street in the east section of Phoenix, go south on South 48th Street for 0.35 mile to the Grand Canal, continue south on South 48th Street for 0.7 mile to the Hughes and Ganz Company on left, continue south on South 48th Street for 0.25 mile to the azimuth mark on left, continue south on South 48th Street for 0.05 mile to side road left, turn left and cross cattle guard and go east-northeast following main track road for 0.5 mile to the southeast corner of cattle pens and station as described.

Station mark, a standard traverse disk stamped GANZ 1963, is set in the top of a concrete cylinder which is set flush with the ground. The mark is 39.5 feet northwest of a large tree, 18.3 feet west of the fence corner, 4.3 feet north of fence and 3.9 feet north-northeast of the witness post.

Reference mark 1, a standard reference disk stamped GANZ 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 34.7 feet northeast of the witness post, 32 feet north of the southeast fence corner, 2 feet south of east steel gate post and 1 foot west of fence.

Reference mark 2, a standard reference disk stamped GANZ 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 56.8 feet northwest of the fence corner, 45 feet northwest of the witness post and 0.6 feet south of fence.

Azimuth mark, is a standard azimuth disk stamped GANZ 1963, is set in the top of a concrete cylinder which projects about 4 inches. The mark is 190.4 feet south of a power pole No. 92 with transformers, 33 feet east of center of South 48th Street, 2.5 feet southwest of the witness post and 1.7 feet west of fence.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: GANZ
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☒
RECOVERED BY:* Arizona Hwy.Dep YEAR: 1968 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 ° ' "
GANZ 1963 RESET 1968 to RM 1 (Chained)		33.83		
GANZ 1963 RESET 1968 to RM 2 (Chained)		42.08		
Witness post to RM 1		37.68		
Witness post to RM 2		44.85		

This traverse station had been partially washed out and the concrete cylinder about one-third exposed. After removing the monument, the underground station mark appeared to be solid and in place. Straddles were set up and the concrete cylinder with surface station disk was reset directly over the underground station mark. The surface mark station disk is stamped " GANZ 1963 RESET 1968 ".

D-4011-2

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GANZ 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 ∠ at) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 484,065.51 y 883,622.64	73° 31' 47" - 0 01 44	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 44".7158 NORTH LONGITUDE: 111 58 08.0250 WEST		BENCH MARK METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 73°30'03".0	

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: GANZ
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY:* L.F. Smith YEAR: 1972 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 6 miles east-southeast 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 METERS	DISTANCE METERS FEET	DIRECTION ° ' "
Azimuth mark 1972 1/2 mile				0 00 00.0
Phoenix, Producters Cotton Oil Co. Water Tank 1962 1963				58 41 08.6
Phoenix, Cudahy Packing Co. Water Tank 1963				59 45 54.8
GANZ 2		19.3671	63.540	76 24 09.3
A Point		13.4976	44.283	80 29 59.2
RM 1	NE	10.310	33.83	

The station was in the way of pipe line construction and was moved at this time. The station mark and reference mark 2 and the azimuth mark were recovered and found in good condition. Reference mark 1 had been destroyed. The azimuth mark was obstructed by trees. The distance and direction to reference mark 2 check the 1963 values.

ANGLES OBSERVED FROM 1972 AZIMUTH MARK

GANZ 2	0 00 00.0
GANG 1963	1 23 53.1

USCOMM—NOAA—ASHEVILLE

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 331113 ARIZ STATION 1024
LATITUDE 33° 00′ TO 33° 30′
LONGITUDE 111° 30′ TO 112° 00′
DIAGRAM NI 12-8 MESA

ARIZONA 168

5 B

33 15
111 45

C&GS FORM 525
10-69

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

331113

DESCRIPTION OF TRIANGULATION STATION

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

CHIEF OF PARTY: L.F. Smith YEAR: 1972 DESCRIBED BY: L.W.W.

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 3 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 3 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‡ °	′	″
1a							
desc	RM 4 (azi Mk) 1/2 mile Phoenix, Producters Cotton Oil Co. Water Tank 1962-63	W			0	00	00.0
	Phoenix, Gudahy Packing Co. Water Tank 1963				59	56	05.8
desc	RM 3	NW	28.99	8.835	61	02	24.5
desc	RM 1	SE	33.83	10.310	105	56	57.0
	A point		19.609	5.9770	228	01	30
	GANZ 1963		63.540	19.3671	248	31	30
					257	48	00.5

Detailed description:

The station is located about 6 miles east-southeast of Phoenix, 1 1/2 miles south of East Washington Street and 1/2 mile east of South 48th Street, on property belonging to the U.S. Government.

The station mark is a standard NGS disk stamped, GANZ 2 1972. It is set in the top of a 10 inch concrete monument which projects 5 inches, 69 feet north of a east-west fenceline, 28 feet west of a north-south fence line and 1 foot west of a witness post and sign.

Reference mark 1 is a standard disk stamped, GANZ NO 1 1963. It is set in the top of a 12 inch concrete monument which is 5 inches below the ground surface. The mark is 2 feet southwest of a witness sign in the fence line.

Reference mark 3 is a NGS disk stamped, GANZ 2 NO 3 1972. It is set in the top of a 10 inch concrete monument which projects 1 1/2 inches, 95 feet north of a east-west fenceline, 19 feet west of a north-south fenceline and 30 feet west-southwest of witness post and sign.

Azimuth mark is a NGS disk stamped, GANZ 2 NO 4 1972. It is set in a drill hole in top of an old 1&6 foot concrete foundation. 13 feet east of a pump, 7 feet northeast of a junction pole, 40 paces east of centerline of 48th Street and 27 paces east of the right of way fence line.

To reach the station from the intersection of South 48th Street and Washington street in eastern Phoenix, go south along South 48th Street for 1.25 mile to a gate on the left. Turn left passing through gate, (the azimuth mark is about 50 feet northeast on this point) and follow track roads leading east for 1/2 mile to fence corner and 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 GANZ 2

STATE Arizona YEAR 1972 First ORDER

LOCALITY Arizona Hwy Survey, Papago Freeway

SOURCE G-10749 FIELD SKETCH

GEODETIC LATITUDE	33° 25′ 45.33584	ELEVATION	346.76 METERS
GEODETIC LONGITUDE	111 58 08.14834		1137.7 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	φ (OR Δ α) ANGLE
Ariz. C	0202	484,055.09	883,685.32	- 0 01 44

*PLANE AZIMUTH HAS 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
AZIMUTH MARK	92° 43′ 47.3	93° 45′ 31″	0202

Position determined by traverse: from station GANZ

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

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 168B

QUAD 331113 STATION 1025
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33° 15'
111° 45'

DESCRIPTION OF ~~TRIANGULATION~~ TRAVERSE STATION

NAME OF STATION: GOMEZ 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.

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
GANZ				00 00 00.00
Tempe, S.R.P. Radio Tower	ENE	approx. 2 miles		69 54 38.3
11b R.M. No. 1	E	35.09	10.693	85 23 22.6
Phoenix, KTAR TV Mast (W of 4)	SW	approx. 10 miles		213 22 12.4
TT R 6 (A.M.S.) (Azimuth mark)	W	approx. 0.45		260 29 06.24
desc. R.M. No. 2	NW	42.09	12.829	314 22 52.1

Detailed description:

Station is located about 6 1/2 miles southeast of the center of Phoenix, about 2 miles west-southwest of Tempe and on the north side of East Transmission Road.

To reach from East Washington Street and South 48th Street in the east section of Phoenix, go south on South 48th Street for 1.7 miles to East Transmission Road, (TT R 6 Azimuth Mark is located in the southwest corner of this intersection), turn left and go east on East Transmission Road for 0.45 mile to the station on left as described.

Station mark, a standard traverse disk stamped GOMEZ 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 south-southeast of the southeast corner of abandon house, 24 feet north of the center of East Transmission Road, 9 feet south-southeast of Farmers Insurance Sign, 3 feet northeast of fence corner and 2.7 feet north-northeast of the witness post.

Reference mark 1, a standard reference disk stamped GOMEZ 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 37 feet east of the fence corner, 36 feet east of witness post, 22 feet north of the center of East Transmission Road, 11.2 feet west of telephone cable pole No. 30 and 6 inches north of fence.

Reference mark 2, a standard reference disk stamped GOMEZ NO 2 1963, is set in a drill hole in the southeast corner of concrete patio. The mark is 43.8 feet northwest of witness post, 27.1 feet east-southeast of the southwest corner of house and 20.4 feet southwest of the southeast corner of house.

TT R 6 (Azimuth Mark), is a Corps of Engineers Army Map Service Survey Mark stamped TT R 6 1963, is set in the top of a concrete cylinder which projects about 1 foot. The mark is located in the southwest corner of intersection of East Transmission Road and South 48th Street, 29 feet east-northeast of fire hydrant and 12.5 feet northwest of center of irrigation gate.

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: GOMEZ
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☒
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 ° ' "
HUMM 1963				0 00 00.0
GOMEZ 2 RESET 1967	N	117.027	(35.670)	186 09 01.4

The station was found in good condition, description was adequate. Transmission Road has been changed to University Drive.

University Drive will soon be widened and the station would have been destroyed, so a new station GOMEZ 2 and reference marks 3 and 4 were established.

The original station mark, reference mark 1 and reference mark 2 were destroyed.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GOMEZ 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 ϕ(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 483,696.90 y 881,025.85	88° 33' 50" - 0 01 46	AZIMUTH MARK = TT R 6 AMS
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 19".0198 NORTH LONGITUDE: 111 58 12.3588 WEST		346.81 METERS 1137.8 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = TT R 6 AMS	SECOND-ORDER 88°32'04".5	

FORM 261 (7-28-69) USCOMM-DC 16261-P69

FILE COPY

JUN 1972

USCOMM—NOAA—ASHEVILLE

168

MARCH 1972 **ARIZONA**

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

33015'
111°45'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 ARIZ STATION 1025 A
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

B

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: GOMEZ 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 SURFACE-STATION MARK, UNDERGROUND-STATION MARK
7 a 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 ° ' "
	HUMM 1963				0 00 00.0
1b	GOMEZ 1963	S	117.027	(35.670)	5 53 52.9
11b	GOMEZ 2 RM 3	W	68.098	(20.756)	103 16 43.0
11b	GOMEZ 2 RM 4	N	68.023	(20.733)	187 11 00.8

Detailed description:

Station is located about 6.5 miles southeast of the center of Phoenix, about 2 miles west-southwest of Tempe and on the north side of University Drive.

