

SUMMARY AND DATA SHEETS SUBMISSION OF  
LEAGUE CITY GPS CONTROL SURVEY

Re-establishment of Horizontal and Vertical  
Control Monuments for  
City of League City, Texas  
300 West Walker  
League City, Texas 77573

Published Date  
January 25, 2006

Prepared by:



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Final Coordinate Listing for League City GPS Control Survey

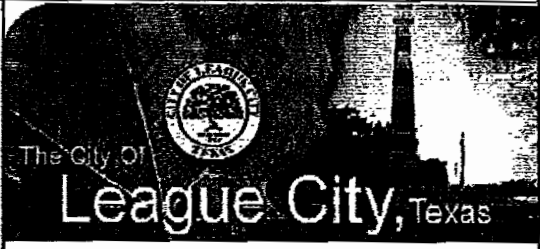
MON ID	NORTHING	EASTING	ELEV	LATITUDE	LONGITUDE
LC-2005-101	13743543.98	3208622.04	21.45	29°28'55.96871"N	95°06'04.60805"W
LC-2005-102	13727147.36	3203282.25	19.88	29°26'15.47794"N	95°07'11.15273"W
LC-2005-103	13729677.49	3184932.91	28.05	29°26'46.49654"N	95°10'37.65095"W
LC-2005-104	13758233.70	3194103.39	21.36	29°31'26.09033"N	95°08'43.32920"W
LC-2005-105	13758352.41	3213771.63	12.16	29°31'20.79663"N	95°05'00.75928"W
LC-2005-106	13753664.53	3231462.78	10.97	29°30'28.50450"N	95°01'42.41086"W
LC-2005-107	13758809.48	3237836.01	16.04	29°31'17.26521"N	95°00'28.33007"W
LC-2005-108	13750807.79	3240294.71	10.69	29°29'57.25819"N	95°00'03.61046"W
LC-2005-109	13753211.18	3235362.42	11.73	29°30'22.70575"N	95°00'58.47310"W
LC-2005-110	13742270.82	3238711.19	11.06	29°28'33.32139"N	95°00'24.81977"W
LC-2005-111	13741751.39	3231518.87	7.81	29°28'30.60565"N	95°01'46.35317"W
LC-2005-112	13748079.82	3232472.08	12.33	29°29'32.90470"N	95°01'33.14123"W
LC-2005-113	13754744.14	3226188.40	18.45	29°30'40.95645"N	95°02'41.66156"W
LC-2005-114	13751015.00	3222523.21	18.71	29°30'05.28176"N	95°03'24.54681"W
LC-2005-115	13755719.55	3220505.60	16.53	29°30'52.50618"N	95°03'45.57648"W
LC-2005-116	13746210.29	3221879.14	17.33	29°29'17.95391"N	95°03'33.66399"W
LC-2005-117	13741431.24	3216659.77	14.02	29°28'32.40196"N	95°04'34.50895"W
LC-2005-118	13747390.16	3214792.88	19.14	29°29'31.98568"N	95°04'53.36220"W
LC-2005-119	13746843.47	3210747.78	20.89	29°29'27.91558"N	95°05'39.32070"W
LC-2005-120	13753157.61	3209798.41	18.28	29°30'30.70849"N	95°05'47.67394"W
LC-2005-121	13750268.30	3200535.87	18.55	29°30'05.16705"N	95°07'33.53810"W
LC-2005-122	13754460.57	3194942.18	21.61	29°30'48.48064"N	95°08'35.24736"W
LC-2005-123	13749848.82	3189221.95	15.95	29°30'04.70903"N	95°09'41.67344"W
LC-2005-124	13741637.02	3190144.25	25.52	29°28'43.15078"N	95°09'34.29208"W
LC-2005-125	13738200.79	3191895.15	26.18	29°28'08.57856"N	95°09'15.76920"W
LC-2005-126	13743823.35	3201365.71	24.26	29°29'01.12068"N	95°07'26.56832"W
LC-2005-127	13736484.64	3210664.16	16.02	29°27'45.44077"N	95°05'44.17930"W
LC-2005-128	13729965.26	3208509.31	15.17	29°26'41.64150"N	95°06'11.00189"W
LC-2005-129	13743453.71	3191033.37	25.77	29°29'00.83843"N	95°09'23.56152"W
LC-2005-130	13752739.67	3216071.57	19.24	29°30'24.49516"N	95°04'36.86931"W
LC-2005-131	13759442.79	3222416.90	17.12	29°31'28.71012"N	95°03'22.53338"W
LC-2005-132	13758263.32	3224311.61	15.95	29°31'16.40644"N	95°03'01.54774"W
LC-2005-133	13748034.14	3206165.86	20.86	29°29'41.20939"N	95°06'30.69562"W
LC-2005-134	13762930.88	3235828.16	13.42	29°31'58.72369"N	95°00'49.45580"W
LC-2005-135	13758170.24	3230781.49	18.52	29°31'13.31699"N	95°01'48.38681"W
LC-2005-136	13748620.75	3225589.83	19.48	29°29'40.56597"N	95°02'50.77484"W
LC-2005-137	13726052.36	3187942.27	22.48	29°26'09.64933"N	95°10'04.97168"W
LC-2005-138	13727362.95	3198521.89	20.09	29°26'19.17180"N	95°08'04.88589"W
LC-2005-139	13738702.19	3207360.46	20.03	29°28'08.47432"N	95°06'20.69970"W

