QB
275
.U35
no.257
1951

U. S. Department of Commerce
Charles Sawyer, *Secretary*

Coast and Geodetic Survey
Robert F. A. Studds, *Director*

Special Publication No. 257

PLANE COORDINATE PROJECTION TABLES
ARIZONA

LIBRARY
MAY 2 2 1992
N.O.A.A.
U.S. Dept. of Commerce

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1951

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 20 cents (paper)

National Oceanic and Atmospheric Administration

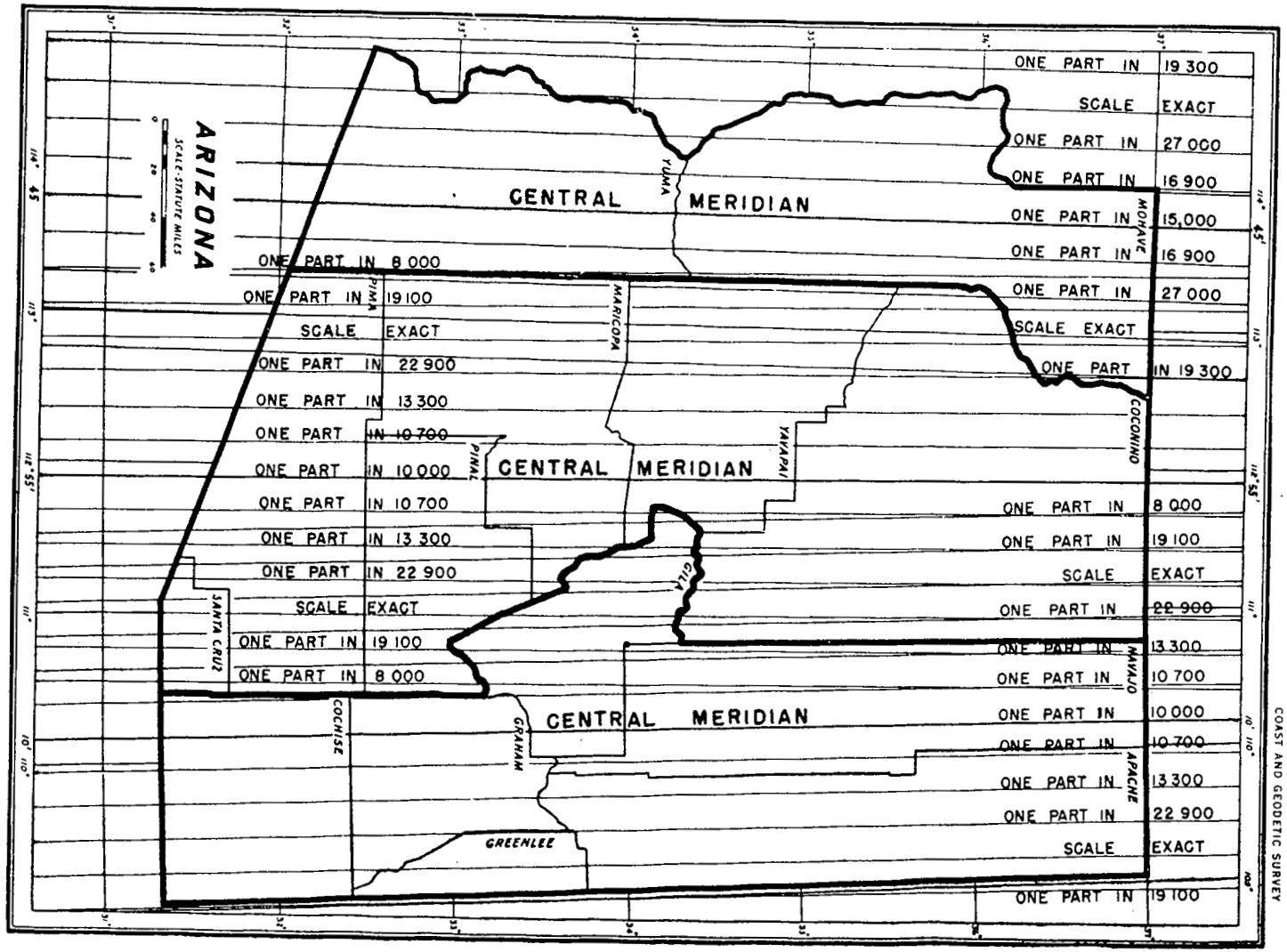
ERRATA NOTICE

One or more conditions of the original document may affect the quality of the image, such as:

Discolored pages
Faded or light ink
Binding intrudes into the text

This has been a co-operative project between the NOAA Central Library and the Climate Database Modernization Program, National Climate Data Center (NCDC). To view the original document, please contact the NOAA Central Library in Silver Spring, MD at (301) 713-2607 x124 or www.reference@nodc.noaa.gov.

LASON
Imaging Contractor
12200 Kiln Court
Beltsville, MD 20704-1387
January 1, 2006



STATE PLANE-COORDINATE ZONES AND SCALE FACTORS

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

X-5562
JAN 29 1952

Foreword

The plane coordinate system used in this State is based on the transverse Mercator projection using a reduced scale for the central meridian of the zone. The tables in this publication are to be used for the conversion of geographic positions to plane coordinates or plane coordinates to geographic positions. The constants of the projection are listed with the tables.

The methods of computation have been designed for machine calculation. All of the functions that are required are given in this publication.

The formulas and sample computations which follow show the general methods for computing either type of coordinates.

Plane coordinates from geographic positions

$$x = x' + 500{,}000$$

$$x' = H \cdot \Delta\lambda'' \pm a\,b$$

$$y = y_o + V\left(\frac{\Delta\lambda''}{100}\right)^2 \pm c$$

Grid azimuth = geodetic azimuth $-\Delta\alpha -$ second term

$$\Delta\alpha'' = \Delta\lambda'' \sin \phi + g$$

where

y_o, H, V, and a are based on the latitude of the geographic position,

and

b, c, and g are based on $\Delta\lambda''$.

$$\Delta\lambda'' = \text{Central Meridian} - \lambda$$

and

$\Delta\alpha''$ is the convergence of the meridian at the station with respect to the Central Meridian.

The second term for the reduction of geodetic to grid azimuths may be neglected for most work. However, for lines five miles or more in length if the same degree of accuracy is desired as is obtained by geographic computations, this term should be evaluated and used.

$$\text{Second term} = \frac{(y_2 - y_1)\ (2x_1' + x_2')}{(6\rho_o^2\ \sin 1'')_g}$$

<u>Geographic positions from plane coordinates</u>

$$P\ (x'/10{,}000)^2 + d = V\ (\Delta\lambda''/100)^2 + c$$

$$y_o = y - P\ (x'/10{,}000)^2 - d$$

Obtain the latitude from the table of y_o.

Use latitude to obtain H from the table.

$$x' = x - 500{,}000$$

approximate $\Delta\lambda'' = x' \div H.$

Determine <u>a</u> from latitude and <u>b</u> from approximate $\Delta\lambda$

then

$$\Delta\lambda'' = (x' \mp a\ b\ ) \div H$$

$$\Delta\alpha'' = Mx' - e$$

M is based on the y and e on the x and y of the plane coordinates.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form No. 744b

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(Condensed form for calculating-machine computation)

State Arizona Zone East Central meridian 110° 10′ 00.″000

Station	Playa, 1935		Edge, 1936								
ϕ	32 08 41.778		35 07 28.243								
λ	109 45 13.226		110 30 34.948								
$\Delta\lambda$ = Central mer. − λ	+ 0° 24′ 46.″774		−0° 20′ 34.″948								
$\Delta\lambda''$	+1,486.774		−1,234.948								
$\left(\frac{\Delta\lambda''}{100}\right)^2$	221.050		152.510								
H	85.976 506		83.064 746								
V	1.109 082		1.158 706								
a	b	-0.912	+4.969	-0.688	+4.263						
$x' = H \cdot \Delta\lambda \pm ab$	+127,823.10		−102,577.71								
$V\left(\frac{\Delta\lambda''}{100}\right)^2 \pm c$	245.115		176.680								
Tabular y	416,446.42		1,500,562.56								
x	627,823.10		397,422.29								
y	416,691.53		1,500,739.24								
$\Delta\alpha''$	+791.07		−710.53								
$\Delta\alpha$	+ 0 13 11.1		− 0 11 50.5								
Geod. Az. to Az. Mk.	174 25 48.2		31 17 43.8								
Grid Az. to Az. Mk.	174 12 37		31 29 34								

$x = x' + 500{,}000$

$y = \text{Tab. } y + V\left(\frac{\Delta\lambda''}{100}\right)^2 \pm c$

$\Delta\alpha'' = \Delta\lambda'' \sin\phi + g$

Grid Az. = Geod. Az. − $\Delta\alpha$

H and V = Tab. H and Tab. V.

When ab is $\begin{matrix}-\\+\end{matrix}$, $\begin{matrix}\text{decrease}\\\text{increase}\end{matrix}$ $H \cdot \Delta\lambda$ numerically

g increases $\Delta\lambda'' \cdot \sin\phi$ numerically

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form No. 748a

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

(CALCULATING MACHINE COMPUTATION)

STATE – ZONE Arizona - East

Station Pat, 1935 r. 1945

X	683,147.83	Y	363,527.54
C	– 500,000.00	$P(\frac{X'}{10,000})^2 + d$	– 500.37
X'	+ 183,147.83	Y_o	363,027.17
P	1.49155	Approx. $\Delta\lambda = X' \div H$	+ 2,127"
d	+0.06	$\Delta\lambda = (X' \mp ab) \div H$	+ 2,126".873
H	86.114 063	$\Delta\lambda$	+ 0° 35' 26".873
a | b	-0.924 | +6.324	Central Meridian	110 10 00.000
ϕ	31° 59' 53".103	λ = C.M. – $\Delta\lambda$	109° 34' 33".127

Station Ives, 1936

X	425,301.13	Y	1,515,853.43
C	– 500,000.00	$P(\frac{X'}{10,000})^2 + d$	– 93.84
X'	- 74,698.87	Y_o	1,515,759.59
P	1.68148	Approx. $\Delta\lambda = X' \div H$	-900"
d	+0.01	$\Delta\lambda = (X' \mp ab) \div H$	-899".771
H	83.022 323	$\Delta\lambda$	-0° 14' 59".771
a | b	-0.685 | +3.214[3]	Central Meridian	110 10 00.000
ϕ	35° 09' 58".568	λ = C.M. – $\Delta\lambda$	110° 24' 59".771

Station

X		Y	
C	–	$P(\frac{X'}{10,000})^2 + d$	–
X'		Y_o	
P		Approx. $\Delta\lambda = X' \div H$	"
d		$\Delta\lambda = (X' \mp ab) \div H$	"
H		$\Delta\lambda$	° ' "
a | b	|	Central Meridian	
ϕ	° ' "	λ = C.M. – $\Delta\lambda$	° ' "

Station

X		Y	
C	–	$P(\frac{X'}{10,000})^2 + d$	–
X'		Y_o	
P		Approx. $\Delta\lambda = X' \div H$	"
d		$\Delta\lambda = (X' \mp ab) \div H$	"
H		$\Delta\lambda$	° ' "
a | b	|	Central Meridian	
ϕ	° ' "	λ = C.M. – $\Delta\lambda$	° "

When a b is $\frac{+, \text{ decrease}}{-, \text{ increase}}$ X' numerically

M-2552-2

Constants for Arizona

Constant	Zone		
	East	Central	West
Central Meridian	110° 10' 00".000	111° 55' 00".000	113° 45' 00".000
log R	-434.3	-434.3	-289.5
Scale reduction (Central Meridian)	1 : 10,000	1 : 10,000	1 : 15,000
$\log\left(\frac{1}{6\rho_0^2}\right)_g$	4.581 6636 -20	4.581 6636 -20	4.581 6025 -20
$\log\left(\frac{1}{6\rho_0^2 \sin 1''}\right)_g$	9.896 0887 -20	9.896 0887 -20	9.896 0276 -20
$\left(\frac{1}{6\rho_0^2 \sin 1''}\right)_g$	0.7872×10^{-10}	0.7872×10^{-10}	0.7871×10^{-10}

