

MISSOURI GEOGRAPHIC REFERENCE SYSTEM

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY
LAND SURVEY PROGRAM

PO Box 250, Rolla, Missouri 65402, (573) 368-2300

STATION NAME: BU-11

PID: AD9784

COUNTY: Buchanan

STATE: Missouri

TOWNSHIP: 57 NORTH, RANGE: 36 WEST, SECTION: NE 1/4 OF 36

USGS 7.5' QUAD: Halls

DATE MONUMENTED: 1993

MONUMENTED BY: MODNR

TECHNICAL DATA TABLE:

(All data in meters 1 meter = 3.28083333 feet)

HORIZONTAL: NAD 1983**VERTICAL:** NAVD 1988

DATE OF OBSERVATIONS: 2001

DATE OF OBSERVATIONS: 2001

DATE OF ADJUSTMENT: 2000

DATE OF ADJUSTMENT: 2000

ORDER: 1st

ORDER:

LATITUDE: 39°43'09.67343"

ELEVATION: 247.4

LONGITUDE: 94°53'08.14923"

ELLIPSOID HEIGHT: 215.54

MISSOURI COORDINATE SYSTEM 1983:

NORTH (Y): 394380.130

EAST (X): 816939.878

ZONE: West

CONVERGENCE: -00°14'47"

GRID FACTOR: .9999208

AZIMUTH INFORMATION:

STATION: BU-11

AZIMUTH MARK: BU-11A

GEODETTIC:

ASTRONOMIC: 90°05'04"

GRID: 90°19'51"

REMARKS

The HORIZONTAL POSITION was determined by GPS observations and adjusted by the National Geodetic Survey in 2000.

The AZIMUTH was determined by observation of Polaris with an estimated accuracy of 1 second of arc.

The ELEVATION was determined by GPS observations.

The ELLIPSOID HEIGHT was determined by GPS observations referenced to NAD83.

GEOID 99 was used in determining ELEVATION and ELLIPSOID HEIGHT.

STATION: BU-11

DESCRIPTION: The station is a standard DNR aluminum GRS disk stamped "BU-11, 1993", set in a 12 inch diameter concrete post flush with the ground surface. The station has an underground mark 0.832 meters below the surface disk. The azimuth mark is a standard DNR aluminum GRS disk stamped "BU-11A, 1993", set in a 12 inch diameter concrete post flush with the ground surface.

STATION, AZIMUTH MARKS AND REFERENCE TIES: The station is located on the west side of the stockyards in St. Joseph, MO and on the south side of Lower Lake Road in the north part of the Community of Kirschner. It is 25.5 feet south of the center of Lower Lake Road; 11.2 feet south from the back of curb; 52.6 feet southwest of the center of a fire hydrant #16; 16.7 feet north of the north rail of the northerly of two tracks; 49.6 feet east-northeast of a nail and shiner in the east post at a commercial plant entrance; 67 feet east of the center of the entrance; 45.2 feet southeast of the south rail of the crossing and 2 feet north of a carsonite witness post.

The azimuth mark is about 0.3 mile east of the station and in the southwest angle of the intersection of Lower Lake Road with Diagonal Road and on line with the east side of the entrance to South St. Joseph Industrial Sewer District Plant. It is 28.5 feet south of the center line of Lower Lake Road; 64.7 feet west of the center of Diagonal Road; 13.5 feet north of the top of the north rail of the track; 46.2 feet east-southeast of the northeast corner of a curb inlet at back of curb and 2.5 feet north of a carsonite witness post.

STATION & AZIMUTH MARK TO REACH: To reach the station from the junction of US Highway 59 with Missouri Highway 752 and Missouri Route U in the southwest part of St. Joseph, MO. Go west on Route U (Alabama) for 0.85 mile to Industrial Road. Turn right and go north on Industrial for 0.5 mile to a T-junction with Lower Lake Road. Go right and travel east on Lower Lake Road for 0.2 mile to station on the right (south) side just beyond second railroad track crossing and entrance.

To reach the azimuth mark from the station, go east on Lower Lake Road for 0.25 mile to the mark on the right (south) side as described.