To reach from East Washington Street and South 48th Street in the east section of Phoenix, go south on South 48th Street for 1.7 miles to University Drive, turn left and go east on University Drive for 0.45 mile to the station on left as described.

Station mark is a standard disk stamped " GOMEZ 2 BM RESET 1967" set in an 8¾-inch circular concrete monument flush with the ground. The mark is 141.327 feet north of the center line of University Drive, 55.80 feet north-northeast of the northeast corner of an abandoned adobe house, 3.5 feet north of a witness post and 0.40 feet east of a north-south fence.

Reference mark 3 , a standard reference mark disk stamped " GOMEZ 2 NO 3 RESET 1967 " set in an 8¾-inch circular concrete monument projecting 0.3 feet. The mark is 4.0 feet south-southwest of a 14-inch mesquite tree and 0.40 feet east of a north-south fence.

Reference mark 4, a standard reference mark disk stamped " GOMEZ 2 NO 4 RESET 1967 " set in an 8¾-inch circular concrete monument projecting 0.10 feet. The mark is 0.40 feet east of a north-south fence.

No azimuth mark was set.

*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: GOMEZ 2

STATE: ARIZONA YEAR: 1967 FIRST -ORDER

LOCALITY: ARIZONA HWY SURVEY PAPAGA FREEWAY

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

GEODETIC LATITUDE:	33 25 20.17705	ELEVATION: 346.99 METERS	
GEODETIC LONGITUDE:	111 58 12.40150	1138.4 FEET	

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ C	0202	483,693.34	881,142.81	- 0 01 46

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
HUMM	352 19 44.4	352 21 30	0202

POSITION DETERMINED BY TRAVERSE FROM STATION GOMEZ

JULY 1966
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
Revised JULY 1975

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 168

QUAD 331113 STATION 1026
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 °15
111 45

FORM 525
(6-15-66)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: HUMM 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† ° ' "	
	GOMEZ (V.G.)				0 00 00.00	
11b	Reference Mark 1	N	33.09	10.087	109 09 20.2	
	BELLE BUTTE (AMS)				174 20 15.62	
16b	Azimuth Mark	S	Approx. 0.25 Mile		185 59 08.96	
11b	Reference Mark 2	S	40.25	12.269	188 42 10.4	

Detailed description:

The station is located along the west side of 52 nd Street, 1/2 mile north of Bell Butte, 7 miles southeast of the central section of Phoenix and on Highway property.

To reach the station from the intersection of East Van Buren and 48 th Street, go south on 48 th Street for 2.0 miles to the intersection of Transmission Road, turn left and go east on Transmission Road for 0.5 mile to a graveled road right, 52 nd Street, turn right and go south on 52 nd Street for 0.5 mile to a driveway right and the station as described.

The station mark is a standard traverse disk stamped HUMM 1963, set in top of a 12-inch concrete cylinder which projects 3 inches above the ground surface. It is 2.4 feet east of a standard metal witness post and marker, 2.4 feet east of a north and south fence line, 19.0 feet west of the approximate center of 52 nd Street, 25.5 feet north of a powerline pole number 36 and 53.0 feet south of the approximate center of a driveway.

Reference mark 1 is a standard disk stamped HUMM NO 1 1963, set in top of a 12-inch concrete cylinder which projects 3 inches above the ground surface. It is 3.3 feet east of the northeast fence corner, 18.0 feet west of the approximate center of 52 nd Street, 20.0 feet south of the approximate center of the driveway and 33.3 feet north of the witness post.

Reference mark 2 is a standard disk stamped HUMM NO 2 1963, set in top of a 12-inch concrete cylinder which projects 2 inches above the ground surface. It is 1.8 feet east of the north and south fence line, 14.6 feet south of the powerline pole number 36, 19.0 feet west of the approximate center of 52 nd Street and 40.1 feet south of the witness post.

The azimuth mark is a standard disk stamped HUMM 1963, set in top of a 12-inch concrete cylinder which is flush with the ground surface. It is 3.0 feet west of west edge of a cultivated field, 2.6 feet north of a witness post, 4.8 feet north of a powerline pole number 35-36 and 24.5 feet east of the approximate center of 52 nd Street.

To reach the azimuth from the station, go south on 52 nd Street for 0.25 mile to the azimuth mark 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.

USCOMM-DC 27171-P69

FILE COPY
MAY 26 1976

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HUMM 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 (FOR Δal ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 484,071.62 y 878,323.33	358° 05' 31" - 0 01 44	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

AZIMUTH MARK IS ALSO A BENCH MARK

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 24' 52".2815 NORTH LONGITUDE: 111 58 07.9215 WEST		347.64 METERS 1140.5 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	SECOND-ORDER 358°03'46".6	

RECOVERY NOTE, TRIANGULATION STATION R

NAME OF STATION: HUMM
ESTABLISHED BY: C.A.A. YEAR: 1963 STATE: Arizona BENCH MARK ALSO ☐
RECOVERED BY:* Charles Novak YEAR: 1974 COUNTY: Maricopa
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 7 miles southeast 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 ° ' "
TEMPE BUTTE 1963				0 00 00.0
HUMM 2				102 04 28.7
Azimuth mark (1963) 1/4 mile	S			113 49 12.4
RM 2	S	40.25	12.269	116 33 11
RM 1	N	33.08	10.083	296 57 46

The station mark, reference marks 1 and 2 and the azimuth mark were recovered as described and found in good condition.

The station was moved at this time due to construction in the area.

OBSERVATIONS FROM HUMM AZIMUTH MARK 1963

HUMM 1963	0 00 00.0
HUMM 2	157 48 24.8

USCOMM—NOAA—ASHEVILLE

ARIZONA 168B

JULY 1975
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 ARIZ 331113 STATION 1026
LATITUDE 33° 00′ TO 33° 30′
LONGITUDE 111° 30′ TO 112° 00′
DIAGRAM NI 12-8 MESA

C&GS FORM 525
10-69)

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

DESCRIPTION OF TRIANGULATION STATION

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

CHIEF OF PARTY: Charles Novak YEAR: 1974 DESCRIBED BY: L.W.W.

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 METERS, HEIGHT OF LIGHT ABOVE STATION MARK 1.5 METERS.

desc none — 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 ° ′ ″
TEMPE BUTTE 1963				0 00 00.0
RM 4	NE	7.93	2.416	12 34 41
RM 3	ESE	20.155	6.143	84 20 50
Azimuth mark 0.3 mile	NNW			284 56 17.4
Phoenix, Producers Cotton Oil Co. Water Tank 1963				293 31 26.5
HUMM 1963				295 23 09.5
Scottsdale, Motorola Water Tank 1963				352 22 08.9

Detailed description:

The station is located about 7 miles southeast of Phoenix and 1 1/2 miles southwest of Tempe. It is on top of a prominent butte which is locally known as Bell Butte.

The station mark is a standard disk stamped, HUMM 2 1974. It is set in a drill hole on the high point at the south end of the butte.

Reference mark 3 is a standard disk stamped, HUMM 2 NO 3 1974. It is set in a drill hole on the south slope of the butte which is about 2 1/2 feet lower than the station.

Reference mark 4 is an Arizona Department of Highways disk stamped, JACK P&M 1967. It is set in top of a rock outcrop at the southeast high-point of the butte.

The azimuth mark is a standard disk stamped, HUMM 1963. It is set in top of a 12 inch concrete monument which is flush with the ground surface. It is 2.6 feet north of a witness post, 3 feet west of the west edge of a cultivated field, 4.8 feet north of power pole no. 35-36 and 24 1/2 feet east of the approximate center of 52nd Street.

To reach the station from East Van Buren and 48th Street in the eastern part of Phoenix, go south for 2 miles along 48th Street to University Drive, continue south for 0.8 mile to Broadway Turn left and go east along Broadway for 0.7 mile to a gate on the right. Pass through the gate and follow graded road for about 0.05 mile to a locked gate. (key obtainable from Salt River Project) Continue to top of butte and station. A 5 minute pack.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: HUMM 2
ESTABLISHED BY: C N YEAR: 1974 STATE: ARIZONA BENCH MARK ALSO ☐
RECOVERED BY: TOM TAYLOR YEAR: 1975 COUNTY: MARICOPA
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 4 1/2 MILES SW OF TEMPE
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 ° ′ ″
PAPAGO 1962				0 00 00.0
RM 4	E	7.94	2.419	53 53 08
RM 3	S	20.17	6.148	125 39 27

The station mark RM 3 and AHD JACK were recovered and found in good condition. The Azimuth mark was not searched for. The route to the station remains unchanged.