Blank page retained for pagination

TRANSVERSE MERCATOR PROJECTION

ARIZONA
EAST AND CENTRAL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
31 00	0.00	101.026 67	87.033 908	252.41	1.086 800	5.62	-1.000
31 01	6 061.60	101.026 83	87.018 764	252.54	1.087 137	5.60	-.998
31 02	12 123.21	101.027 17	87.003 612	252.64	1.087 473	5.60	-.997
31 03	18 184.84	101.027 33	86.988 454	252.79	1.087 809	5.60	-.996
31 04	24 246.48	101.027 83	86.973 287	252.89	1.088 145	5.60	-.994
31 05	30 308.15	101.027 83	86.958 114	253.02	1.088 481	5.58	-.993
31 06	36 369.82	101.028 33	86.942 933	253.14	1.088 816	5.57	-.992
31 07	42 431.52	101.028 50	86.927 745	253.27	1.089 150	5.58	-.990
31 08	48 493.23	101.028 67	86.912 549	253.39	1.089 485	5.55	-.989
31 09	54 554.95	101.029 00	86.897 346	253.51	1.089 818	5.57	-.988
31 10	60 616.69	101.029 33	86.882 136	253.64	1.090 152	5.55	-.987
31 11	66 678.45	101.029 50	86.866 918	253.76	1.090 485	5.55	-.985
31 12	72 740.22	101.029 83	86.851 693	253.87	1.090 818	5.53	-.984
31 13	78 802.01	101.030 00	86.836 461	254.01	1.091 150	5.53	-.983
31 14	84 863.81	101.030 33	86.821 221	254.12	1.091 482	5.53	-.982
31 15	90 925.63	101.030 67	86.805 974	254.24	1.091 814	5.52	-.981
31 16	96 987.47	101.030 83	86.790 720	254.37	1.092 145	5.52	-.979
31 17	103 049.32	101.031 17	86.775 458	254.49	1.092 476	5.52	-.978
31 18	109 111.19	101.031 33	86.760 189	254.61	1.092 807	5.50	-.977
31 19	115 173.07	101.031 67	86.744 913	254.74	1.093 137	5.50	-.976
31 20	121 234.97	101.032 00	86.729 629	254.86	1.093 467	5.50	-.975
31 21	127 296.89	101.032 17	86.714 338	254.99	1.093 797	5.48	-.973
31 22	133 358.82	101.032 33	86.699 039	255.09	1.094 126	5.48	-.972
31 23	139 420.76	101.032 83	86.683 734	255.22	1.094 455	5.47	-.971
31 24	145 482.73	101.033 00	86.668 421	255.36	1.094 783	5.47	-.969
31 25	151 544.71	101.033 17	86.653 100	255.47	1.095 111	5.47	-.968
31 26	157 606.70	101.033 50	86.637 772	255.59	1.095 439	5.45	-.967
31 27	163 668.71	101.033 83	86.622 437	255.71	1.095 766	5.45	-.965
31 28	169 730.74	101.034 00	86.607 095	255.84	1.096 093	5.45	-.964
31 29	175 792.78	101.034 33	86.591 745	255.96	1.096 420	5.43	-.963
31 30	181 854.84	101.034 67	86.576 388	256.09	1.096 746	5.43	-.962
31 31	187 916.92	101.034 83	86.561 023	256.19	1.097 072	5.42	-.960
31 32	193 979.01	101.035 17	86.545 652	256.32	1.097 397	5.42	-.959
31 33	200 041.12	101.035 33	86.530 273	256.46	1.097 722	5.42	-.958
31 34	206 103.24	101.035 67	86.514 886	256.57	1.098 047	5.40	-.956
31 35	212 165.38	101.035 83	86.499 492	256.69	1.098 371	5.40	-.955
31 36	218 227.53	101.036 17	86.484 091	256.81	1.098 695	5.38	-.954
31 37	224 289.70	101.036 50	86.468 683	256.94	1.099 018	5.40	-.952
31 38	230 351.89	101.036 67	86.453 267	257.06	1.099 342	5.38	-.951
31 39	236 414.09	101.037 00	86.437 844	257.17	1.099 665	5.37	-.950
31 40	242 476.31	101.037 33	86.422 414	257.31	1.099 987	5.37	-.949
31 41	248 538.55	101.037 50	86.406 976	257.42	1.100 309	5.37	-.947
31 42	254 600.80	101.037 83	86.391 531	257.54	1.100 631	5.35	-.946
31 43	260 663.07	101.038 00	86.376 079	257.66	1.100 952	5.37	-.945
31 44	266 725.35	101.038 33	86.360 620	257.79	1.101 274	5.33	-.944
31 45	272 787.65	101.038 50	86.345 153	257.91	1.101 594	5.35	-.943
31 46	278 849.96	101.039 00	86.329 679	258.04	1.101 915	5.32	-.941
31 47	284 912.30	101.039 00	86.314 197	258.16	1.102 234	5.33	-.940
31 48	290 974.64	101.039 50	86.298 708	258.27	1.102 554	5.32	-.939
31 49	297 037.01	101.039 67	86.283 212	258.39	1.102 873	5.32	-.938
31 50	303 099.39	101.039 83	86.267 709	258.52	1.103 192	5.30	-.937
31 51	309 161.78	101.040 17	86.252 198	258.64	1.103 510	5.30	-.935
31 52	315 224.19	101.040 50	86.236 680	258.76	1.103 828	5.30	-.934
31 53	321 286.62	101.040 67	86.221 155	258.89	1.104 146	5.28	-.933
31 54	327 349.06	101.041 00	86.205 622	259.01	1.104 463	5.28	-.931
31 55	333 411.52	101.041 33	86.190 082	259.12	1.104 780	5.28	-.930
31 56	339 474.00	101.041 50	86.174 535	259.26	1.105 097	5.27	-.929
31 57	345 536.49	101.041 83	86.158 980	259.36	1.105 413	5.27	-.927
31 58	351 599.00	101.042 17	86.143 419	259.51	1.105 729	5.25	-.926
31 59	357 661.53	101.042 33	86.127 849	259.61	1.106 044	5.25	-.925
32 00	363 724.07		86.112 273		1.106 359		-.924

TRANSVERSE MERCATOR PROJECTION

ARIZONA
EAST AND CENTRAL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
32 00	363 724.07	101.042 50	86.112 273	259.74	1.106 359	5.25	-.924
32 01	369 786.62	101.043 00	86.096 689	259.86	1.106 674	5.23	-.922
32 02	375 849.20	101.043 00	86.081 098	259.97	1.106 988	5.23	-.921
32 03	381 911.78	101.043 50	86.065 500	260.11	1.107 302	5.22	-.920
32 04	387 974.39	101.043 67	86.049 894	260.22	1.107 615	5.22	-.918
32 05	394 037.01	101.044 00	86.034 281	260.34	1.107 928	5.22	-.917
32 06	400 099.65	101.044 17	86.018 661	260.47	1.108 241	5.20	-.916
32 07	406 162.30	101.044 50	86.003 033	260.59	1.108 553	5.20	-.914
32 08	412 224.97	101.044 83	85.987 398	260.71	1.108 865	5.20	-.913
32 09	418 287.66	101.045 00	85.971 756	260.82	1.109 177	5.18	-.912
32 10	424 350.36	101.045 33	85.956 107	260.96	1.109 488	5.18	-.911
32 11	430 413.08	101.045 50	85.940 450	261.06	1.109 799	5.17	-.909
32 12	436 475.81	101.045 83	85.924 787	261.21	1.110 109	5.17	-.908
32 13	442 538.56	101.046 17	85.909 115	261.31	1.110 419	5.17	-.907
32 14	448 601.33	101.046 33	85.893 437	261.44	1.110 729	5.17	-.906
32 15	454 664.11	101.046 67	85.877 751	261.56	1.111 039	5.15	-.905
32 16	460 726.91	101.047 00	85.862 058	261.67	1.111 348	5.13	-.903
32 17	466 789.73	101.047 17	85.846 358	261.79	1.111 656	5.15	-.902
32 18	472 852.56	101.047 50	85.830 651	261.92	1.111 965	5.12	-.901
32 19	478 915.41	101.047 67	85.814 936	262.04	1.112 272	5.13	-.900
32 20	484 978.27	101.048 00	85.799 214	262.16	1.112 580	5.12	-.899
32 21	491 041.15	101.048 33	85.783 485	262.29	1.112 887	5.12	-.897
32 22	497 104.05	101.048 50	85.767 748	262.41	1.113 194	5.10	-.896
32 23	503 166.96	101.048 83	85.752 004	262.52	1.113 500	5.12	-.895
32 24	509 229.89	101.049 00	85.736 253	262.64	1.113 807	5.08	-.893
32 25	515 292.83	101.049 50	85.720 495	262.77	1.114 112	5.10	-.892
32 26	521 355.80	101.049 50	85.704 729	262.89	1.114 418	5.07	-.891
32 27	527 418.77	101.050 00	85.688 956	263.01	1.114 722	5.08	-.889
32 28	533 481.77	101.050 17	85.673 176	263.12	1.115 027	5.07	-.888
32 29	539 544.78	101.050 33	85.657 389	263.26	1.115 331	5.07	-.887
32 30	545 607.80	101.050 67	85.641 594	263.37	1.115 635	5.05	-.886
32 31	551 670.84	101.051 00	85.625 792	263.49	1.115 938	5.05	-.884
32 32	557 733.90	101.051 33	85.609 983	263.62	1.116 241	5.05	-.883
32 33	563 796.98	101.051 50	85.594 166	263.72	1.116 544	5.03	-.882
32 34	569 860.07	101.051 83	85.578 343	263.86	1.116 846	5.03	-.881
32 35	575 923.18	101.052 00	85.562 512	263.97	1.117 148	5.03	-.880
32 36	581 986.30	101.052 33	85.546 674	264.11	1.117 450	5.02	-.878
32 37	588 049.44	101.052 67	85.530 828	264.21	1.117 751	5.02	-.877
32 38	594 112.60	101.052 83	85.514 976	264.34	1.118 052	5.00	-.876
32 39	600 175.77	101.053 17	85.499 116	264.46	1.118 352	5.00	-.875
32 40	606 238.96	101.053 50	85.483 249	264.57	1.118 652	5.00	-.874
32 41	612 302.17	101.053 67	85.467 375	264.71	1.118 952	4.98	-.872
32 42	618 365.39	101.054 00	85.451 493	264.81	1.119 251	4.98	-.871
32 43	624 428.63	101.054 17	85.435 605	264.94	1.119 550	4.97	-.870
32 44	630 491.88	101.054 50	85.419 709	265.06	1.119 848	4.97	-.868
32 45	636 555.15	101.054 83	85.403 806	265.19	1.120 146	4.97	-.867
32 46	642 618.44	101.055 00	85.387 895	265.31	1.120 444	4.95	-.866
32 47	648 681.74	101.055 33	85.371 977	265.41	1.120 741	4.95	-.864
32 48	654 745.06	101.055 67	85.356 053	265.56	1.121 038	4.95	-.863
32 49	660 808.40	101.055 83	85.340 120	265.66	1.121 335	4.93	-.862
32 50	666 871.75	101.056 17	85.324 181	265.79	1.121 631	4.93	-.861
32 51	672 935.12	101.056 33	85.308 234	265.91	1.121 927	4.92	-.859
32 52	678 998.50	101.056 67	85.292 280	266.02	1.122 222	4.92	-.858
32 53	685 061.90	101.057 00	85.276 319	266.14	1.122 517	4.92	-.857
32 54	691 125.32	101.057 33	85.260 351	266.27	1.122 812	4.90	-.855
32 55	697 188.76	101.057 50	85.244 375	266.39	1.123 106	4.90	-.854
32 56	703 252.21	101.057 67	85.228 392	266.51	1.123 400	4.90	-.853
32 57	709 315.67	101.058 17	85.212 402	266.62	1.123 694	4.88	-.851
32 58	715 379.16	101.058 33	85.196 405	266.74	1.123 987	4.88	-.850
32 59	721 442.66	101.058 50	85.180 401	266.87	1.124 280	4.87	-.849
33 00	727 506.17		85.164 389		1.124 572		-.848

TRANSVERSE MERCATOR PROJECTION

ARIZONA
EAST AND CENTRAL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
33 00	727 506.17	101.058 83	85.164 389	266.99	1.124 572	4.87	-.848
33 01	733 569.70	101.059 33	85.148 370	267.11	1.124 864	4.87	-.846
33 02	739 633.26	101.059 33	85.132 344	267.22	1.125 156	4.85	-.845
33 03	745 696.82	101.059 67	85.116 311	267.36	1.125 447	4.85	-.844
33 04	751 760.40	101.060 00	85.100 270	267.46	1.125 738	4.85	-.843
33 05	757 824.00	101.060 17	85.084 223	267.59	1.126 029	4.83	-.842
33 06	763 887.61	101.060 50	85.068 168	267.71	1.126 319	4.83	-.840
33 07	769 951.24	101.060 83	85.052 106	267.84	1.126 609	4.82	-.839
33 08	776 014.89	101.061 17	85.036 036	267.94	1.126 898	4.82	-.838
33 09	782 078.56	101.061 33	85.019 960	268.07	1.127 187	4.82	-.837
33 10	788 142.24	101.061 50	85.003 876	268.19	1.127 476	4.80	-.836
33 11	794 205.93	101.062 00	84.987 785	268.31	1.127 764	4.80	-.834
33 12	800 269.65	101.062 17	84.971 687	268.44	1.128 052	4.78	-.833
33 13	806 333.38	101.062 33	84.955 581	268.54	1.128 339	4.80	-.832
33 14	812 397.12	101.062 67	84.939 469	268.67	1.128 627	4.77	-.830
33 15	818 460.88	101.063 00	84.923 349	268.79	1.128 913	4.78	-.829
33 16	824 524.66	101.063 33	84.907 222	268.91	1.129 200	4.75	-.828
33 17	830 588.46	101.063 50	84.891 088	269.04	1.129 485	4.77	-.826
33 18	836 652.27	101.063 83	84.874 946	269.14	1.129 771	4.75	-.825
33 19	842 716.10	101.064 00	84.858 798	269.27	1.130 056	4.75	-.824
33 20	848 779.94	101.064 33	84.842 642	269.39	1.130 341	4.73	-.823
33 21	854 843.80	101.064 67	84.826 479	269.51	1.130 625	4.73	-.821
33 22	860 907.68	101.065 00	84.810 309	269.64	1.130 909	4.73	-.820
33 23	866 971.58	101.065 17	84.794 131	269.74	1.131 193	4.72	-.819
33 24	873 035.49	101.065 33	84.777 947	269.87	1.131 476	4.72	-.817
33 25	879 099.41	101.065 83	84.761 755	269.99	1.131 759	4.72	-.816
33 26	885 163.36	101.066 00	84.745 556	270.11	1.132 042	4.70	-.815
33 27	891 227.32	101.066 17	84.729 350	270.22	1.132 324	4.70	-.813
33 28	897 291.29	101.066 67	84.713 137	270.34	1.132 606	4.68	-.812
33 29	903 355.29	101.066 83	84.696 917	270.47	1.132 887	4.68	-.811
33 30	909 419.30	101.067 00	84.680 689	270.59	1.133 168	4.68	-.810
33 31	915 483.32	101.067 33	84.664 454	270.71	1.133 449	4.67	-.808
33 32	921 547.36	101.067 67	84.648 212	270.82	1.133 729	4.67	-.807
33 33	927 611.42	101.068 00	84.631 963	270.94	1.134 009	4.65	-.806
33 34	933 675.50	101.068 17	84.615 707	271.06	1.134 288	4.65	-.805
33 35	939 739.59	101.068 50	84.599 444	271.19	1.134 567	4.65	-.804
33 36	945 803.70	101.068 83	84.583 173	271.31	1.134 846	4.63	-.802
33 37	951 867.83	101.069 00	84.566 895	271.42	1.135 124	4.63	-.801
33 38	957 931.97	101.069 33	84.550 610	271.54	1.135 402	4.63	-.800
33 39	963 996.13	101.069 50	84.534 318	271.66	1.135 680	4.62	-.799
33 40	970 060.30	101.069 83	84.518 019	271.79	1.135 957	4.62	-.798
33 41	976 124.49	101.070 17	84.501 712	271.89	1.136 234	4.60	-.796
33 42	982 188.70	101.070 50	84.485 399	272.02	1.136 510	4.60	-.795
33 43	988 252.93	101.070 67	84.469 078	272.14	1.136 786	4.60	-.794
33 44	994 317.17	101.070 83	84.452 750	272.26	1.137 062	4.58	-.792
33 45	1 000 381.42	101.071 33	84.436 415	272.39	1.137 337	4.58	-.791
33 46	1 006 445.70	101.071 50	84.420 072	272.49	1.137 612	4.58	-.790
33 47	1 012 509.99	101.071 83	84.403 723	272.61	1.137 887	4.57	-.788
33 48	1 018 574.30	101.072 00	84.387 367	272.74	1.138 161	4.57	-.787
33 49	1 024 638.62	101.072 33	84.371 003	272.86	1.138 435	4.55	-.786
33 50	1 030 702.96	101.072 67	84.354 632	272.97	1.138 708	4.55	-.785
33 51	1 036 767.32	101.073 00	84.338 254	273.09	1.138 981	4.55	-.783
33 52	1 042 831.70	101.073 17	84.321 869	273.21	1.139 254	4.53	-.782
33 53	1 048 896.09	101.073 33	84.305 477	273.34	1.139 526	4.52	-.781
33 54	1 054 960.49	101.073 83	84.289 077	273.44	1.139 797	4.53	-.779
33 55	1 061 024.92	101.074 00	84.272 671	273.57	1.140 069	4.52	-.778
33 56	1 067 089.36	101.074 33	84.256 257	273.69	1.140 340	4.50	-.777
33 57	1 073 153.82	101.074 50	84.239 836	273.81	1.140 610	4.52	-.775
33 58	1 079 218.29	101.074 83	84.223 408	273.92	1.140 881	4.50	-.774
33 59	1 085 282.78	101.075 17	84.206 973	274.04	1.141 151	4.48	-.773
34 00	1 091 347.29		84.190 531		1.141 420		-.772

