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

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

Special Publication No. 258

PLANE COORDINATE PROJECTION TABLES
WYOMING

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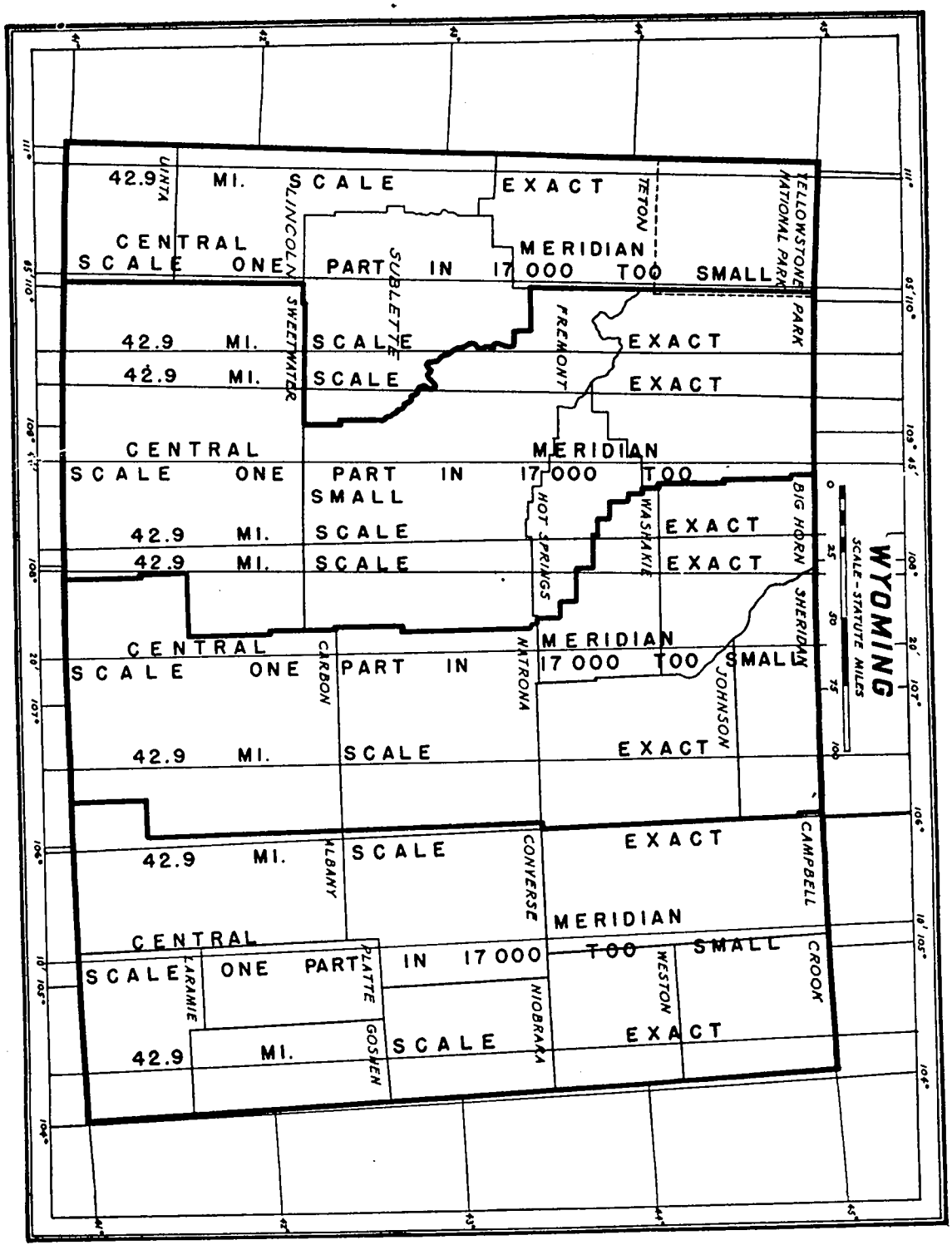
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CENTRAL MERIDIAN
SCALE ONE PART IN 17 000 TOO SMALL
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SWEETWATER
FREMONT
PARK
HOT SPRINGS
WASHAKIE
BIG HORN
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NATRONA
JOHNSON
ALBANY
CONVERSE
CAMPBELL
LARAMIE
PLATTE
NIOBRARA
WESTON
CROOK
GOSHEN
WYOMING
SCALE - STATUTE MILES
0 25 50 75 100

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.

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

Geographic positions from plane coordinates

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

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

Obtain the latitude from the table of y_o.

Use latitude to obtain H from the table.

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

$$\text{approximate } \Delta\lambda'' = x' \div H.$$

Determine a from latitude and b 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 Wyoming Zone E. Central (2) Central meridian 107° 20′ 00.″000

Station	Arlington, 1933	Divide, 1933			
ϕ	41° 36′ 14.″640	41° 51′ 57.″518			
λ	106 13 03.224	108 01 56.720			
$\Delta\lambda$ = Central mer. − λ	+1° 06′ 56.″776	−0° 41′ 56.″720			
$\Delta\lambda''$	+4,016.776	−2,516.720			
$\left(\frac{\Delta\lambda''}{100}\right)^2$	1,613.449	633.388			
H	75.970 100	75.662 044			
V	1.222 985	1.224 284			
a | b	−0.775 | +1.278	−0.713 | +1.930			
$x' = H\cdot\Delta\lambda \pm ab$	+305,153.88	−190,418.80			
$V\left(\frac{\Delta\lambda''}{100}\right)^2 \pm c$	1,973.110	775.340			
Tabular y	341,523.76	436,955.94			
x	805,153.88	309,581.20			
y	343,496.87	437,731.28			
$\Delta\alpha''$	+2,667.24	−1,679.68			
$\Delta\alpha$	+ 44 27.2	− 27 59.7			
Geod. Az. to Az. Mk.	324 56 06	294 11 45			
Grid Az. to Az. Mk.	324 11 39	294 39 45			

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

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

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

Grid Az. = Geod. Az. − $\Delta\alpha$

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

When ab is $\frac{-}{+}$, $\frac{\text{decrease}}{\text{increase}}$ $H\cdot\Delta\lambda$ numerically.