FILE COPY
MAY 26 1976

ADJUSTED HORIZONTAL CONTROL DATA

33°15′
111 45

NAME OF STATION HUMM 2
STATE Arizona YEAR 1974 First ORDER
LOCALITY
SOURCE G-10749 FIELD SKETCH

GEODETIC LATITUDE	33 ° 24 ′ 24.23905 ″	ELEVATION	414.1 METERS
GEODETIC LONGITUDE	111 57 59.78190		1359 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE ° ′ ″
Ariz. C	0202	484,760.18	875,488.87	- 0 01 39

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ (OR Δ α) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
AZIMUTH MARK 1963	155° 52′ 14.1″	155° 53′ 53″	0202

ADJUSTED HORIZONTAL CONTROL DATA

33°15′
111 45

NAME OF STATION: HUMM 1963 AZ MK
STATE: Arizona YEAR: 1974 Second ORDER
LOCALITY:
SOURCE: G-10749 FIELD SKETCH:

GEODETIC LATITUDE:	33 ° 24 ′ 38.43368 ″	ELEVATION:	348.16 METERS
GEODETIC LONGITUDE:	111 58 07.36301		1142.2 FEET

STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE ° ′ ″
Ariz. C	0202	484,118.26	876,923.77	- 0 01 43

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
HUMM 2	335 °52 ′09.9 ″	335 °53 ′53 ″	0202

USCOMM—ESSA—ASHEVILLE

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 168 B

QUAD 331113 STATION 1027
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33 0 15
111 0 45

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: TEMPE BUTTE 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‡
	BELL BUTTE AMS 1962				00 00 00.0
desc.	R.M. No. 3	WNW	10.3	3.14	26 09 35
desc.	Azimuth Mark (A.H.D. Mark)	NW	approx.	0.3 mile	45 14 24.7
	Scottsdale, Motorola Water Tank	NE	approx.	3 miles	166 11 49.5
desc.	R.M. No. 1	E	16.56	5.049	180 44 13
	VORTAC, Phoenix Radio PHX	E	approx.	5 miles	214 11 07.7
12a	R.M. No. 2	S	22.88	6.975	263 43 19

Detailed description:

Station is located about 1/2 mile northeast of the business district of Tempe and on the highest point of Tempe Butte.

To reach from the junction of Mill Avenue and 5th Street in Tempe, go north on Mill Avenue for 0.2 mile to West 2nd Street and the azimuth mark on left as described, continue north on Mill Avenue for 0.15 mile to side road right just north of the Hayden Flour Elevator, turn right and go east about 100 yards thence right, south, keeping to the east side of elevator for 0.1 mile, then go left on track road that goes easterly up butte for 0.25 mile to top and end of truck travel, from here pack northerly up steep slope for 100 yards to top of butte and station.

Station mark is a standard triangulation disk stamped TEMPE BUTTE 1963, is cemented in a drill hole in outcropping bedrock about 18 inches below the top of rock that surrounds the disk. The mark is 7.5 feet southwest of the northwest corner of concrete roof of building, 6.4 feet east-southeast of the southwest corner of concrete foundation for Salt River Project Radio Tower and 4.7 feet south of the southeast corner of concrete foundation for radio tower.

Reference mark 1, a standard reference disk stamped TEMPE BUTTE NO 1 1963, is cemented in a drill hole in the northeast corner of concrete roof of building and is about the same elevation as the station mark.

Reference mark 2, a standard reference disk stamped TEMPE BUTTE NO 2 1963, is cemented in a drill hole in outcropping bedrock that is south of station mark and is about 3 feet lower in elevation than the station. The mark is 13.3 feet southeast of the southwest corner of building and 8.1 feet southeast of the southwest fence corner.

Reference mark 3, is a brass disk set in a drill hole in outcropping bedrock. There is no stamping on the disk but a cross marks the center. The mark is about 3 feet lower in elevation than the station mark.

Azimuth mark, a Arizona Highway Department Elevation Station disk stamped 1162+16 0+4825 1961, is cemented in a drill hole in the north west street curb at the intersection of Mill Avenue and West 2nd Street. The mark is set in bus stop area and is painted over with red paint.

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

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TEMPE BUTTE YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 494,381.82 y 883,291.57	96° 27' 51" - 0 00 36	AZIMUTH MARK = BENCH MARK AHD
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 41".4746 NORTH LONGITUDE: 111 56 06.2931 WEST		456.1 METERS 1496 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = BENCH MARK AHD	THIRD-ORDER 96°27'15".4	

FORM 281 (3-23-66) USCOMM-DC 18261-P61

USCOMM—ESSA—ASHEVILLE

FILE COPY

JAN 1967

168

ARIZONA

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

330 15'
111° 45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1028,1029
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

ADJUSTED HORIZONTAL CONTROL DATA

B

NAME OF STATION: TEMPE SALT RIVER PROJECT RADIO TOWER 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 (FOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 494,376.28 y 883,298.00	- 0 00 37	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 41".538 NORTH LONGITUDE: 111 56 06.358 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: BELL BUTTE AMS, HUMM, GOMEZ, GRAN, STUART, CURB, SCOTT, RURAL		

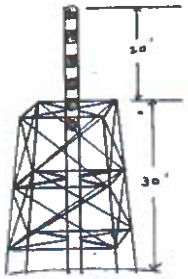
U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Tempe, Salt River Project Radio Tower

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

Description, including sketch of object: The Salt River Project, Tempe Base Station, Radio Tower is situated on the highest point of Tempe Butte which is located in the north section of the city of Tempe. The top and center of the pole, painted alternately red and white, which projects from a 30 feet steel tower, was the point observed. The over-all height of the tower is 50 feet. The elevation of the butte is 1496 feet.



Described by Carl Annis

B

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TEMPE BUTTE AIRWAY BEACON YEAR: 1935

STATE: Arizona LOCALITY: Yuma to Stewart Dam

Third -ORDER Triangulation SOURCE: G-3022 FIELD SKETCH: Ariz. 8

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Δα) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 494,375.82 y 883,297.37		
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33°25'41".532 NORTH LONGITUDE: 111 56 06.364 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
Station computed from MESA, WHITEM, RIVER		

Tempe Butte, airway beacon (Maricopa County, E. B. Latham, 1935).-

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

RECOVERY NOTE, TRIANGULATION INTERSECTION STATION

R

NAME OF STATION: Tempe Butte, Airway Beacon,
ESTABLISHED BY: E.B.L. YEAR: 1935 STATE: Arizona
RECOVERED BY: L.J.Q. YEAR: 1953 COUNTY: Maricopa No previous description.

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

The station has been destroyed. On Tempe Butte there now stands an antenna atop steel tower.

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

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: TEMPE BUTTE, AIRWAY BEACON
ESTABLISHED BY: EBL YEAR: 1935 STATE: Arizona
RECOVERED BY: WTJ YEAR: 1957 COUNTY: Maricopa

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

The rotating light is gone but the tower still stands and there is a short radio tower projecting out the top where the light used to be. The center of the old tower was observed on.

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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

168 B

QUAD 331113 STATION 1030
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33° 15'
111° 45'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: RURAL STATE: Arizona COUNTY: Maricopa

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

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

NOTE.*	SURFACE-STATION MARK, UNDERGROUND-STATION MARK / OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION‡
1b 7a	TEMPE BUTTE				00 00 00.0
11b	R.M. No. 1	E	41.06	12.515	118 11 13
desc	Azimuth Mark	S	approx.	1.0 mile	193 58 03.8
desc	TT U8 (AMS) (trav. dist.)	S	104.72	31.918	206 54 44.78
desc	R.M. No. 2	WSW	89.16	27.177	267 22 56
	Tempe, S.R.P. Radio Tower	NW	approx.	2.5 miles	359 58 56.9

Detailed description:

Station is located in the northeast corner of intersection at Southern Avenue and Rural Road which is 1.5 miles south of center of Tempe.

To reach from Mill Avenue and 5th Street in Tempe, go south on Mill Avenue for 2.3 mile to Southern Avenue, turn left and go east on Southern Avenue for 0.8 mile to Rural Road and station in the northeast corner of intersection as described.

Station mark, a standard triangulation disk stamped RURAL 1963, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 79 feet north of the center of Southern Avenue, 42 feet east of the center of Rural Road, 13 feet north of fence and 4 feet south of the witness post.

Reference mark 1, is a standard reference disk stamped RURAL 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 82 feet east of center of Rural Road, 68 feet north of the center of Southern Avenue, 42 feet southeast of the witness post and 1 foot north of fence.

Reference mark 2, a standard reference disk stamped RURAL NO 2 1963, is set in a drill hole in the northeast corner of irrigation gate control which projects about 1 foot above the ground. The mark is 55 feet north of the center of Southern Avenue and 43 feet west of the center of Rural Road.

Azimuth mark, is a Arizona Highway Department Elevation Station disk with no stamping. The disk is cemented in a drill hole in an irrigation headwall. The mark is 32 feet east of center of Canal Drive and 24 feet north of center of East Baseline Road.

A traverse connection was made from RURAL to TT U8 (AMS) and the distance is 104.72 feet or 31.918 meters.

TT U8 (AMS), is a Corps of Engineers Army Map Service disk stamped TT U8 1960, is set in the top of a concrete cylinder which is set below the surface of the ground about 6 inches. The mark is 23 feet south of the center of Southern Avenue, 19 feet east of the center of Rural Road and 2.2 feet northwest of a telephone pole.

*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: RURAL YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (HOR ∠s) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 497,312.82 y 870,534.04	1° 01' 42" - 0 00 17	AZIMUTH MARK = BENCH MARK AHD
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 23' 35".2481 NORTH LONGITUDE: 111 55 31.6953 WEST		358.7 METERS 1177 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = BENCH MARK AHD	THIRD-ORDER 1°01'25".2	

FORM 261 (7-23-58) USCOMM-DC (1951-P61)

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168

B

ARIZONA

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COAST AND GEODETIC SURVEY
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RURAL (Continued) 33°15'
111°45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1030
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

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

TRAVERSE
DESCRIPTION OF [redacted] STATION

NAME OF STATION: TT U8 (AMS)

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

Description, including sketch of object:

Station is located in the southeast corner of intersection at Southern Avenue and Rural Road which is 1.5 miles south of the center of Tempe.

Station is a Corps of Engineers Army Map Service disk stamped TT U8 1960, is set in the top of a concrete cylinder which is set below the surface of the ground about 6 inches. The mark is 23 feet south of the center of Southern Avenue, 19 feet east of the center of Rural Road and 2.2 feet northwest of a telephone pole.