TRANSVERSE MERCATOR PROJECTION

ARIZONA
EAST AND CENTRAL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
34 00	1 091 347.29	101.075 33	84.190 531	274.16	1.141 420	4.48	-.772
34 01	1 097 411.81	101.075 67	84.174 082	274.29	1.141 689	4.48	-.770
34 02	1 103 476.35	101.076 00	84.157 625	274.41	1.141 958	4.47	-.769
34 03	1 109 540.91	101.076 17	84.141 161	274.52	1.142 226	4.47	-.768
34 04	1 115 605.48	101.076 50	84.124 690	274.62	1.142 494	4.45	-.767
34 05	1 121 670.07	101.076 83	84.108 213	274.77	1.142 761	4.45	-.766
34 06	1 127 734.68	101.077 00	84.091 727	274.87	1.143 028	4.45	-.764
34 07	1 133 799.30	101.077 33	84.075 235	274.99	1.143 295	4.43	-.763
34 08	1 139 863.94	101.077 67	84.058 736	275.11	1.143 561	4.43	-.762
34 09	1 145 928.60	101.077 83	84.042 230	275.24	1.143 827	4.43	-.761
34 10	1 151 993.27	101.078 17	84.025 716	275.36	1.144 093	4.42	-.760
34 11	1 158 057.96	101.078 50	84.009 195	275.47	1.144 358	4.42	-.758
34 12	1 164 122.67	101.078 83	83.992 667	275.57	1.144 623	4.42	-.757
34 13	1 170 187.40	101.079 00	83.976 133	275.71	1.144 888	4.40	-.756
34 14	1 176 252.14	101.079 17	83.959 591	275.84	1.145 152	4.38	-.754
34 15	1 182 316.89	101.079 67	83.943 041	275.94	1.145 415	4.40	-.753
34 16	1 188 381.67	101.079 83	83.926 485	276.06	1.145 679	4.38	-.752
34 17	1 194 446.46	101.080 00	83.909 922	276.19	1.145 942	4.37	-.750
34 18	1 200 511.26	101.080 50	83.893 351	276.29	1.146 204	4.37	-.749
34 19	1 206 576.09	101.080 67	83.876 774	276.42	1.146 466	4.37	-.748
34 20	1 212 640.93	101.080 83	83.860 189	276.54	1.146 728	4.35	-.747
34 21	1 218 705.78	101.081 33	83.843 597	276.66	1.146 989	4.35	-.745
34 22	1 224 770.66	101.081 50	83.826 998	276.77	1.147 250	4.35	-.744
34 23	1 230 835.55	101.081 83	83.810 392	276.89	1.147 511	4.33	-.743
34 24	1 236 900.46	101.082 00	83.793 779	277.01	1.147 771	4.33	-.742
34 25	1 242 965.38	101.082 33	83.777 159	277.14	1.148 031	4.32	-.741
34 26	1 249 030.32	101.082 67	83.760 531	277.24	1.148 290	4.32	-.739
34 27	1 255 095.28	101.083 00	83.743 897	277.37	1.148 549	4.32	-.738
34 28	1 261 160.26	101.083 17	83.727 255	277.47	1.148 808	4.30	-.737
34 29	1 267 225.25	101.083 33	83.710 607	277.61	1.149 066	4.30	-.736
34 30	1 273 290.25	101.083 83	83.693 951	277.72	1.149 324	4.28	-.735
34 31	1 279 355.28	101.084 00	83.677 288	277.84	1.149 581	4.28	-.733
34 32	1 285 420.32	101.084 33	83.660 618	277.96	1.149 838	4.28	-.732
34 33	1 291 485.38	101.084 50	83.643 941	278.07	1.150 095	4.27	-.731
34 34	1 297 550.45	101.084 83	83.627 257	278.19	1.150 351	4.27	-.729
34 35	1 303 615.54	101.085 17	83.610 566	278.31	1.150 607	4.27	-.728
34 36	1 309 680.65	101.085 50	83.593 868	278.44	1.150 863	4.25	-.727
34 37	1 315 745.78	101.085 67	83.577 162	278.54	1.151 118	4.25	-.725
34 38	1 321 810.92	101.086 00	83.560 450	278.66	1.151 373	4.23	-.724
34 39	1 327 876.08	101.086 33	83.543 731	278.79	1.151 627	4.23	-.723
34 40	1 333 941.26	101.086 50	83.527 004	278.91	1.151 881	4.23	-.722
34 41	1 340 006.45	101.086 83	83.510 270	279.01	1.152 135	4.22	-.720
34 42	1 346 071.66	101.087 00	83.493 530	279.14	1.152 388	4.22	-.719
34 43	1 352 136.88	101.087 50	83.476 782	279.26	1.152 641	4.20	-.718
34 44	1 358 202.13	101.087 67	83.460 027	279.37	1.152 893	4.22	-.717
34 45	1 364 267.39	101.087 83	83.443 265	279.49	1.153 146	4.18	-.716
34 46	1 370 332.66	101.088 33	83.426 496	279.61	1.153 397	4.20	-.714
34 47	1 376 397.96	101.088 50	83.409 720	279.72	1.153 649	4.17	-.713
34 48	1 382 463.27	101.088 83	83.392 937	279.86	1.153 899	4.18	-.712
34 49	1 388 528.60	101.089 00	83.376 146	279.96	1.154 150	4.17	-.711
34 50	1 394 593.94	101.089 33	83.359 349	280.07	1.154 400	4.17	-.710
34 51	1 400 659.30	101.089 67	83.342 545	280.21	1.154 650	4.15	-.708
34 52	1 406 724.68	101.089 83	83.325 733	280.31	1.154 899	4.15	-.707
34 53	1 412 790.07	101.090 17	83.308 915	280.44	1.155 148	4.13	-.706
34 54	1 418 855.48	101.090 50	83.292 089	280.56	1.155 396	4.13	-.704
34 55	1 424 920.91	101.090 83	83.275 256	280.66	1.155 644	4.13	-.703
34 56	1 430 986.36	101.091 00	83.258 417	280.79	1.155 892	4.12	-.702
34 57	1 437 051.82	101.091 33	83.241 570	280.91	1.156 139	4.12	-.700
34 58	1 443 117.30	101.091 50	83.224 716	281.02	1.156 386	4.12	-.699
34 59	1 449 182.79	101.091 83	83.207 855	281.14	1.156 633	4.10	-.698
35 00	1 455 248.30		83.190 987		1.156 879		-.697

TRANSVERSE MERCATOR PROJECTION

ARIZONA
EAST AND CENTRAL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
35 00	1 455 248.30	101.092 33	83.190 987	281.26	1.156 879	4.10	-.697
35 01	1 461 313.84	101.092 33	83.174 112	281.37	1.157 125	4.08	-.695
35 02	1 467 379.38	101.092 67	83.157 230	281.49	1.157 370	4.10	-.694
35 03	1 473 444.94	101.093 00	83.140 341	281.62	1.157 616	4.07	-.693
35 04	1 479 510.52	101.093 33	83.123 444	281.72	1.157 860	4.08	-.692
35 05	1 485 576.12	101.093 50	83.106 541	281.84	1.158 105	4.05	-.691
35 06	1 491 641.73	101.093 83	83.089 631	281.97	1.158 348	4.07	-.689
35 07	1 497 707.36	101.094 17	83.072 713	282.07	1.158 592	4.05	-.688
35 08	1 503 773.01	101.094 50	83.055 789	282.21	1.158 835	4.05	-.687
35 09	1 509 838.68	101.094 67	83.038 857	282.31	1.159 078	4.03	-.686
35 10	1 515 904.36	101.095 00	83.021 919	282.44	1.159 320	4.03	-.685
35 11	1 521 970.06	101.095 17	83.004 973	282.54	1.159 562	4.02	-.683
35 12	1 528 035.77	101.095 50	82.988 021	282.67	1.159 803	4.02	-.682
35 13	1 534 101.50	101.095 83	82.971 061	282.79	1.160 044	4.02	-.681
35 14	1 540 167.25	101.096 17	82.954 094	282.89	1.160 285	4.00	-.679
35 15	1 546 233.02	101.096 33	82.937 121	283.02	1.160 525	4.00	-.678
35 16	1 552 298.80	101.096 67	82.920 140	283.14	1.160 765	4.00	-.677
35 17	1 558 364.60	101.096 83	82.903 152	283.24	1.161 005	3.98	-.675
35 18	1 564 430.41	101.097 33	82.886 158	283.37	1.161 244	3.98	-.674
35 19	1 570 496.25	101.097 50	82.869 156	283.49	1.161 483	3.97	-.673
35 20	1 576 562.10	101.097 83	82.852 147	283.61	1.161 721	3.97	-.672
35 21	1 582 627.97	101.098 00	82.835 131	283.72	1.161 959	3.97	-.670
35 22	1 588 693.85	101.098 33	82.818 108	283.82	1.162 197	3.95	-.669
35 23	1 594 759.75	101.098 67	82.801 079	283.96	1.162 434	3.93	-.668
35 24	1 600 825.67	101.099 00	82.784 042	284.07	1.162 670	3.95	-.667
35 25	1 606 891.61	101.099 17	82.766 998	284.19	1.162 907	3.93	-.666
35 26	1 612 957.56	101.099 50	82.749 947	284.31	1.163 143	3.92	-.664
35 27	1 619 023.53	101.099 83	82.732 889	284.42	1.163 378	3.93	-.663
35 28	1 625 089.52	101.100 00	82.715 824	284.54	1.163 614	3.92	-.662
35 29	1 631 155.52	101.100 33	82.698 752	284.66	1.163 849	3.90	-.661
35 30	1 637 221.54	101.100 67	82.681 673	284.77	1.164 083	3.90	-.660
35 31	1 643 287.58	101.100 83	82.664 587	284.89	1.164 317	3.90	-.658
35 32	1 649 353.63	101.101 17	82.647 494	285.01	1.164 551	3.88	-.657
35 33	1 655 419.70	101.101 50	82.630 394	285.12	1.164 784	3.88	-.656
35 34	1 661 485.79	101.101 67	82.613 287	285.24	1.165 017	3.88	-.654
35 35	1 667 551.89	101.102 17	82.596 173	285.37	1.165 250	3.87	-.653
35 36	1 673 618.02	101.102 33	82.579 051	285.47	1.165 482	3.85	-.652
35 37	1 679 684.16	101.102 50	82.561 923	285.59	1.165 713	3.87	-.650
35 38	1 685 750.31	101.102 83	82.544 788	285.71	1.165 945	3.85	-.649
35 39	1 691 816.48	101.103 17	82.527 646	285.82	1.166 176	3.83	-.648
35 40	1 697 882.67	101.103 50	82.510 497	285.94	1.166 406	3.83	-.647
35 41	1 703 948.88	101.103 67	82.493 341	286.06	1.166 636	3.83	-.645
35 42	1 710 015.10	101.104 17	82.476 178	286.19	1.166 866	3.82	-.644
35 43	1 716 081.35	101.104 33	82.459 007	286.29	1.167 095	3.82	-.643
35 44	1 722 147.61	101.104 50	82.441 830	286.41	1.167 324	3.80	-.642
35 45	1 728 213.88	101.104 83	82.424 646	286.52	1.167 552	3.80	-.641
35 46	1 734 280.17	101.105 17	82.407 455	286.64	1.167 780	3.80	-.639
35 47	1 740 346.48	101.105 50	82.390 257	286.76	1.168 008	3.80	-.638
35 48	1 746 412.81	101.105 67	82.373 052	286.87	1.168 236	3.77	-.637
35 49	1 752 479.15	101.106 00	82.355 840	286.99	1.168 462	3.78	-.636
35 50	1 758 545.51	101.106 33	82.338 621	287.11	1.168 689	3.77	-.635
35 51	1 764 611.89	101.106 50	82.321 395	287.22	1.168 915	3.77	-.633
35 52	1 770 678.28	101.106 83	82.304 162	287.34	1.169 141	3.75	-.632
35 53	1 776 744.69	101.107 17	82.286 922	287.46	1.169 366	3.75	-.631
35 54	1 782 811.12	101.107 50	82.269 675	287.57	1.169 591	3.75	-.629
35 55	1 788 877.57	101.107 67	82.252 421	287.69	1.169 816	3.73	-.628
35 56	1 794 944.03	101.108 00	82.235 160	287.81	1.170 040	3.73	-.627
35 57	1 801 010.51	101.108 33	82.217 892	287.91	1.170 264	3.72	-.625
35 58	1 807 077.01	101.108 50	82.200 618	288.04	1.170 487	3.72	-.624
35 59	1 813 143.52	101.108 83	82.183 336	288.16	1.170 710	3.72	-.623
36 00	1 819 210.05		82.166 047		1.170 933		-.622