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

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

6 GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

(CALCULATING MACHINE COMPUTATION)

STATE – ZONE Wyoming - East (1)

Station Split Rock, 1933

X	437,860.19		Y	491,889.06
C	− 500,000.00		$P(\frac{X'}{10,000})^2 + d$	− 83.00
X'	− 62,139.81		Y_o	491,806.06
P	2.14931		Approx. $\Delta\lambda = X' \div H$	− 823"
d	+ 0.01		$\Delta\lambda = (X' \mp ab) \div H$	− 823".223
H	75.484 274		$\Delta\lambda$	− 13' 43".223
a | b	− 0.679	+ 0.848	Central Meridian	105 10 00.000
ϕ	42° 00' 59".422		λ = C.M. − $\Delta\lambda$	105° 23' 43".223

Station Hobbs, 1912

X	656,606.90		Y	697,923.65
C	− 500,000.00		$P(\frac{X'}{10,000})^2 + d$	− 537.71
X'	+ 156,606.90		Y_o	697,385.94
P	2.19227		Approx. $\Delta\lambda = X' \div H$	+ 2,093"
d	+ 0.04		$\Delta\lambda = (X' \mp ab) \div H$	+ 2,093".314
H	74.813 378		$\Delta\lambda$	+ 34' 53".314
a | b	− 0.548	+ 1.794	Central Meridian	105 10 00.000
ϕ	42° 34' 50".366		λ = C.M. − $\Delta\lambda$	104° 35' 06".686

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

Constants for Wyoming

Constant	Zone			
	East (1)	East-central (2)	West-central (3)	West (4)
Central Meridian	105°10'00".000	107°20'00".000	108°45'00".000	110°05'00".000
log R	-255.5	-255.5	-255.5	-255.5
Scale reduction (Central Meridian)	1 : 17,000	1 : 17,000	1 : 17,000	1 : 17,000
$\log\left(\frac{1}{6\rho_0^2}\right)_g$	4.580 7451 -20	4.580 7451 -20	4.580 7451 -20	4.580 7451 -20
$\log\left(\frac{1}{6\rho_0 \sin 1''}\right)_g$	9.895 1702 -20	9.895 1702 -20	9.895 1702 -20	9.895 1702 -20
$\left(\frac{1}{6\rho_0 \sin 1''}\right)_g$	0.7855×10^{-10}	0.7855×10^{-10}	0.7855×10^{-10}	0.7855×10^{-10}

TRANSVERSE MERCATOR PROJECTION

WYOMING
ALL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
40 40	0.00	101.194 83	77.059 547	319.83	1.217 501	1.82	-1.000
40 41	6 071.69	101.195 17	77.040 357	319.93	1.217 610	1.80	-.996
40 42	12 143.40	101.195 33	77.021 161	320.07	1.217 718	1.82	-.992
40 43	18 215.12	101.195 67	77.001 957	320.15	1.217 827	1.78	-.988
40 44	24 286.86	101.196 00	76.982 748	320.27	1.217 934	1.80	-.984
40 45	30 358.62	101.196 33	76.963 532	320.38	1.218 042	1.77	-.980
40 46	36 430.40	101.196 50	76.944 309	320.48	1.218 148	1.78	-.975
40 47	42 502.19	101.197 00	76.925 080	320.60	1.218 255	1.77	-.971
40 48	48 574.01	101.197 17	76.905 844	320.70	1.218 361	1.77	-.967
40 49	54 645.84	101.197 50	76.886 602	320.82	1.218 467	1.75	-.963
40 50	60 717.69	101.197 83	76.867 353	320.93	1.218 572	1.75	-.959
40 51	66 789.56	101.198 17	76.848 097	321.03	1.218 677	1.73	-.955
40 52	72 861.45	101.198 33	76.828 835	321.13	1.218 781	1.73	-.951
40 53	78 933.35	101.198 67	76.809 567	321.25	1.218 885	1.73	-.947
40 54	85 005.27	101.199 00	76.790 292	321.37	1.218 989	1.72	-.943
40 55	91 077.21	101.199 17	76.771 010	321.47	1.219 092	1.72	-.939
40 56	97 149.16	101.199 67	76.751 722	321.57	1.219 195	1.70	-.935
40 57	103 221.14	101.199 83	76.732 428	321.68	1.219 297	1.70	-.931
40 58	109 293.13	101.200 17	76.713 127	321.80	1.219 399	1.70	-.927
40 59	115 365.14	101.200 50	76.693 819	321.90	1.219 501	1.68	-.923
41 00	121 437.17		76.674 505		1.219 602		-.919

