

**Cherokee County
Iowa**

**G.P.S.
Countywide Survey**

**Control Network
in
Support of
Geographical
Information
System**

2000

**Aerial Services, Inc.
www.asi-gis.com
2120 Center Street
P.O. Box 336
Cedar Falls, Iowa 50613
(319) 277-0436**

INTRODUCTION

Cherokee County, Iowa, chose to embark on a county wide high accuracy geographical information system (GIS) survey. This project is designed in phases. The first phase consists of the GPS control survey and permanent 3D monumentation. Aerial Services Inc. of Cedar Falls, Iowa, was selected to complete this Phase.

Seventy-five new control stations were added within the project area. Twelve existing points, nine being Plymouth County GPS control points, two others being Woodbury County GPS control, and the other being a Clay County GPS control point, were recovered and tied into the GPS network. Eighteen existing horizontal and vertical control stations set by others both inside and outside the project area were included in the survey.

PROJECT REQUIREMENTS

The purpose of this survey was to establish throughout the project area, a new horizontal control network using GPS survey equipment and techniques. This network was horizontally referenced to the Iowa High Accuracy Reference Network (HARN) of 1996. Vertically the network was referenced to the North American Vertical Datum of 1988 (NAVD88). Because this control would be utilized to control the analytical triangulation of the aerial photography, the network geometry was ideal for a strong GPS survey. All new point locations for control were selected with the needs of both the analytical triangulation and GPS survey requirements in mind. In some instances, all of the needs could not be met due to physical obstructions or existing land features. In these instances, the needs of analytical triangulation were held primary and the GPS survey needs were satisfied second.

MONUMENTATION

To perpetuate the GPS control measurements, 75 new permanent monuments were set for the project. BERNTSEN driven aluminum rod monuments were selected for the permanent monuments. Each BERNTSEN station monument consisted of one three-foot smooth rod section and one three-foot top security fluted rod section with a stamped cap. These were driven to approximately 6" below the existing ground surface. For easy access and protection, a two foot long 5" diameter PVC pipe was placed over each rod monument along with a pre-cast aluminum access cover and backfilled with sand to facilitate drainage and to minimize frost movement.

The County handled the coordination of marking the various underground utility locations for each new site.

RECONNAISSANCE

The most important criterion for GPS observations at any given location is a clear view to the sky. In terms of network design, it is desirable that the horizontal control be located near the perimeter of the project site. With this in mind, four existing HARN horizontal stations were recovered near Cherokee County. All four were chosen to be included in the network.

Vertical control was selected to provide as much coverage as possible, both at the periphery and in the interior of the project area. Fourteen existing NGS and USGS benchmarks were recovered and included in this survey. Eleven of the benchmarks were occupied directly and points 307, 308 and 310 were TBM points set within 300ft of the existing bench disks. A closed level loop was run, and the TBM points were occupied directly to facilitate GPS observations.

FIELD SURVEY

Three Ashtech Z-12 dual frequency GPS receivers and one Ashtech Z-Surveyor dual frequency GPS receiver, all with Z-tracking capabilities, were used in this survey. GPS observations began Monday morning, July 31, 2000. GPS observations were made during daylight hours from Monday, July 31, through Thursday, August 3, 2000.

Rapid static GPS techniques were utilized to minimize the time and cost of the survey. The satellite "window", where at least six satellites were observable, was open for much of the day. Each measurement period during which all receivers observe satellites simultaneously lasted from 10 minutes to 50 minutes, depending on the distance being measured and the geometry of the satellite constellation.

DATA ADJUSTMENT

The final network is comprised of 105 stations and 288 baselines. All data adjustment was performed using the STARNET least squares adjustment software. The total number of lines observed and processed was 786. Based on statistical indicators from the ASHTECH PRISM processing utility and analysis of loop closures, 77 lines were rejected and removed prior to data adjustment. These lines were either remeasured or considered unneeded for the adjustment. An initial free adjustment was performed in NAD83 to check the overall quality of the GPS data and the nature of the control. The initial unconstrained (free) adjustment yielded baseline precisions which ranged from 1:60,000 to 1:1,600,000. Once the horizontal and vertical control was verified, subsequent adjustments were performed to arrive at the optimal solutions for each datum.

NAD83 (1996)

The initial free adjustment was performed holding point #301 fixed horizontally with the vertical adjustment disabled. Coordinate values on the other horizontal control stations were then checked against the published values. One at a time, each of the three remaining horizontal control points was added to the network and a new adjustment performed. After each adjustment a comparison of adjusted coordinates vs. published values was made. By holding the remaining three existing horizontal control stations fixed, the precision of the "free" adjustment degraded very little.

Once we were satisfied with the horizontal adjustment, we locked the horizontal positions and concentrated on the vertical adjustment. The Geoid 96 Central zone was utilized to provide a model of the height of the Geoid. Adjustments were then performed locking on to the vertical control stations one at a time. Elevations on the benchmarks were then checked against the published values.

A final adjustment of both horizontal and vertical was then performed. All of the horizontal control points were held fixed in x and y and all vertical control were held fixed in z, except for points 1, 9, 303 and 305. This fully constrained adjustment solved for scale and rotation. In the final adjusted network, 99.6% of the adjusted vectors have an estimated error of 1:100,000 or less. The results are well in excess of the first-order precision. The error ellipses for each point are listed in Section IV. The units of measure for the error ellipses are US survey feet.

CONCLUSION

All measured points will be usable for better than first-order control in horizontal position and with ± 0.1 ft. vertically for benchmark use.



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 1

Northing: 3675813.33(Ft) Easting: 4301572.04(Ft)

Northing: 1120390.142(M) Easting: 1311121.781(M)

Elev: 1308.69(Ft) NAVD_88

Elev: 398.890(M) NAVD_88 Ellip Ht: 371.696(M) 96C Geoid Ht: -27.193(M)

Latitude: 42-33-38.572298 N Longitude: 95-48-01.613700 W

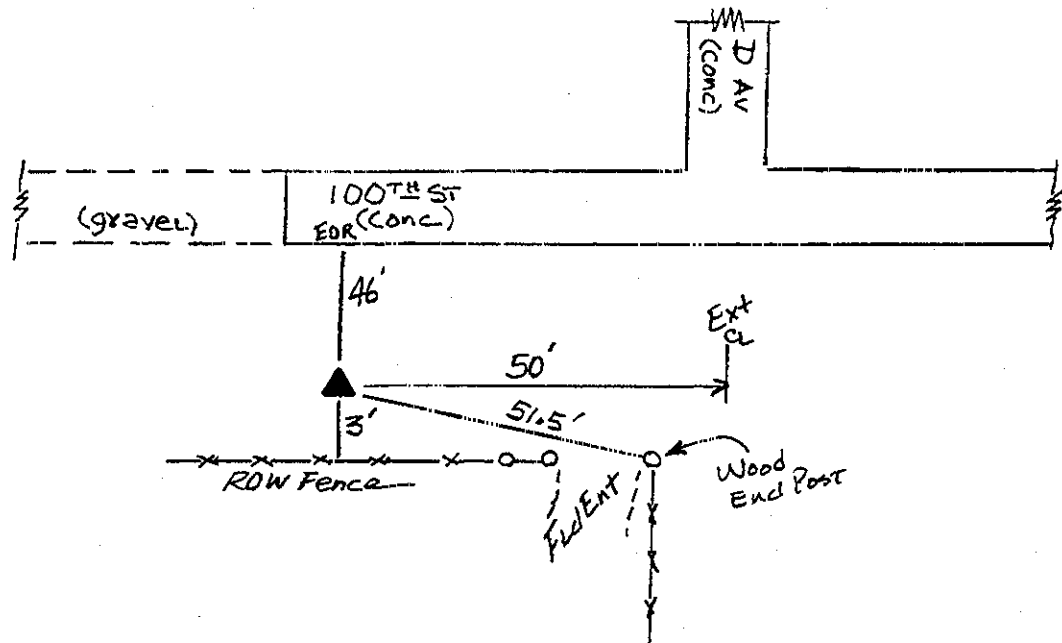
Theta: -1-33-32.82 Combination Factor: 0.99988878

Designation: **WOODBURY CO GPS PT #8017**

Monument Type: A standard disk set in the top of a concrete post

To Reach: 50ft South of 100th St and 50ft West of ext CL of "D" Ave Near the NE Cor of Sec 4, T89N, R42W

Date Printed August 29, 2000



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April 2000

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 2

Northing: 3691623.10(Ft) Easting: 4302002.54(Ft)

Northing: 1125208.972(M) Easting: 1311252.998(M)

Elev: 1373.39(Ft) NAVD_88

Elev: 418.611(M) NAVD_88 Ellip Ht: 391.442(M) 96C Geoid Ht: -27.169(M)