This report includes City Control Monuments that were undisturbed in the 2021 report.

*Found* *Found*

# LEAGUE CITY REFERENCE MARK LC-2005-115

<b>Monument Stamping:</b>	LC-2005-115
<b>X ECEF:</b>	-490196.852
<b>Y ECEF:</b>	-5533272.535
<b>Z ECEF:</b>	3123650.895
<b>Latitude:</b>	29°30'52.50618"N
<b>Longitude:</b>	95°03'45.57648"W
<b>Ellipsoid:</b>	-21.947
<b>GEOID03:</b>	-26.985
<b>Northing (m):</b>	4192751.703
<b>Easting (m):</b>	981612.07
<b>Elevation (m):</b>	5.038
<b>Northing (USft):</b>	13755719.55
<b>Easting (USft):</b>	3220505.60
<b>Elevation (USft):</b>	16.53
<b>Grid Scale Factor</b>	0.999868142
<b>ElevationScale Factor:</b>	1.00000344
<b>Combined Scale Factor:</b>	0.99987158
<b>Convergence:</b>	1°55'44"

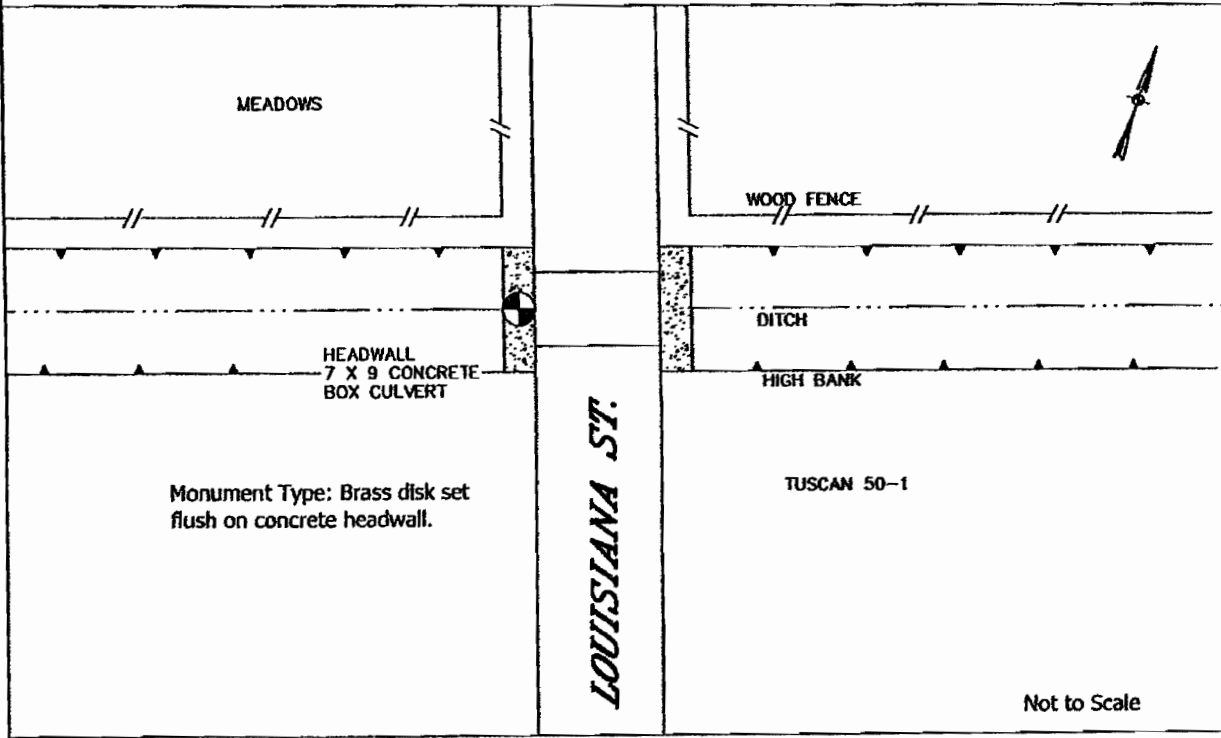


**Survey Method:** GPS Observation  
**Established By:** GeoSurv LLC  
**Date of GPS Observation:** (11/10/2005)  
**Notes:** This reference mark was established using procedures outlined in NOAA Technical Memorandum NOS NGS-58 Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2cm and 5cm) and the Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques by the FGCC 1989, and tied to the NGS CORS Network. CORS reference station used in the League City GPS Network are: TXLM, TXGA, NETP, ANGL. Orthometric Heights established with GEOID03.