TRANSVERSE MERCATOR PROJECTION

WYOMING
ALL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
41 00	121 437.17	101.200 67	76.674 505	322.02	1.219 602	1.68	-.919
41 01	127 509.21	101.201 00	76.655 184	322.12	1.219 703	1.67	-.915
41 02	133 581.27	101.201 33	76.635 857	322.22	1.219 803	1.67	-.911
41 03	139 653.35	101.201 67	76.616 524	322.33	1.219 903	1.65	-.907
41 04	145 725.45	101.202 00	76.597 184	322.45	1.220 002	1.65	-.903
41 05	151 797.57	101.202 17	76.577 837	322.55	1.220 101	1.65	-.899
41 06	157 869.70	101.202 50	76.558 484	322.65	1.220 200	1.63	-.895
41 07	163 941.85	101.202 83	76.539 125	322.77	1.220 298	1.63	-.891
41 08	170 014.02	101.203 17	76.519 759	322.88	1.220 396	1.62	-.887
41 09	176 086.21	101.203 50	76.500 386	322.98	1.220 493	1.62	-.883
41 10	182 158.42	101.203 67	76.481 007	323.10	1.220 590	1.62	-.879
41 11	188 230.64	101.204 00	76.461 621	323.20	1.220 687	1.60	-.875
41 12	194 302.88	101.204 33	76.442 229	323.32	1.220 783	1.58	-.871
41 13	200 375.14	101.204 67	76.422 830	323.42	1.220 878	1.60	-.867
41 14	206 447.42	101.204 83	76.403 425	323.52	1.220 974	1.58	-.863
41 15	212 519.71	101.205 17	76.384 014	323.65	1.221 069	1.57	-.860
41 16	218 592.02	101.205 50	76.364 595	323.73	1.221 163	1.57	-.856
41 17	224 664.35	101.205 83	76.345 171	323.85	1.221 257	1.57	-.852
41 18	230 736.70	101.206 17	76.325 740	323.97	1.221 351	1.55	-.848
41 19	236 809.07	101.206 33	76.306 302	324.07	1.221 444	1.55	-.844
41 20	242 881.45	101.206 67	76.286 858	324.18	1.221 537	1.53	-.840
41 21	248 953.85	101.207 00	76.267 407	324.28	1.221 629	1.53	-.836
41 22	255 026.27	101.207 33	76.247 950	324.40	1.221 721	1.53	-.832
41 23	261 098.71	101.207 67	76.228 486	324.50	1.221 813	1.52	-.828
41 24	267 171.17	101.207 83	76.209 016	324.60	1.221 904	1.52	-.824
41 25	273 243.64	101.208 17	76.189 540	324.72	1.221 995	1.50	-.820
41 26	279 316.13	101.208 50	76.170 057	324.83	1.222 085	1.50	-.816
41 27	285 388.64	101.208 83	76.150 567	324.93	1.222 175	1.48	-.812
41 28	291 461.17	101.209 00	76.131 071	325.03	1.222 264	1.48	-.808
41 29	297 533.71	101.209 33	76.111 569	325.15	1.222 353	1.48	-.804
41 30	303 606.27	101.209 67	76.092 060	325.25	1.222 442	1.47	-.800
41 31	309 678.85	101.210 00	76.072 545	325.37	1.222 530	1.47	-.796
41 32	315 751.45	101.210 33	76.053 023	325.47	1.222 618	1.45	-.792
41 33	321 824.07	101.210 50	76.033 495	325.58	1.222 705	1.45	-.788
41 34	327 896.70	101.210 83	76.013 960	325.68	1.222 792	1.43	-.784
41 35	333 969.35	101.211 17	75.994 419	325.80	1.222 878	1.43	-.780
41 36	340 042.02	101.211 50	75.974 871	325.90	1.222 964	1.43	-.776
41 37	346 114.71	101.211 67	75.955 317	326.02	1.223 050	1.43	-.772
41 38	352 187.41	101.212 00	75.935 756	326.12	1.223 136	1.40	-.768
41 39	358 260.13	101.212 50	75.916 189	326.22	1.223 220	1.42	-.764
41 40	364 332.88	101.212 67	75.896 616	326.33	1.223 305	1.40	-.760
41 41	370 405.64	101.212 83	75.877 036	326.45	1.223 389	1.40	-.756
41 42	376 478.41	101.213 33	75.857 449	326.53	1.223 473	1.38	-.752
41 43	382 551.21	101.213 50	75.837 857	326.67	1.223 556	1.38	-.748
41 44	388 624.02	101.213 83	75.818 257	326.77	1.223 639	1.38	-.744
41 45	394 696.85	101.214 17	75.798 651	326.87	1.223 722	1.37	-.741
41 46	400 769.70	101.214 33	75.779 039	326.97	1.223 804	1.35	-.737
41 47	406 842.56	101.214 83	75.759 421	327.10	1.223 885	1.37	-.733
41 48	412 915.45	101.215 00	75.739 795	327.18	1.223 967	1.35	-.729
41 49	418 988.35	101.215 33	75.720 164	327.30	1.224 048	1.33	-.725
41 50	425 061.27	101.215 67	75.700 526	327.40	1.224 128	1.33	-.721
41 51	431 134.21	101.215 83	75.680 882	327.52	1.224 208	1.32	-.717
41 52	437 207.16	101.216 17	75.661 231	327.62	1.224 287	1.33	-.713
41 53	443 280.13	101.216 50	75.641 574	327.73	1.224 367	1.30	-.710
41 54	449 353.12	101.216 83	75.621 910	327.83	1.224 445	1.32	-.706
41 55	455 426.13	101.217 17	75.602 240	327.95	1.224 524	1.30	-.702
41 56	461 499.16	101.217 50	75.582 563	328.05	1.224 602	1.28	-.698
41 57	467 572.21	101.217 67	75.562 880	328.15	1.224 679	1.28	-.694
41 58	473 645.27	101.218 00	75.543 191	328.27	1.224 756	1.28	-.691
41 59	479 718.35	101.218 33	75.523 495	328.37	1.224 833	1.27	-.687
42 00	485 791.45		75.503 793		1.224 909		-.683