Latitude: 42-36-14.805894 N Longitude: 95-48-01.611262 W

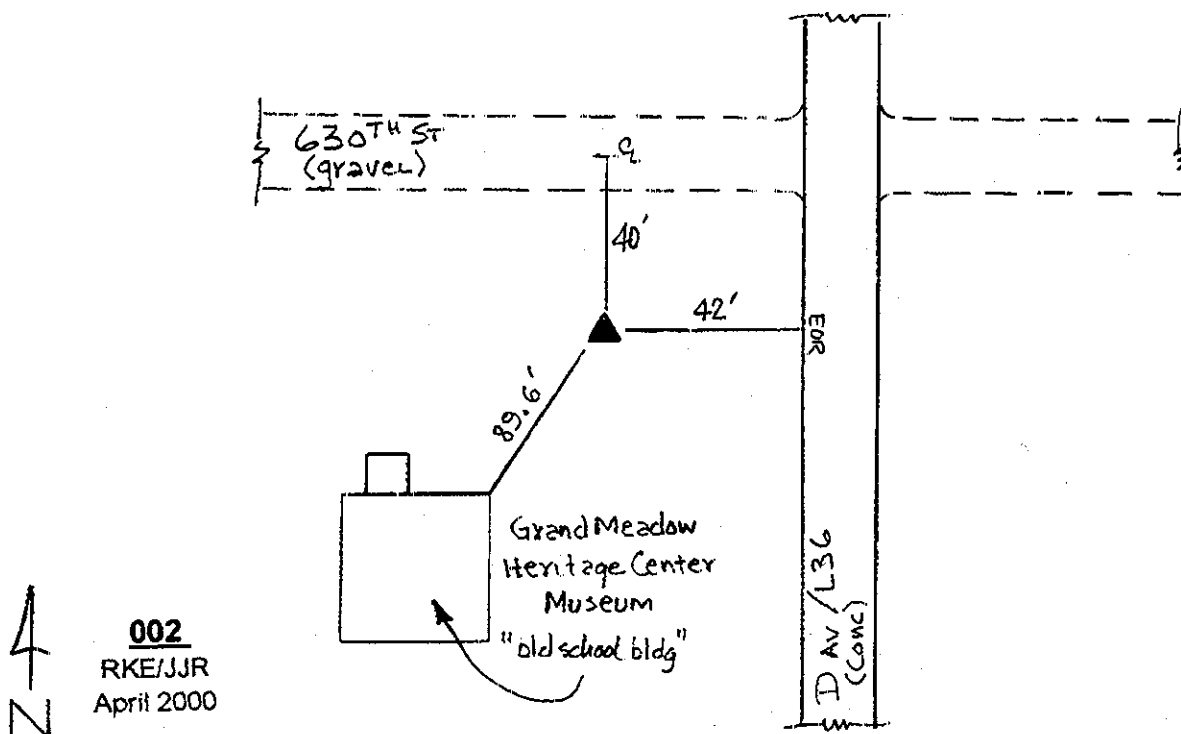
Theta: -1-33-32.82 Combination Factor: 0.99988456

Designation: **CHEROKEE CO GPS CONTROL PT 2000-002**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 40ft South of 630th St, 45ft West of "D" Ave (L36) Near the NE Cor of Sec 21, T90N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 3

Northing: 3707722.82(Ft) Easting: 4302410.22(Ft)

Northing: 1130116.175(M) Easting: 1311377.259(M)

Elev: 1424.96(Ft) NAVD_88

Elev: 434.328(M) NAVD_88 Ellip Ht: 407.184(M) 96C Geoid Ht: -27.144(M)

Latitude: 42-38-53.895319 N Longitude: 95-48-02.019635 W

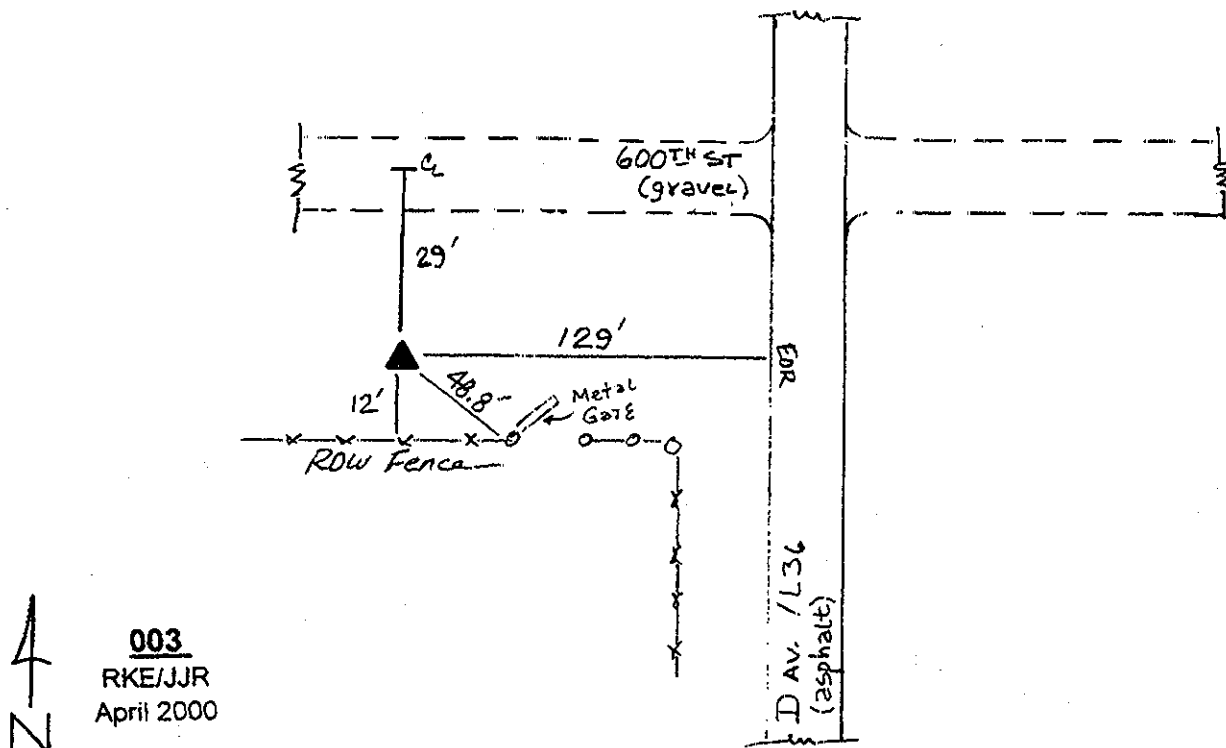
Theta: -1-33-33.09 Combination Factor: 0.99988153

Designation: **CHEROKEE CO GPS CONTROL PT 2000-003**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft South of 600th St, 130ft West of "D" Ave (L36) Near the NE Cor of Sec 4, T90N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 4

Northing: 3723713.78(Ft) Easting: 4302827.68(Ft)

Northing: 1134990.232(M) Easting: 1311504.501(M)

Elev: 1319.37(Ft) NAVD_88

Elev: 402.145(M) NAVD_88 Ellip Ht: 375.019(M) 96C Geoid Ht: -27.126(M)

Latitude: 42-41-31.912342 N Longitude: 95-48-02.258020 W

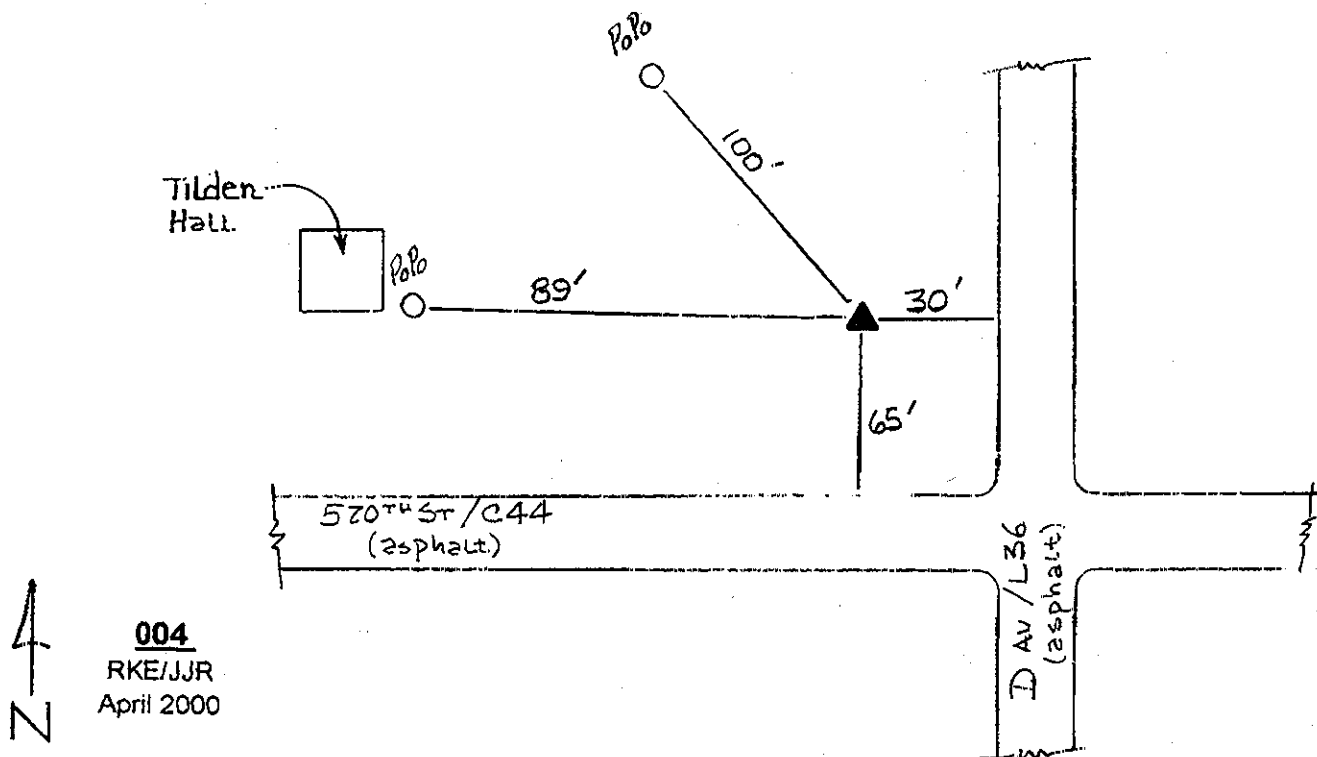
Theta: -1-33-33.26 Combination Factor: 0.99988661

Designation: **CHEROKEE CO GPS CONTROL PT 2000-004**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft West of "D" Ave (L36), 65ft North of 570th St (C44) at Tilden Twp Hall Near the SE Cor of Sec 16, T91N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 5

Northing: 3739322.39(Ft)

