Horizontal and Vertical Control Base List

City of Chandler
Benchmarks – September, 1995
Field Checked and Revised – May, 2003

Chandler + Arizona

Where Values Make The Difference

SURVEY BASE FOR SOUTH CHANDLER
CITY OF CHANDLER

EXECUTIVE SUMMARY

PROJECT

This project was developed to extend the City of Chandler's current survey base in the north half (Pecos Road to the north) to the south. The project area is bounded by Pecos Road on the north, Hunt Highway on the south, Gilbert Road on the east and Price Road on the west.

EQUIPMENT

Trimble SSE 400 series and Leica 399 series Global Positioning System (GPS) receivers were utilized for the majority of the horizontal network. In areas where GPS was not effective, Leica T-1010 digital theodilites and DI 1600 electronic distance meters were used. Leica NA 2002 digital levels were utilized for the vertical control.

RECONNAISSANCE

Reconnaissance began with the selection of appropriate locations to build the Chandler Municipal Control Network (CMCN) monuments. These were placed strategically throughout the project at approximately 2-mile intervals within the existing right-of-way. The results of survey approximately show these locations. The section corners, quarter corners and centers of sections were searched and documented. While most of the section corners and quarter corners were found, most of the centers of sections were not. One problem encountered during this phase of the project was Maricopa County began replacing found corners (rebar, pipe, etc.) with brass caps. This made it necessary for Greiner to revise description sheets to reflect these changes.

MONUMENTS

The CMCN monuments consist of a brass cap set in a concrete base approximately 24 to 30 inches in depth and 12 inches in diameter. Two fence posts were set on either side as well as a sign denoting it is a survey control marker. The point number was also imprinted on the brass cap.

HORIZONTAL

In most cases, GPS technology was utilized to perform the horizontal network survey. In areas where GPS as not effective, traditional survey methods were performed. All baseline vectors were resolved using GPS software. In addition to this, we performed independent loop closures to verify the integrity of

the measurements. Both of these functions were performed using unconstrained data. This data was then constrained and adjusted to the control shown on the Results of Survey.

GROUND TO GRID FACTOR

The coordinates, bearings and distances included in this list are based on the Arizona State Plane Coordinate System, Central Zone, 83 datum adjusted from grid to ground. The grid to ground factor of 0.9998472125 is the average of each point's combined factor.

VERTICAL

The existing 29 vertical datum in the north portion of the City was utilized for the vertical network. Efforts were made to tie in to a Salt River Project (SRP) level run down the Consolidated Canal, but in trying to incorporate these elevations into our network adjustments, it quickly reduced our precision. It was decided to hold Greiner's level runs because it provided the best closures. All this really means is the City of Chandler and SRP are on different vertical planes, with SRP being 0.15 to 0.20 feet higher in elevation.

ADJUSTMENTS

The horizontal and vertical networks were adjusted by the rigorous least squares adjustment programs Geolab, Star-Net and Star-Lev.

DATUM CONVERSION

The existing Arizona State Plane Coordinate System, Central Zone, 27 datum in the north portion of the City was converted to 83 datum and adjusted from grid to ground based on the factor above. This conversion was completed by incorporating GPS observations of selected CMCN's and processing and adjusting simultaneously with the GPS observations in the south portioin. These new CMCN positions were then held fixed and the original traverse was input into Stat-Net for final square adjustments.