TRANSVERSE MERCATOR PROJECTION

WYOMING
ALL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
42 00	485 791.45	101.218 67	75.503 793	328.48	1.224 909	1.27	-.683
42 01	491 864.57	101.218 83	75.484 084	328.58	1.224 985	1.25	-.679
42 02	497 937.70	101.219 17	75.464 369	328.70	1.225 060	1.25	-.675
42 03	504 010.85	101.219 50	75.444 647	328.80	1.225 135	1.23	-.671
42 04	510 084.02	101.219 83	75.424 919	328.90	1.225 209	1.25	-.667
42 05	516 157.21	101.220 17	75.405 185	329.02	1.225 284	1.22	-.663
42 06	522 230.42	101.220 33	75.385 444	329.12	1.225 357	1.23	-.659
42 07	528 303.64	101.220 67	75.365 697	329.23	1.225 431	1.20	-.655
42 08	534 376.88	101.221 00	75.345 943	329.33	1.225 503	1.22	-.651
42 09	540 450.14	101.221 33	75.326 183	329.43	1.225 576	1.20	-.647
42 10	546 523.42	101.221 50	75.306 417	329.55	1.225 648	1.20	-.643
42 11	552 596.71	101.222 00	75.286 644	329.65	1.225 720	1.18	-.639
42 12	558 670.03	101.222 17	75.266 865	329.77	1.225 791	1.18	-.635
42 13	564 743.36	101.222 50	75.247 079	329.87	1.225 862	1.17	-.632
42 14	570 816.71	101.222 67	75.227 287	329.97	1.225 932	1.17	-.628
42 15	576 890.07	101.223 17	75.207 489	330.08	1.226 002	1.17	-.624
42 16	582 963.46	101.223 33	75.187 684	330.18	1.226 072	1.15	-.620
42 17	589 036.86	101.223 67	75.167 873	330.30	1.226 141	1.15	-.616
42 18	595 110.28	101.224 00	75.148 055	330.40	1.226 210	1.13	-.613
42 19	601 183.72	101.224 33	75.128 231	330.50	1.226 278	1.13	-.609
42 20	607 257.18	101.224 50	75.108 401	330.62	1.226 346	1.12	-.605
42 21	613 330.65	101.224 83	75.088 564	330.72	1.226 413	1.12	-.601
42 22	619 404.14	101.225 17	75.068 721	330.83	1.226 480	1.12	-.597
42 23	625 477.65	101.225 50	75.048 871	330.93	1.226 547	1.10	-.593
42 24	631 551.18	101.225 83	75.029 015	331.05	1.226 613	1.10	-.589
42 25	637 624.73	101.226 00	75.009 152	331.13	1.226 679	1.08	-.586
42 26	643 698.29	101.226 33	74.989 284	331.27	1.226 744	1.08	-.582
42 27	649 771.87	101.226 67	74.969 408	331.35	1.226 809	1.08	-.578
42 28	655 845.47	101.227 00	74.949 527	331.47	1.226 874	1.07	-.574
42 29	661 919.09	101.227 33	74.929 639	331.57	1.226 938	1.07	-.570
42 30	667 992.73	101.227 50	74.909 745	331.67	1.227 002	1.05	-.566
42 31	674 066.38	101.227 83	74.889 845	331.78	1.227 065	1.05	-.562
42 32	680 140.05	101.228 17	74.869 938	331.88	1.227 128	1.05	-.558
42 33	686 213.74	101.228 50	74.850 025	332.00	1.227 191	1.03	-.555
42 34	692 287.45	101.228 67	74.830 105	332.10	1.227 253	1.03	-.551
42 35	698 361.17	101.229 17	74.810 179	332.20	1.227 315	1.02	-.547
42 36	704 434.92	101.229 33	74.790 247	332.32	1.227 376	1.02	-.543
42 37	710 508.68	101.229 67	74.770 308	332.42	1.227 437	1.00	-.539
42 38	716 582.46	101.229 83	74.750 363	332.52	1.227 497	1.00	-.536
42 39	722 656.25	101.230 33	74.730 412	332.63	1.227 557	1.00	-.532
42 40	728 730.07	101.230 50	74.710 454	332.73	1.227 617	0.98	-.528
42 41	734 803.90	101.230 83	74.690 490	332.85	1.227 676	0.98	-.524
42 42	740 877.75	101.231 17	74.670 519	332.95	1.227 735	0.97	-.521
42 43	746 951.62	101.231 50	74.650 542	333.05	1.227 793	0.97	-.517
42 44	753 025.51	101.231 67	74.630 559	333.17	1.227 851	0.97	-.513
42 45	759 099.41	101.232 17	74.610 569	333.27	1.227 909	0.95	-.510
42 46	765 173.34	101.232 33	74.590 573	333.37	1.227 966	0.93	-.506
42 47	771 247.28	101.232 67	74.570 571	333.48	1.228 022	0.95	-.502
42 48	777 321.24	101.232 83	74.550 562	333.58	1.228 079	0.93	-.498
42 49	783 395.21	101.233 33	74.530 547	333.68	1.228 135	0.92	-.495
42 50	789 469.21	101.233 50	74.510 526	333.80	1.228 190	0.92	-.491
42 51	795 543.22	101.233 83	74.490 498	333.90	1.228 245	0.90	-.487
42 52	801 617.25	101.234 17	74.470 464	334.00	1.228 299	0.92	-.483
42 53	807 691.30	101.234 33	74.450 424	334.12	1.228 354	0.88	-.479
42 54	813 765.36	101.234 83	74.430 377	334.22	1.228 407	0.90	-.475
42 55	819 839.45	101.235 00	74.410 324	334.32	1.228 461	0.87	-.472
42 56	825 913.55	101.235 33	74.390 265	334.43	1.228 513	0.88	-.468
42 57	831 987.67	101.235 67	74.370 199	334.53	1.228 566	0.87	-.464
42 58	838 061.81	101.235 83	74.350 127	334.63	1.228 618	0.87	-.460
42 59	844 135.96	101.236 33	74.330 049	334.75	1.228 670	0.85	-.456
43 00	850 210.14		74.309 964		1.228 721		-.452