Horizontal Datum: NAD83(CORS96)(EPOCH 2002.0000)  
 Project Zone: Texas South Central 4204  
 Vertical Datum: NAVD88 (2002 Adjustment) Continuously Operating Reference Station NETP (NGS PID AJ8805) was held for vertical

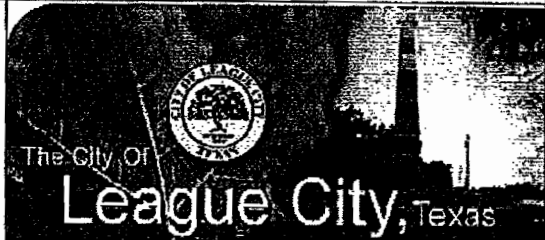
## General Location of Reference Mark

From the intersection of F.M. 2094 and F.M. 518, travel 0.7 miles East on F.M. 518 to Louisiana Street. Thence 0.7 miles South on Louisiana Street to the intersection of a drainage ditch. RM is located on the West headwall at the intersection of the drainage ditch and Louisiana Street.



# LEAGUE CITY REFERENCE MARK LC-2005-119

<b>Monument Stamping:</b>	LC-2005-119
<b>X ECEF:</b>	-493362.083
<b>Y ECEF:</b>	-5534280.123
<b>Z ECEF:</b>	3121384.746
<b>Latitude:</b>	29°29'27.91558"N
<b>Longitude:</b>	95°05'39.32070"W
<b>Ellipsoid:</b>	-20.603
<b>GEOID03:</b>	-26.970
<b>Northing (m):</b>	4190046.27
<b>Eastng (m):</b>	978637.88
<b>Elevation (m):</b>	6.367
<b>Northing (USft):</b>	13746843.47
<b>Eastng (USft):</b>	3210747.78
<b>Elevation (USft):</b>	20.89
<b>Grid Scale Factor</b>	0.999866945
<b>ElevationScale Factor:</b>	1.00000323
<b>Combined Scale Factor:</b>	0.99987017
<b>Convergence:</b>	1°54'49"

