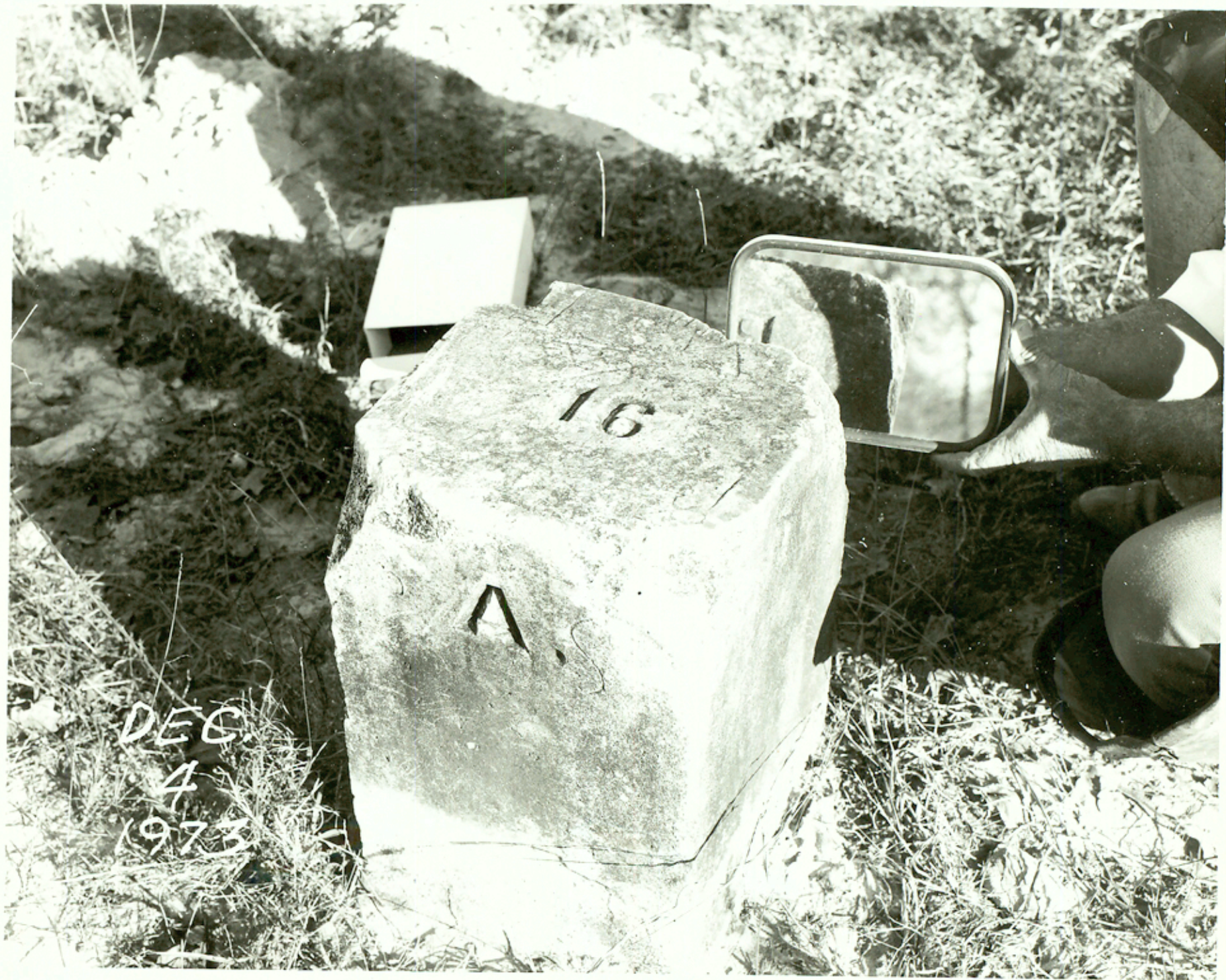




1973

center 50213



DEC  
4  
1973

POLARIS OBSERVATION (ANY TIME)  
Watch is 20" Fast

Date 7-28-70

Party Chief: Frye

Highway:	SH 16			Λ	:	Frye
County:	Atascosa			M	:	Willing
	Λ	:	P.I. # 2	Latitude:		From
F.S. at :			P.I. # 1	Longitude:		Map
		Angle turned	Clockwise	From Star to	P.I. # 1 (mark)	
	Angle			Time		
2	1.	18-55-04.9		:	:	
-	1	2.	00-14-18.8	→	1	9:24:47
Net +	3	3.	18° 40' 46.1" ✓	:	:	
	5	4.	98-54-57.6	:	:	
-	4	5.	120-15-04.5	→	2	9:29:38
Net +	6	6.	18° 39' 53.1" ✓	:	:	
+3 (1/2) Aver.		18° 40' 19.0" ✓		1 + 2 (1/2)		9:27:12.5 ✓