TRANSVERSE MERCATOR PROJECTION

WYOMING
ALL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
43 00	850 210.14	101.236 50	74.309 964	334.85	1.228 731	0.85	-.452
43 01	856 284.33	101.236 83	74.289 873	334.95	1.228 772	0.83	-.448
43 02	862 358.54	101.237 17	74.269 776	335.07	1.228 822	0.83	-.445
43 03	868 432.77	101.237 33	74.249 672	335.17	1.228 872	0.83	-.441
43 04	874 507.01	101.237 67	74.229 562	335.27	1.228 922	0.82	-.437
43 05	880 581.27	101.238 00	74.209 446	335.38	1.228 971	0.82	-.434
43 06	886 655.55	101.238 33	74.189 323	335.48	1.229 020	0.80	-.430
43 07	892 729.85	101.238 67	74.169 194	335.58	1.229 068	0.80	-.426
43 08	898 804.17	101.239 00	74.149 059	335.68	1.229 116	0.80	-.422
43 09	904 878.51	101.239 17	74.128 918	335.80	1.229 164	0.78	-.419
43 10	910 952.86	101.239 50	74.108 770	335.90	1.229 211	0.78	-.415
43 11	917 027.23	101.239 83	74.088 616	336.02	1.229 258	0.77	-.411
43 12	923 101.62	101.240 17	74.068 455	336.10	1.229 304	0.75	-.408
43 13	929 176.03	101.240 50	74.048 289	336.23	1.229 349	0.77	-.404
43 14	935 250.46	101.240 67	74.028 115	336.32	1.229 395	0.75	-.400
43 15	941 324.90	101.241 00	74.007 936	336.43	1.229 440	0.73	-.397
43 16	947 399.36	101.241 33	73.987 750	336.52	1.229 484	0.75	-.393
43 17	953 473.84	101.241 67	73.967 559	336.65	1.229 529	0.73	-.389
43 18	959 548.34	101.241 83	73.947 360	336.73	1.229 573	0.72	-.385
43 19	965 622.85	101.242 17	73.927 156	336.85	1.229 616	0.72	-.382
43 20	971 697.38	101.242 67	73.906 945	336.95	1.229 659	0.72	-.378
43 21	977 771.94	101.242 83	73.886 728	337.07	1.229 702	0.70	-.374
43 22	983 846.51	101.243 00	73.866 504	337.15	1.229 744	0.70	-.370
43 23	989 921.09	101.243 50	73.846 275	337.27	1.229 786	0.68	-.367
43 24	995 995.70	101.243 67	73.826 039	337.38	1.229 827	0.68	-.363
43 25	1 002 070.32	101.244 00	73.805 796	337.47	1.229 868	0.68	-.359
43 26	1 008 144.96	101.244 33	73.785 548	337.58	1.229 909	0.67	-.355
43 27	1 014 219.62	101.244 67	73.765 293	337.68	1.229 949	0.67	-.351
43 28	1 020 294.30	101.244 83	73.745 032	337.78	1.229 989	0.65	-.348
43 29	1 026 368.99	101.245 17	73.724 765	337.90	1.230 028	0.65	-.344
43 30	1 032 443.70	101.245 50	73.704 491	338.00	1.230 067	0.63	-.340
43 31	1 038 518.43	101.245 83	73.684 211	338.10	1.230 105	0.63	-.336
43 32	1 044 593.18	101.246 17	73.663 925	338.22	1.230 143	0.63	-.333
43 33	1 050 667.95	101.246 50	73.643 632	338.32	1.230 181	0.62	-.329
43 34	1 056 742.74	101.246 67	73.623 333	338.40	1.230 218	0.62	-.325
43 35	1 062 817.54	101.247 00	73.603 029	338.53	1.230 255	0.62	-.322
43 36	1 068 892.36	101.247 33	73.582 717	338.62	1.230 292	0.60	-.318
43 37	1 074 967.20	101.247 50	73.562 400	338.73	1.230 328	0.58	-.314
43 38	1 081 042.05	101.248 00	73.542 076	338.83	1.230 363	0.58	-.310
43 39	1 087 116.93	101.248 17	73.521 746	338.93	1.230 398	0.58	-.307
43 40	1 093 191.82	101.248 50	73.501 410	339.03	1.230 433	0.57	-.303
43 41	1 099 266.73	101.248 83	73.481 068	339.15	1.230 467	0.57	-.299
43 42	1 105 341.66	101.249 17	73.460 719	339.25	1.230 501	0.55	-.296
43 43	1 111 416.61	101.249 33	73.440 364	339.35	1.230 534	0.55	-.292
43 44	1 117 491.57	101.249 67	73.420 003	339.45	1.230 567	0.55	-.288
43 45	1 123 566.55	101.250 00	73.399 636	339.57	1.230 600	0.53	-.285
43 46	1 129 641.55	101.250 33	73.379 262	339.67	1.230 632	0.53	-.281
43 47	1 135 716.57	101.250 67	73.358 882	339.77	1.230 664	0.52	-.277
43 48	1 141 791.61	101.250 83	73.338 496	339.87	1.230 695	0.52	-.273
43 49	1 147 866.66	101.251 17	73.318 104	339.98	1.230 726	0.52	-.270
43 50	1 153 941.73	101.251 50	73.297 705	340.08	1.230 757	0.50	-.266
43 51	1 160 016.82	101.251 83	73.277 300	340.18	1.230 787	0.50	-.262
43 52	1 166 091.93	101.252 17	73.256 889	340.30	1.230 817	0.48	-.259
43 53	1 172 167.06	101.252 33	73.236 471	340.40	1.230 846	0.48	-.255
43 54	1 178 242.20	101.252 67	73.216 047	340.50	1.230 875	0.48	-.252
43 55	1 184 317.36	101.253 00	73.195 617	340.60	1.230 904	0.47	-.248
43 56	1 190 392.54	101.253 33	73.175 181	340.70	1.230 932	0.45	-.244
43 57	1 196 467.74	101.253 67	73.154 739	340.82	1.230 959	0.47	-.241
43 58	1 202 542.96	101.253 83	73.134 290	340.92	1.230 987	0.45	-.237
43 59	1 208 618.19	101.254 33	73.113 835	341.02	1.231 014	0.43	-.234
44 00	1 214 693.45		73.093 374		1.231 040		-.230

