

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-12

PID: AD9785

COUNTY: Buchanan

STATE: Missouri

TOWNSHIP: 56 NORTH, **RANGE:** 36 WEST, **SECTION:** SE 1/4 OF 1

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: 1993

ORDER: 1st

ORDER: 3rd

LATITUDE: 39°41'52.57091"

ELEVATION: 253.63

LONGITUDE: 94°53'14.45413"

ELLIPSOID HEIGHT: 221.71

MISSOURI COORDINATE SYSTEM 1983:

NORTH (Y): 392002.958

EAST (X): 816779.450

ZONE: West

CONVERGENCE: -00°14'51"

GRID FACTOR: .9999200

AZIMUTH INFORMATION:

STATION: BU-12

AZIMUTH MARK: BU-12A

GEODETTIC:

ASTRONOMIC: 35°47'02"

GRID: 36°01'53"

REMARKS

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

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

The ELEVATION was determined by differential leveling using reset procedures from station V 340 by the Missouri Department of Natural Resources in November 1993.

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

GEOID 99 was used in determining ELLIPSOID HEIGHT.

STATION: BU-12

DESCRIPTION: The station is a standard DNR aluminum GRS disk stamped "BU-12, 1993", set in a 12 inch diameter concrete post 2 inches below the ground surface. The station has an underground mark 0.887 meters below the surface disk. The azimuth mark is a standard DNR aluminum GRS disk stamped "BU-12A, 1993", set in a 12 inch diameter concrete post 1 inch below the ground surface.

STATION, AZIMUTH MARKS AND REFERENCE TIES: The station is located just outside the southwest city limits of St. Joseph, MO, on the northwest right-of-way of US Highway 59, and close to the north end of the bridge over Contrary Creek. It is 208+ feet southwest of the extended center of Parker Road; 41.0 feet north-northeast of the northwest corner of the northwest bridge handrail; 28 feet northwest of the center of Highway 59; 15.5 feet northwest of the northwest edge of the driving lane; 5.6 feet northwest of the face of the guardrail and 2.5 feet northeast of a carsonite witness post.

The azimuth mark is about 0.4-mile northeast, on the southeast side of US Highway 59, and near the northwest corner of the fenced area of the Bluffwoods Family Recreation Center. It is 67 feet southwest of the center of the entrance to a large gravel parking are; 46.0 feet southwest of a punch mark on the southwest end of an 18 inch corrugated metal pipe under the entrance; 37.9 feet southwest of the southwest corner of a 6 feet by 8 feet concrete slab; 3.7 feet southeast of the edge of the asphalt shoulder; 12.9 feet southeast of the edge of the driving lane; 26 feet southeast of the center of Highway 59 and 18.8 feet northwest of a carsonite witness post.

STATION & AZIMUTH MARK TO REACH: To reach the **azimuth mark** from the junction of US Hwy 59 with MO Hwy 752 and Route U in southwest St. Joseph, MO. Go southwest on US Hwy 59 for 0.9 mile to the mark on the left (southeast) side as described.

To reach the station from the azimuth continue southwest on US 59 for 0.4 mile to the station on the right (northwest) side behind the guardrail on the north side of Contrary Creek as described.