Easting: 4303156.48(Ft)

Northing: 1139747.743(M)

Easting: 1311604.720(M)

Elev: 1366.35(Ft) NAVD_88

Elev: 416.463(M) NAVD_88

Ellip Ht: 389.361(M)

96C Geoid Ht: -27.102(M)

Latitude: 42-44-06.128614 N

Longitude: 95-48-03.544948 W

Theta: -1-33-34.13

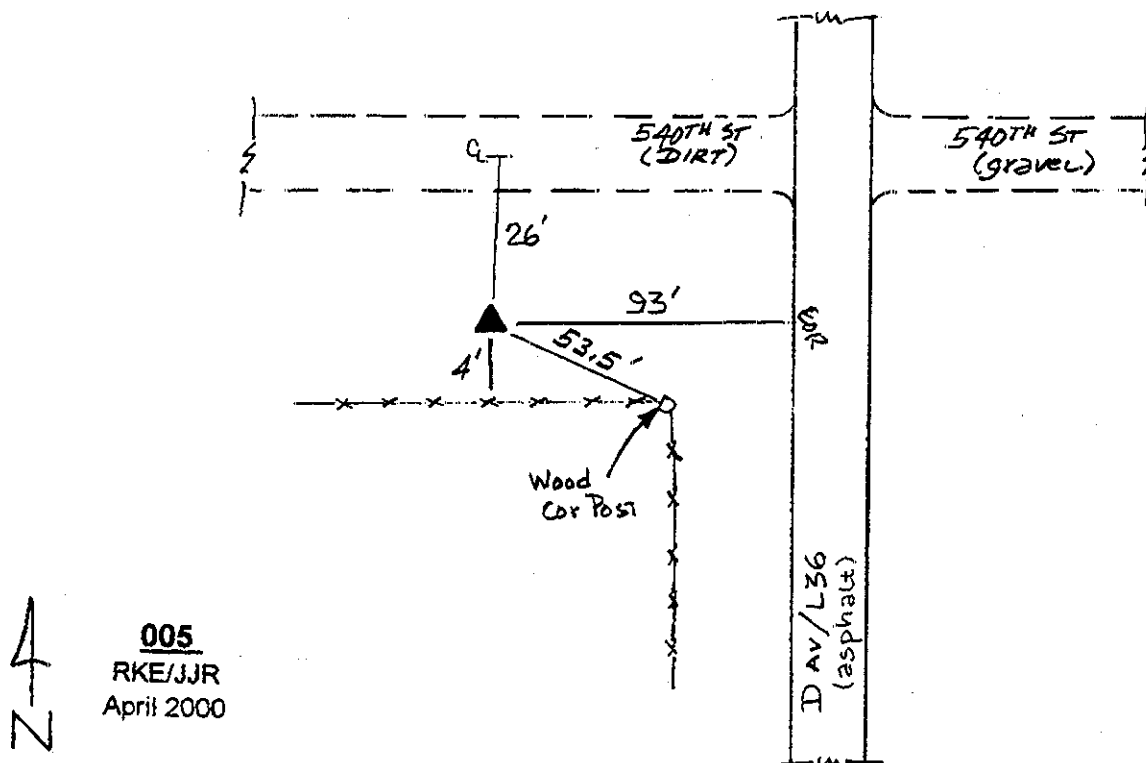
Combination Factor: 0.99988496

Designation: **CHEROKEE CO GPS CONTROL PT 2000-005**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft South of 540th St, 95ft West of "D" Ave (L36) Near the NE Cor of Sec 4, T91N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 6

Northing: 3755328.86(Ft) Easting: 4303864.72(Ft)

Northing: 1144626.526(M) Easting: 1311820.589(M)

Elev: 1420.24(Ft) NAVD_88

Elev: 432.890(M) NAVD_88 Ellip Ht: 405.805(M) 96C Geoid Ht: -27.085(M)

Latitude: 42-46-44.374326 N Longitude: 95-47-59.892746 W

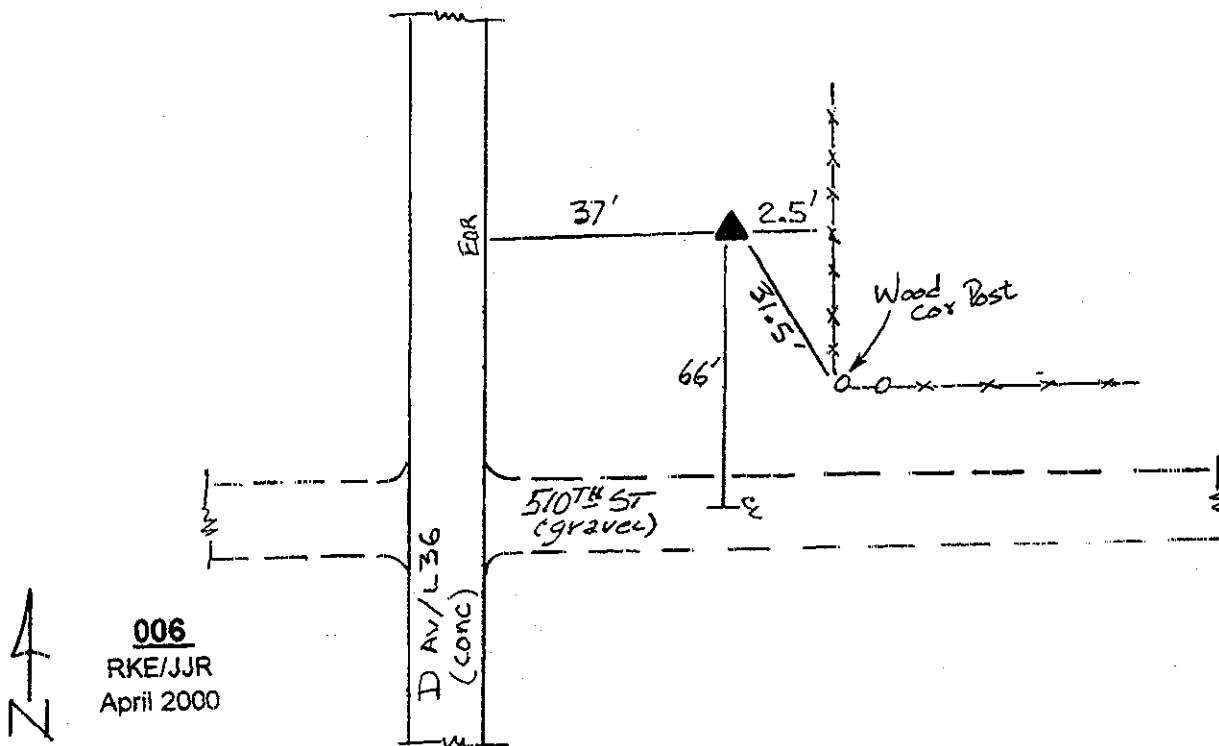
Theta: -1-33-31.65 Combination Factor: 0.99988357

Designation: CHEROKEE CO GPS CONTROL PT 2000-006

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 35ft East of "D" Ave (L36), 65ft North of 510th St Near the SW Cor of Sec 15, T92N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 7

Northing: 3787048.24(Ft)

Easting: 4304763.30(Ft)

Northing: 1154294.613(M)

Easting: 1312094.477(M)

Elev: 1469.15(Ft) NAVD_88

Elev: 447.797(M) NAVD_88

Ellip Ht: 420.758(M)

96C Geoid Ht: -27.039(M)

Latitude: 42-51-57.823340 N

Longitude: 95-47-59.417460 W

Theta: -1-33-31.33

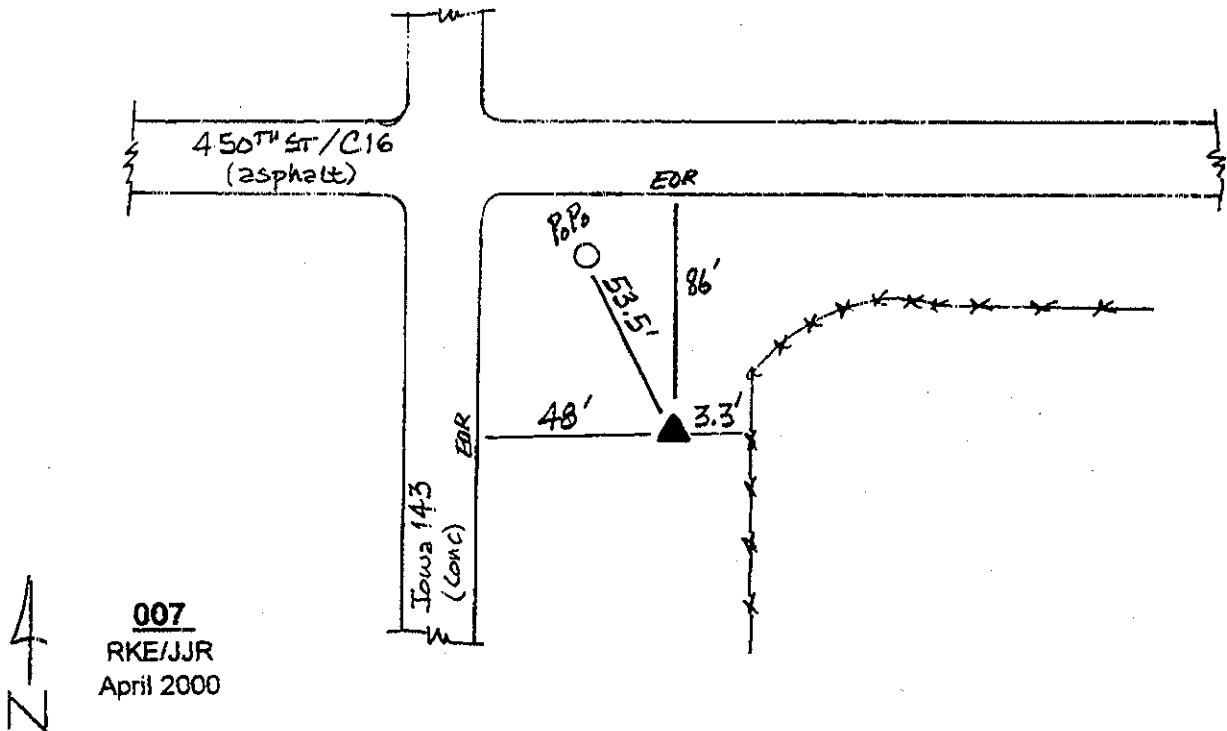
Combination Factor: 0.99988533

Designation: **CHEROKEE CO GPS CONTROL PT 2000-007**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 50ft East of Iowa #143, 90ft South of 450th St. Near the NW Cor of Sec 22, T93N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 8