TRANSVERSE MERCATOR PROJECTION

WYOMING
ALL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
44 00	1 214 693.45	101.254 50	73.093 374	341.12	1.231 040	0.43	-.230
44 01	1 220 768.72	101.254 83	73.072 907	341.23	1.231 066	0.42	-.226
44 02	1 226 844.01	101.255 00	73.052 433	341.33	1.231 091	0.43	-.223
44 03	1 232 919.31	101.255 33	73.031 953	341.43	1.231 117	0.40	-.219
44 04	1 238 994.63	101.255 83	73.011 467	341.53	1.231 141	0.42	-.215
44 05	1 245 069.98	101.256 00	72.990 975	341.63	1.231 166	0.40	-.212
44 06	1 251 145.34	101.256 33	72.970 477	341.75	1.231 190	0.38	-.208
44 07	1 257 220.72	101.256 50	72.949 972	341.85	1.231 213	0.38	-.204
44 08	1 263 296.11	101.257 00	72.929 461	341.95	1.231 236	0.38	-.200
44 09	1 269 371.53	101.257 17	72.908 944	342.05	1.231 259	0.37	-.197
44 10	1 275 446.96	101.257 50	72.888 421	342.15	1.231 281	0.37	-.193
44 11	1 281 522.41	101.257 83	72.867 892	342.27	1.231 303	0.35	-.189
44 12	1 287 597.88	101.258 00	72.847 356	342.37	1.231 324	0.35	-.186
44 13	1 293 673.36	101.258 50	72.826 814	342.47	1.231 345	0.35	-.182
44 14	1 299 748.87	101.258 67	72.806 266	342.57	1.231 366	0.33	-.179
44 15	1 305 824.39	101.259 00	72.785 712	342.68	1.231 386	0.32	-.175
44 16	1 311 899.93	101.259 33	72.765 151	342.77	1.231 405	0.33	-.171
44 17	1 317 975.49	101.259 50	72.744 585	342.88	1.231 425	0.30	-.168
44 18	1 324 051.06	101.260 00	72.724 012	342.98	1.231 443	0.32	-.164
44 19	1 330 126.66	101.260 17	72.703 433	343.08	1.231 462	0.30	-.161
44 20	1 336 202.27	101.260 50	72.682 848	343.18	1.231 480	0.30	-.157
44 21	1 342 277.90	101.260 83	72.662 257	343.30	1.231 498	0.28	-.153
44 22	1 348 353.55	101.261 00	72.641 659	343.40	1.231 515	0.27	-.150
44 23	1 354 429.21	101.261 50	72.621 055	343.50	1.231 531	0.28	-.146
44 24	1 360 504.90	101.261 67	72.600 445	343.60	1.231 548	0.27	-.143
44 25	1 366 580.60	101.262 00	72.579 829	343.70	1.231 564	0.25	-.139
44 26	1 372 656.32	101.262 33	72.559 207	343.82	1.231 579	0.25	-.135
44 27	1 378 732.06	101.262 50	72.538 578	343.90	1.231 594	0.25	-.132
44 28	1 384 807.81	101.263 00	72.517 944	344.02	1.231 609	0.23	-.128
44 29	1 390 883.59	101.263 17	72.497 303	344.12	1.231 623	0.23	-.125
44 30	1 396 959.38	101.263 50	72.476 656	344.22	1.231 637	0.22	-.121
44 31	1 403 035.19	101.263 83	72.456 003	344.32	1.231 650	0.22	-.117
44 32	1 409 111.02	101.264 17	72.435 344	344.43	1.231 663	0.22	-.114
44 33	1 415 186.87	101.264 33	72.414 678	344.52	1.231 676	0.20	-.110
44 34	1 421 262.73	101.264 67	72.394 007	344.63	1.231 688	0.20	-.107
44 35	1 427 338.61	101.265 00	72.373 329	344.73	1.231 700	0.18	-.103
44 36	1 433 414.51	101.265 33	72.352 645	344.83	1.231 711	0.18	-.099
44 37	1 439 490.43	101.265 67	72.331 955	344.93	1.231 722	0.17	-.096
44 38	1 445 566.37	101.265 83	72.311 259	345.03	1.231 732	0.17	-.092
44 39	1 451 642.32	101.266 17	72.290 557	345.15	1.231 742	0.17	-.089
44 40	1 457 718.29	101.266 50	72.269 848	345.25	1.231 752	0.15	-.085
44 41	1 463 794.28	101.266 83	72.249 133	345.35	1.231 761	0.15	-.082
44 42	1 469 870.29	101.267 17	72.228 412	345.45	1.231 770	0.15	-.078
44 43	1 475 946.32	101.267 33	72.207 685	345.55	1.231 779	0.13	-.075
44 44	1 482 022.36	101.267 67	72.186 952	345.67	1.231 787	0.12	-.071
44 45	1 488 098.42	101.268 00	72.166 212	345.75	1.231 794	0.12	-.068
44 46	1 494 174.50	101.268 33	72.145 467	345.87	1.231 801	0.12	-.064
44 47	1 500 250.60	101.268 67	72.124 715	345.97	1.231 808	0.10	-.061
44 48	1 506 326.72	101.268 83	72.103 957	346.07	1.231 814	0.10	-.057
44 49	1 512 402.85	101.269 17	72.083 193	346.17	1.231 820	0.10	-.054
44 50	1 518 479.00	101.269 50	72.062 423	346.27	1.231 826	0.08	-.050
44 51	1 524 555.17	101.269 83	72.041 647	346.38	1.231 831	0.08	-.046
44 52	1 530 631.36	101.270 17	72.020 864	346.47	1.231 836	0.07	-.043
44 53	1 536 707.57	101.270 33	72.000 076	346.58	1.231 840	0.07	-.039
44 54	1 542 783.79	101.270 67	71.979 281	346.68	1.231 844	0.05	-.036
44 55	1 548 860.03	101.271 00	71.958 480	346.77	1.231 847	0.05	-.032
44 56	1 554 936.29	101.271 33	71.937 674	346.88	1.231 850	0.05	-.028
44 57	1 561 012.57	101.271 67	71.916 861	347.00	1.231 853	0.03	-.025
44 58	1 567 088.87	101.271 83	71.896 041	347.08	1.231 855	0.03	-.021
44 59	1 573 165.18	101.272 17	71.875 216	347.18	1.231 857	0.02	-.018
45 00	1 579 241.51		71.854 385		1.231 858		-.014