TRANSVERSE MERCATOR PROJECTION

ARIZONA
EAST AND CENTRAL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
36 00	1 819 210.05	101.109 17	82.166 047	288.27	1.170 933	3.70	-.622
36 01	1 825 276.60	101.109 33	82.148 751	288.39	1.171 155	3.70	-.620
36 02	1 831 343.16	101.109 83	82.131 448	288.49	1.171 377	3.68	-.619
36 03	1 837 409.75	101.110 00	82.114 139	288.62	1.171 598	3.68	-.618
36 04	1 843 476.35	101.110 17	82.096 822	288.74	1.171 819	3.68	-.617
36 05	1 849 542.96	101.110 67	82.079 498	288.84	1.172 040	3.67	-.616
36 06	1 855 609.60	101.110 83	82.062 168	288.97	1.172 260	3.67	-.614
36 07	1 861 676.25	101.111 00	82.044 830	289.07	1.172 480	3.65	-.613
36 08	1 867 742.91	101.111 50	82.027 486	289.21	1.172 699	3.65	-.612
36 09	1 873 809.60	101.111 67	82.010 134	289.31	1.172 918	3.65	-.611
36 10	1 879 876.30	101.112 00	81.992 776	289.42	1.173 137	3.63	-.610
36 11	1 885 943.02	101.112 33	81.975 411	289.56	1.173 355	3.63	-.608
36 12	1 892 009.76	101.112 50	81.958 038	289.66	1.173 573	3.62	-.607
36 13	1 898 076.51	101.112 83	81.940 659	289.77	1.173 790	3.62	-.606
36 14	1 904 143.28	101.113 17	81.923 273	289.89	1.174 007	3.62	-.605
36 15	1 910 210.07	101.113 33	81.905 880	290.01	1.174 224	3.60	-.604
36 16	1 916 276.87	101.113 67	81.888 480	290.12	1.174 440	3.60	-.602
36 17	1 922 343.69	101.114 00	81.871 073	290.24	1.174 656	3.58	-.601
36 18	1 928 410.53	101.114 33	81.853 659	290.36	1.174 871	3.58	-.600
36 19	1 934 477.39	101.114 50	81.836 238	290.47	1.175 086	3.58	-.599
36 20	1 940 544.26	101.114 83	81.818 810	290.59	1.175 301	3.57	-.598
36 21	1 946 611.15	101.115 17	81.801 375	290.71	1.175 515	3.57	-.596
36 22	1 952 678.06	101.115 33	81.783 933	290.81	1.175 729	3.57	-.595
36 23	1 958 744.98	101.115 83	81.766 485	290.94	1.175 943	3.55	-.594
36 24	1 964 811.93	101.115 83	81.749 029	291.04	1.176 156	3.55	-.592
36 25	1 970 878.88	101.116 33	81.731 567	291.17	1.176 369	3.53	-.591
36 26	1 976 945.86	101.116 50	81.714 097	291.27	1.176 581	3.53	-.590
36 27	1 983 012.85	101.116 83	81.696 621	291.41	1.176 793	3.52	-.588
36 28	1 989 079.86	101.117 17	81.679 137	291.51	1.177 004	3.52	-.587
36 29	1 995 146.89	101.117 50	81.661 647	291.62	1.177 215	3.52	-.586
36 30	2 001 213.94	101.117 67	81.644 150	291.74	1.177 426	3.50	-.585
36 31	2 007 281.00	101.118 00	81.626 646	291.86	1.177 636	3.50	-.583
36 32	2 013 348.08	101.118 17	81.609 135	291.97	1.177 846	3.50	-.582
36 33	2 019 415.17	101.118 67	81.591 617	292.09	1.178 056	3.48	-.581
36 34	2 025 482.29	101.118 83	81.574 092	292.21	1.178 265	3.47	-.580
36 35	2 031 549.42	101.119 17	81.556 560	292.32	1.178 473	3.48	-.579
36 36	2 037 616.57	101.119 33	81.539 021	292.44	1.178 682	3.47	-.577
36 37	2 043 683.73	101.119 67	81.521 475	292.54	1.178 890	3.45	-.576
36 38	2 049 750.91	101.120 00	81.503 923	292.67	1.179 097	3.45	-.575
36 39	2 055 818.11	101.120 33	81.486 363	292.77	1.179 304	3.45	-.574
36 40	2 061 885.33	101.120 50	81.468 797	292.89	1.179 511	3.43	-.573
36 41	2 067 952.56	101.120 83	81.451 224	293.01	1.179 717	3.43	-.571
36 42	2 074 019.81	101.121 17	81.433 644	293.12	1.179 923	3.43	-.570
36 43	2 080 087.08	101.121 50	81.416 057	293.24	1.180 129	3.42	-.569
36 44	2 086 154.37	101.121 67	81.398 463	293.36	1.180 334	3.42	-.568
36 45	2 092 221.67	101.122 00	81.380 862	293.47	1.180 539	3.42	-.567
36 46	2 098 288.99	101.122 33	81.363 254	293.59	1.180 744	3.40	-.565
36 47	2 104 356.33	101.122 50	81.345 639	293.69	1.180 948	3.38	-.564
36 48	2 110 423.68	101.122 83	81.328 018	293.82	1.181 151	3.38	-.563
36 49	2 116 491.05	101.123 17	81.310 389	293.92	1.181 354	3.38	-.562
36 50	2 122 558.44	101.123 50	81.292 754	294.04	1.181 557	3.37	-.561
36 51	2 128 625.85	101.123 67	81.275 112	294.17	1.181 759	3.37	-.559
36 52	2 134 693.27	101.124 00	81.257 462	294.27	1.181 961	3.37	-.558
36 53	2 140 760.71	101.124 33	81.239 806	294.39	1.182 163	3.35	-.557
36 54	2 146 828.17	101.124 50	81.222 143	294.49	1.182 364	3.35	-.556
36 55	2 152 895.64	101.125 00	81.204 474	294.62	1.182 565	3.33	-.555
36 56	2 158 963.14	101.125 17	81.186 797	294.74	1.182 765	3.33	-.553
36 57	2 165 030.65	101.125 33	81.169 113	294.84	1.182 965	3.32	-.552
36 58	2 171 098.17	101.125 83	81.151 423	294.97	1.183 164	3.32	-.551
36 59	2 177 165.72	101.126 00	81.133 725	295.07	1.183 363	3.32	-.550
37 00	2 183 233.28		81.116 021		1.183 562		-.549

TRANSVERSE MERCATOR PROJECTION

ARIZONA
EAST AND CENTRAL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
37 00	2 183 233.28	101.126 33	81.116 021	295.19	1.183 562	3.30	-.549
37 01	2 189 300.86	101.126 67	81.098 310	295.31	1.183 760	3.30	-.547
37 02	2 195 368.46	101.126 83	81.080 592	295.42	1.183 958	3.30	-.546
37 03	2 201 436.07	101.127 17	81.062 867	295.54	1.184 156	3.28	-.545
37 04	2 207 503.70	101.127 50	81.045 135	295.66	1.184 353	3.28	-.544
37 05	2 213 571.35	101.127 67	81.027 396	295.76	1.184 550	3.27	-.543
37 06	2 219 639.01	101.128 00	81.009 651	295.89	1.184 746	3.27	-.541
37 07	2 225 706.69	101.128 33	80.991 898	295.99	1.184 942	3.25	-.540
37 08	2 231 774.39	101.128 67	80.974 139	296.11	1.185 137	3.25	-.539
37 09	2 237 842.11	101.129 00	80.956 373	296.22	1.185 332	3.25	-.538
37 10	2 243 909.85	101.129 17	80.938 600	296.34	1.185 527	3.23	-.537
37 11	2 249 977.60	101.129 33	80.920 820	296.46	1.185 721	3.23	-.535
37 12	2 256 045.36	101.129 83	80.903 033	296.56	1.185 915	3.23	-.534
37 13	2 262 113.15	101.130 17	80.885 240	296.69	1.186 109	3.22	-.533
37 14	2 268 180.96	101.130 33	80.867 439	296.79	1.186 302	3.22	-.532
37 15	2 274 248.78	101.130 67	80.849 632	296.91	1.186 495	3.20	-.531
37 16	2 280 316.62	101.130 83	80.831 818	297.04	1.186 687	3.20	-.529
37 17	2 286 384.47	101.131 17	80.813 996	297.14	1.186 879	3.18	-.528
37 18	2 292 452.34	101.131 50	80.796 168	297.24	1.187 070	3.18	-.527
37 19	2 298 520.23	101.131 83	80.778 334	297.37	1.187 261	3.18	-.526
37 20	2 304 588.14		80.760 492		1.187 452		-.524

TRANSVERSE MERCATOR PROJECTION

ARIZONA
WEST ZONE

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
31 00	0.00	101.030 00	87.036 809	252.42	1.086 836	5.62	1.000
31 01	6 061.80	101.030 33	87.021 664	252.54	1.087 173	5.60	-.998
31 02	12 123.62	101.030 50	87.006 512	252.66	1.087 509	5.60	-.997
31 03	18 185.45	101.030 67	86.991 353	252.79	1.087 845	5.60	-.996
31 04	24 247.29	101.031 17	86.976 186	252.91	1.088 181	5.60	-.994
31 05	30 309.16	101.031 33	86.961 012	253.02	1.088 517	5.58	-.993
31 06	36 371.04	101.031 50	86.945 831	253.16	1.088 852	5.57	-.992
31 07	42 432.93	101.031 83	86.930 642	253.27	1.089 186	5.58	-.990
31 08	48 494.84	101.032 17	86.915 446	253.39	1.089 521	5.55	-.989
31 09	54 556.77	101.032 33	86.900 243	253.52	1.089 854	5.57	-.988
31 10	60 618.71	101.032 67	86.885 032	253.64	1.090 188	5.55	-.987
31 11	66 680.67	101.032 83	86.869 814	253.77	1.090 521	5.55	-.985
31 12	72 742.64	101.033 17	86.854 588	253.89	1.090 854	5.53	-.984
31 13	78 804.63	101.033 50	86.839 355	254.01	1.091 186	5.53	-.983
31 14	84 866.64	101.033 67	86.824 115	254.12	1.091 518	5.53	-.982
31 15	90 928.66	101.034 00	86.808 868	254.26	1.091 850	5.52	-.981
31 16	96 990.70	101.034 17	86.793 613	254.37	1.092 181	5.52	-.979
31 17	103 052.75	101.034 50	86.778 351	254.51	1.092 512	5.52	-.978
31 18	109 114.82	101.034 83	86.763 081	254.62	1.092 843	5.50	-.977
31 19	115 176.91	101.035 00	86.747 804	254.74	1.093 173	5.50	-.976
31 20	121 239.01	101.035 33	86.732 520	254.87	1.093 503	5.50	-.975
31 21	127 301.13	101.035 50	86.717 228	254.99	1.093 833	5.48	-.973
31 22	133 363.26	101.035 83	86.701 929	255.11	1.094 162	5.48	-.972
31 23	139 425.41	101.036 17	86.686 623	255.22	1.094 491	5.48	-.971
31 24	145 487.58	101.036 33	86.671 310	255.36	1.094 820	5.47	-.969
31 25	151 549.76	101.036 67	86.655 989	255.49	1.095 148	5.47	-.968
31 26	157 611.96	101.036 83	86.640 660	255.59	1.095 476	5.45	-.967
31 27	163 674.17	101.037 17	86.625 325	255.72	1.095 803	5.45	-.965
31 28	169 736.40	101.037 33	86.609 982	255.84	1.096 130	5.45	-.964
31 29	175 798.64	101.037 67	86.594 632	255.97	1.096 457	5.43	-.963
31 30	181 860.90	101.038 00	86.579 274	256.09	1.096 783	5.43	-.962
31 31	187 923.18	101.038 17	86.563 909	256.21	1.097 109	5.42	-.960
31 32	193 985.47	101.038 50	86.548 537	256.34	1.097 434	5.42	-.959
31 33	200 047.78	101.038 83	86.533 157	256.46	1.097 759	5.42	-.958
31 34	206 110.11	101.039 00	86.517 770	256.57	1.098 084	5.40	-.956
31 35	212 172.45	101.039 33	86.502 376	256.71	1.098 408	5.40	-.955
31 36	218 234.81	101.039 50	86.486 974	256.82	1.098 732	5.38	-.954
31 37	224 297.18	101.039 83	86.471 565	256.94	1.099 055	5.40	-.952
31 38	230 359.57	101.040 17	86.456 149	257.06	1.099 379	5.38	-.951
31 39	236 421.98	101.040 33	86.440 726	257.19	1.099 702	5.37	-.950
31 40	242 484.40	101.040 50	86.425 295	257.31	1.100 024	5.37	-.949
31 41	248 546.83	101.041 00	86.409 857	257.44	1.100 346	5.37	-.947
31 42	254 609.29	101.041 17	86.394 411	257.54	1.100 668	5.35	-.946
31 43	260 671.76	101.041 33	86.378 959	257.67	1.100 989	5.37	-.945
31 44	266 734.24	101.041 67	86.363 499	257.81	1.101 311	5.33	-.944
31 45	272 796.74	101.042 00	86.348 031	257.91	1.101 631	5.35	-.943
31 46	278 859.26	101.042 17	86.332 557	258.04	1.101 952	5.32	-.941
31 47	284 921.79	101.042 50	86.317 075	258.17	1.102 271	5.33	-.940
31 48	290 984.34	101.042 83	86.301 585	258.27	1.102 591	5.32	-.939
31 49	297 046.91	101.043 00	86.286 089	258.41	1.102 910	5.32	-.938
31 50	303 109.49	101.043 33	86.270 585	258.52	1.103 229	5.30	-.937
31 51	309 172.09	101.043 50	86.255 074	258.66	1.103 547	5.30	-.935
31 52	315 234.70	101.043 83	86.239 555	258.77	1.103 865	5.30	-.934
31 53	321 297.33	101.044 17	86.224 029	258.89	1.104 183	5.28	-.933
31 54	327 359.98	101.044 33	86.208 496	259.01	1.104 500	5.28	-.931
31 55	333 422.64	101.044 67	86.192 956	259.14	1.104 817	5.28	-.930
31 56	339 485.32	101.044 83	86.177 408	259.26	1.105 134	5.27	-.929
31 57	345 548.01	101.045 17	86.161 853	259.37	1.105 450	5.27	-.927
31 58	351 610.72	101.045 50	86.146 291	259.51	1.105 766	5.25	-.926
31 59	357 673.45	101.045 67	86.130 721	259.62	1.106 081	5.25	-.925
32 00	363 736.19		86.115 144		1.106 396		-.924