A traverse connection was made from triangulation station RURAL to TT U8 (AMS) and the distance is 104.72 ft. or 31.918 meters.

Described by R.P. Konrady 1/6

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TT U8 AMS YEAR: 1963

STATE: Arizona LOCALITY: Vicinity of Phoenix

First-ORDER Traverse SOURCE: G-13304 FIELD SKETCH: Ariz. 51
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 497,287.54 y 870,432.43	- 0 00 18	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 23' 34".2427 NORTH LONGITUDE: 111 55 31.9934 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
Position determined by traverse from station RURAL		

FORM 251 (7-25-61)

FILE COPY

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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 168

QUAD 331113 STATION 1031 B
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: BELL BUTTE (AMS) 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 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	DIRECTIONS ° ' "
	TELEGRAPH PASS (USGS) 1935				00 00 00.00
	Phoenix, KTAR TV Mast	SW	approx. 7.0 miles		00 04 43.9
12a	R. M. No. 1	N	19.46	5.933	126 38 23
	Azimuth Mark	E	approx. 0.5 mile		216 13 22.1
12a	R. M. No.2	S	20.09	6.124	288 37 32

Detailed description:

The station is located on the highest point of the Bell Butte Hills and on the northeast butte of a small group of three, it is about 7 miles southeast of Phoenix, about 2 miles southwest of Tempe and about 2 1/2 miles north of Guadalupe.

To reach the station from the intersection of E. Broadway Rd. and Priest Rd. and azimuth mark (U.S. Army War Department Corp of Engineers Survey Mark) in the northwest angle of intersection, go west on E. Broadway Rd. for 0.65 mile to butte and a side road left, turn left and go south around west side of hill to the southwest side and end of truck travel. From here pack northeast and east up hill to highest point and station.

Station mark, a U.S. Army War Department Corp. of Engineers Mark set in a drill hole in outcropping bedrock and is stamped BELL BUTTE 1948. The mark is 11 feet northwest of an 8 foot post an on the highest point of the hill.

Reference mark 1, a standard reference disk set in a drill hole in outcropping bedrock and is stamped BELL BUTTE AMS NO 2 1962. The mark is 29.6 feet northwest of an 8 foot post and about 2 feet lower than the station mark.

Reference mark 2, a standard reference disk set in a drill hole in outcropping bedrock and stamped BELL BUTTE AMS NO 2 1962. The mark is 6 feet south of an 8 foot post and about 1 foot lower than the station mark.

Azimuth mark, a U.S. Army War Department Corp. of Engineers Mark set in the top of a 20 inch round concrete post which is about 6 inches under ground and is stamped TL-S-7 ARMY MAP SERVICE 1960. The mark is 37 feet north of E. Broadway Rd., 38 feet west of Priest Rd., 21 feet east southeast on a power pole, 3.4 feet south of a right-of-way post and 3 feet north of a right-of-way post.

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

RECOVERY NOTE, TRIANGULATION STATION
Card 1 of 1

R

NAME OF STATION: BELL BUTTE (AMS)
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:

The station mark, azimuth mark, reference marks number 1 and 2 were recovered as described and found to be in good condition.
The description of to reach the station was found to be adequate.

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

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: BELL BUTTE (AMS)
ESTABLISHED BY: YEAR 1948 STATE Arizona
RECOVERED BY:* P. A. Weber YEAR: 1964 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 No. 1 and No. 2 were destroyed by John Carollo Engineers of Phoenix Arizona and the disks forwarded to this office.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BELL BUTTE AMS YEAR: 1962, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (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 Adj ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 484,741.08 y 875,546.89	263° 56' 13" - 0 01 39	AZIMUTH MARK = TL S 7 AMS
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 24' 24".8131 NORTH LONGITUDE: 111 58 00.0075 WEST		418.5 METERS 1373 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = TL S 7 AMS	THIRD-ORDER 263°54'33".7	

FORM 261 (7-23-58) USCOMM-DC 72251-P61

USCOMM—ESSA—ASHEVILLE

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168 D
C

JULY 1966 ARIZONA

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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33 01 5'
111° 45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1032
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION

TRAVERSE

NAME OF STATION: ANGELO STATE: Arizona COUNTY: Maricopa

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

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 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	DIRECTIONS‡ ° ' "
	BELLE BUTTE (AMS)				00 00 00
	Guadalupe, KUPD Radio Mast (center of 3)	NNE	approx.	0.5 mile	36 11 26.9
12a	R. M. No. 1	ESE	62.09	18.924	105 45 26
12a	R. M. No. 2	SE	20.60	6.280	123 50 26

Detailed description:

The station is located about 9 miles southeast of the center of Phoenix, about 4 miles south-southwest of Tempe, 1/2 mile west of Guadalupe and on a small rocky hill with a cross on top.

To reach the station from the junction of East Base Line Road and 56th Street, about 1/2 mile north of Guadalupe, go south on 56th Street for 0.4 mile to the post office in Guadalupe, continue south on 56 th Street for 0.2 mile, turn right, go west on San Angelo Street for 0.4 mile to the base of small hill with a cross on top. continue west up steep grade for 0.1 mile to the station.

Station mark, a standard traverse disk set in a drill hole in outcropping bedrock which is flush and is stamped ANGELO 1962. The mark 103 feet east-southeast of a cross on top of hill and is approximately 15 feet lower than the top of the hill.

Reference mark 1, a standard reference disk set in a drill hole in top outcropping bedrock which is flush and is stamped ANGELO NO 1 1962. The mark is 26.5 feet north of the center of track road and is approximately 15 feet lower than the station mark.

Reference mark 2, a standard reference disk set in top of outcropping bedrock which is flush and is about 5 feet lower than the station mark. The mark is 19 feet north of center of track road and the disk is stamped ANGELO NO 2 1962.

No Azimuth mark set, Guadalupe, KUPD Radio Mast could be used as azimuth.

Distance from R. M. No.1 to R. M. No.2 is 43.22 ft. or 13.175 m.

*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: ANGELO YEAR: 1962, 1963

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

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (from Δal ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 483,107.09 y 862,121.22	223° 07' 48" - 0 01 50	AZIMUTH MARK Δ GUADALUPE RADIO STATION KUPD CENTER MAST
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 22' 11".9632 NORTH LONGITUDE: 111 58 19.1993 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
GUADALUPE RADIO STATION KUPD CENTER MAST	THIRD-ORDER 223°05'58".0	

FORM 251 (7-30-51) USCGS-DC 1951-951

JAN 1967

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COAST AND GEODETIC SURVEY
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HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

168

QUAD 331113 STATION 1033
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

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

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Guadalupe, Radio Station KUPD, Center Mast

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

Description, including sketch of object: Station is located about 1/4 mile north-northwest of Guadalupe. It is the center one of three identical masts, which are painted red and white and are approximately 237 feet high.

To reach from the post office in Guadalupe, go north on 56 th. Street for 0.25 mile, turn left and go west on Beverly Road for 0.2 mile to a driveway and the three masts on the right.

The point intersected was the red light on top of center mast.

Described by R. C. Jones

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GUADALUPE RADIO STATION KUPD CENTER MAST YEAR: 1962

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 485,047.11 y 864,192.90	° ' " - 0 01 37	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 22' 32".464 NORTH LONGITUDE: 111 57 56.334 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: HIGH, ANGELO, RIVER, BELL BUTTE AMS, GOODYEAR 2, PORT		

Form 561 (7-22-66) USCOMM-DC 16251-P67

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168C

ARIZONA

JULY 1966
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COAST AND GEODETIC SURVEY
WASHINGTON D.C.

33° 15'
111° 45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1034
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF ~~TRIANGULATION~~ STATION

TRAVERSE

NAME OF STATION: HIGH STATE: Arizona COUNTY: Maricopa

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

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 4.23 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 4.6 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° ' "		
	ANGELO				00	00	00.0
7a	Guadalupe, KUPD Radio Mast	NNE	approx.	4 miles	05	12	52.7
11b	R.M. No. 1 /(center of 3)	E	52.19	15.906	88	42	33
	Chandler, Municipal Water Tank /(3)	ESE	approx.	8 1/2 m.	97	31	24.5
	Chandler, Municipal Water Tank /NE	ESE	approx.	8 1/2 m.	97	37	42.7
11b	R.M. No. 2	W	50.85	15.500	266	49	50
desc.	Azimuth Mark (AMS)	W	approx.	0.3 mile	269	21	54.3

Detailed description:

Station is located about 11 miles southeast of Phoenix, about 8 miles west of Chandler, about 4 miles south of Guadalupe and on right-of-way on south side of road.

To reach from S. Central Avenue and Baseline Road in the south part of Phoenix, go east on Baseline Road for 6.5 miles to S. 56th Street on right, turn right and go south on S. 56th Street for 4.4 miles to cross-road (Ray Road) and Kyrene Store and 76 Service Station on right, turn right and go west on Ray Road for 0.6 mile to where road crosses canal, continue west for 0.1 mile to station on left.

Station mark, a standard traverse disk stamped HIGH 1962, is set in top of a concrete cylinder which is set flush with the surface of the ground. The mark is 26 feet east-southeast of a triangle blazed telephone pole, 25 feet south of center of road, 17 feet north of the north edge of irrigation ditch and 1.4 feet south of the witness post.

Reference mark 1, a standard reference disk stamped HIGH NO 1 1962, is set in top of a concrete cylinder which projects about 2 inches above the ground. The mark is 77.5 feet east of a triangle blazed telephone pole, 53 feet east of the witness post, 27 feet south of the center of road and 16 feet north of the north edge of irrigation ditch.

Reference mark 2, a standard reference disk stamped HIGH NO 2 1962, is set in the top of a concrete cylinder which is set flush with the surface of the ground. The mark is 50.2 feet west of the witness post, 27 feet south of the center of road, 25.5 feet west-southwest of a triangle blazed telephone pole and 16 feet north of the north edge of irrigation ditch.