C.D.T  
C.S.T

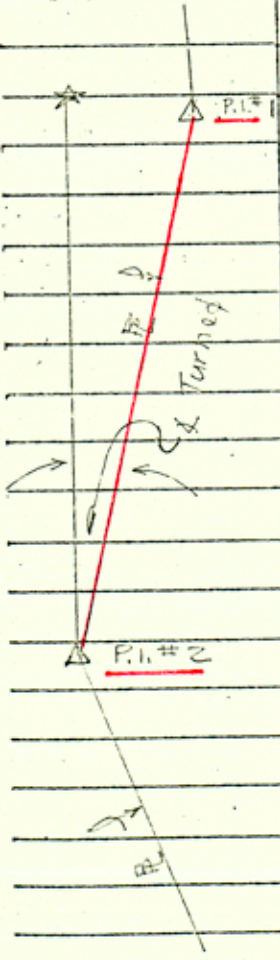
Watch time	8:27:13 P.M.
Watch Correction (slow is <sup>plus</sup> minus)	- : : 20
Standard Time (90th meridian)	8:26:53 P.M.
Correction to 24 hour basis	+ 12:
90th Meridian Time	20:26:53 P.M.
Correction for time zone	+ 6:
GCT	26:26:53
GCT (Date: 7-28-70 )	2:26:53
GHA 0 <sup>h</sup> JUL 28 70, 2963 (Table 1)	274.23.1
Corr. for 2 hr. 26 min. (Table 5)	+ 36.36.0
Corr. for 53 sec. (Table 5)	+ 13.3
GHA	311.12.4
Less west longitude (from map)	- 98.39.4
LHA (Sec. 14)	212.37.0
t=LHA or 360-LHA (use smaller)	147.23.0
h=True Altitude (Table 6)	28.25.7
p=Polar Distance (Table 3)	0-52.482

$$z = \frac{\sin t}{\cos h} \quad p = .53901582 \times 52.482 = 32.167616$$

$$87441326 \quad 0^{\circ} 32' 10.1''$$

Clockwise Angle, mark to Star 18° 40' 20"  
 Bearing of Polaris N 0° 32' 10.1" E  
 N 19° 12' 30.1" E

counter 50221 Bearing of Survey Line



POLARIS OBSERVATION (ANY TIME)

2<sup>nd</sup> Observation

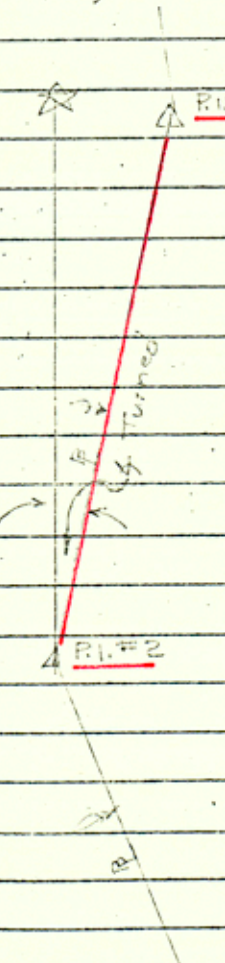
Watch is 20" Fast

Date 7-27-70

Party Chief: Frye

Highway:	5416			Λ	:	Frye
County:	Atascosa			Ⓜ	:	Ullman
	Λ	:	P.I. # X #2	Latitude:		} From Map
F.S. at:		:	P.I. # X #1	Longitude:		
			Angle turned Clockwise From Star To	P.I. #		(Mark)
	Angle			Time		
2	1.	18-44-33.2		:	:	
-1	2.	05-02-37.0	→ 1	9:19:35		
Net +3	3.	18°41'56.2" ✓		:	:	
5	4.	192-44-21.3		:	:	
-4	5.	192-02-52.1	→ 2	9:22:18		
Net +6	6.	18°41'29.2" ✓		:	:	
-2(1/2)	Aver.	18°41'42.7" ✓	1+2(1/2)	9:20:54 ✓		C.D.T