TRANSVERSE MERCATOR PROJECTION

ARIZONA
WEST ZONE

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
32 00	363 736.19	101.046 00	86.115 144	259.76	1.106 396	5.25	-.924
32 01	369 798.95	101.046 33	86.099 559	259.86	1.106 711	5.23	-.922
32 02	375 861.73	101.046 50	86.083 968	259.99	1.107 025	5.23	-.921
32 03	381 924.52	101.046 67	86.068 369	260.12	1.107 339	5.22	-.920
32 04	387 987.32	101.047 17	86.052 762	260.22	1.107 652	5.22	-.918
32 05	394 050.15	101.047 33	86.037 149	260.36	1.107 965	5.22	-.917
32 06	400 112.99	101.047 50	86.021 528	260.47	1.108 278	5.20	-.916
32 07	406 175.84	101.047 83	86.005 900	260.61	1.108 590	5.20	-.914
32 08	412 238.71	101.048 17	85.990 264	260.71	1.108 902	5.20	-.913
32 09	418 301.60	101.048 50	85.974 622	260.84	1.109 214	5.18	-.912
32 10	424 364.51	101.048 67	85.958 972	260.96	1.109 525	5.18	-.911
32 11	430 427.43	101.048 83	85.943 315	261.07	1.109 836	5.17	-.909
32 12	436 490.36	101.049 33	85.927 651	261.21	1.110 146	5.17	-.908
32 13	442 553.32	101.049 50	85.911 979	261.32	1.110 456	5.17	-.907
32 14	448 616.29	101.049 67	85.896 300	261.44	1.110 766	5.17	-.906
32 15	454 679.27	101.050 00	85.880 614	261.57	1.111 076	5.15	-.905
32 16	460 742.27	101.050 33	85.864 920	261.67	1.111 385	5.13	-.903
32 17	466 805.29	101.050 50	85.849 220	261.81	1.111 693	5.15	-.902
32 18	472 868.32	101.050 83	85.833 512	261.92	1.112 002	5.12	-.901
32 19	478 931.37	101.051 17	85.817 797	262.06	1.112 309	5.13	-.900
32 20	484 994.44	101.051 33	85.802 074	262.17	1.112 617	5.12	-.899
32 21	491 057.52	101.051 67	85.786 344	262.29	1.112 924	5.12	-.897
32 22	497 120.62	101.051 83	85.770 607	262.41	1.113 231	5.10	-.896
32 23	503 183.73	101.052 17	85.754 863	262.54	1.113 537	5.12	-.895
32 24	509 246.86	101.052 50	85.739 111	262.66	1.113 844	5.08	-.893
32 25	515 310.01	101.052 83	85.723 352	262.77	1.114 149	5.10	-.892
32 26	521 373.18	101.053 00	85.707 586	262.89	1.114 455	5.07	-.891
32 27	527 436.36	101.053 17	85.691 813	263.02	1.114 759	5.08	-.889
32 28	533 499.55	101.053 50	85.676 032	263.14	1.115 064	5.07	-.888
32 29	539 562.76	101.053 83	85.660 244	263.26	1.115 368	5.07	-.887
32 30	545 625.99	101.054 17	85.644 449	263.37	1.115 672	5.05	-.886
32 31	551 689.24	101.054 33	85.628 647	263.51	1.115 975	5.05	-.884
32 32	557 752.50	101.054 50	85.612 837	263.62	1.116 278	5.05	-.883
32 33	563 815.77	101.055 00	85.597 020	263.74	1.116 581	5.03	-.882
32 34	569 879.07	101.055 17	85.581 196	263.86	1.116 883	5.03	-.881
32 35	575 942.38	101.055 33	85.565 365	263.99	1.117 185	5.03	-.880
32 36	582 005.70	101.055 83	85.549 526	264.11	1.117 487	5.02	-.878
32 37	588 069.05	101.055 83	85.533 680	264.22	1.117 788	5.02	-.877
32 38	594 132.40	101.056 33	85.517 827	264.34	1.118 089	5.00	-.876
32 39	600 195.78	101.056 50	85.501 967	264.47	1.118 389	5.00	-.875
32 40	606 259.17	101.056 83	85.486 099	264.59	1.118 689	5.00	-.874
32 41	612 322.58	101.057 00	85.470 224	264.71	1.118 989	4.98	-.872
32 42	618 386.00	101.057 33	85.454 342	264.82	1.119 288	4.98	-.871
32 43	624 449.44	101.057 67	85.438 453	264.96	1.119 587	4.97	-.870
32 44	630 512.90	101.057 83	85.422 556	265.07	1.119 885	4.97	-.868
32 45	636 576.37	101.058 17	85.406 652	265.19	1.120 183	4.97	-.867
32 46	642 639.86	101.058 50	85.390 741	265.31	1.120 481	4.95	-.866
32 47	648 703.37	101.058 67	85.374 823	265.42	1.120 778	4.95	-.864
32 48	654 766.89	101.059 00	85.358 898	265.56	1.121 075	4.95	-.863
32 49	660 830.43	101.059 17	85.342 965	265.67	1.121 372	4.93	-.862
32 50	666 893.98	101.059 50	85.327 025	265.79	1.121 668	4.93	-.861
32 51	672 957.55	101.059 83	85.311 078	265.92	1.121 964	4.92	-.859
32 52	679 021.14	101.060 00	85.295 123	266.02	1.122 259	4.92	-.858
32 53	685 084.74	101.060 33	85.279 162	266.16	1.122 554	4.92	-.857
32 54	691 148.36	101.060 67	85.263 193	266.27	1.122 849	4.90	-.855
32 55	697 212.00	101.060 83	85.247 217	266.41	1.123 143	4.90	-.854
32 56	703 275.65	101.061 17	85.231 233	266.51	1.123 437	4.88	-.853
32 57	709 339.32	101.061 33	85.215 243	266.64	1.123 730	4.90	-.851
32 58	715 403.00	101.061 83	85.199 245	266.76	1.124 024	4.88	-.850
32 59	721 466.71	101.062 00	85.183 240	266.87	1.124 317	4.87	-.849
33 00	727 530.43		85.167 228		1.124 609		-.848

TRANSVERSE MERCATOR PROJECTION

ARIZONA
WEST ZONE

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
33 00	727 530.43	101.062 17	85.167 228	266.99	1.124 609	4.87	-.848
33 01	733 594.16	101.062 50	85.151 209	267.12	1.124 901	4.87	-.846
33 02	739 657.91	101.062 83	85.135 182	267.24	1.125 193	4.87	-.845
33 03	745 721.68	101.063 00	85.119 148	267.36	1.125 485	4.85	-.844
33 04	751 785.46	101.063 33	85.103 107	267.47	1.125 776	4.85	-.843
33 05	757 849.26	101.063 67	85.087 059	267.59	1.126 067	4.83	-.842
33 06	763 913.08	101.063 83	85.071 004	267.72	1.126 357	4.83	-.840
33 07	769 976.91	101.064 17	85.054 941	267.84	1.126 647	4.82	-.839
33 08	776 040.76	101.064 50	85.038 871	267.96	1.126 936	4.82	-.838
33 09	782 104.63	101.064 67	85.022 794	268.07	1.127 225	4.82	-.837
33 10	788 168.51	101.065 00	85.006 710	268.21	1.127 514	4.80	-.836
33 11	794 232.41	101.065 17	84.990 618	268.32	1.127 802	4.80	-.834
33 12	800 296.32	101.065 67	84.974 519	268.44	1.128 090	4.78	-.833
33 13	806 360.26	101.065 67	84.958 413	268.56	1.128 377	4.80	-.832
33 14	812 424.20	101.066 17	84.942 300	268.67	1.128 665	4.77	-.830
33 15	818 488.17	101.066 33	84.926 180	268.81	1.128 951	4.78	-.829
33 16	824 552.15	101.066 67	84.910 052	268.92	1.129 238	4.75	-.828
33 17	830 616.15	101.066 83	84.893 917	269.04	1.129 523	4.77	-.826
33 18	836 680.16	101.067 17	84.877 775	269.16	1.129 809	4.75	-.825
33 19	842 744.19	101.067 50	84.861 626	269.27	1.130 094	4.75	-.824
33 20	848 808.24	101.067 67	84.845 470	269.39	1.130 379	4.73	-.823
33 21	854 872.30	101.068 00	84.829 307	269.52	1.130 663	4.73	-.821
33 22	860 936.38	101.068 33	84.813 136	269.64	1.130 947	4.73	-.820
33 23	867 000.48	101.068 50	84.796 958	269.76	1.131 231	4.72	-.819
33 24	873 064.59	101.068 83	84.780 773	269.87	1.131 514	4.72	-.817
33 25	879 128.72	101.069 00	84.764 581	270.01	1.131 797	4.72	-.816
33 26	885 192.86	101.069 50	84.748 381	270.11	1.132 080	4.70	-.815
33 27	891 257.03	101.069 67	84.732 175	270.24	1.132 362	4.70	-.813
33 28	897 321.21	101.069 83	84.715 961	270.36	1.132 644	4.68	-.812
33 29	903 385.40	101.070 17	84.699 740	270.47	1.132 925	4.68	-.811
33 30	909 449.61	101.070 50	84.683 512	270.59	1.133 206	4.68	-.810
33 31	915 513.84	101.070 83	84.667 277	270.72	1.133 487	4.67	-.808
33 32	921 578.09	101.071 00	84.651 034	270.84	1.133 767	4.67	-.807
33 33	927 642.35	101.071 17	84.634 784	270.94	1.134 047	4.65	-.806
33 34	933 706.62	101.071 67	84.618 528	271.07	1.134 326	4.65	-.805
33 35	939 770.92	101.071 83	84.602 264	271.21	1.134 605	4.65	-.804
33 36	945 835.23	101.072 17	84.585 992	271.31	1.134 884	4.63	-.802
33 37	951 899.56	101.072 33	84.569 714	271.44	1.135 162	4.63	-.801
33 38	957 963.90	101.072 67	84.553 428	271.54	1.135 440	4.63	-.800
33 39	964 028.26	101.073 00	84.537 136	271.67	1.135 718	4.62	-.799
33 40	970 092.64	101.073 17	84.520 836	271.79	1.135 995	4.62	-.798
33 41	976 157.03	101.073 50	84.504 529	271.91	1.136 272	4.60	-.796
33 42	982 221.44	101.073 83	84.488 215	272.04	1.136 548	4.60	-.795
33 43	988 285.87	101.074 00	84.471 893	272.14	1.136 824	4.60	-.794
33 44	994 350.31	101.074 33	84.455 565	272.27	1.137 100	4.58	-.792
33 45	1 000 414.77	101.074 67	84.439 229	272.39	1.137 375	4.58	-.791
33 46	1 006 479.25	101.074 83	84.422 886	272.49	1.137 650	4.58	-.790
33 47	1 012 543.74	101.075 17	84.406 537	272.62	1.137 925	4.57	-.788
33 48	1 018 608.25	101.075 50	84.390 180	272.76	1.138 199	4.57	-.787
33 49	1 024 672.78	101.075 67	84.373 815	272.86	1.138 473	4.55	-.786
33 50	1 030 737.32	101.076 00	84.357 444	272.97	1.138 746	4.55	-.785
33 51	1 036 801.88	101.076 33	84.341 066	273.11	1.139 019	4.55	-.783
33 52	1 042 866.46	101.076 50	84.324 680	273.22	1.139 292	4.53	-.782
33 53	1 048 931.05	101.076 83	84.308 287	273.34	1.139 564	4.52	-.781
33 54	1 054 995.66	101.077 17	84.291 887	273.46	1.139 835	4.53	-.779
33 55	1 061 060.29	101.077 33	84.275 480	273.57	1.140 107	4.52	-.778
33 56	1 067 124.93	101.077 67	84.259 066	273.69	1.140 378	4.50	-.777
33 57	1 073 189.59	101.078 00	84.242 645	273.82	1.140 648	4.52	-.775
33 58	1 079 254.27	101.078 17	84.226 216	273.92	1.140 919	4.50	-.774
33 59	1 085 318.96	101.078 50	84.209 781	274.06	1.141 189	4.48	-.773
34 00	1 091 383.67		84.193 338		1.141 458		-.772