Azimuth mark, a Corps of Engineers traverse station disk stamped TT R13 1948 RESET AMS 1952, is set in top of a concrete cylinder which projects about 7 inches above the ground. The mark is 61 feet northwest of center of intersection, 50 feet west of center of S. 48th Street, 34 feet north of the center of Ray Road and 2 feet north of the witness post.

To reach the azimuth mark from the station, go west on Ray Road for 0.3 mile to junction of S. 48th Street and azimuth mark in northwest corner of intersection as described.

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

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HIGH 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.	x 482,449.72	91° 25' 31"	AZIMUTH MARK = TT R 13 RESET (AMS)
ZONE: C	y 843,845.64	- 0 01 54	
CODE: 0202			
STATE:	x		
ZONE:	y		
CODE:			

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 19' 11".1287 NORTH		BENCH MARK METERS FEET
	LONGITUDE: 111 58 26.8321 WEST		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = TT R 13 RESET AMS	THIRD-ORDER 91°23'36".8	

FORM 251 (7-25-30)

FILE COPY

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COAST AND GEODETIC SURVEY
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HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA

168c

QUAD 331113 STATION 1035
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33° 15'
111° 45

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF [redacted] STATION
TRAVERSE

NAME OF STATION: PORT 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 ____ METERS.

NOTE.*	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
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				
	HIGH				00 00 00
11b	R.M. No. 1	NE	150.00	45.717	67 46 03
	Goodyear, Aux, Field Eater Tank 1935	SE	approx.	6 miles	123 19 20.1
11b	R.M. No. 2	SE	66.37	20.230	157 03 01
	Azimuth Mark (USC&GS BM C 414)	SE	approx.	0.55 mile	157 16 12.0

Detailed description:

The station is located about 7 miles west-southwest of Chandler, about 6 1/2 miles south of Guadalupe, about 1/4 mile east of a surfaced road and is set in the center line of proposed interstate highway.

To reach the station from the junction of East Baseline Road and south 56th Street, about 1/4 mile north of Guadalupe. Go south on 56th Street for 0.4 mile to the post office in Guadalupe, continue south on 56th Street for 4.65 miles to a "T" road, turn left, go east on Williams Field Road for 0.15 mile to a side road right, turn right, go south for 1.95 miles to a dim track road left, turn left off road, thence left and go north for 0.1 mile, turn right and follow cleared line southeast for 0.2 mile to the station.

Station mark, a standard traverse disk set in top of a round concrete post which projects about 5 inches and is stamped PORT 1962. The mark is set in the center line of the proposed highway and is 2.6 feet southwest of witness post.

Reference mark 1, a standard reference disk set in top of a round concrete post which projects about 5 inches and is stamped PORT NO 1 1962. The mark is 147.9 feet northeast of witness post and 1 foot southwest of a yellow 2 x 4 witness post.

Reference mark 2, a standard reference disk set in top of a round concrete post which projects about 4 inches and is stamped PORT NO 2 1962. The mark is set in the center of proposed highway, 65.0 feet southeast of witness post and 1 foot northwest of a yellow 2 x 4 witness post.

Azimuth mark, a standard U.S.C.& G.S. Bench mark set in top of a round concrete post which projects about 3 inches and is stamped C 414 1962. The mark is 29.5 feet southeast of an Arizona Highway Department Survey mark (POT 949 4501), 26.0 feet southeast of (AHD) witness post and 3.2 feet north of witness post.

To reach the Azimuth mark from the station, go southeast for 0.55 mile to 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: PORT 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 (Hor Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 485,178.62 y 828,757.01	327° 01' 07" - 0 01 36	AZIMUTH MARK = BM C 414
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 16' 41".8442 NORTH		BENCH MARK METERS
	LONGITUDE: 111 57 54.5891 WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK = BM C 414	THIRD-ORDER 326°59'30".6	

FORM 561 (7-22-58)

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

168c

QUAD 331113 STATION 1036
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

Goodyear (Maricopa County, E. B. Latham, 1935).—About 4 miles southwest of the town of Chandler, on a small sandy rise in the middle of sec. 12, T. 2 S., R. 4 E. Marked by a standard bronze disk as described in note 1a. Reference mark No. 1, a standard bronze reference disk, note 11a, is 24.780 meters (81.30 feet) from station in azimuth 266°57'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 18.660 meters (61.22 feet) from station in azimuth 10°33'.

Form 526
(11-8-55)

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

R

NAME OF STATION: GOODYEAR
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 and reference mark 1 found destroyed.
Reference mark 2 recovered as described in good condition.

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

R

NAME OF STATION: GOODYEAR
ESTABLISHED BY: E. B. L. 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:

The station was recovered, the surface station mark and reference mark 1 had been destroyed, the sub surface mark was found to be loose in the ground and reference mark 2 was found to be in good condition.

Station GOODYEAR 2 was established at this time, in the approximate location of the original station.

B. P. Brunetti

*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: GOODYEAR YEAR: 1935
STATE: Arizona LOCALITY: Ajo to Tucson to Phoenix to Winkelman
First -ORDER Triangulation SOURCE: G-3058 G-12917 FIELD SKETCH: Ariz. 9

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 506,105.19 y 824,132.48	309° 53' 54" + 0 00 39	AZIMUTH MARK, GOODYEAR AUX FIELD WATER TANK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
LATITUDE:	33° 15' 56"1137	NORTH		METERS
LONGITUDE:	111 53 48.0940	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK, GOODYEAR AUX FIELD WATER TANK	THIRD-ORDER 309°54'33"1	

FORM 251 (7-28-60) USCOMM-ESSA-ASHEVILLE

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JAN 1967

168C

JULY 1966 ARIZONA

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HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1036
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

GOODYEAR (Continued)

33° 15
111° 45

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION STATION

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

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

NOTE.* HEIGHT OF TELESCOPE ABOVE STATION MARK 19.44 METERS.† HEIGHT OF LIGHT ABOVE STATION MARK 21.99 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

Note	Object	Bearing	Distance Feet	Distance Meters	Direction °	'	"
	GILA BUTTE 1935				00	00	00.00
11a	R.M. No. 2	S	60.12	18.324	26	09	41
	Guadalupe, KUPD Radio Mast	NW	approx. 10.0 miles		167	26	51.5
17b	Azimuth Mark	NNE	approx. 0.5 mile		229	13	45.4
11b	R.M. No. 3	ENE	70.52	21.496	258	42	24
	Goodyear Water Tank 1935 (Aux. Field)	SE	approx. 8.0 miles		325	04	16.2

Detailed description:

The station is located about 4 miles southwest of Chandler and about 4 miles north of the Maricopa-Pinal County Line on a small sandy rise in the middle of section 12, T2S, R4E.

To reach the station from the intersection of Arizona Ave. and Cleaveland Ave. which changes to Williams Field Road, go west on Cleaveland Ave. for 3.0 miles to the intersection of Williams Field Road and Price Road, turn left and go south on Price Road for 2.05 miles to Germann Road, continue south on Price Road for 0.45 mile to the Azimuth Mark on right, continue south on Price Road for 0.35 mile to a track road right, turn right and go west through dumping grounds for 0.15 mile to a fork, keep left fork for 0.1 mile passing to the left of bee hives, continue for 0.1 mile to a dim fork, keep right for about 0.05 mile to the station on right as described.

Station mark, a standard triangulation disk set in the top of a 12 inch round concrete post which projects about 2 inches and stamped GOODYEAR 2 1962. The mark is 66 feet northeast of a track road and 3.4 feet northwest of the witness post.

Reference mark 2, a standard reference disk set in the top of a 12 square concrete post which projects about 2 inches and stamped GOODYEAR NO 2 1935. The mark is 58.6 feet south of the witness post and 18 feet east of a track road.

Reference mark 3, a standard reference disk set in the top of a 12 inch round concrete post which projects about 8 inches and stamped GOODYEAR 2 NO 3 1962. The mark is 69.3 feet northeast of the witness post and 37 feet north of a track road.

Azimuth mark, a standard azimuth disk set in the top of a 12 inch round concrete post which projects about 6 inches and stamped GOODYEAR 2 1962. The mark is 28 feet west of the center of road, 2.4 feet south of the witness post and 1 foot east of the 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: GOODYEAR 2 YEAR: 1962

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

First-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 506,105.44 y 824,131.31	214° 03' 12" + 0 00 39	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 15' 56".1021	NORTH		362.7 METERS
	LONGITUDE: 111 53 48.0911	WEST		1190 FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
AZIMUTH MARK	THIRD-ORDER 214°03'51".3	

Position determined by traverse from GOODYEAR through RM 2 and checked by observations to and from other stations.

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JULY 1966 **ARIZONA**

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WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATIONS 1077, 1078
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111° 45'

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AIRWAY BEACON AT AIRPORT NO 34 A YEAR: 1935

STATE: Ariz LOCALITY: Ajo to Tucson to Phoenix to Winkelman

Third-ORDER Triangulation SOURCE: G-3058 FIELD SKETCH: ARIZ 9
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR Δα) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 557,824 y 752,966	+ 0 06 11	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°04'11"42	NORTH		METERS
	LONGITUDE: 111 43 40.47	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
Computed from stations SWEET, SANTAN			

Airway beacon at Airport No. 34a (Pinal County, E. B. Latham, 1935)

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX TUCSON AIRWAY BCN 0 YEAR: 1938

STATE: Ariz LOCALITY: Queen Creek Area

Third-ORDER Triangulation SOURCE: G-4029 FIELD SKETCH: ARIZ 17

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR Δα) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 481,011.23 y 861,054.94	- 0 02 03	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°22'01"401	NORTH		METERS
	LONGITUDE: 111 58 43.906	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
Computed from stations VERDE, SUPERSTITION USGS, ROADSIDE, FRASER, QUEEN			

Phoenix-Tucson airway beacon 0 (Maricopa County, F. G. Johnson, 1038).—

PHOENIX-TUCSON AIRWAY BEACON O (Maricopa County,Ariz.,F.G.J., 1938;L.W.Q.,1953)(No previous description)--The station was recovered in good condition.
This is an intersection station.