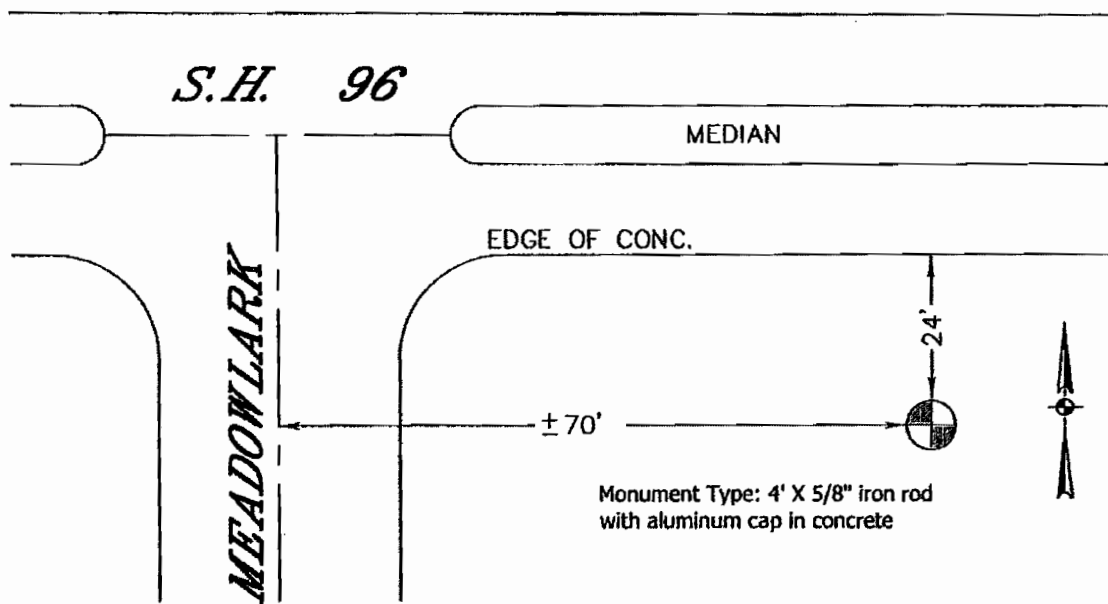


**Survey Method:** GPS Observation  
**Established By:** GeoSurv LLC  
**Date of GPS Observation:** (11/10/2005)  
**Notes:** This reference mark was established using procedures outlined in NOAA Technical Memorandum NOS NGS-58 Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2cm and 5cm) and the Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques by the FGCC 1989, and tied to the NGS CORS Network. CORS reference station used in the League City GPS Network are: TXLM, TXGA, NETP, ANG1. Orthometric Heights established with GEOID03.

Horizontal Datum: NAD83(CORS96)(EPOCH 2002.0000)  
 Project Zone: Texas South Central 4204  
 Vertical Datum: NAVD88 (2002 Adjustment) Continuously Operating Reference Station NETP (NGS PID AJ8805) was held for vertical

## General Location of Reference Mark

From the intersection of F.M. 518 and N. Calder Rd., travel South on N. Calder Rd. 0.9 miles to S.H. 96. Then East on 96, 0.6 miles to the intersection of Meadowlark Drive. RM is in an open field in the Southeast Intersection of 96 and Meadowlark Drive.

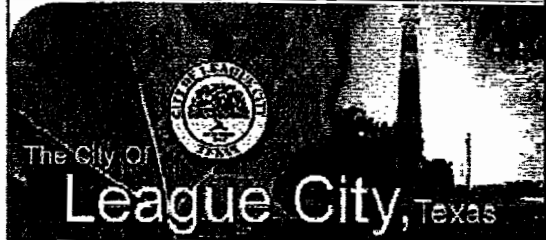


Monument Type: 4' X 5/8" iron rod with aluminum cap in concrete

Not to Scale

# LEAGUE CITY REFERENCE MARK LC-2005-120

<b>Monument Stamping:</b>	LC-2005-120
<b>X ECEF:</b>	-493501.571
<b>Y ECEF:</b>	-5533311.157
<b>Z ECEF:</b>	3123067.084
<b>Latitude:</b>	29°30'30.70849"N
<b>Longitude:</b>	95°05'47.67394"W
<b>Ellipsoid:</b>	-21.416
<b>GEOID03:</b>	-26.988
<b>Northing (m):</b>	4191970.822
<b>Easting (m):</b>	978348.511
<b>Elevation (m):</b>	5.572
<b>Northing (USft):</b>	13753157.61
<b>Easting (USft):</b>	3209798.41
<b>Elevation (USft):</b>	18.28
<b>Grid Scale Factor</b>	0.999867817
<b>ElevationScale Factor:</b>	1.00000336
<b>Combined Scale Factor:</b>	0.99987117
<b>Convergence:</b>	1°54'44"