Northing: 3802815.71(Ft)

Easting: 4305106.59(Ft)

Northing: 1159100.548(M)

Easting: 1312199.113(M)

Elev: 1452.55(Ft) NAVD_88

Elev: 442.739(M) NAVD_88

Ellip Ht: 415.727(M)

96C Geoid Ht: -27.012(M)

Latitude: 42-54-33.606424 N

Longitude: 95-48-00.569408 W

Theta: -1-33-32.11

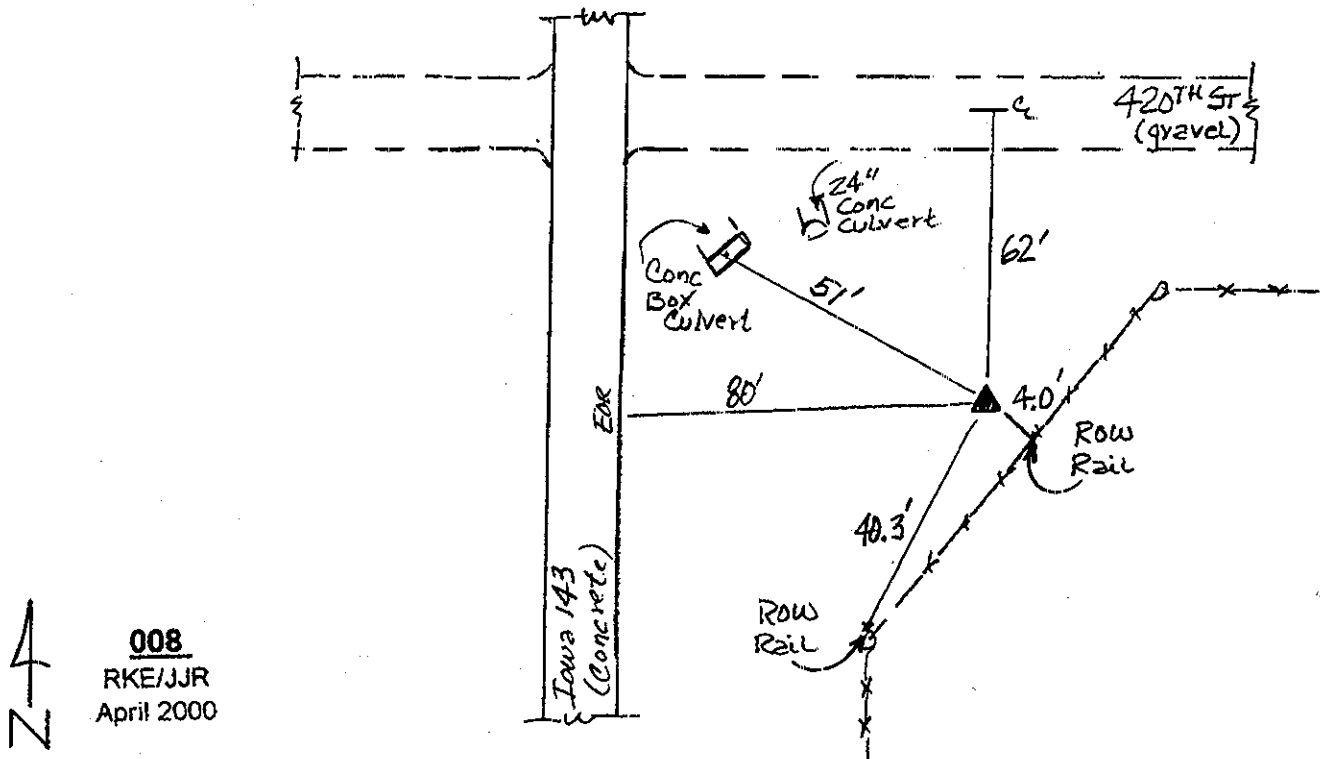
Combination Factor: 0.99988901

Designation: **CHEROKEE CO GPS CONTROL PT 2000-008**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 60ft South of 420th St, 80ft East of Iowa Hwy 143 Near the NW Cor of Sec 3, T93N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 9

Northing: 3675228.93(Ft) Easting: 4317256.10(Ft)

Northing: 1120212.019(M) Easting: 1315902.291(M)

Elev: 1151.93(Ft) NAVD_88

Elev: 351.110(M) NAVD_88 Ellip Ht: 323.788(M) 96C Geoid Ht: -27.322(M)

Latitude: 42-33-36.963626 N Longitude: 95-44-31.898409 W

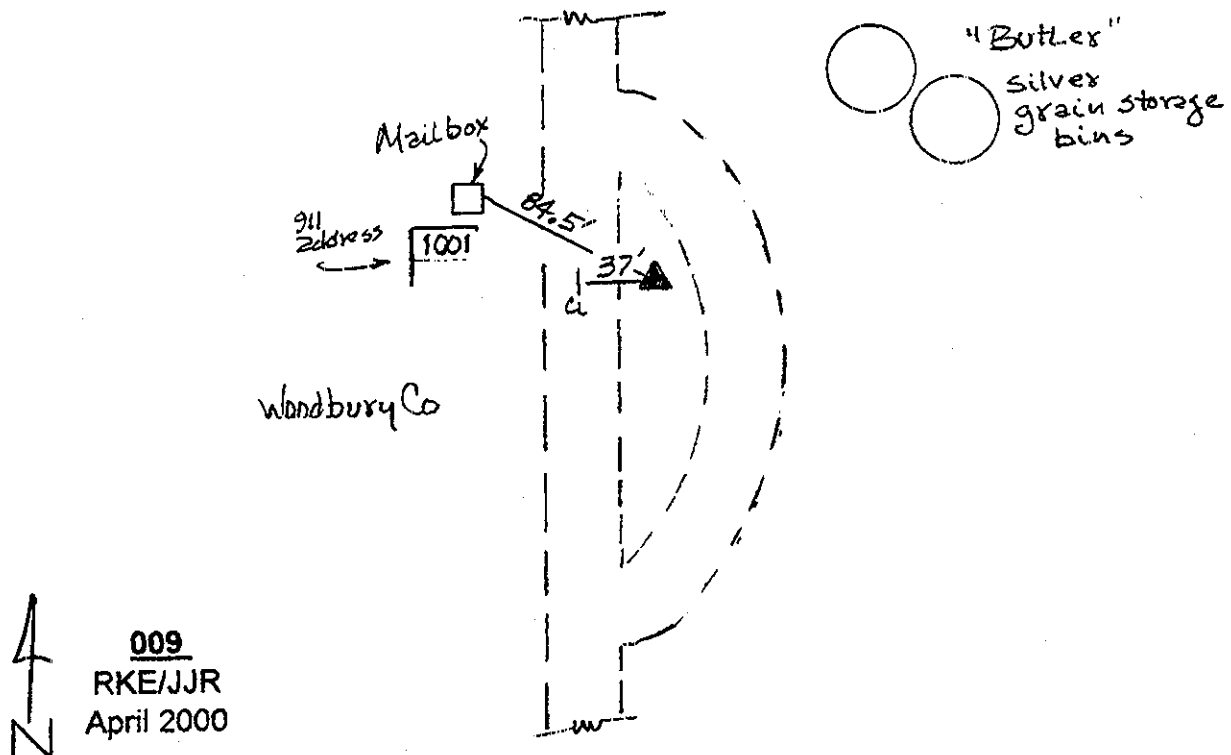
Theta: -1-31-10.69 Combination Factor: 0.99989631

Designation: **WOODBURY CO GPS PT #8016**

Monument Type: A standard disk set in the top of a concrete post

To Reach: Found Woodbury Co GPS Control Monument #8016 Near the NE Cor of Sec 1, T89N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 10

Northing: 3691386.02(Ft) Easting: 4317766.58(Ft)

Northing: 1125136.710(M) Easting: 1316057.886(M)

Elev: 1204.21(Ft) NAVD_88

Elev: 367.043(M) NAVD_88 Ellip Ht: 339.745(M) 96C Geoid Ht: -27.298(M)