TRANSVERSE MERCATOR PROJECTION

WYOMING
ALL ZONES

Lat.	y_o feet	Δy_o per second	H	ΔH per second	V	ΔV per second	a
45 00	1 579 241.51	101.272 50	71.854 385	347.28	1.231 858	0.02	-.014
45 01	1 585 317.86	101.272 83	71.833 548	347.40	1.231 859	+ 0.02	-.010
45 02	1 591 394.23	101.273 17	71.812 704	347.50	1.231 860	0.00	-.007
45 03	1 597 470.62	101.273 33	71.791 854	347.58	1.231 860	- 0.02	-.003
45 04	1 603 547.02	101.273 83	71.770 999	347.70	1.231 859	0.00	.000
45 05	1 609 623.45	101.274 00	71.750 137	347.80	1.231 859	- 0.02	+.004
45 06	1 615 699.89	101.274 33	71.729 269	347.90	1.231 858	- 0.03	.008
45 07	1 621 776.35	101.274 50	71.708 395	348.00	1.231 856	- 0.03	.011
45 08	1 627 852.82	101.274 83	71.687 515	348.12	1.231 854	- 0.03	.015
45 09	1 633 929.31	101.275 33	71.666 628	348.20	1.231 852	- 0.05	.018
45 10	1 640 005.83	101.275 50	71.645 736	348.32	1.231 849	- 0.05	.022
45 11	1 646 082.36	101.275 83	71.624 837	348.40	1.231 846	- 0.07	.026
45 12	1 652 158.91	101.276 00	71.603 933	348.52	1.231 842	- 0.07	.029
45 13	1 658 235.47	101.276 50	71.583 022	348.62	1.231 838	- 0.07	.033
45 14	1 664 312.06	101.276 67	71.562 105	348.72	1.231 834	- 0.08	.036
45 15	1 670 388.66	101.277 00	71.541 182	348.82	1.231 829	- 0.10	.040
45 16	1 676 465.28	101.277 33	71.520 253	348.92	1.231 823	- 0.08	.044
45 17	1 682 541.92	101.277 50	71.499 318	349.02	1.231 818	- 0.12	.047
45 18	1 688 618.57	101.278 00	71.478 377	349.13	1.231 811	- 0.10	.051
45 19	1 694 695.25	101.278 17	71.457 429	349.22	1.231 805	- 0.12	.054
45 20	1 700 771.94		71.436 476		1.231 798		.058

TRANSVERSE MERCATOR PROJECTION

WYOMING

ALL ZONES

$\Delta\lambda''$	b	Δb	c	$\Delta\lambda''$	b	Δb	c
0	0.000	+0.107	0.000				
100	+0.107	+0.106	0.000	3100	+1.913	-0.031	-0.133
200	+0.213	+0.105	-0.001	3200	+1.882	-0.040	-0.135
300	+0.318	+0.104	-0.002	3300	+1.842	-0.048	-0.136
400	+0.422	+0.104	-0.003	3400	+1.794	-0.058	-0.135
500	+0.526	+0.102	-0.005	3500	+1.736	-0.068	-0.133
600	+0.628	+0.100	-0.007	3600	+1.668	-0.077	-0.131
700	+0.728	+0.098	-0.010	3700	+1.591	-0.087	-0.128
800	+0.826	+0.096	-0.014	3800	+1.504	-0.098	-0.124
900	+0.922	+0.093	-0.018	3900	+1.406	-0.108	-0.120
1000	+1.015	+0.090	-0.022	4000	+1.298	-0.121	-0.115
1100	+1.105	+0.087	-0.027	4100	+1.177	-0.132	-0.109
1200	+1.192	+0.084	-0.032	4200	+1.045	-0.144	-0.101
1300	+1.276	+0.080	-0.038	4300	+0.901	-0.155	-0.091
1400	+1.356	+0.077	-0.043	4400	+0.746	-0.169	-0.078
1500	+1.433	+0.072	-0.049	4500	+0.577	-0.180	-0.063
1600	+1.505	+0.068	-0.055	4600	+0.397	-0.193	-0.045
1700	+1.573	+0.064	-0.061	4700	+0.204	-0.204	-0.025
1800	+1.637	+0.058	-0.067	4800	0.000	-0.213	0.000
1900	+1.695	+0.053	-0.073	4900	-0.213	-0.224	+0.026
2000	+1.748	+0.049	-0.079	5000	-0.437	-0.241	+0.053
2100	+1.797	+0.042	-0.085	5100	-0.678	-0.254	+0.084
2200	+1.839	+0.036	-0.091	5200	-0.932	-0.270	+0.117
2300	+1.875	+0.029	-0.096	5300	-1.202	-0.286	+0.153
2400	+1.904	+0.023	-0.101	5400	-1.488	-0.301	+0.191
2500	+1.927	+0.017	-0.106	5500	-1.789	-0.317	+0.232
2600	+1.944	+0.009	-0.111	5600	-2.106	-0.335	+0.275
2700	+1.953	+0.002	-0.116	5700	-2.441	-0.352	+0.321
2800	+1.955	-0.006	-0.121	5800	-2.793	-0.371	+0.371
2900	+1.949	-0.014	-0.125	5900	-3.164	-0.390	+0.426
3000	+1.935	-0.022	-0.130	6000	-3.554		+0.487

$F = 7.12.x\ 10^{-13}$

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, WYOMING-EAST, EAST-CENTRAL, WEST AND WEST-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	x'	d
0	2.04972	1992	0	0.00
100,000	2.06964	2007	50,000	+ 0.01
200,000	2.08971	2025	100,000	+ 0.02
300,000	2.10996	2042	150,000	+ 0.04
400,000	2.13038	2060	200,000	+ 0.07
500,000	2.15098	2077	250,000	+ 0.08
600,000	2.17175	2095	300,000	+ 0.07
700,000	2.19270	2113	350,000	+ 0.04
800,000	2.21383	2132	400,000	- 0.04
900,000	2.23515	2151		
1,000,000	2.25666	2171		
1,100,000	2.27837	2190		
1,200,000	2.30027	2211		
1,300,000	2.32238	2232		
1,400,000	2.34470	2252		
1,500,000	2.36722	2273		
1,600,000	2.38995	2296		
1,700,000	2.41291			