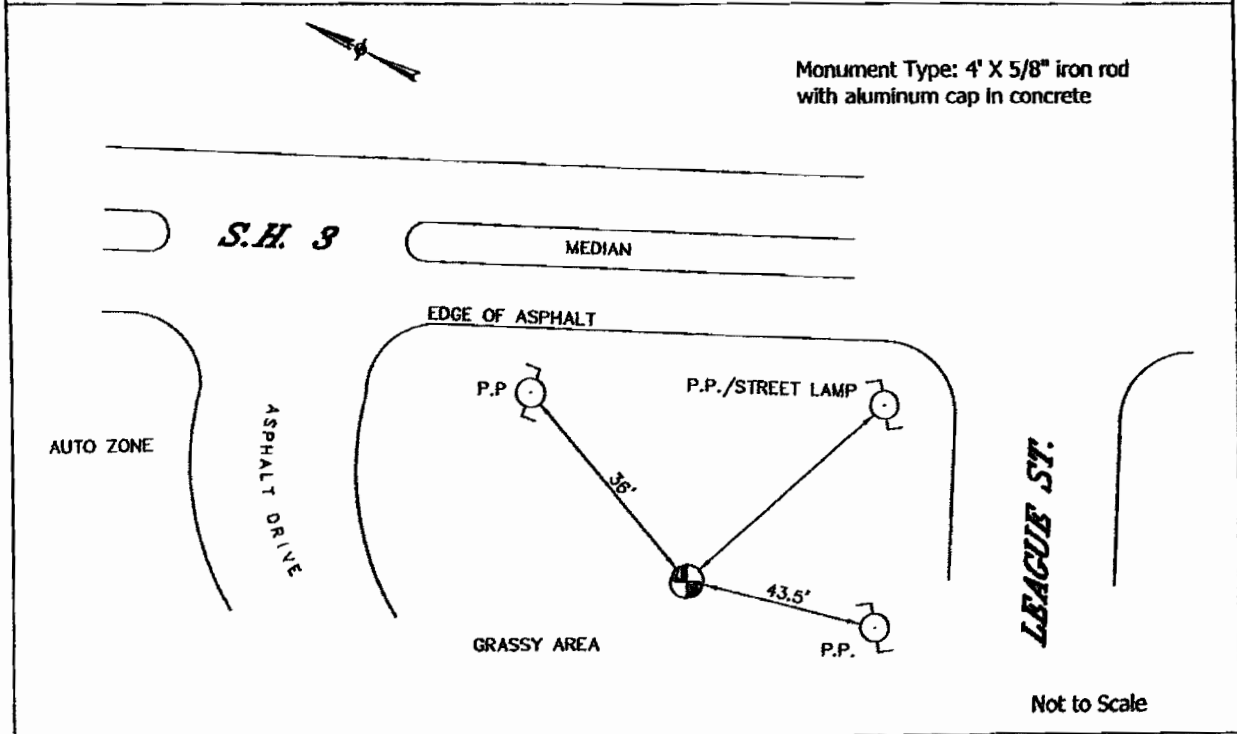


**Survey Method:** GPS Observation  
**Established By:** GeoSurv LLC  
**Date of GPS Observation:** (11/10/2005)  
**Notes:** This reference mark was established using procedures outlined in NOAA Technical Memorandum NOS NGS-58 Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2cm and 5cm) and the Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques by the FGCC 1989, and tied to the NGS CORS Network. CORS reference station used in the League City GPS Network are: TXLM, TXGA, NETP, ANG1. Orthometric Heights established with GEOID03.

**Horizontal Datum:** NAD83(CORS96)(EPOCH 2002.0000)  
**Project Zone:** Texas South Central 4204  
**Vertical Datum:** NAVD88 (2002 Adjustment) Continuously Operating Reference Station NETP (NGS PID AJ8805) was held for vertical

## General Location of Reference Mark

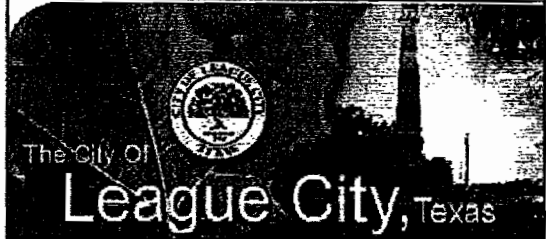
From the intersection of F.M. 518 and S.H. 3, travel North on S.H. 3 approximately 486 feet to the intersection of League St. Turn left onto League St. The RM is located in a grassy area at the Northwest intersection of League St. and S.H. 3 approximately 85 feet from the centerline of S.H. 3.



Not to Scale

# LEAGUE CITY REFERENCE MARK LC-2005-122

<b>Monument Stamping:</b>	LC-2005-122
<b>X ECEF:</b>	-497972.688
<b>Y ECEF:</b>	-5532640.803
<b>Z ECEF:</b>	3123543.786
<b>Latitude:</b>	29°30'48.48064"N
<b>Longitude:</b>	95°08'35.24736"W
<b>Ellipsoid:</b>	-20.419
<b>GEOID03:</b>	-27.007
<b>Northing (m):</b>	4192367.967
<b>Easting (m):</b>	973820.325
<b>Elevation (m):</b>	6.588
<b>Northing (USft):</b>	13754460.57
<b>Easting (USft):</b>	3194942.18
<b>Elevation (USft):</b>	21.61
<b>Grid Scale Factor</b>	0.999868081
<b>ElevationScale Factor:</b>	1.0000032
<b>Combined Scale Factor:</b>	0.99987128
<b>Convergence:</b>	1°53'22"