CITY OF CHANDLER
BENCHMARKS

NUMBER	ELEVATION	DESCRIPTION
RYAN	**1254.7514**	Arizona Department of Highways brass cap set in concrete on bedrock down 0.1', 0.37 miles south on I-10 from the intersection of I-10 and Baseline Road, about 80' west of center of southbound lane of I-10.
BM-F	1215.292	Maricopa County brass cap set in 8" concrete post, flush with pavement surfacing. 500' south of US 60 freeway centerline on Arizona Avenue to Iron Avenue and 500' east on Iron Avenue.
1	1190.178	Section 21, T1S, R4E, 2" brass cap set in footing of electrical transmission tower #14, between 56th Street and Kyrene Rd., 40' east of railroad tracks; 920' north of Ray Road.
2	1173.632	Section 28, T1S, R4E, 2" brass cap set in footing of electrical transmission tower #20 between 56th Street and Kyrene Road; 40' east of railroad tracks, 700' north of Chandler Boulevard.
3	1170.253	Section 27, T1S, R4E, 3" City of Chandler brass cap in concrete, flush,between Chandler Blvd and Ray Rd; 140' East of Kyrene Rd at point of curvature of Ivanhoe St.
4	1171.558	Section 26, T1S, R4E, 3" City of Chandler Chandler brass cap in concrete, flush, between Chandler Blvd and Ray Rd; 430' East of Rural Rd at intersection of Jentilly Lane and Joshua Blvd.

5	1174.975	Section 25, T1S, R4E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Ray Rd; 250' East of McClintock Drive at intersection of Laveen Drive and Galveston Street.
6	1176.343	Section 35, T1S, R4E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 560' West of McClintock Dr at intersection of 79th St and Milky Way.
7	1170.074	Section 34, T1S, R4E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 105' west of intersection of Whitten St and Twelve Oaks Blvd at point of curvature on Whitten St.
8	1158.756	Section 34, T1S, R4E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 390' east of Kyrene Rd at intersection of Aspen Dr and Chicago St.
9	1177.972	Section 23, T1S, R4E, 3" City of Chandler brass cap in concrete, flush, between Ray Rd and Warner Rd, 190' west of McClintock Dr at intersection of Orchid Lane and Alder Dr.
10	None	Destroyed by freeway construction
11	1192.045	Section 19, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Ray Rd and Warner Rd; 200' west of Dobson Rd at intersection of Knox Rd and Santa Anna Court.
12	1191.820	Section 30, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Ray Rd and Chandler Blvd; 175' west of Dobson Rd at intersection of Salida Del Sol and Tulsa St.
13	1190.833	Section 31, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 660' west of Dobson Rd; 500' south of Frye Rd at point of curvature of 95th St.

14	1184.453	Section 31, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 960' east of Price Rd and 685' south of Frye Rd at point of curvature of Bracken Lane.
15	1187.892	Section 25, T1S, R4E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Ray Rd; 1,000' west of Price Rd and 215' north of Metro Blvd at point of curvature of Federal St.
16	None	Destroyed by freeway construction.
17	1193.513	Section 7, T1S, R5E, 2" brass cap set in base of electric transmission tower #133, between Guadalupe Rd and Elliot Rd, 150' east of northbound frontage road of Price Freeway; 90' south of canal.
18	1197.577	Section 7, T1S, R5E, 2" brass cap set in base of electric transmission tower #127, between Guadalupe Rd and Elliot Rd; west of Dobson Rd; 90' south of canal.
19	1192.522	Section 17, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Elliot Rd and Warner Rd, 290' east of Dobson Rd at intersection of Shawnee Dr and Yucca St.
20	1204.484	Section 17, T1S, R5E, 2" brass cap set in base of electric transmission tower #121, between Guadalupe Rd and Elliot Rd; first tower east of Alma School Rd, 90' south of canal.
21	1209.933	Section 10, T1S, R5E, 2" brass cap in base of electric transmission tower #115 between Guadalupe Rd and Elliot Rd, east of Arizona Ave, 90' south of canal.
22	1207.640	Section 16, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Elliot Rd and Warner Rd; 450' west of Arizona Ave at point of tangency of Palomino Dr, straight north of Bldg 8.