TRANSVERSE MERCATOR PROJECTION

ARIZONA
WEST ZONE

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
34 00	1 091 383.67	101.078 67	84.193 338	274.17	1.141 458	4.48	-.772
34 01	1 097 448.39	101.079 17	84.176 888	274.29	1.141 727	4.48	-.770
34 02	1 103 513.14	101.079 33	84.160 431	274.42	1.141 996	4.47	-.769
34 03	1 109 577.90	101.079 50	84.143 966	274.52	1.142 264	4.47	-.768
34 04	1 115 642.67	101.079 83	84.127 495	274.66	1.142 532	4.45	-.767
34 05	1 121 707.46	101.080 17	84.111 016	274.76	1.142 799	4.45	-.766
34 06	1 127 772.27	101.080 50	84.094 531	274.89	1.143 066	4.45	-.764
34 07	1 133 837.10	101.080 67	84.078 038	275.01	1.143 333	4.43	-.763
34 08	1 139 901.94	101.081 00	84.061 538	275.12	1.143 599	4.43	-.762
34 09	1 145 966.80	101.081 33	84.045 031	275.24	1.143 865	4.43	-.761
34 10	1 152 031.68	101.081 50	84.028 517	275.36	1.144 131	4.42	-.760
34 11	1 158 096.57	101.081 83	84.011 996	275.47	1.144 396	4.42	-.758
34 12	1 164 161.48	101.082 17	83.995 468	275.61	1.144 661	4.42	-.757
34 13	1 170 226.41	101.082 33	83.978 932	275.71	1.144 926	4.40	-.756
34 14	1 176 291.35	101.082 67	83.962 390	275.84	1.145 190	4.38	-.754
34 15	1 182 356.31	101.082 83	83.945 840	275.96	1.145 453	4.40	-.753
34 16	1 188 421.28	101.083 33	83.929 283	276.07	1.145 717	4.38	-.752
34 17	1 194 486.28	101.083 33	83.912 719	276.19	1.145 980	4.37	-.750
34 18	1 200 551.28	101.083 83	83.896 148	276.31	1.146 242	4.37	-.749
34 19	1 206 616.31	101.084 00	83.879 570	276.42	1.146 504	4.37	-.748
34 20	1 212 681.35	101.084 33	83.862 985	276.54	1.146 766	4.35	-.747
34 21	1 218 746.41	101.084 67	83.846 393	276.67	1.147 027	4.35	-.745
34 22	1 224 811.49	101.084 83	83.829 793	276.79	1.147 288	4.35	-.744
34 23	1 230 876.58	101.085 17	83.813 186	276.91	1.147 549	4.33	-.743
34 24	1 236 941.69	101.085 50	83.796 572	277.01	1.147 809	4.33	-.742
34 25	1 243 006.82	101.085 67	83.779 952	277.14	1.148 069	4.32	-.741
34 26	1 249 071.96	101.086 00	83.763 324	277.26	1.148 328	4.32	-.739
34 27	1 255 137.12	101.086 33	83.746 689	277.37	1.148 587	4.32	-.738
34 28	1 261 202.30	101.086 50	83.730 047	277.51	1.148 846	4.30	-.737
34 29	1 267 267.49	101.086 83	83.713 397	277.61	1.149 104	4.30	-.736
34 30	1 273 332.70	101.087 17	83.696 741	277.72	1.149 362	4.28	-.735
34 31	1 279 397.93	101.087 33	83.680 078	277.86	1.149 619	4.28	-.733
34 32	1 285 463.17	101.087 67	83.663 407	277.97	1.149 876	4.28	-.732
34 33	1 291 528.43	101.088 00	83.646 729	278.07	1.150 133	4.27	-.731
34 34	1 297 593.71	101.088 17	83.630 045	278.21	1.150 389	4.27	-.729
34 35	1 303 659.00	101.088 50	83.613 353	278.32	1.150 645	4.27	-.728
34 36	1 309 724.31	101.088 83	83.596 654	278.44	1.150 901	4.25	-.727
34 37	1 315 789.64	101.089 17	83.579 948	278.56	1.151 156	4.25	-.725
34 38	1 321 854.99	101.089 33	83.563 235	278.67	1.151 411	4.23	-.724
34 39	1 327 920.35	101.089 50	83.546 515	278.79	1.151 665	4.23	-.723
34 40	1 333 985.72	101.090 00	83.529 788	278.91	1.151 919	4.23	-.722
34 41	1 340 051.12	101.090 17	83.513 054	279.02	1.152 173	4.22	-.720
34 42	1 346 116.53	101.090 50	83.496 313	279.16	1.152 426	4.22	-.719
34 43	1 352 181.96	101.090 67	83.479 564	279.26	1.152 679	4.20	-.718
34 44	1 358 247.40	101.091 17	83.462 809	279.37	1.152 931	4.20	-.717
34 45	1 364 312.87	101.091 33	83.446 047	279.51	1.153 183	4.20	-.716
34 46	1 370 378.35	101.091 50	83.429 277	279.62	1.153 435	4.18	-.714
34 47	1 376 443.84	101.091 83	83.412 500	279.72	1.153 686	4.18	-.713
34 48	1 382 509.35	101.092 17	83.395 717	279.86	1.153 937	4.18	-.712
34 49	1 388 574.88	101.092 50	83.378 926	279.97	1.154 188	4.17	-.711
34 50	1 394 640.43	101.092 67	83.362 128	280.09	1.154 438	4.17	-.710
34 51	1 400 705.99	101.093 00	83.345 323	280.21	1.154 688	4.15	-.708
34 52	1 406 771.57	101.093 33	83.328 511	280.32	1.154 937	4.15	-.707
34 53	1 412 837.17	101.093 50	83.311 692	280.46	1.155 186	4.15	-.706
34 54	1 418 902.78	101.093 83	83.294 865	280.56	1.155 435	4.13	-.704
34 55	1 424 968.41	101.094 17	83.278 032	280.67	1.155 683	4.13	-.703
34 56	1 431 034.06	101.094 33	83.261 192	280.81	1.155 931	4.12	-.702
34 57	1 437 099.72	101.094 67	83.244 344	280.91	1.156 178	4.12	-.700
34 58	1 443 165.40	101.095 00	83.227 490	281.02	1.156 425	4.12	-.699
34 59	1 449 231.10	101.095 33	83.210 629	281.16	1.156 672	4.10	-.698
35 00	1 455 296.82		83.193 760		1.156 918		-.697

TRANSVERSE MERCATOR PROJECTION

ARIZONA
WEST ZONE

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
35 00	1 455 296.82	101.095 50	83.193 760	281.27	1.156 918	4.10	-.697
35 01	1 461 362.55	101.095 83	83.176 884	281.37	1.157 164	4.08	-.695
35 02	1 467 428.30	101.096 00	83.160 002	281.51	1.157 409	4.10	-.694
35 03	1 473 494.06	101.096 33	83.143 112	281.62	1.157 655	4.07	-.693
35 04	1 479 559.84	101.096 67	83.126 215	281.72	1.157 899	4.08	-.692
35 05	1 485 625.64	101.097 00	83.109 312	281.86	1.158 144	4.05	-.691
35 06	1 491 691.46	101.097 17	83.092 401	281.97	1.158 387	4.07	-.689
35 07	1 497 757.29	101.097 50	83.075 483	282.09	1.158 631	4.05	-.688
35 08	1 503 823.14	101.097 83	83.058 558	282.21	1.158 874	4.05	-.687
35 09	1 509 889.01	101.098 00	83.041 626	282.32	1.159 117	4.03	-.686
35 10	1 515 954.89	101.098 33	83.024 687	282.44	1.159 359	4.03	-.685
35 11	1 522 020.79	101.098 67	83.007 741	282.56	1.159 601	4.02	-.683
35 12	1 528 086.71	101.098 83	82.990 788	282.69	1.159 842	4.02	-.682
35 13	1 534 152.64	101.099 17	82.973 827	282.79	1.160 083	4.02	-.681
35 14	1 540 218.59	101.099 50	82.956 860	282.91	1.160 324	4.00	-.679
35 15	1 546 284.56	101.099 83	82.939 886	283.04	1.160 564	4.00	-.678
35 16	1 552 350.55	101.100 00	82.922 904	283.14	1.160 804	4.00	-.677
35 17	1 558 416.55	101.100 33	82.905 916	283.26	1.161 044	3.98	-.675
35 18	1 564 482.57	101.100 50	82.888 921	283.39	1.161 283	3.98	-.674
35 19	1 570 548.60	101.101 00	82.871 918	283.49	1.161 522	3.97	-.673
35 20	1 576 614.66	101.101 17	82.854 909	283.61	1.161 760	3.97	-.672
35 21	1 582 680.73	101.101 33	82.837 893	283.74	1.161 998	3.97	-.670
35 22	1 588 746.81	101.101 83	82.820 869	283.84	1.162 236	3.95	-.669
35 23	1 594 812.92	101.102 00	82.803 839	283.97	1.162 473	3.93	-.668
35 24	1 600 879.04	101.102 33	82.786 801	284.07	1.162 709	3.95	-.667
35 25	1 606 945.18	101.102 50	82.769 757	284.21	1.162 946	3.93	-.666
35 26	1 613 011.33	101.102 83	82.752 705	284.31	1.163 182	3.92	-.664
35 27	1 619 077.50	101.103 17	82.735 647	284.44	1.163 417	3.93	-.663
35 28	1 625 143.69	101.103 50	82.718 581	284.54	1.163 653	3.92	-.662
35 29	1 631 209.90	101.103 67	82.701 509	284.67	1.163 888	3.90	-.661
35 30	1 637 276.12	101.103 83	82.684 429	284.79	1.164 122	3.90	-.660
35 31	1 643 342.35	101.104 33	82.667 342	284.89	1.164 356	3.90	-.658
35 32	1 649 408.61	101.104 67	82.650 249	285.02	1.164 590	3.88	-.657
35 33	1 655 474.89	101.104 83	82.633 148	285.12	1.164 823	3.88	-.656
35 34	1 661 541.18	101.105 00	82.616 041	285.26	1.165 056	3.88	-.654
35 35	1 667 607.48	101.105 50	82.598 926	285.36	1.165 289	3.87	-.653
35 36	1 673 673.81	101.105 67	82.581 805	285.49	1.165 521	3.85	-.652
35 37	1 679 740.15	101.106 00	82.564 676	285.61	1.165 752	3.87	-.650
35 38	1 685 806.51	101.106 17	82.547 540	285.71	1.165 984	3.85	-.649
35 39	1 691 872.88	101.106 67	82.530 398	285.84	1.166 215	3.83	-.648
35 40	1 697 939.28	101.106 83	82.513 248	285.96	1.166 445	3.83	-.647
35 41	1 704 005.69	101.107 00	82.496 091	286.07	1.166 675	3.83	-.645
35 42	1 710 072.11	101.107 50	82.478 927	286.17	1.166 905	3.82	-.644
35 43	1 716 138.56	101.107 67	82.461 757	286.31	1.167 134	3.82	-.643
35 44	1 722 205.02	101.107 83	82.444 579	286.42	1.167 363	3.80	-.642
35 45	1 728 271.49	101.108 33	82.427 394	286.52	1.167 591	3.80	-.641
35 46	1 734 337.99	101.108 50	82.410 203	286.66	1.167 819	3.80	-.639
35 47	1 740 404.50	101.108 83	82.393 004	286.77	1.168 047	3.80	-.638
35 48	1 746 471.03	101.109 00	82.375 798	286.87	1.168 275	3.77	-.637
35 49	1 752 537.57	101.109 33	82.358 586	287.01	1.168 501	3.78	-.636
35 50	1 758 604.13	101.109 67	82.341 366	287.12	1.168 728	3.77	-.635
35 51	1 764 670.71	101.110 00	82.324 139	287.22	1.168 954	3.77	-.633
35 52	1 770 737.31	101.110 17	82.306 906	287.36	1.169 180	3.75	-.632
35 53	1 776 803.92	101.110 67	82.289 665	287.46	1.169 405	3.75	-.631
35 54	1 782 870.56	101.110 67	82.272 418	287.59	1.169 630	3.75	-.629
35 55	1 788 937.20	101.111 17	82.255 163	287.69	1.169 855	3.73	-.628
35 56	1 795 003.87	101.111 33	82.237 902	287.82	1.170 079	3.73	-.627
35 57	1 801 070.55	101.111 67	82.220 633	287.92	1.170 303	3.72	-.625
35 58	1 807 137.25	101.111 83	82.203 358	288.06	1.170 526	3.72	-.624
35 59	1 813 203.96	101.112 33	82.186 075	288.16	1.170 749	3.72	-.623
36 00	1 819 270.70		82.168 786		1.170 972		-.622