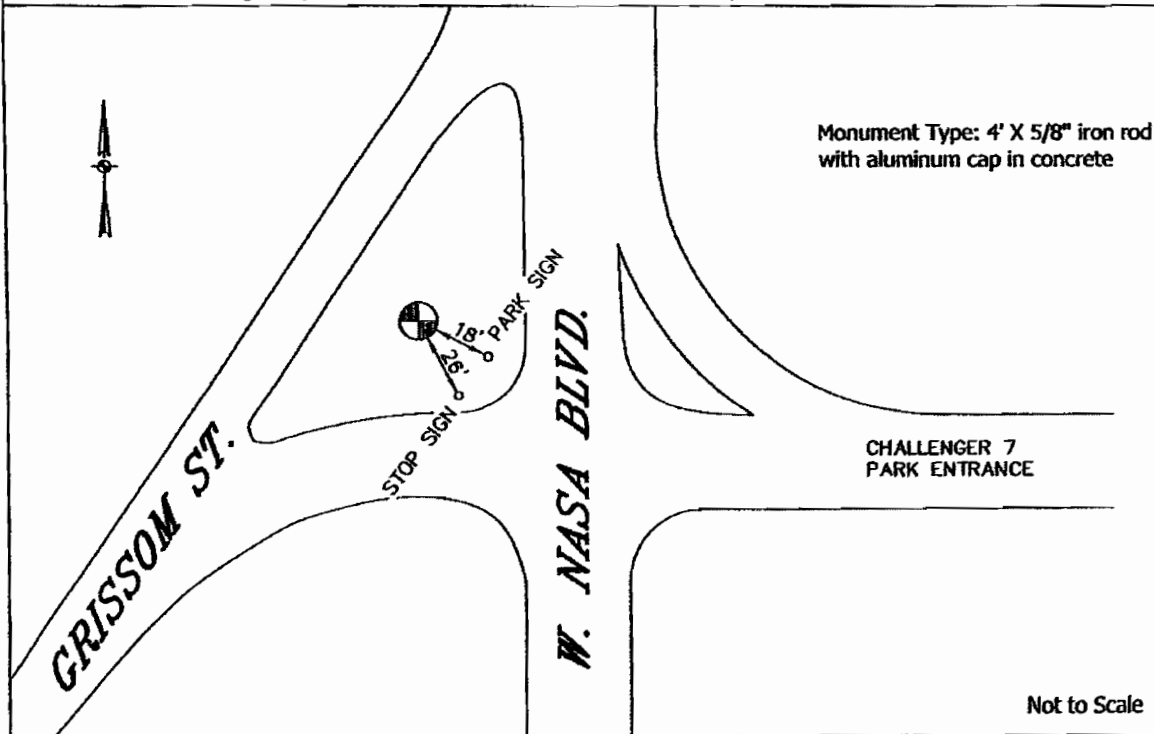


**Survey Method:** GPS Observation  
**Established By:** GeoSurv LLC  
**Date of GPS Observation:** (11/10/2005)  
**Notes:** This reference mark was established using procedures outlined in NOAA Technical Memorandum NOS NGS-58 Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2cm and 5cm) and the Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques by the FGCC 1989, and tied to the NGS CORS Network. CORS reference station used in the League City GPS Network are: TXLM, TXGA, NETP, ANG1. Orthometric Heights established with GEIOD03.

Horizontal Datum: NAD83(CORS96)(EPOCH 2002.0000)  
 Project Zone: Texas South Central 4204  
 Vertical Datum: NAVD88 (2002 Adjustment) Continuously Operating Reference Station NETP (NGS PID AJ8805) was held for vertical

## General Location of Reference Mark

From the intersection of W. Nasa Road 1 and I-45 South, travel .5 miles West on W. Nasa Road 1 to the intersection of W. Nasa Blvd. Go South on W. Nasa Blvd for 0.9 miles to the entrance of Challenger Park. RM is located in the grassy area at the Northwest intersection of park entrance.



# LEAGUE CITY REFERENCE MARK LC-2005-123

<b>Monument Stamping:</b>	LC-2005-123
<b>X ECEF:</b>	-499813.993
<b>Y ECEF:</b>	-5533139.766
<b>Z ECEF:</b>	3122370.022
<b>Latitude:</b>	29°30'04.70903"N
<b>Longitude:</b>	95°09'41.67344"W
<b>Ellipsoid:</b>	-22.141
<b>GEOID03:</b>	-27.004
<b>Northing (m):</b>	4190962.303
<b>Easting (m):</b>	972076.794
<b>Elevation (m):</b>	4.863
<b>Northing (USft):</b>	13749848.82
<b>Easting (USft):</b>	3189221.95
<b>Elevation (USft):</b>	15.95
<b>Grid Scale Factor</b>	0.999867445
<b>ElevationScale Factor:</b>	1.00000347
<b>Combined Scale Factor:</b>	0.99987091
<b>Convergence:</b>	1°52'50"