23	1208.829	Section 21, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Warner Rd and Ray Rd; 530' west of Arizona Ave at intersection of Knox Rd And Oregon St.
24	1204.066	Section 21, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Warner Rd and Ray Rd; 670' east of Alma School Rd at the intersection of Knox Rd and Pleasant Dr.
25	1200.173	Section 17, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Warner Rd and Elliot Rd; 200' west of Alma School Rd at intersection of Barrow Dr and Citation Dr.
26	1218.884	Section 22, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Warner Rd and Ray Rd; 450' west of McQueen Rd at intersection of Calle Del Norte and Kingston St.
27	1224.095	Section 26, T1S, R5E, 2" brass cap set in base of most westerly ballfield light standard at Pima Park between Ray Rd and Chandler Blvd, 140' east of McQueen Rd,390' north of Galveston St and Thatcher.
28	1207.213	Section 28,T1S, R5E, 2" brass cap set in base of flagpole in front of "Chandler Public Schools" building between Ray Rd and Chandler Blvd and Alma School Rd and Arizona Ave; 450' east of Hartford St at intersection of Iowa St and Galveston St (north side of Galveston St)
29	1200.659	Section 29, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Ray Rd; 510' west of Alma School Rd at intersection of Chippewa St and Galveston St.
30	1225.214	Section 35, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 1,000' east of McQueen Rd; 150' north of Frye Rd at intersection of Cindy St and Cross Creek Dr.

31	None	Destroyed by construction.
32	1216.807	Section 34, T1S, R5E, 2" brass cap set in rear ramp of 215 East Buffalo St Public Works Bldg, just outside and right of the rear door.
33	1202.912	Section 32, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 640' west of Alma School Rd; 640' north of Frye Rd at intersection of Maggio Way and Apache Dr.
34	1234.141	Section 36,T1S, R5E, 3" City of Chandler brass cap in concrete, flush, between Chandler Blvd and Pecos Rd; 200' east of Cooper Rd at intersection of Frye Rd and Eucalyptus Place.
35A	1236.11	Section 36, T1S, R5E, set 3" brass cap in concrete, 130' north, 50' east of intersection of Cooper Road and Pecos Rd; 10' east of back of curb.
36A	1215.12	Section 4, T2S, R5E, set 3" brass cap in concrete, 150' south, 75' west of intersection of Arizona Ave and Pecos Rd; 4' west of back of sidewalk.
37	1193.16	Section 31, T1S, R5E, 3" City of Chandler brass cap in concrete, flush, 200' north of intersection of Pecos Rd and Dobson Rd; 21' west of edge of pavement; 3' east of barbed wire fence. (Northing 833869.893; Easting 712419.351)
38	1181.52	Section 7, T2S, R5E, set 3" brass cap in concrete, 200' east of southwest corner of section 6, approximate intersection of Old Price Rd and Germann Rd; 32.5' south of monument line. (Northing 828007.232, Easting 707380.141)

39A	1207.43	Section 5, T2S, R5E, set 3" brass cap in concrete, 200' north of intersection of Germann Rd and Alma School Rd; 3' west of back of sidewalk at west side of Alma School Rd. (Northing 828448.394 Easting 717765.451)
40	1222.42	Section10, T2S, R5E, set 3" brass cap in concrete, 200' south of intersection of McQueen Rd and Germann Rd; 13' west of edge of pavement, 3' east of concrete lined ditch. (Northing 828243.961, Easting 728342.330)
41	1249.00	Section 1, T2S, R5E, 3" City of Chandler brass cap in concrete, flush, 200' north of brass cap in handhole at intersection of Gilbert Rd and Germann Rd; 13' west of edge of pavement; 1' east of concrete lined ditch. (Northing 828786.361, Easting 738891.960)
42	1237.90	Section 12, T2S, R5E, 3" City of Chandler brass cap in concrete, flush, 200' north of intersection of Queen Creek Rd and Cooper Rd; 23' east of edge of pavement. (Northing 823412.906; Easting 733727.263).
43A	1213.88	Section 9, T2S, R5E, set 3" brass cap in concrete, 100' north, 70' west of intersection of Arizona Ave and Queen Creek Rd; on roadside by SRP structure (Northing 823148.607, Easting 723063.962)
44	None	Destroyed by construction.
45	1182.50	Section 19, T2S, R5E, 3" City of Chandler brass cap in concrete, flush, on Old Price Rd (dirt road just west of Intel Delivery Rd); 1 mile south of Queen Creek Rd, 100' south of airport entrance, east side of road. Sign is on Intel fence. (Northing 817273.665; Easting 707321.855) (Difficult to find and within Intel Security Boundaries)

