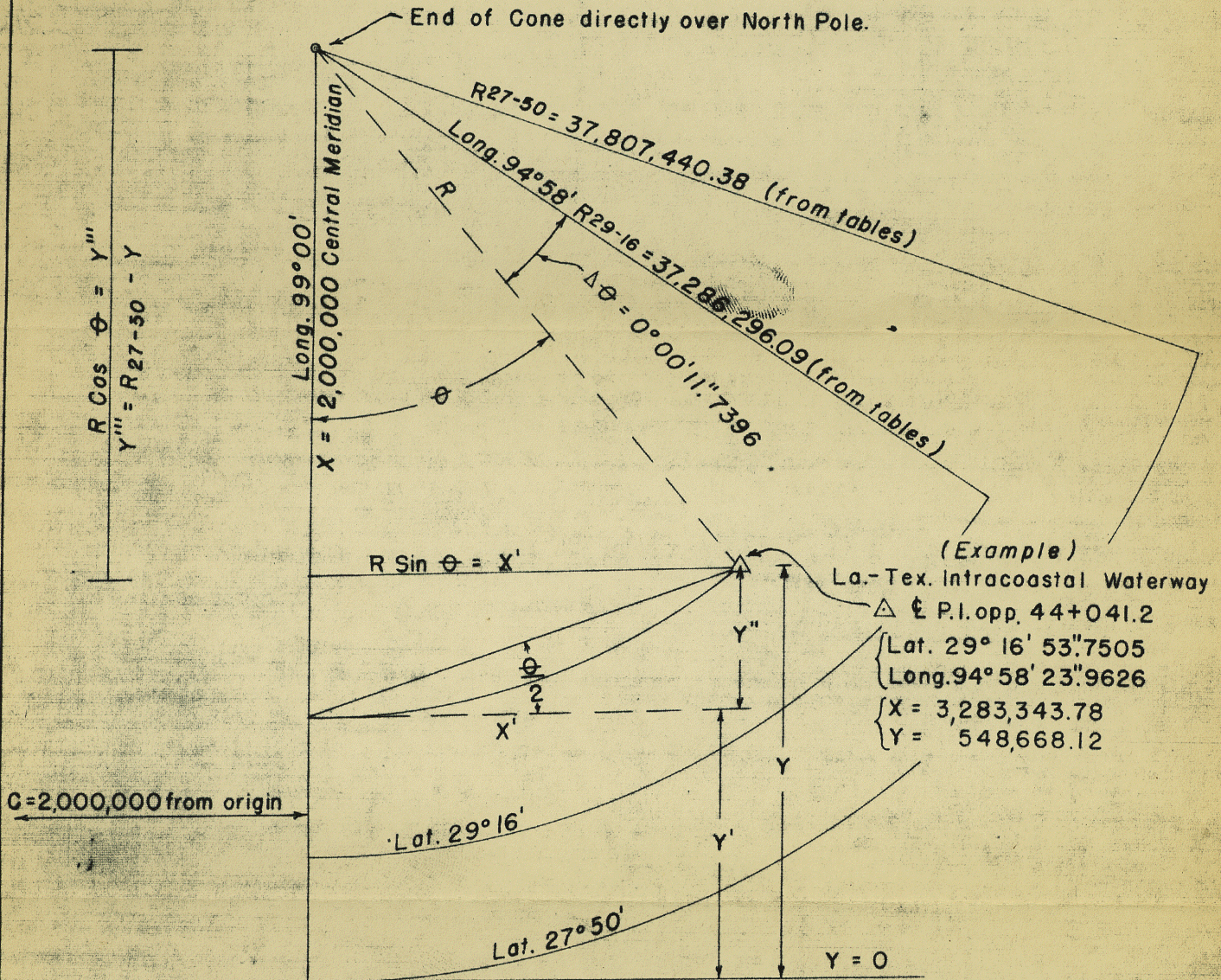


LAMBERT PROJECTION DIAGRAM

(SEE PAGES 4,6 AND 54 U.S.C. AND G.S. SPEC. PUB. NO. 193)



Derivation of Formulae from Diagram:

$$Y' = R_{27-50} - R$$

$$Y'' = R - R \cos \theta$$

$$= R(1 - \cos \theta); 1 - \cos \theta = 2 \sin^2 \frac{\theta}{2}$$

$$= 2 R \sin^2 \frac{\theta}{2}$$

$$= X' \tan \frac{\theta}{2}$$

$$Y''' = R_{27-50} - Y$$

$$= R \cos \theta$$

$$Y = Y' + Y''$$

$$= R_{27-50} - R + 2 R \sin^2 \frac{\theta}{2}$$

$$= R_{27-50} - R \cos \theta$$

$$X' = X - 2,000,000$$

$$\tan \theta = \frac{X'}{Y''}$$

$$\tan \frac{\theta}{2} = \frac{Y''}{X'}$$

LA.-TEX. INTRACOASTAL WATERWAY GEODETIC POSITIONS FROM LAMBERT COORDINATES

(CALCULATING MACHINE COMPUTATION)

(Example)

STATE Texas ZONE S. C. STATION △ 4 P.I. opp. 44+041.2

X	3,283,343.78	R _b + A	37,807,440.38
C	-2,000,000.00	Y	- 548,668.12
X'	1,283,343.78	Y'''	37,258,772.26

Tan θ = X' ÷ Y'''	0.0344440705	θ	1° 58' 21."7919
$\frac{1}{2}$ Tan θ	0.0172220352	θ for next lower min. of λ	1° 58' 33."5315
Correction	- 51 053	Difference Δ θ	+ 0° 00' 11."7396
Tan $\frac{\theta}{2}$	0.0172169299	1" of λ = 0."4899126408 of θ	

Y	548,668.12	λ	94° 58' 23."9626
Y'' = X' Tan $\frac{\theta}{2}$	+ 22,095.24	1" of φ = 100.99600 ft.	
Y'	+ 526,572.88	5,428.59 + 100.99600 = 53."7505	
Y" when φ = 29° 16'	- 521,144.29	φ	29° 16' 53."7505
Cor. for φ "	5,428.59		

74211

CURRENT
MISCELLANEOUS
INFORMATION
LAMBERT
PROJECTION
DIAGRAM
U.S. C AND G.S.