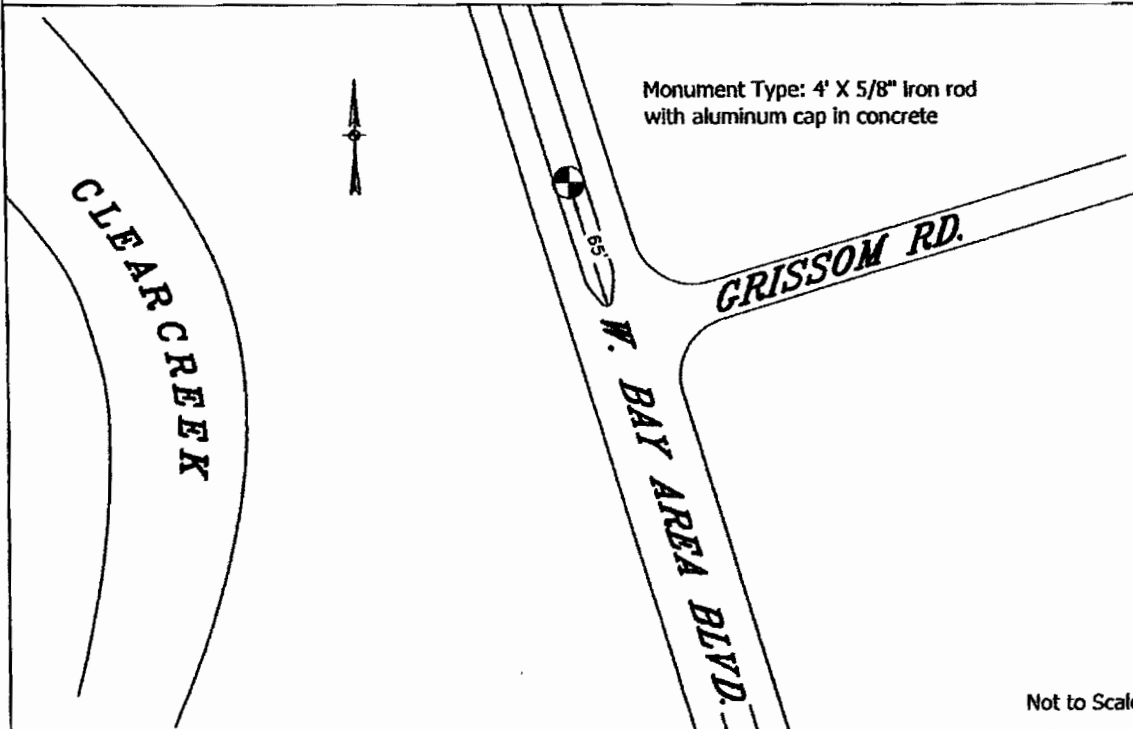


**Survey Method:** GPS Observation  
**Established By:** GeoSurv LLC  
**Date of GPS Observation:** (11/10/2005)  
**Notes:** This reference mark was established using procedures outlined in NOAA Technical Memorandum NOS NGS-58 Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2cm and 5cm) and the Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques by the FGCC 1989, and tied to the NGS CORS Network. CORS reference station used in the League City GPS Network are: TXLM, TXGA, NETP, ANG1. Orthometric Heights established with GEOID03.

Horizontal Datum: NAD83(CORS96)(EPOCH 2002.0000)  
 Project Zone: Texas South Central 4204  
 Vertical Datum: NAVD88 (2002 Adjustment) Continuously Operating Reference Station NETP (NGS PID AJ8805) was held for vertical

## General Location of Reference Mark

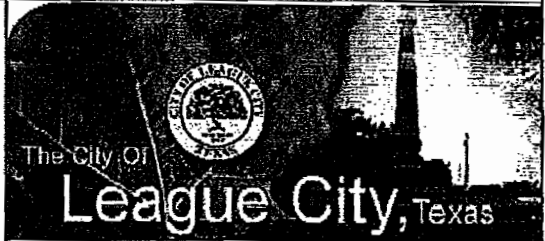
From the intersection of W. Bay Area Blvd. and F.M. 518, travel North on W. Bay Area Blvd 0.9 miles to the intersection of W. Bay Area Blvd. and Grissom Road. RM is in the grassy median North of Grissom Road and between the Northbound and Southbound lanes of W. Bay Area Blvd.



FOUND

# LEAGUE CITY REFERENCE MARK LC-2005-130

<b>Monument Stamping:</b>	None/ 3/4" I.R.
<b>X ECEF:</b>	-491610.480
<b>Y ECEF:</b>	-5533574.351
<b>Z ECEF:</b>	3122900.738
<b>Latitude:</b>	29°30'24.49516"N
<b>Longitude:</b>	95°04'36.86931"W
<b>Ellipsoid:</b>	-21.118
<b>GEOID03:</b>	-26.981
<b>Northing (m):</b>	4191843.434
<b>Easting (m):</b>	980260.575
<b>Elevation (m):</b>	5.863
<b>Northing (USft):</b>	13752739.67
<b>Easting (USft):</b>	3216071.57
<b>Elevation (USft):</b>	19.24
<b>Grid Scale Factor</b>	0.999867727
<b>ElevationScale Factor:</b>	1.00000331
<b>Combined Scale Factor:</b>	0.99987103
<b>Convergence:</b>	1°55'19"