46A	1204.51	Section 16, T2S, R5E, set 3" brass cap in concrete, 70' north, 70' east of intersection of Basha Rd and Ocotillo Rd; 4' north of back of sidewalk.
47A	1227.92	Section 23, T2S, R5E, set 3" brass cap in concrete, 215' east of intersection of McQueen Rd and Ocotillo Rd; 4' north of back of curb.(Northing 817878.803, Easting 728629.500)
48	1253.94	Section 24, T2S, R5E, set 3" brass cap in concrete, 200' south of intersection of Ocotillo Rd and Gilbert Rd, 14' west of edge of pavement, 3' east of concrete lined ditch. (Northing 817836.811, Easting 738972.720)
49	1242.85	Section 25, T2S, R5E, 3" City of Chandler brass cap in concrete, flush, 300' east of intersection of Cooper Rd and Chandler Heights Rd, 12.5' south of edge of Pavement. (Northing 812635.984; Easting 734038.204)
50	1212.03	Section 21, T2S, R5E, 3" City of Chandler brass cap set in concrete, flush, 200' north of intersection of Chandler Heights Rd and Arizona Ave; 12' west of edge of pavement; 12' east of concrete lined ditch.(Northing 812642.646, Easting 723104.377)
51	(1190.94)	Possibly exists in field, but is inaccessible. Description placed it at the intersection of Dobson Rd and Chandler Heights Rd. There is no such intersection in the field.
52	1200.63	Section 28. T2S, R5E, 3" City of Chandler brass cap in concrete, flush, 225' north of intersection of Riggs Rd and Alma School Rd; 5' east of top back of curb, 1' from the base of 45 mph speed limit sign. (Northing 807304.830; Easting 717944.193)

53A	1227.04	Section 35, T2S, R5E, 2" City of Chandler brass cap set in concrete 200' south of the intersection of Riggs Rd and McQueen Rd, east side of McQueen, 8' east of back of curb, between back of curb and sidewalk. (Northing and Easting not available)
54A	1251.92	Section 36, T2S, R5E, set 3" brass cap in concrete 79' south, 65' west of intersection of Riggs and Gilbert Rd, 2' west of back of curb. Northing 12567.721, Easting 14948.250
55	1235.06	Section 1, T3S, R5E, 3" City of Chandler brass cap in concrete, flush, 216' east of intersection of Hunt Hwy and centerline of Cooper Rd North, 22.5' south of edge of pavement; 2' north of barbed wire fence. (Northing 802088.583, Easting 734034.369)
56	1215.03	Section 3. T3S, R5E, 3" City of Chandler brass cap in concrete, flush. Southeast corner of Arizona Ave and Riggs Rd, 10' south of edge of pavement. (Northing 801860.284, Easting 723572.960)

SURVEY BASE FOR SOUTH CHANDLER PROJECT NO. 39505 201 (NORTH PORTION - DATUM CONVERSION)

THESE SHEETS ARE REPRODUCED BY THE CITY OF CHANDLER

CERTIFICATION

I hereby certify that this survey was performed under my direct supervision during the months of March thru September of 1995 and meets the "Minimum Standards For Arizona Land Boundary Survey" as adopted by the State Board of Technical Registration, November 15, 1989.

Robert J. Pecha, R. L. S. 21080

BASIS OF SURVEY

USGS First Order Monuments
Tempe Butte
Val Vista

USGS Second Order Monuments
Broadway

Salt River Project Monuments
R064
R065
R067
R069

NOTES

1. All coordinates, bearings and distances are based on the Arizona State Plane Coordinate System, Central Zone.
2. For coordinate values (geographic, metric grid, english grid and english ground) and point descriptions see "Survey Base For South Chandler Surveyors Report" on file with the City of Chandler. Refer to Project No. 39505 201.