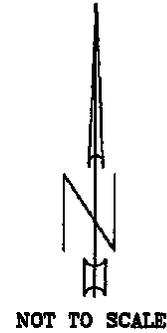
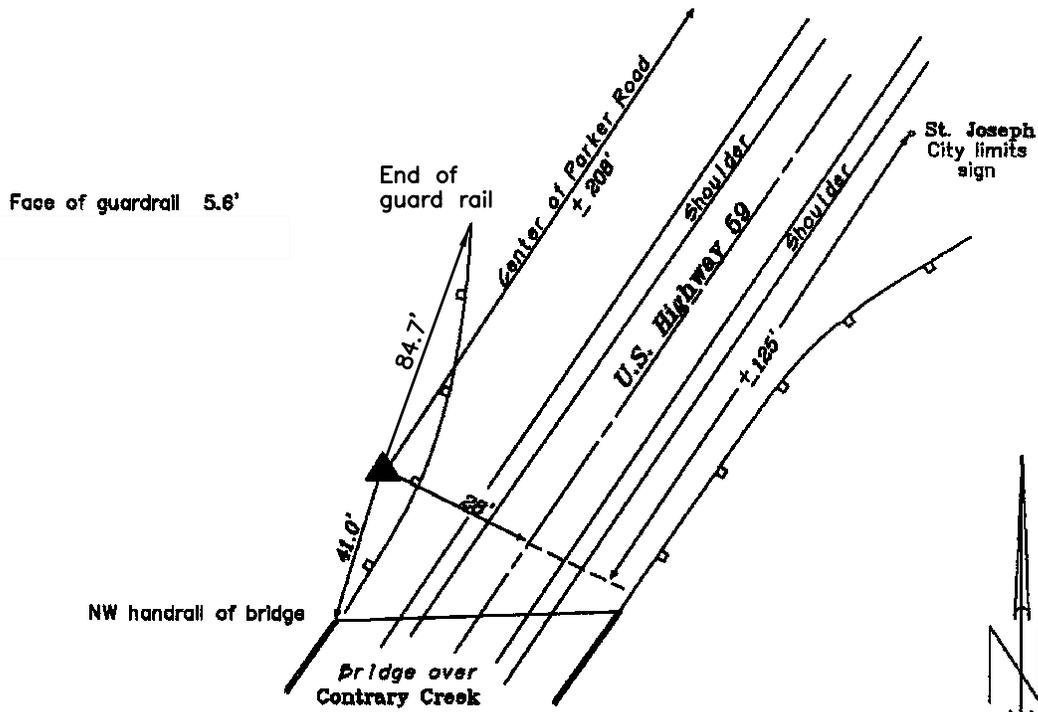
SPECIAL INFORMATION:

SUPERSEDED SURVEY CONTROL

NGS NAD 83(1997)-	39°41'52.57090"(N)	94°53'14.45414"(W)
NGS NAD 83(1997)-	39°41'52.57091"(N)	94°53'14.45414"(W)
NGS NAD 83(1986)-	39°41'52.57388"(N)	94°53'14.45043"(W)
MODNR NAD 83(1986)-	39°41'52.57267"(N)	94°53'14.44998"(W)

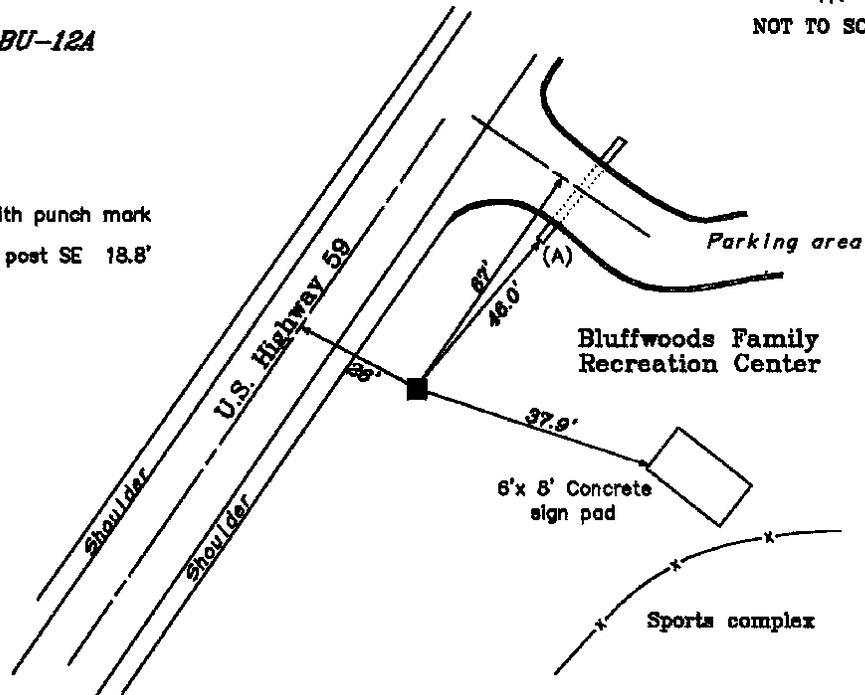
DATE of REPORT, 2002

STATION: BU-12



AZIMUTH MARK: BU-12A

(A) 18" cmp with punch mark
Carsonite witness post SE 18.8'



DATE OF SKETCH 2001



STATION: BU-12 (LOOKING EAST)



STATION: BU-12 (LOOKING SOUTH)