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COAST AND GEODETIC SURVEY
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HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 168

QUAD 331113 STATION 1076
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

Whitem (Maricopa County, E. B. Latham, 1935).—About 3 miles west of Mesa, on the north side of U. S. Highway No. 80 and in the yard of Mr. E. M. White. Station mark is about 15 feet east of the fence at the west edge of the yard, and about 50 feet north of the ditch. Marked by standard bronze disks as described in notes 1a and 7a. Reference mark No. 1, a standard bronze reference disk, note 11a, is 22.70 meters (74.5 feet) from station in azimuth 209°07'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 40.64 meters (133.3 feet) from station in azimuth 282°47'. Azimuth mark is Coast and Geodetic Survey bench mark M 22, 1933, set in a concrete headgate of the ditch on the north side of U. S. Highway No. 80 and in azimuth 86°49'31".

WHITEM (Maricoopa County.Ariz.,E.B.L.,1935;L.W.Q.,1953)
The station and reference mark 1 were not recovered. Reference mark 2 was recovered in good condition. Mr. E.M. White of the original description no longer lives at the site. A service station has been constructed at the station site, and it is believed that the station is destroyed.

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

1821 **R**

NAME OF STATION: WHITEM
ESTABLISHED BY: E.B.L. 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 and reference marks were searched for but not found and are presumed lost. A service station has been built over the station site.

* 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: WHITEM YEAR: 1935

STATE: Ariz LOCALITY: Yuma to Stewart Dam

Second-ORDER Triangulation SOURCE: G-3022 FIELD SKETCH: ARIZ 8-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & (OR ∠) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 508,764.90 y 878,485.94	86°48'34" + 0 00 57	AZIMUTH MARK (RM NO 3)
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE: 33°24'53".918 NORTH LONGITUDE: 111 53 16.592 WEST			364.0 METERS 1,194 FEET	

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK (RM NO 3)	THIRD-ORDER 86°49'31".2		

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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 168C

QUAD 331113 STATION 1070
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45

Ray (Maricopa County, E. B. Latham, 1935).—About 5.5 miles due west of the town of Chandler, about 8.0 miles due south of the town of Tempe, and 1.5 miles west of the Ray Estrella store, just south of the south ditch south of the road. Marked by standard bronze disks as described in notes 1a and 7a. Reference mark No. 1, set in concrete culvert under road northeast of station, is 22.333 meters (73.27 feet) from station in azimuth 221°27'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 18.437 meters (60.49 feet) from station in azimuth 292°47'. Azimuth mark (reference mark No. 3) set in concrete culvert northwest of pumphouse (22 E. 5½ S.), is one-half mile from station in azimuth 312°43'16".

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

R

NAME OF STATION: RAY
ESTABLISHED BY: E.B.Latham YEAR: 1935 STATE: Arizona
RECOVERED BY: N.E.Sylar 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 was found on the south side of a fence line on the south side of the road near the immediate vicinity of its original position. The reference marks were searched for and could not be found, as all evidence indicate they have been destroyed due to construction. The azimuth mark was recovered and found in good condition as described.

There has been considerable grade work done on the road and on new irrigation ditches. According to measurements and angles, there is an irrigation ditch about 4 feet deep where the station mark was originally set, and evidence indic ate the underground mark is also destroyed.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: RAY 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 $\Delta\alpha$ ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 493,894.59 y 838,531.03	312°43'56" - 0 00 40	AZIMUTH MARK (RM NO 3)
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°18'18".584 NORTH LONGITUDE: 111 56 11.941 WEST			METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK (RM NO 3)	THIRD-ORDER 312°43'16".4		

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USCOMM—ESSA—ASHEVILLE

1684

JULY 1966

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

33°15'
111°45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1067
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

Mesa (Maricopa County, E. B. Latham, 1935).—In the yard of the largest of the two water tanks in the city of Mesa, and 95 feet east of the west leg of the tank. Marked by standard bronze disks as described in notes 1a and 7a. Reference mark No. 1, a standard bronze reference disk, note 11a, is 21.907 meters (71.87 feet) from station in azimuth 350°07'. Reference mark No. 2, a standard bronze reference disk, note 11a, is 28.698 meters (94.15 feet) from station in azimuth 102°20'. The azimuth mark (reference mark No. 3), a standard bronze disk, is 1 block east from station in azimuth 263°57'58".

MESA (Maricopa County, Ariz., E.B.L., 1935; L.W.Q., 1953)
The station and reference mark 2 were not recovered. Reference mark 1, at the base of the W leg of the water tank, was recovered in good condition. The azimuth mark was not searched for. A road now passes over the station site. No attempt was made to uncover the station.

Form 526 (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION **R**

NAME OF STATION: MESA
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:

Station recovered as described. The station is 74 feet N of centerline EW street; 74 feet W of centerline NS street; 76 feet S centerline EW sidewalk.

Form 526 (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION **R**

NAME OF STATION: MESA
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 was recovered in good condition. It is located just E of the fenced yard containing the larger of two water tanks of the city of Mesa. It is 14.8 ft. E of the N-S fence, 18.7 ft. NE of the SE corner of the yard fence, and 66.2 ft. S of the S edge of the E-W sidewalk. The station is approximately 0.3 ft. beneath the surface of the dirt road.
The reference marks were recovered in good condition.
The azimuth mark was searched for but not found.

Form 526 (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION **R**

NAME OF STATION: MESA
ESTABLISHED BY: A.M.S. YEAR: 1935 STATE: Arizona
RECOVERED BY:* C. Andreasen YEAR: 1966 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 were found in good condition. The description to reach the station is completely adequate.

Truman H. Bruns
Photo Party G-47

* 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: MESA YEAR: 1935
STATE: Ariz LOCALITY: Yuma to Stewart Dam
First-ORDER Triangulation SOURCE: G-3022 FIELD SKETCH: ARIZ 8-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & (GRID) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 526,471.56 y 880,778.13	263°55'06" + 0 02 52	AZIMUTH MARK (RM NO 3)
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE: 33°25'16".501 NORTH LONGITUDE: 111 49 47.667 WEST			377.5 METERS 1,239 FEET	

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK (RM NO 3)	THIRD-ORDER 263°57'57".8		

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AUG 1969

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 168

QUAD 331113 STATION 1066
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33° 15'
111° 45'

Magma (Pinal County, J. Bowie, Jr., 1936).—About 200 yards northwest of the Southern Pacific depot known as Magma (now abandoned), on a slight rise of ground, 16.3 meters southwest of the southwest rail of the railroad tracks, 173 feet south of the extended center line of the road which runs on a tangent for 2 miles west from the railroad to the old Florence-Phoenix Highway, 6.5 meters northeast of the center line of an old road that parallels the railroad, 35.6 meters south of a switch post, 22.3 meters northwest of a square telephone pole. The station and reference marks are standard bronze disks set in pipes embedded in circular masses of concrete. Reference mark No. 1 is 12.2 meters southwest of the southwest rail of the railroad, 10.2 meters northwest of a square telephone pole, 12.5 meters northeast of the center line of the road that parallels the railroad tracks, and 12.173 meters (39.94 feet) from station in azimuth 292°16'. Reference mark No. 2 is 5.6 meters southwest of the center line of the road that parallels the tracks, about 60 yards south of the extended center line of the road mentioned above and 11.980 meters (39.30 feet) from station in azimuth 44°41'. The azimuth mark, a standard bronze disk, note 11a, is 200 yards southeast of the railroad depot, 29 paces southwest of the railroad tracks, 21 paces southwest of a telephone line, 4 paces northeast of the extended line of a corral fence which is about 125 yards to the northwest and about 0.3 mile from station in azimuth 322°25'20".

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
Form 525
Rev. Apr. 1949

RECOVERY ~~DESCRIPTION~~ OF TRIANGULATION STATION

NAME OF STATION: MAGMA 1936 STATE: Arizona COUNTY: Pinal
Recovered By:
CHIEF OF PARTY: P. A. Weber YEAR: 1964 Described by: J.V.C.

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

Pipe 7 a — Surface-station mark, U. 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 °	'	"
Reference Mark No. 1	SE	39.94	12.173	00	00	00.0
Reference Mark No. 2	S	39.33	11.987	112	28	29.2
Reference Mark No. 3	SW	60.85	18.547	166	11	52.4

Detailed description:

The station is located about 10 miles northwest of Florence and 200 yards northwest of the old Magma station (now abandoned) on the Southern Pacific railroad.

The station mark is a standard disk stamped MAGMA 1936, brazed to the top of 1½ inch bronze rod and projecting about 10 inches. It is 60 feet southwest of the southwest rail of the track. It is 35 feet northeast of a concrete irrigation ditch or canal, 19 feet northeast of the center of a dirt road, 200 yards northwest of a sign Magma and 1 foot west of a witness post.

Reference mark No. 2 is a standard disk stamped MAGMA NO 2 1936, brazed to the top of a 1½ inch bronze rod and projecting about 10 inches. It is 98 feet south of the southwest rail, 19 feet south of the center of a dirt road, 5 feet north of a concrete irrigation canal and 1 foot west of a witness post.

Reference mark No. 3 is a standard disk stamped MAGMA NO 3 1936, set in the top of a cylindrical concrete monument and projecting 3 inches. It is 100 feet south of the southwest rail, 21 feet south of the center of a dirt road, 3 feet northwest of a concrete irrigation canal and 1 foot west of a witness post.