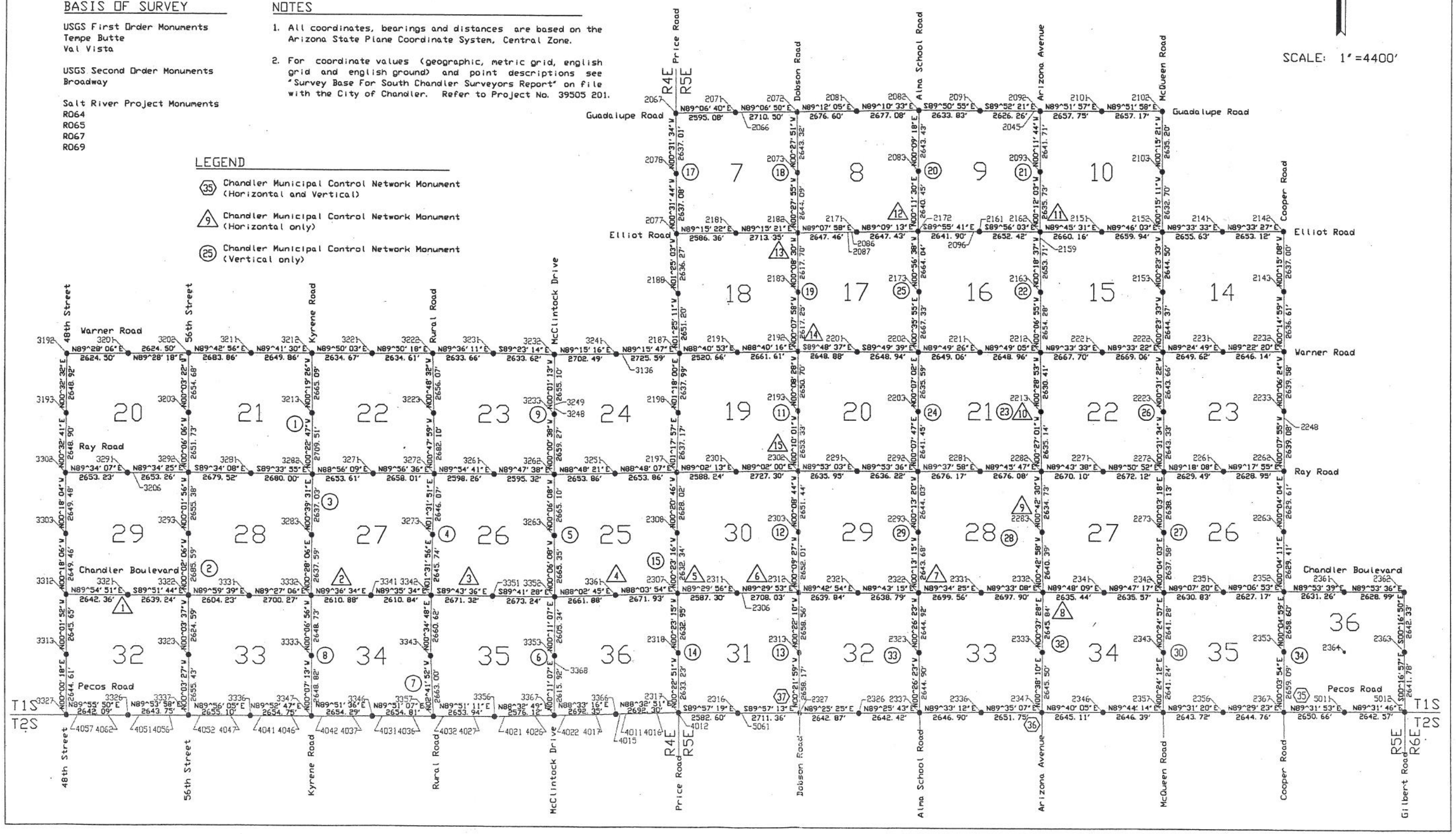
LEGEND

(35) Chandler Municipal Control Network Monument (Horizontal and Vertical)

△9 Chandler Municipal Control Network Monument (Horizontal only)