SPECIAL INFORMATION:

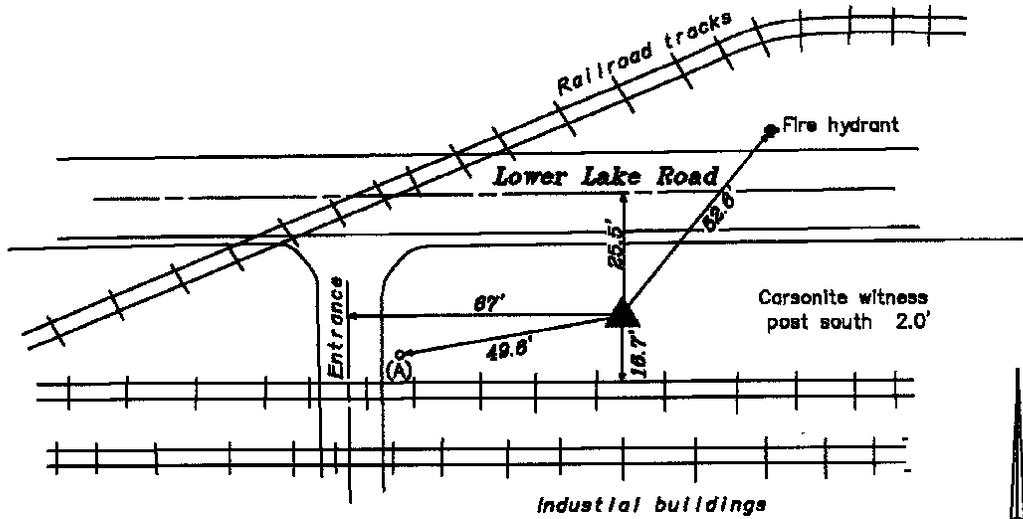
SUPERSEDED SURVEY CONTROL

| | | |
|---------------------|--------------------|--------------------|
| NGS NAD 83(1997)- | 39°43'09.67342"(N) | 94°53'08.14924"(W) |
| NGS NAD 83(1997)- | 39°43'09.67342"(N) | 94°53'08.14924"(W) |
| NGS NAD 83(1997)- | 39°43'09.67626"(N) | 94°53'08.14526"(W) |
| MODNR NAD 83(1986)- | 39°43'09.67560"(N) | 94°53'08.14486"(W) |

DATE of REPORT, 2002

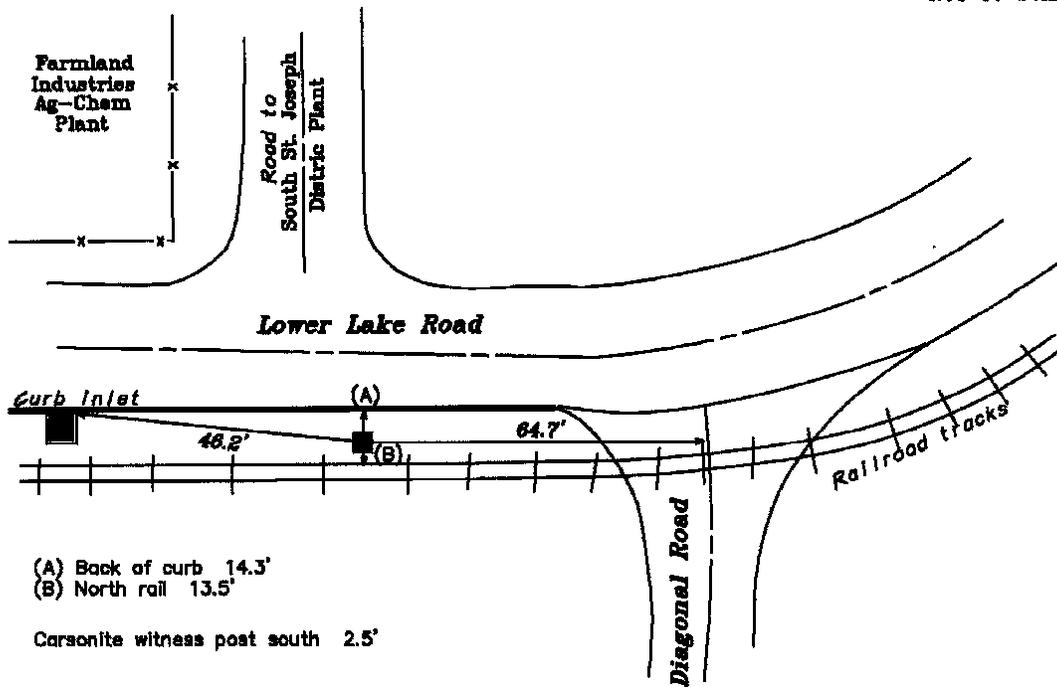
STATION: BU-11

(A) Nail/shiner post



NOT TO SCALE

AZIMUTH MARK: BU-11A



DATE OF SKETCH 2001



STATION: BU-11 (LOOKING WEST)



STATION: BU-11 (LOOKING SOUTH)