# PLANE COORDINATES CALCULATED FROM GEOGRAPHIC POSITION OF

## STATION "SPINDLE TOP"

Latitude   30° 02' 11".077
Longitude  94° 03' 36".169

### Zone-South Central

### -TEXAS-

(1) R for Latitude 30° 02' (From tables)                        = 37,007,525.14 Ft.
(2) 11".077 times one second, (tabular diff.,
     101.01533)                                         =   — 1,118.95 Ft.

(3) R. For Station                                    R = 37,006,406.19 Ft.

(4) Theta angle for Longitude 94° 03'  = 2° 25' 30".2433
(5) 36".169 times constant 0.48991264  =   — 17".7196

(6) Theta angle for station            = $\neq$ 2° 25' 12".5237

(7) Sine Theta                         =   .04222 69475

(8) X = R Sine Theta $\neq$ C                              = 1,562,667.57 Ft.
(9) C is value of X assigned to Central Meridian      = 2,000,000.00 Ft.

(10) X For Station                              X = 3,562.667.57 Ft.
(11) Cosine Theta                      =   .99910 80450

(12) $Y = R_b$ — R Cosine Theta

(13) $R_b$ (origin)                                     = 37,807,440.38 Ft.
(14) R times Cosine Theta                             = 36,973,398.13 Ft.

(15) Y For Station                              Y =   834,042.25 Ft.


REQUIRED:  A copy of "Plane coordinate Projection
          Tables" Texas Lambert G-141.


FROM:      Director, U. S. Coast & Geodetic Survey
          Washington 25, D. C.



Ten place sine and cosine tables.

74231

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            Washington 25, D. C.



Ten place sine and cosine tables.

74232

# GEOGRAPHIC POSITIONS FROM LAMBERT COORDINATES STATE - ZONE TEXAS
## SOUTH CENTRAL U. S. COAST AND GEODETIC STATION TATLUM
### 1933,  X=3,230,063.81'    Y = 463, 18⊀.37
Constant $\ell$ = 0".48991264

| | | |
|---|---|---|
| C | | − 2000,000 |
| X | | 3,230,063.81 |
| $X' = X - C$ | = | 1,230,063.81 |
| $\tan \Theta = X' \div (R_b - Y)$ | = | .03293 84973 |
| $\Theta$ | = | 1° 53' 11".597 |
| $\cos \Theta$ | = | 99945 79685 |
| $R = (R_b - Y) \div \cos \Theta$ | = | 37,364,512.70 |
| $\emptyset$ | | 29° 03' 05".537 |

| | | |
|---|---|---|
| $R_b$ | = | 37,807,440.38 |
| Y | = | 463,180.37 |
| $R_b - Y$ | = | 37,344,260.01 |
| $\Theta$ | | 6791".597 |
| $\Delta\lambda = \Theta \cdot \ell$ | | 1386".2874 |
| $\Delta\lambda$ | = | 3° 51' 02".874 |
| Central Meridian | = | 99° 00' 00".000 |
| $\lambda = CM - \Delta\lambda$ | = | 95° 08' 57".126 |

| | | |
|---|---|---|
| $R_b$ (origin) | = | 37,807.440.38 |
| Y | = | 463,180.37 |
| $R_b - Y$ | = | 37,344,260.01 |
| $\div \cos.$ | = | .99945 79685 |
| R | = | 37,364,512.70 |
| R for | = | 37,365,071.94  = 29° 03' ∠ |

$$R - R \text{ for } 29° 03' = \frac{559.24}{100.99} = 05".537$$
Tabular diff. for one second =

$\Delta\lambda$ = 6791."597 ÷ 0.48991264 = 1386."2874)
÷60 = 23.1047900 ÷ 60 = 3° 85079833
(or ÷ 3600) _____ x 60

51' 0478998
x 60
_____

2".873988

$\Delta\lambda$ = 3° 51' 02".874

14

# General Land Office

### State of Texas

## Austin

14

July 13, 1954

OFFICE MEMO

T O

## MR. WILLIAM SHIRRIFFS

As requested, I have examined the General Land
Office Map showing St. Charles, Aransas and Red Fish Bays
State Tracts. It is noted that the U. S. C. & G. S. Station
Lamar 1931 was adopted for the origin of these tracts.

The original map was drawn before the General Land
Office had adopted the Texas coordinate system. In its caption,
it was stated that all lines are parallel to or perpendicular to
a true North line through Station Lamar, and all tracts are one
mile North and South, one-half mile East and West. The map was
redrawn and dated December 15, 1949, and coordinates adopted for
State tracts. The published coordinates for Station Lamar are:

$$x = 2,647,179.04 \text{ feet}$$
$$y = \phantom{2,6}115,219.73 \text{ feet}$$

converted into varas

$$x = 952,984.45 \text{ varas}$$
$$y = \phantom{95}41,479.10 \text{ varas}$$

The longitude of Lamar is 96° 59' 31".694. The
mapping angle computed = 0° 59' 01".2385. The grid bearing
of tract lines are S 0° 59' 01".2385 East 1900.8 varas or a
right angle to this line S 89° 00' 58".7615 West 1900.8 varas.
The scale factor for computation on Lambert grid distances was
not applied, hence all distances remain as originally stated.

Respectfully submitted,

Curtis R. Hale

74234

Current Misc^h Infor 84

Plane Coordinates

Calculated from

Geographic Position

of "Spindle Top"