TEMPE, ARIZONA SURVEY CONTROL

I,Steven A.Sood,hereby certify that I am a registered Land Surveyor in the State of Indiana that this map represents a survey made under my supervision during the months of January through March,1984 and that the survey was performed in accordance with specifications defined by the Federal Geodetic Control Committee for the conduct of Second Order,Class Short-Lateral traverse surveys and that the results of the survey meet or exceed the Second Order standards established for control surveys, or are designated for the purposes of this survey by the City Engineer of Tempe, Arizona.

Certified this 29th day of March,1984

MID-STATES ENGINEERING CO.,INC.

Steven A.Sood
Registered Land Surveyor #50324 - Indiana

I,Rudy J.Strickler,hereby certify that I am a registered Land Surveyor in the state of Arizona,and that the data presentation on this map correctly reflects specifications made under my supervision.

All coordinates shown hereon indicate project datum ground coordinates,projected from the Arizona Coordinate System,Central Zone,by a combination scale and sea level factor of 1.0000720,and translated by -200,000 in the X direction,and by -400,000 in the Y direction. Coordinate values shown hereon are listed in Y,X or Northing-Easting order. To convert coordinate values shown hereon to their corresponding Arizona Coordinate System values,utilize the following formulas

X ACS = X coordinate value on Arizona Coordinate System
X PD = X coordinate value on Arizona Coordinate System
Y PD = Y project datum coordinates
Y ACS = Y project datum coordinates

$X_{ACS} = (X_{PD} + 200{,}000) \times 0.9999429$
$Y_{ACS} = (Y_{PD} + 400{,}000) \times 0.9999429$

Distances shown hereon indicate ground level(GD) feet A.M.S.L.) distances converted from sea level datum.

Bearings are referred to grid north of the Arizona Coordinate System,Central Zone.

• Derivation of Combination Factor:

In the Central Zone of the Arizona State Plane Coordinate System,the grid distance between two points is shorter than the actual horizontal ground distance between the points and therefore shorter than the actual geodetic ground distances. The appropriate scale factor to apply along the Central Meridian is 1/0.9999429, Average scale factors derived for the City of Tempe were:

0.9999600 ground to grid
1.0000568 grid to ground

The sea level reduction factor, assuming a mean radius of the earth of 20,906,000 feet and an average ground elevation of 1200 feet,is approximation

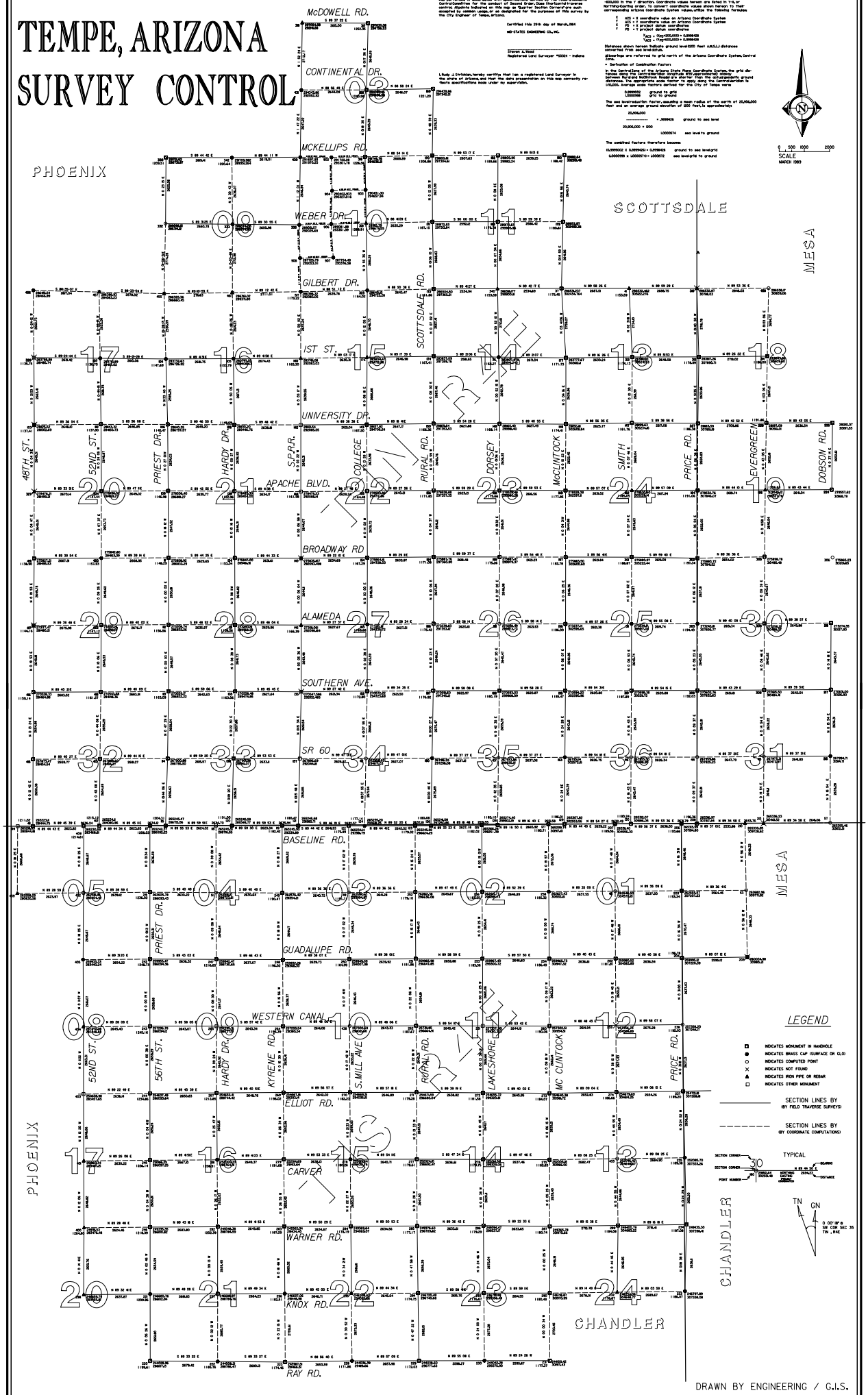
$$\frac{20{,}906{,}000}{20{,}906{,}000 + 1200} = .9999426 \quad \text{ground to sea level}$$

1.0000574 sea level to ground

The combined factors therefore become

0.9999002 X 0.9999426 = 0.9998428 ground to sea level grid
1.0000568 x 1.0000574 = 1.0000142 sea level grid to ground

0 500 1000 2000
SCALE
MARCH 1989



DRAWN BY ENGINEERING / G.I.S.
LAST UPDATED 3/6/06

PREPARED BY THE CITY OF TEMPE ENGINEERING DIVISION