Latitude: 42-36-16.647812 N Longitude: 95-44-30.804292 W

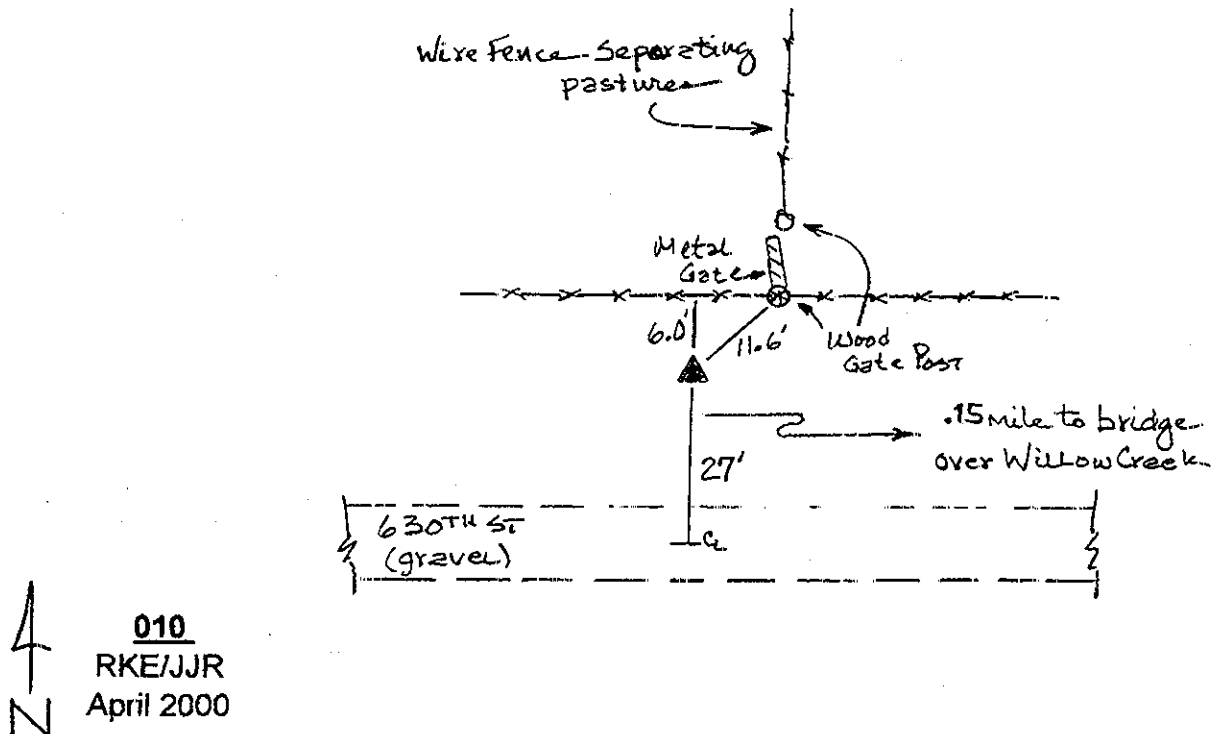
Theta: -1-31-09.94 Combination Factor: 0.99989266

Designation: **CHEROKEE CO GPS CONTROL PT 2000-010**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft North of 630th St, 100ft West of Section Line Near the SE Cor of Sec 13, T90N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 11

Northing: 3707382.88(Ft) Easting: 4318255.28(Ft)

Northing: 1130012.563(M) Easting: 1316206.842(M)

Elev: 1262.65(Ft) NAVD_88

Elev: 384.858(M) NAVD_88 Ellip Ht: 357.582(M) 96C Geoid Ht: -27.275(M)

Latitude: 42-38-54.742974 N Longitude: 95-44-29.943098 W

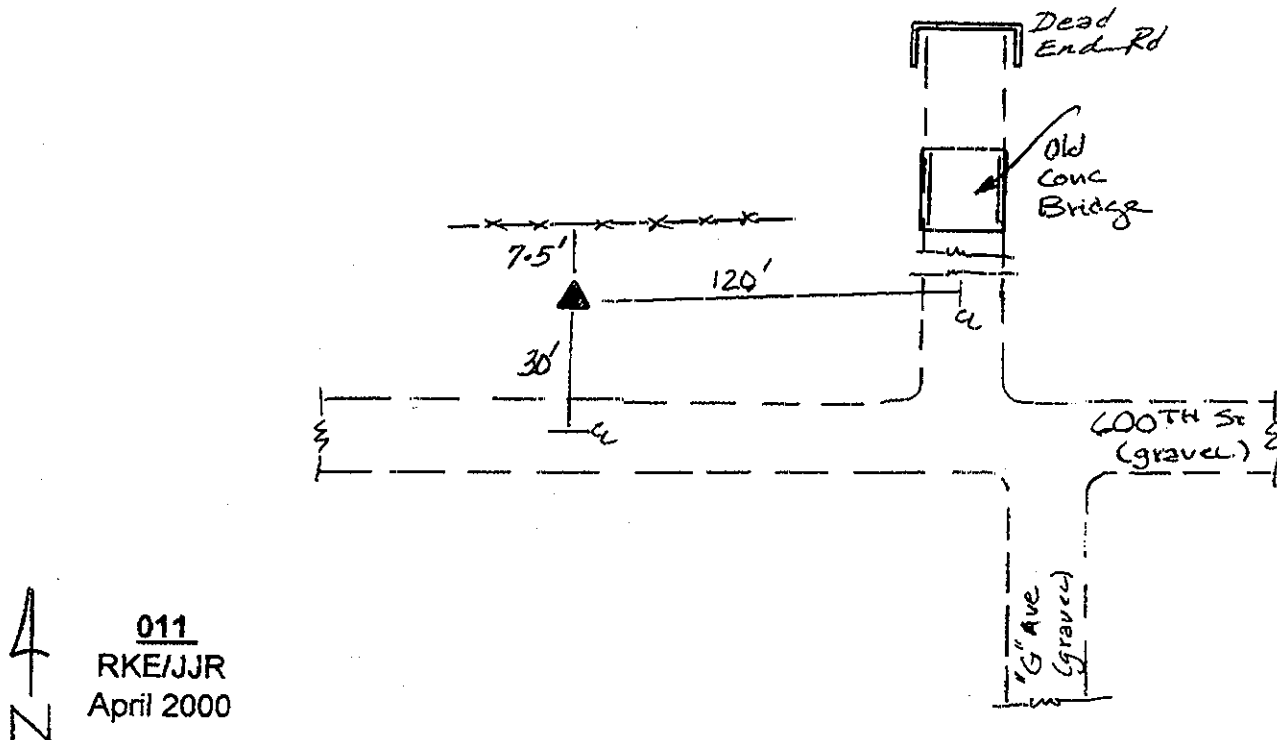
Theta: -1-31-09.36 Combination Factor: 0.99988931

Designation: **CHEROKEE CO GPS CONTROL PT 2000-011**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft North of 600th St, 120ft West of "G" Ave Near the SE Cor of Sec 36, T91N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 12

Northing: 3723247.28(Ft) Easting: 4318280.76(Ft)

Northing: 1134848.040(M) Easting: 1316214.608(M)

Elev: 1375.73(Ft) NAVD_88

Elev: 419.323(M) NAVD_88 Ellip Ht: 392.070(M) 96C Geoid Ht: -27.253(M)

Latitude: 42-41-31.407485 N Longitude: 95-44-35.234408 W

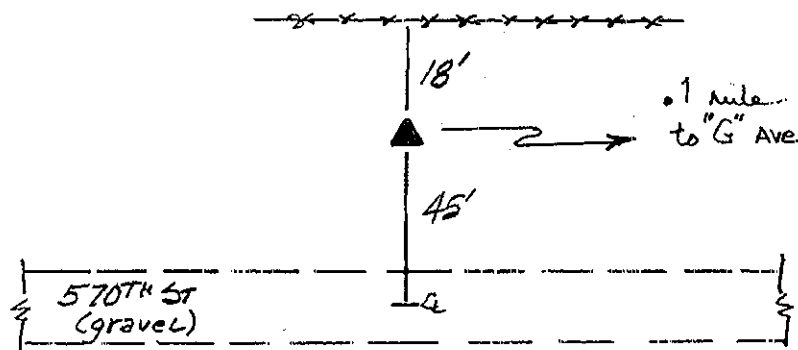
Theta: -1-31-12.95 Combination Factor: 0.99988394

Designation: **CHEROKEE CO GPS CONTROL PT 2000-012**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 45ft North of 570th St, 0.1mile West of "G" Ave, 0.1mile West of the SE Cor of Sec 13, T91N, R42W

Date Printed August 29, 2000



 **012**
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April 2000

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 13

Northing: 3738956.88(Ft) Easting: 4319038.42(Ft)

Northing: 1139636.336(M) Easting: 1316445.542(M)

Elev: 1351.22(Ft) NAVD_88

Elev: 411.853(M) NAVD_88 Ellip Ht: 384.612(M) 96C Geoid Ht: -27.241(M)

Latitude: 42-44-06.734086 N Longitude: 95-44-30.670246 W

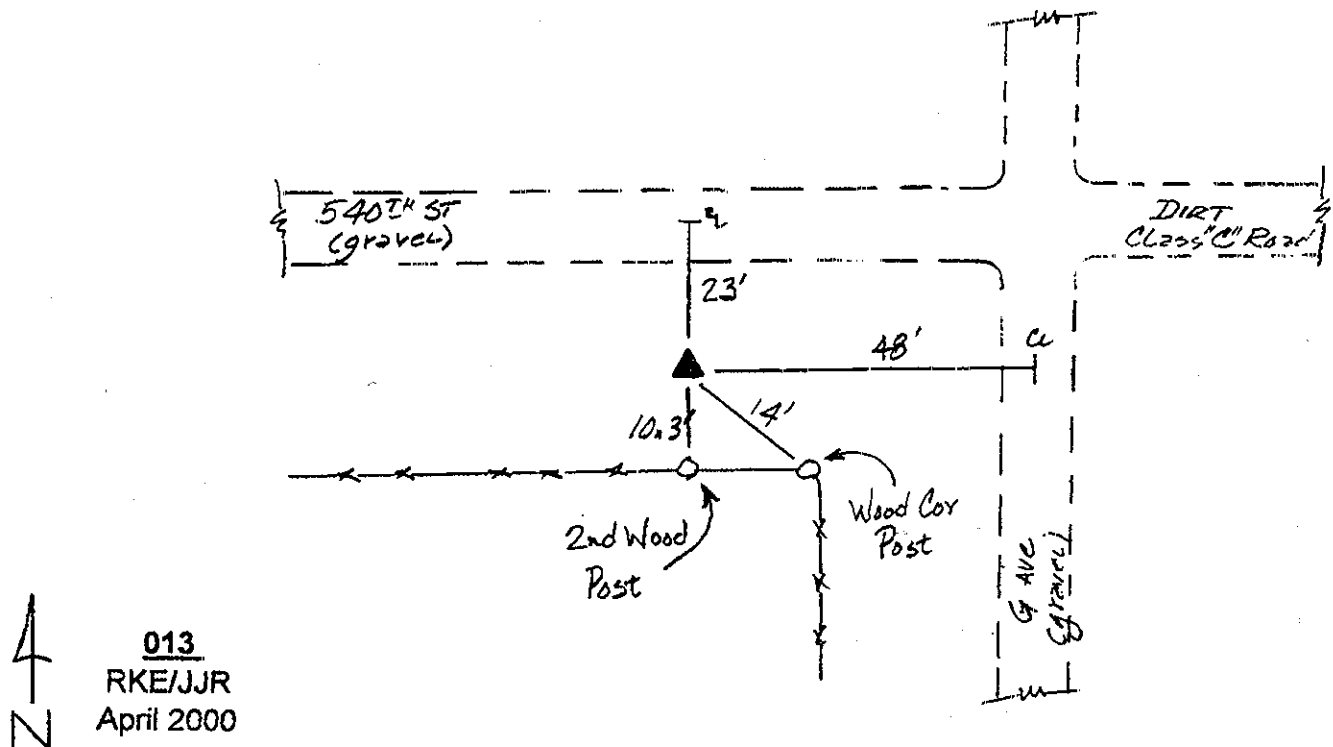
Theta: -1-31-09.85 Combination Factor: 0.99988571