To reach the station from the junction of State Highway 287 (Butte Avenue) and US Highway 80 in the southeast edge of Florence; go north on US Highway 80 for 6.2 miles to a road left, turn left and go west on a blacktop road for 5.5 miles to a crossroad and Magma Gin on the right, continue ahead west for 1.0 mile to a road right, turn right and go north on a dirt road for 2.0 miles to a crossroad, just before reaching a railroad crossing, turn left and go west for 1.0 mile to a T-road just after passing under a power line, turn left and go south for 1.1 miles to a railroad track, cross track and turn left southeast for 0.1 mile to the station on the left as described.

The azimuth mark was found broken off and the disk was removed by this party.

Reference mark No. 1 was destroyed after the observations were made by this party.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MAGMA

STATE: ARIZONA YEAR: 1936 SECOND-ORDER

LOCALITY: PAPAGO INDIAN RESERVATION

SOURCE: G-3083 FIELD SKETCH: ARIZ 14

GEODETIC LATITUDE:	33 08 03.04891	ELEVATION: Bench Mark	METERS / FEET
GEODETIC LONGITUDE:	111 30 04.61528		

STATE COORDINATES (Fnl)

STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
ARIZ. C.	0202	627,156.17	776,574.97	+ 0 13 37

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
AZIMUTH MARK	322 25 17.8	322 11 41	0202

THESE DATA OBTAINED FROM READJUSTMENT OF 3-69.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 526
(Rev. Feb. 1949)

RECOVERY NOTE, TRIANGULATION STATION Page 1 of 2

R

NAME OF STATION: Magma
ESTABLISHED BY: C&GS YEAR: 1936 STATE: Arizona
RECOVERED BY: Carl H. Davis YEAR: 1967 COUNTY: Pinal

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

The station mark, stamped "MAGMA 1936", is about 0.15 mile northwest along the Southern Pacific Railroad from the station sign at Magma, in section 26, T 3 S, R 8 E, 0.1 mile southeast of a crossing of the railroad and a road, 6 rails southeast of semaphore number 9495, 28 feet southwest of the southwest rail of the southwest set of tracks, 38 feet northwest of the northwest side of a small metal building, 18 feet northeast of the center line of a dirt road which parallels the tracks, 0.5 foot northwest of a metal witness post, about 4 feet above the level of the tracks, and on the top of a 1-inch iron pipe which projects 12 inches.

R.M. 2, stamped MAGMA NO 2 1936", is 39½ feet southwest and across a road from the station mark, 67 feet southwest and across a road from the southwest rail of the southwest set of tracks, 21 feet southwest of the center line of a dirt road which parallels the tracks, 51 feet west and across the road from a small metal building, 5 feet northeast of the northeast concrete bank of an irrigation canal, 0.5 foot northwest of a metal witness post, about 1 foot above the level of the road, and on the top of a 1-inch iron pipe which projects 14 inches.

R.M. 3, stamped "MAGMA NO 3 1936", is 61 feet west and across the road from the station mark, 73 feet southwest and across a road from the southwest rail of the southwest set of tracks, 26 feet southwest of the center line of a dirt road which parallels the tracks, 4 feet northeast of the northeast concrete bank of an irrigation canal, 0.6 foot east of a metal witness post, about level with the road, and set in the top of a concrete post projecting 4 inches.

USCOMM—ESSA—ASHEVILLE

1680 ARIZONA

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

33° 15'
111° 45

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1063
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

Falfa (Maricopa County, J. Bowie, Jr., 1936).—On the east side of State Highway No. 87, 4.6 miles south of Mesa. Station marks are bronze disks as described in notes 1a and 7a. Reference mark No. 1, a standard bronze reference disk, is cemented in culvert bulkhead at cross roads and is 29.405 meters (96.47 feet) from station in azimuth 0°02'. Reference mark No. 2, a standard bronze reference disk, is cemented in concrete highway opposite the station and is 11.980 meters (39.30 feet) from station in azimuth 90°16'. The azimuth mark is along the west side of Highway No. 87 near the west right-of-way boundary fence and about 0.3 mile from station in azimuth 177°41'14".

FALFA (Maricopa Co., Ariz., J.B., Jr., 1936; N.B.A., 1942)
--The station was found in good condition as described.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FALFA YEAR 1936

STATE: Ariz LOCALITY: Papago Indian Reservation

Second -ORDER Triangulation SOURCE: G-3083 FIELD SKETCH: ARIZ 14

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH ϕ (OR $\Delta\alpha$) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 523,109.13 y 854,851.78	177°38'44" + 0 02 30	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°20'59".996	NORTH		METERS
	LONGITUDE: 111 50 27.562	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD-ORDER 177°41'14".0		

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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 168

QUAD 331113 STATION 1062
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

Canarr (Maricopa County, J. Bowie, Jr., 1936).—At the intersection of Highland or Eastern Canal with the Southern Pacific Railroad, 7.1 meters northwest of the northwest bank of the canal, 2.1 meters southeast of a wire fence at a point where it makes a jog, 16.5 meters southwest of a concrete water gate, and 328 meters southwest of the southwest rail of the railroad tracks. There is a road between the station and the canal. (The canal runs approximately northeast and southwest, and the railroad runs approximately northwest and southeast.) The station and reference marks are standard disks in the top of pipes which are set in concrete. The concrete is a circular mass, the top of which is about 8 inches below the ground surface. The disk projects about 8 inches above the ground surface and about 11 inches above the top of the concrete. Reference mark No. 1 is 40 paces southwest of the southwest rail of the railroad tracks, 5 paces southwest of a wire fence, about 1 meter southeast of the southeast bank of the concrete canal and 17.269 meters (56.66 feet) from station in azimuth 313°12'. Reference mark No. 2 is about 51 meters southwest of the southwest rail (mentioned above), 13.8 meters northwest of the northwest bank of the canal, 6 inches east of a wire fence line and 19.059 meters (62.53 feet) from station in azimuth 59°22'. The azimuth mark, a standard bronze disk, note 11a, is about one-fourth mile southwest of the railroad, on the northwest side of the canal about halfway between the road and the right-of-way fence and 0.2 mile from station in azimuth 88°19'03".

CANARR (Maricopa Co., Ariz., J.B., Jr., 1936; U.S.B.R., 1942)
--Bronze disk broken, supporting pipe bent over, reference marks intact.

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

R

NAME OF STATION: CANARR
ESTABLISHED BY: J.B.Jr. YEAR: 1936 STATE: Arizona
RECOVERED BY:* A.M.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 not found - indicated measurement would place mark on a field drive and as it projected above ground it is believed to be destroyed.
Reference mark 2 was found badly bent over.
Reference mark 1 not found.
Azimuth mark found destroyed.

*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: CANARR YEAR: 1936
STATE: Ariz LOCALITY: Papago Indian Reservation
Second -ORDER Triangulation SOURCE: G-3083 FIELD SKETCH: ARIZ 14

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH ϕ (OR Δα) ANGLE	MARK
STATE: Ariz ZONE: C CODE: 0202	x 551,640.47 y 846,403.84	38°13'29" + 0 05 34	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 33°19'36".075	NORTH		METERS
	LONGITUDE: 111 44 51.363	WEST		FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE LOGARITHM (Meters)	DISTANCE METERS
AZIMUTH MARK	THIRD-ORDER 38°19'03".1		

USCOMM—ESSA—ASHEVILLE

168 ARIZONA

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

33° 15'
111° 45'

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1058,1059
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MESA MUNICIPAL WATER TANK NO 2 YEAR: 1963

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

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR ∠α) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 526,406.41 y 880,797.20	° ' " + 0 02 52	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 16".690 NORTH LONGITUDE: 111 49 48.435 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: PIMA, GRIND, BARK, BALZ, LEHI, VAL VISTA		

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

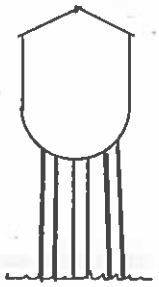
DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Mesa, Municipal Water Tank No. 2

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

Description, including sketch of object:

Station is located in the Rendezvous Park in the city of Mesa.
Station is a metal water tank painted silver, is supported by 6 legs, is approximately 140 feet high and has a ball on top.
Point intersected was top and center.



Described by Robert P. Konrady

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MESA MUNICIPAL WATER TANK NO 3 YEAR: 1963

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

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR ∠α) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 531,264.38 y 875,619.06	° ' " + 0 03 23	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 24' 25".411 NORTH LONGITUDE: 111 48 51.177 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: PIMA, GRIND, VAL VISTA		

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

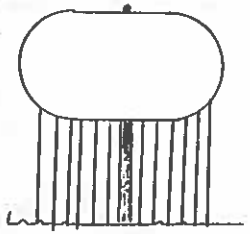
DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Mesa, Municipal Water Tank No. 3

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

Description, including sketch of object:

Station is located at Belview Street and 4th Avenue in the city of Mesa.
The tank is a large oval flat new water tank painted silver, is supported by approximately 12 legs and is approximately 140 feet high.
Point intersected was top and center.



Described by Robert P. Konrady

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HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

ARIZONA 168

QUAD 331113 STATION 1056,1057
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: TEMPE SALT RIVER PROJECT RADIO MAST YEAR: 1963

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

Third-ORDER Triangulation SOURCE: G-13304 FIELD SKETCH: Ariz. 50 #1

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH ϕ(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 492,876.64 y 868,783.24	- 0 00 46	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 35".809 NORTH LONGITUDE: 111 56 24.068 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: HUMM, STUART, PAPAGO, GUN, HAYDEN, BARK, BALZ, TEMPE BUTTE * (* Ariz. 51)			

Form 525b (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Tempe, Salt River Project Radio Mast

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

Description, including sketch of object:

The station is located about 1 1/2 miles north of Tempe and about 1/2 mile east of U.S. Highway 80 and89 in Tempe Park.

To reach the station from the post office in Tempe(5th street and Mill Ave.), go north on U.S. Highway 80 and 89(Mill Ave.) for 0.8 mile to stop light, continue north for 0.1 mile to a side road right, turn right, go east for 0.3 mile to Salt River Project building and station.