Watch time		8:20:54 P.M.	C.S.T
Watch Correction (slow is minus)		- : 20	
Standard Time (90th meridian)		8:20:34 P.M.	
Correction to 24 hour basis		+ 12:	
90th Meridian Time		20:20:34 P.M.	
Correction for time zone		+ 6:	
GCT		26:20:34	
GCT (Date: 7-28-70 )		2:20:34	
GHA 0 <sup>h</sup> July 28-70, 1963 (Table 1)		274.23.1	
Corr. for 2 hr. 20 min. (Table 5)		+ 35.05.7	
Corr. for 34 sec. (Table 5)		+ 8.5	
GHA		309.37.3	
Less west longitude (from map)		- 98.35.4	
LHA (Sec. 14)		211.01.9	
t=LHA or 360-LHA (use smaller)		148.58.1	29-09.73
h=True Altitude (Table 6)		28.24.9	- 44.78.
p=Polar Distance (Table 3)		0-52.482	28-24.945
		.51551174	
Z = $\frac{\sin t}{\cos h}$		p = $\sin 148^{\circ}58'06'' \times 52.482 = 30.761055$	
		(is 28°24'54"	0°30'45.7"
		.87952402	
Clockwise Angle, mark to Star		18°41'43"	
Bearing of Polaris		N 0°30'45.7" E	
		N 19°12'28.7" E	
counter 50220	Bearing of Survey Line		



1st observ.

POLARIS OBSERVATION (ANY TIME)  
Watch is 20" fast

Date 7-27-70

Party Chief: Fryc

Highway: SH 16

⋈ : Fryc

County: Adams

☾ : Miller

⋈ : B P1 #2

Latitude: 29° 05' 44" - 29° 29' 18" From

F.S. at : B P1 #1

Longitude: 98° 35' 24" - 98° 35' 38" Map

Angle turned Clockwise from star to P1 #1 (mark)

	Angle	Time	
2 1.	18-52-12.1	:	:
- 1 2.	05-05-46.3	→ 1 9:04:27	D.S.T.
Net 3 3.	18-45-25.8 ✓	:	:
5 4.	18-52-06.5	:	:
- 4 5.	18-05-15.5	→ 2 9:16:22	
Net 6 6.	18-42-51.0 ✓	:	:
6+3 (1/2) Aver.	18° 44' 08.4 ✓✓	142(x) 9:10:24.5 ✓	C.D.T

Watch time

8:10:25 P.M.

C.S.T

Watch Correction (slow is <sup>plus</sup> minus)

- : : 20

Standard Time (90th meridian)

8:10:05 P.M.

Correction to 24 hour basis

+ 12:

90th Meridian Time

20:10:05 P.M.

Correction for time zone

+ 6:

GCT

26:10:05

GCT (Date: 7-28-70 )

2:10:05

GHA 0<sup>h</sup> July 28-70, 1963 (Table 1)

274.23.1

Corr. for 2 hr. 10 min. (Table 5)

+ 32.35.3

Corr. for 05 sec. (Table 5)

+ 1.3

GHA

306.59.7

Less west longitude (from map)

- 98.35.4

LHA (Sec. 14)

208.24.3

t=LHA or 360-LHA (use smaller)

151.35.7

h=True Altitude (Table 6)

28.23.8

p=Polar Distance (Table 3)

0-52.482

$Z = \frac{\sin t}{\cos h}$  p = .47570097 x 52.482 = 28.380599

.87967624 0° 28' 22.8"