Designation: **CHEROKEE CO GPS CONTROL PT 2000-013**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft South of 540th St, 50ft West of "G" Ave Near the NE Cor of Sec 1, T91N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 14

Northing: 3754983.92(Ft) Easting: 4319778.76(Ft)

Northing: 1144521.387(M) Easting: 1316671.201(M)

Elev: 1421.39(Ft) NAVD_88

Elev: 433.241(M) NAVD_88 Ellip Ht: 406.009(M) 96C Geoid Ht: -27.232(M)

Latitude: 42-46-45.189330 N Longitude: 95-44-26.444554 W

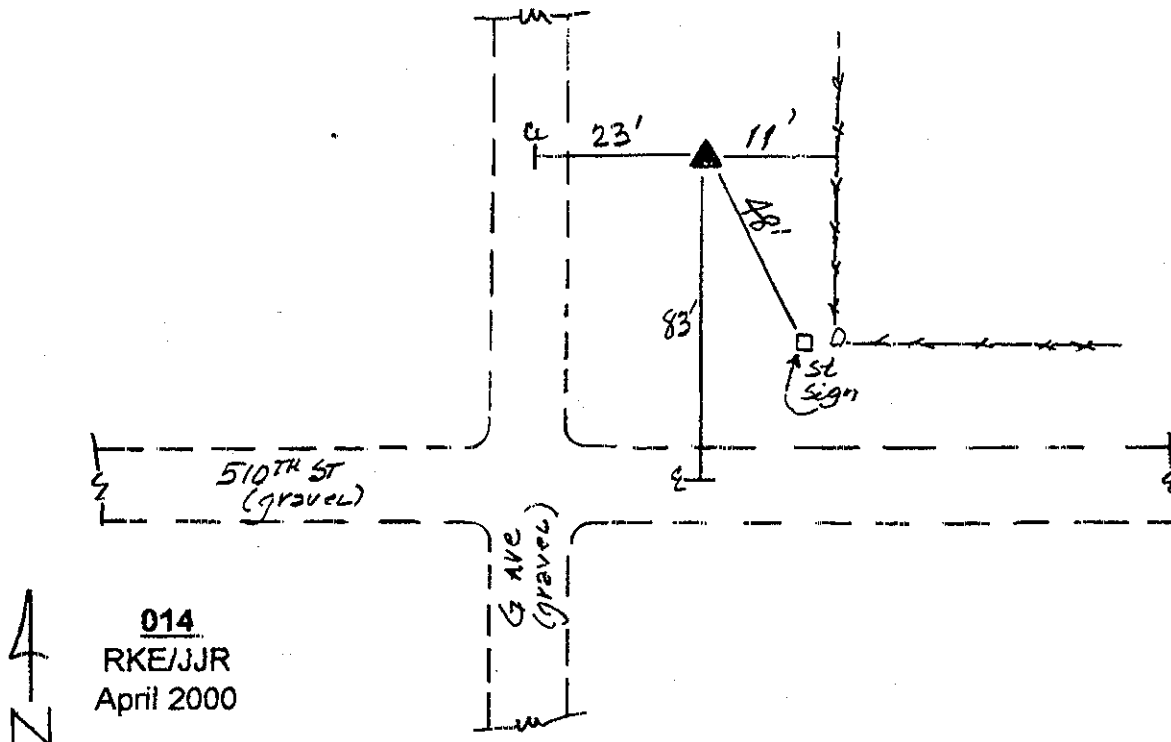
Theta: -1-31-06.99 Combination Factor: 0.99988355

Designation: **CHEROKEE CO GPS CONTROL PT 2000-014**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft East of "G" Ave, 85ft North of 510th St Near the SW Cor of Sec 18, T92N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 15

Northing: 3770513.82(Ft) Easting: 4320334.55(Ft)

Northing: 1149254.910(M) Easting: 1316840.603(M)

Elev: 1426.63(Ft) NAVD_88

Elev: 434.837(M) NAVD_88 Ellip Ht: 407.618(M) 96C Geoid Ht: -27.220(M)

Latitude: 42-49-18.685782 N Longitude: 95-44-24.511986 W

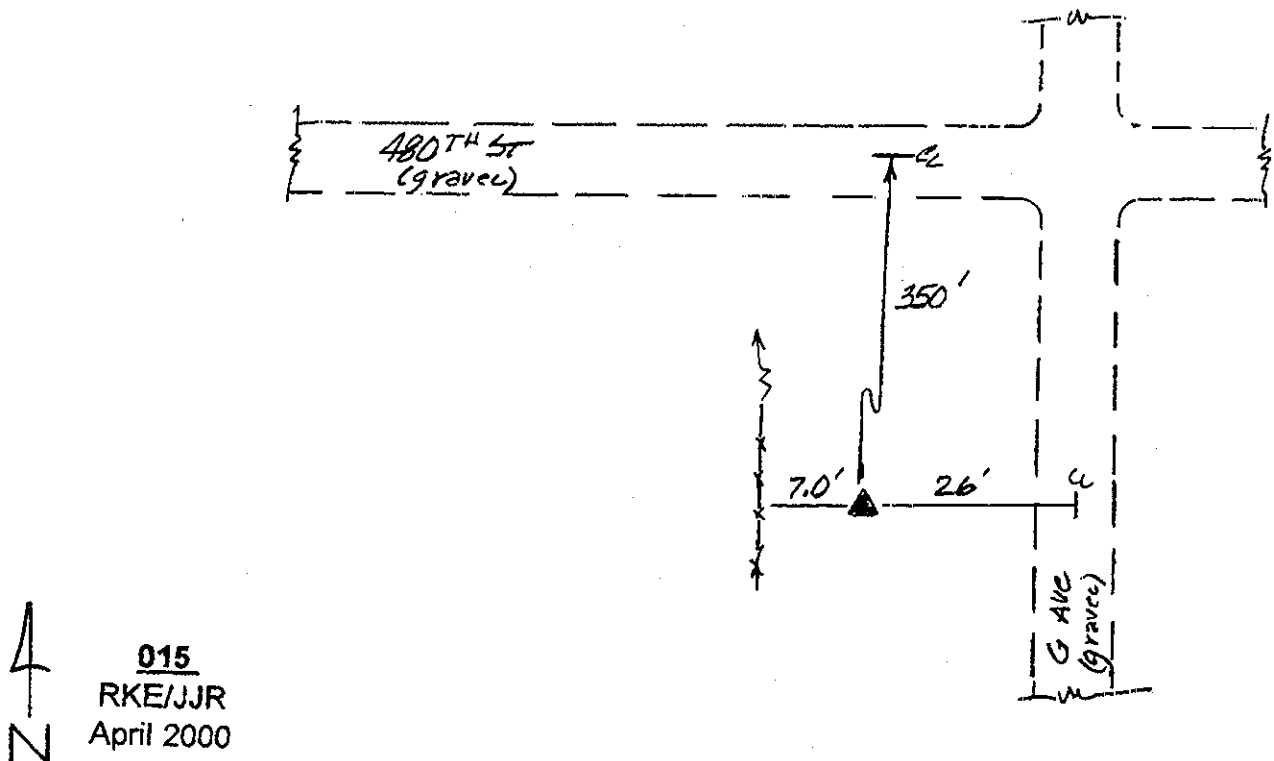
Theta: -1-31-05.68 Combination Factor: 0.99988502

Designation: **CHEROKEE CO GPS CONTROL PT 2000-015**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of "G" Ave, 350ft South of 480th St, 0.1mile South of NE Cor of Sec1, T92N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 16

Northing: 3786819.67(Ft) Easting: 4320598.44(Ft)

Northing: 1154224.943(M) Easting: 1316921.037(M)

Elev: 1428.39(Ft) NAVD_88

Elev: 435.374(M) NAVD_88 Ellip Ht: 408.179(M) 96C Geoid Ht: -27.195(M)