Station, a steel radio mast painted red and white with four reflectors (one large, three small), red light on top and 200 feet in height.

Point intersected, red light on top.

Described by Howell D. Ellis PJ

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MESA MUNICIPAL WATER TANK NO 1 YEAR: 1963

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

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH ϕ(OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 526,405.87 y 880,616.27	+ 0 02 52	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 25' 14".900 NORTH LONGITUDE: 111 49 48.444 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: PIMA, GRIND, BARK, BALZ, VAL VISTA			

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

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Mesa, Minicipal Water Tank No. 1

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

Description, including sketch of object:

Station is located in the Rendezvous Park in the city of Mesa.
Station is a metal water tank painted silver, is supported by 4 legs, is approximately 140 feet high and has a ball on top.
Point intersected was top and center.

Described by Robert Konrady

FILE COPY

JAN 1967

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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 331113 STATION 1054,1055
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

33° 15'
111° 45'

13

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SCOTTSDALE MOTOROLA WATER TANK YEAR: 1963

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

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 504,096.59 y 895,987.99	° ' " + 0 00 27	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 47".102 NORTH LONGITUDE: 111 54 11.642 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: TEMPE BUTTE, SCOTT, ROLA, GRIND with additional observations from BATON, GUN, PAPAGO, SQUAW PEAK, LEHI, FINCH, BARK		

Form 525b (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Scottsdale, Motorola, Water Tank

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

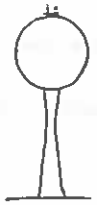
Description, including sketch of object:

Station is located in the southeast section of Scottsdale and in the parking area of the Motorola Corporation.

To reach from Scottsdale Road and East Mc Dowell Road in Scottsdale, go east on East Mc Dowell Road for 1.2 miles to Motorola Corporation and station on right.

Station is a round metal tank atop a cylindrical column, has a antena and red light on top and is approximately 140 feet high.

Point intersected was top and center of tank.



Described by Robert P. Konrady

Comm-DC 34313

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: GOVERNOR HUNTS TOMB YEAR: 1936, 1963

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Papago Indian Reservation)

Third -ORDER Triangulation SOURCE: G-3083, G-13304 FIELD SKETCH: Ariz. 14, 50

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 491,762.84 y 891,901.44	° ' " - 0 00 54	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 27' 06".660 NORTH LONGITUDE: 111 56 37.223 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: SEAM, GOLF, GUN, PAPAGO		

Governor Hunt's Tomb, center (Maricopa County, J. Bowie, Jr., 1936).

TRIANGULATION STATION RECOVERY

R

NAME OF STATION Governor Hunt's Tomb, center STATE: Arizona COUNTY: Maricopa
ESTABLISHED BY: J Bowie Jr YEAR: 1936 LOCALITY: Tempe
RECOVERED BY: Lewis A McArthur YEAR: 1941, October

Detailed statement as to the fitness of the original description:

Following submitted in Oct 1941 as result of field visit.

Governor Hunt's Tomb, center (Maricopa County, J.Bowie, Jr., 1936; 1941).--Intersection station is apex of prominent pyramidal tomb of Governor G.U.P.Hunt, which is faced with white tiles and is surrounded by iron fence. Tomb is about 15 feet square and apex is very sharp point. Station is about 7.5 miles east of Phoenix and 2 miles northwest of Tempe, on ridge, in natural desert parkland. Park is on northeast side of U.S.Highway 60-70-80, and winding gravel road leads north from highway about 1 mile through park to tomb. Tomb easily visible from highway and is well-known landmark.

(L.W.Q.,1953)--The station was recovered in good condition. Description adequate.

(C.A.A.,1963)--Station recovered as described.

(11-8-55)

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

R

NAME OF STATION: GOVERNOR HUNTS TOMB
ESTABLISHED BY: J.B.J. YEAR: 1936 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.

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 168

QUAD 331113 STATION 1052,1053
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00'
DIAGRAM NI 12-8 MESA

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX CUDAHY PACKING CO WATER TANK YEAR: 1963

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

Third -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 480,352.83 y 891,208.67	- 0 02 08	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 59".755 NORTH LONGITUDE: 111 58 51.890 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: PALM, GOLF, STUART, GRAM, GANZ with additional observations from LEE, DALL, PAPAGO		

(11-5-65)

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Cudahy Packing Co., Water Tank

CHIEF OF PARTY: C. A. Annis YEAR: 1965 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object:

The station is located in the eastern section of Phoenix, about 0.2 mile west of 48 th. Street and about 100 yards north of East Washington Street at the Cudahy Packing Company Plant.

It is a steel structure supported by four legs, painted silver and approximately 125 feet high.

The point intersected was the ball on top .

(11-5-65)

RECOVERY NOTE, TRIANGULATION STATION (INTERSECTION)

R

NAME OF STATION: PHOENIX CUDAHY PACKING CO WATER TANK
ESTABLISHED BY: C.A.A. YEAR: 1963 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. The tank has a large red square painted on the east and the west sides with Cudahy in large white letters and BAR S painted in black.

33° 15'
111° 45'

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX RADIO STATION KOOL SOUTH MAST YEAR: 1963

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

Third -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 479,044.46 y 898,507.98	- 0 02 16	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 28' 11".970 NORTH LONGITUDE: 111 59 07.389 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: PALM, DALL, LEE, GUN, GOLF, SEAM		

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Radio Station KOOL, South Mast

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

Description, including sketch of object:

Station is located in the east section of Phoenix, about 6 miles east-northeast of center of downtown business section of Phoenix and in the northeast corner of intersection of North 44th Street and East Palm Lane.

Station is the south one of four radio masts, is approximately 260 feet high, painted red and white, has dark red paint on top of tower and has a red light on top.

Point intersected was top and center.

(11-5-65)

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PHOENIX RADIO STATION KOOL SOUTH MAST
ESTABLISHED BY: C.A.A. YEAR: 1963 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 could not be recovered. These four towers were removed during the last half of 1966. The bases of the two southwesterly towers are still in place.

168 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 331113 STATION 1050,1051
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°00
DIAGRAM NI 12-8 MESA

33°15'
111°45'

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: RNG PHOENIX TX 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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 481,822.48 y 886,569.86	- 0 01 58	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 13".865 NORTH LONGITUDE: 111 58 34.512 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: WILSON, HILTON, COURT HOUSE, GANZ, BELL BUTTE AMS			

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

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: RNG, Phoenix TX

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

Description, including sketch of object: The station is located in the east edge of Phoenix, about 2 miles east of the Sky Harbor Municipal Airport and 1/2 mile south of the intersection of East Washington Street and South 48 th. Street.

Station is a steel structure painted red and white and is approximately 90 feet high.

The point intersected was the top and center of mast.

Station is the center one of five masts.

Described by R. D. Strum

R&R

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PHOENIX PRODUCERS COTTON OIL CO WATER TANK YEAR: 1962 *, 1963

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

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (OR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 480,658.35 y 890,264.33	- 0 02 06	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 26' 50".413 NORTH LONGITUDE: 111 58 48.277 WEST		METERS FEET
TO STATION		GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: DALL, GOLF, PAPAGO *, GRAM, GANZ, (* Ariz. 49-II)			

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

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Phoenix, Producers Cotton Oil Co., Water Tank

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

Description, including sketch of object:

The station is located in the eastern section of Phoenix, along the south side of East Washington Street, 0.2 mile west of 48 th. Street at the Producers Oil Company Plant.

It is a steel structure supported by four legs, painted silver and approximately 125 feet high.

The point intersected was the ball on top.

Described by R. C. Jones

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

ARIZONA 168D

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 331113 STATION 1048,1049
ARIZ
LATITUDE 33°00' TO 33°30'
LONGITUDE 111°30' TO 112°30'
DIAGRAM NI 12-8 MESA

33°15'
111°45'

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CHANDLER OLD MUNICIPAL WATER TANK YEAR: 1935, 1962

STATE: Arizona LOCALITY: Arizona Hwy. Survey, Papago Freeway (Ajo to Tucson to Phoenix to Winkelman)

Third-ORDER Triangulation SOURCE: G-3058 G-12917, G-13304 FIELD SKETCH: Ariz. 9, 49-II

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 524,271.39 y 836,784.59	+ 0 02 37	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 18' 01".218 NORTH LONGITUDE: 111 50 14.022 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: GOODYEAR 2, BONE, JACKSON, PORT, HIGH, ANGELO		

Chandler, water tank (Pinal County, E. B. Latham, 1935)

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

RECOVERY
DESCRIPTION OF TRIANGULATION INTERSECTION STATION

R

NAME OF STATION: Chandler, Municipal Water Tank 1935
RECOVERED BY:
CHIEF OF PARTY: C.A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object: No previous description.

Station is located just east of the business section of Chandler.
Station is a silver water tank, is supported by 4 legs and is approximately 125 feet high. This tank is the older one of two and is the north one.
Point intersected was top and center of tank.

Described by R.P. Konrady

FILE COPY

JAN 1967

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CHANDLER NEW MUNICIPAL WATER TANK YEAR: 1962

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

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH (FOR Δα) ANGLE	MARK
STATE: Ariz. ZONE: C CODE: 0202	x 524,249.51 y 836,709.94	+ 0 02 37	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 33° 18' 00".479 NORTH LONGITUDE: 111 50 14.281 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
STATION COMPUTED FROM: GOODYEAR 2, BONE, JACKSON, PORT, HIGH, ANGELO		

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

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Chandler, New Municipal Water Tank
CHIEF OF PARTY: C.A. Annis YEAR: 1962 STATE: Arizona COUNTY: Maricopa

Description, including sketch of object:

Station is located just east of the business section of Chandler.
Station is a large oval shaped water tank, is painted silver, is supported by 8 legs and is approximately 125 high. This tank is the newer one of two and is the south one.
Point intersected was top and center of tank.

Described by Robert P. Konrady
Comm-DC 31813

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