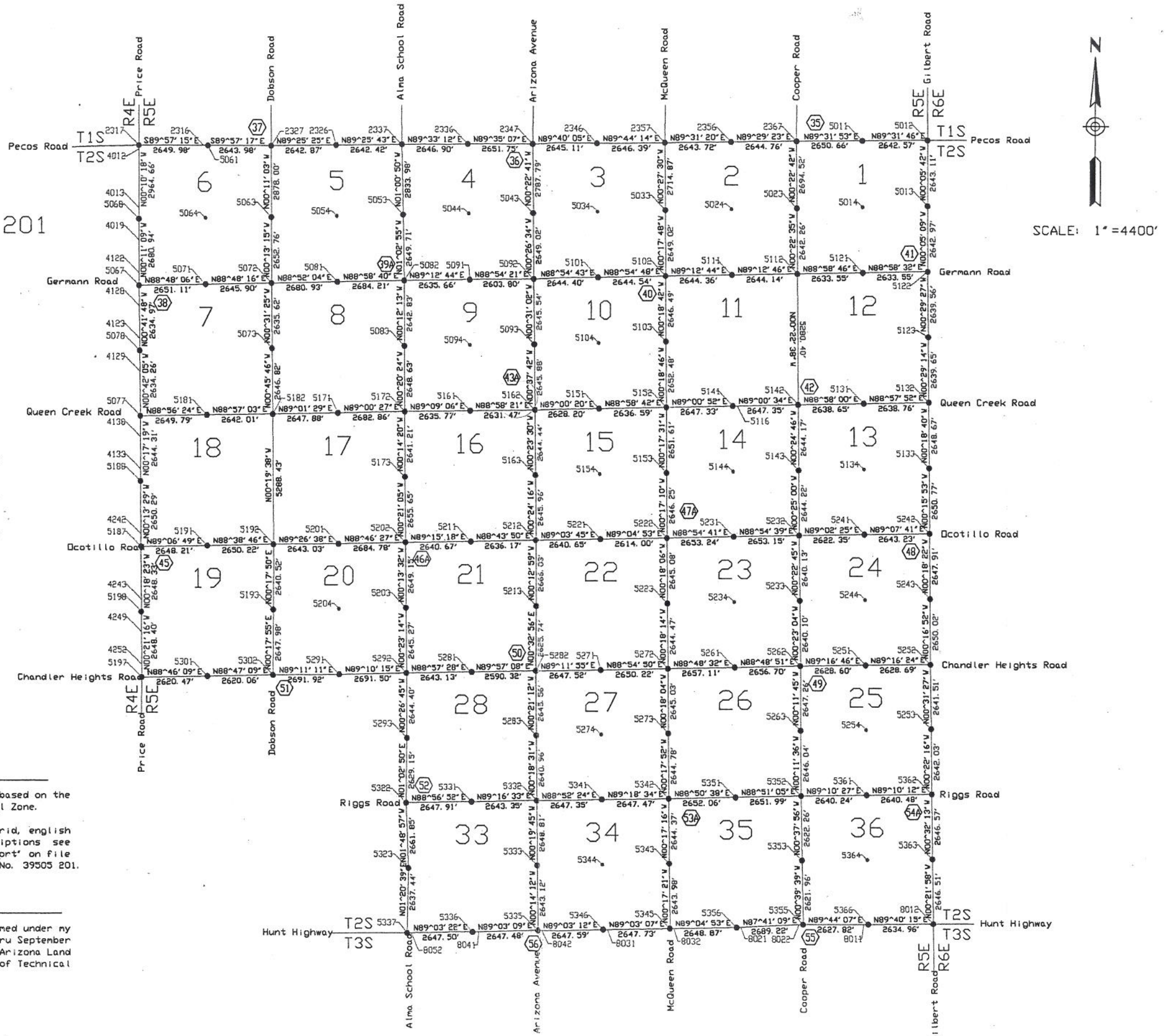
(25) Chandler Municipal Control Network Monument (Vertical only)

SCALE: 1"=4400'



SURVEY BASE FOR SOUTH CHANDLER PROJECT NO. 39505 201 (SOUTH PORTION)

THESE SHEETS ARE REPRODUCED BY THE CITY OF CHANDLER



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