Clockwise Angle, mark to Star

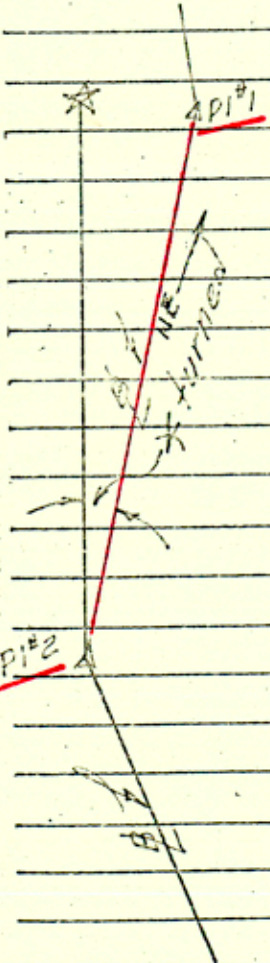
18° 44' 08"

Bearing of Polaris

N 0° 28' 22.8" E

N 19° 12' 30.8" E

Bearing of Survey Line



208.24.3  
51.8034

counter 50219



COMMISSION

REAGAN HOUSTON, CHAIRMAN  
DEWITT C. GREER  
CHARLES E. SIMONS

TEXAS HIGHWAY DEPARTMENT

P. O. Box 5687  
San Antonio, Texas 78284  
December 6, 1973

STATE HIGHWAY ENGINEER  
B. L. DEBERRY

IN REPLY REFER TO  
FILE NO.

Mr. Bob Armstrong, Commissioner  
General Land Office  
Austin, Texas 78701

Attention: Mr. R. C. Wisdom, Chief Engineer

Dear Sir:

RECEIVED

DEC 8 1973

General Land Office

In July 1970, the District 15 Survey Section began staking a survey baseline to control a mapping project in Bexar and Atascosa Counties on State Highway 16. The bearing control was established by Polaris Observations. Milepost Monuments No. 15 and No. 16, marking the Boundary Line between Bexar and Atascosa Counties, were recovered in sound condition. The line between the Mileposts was intersected with the mapping baseline and the angle was field measured. The resultant bearing obtained on the County Line at this crossing, was within thirty seconds (30") of the bearing called for in the Field Notes of the Boundary Line Survey made by Mr. E. B. Brown, Surveyor for Atascosa County, and Mr. W. M. Locke, County Surveyor of Bexar County; said survey was made between December 16, 1901 and February 25, 1902 and filed in the General Land Office on May 10, 1902.

Attached for your further use, is one (1) xerox copy each, of three (3) Polaris Observation Field Note Sheets and one (1) xerox copy of the sketch showing the bearing tie between the mapping survey baseline and the County Line. Also, five (5) 8" x 10" photographs of the subject Milepost Monuments are attached.

This office is grateful to you for the copy of the material filed in your office, relative to the Boundary Line Survey made by Mr. Brown and Mr. Locke.

Very truly yours,

R. O. Lytton  
District Engineer

By:

*Garrette H. Wilson, Jr.*  
Garrette H. Wilson, Jr.  
District Planning Engineer

MLF:b1  
Attachments a/s

counter 50218



DEC.  
4  
1973

CG 50017



DEC.  
4  
1973

UNIV. OF CALIF.





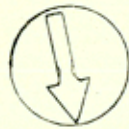
DEC 4 1973

7-29-70  
Ullevig

Cut in of Bexar/Atascosa  
on S.H. 16

County line

E.P.I. # 2  
67 + 15.19



(Atascosa Co.)

Not To Scale

checked  
11/30/73  
Frye

1.  $92^{\circ}-08'-00''$

6.  $192^{\circ}-48'-00''$

Au.  $92^{\circ}-08'-00''$

Sta. checked 11/30/73  
Frye

E.P.O.T.  
18 + 27.00

Oak Hub

County line @  $2300' S 10' W$

$N 68^{\circ}39'30'' W$

Oak Hub

23.02

County line

Approx. 2,945'

23.02

23.00

Cons Mon - Co. Line

M.P. # 16

Cons Mon - Co. Line

M.P. # 15

Cut Limestone  
Cut Sandstone Mon. w/ 16 scribed in  
top & letter A scribed in SW side  
& letter B scribed in NE side

Sta. 18 + 03.98 Cut Sandstone Mon.  
w/ 15 scribed in  
top & letter A

(Bexar Co.) scribed on S.W.  
side & letter B  
scribed on NE side

11/30/73  
Frye

E.P.I. # 1  
14 + 20.39

Calc. Frye 11/30/73  
Frye

counter 50222