Latitude: 42-51-59.766425 N Longitude: 95-44-26.771057 W

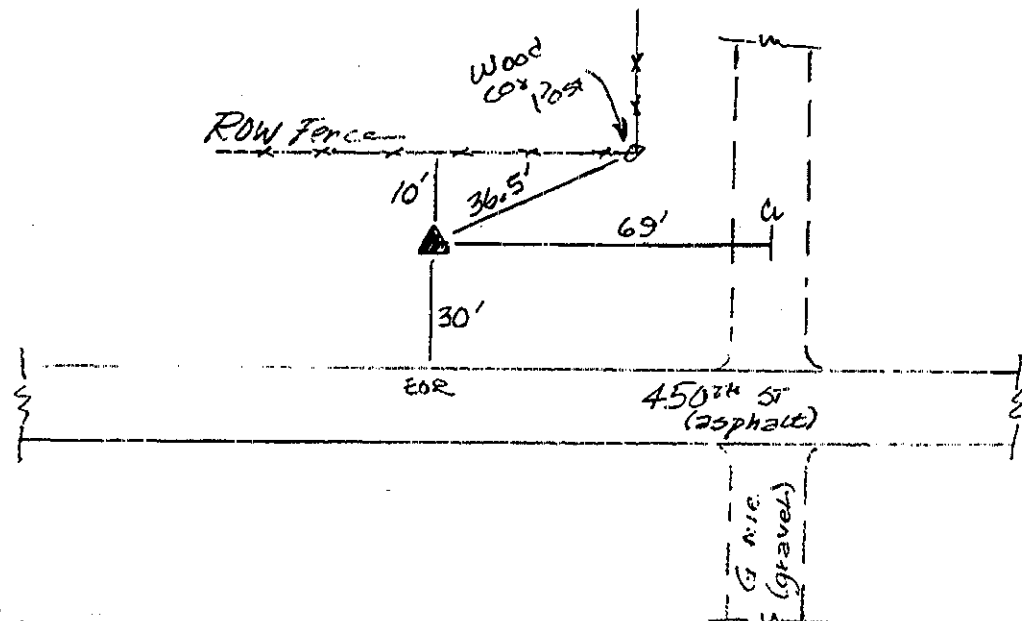
Theta: -1-31-07.21 Combination Factor: 0.99988733

Designation: **CHEROKEE CO GPS CONTROL PT 2000-016**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft North of 450th St (C16), 70ft West of "G" Ave Near the SE Cor of Sec 13, T93N, R42W

Date Printed August 29, 2000



016
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April 2000

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 17

Northing: 3801915.30(Ft) Easting: 4320909.83(Ft)

Northing: 1158826.102(M) Easting: 1317015.951(M)

Elev: 1389.45(Ft) NAVD_88

Elev: 423.504(M) NAVD_88 Ellip Ht: 396.333(M) 96C Geoid Ht: -27.171(M)

Latitude: 42-54-28.907782 N Longitude: 95-44-27.964135 W

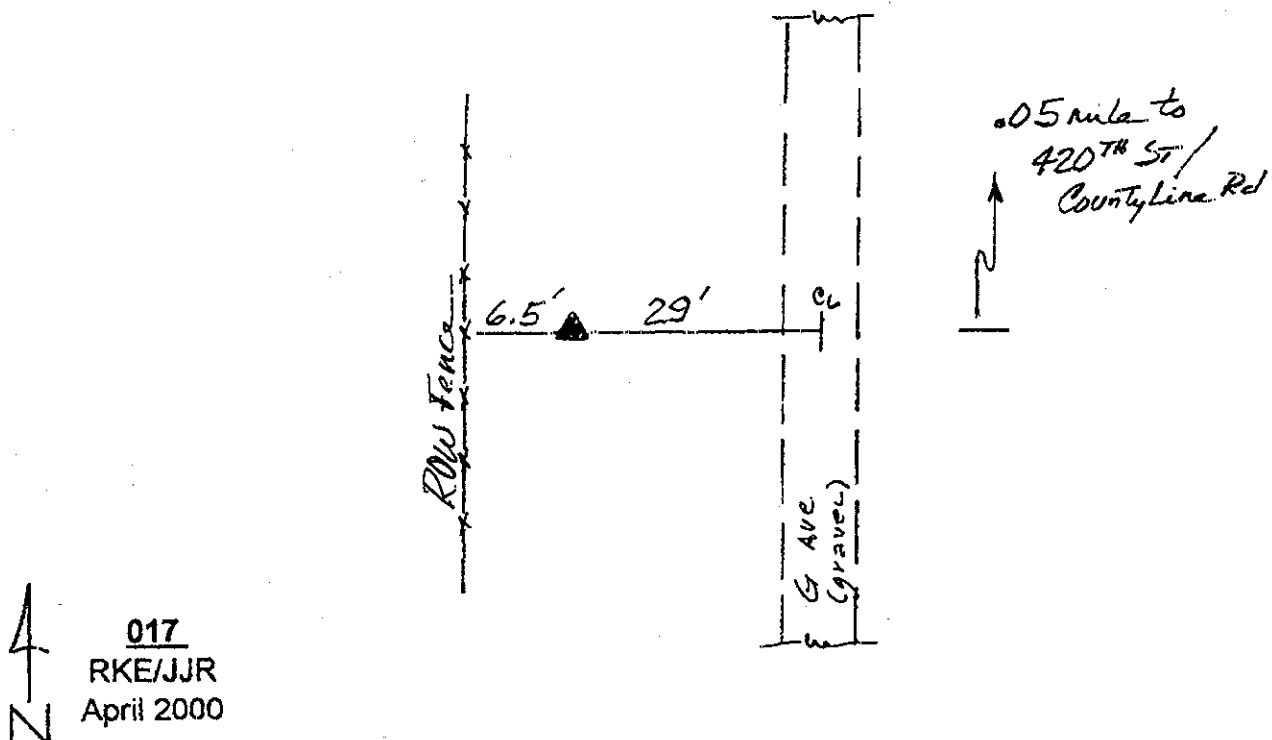
Theta: -1-31-08.02 Combination Factor: 0.99989196

Designation: CHEROKEE CO GPS CONTROL PT 2000-017

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft West of "G" Ave, 0.05mile South of 420th St, 0.05mile South of NE Cor of Sec 1, T93N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 18

Northing: 3675269.09(Ft) Easting: 4333444.74(Ft)

Northing: 1120224.260(M) Easting: 1320836.598(M)

Elev: 1303.59(Ft) NAVD_88

Elev: 397.334(M) NAVD_88 Ellip Ht: 369.896(M) 96C Geoid Ht: -27.438(M)

Latitude: 42-33-41.544380 N Longitude: 95-40-55.661383 W

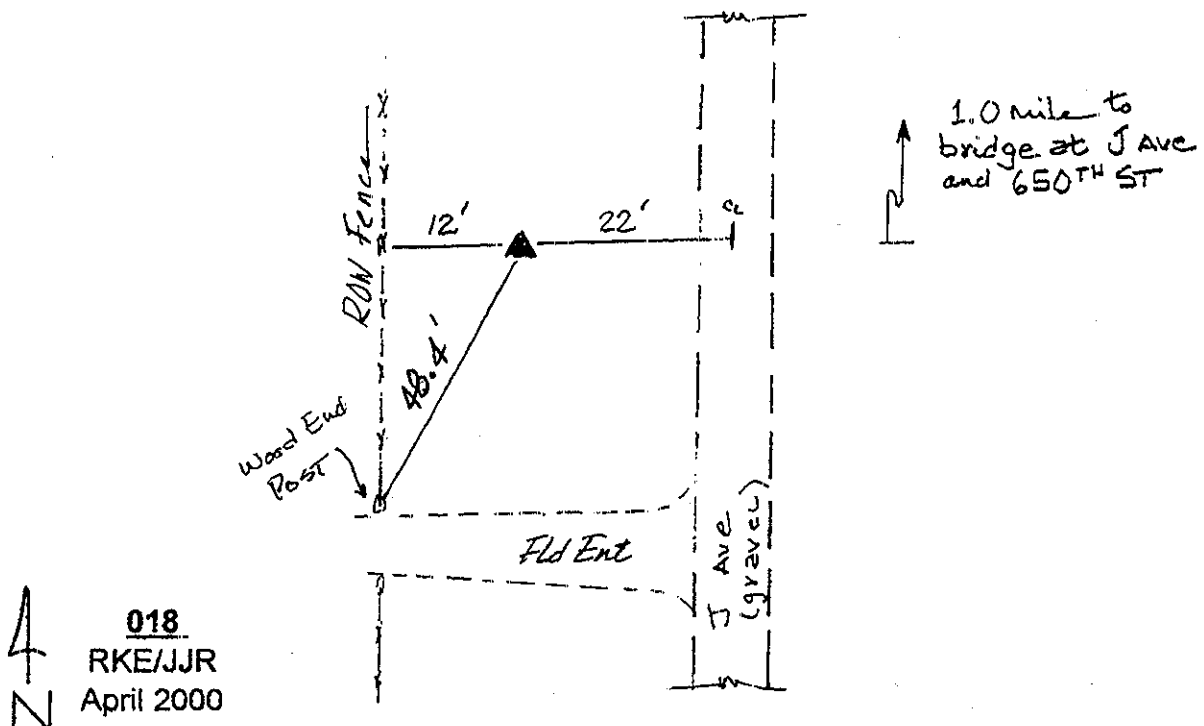
Theta: -1-28-44.13 Combination Factor: 0.99988903

Designation: **CHEROKEE CO GPS CONTROL PT 2000-018**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 20ft West of "J" Ave, 100ft North of Section Line Near the SE Cor of Sec 33, T90N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 19

Northing: 3690846.03(Ft) Easting: 4335488.25(Ft)

Northing: 1124972.119(M) Easting: 1321459.460(M)

Elev: 1164.35(Ft) NAVD_88

Elev: 354.895(M) NAVD_88 Ellip Ht: 327.462(M) 96C Geoid Ht: -27.433(M)