TRANSVERSE MERCATOR PROJECTION

Wyoming

All zones

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

y	M	ΔM
0	0.008 4565	822
100,000	0.008 5387	829
200,000	0.008 6216	835
300,000	0.008 7051	843
400,000	0.008 7894	849
500,000	0.008 8743	857
600,000	0.008 9600	865
700,000	0.009 0465	872
800,000	0.009 1337	879
900,000	0.009 2216	888
1,000,000	0.009 3104	896
1,100,000	0.009 4000	904
1,200,000	0.009 4904	912
1,300,000	0.009 5816	921
1,400,000	0.009 6737	929
1,500,000	0.009 7666	938
1,600,000	0.009 8604	947
1,700,000	0.009 9551	

e

y \ x'	100,000	200,000	300,000	400,000
0	0.0	0.1	0.3	0.6
500,000	0.0	0.1	0.3	0.7
1,000,000	0.0	0.1	0.3	0.8
1,500,000	0.0	0.1	0.4	0.9

TRANSVERSE MERCATOR PROJECTION

WYOMING

All 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	-255.5	0.9999412	175,000	-103.6	0.9999761
5,000	-255.4	0.9999412	180,000	- 94.8	0.9999782
10,000	-255.0	0.9999413	185,000	- 85.7	0.9999803
15,000	-254.4	0.9999414	190,000	- 76.4	0.9999824
20,000	-253.5	0.9999416	195,000	- 66.8	0.9999846
25,000	-252.4	0.9999419	200,000	- 57.0	0.9999869
30,000	-251.0	0.9999422	205,000	- 47.0	0.9999892
35,000	-249.4	0.9999426	210,000	- 36.7	0.9999915
40,000	-247.6	0.9999430	215,000	- 26.2	0.9999940
45,000	-245.5	0.9999435	220,000	- 15.4	0.9999965
50,000	-243.1	0.9999440	225,000	- 4.3	0.9999990
55,000	-240.5	0.9999446	230,000	+ 7.0	1.0000016
60,000	-237.6	0.9999453	235,000	+ 18.5	1.0000043
65,000	-234.5	0.9999460	240,000	+ 30.3	1.0000070
70,000	-231.2	0.9999468	245,000	+ 42.3	1.0000097
75,000	-227.6	0.9999476	250,000	+ 54.6	1.0000126
80,000	-223.7	0.9999485	255,000	+ 67.1	1.0000155
85,000	-219.7	0.9999494	260,000	+ 79.9	1.0000184
90,000	-215.3	0.9999504	265,000	+ 92.9	1.0000214
95,000	-210.7	0.9999514	270,000	+106.2	1.0000245
100,000	-205.9	0.9999526	275,000	+119.7	1.0000276
105,000	-200.8	0.9999538	280,000	+133.5	1.0000307
110,000	-195.5	0.9999550	285,000	+147.5	1.0000340
115,000	-189.9	0.9999563	290,000	+161.7	1.0000372
120,000	-184.1	0.9999576	295,000	+176.3	1.0000406
125,000	-178.0	0.9999590	300,000	+191.0	1.0000440
130,000	-171.7	0.9999605	305,000	+206.0	1.0000474
135,000	-165.1	0.9999620	310,000	+221.3	1.0000510
140,000	-158.3	0.9999636	315,000	+236.8	1.0000545
145,000	-151.2	0.9999652	320,000	+252.5	1.0000581
150,000	-143.9	0.9999669	325,000	+268.5	1.0000618
155,000	-136.3	0.9999686	330,000	+284.8	1.0000656
160,000	-128.5	0.9999704	335,000	+301.3	1.0000694
165,000	-120.4	0.9999723	340,000	+318.0	1.0000732
170,000	-112.1	0.9999741	345,000	+335.0	1.0000771

TRANSVERSE MERCATOR PROJECTION

WYOMING

All zones

x' (feet)	Scale in units of 7th place of logs	Scale expressed as a ratio
350,000	+352.3	1.0000811
355,000	+369.8	1.0000851
360,000	+387.5	1.0000892
365,000	+405.5	1.0000934
370,000	+423.7	1.0000976
375,000	+442.2	1.0001018
380,000	+460.9	1.0001061
385,000	+479.9	1.0001105
390,000	+499.1	1.0001149
395,000	+518.6	1.0001194
400,000	+538.3	1.0001239
405,000	+558.3	1.0001286
410,000	+578.5	1.0001332
415,000	+599.0	1.0001379
420,000	+619.7	1.0001427
425,000	+640.6	1.0001475
430,000	+661.9	1.0001524
435,000	+683.3	1.0001573
440,000	+705.0	1.0001623
445,000	+727.0	1.0001674
450,000	+749.2	1.0001725
455,000	+771.6	1.0001777
460,000	+794.3	1.0001829
465,000	+817.3	1.0001882
470,000	+840.5	1.0001935
475,000	+863.9	1.0001989

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

For Lambert Projection

$\Delta\phi'$ as argument

$\Delta\phi'$	Corr'n (Plus)	$\Delta\phi'$	Corr'n (Plus)
1	0	31	34
2	0	32	36
3	0	33	38
4	1	34	40
5	1	35	43
6	1	36	45
7	2	37	48
8	2	38	51
9	3	39	53
10	4	40	56
11	4	41	59
12	5	42	62
13	6	43	65
14	7	44	68
15	8	45	71
16	9	46	74
17	10	47	77
18	11	48	81
19	13	49	84
20	14	50	88
21	15	51	91
22	17	52	95
23	19	53	98
24	20	54	102
25	22	55	106
26	24	56	110
27	26	57	114
28	27	58	118
29	29	59	122
30	32	60	126

$\Delta\phi'$ is the difference in latitude in minutes of the ends of the line.

For Lambert or transverse Mercator Projection

Δy or Δx	Corr'n (Plus)
10,000	0
20,000	0
30,000	1
40,000	2
50,000	2
60,000	3
70,000	5
80,000	6
90,000	8
100,000	10
110,000	11
120,000	14
130,000	16
140,000	19
150,000	21
160,000	24
170,000	27
180,000	31
190,000	34
200,000	38
210,000	42
220,000	46
230,000	50
240,000	55
250,000	59
260,000	64
270,000	69
280,000	74
290,000	80
300,000	86
310,000	91
320,000	97
330,000	103
340,000	110
350,000	116

*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.