**Survey Method:** GPS Observation  
**Established By:** GeoSurv LLC  
**Date of GPS Observation:** (11/10/2005)  
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Horizontal Datum: NAD83(CORS96)(EPOCH 2002.0000)  
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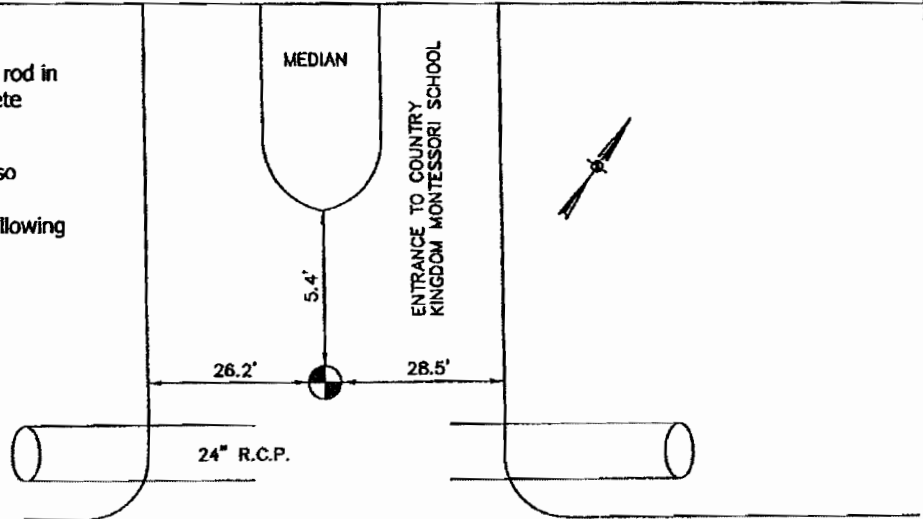
## General Location of Reference Mark

From the intersection of Texas Ave. and Power St., travel west on Power St. approx. 425' to the entrance of Country Kingdom Montessori School. RM is 3/4" Iron rod in construction joint at concrete driveway.

Monument Type: 3/4" iron rod in construction joint in concrete driveway.

Note: Reference mark is also known as League City GPS Monument #36 with the following superseded coordinates:

29°30'24.51030"N  
 95°04'36.85024"W  
 N 13752741.250 (USft)  
 E 3216073.202 (USft)  
 Hgt. 19.24 (USft)  
 NAD83  
 NGVD29 (87 Adj.)



**POWER STREET**

Not to Scale



# LEAGUE CITY REFERENCE MARK LC-2005-131

<b>Monument Stamping:</b>	None/ 5/8" IR
<b>X ECEF:</b>	-489530.299
<b>Y ECEF:</b>	-5532780.304
<b>Z ECEF:</b>	3124620.995
<b>Latitude:</b>	29°31'28.71012"N
<b>Longitude:</b>	95°03'22.53338"W
<b>Ellipsoid:</b>	-21.774
<b>GEOID03:</b>	-26.993
<b>Northing (m):</b>	4193886.549
<b>Easting (m):</b>	982194.637
<b>Elevation (m):</b>	5.219
<b>Northing (USft):</b>	13759442.79
<b>Easting (USft):</b>	3222416.90
<b>Elevation (USft):</b>	17.12
<b>Grid Scale Factor</b>	0.999868705
<b>ElevationScale Factor:</b>	1.00000341
<b>Combined Scale Factor:</b>	0.99987212
<b>Convergence:</b>	1°55'56"



**Survey Method:** GPS Observation  
**Established By:** GeoSurv LLC  
**Date of GPS Observation:** (11/10/2005)  
**Notes:** This reference mark was established using procedures outlined in NOAA Technical Memorandum NOS NGS-58 Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2cm and 5cm) and the Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques by the FGCC 1989, and tied to the NGS CORS Network. CORS reference station used in the League City GPS Network are: TXLM, TXGA, NETP, ANG1. Orthometric Heights established with GEOID03.

Horizontal Datum: NAD83(CORS96)(EPOCH 2002.0000)  
 Project Zone: Texas South Central 4204  
 Vertical Datum: NAVD88 (2002 Adjustment) Continuously Operating Reference Station NETP (NGS PID AJ8805) was held for vertical

## General Location of Reference Mark

From the intersection of F.M. 518 and Meadow Parkway, travel South 0.2 miles on Meadow Parkway to the intersection of Wood Hollow Dr. Thence West on Wood Hollow Dr. 0.1 miles to Greenshire Dr. Turn North on Greenshire Dr., 0.2 miles to its intersection with Pinewood Drive. RM is at the centerline intersection.