TRANSVERSE MERCATOR PROJECTION

ARIZONA
WEST ZONE

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
36 00	1 819 270.70	101.112 50	82.168 786	288.27	1.170 972	3.70	-.622
36 01	1 825 337.45	101.112 83	82.151 490	288.41	1.171 194	3.70	-.620
36 02	1 831 404.22	101.113 00	82.134 186	288.51	1.171 416	3.68	-.619
36 03	1 837 471.00	101.113 33	82.116 876	288.64	1.171 637	3.68	-.618
36 04	1 843 537.80	101.113 67	82.099 558	288.74	1.171 858	3.68	-.617
36 05	1 849 604.62	101.114 00	82.082 234	288.86	1.172 079	3.67	-.616
36 06	1 855 671.46	101.114 17	82.064 903	288.97	1.172 299	3.67	-.614
36 07	1 861 738.31	101.114 50	82.047 565	289.09	1.172 519	3.65	-.613
36 08	1 867 805.18	101.114 83	82.030 220	289.21	1.172 738	3.65	-.612
36 09	1 873 872.07	101.115 00	82.012 868	289.32	1.172 957	3.65	-.611
36 10	1 879 938.97	101.115 33	81.995 509	289.44	1.173 176	3.63	-.610
36 11	1 886 005.89	101.115 67	81.978 143	289.56	1.173 394	3.63	-.608
36 12	1 892 072.83	101.115 83	81.960 770	289.66	1.173 612	3.62	-.607
36 13	1 898 139.78	101.116 33	81.943 391	289.79	1.173 829	3.62	-.606
36 14	1 904 206.76	101.116 50	81.926 004	289.91	1.174 046	3.62	-.605
36 15	1 910 273.75	101.116 83	81.908 610	290.01	1.174 263	3.60	-.604
36 16	1 916 340.76	101.117 00	81.891 210	290.14	1.174 479	3.60	-.602
36 17	1 922 407.78	101.117 33	81.873 802	290.24	1.174 695	3.58	-.601
36 18	1 928 474.82	101.117 67	81.856 388	290.37	1.174 910	3.58	-.600
36 19	1 934 541.88	101.117 83	81.838 966	290.47	1.175 125	3.58	-.599
36 20	1 940 608.95	101.118 33	81.821 538	290.59	1.175 340	3.57	-.598
36 21	1 946 676.05	101.118 50	81.804 103	290.72	1.175 554	3.57	-.596
36 22	1 952 743.16	101.118 67	81.786 660	290.82	1.175 768	3.57	-.595
36 23	1 958 810.28	101.119 17	81.769 211	290.94	1.175 982	3.55	-.594
36 24	1 964 877.43	101.119 33	81.751 755	291.06	1.176 195	3.55	-.592
36 25	1 970 944.59	101.119 67	81.734 292	291.17	1.176 408	3.53	-.591
36 26	1 977 011.77	101.119 83	81.716 822	291.29	1.176 620	3.53	-.590
36 27	1 983 078.96	101.120 33	81.699 345	291.41	1.176 832	3.52	-.588
36 28	1 989 146.18	101.120 50	81.681 861	291.52	1.177 043	3.52	-.587
36 29	1 995 213.41	101.120 67	81.664 370	291.64	1.177 254	3.52	-.586
36 30	2 001 280.65	101.121 17	81.646 872	291.76	1.177 465	3.50	-.585
36 31	2 007 347.92	101.121 33	81.629 367	291.87	1.177 675	3.50	-.583
36 32	2 013 415.20	101.121 67	81.611 855	291.97	1.177 885	3.50	-.582
36 33	2 019 482.50	101.121 83	81.594 337	292.11	1.178 095	3.48	-.581
36 34	2 025 549.81	101.122 17	81.576 811	292.21	1.178 304	3.47	-.580
36 35	2 031 617.14	101.122 50	81.559 279	292.34	1.178 512	3.48	-.579
36 36	2 037 684.49	101.122 83	81.541 739	292.44	1.178 721	3.47	-.577
36 37	2 043 751.86	101.123 17	81.524 193	292.56	1.178 929	3.45	-.576
36 38	2 049 819.25	101.123 33	81.506 640	292.67	1.179 136	3.45	-.575
36 39	2 055 886.65	101.123 67	81.489 080	292.79	1.179 343	3.45	-.574
36 40	2 061 954.07	101.123 83	81.471 513	292.91	1.179 550	3.43	-.573
36 41	2 068 021.50	101.124 33	81.453 939	293.02	1.179 756	3.43	-.571
36 42	2 074 088.96	101.124 50	81.436 358	293.12	1.179 962	3.43	-.570
36 43	2 080 156.43	101.124 83	81.418 771	293.26	1.180 168	3.42	-.569
36 44	2 086 223.92	101.125 00	81.401 176	293.36	1.180 373	3.42	-.568
36 45	2 092 291.42	101.125 33	81.383 575	293.49	1.180 578	3.42	-.567
36 46	2 098 358.94	101.125 67	81.365 966	293.59	1.180 783	3.40	-.565
36 47	2 104 426.48	101.126 00	81.348 351	293.71	1.180 987	3.38	-.564
36 48	2 110 494.04	101.126 17	81.330 729	293.82	1.181 190	3.38	-.563
36 49	2 116 561.61	101.126 50	81.313 100	293.94	1.181 393	3.38	-.562
36 50	2 122 629.20	101.126 83	81.295 464	294.06	1.181 596	3.37	-.561
36 51	2 128 696.81	101.127 17	81.277 821	294.17	1.181 798	3.37	-.559
36 52	2 134 764.44	101.127 33	81.260 171	294.27	1.182 000	3.37	-.558
36 53	2 140 832.08	101.127 67	81.242 515	294.41	1.182 202	3.35	-.557
36 54	2 146 899.74	101.128 00	81.224 851	294.51	1.182 403	3.33	-.556
36 55	2 152 967.42	101.128 17	81.207 181	294.64	1.182 603	3.35	-.555
36 56	2 159 035.11	101.128 50	81.189 503	294.74	1.182 804	3.33	-.553
36 57	2 165 102.82	101.128 83	81.171 819	294.86	1.183 004	3.32	-.552
36 58	2 171 170.55	101.129 17	81.154 128	294.97	1.183 203	3.32	-.551
36 59	2 177 238.30	101.129 33	81.136 430	295.09	1.183 402	3.32	-.550
37 00	2 183 306.06		81.118 725		1.183 601		-.549

TRANSVERSE MERCATOR PROJECTION

ARIZONA
WEST ZONE

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
37 00	2 183 306.06	101.129 67	81.118 725	295.21	1.183 601	3.30	-.549
37 01	2 189 373.84	101.130 00	81.101 013	295.31	1.183 799	3.30	-.547
37 02	2 195 441.64	101.130 33	81.083 295	295.44	1.183 997	3.30	-.546
37 03	2 201 509.46	101.130 50	81.065 569	295.54	1.184 195	3.28	-.545
37 04	2 207 577.29	101.130 83	81.047 837	295.67	1.184 392	3.28	-.544
37 05	2 213 645.14	101.131 17	81.030 097	295.77	1.184 589	3.28	-.543
37 06	2 219 713.01	101.131 33	81.012 351	295.89	1.184 786	3.27	-.541
37 07	2 225 780.89	101.131 67	80.994 598	296.01	1.184 982	3.25	-.540
37 08	2 231 848.79	101.132 00	80.976 838	296.11	1.185 177	3.25	-.539
37 09	2 237 916.71	101.132 33	80.959 072	296.24	1.185 372	3.25	-.538
37 10	2 243 984.65	101.132 50	80.941 298	296.36	1.185 567	3.23	-.537
37 11	2 250 052.60	101.132 83	80.923 517	296.46	1.185 761	3.23	-.535
37 12	2 256 120.57	101.133 17	80.905 730	296.57	1.185 955	3.23	-.534
37 13	2 262 188.56	101.133 50	80.887 936	296.69	1.186 149	3.22	-.533
37 14	2 268 256.57	101.133 67	80.870 135	296.81	1.186 342	3.22	-.532
37 15	2 274 324.59	101.134 00	80.852 327	296.92	1.186 535	3.20	-.531
37 16	2 280 392.63	101.134 33	80.834 512	297.04	1.186 727	3.20	-.529
37 17	2 286 460.69	101.134 50	80.816 690	297.14	1.186 919	3.18	-.528
37 18	2 292 528.76	101.135 00	80.798 862	297.27	1.187 110	3.18	-.527
37 19	2 298 596.86	101.135 00	80.781 026	297.37	1.187 301	3.18	-.526
37 20	2 304 664.96		80.763 184		1.187 492		-.524

TRANSVERSE MERCATOR PROJECTION

ARIZONA

All Zones

$\Delta\lambda''$	b	Δb	c	$\Delta\lambda''$	b	Δb	c
0	0.000	+0.370	0.000				
100	+0.370	+0.370	0.000	3100	+6.697	-0.110	-0.133
200	+0.740	+0.367	-0.001	3200	+6.587	-0.141	-0.135
300	+1.107	+0.364	-0.002	3300	+6.446	-0.173	-0.136
400	+1.471	+0.360	-0.003	3400	+6.273	-0.205	-0.135
500	+1.831	+0.355	-0.005	3500	+6.068	-0.239	-0.133
600	+2.186	+0.350	-0.007	3600	+5.829	-0.273	-0.131
700	+2.536	+0.343	-0.010	3700	+5.556	-0.309	-0.128
800	+2.879	+0.335	-0.014	3800	+5.247	-0.346	-0.124
900	+3.214	+0.326	-0.018	3900	+4.901	-0.382	-0.120
1000	+3.540	+0.315	-0.022	4000	+4.519	-0.422	-0.115
1100	+3.855	+0.305	-0.027	4100	+4.097	-0.462	-0.109
1200	+4.160	+0.294	-0.032	4200	+3.635	-0.503	-0.101
1300	+4.454	+0.282	-0.038	4300	+3.132	-0.544	-0.091
1400	+4.736	+0.268	-0.043	4400	+2.588	-0.585	-0.078
1500	+5.004	+0.255	-0.049	4500	+2.003	-0.626	-0.063
1600	+5.259	+0.239	-0.055	4600	+1.377	-0.667	-0.045
1700	+5.498	+0.223	-0.061	4700	+0.710	-0.710	-0.025
1800	+5.721	+0.206	-0.067	4800	0.000	-0.755	0.000
1900	+5.927	+0.188	-0.073	4900	-0.755	-0.807	+0.026
2000	+6.115	+0.169	-0.079	5000	-1.562	-0.860	+0.053
2100	+6.284	+0.149	-0.085	5100	-2.422	-0.911	+0.084
2200	+6.433	+0.128	-0.091	5200	-3.333	-0.960	+0.117
2300	+6.561	+0.105	-0.096	5300	-4.293	-1.014	+0.153
2400	+6.666	+0.082	-0.101	5400	-5.307	-1.067	+0.191
2500	+6.748	+0.058	-0.106	5500	-6.374	-1.120	+0.232
2600	+6.806	+0.033	-0.111	5600	-7.494	-1.172	+0.275
2700	+6.839	+0.007	-0.116	5700	-8.666	-1.225	+0.321
2800	+6.846	-0.021	-0.121	5800	-9.891	-1.277	+0.371
2900	+6.825	-0.049	-0.125	5900	-11.168	-1.331	+0.426
3000	+6.776	-0.079	-0.130	6000	-12.499		+0.487

$F = 7.47 \times 10^{-13}$

TRANSVERSE MERCATOR PROJECTION

TABLE FOR g

$$\Delta\alpha'' = \sin \phi \, (\Delta\lambda'') + g$$

Latitude	$\Delta\lambda''$						
	0"	1000"	2000"	3000"	4000"	5000"	6000"
24°	0".00	0".00	0".02	0".07	0".17	0".33	0".58
25	0	0	0.02	0.07	0.17	0.34	0.59
26°	0.00	0.00	0.02	0.08	0.18	0.35	0.60
27	0	0	0.02	0.08	0.18	0.35	0.61
28	0	0	0.02	0.08	0.18	0.36	0.62
29	0	0	0.02	0.08	0.19	0.37	0.63
30	0	0	0.02	0.08	0.19	0.37	0.64
31°	0.00	0.00	0.02	0.08	0.19	0.37	0.64
32	0	0	0.02	0.08	0.19	0.38	0.65
33	0	0	0.02	0.08	0.19	0.38	0.65
34	0	0	0.02	0.08	0.19	0.38	0.65
35	0	0	0.02	0.08	0.19	0.38	0.65
36°	0.00	0.00	0.02	0.08	0.19	0.38	0.65
37	0	0	0.02	0.08	0.19	0.38	0.65
38	0	0	0.02	0.08	0.19	0.38	0.65
39	0	0	0.02	0.08	0.19	0.37	0.64
40	0	0	0.02	0.08	0.19	0.37	0.64
41°	0.00	0.00	0.02	0.08	0.19	0.37	0.63
42	0	0	0.02	0.08	0.18	0.36	0.63
43	0	0	0.02	0.08	0.18	0.36	0.62
44	0	0	0.02	0.08	0.18	0.35	0.61
45	0	0	0.02	0.08	0.18	0.35	0.60
46°	0.00	0.00	0.02	0.07	0.17	0.34	0.59
47	0	0	0.02	0.07	0.17	0.33	0.58
48	0	0	0.02	0.07	0.17	0.33	0.56
49	0	0	0.02	0.07	0.16	0.32	0.55
50	0.00	0.00	0.02	0.07	0.16	0.31	0.54

$$g = \left[\frac{C\,(\sin 1'')\cos^3 \phi}{2A^2} + F\right] (\Delta\lambda'')^3$$

A, C and F are position factors.

Y CORRECTION FOR COMPUTATION OF GEOGRAPHIC POSITIONS FROM PLANE COORDINATES TRANSVERSE MERCATOR PROJECTION, ARIZONA-EAST & CENTRAL ZONES

$$P(x'/10{,}000)^2 + d = V(\Delta y/100)^2 + c$$

P taken out for y-coordinate
d taken out for x'

y	P	ΔP
0	1.43434	1562
100,000	1.44996	1570
200,000	1.46566	1580
300,000	1.48146	1589
400,000	1.49735	1598
500,000	1.51333	1608
600,000	1.52941	1618
700,000	1.54559	1628
800,000	1.56187	1638
900,000	1.57825	1649
1,000,000	1.59474	1658
1,100,000	1.61132	1670
1,200,000	1.62802	1680
1,300,000	1.64482	1692
1,400,000	1.66174	1702
1,500,000	1.67876	1714
1,600,000	1.69590	1726
1,700,000	1.71316	1738
1,800,000	1.73054	1749
1,900,000	1.74803	1761

x'	d
0	0.00
50,000	+ 0.01
100,000	+ 0.02
150,000	+ 0.04
200,000	+ 0.07
250,000	+ 0.09
300,000	+ 0.10
350,000	+ 0.08
400,000	+ 0.03
450,000	- 0.07

y	P	ΔP
2,000,000	1.76564	1775
2,100,000	1.78339	1786
2,200,000	1.80125	1800
2,300,000	1.81925	

Y CORRECTION FOR COMPUTATION OF GEOGRAPHIC POSITIONS FROM PLANE COORDINATES TRANSVERSE MERCATOR PROJECTION, ARIZONA-WEST ZONE

$$P(x'/10{,}000)^2 + d = V(\Delta y/100)^2 + c$$

P taken out for y-coordinate
d taken out for x'

y	P	ΔP
0	1.43438	1561
100,000	1.44999	1571
200,000	1.46570	1580
300,000	1.48150	1589
400,000	1.49739	1598
500,000	1.51337	1608
600,000	1.52945	1618
700,000	1.54563	1628
800,000	1.56191	1638
900,000	1.57829	1649
1,000,000	1.59478	1658
1,100,000	1.61136	1670
1,200,000	1.62806	1680
1,300,000	1.64486	1692
1,400,000	1.66178	1702
1,500,000	1.67880	1714
1,600,000	1.69594	1726
1,700,000	1.71320	1737
1,800,000	1.73057	1749
1,900,000	1.74806	1762

x'	d
0	0.00
50,000	0.00
100,000	+ 0.01
150,000	+ 0.02
200,000	+ 0.03
250,000	+ 0.03
300,000	+ 0.02
350,000	- 0.04
400,000	- 0.13

y	P	ΔP
2,000,000	1.76568	1774
2,100,000	1.78342	1787
2,200,000	1.80129	1800
2,300,000	1.81929	

TRANSVERSE MERCATOR PROJECTION

Arizona

$$\Delta\alpha = Mx' - e$$

y	East and central zones		West zone	
	M	ΔM	M	ΔM
0	0.005 9177	644	0.005 9175	644
100,000	0.005 9821	648	0.005 9819	648
200,000	0.006 0469	652	0.006 0467	652
300,000	0.006 1121	656	0.006 1119	655
400,000	0.006 1777	659	0.006 1774	660
500,000	0.006 2436	664	0.006 2434	663
600,000	0.006 3100	667	0.006 3097	668
700,000	0.006 3767	672	0.006 3765	672
800,000	0.006 4439	676	0.006 4437	675
900,000	0.006 5115	680	0.006 5112	680
1,000,000	0.006 5795	684	0.006 5792	685
1,100,000	0.006 6479	689	0.006 6477	689
1,200,000	0.006 7168	693	0.006 7166	693
1,300,000	0.006 7861	698	0.006 7859	698
1,400,000	0.006 8559	703	0.006 8557	702
1,500,000	0.006 9262	707	0.006 9259	707
1,600,000	0.006 9969	712	0.006 9966	712
1,700,000	0.007 0681	717	0.007 0678	717
1,800,000	0.007 1398	722	0.007 1395	722
1,900,000	0.007 2120	727	0.007 2117	727
2,000,000	0.007 2847	732	0.007 2844	732
2,100,000	0.007 3579	737	0.007 3576	737
2,200,000	0.007 4316	742	0.007 4313	742
2,300,000	0.007 5058		0.007 5055	

e

y \ x'	200,000	300,000	400,000	500,000
0	0.0	0.1	0.3	0.6
1,000,000	0.0	0.1	0.4	0.8
2,000,000	0.0	0.2	0.5	1.0

TRANSVERSE MERCATOR PROJECTION

ARIZONA

East and Central Zones

x' feet	Scale in units of 7th place of logs	Scale expressed as a ratio	x' feet	Scale in units of 7th place of logs	Scale expressed as a ratio
0	-434.3	0.9999000	175,000	-282.0	0.9999351
5,000	-434.2	0.9999000	180,000	-273.2	0.9999371
10,000	-433.8	0.9999001	185,000	-264.1	0.9999392
15,000	-433.2	0.9999003	190,000	-254.8	0.9999413
20,000	-432.3	0.9999005	195,000	-245.2	0.9999435
25,000	-431.2	0.9999007	200,000	-235.4	0.9999458
30,000	-429.8	0.9999010	205,000	-225.3	0.9999481
35,000	-428.2	0.9999014	210,000	-215.0	0.9999505
40,000	-426.4	0.9999018	215,000	-204.5	0.9999529
45,000	-424.3	0.9999023	220,000	-193.7	0.9999554
50,000	-421.9	0.9999029	225,000	-182.6	0.9999580
55,000	-419.3	0.9999035	230,000	-171.3	0.9999606
60,000	-416.4	0.9999041	235,000	-159.7	0.9999632
65,000	-413.3	0.9999048	240,000	-147.9	0.9999659
70,000	-410.0	0.9999056	245,000	-135.9	0.9999687
75,000	-406.4	0.9999064	250,000	-123.6	0.9999715
80,000	-402.5	0.9999073	255,000	-111.0	0.9999744
85,000	-398.4	0.9999083	260,000	- 98.2	0.9999774
90,000	-394.0	0.9999093	265,000	- 85.2	0.9999804
95,000	-389.4	0.9999103	270,000	- 71.9	0.9999834
100,000	-384.6	0.9999114	275,000	- 58.4	0.9999866
105,000	-379.5	0.9999126	280,000	- 44.6	0.9999897
110,000	-374.1	0.9999139	285,000	- 30.5	0.9999930
115,000	-368.5	0.9999151	290,000	- 16.2	0.9999963
120,000	-362.7	0.9999165	295,000	- 1.7	0.9999996
125,000	-356.6	0.9999179	300,000	+ 13.1	1.0000030
130,000	-350.3	0.9999193	305,000	+ 28.1	1.0000065
135,000	-343.7	0.9999209	310,000	+ 43.4	1.0000100
140,000	-336.8	0.9999224	315,000	+ 59.0	1.0000136
145,000	-329.7	0.9999241	320,000	+ 74.8	1.0000172
150,000	-322.4	0.9999258	325,000	+ 90.8	1.0000209
155,000	-314.8	0.9999275	330,000	+107.1	1.0000247
160,000	-307.0	0.9999293	335,000	+123.6	1.0000285
165,000	-298.9	0.9999312	340,000	+140.4	1.0000323
170,000	-290.6	0.9999331	345,000	+157.4	1.0000362

TRANSVERSE MERCATOR PROJECTION

ARIZONA

East and Central Zones

x' feet	Scale in units of 7th place of logs	Scale expressed as a ratio
350,000	+174.7	1.0000402
355,000	+192.2	1.0000443
360,000	+210.0	1.0000484
365,000	+228.0	1.0000525
370,000	+246.3	1.0000567
375,000	+264.8	1.0000610
380,000	+283.6	1.0000653
385,000	+302.6	1.0000697
390,000	+321.8	1.0000741
395,000	+341.3	1.0000786
400,000	+361.1	1.0000831
405,000	+381.1	1.0000878
410,000	+401.4	1.0000924
415,000	+421.9	1.0000971
420,000	+442.6	1.0001019
425,000	+463.6	1.0001067
430,000	+484.9	1.0001117
435,000	+506.4	1.0001166
440,000	+528.2	1.0001216
445,000	+550.2	1.0001267
450,000	+572.4	1.0001318
455,000	+594.9	1.0001370
460,000	+617.6	1.0001422
465,000	+640.6	1.0001475
470,000	+663.9	1.0001529
475,000	+687.4	1.0001583
480,000	+711.1	1.0001637
485,000	+735.1	1.0001693
490,000	+759.4	1.0001749
495,000	+783.9	1.0001805
500,000	+808.6	1.0001862
505,000	+833.6	1.0001919
510,000	+858.8	1.0001977
515,000	+884.3	1.0002036
520,000	+910.0	1.0002095
525,000	+936.0	1.0002155

TRANSVERSE MERCATOR PROJECTION

ARIZONA

West Zone

x' (feet)	Scale in units of 7th place of logs	Scale expressed as a ratio	x' (feet)	Scale in units of 7th place of logs	Scale expressed as a ratio
0	-289.5	0.9999333	175,000	-137.2	0.9999684
5,000	-289.4	0.9999334	180,000	-128.4	0.9999704
10,000	-289.0	0.9999335	185,000	-119.3	0.9999725
15,000	-288.4	0.9999336	190,000	-110.0	0.9999747
20,000	-287.5	0.9999338	195,000	-100.4	0.9999769
25,000	-286.4	0.9999341	200,000	- 90.6	0.9999791
30,000	-285.0	0.9999344	205,000	- 80.5	0.9999815
35,000	-283.4	0.9999347	210,000	- 70.2	0.9999838
40,000	-281.6	0.9999352	215,000	- 59.7	0.9999863
45,000	-279.5	0.9999356	220,000	- 48.9	0.9999887
50,000	-277.1	0.9999362	225,000	- 37.8	0.9999913
55,000	-274.5	0.9999368	230,000	- 26.5	0.9999939
60,000	-271.6	0.9999375	235,000	- 14.9	0.9999966
65,000	-268.5	0.9999382	240,000	- 3.1	0.9999993
70,000	-265.2	0.9999390	245,000	+ 8.9	1.0000020
75,000	-261.6	0.9999398	250,000	+ 21.2	1.0000049
80,000	-257.7	0.9999407	255,000	+ 33.8	1.0000078
85,000	-253.6	0.9999416	260,000	+ 46.7	1.0000108
90,000	-249.2	0.9999426	265,000	+ 59.6	1.0000137
95,000	-244.6	0.9999437	270,000	+ 72.9	1.0000168
100,000	-239.8	0.9999448	275,000	+ 86.4	1.0000199
105,000	-234.7	0.9999460	280,000	+100.2	1.0000231
110,000	-229.4	0.9999472	285,000	+114.3	1.0000263
115,000	-223.8	0.9999485	290,000	+128.6	1.0000296
120,000	-217.9	0.9999498	295,000	+143.1	1.0000329
125,000	-211.8	0.9999512	300,000	+157.9	1.0000364
130,000	-205.5	0.9999527	305,000	+172.9	1.0000398
135,000	-198.9	0.9999542	310,000	+188.2	1.0000433
140,000	-192.0	0.9999558	315,000	+203.8	1.0000469
145,000	-184.9	0.9999574	320,000	+219.6	1.0000506
150,000	-177.6	0.9999591	325,000	+235.6	1.0000542
155,000	-170.0	0.9999609	330,000	+251.9	1.0000580
160,000	-162.2	0.9999627	335,000	+268.4	1.0000618
165,000	-154.1	0.9999645	340,000	+285.2	1.0000657
170,000	-145.8	0.9999664	345,000	+302.2	1.0000696

TRANSVERSE MERCATOR PROJECTION

ARIZONA

West Zone

x' (feet)	Scale in units of 7th place of logs	Scale expressed as a ratio
350,000	+319.5	1.0000736
355,000	+337.0	1.0000776
360,000	+354.8	1.0000817
365,000	+372.8	1.0000858
370,000	+391.1	1.0000901
375,000	+409.6	1.0000943
380,000	+428.4	1.0000986
385,000	+447.4	1.0001030
390,000	+466.6	1.0001074
395,000	+486.1	1.0001119
400,000	+505.9	1.0001165

CORRECTIONS TO NATURAL SCALE RATIOS*
(in units of the 7th decimal place)

For Lambert Projection: Δø' as argument				For Lambert or transverse Mercator Projection	
Δø'	Corr'n (Plus)	Δø'	Corr'n (Plus)	Δy or Δx	Corr'n (Plus)
1	0	31	34	10,000	0
2	0	32	36	20,000	0
3	0	33	38	30,000	1
4	1	34	40	40,000	2
5	1	35	43	50,000	2
6	1	36	45	60,000	3
7	2	37	48	70,000	5
8	2	38	51	80,000	6
9	3	39	53	90,000	8
10	4	40	56	100,000	10
11	4	41	59	110,000	11
12	5	42	62	120,000	14
13	6	43	65	130,000	16
14	7	44	68	140,000	19
15	8	45	71	150,000	21
16	9	46	74	160,000	24
17	10	47	77	170,000	27
18	11	48	81	180,000	31
19	13	49	84	190,000	34
20	14	50	88	200,000	38
21	15	51	91	210,000	42
22	17	52	95	220,000	46
23	19	53	98	230,000	50
24	20	54	102	240,000	55
25	22	55	106	250,000	59
26	24	56	110	260,000	64
27	26	57	114	270,000	69
28	27	58	118	280,000	74
29	29	59	122	290,000	80
30	32	60	126	300,000	86
				310,000	91
				320,000	97
				330,000	103
				340,000	110
				350,000	116

Δø' is the difference in latitude in minutes of the ends of the line.

*Scale ratio interpolated for mean latitude or mean x' of the ends of a line and corrected by the above table is a true mean value accurate to within one in the seventh decimal place.

☆ U. S. GOVERNMENT PRINTING OFFICE : 1952 O—979350