Latitude: 42-36-15.889095 N Longitude: 95-40-33.720497 W

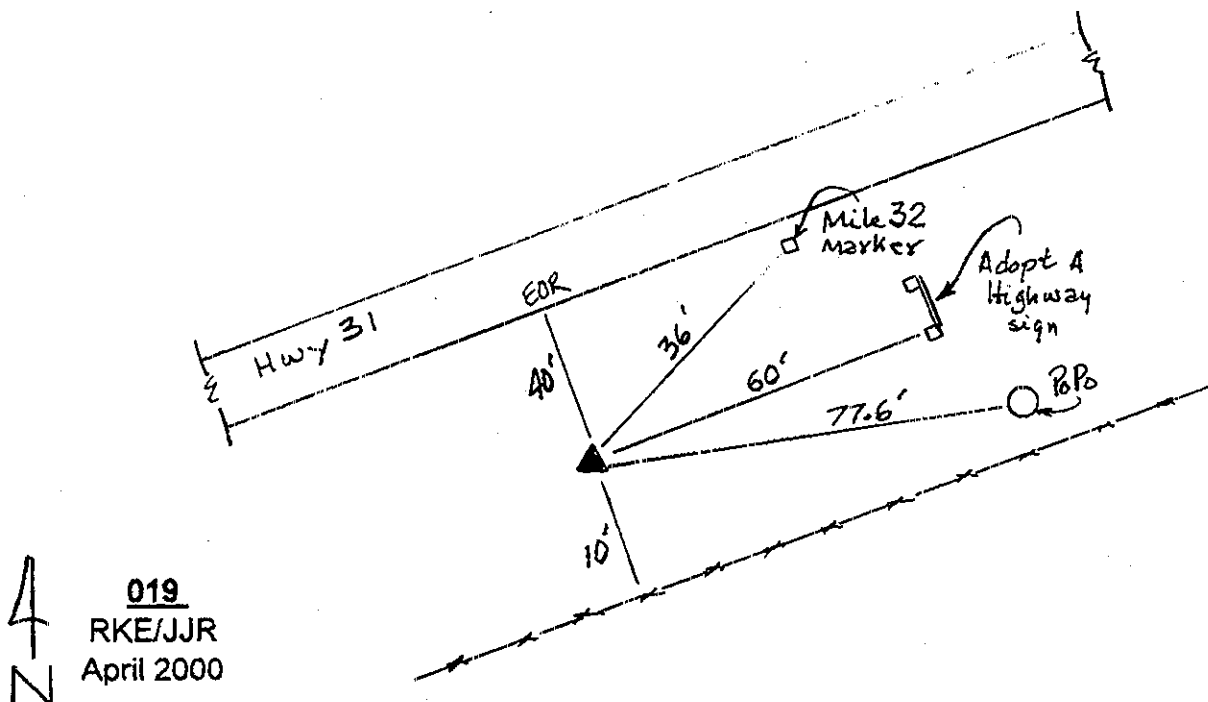
Theta: -1-28-29.26 Combination Factor: 0.99989459

Designation: **CHEROKEE CO GPS CONTROL PT 2000-019**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 40ft SE of Hwy 31, 200ft South of Section Line Near the N 1/4 Cor of the NW 1/4 of Sec 22, T90N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 20

Northing: 3706934.65(Ft) Easting: 4334571.63(Ft)

Northing: 1129875.940(M) Easting: 1321180.074(M)

Elev: 1330.34(Ft) NAVD_88

Elev: 405.487(M) NAVD_88 Ellip Ht: 378.080(M) 96C Geoid Ht: -27.408(M)

Latitude: 42-38-54.532158 N Longitude: 95-40-51.523175 W

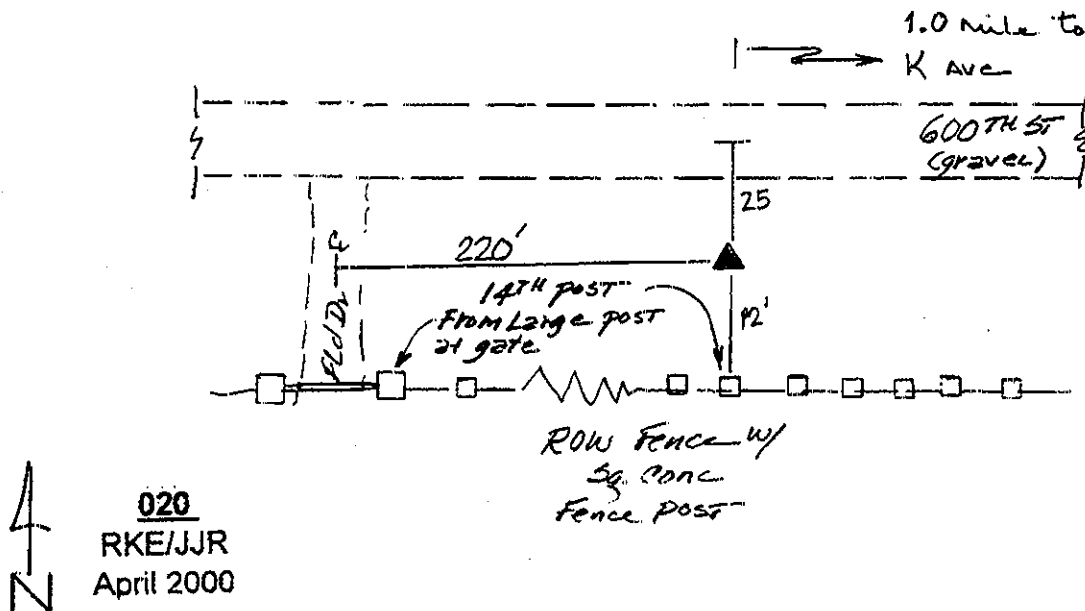
Theta: -1-28-41.33 Combination Factor: 0.99988610

Designation: **CHEROKEE CO GPS CONTROL PT 2000-020**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft South of 600th St, 300ft East of Section Line Near the NW Cor of Sec 3, T90N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 21

Northing: 3722590.13(Ft) Easting: 4334820.37(Ft)

Northing: 1134647.742(M) Easting: 1321255.890(M)

Elev: 1277.89(Ft) NAVD_88

Elev: 389.503(M) NAVD_88 Ellip Ht: 362.111(M) 96C Geoid Ht: -27.392(M)

Latitude: 42-41-29.193431 N Longitude: 95-40-53.601227 W

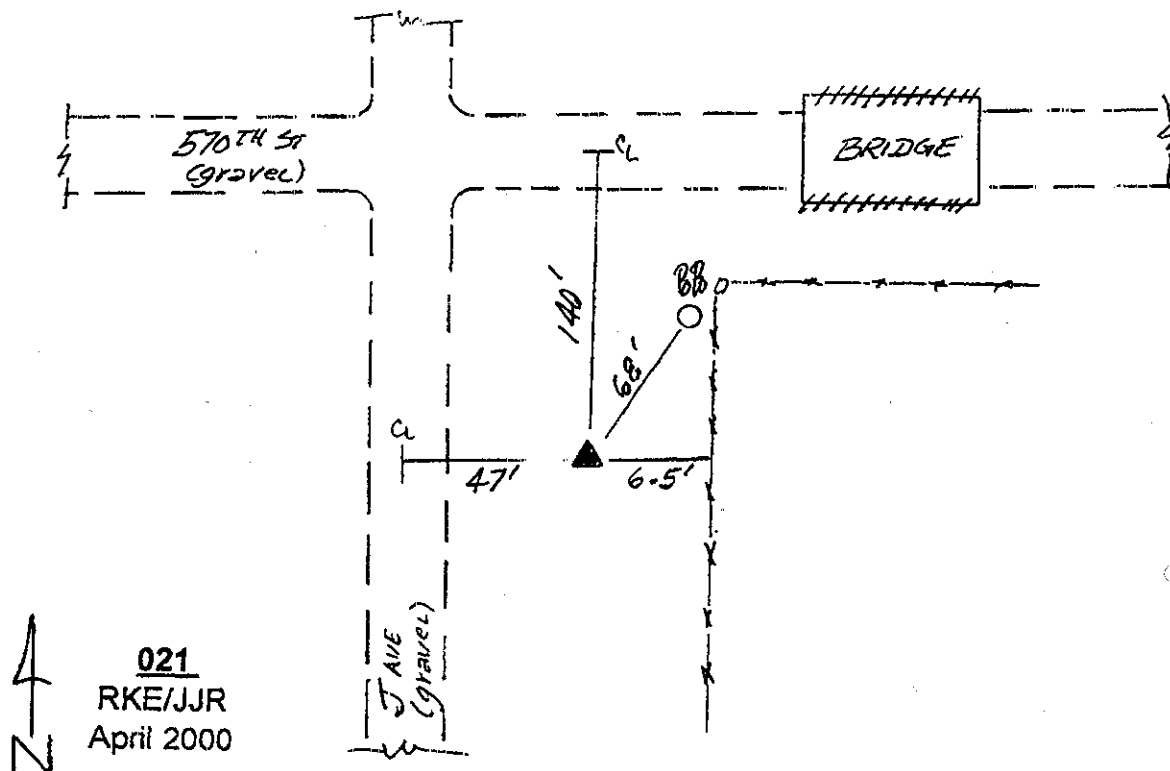
Theta: -1-28-42.74 Combination Factor: 0.99988863

Designation: **CHEROKEE CO GPS CONTROL PT 2000-021**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 45ft East of "J" Ave, 140ft South of 570th St Near the NW Cor of Sec 22, T91N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 22

Northing: 3738804.65(Ft)

Easting: 4335063.72(Ft)

Northing: 1139589.936(M)

Easting: 1321330.064(M)

Elev: 1332.02(Ft) NAVD_88

Elev: 406.001(M) NAVD_88

Ellip Ht: 378.618(M)

96C Geoid Ht: -27.383(M)

Latitude: 42-44-09.372413 N

Longitude: 95-40-55.947704 W

Theta: -1-28-44.33

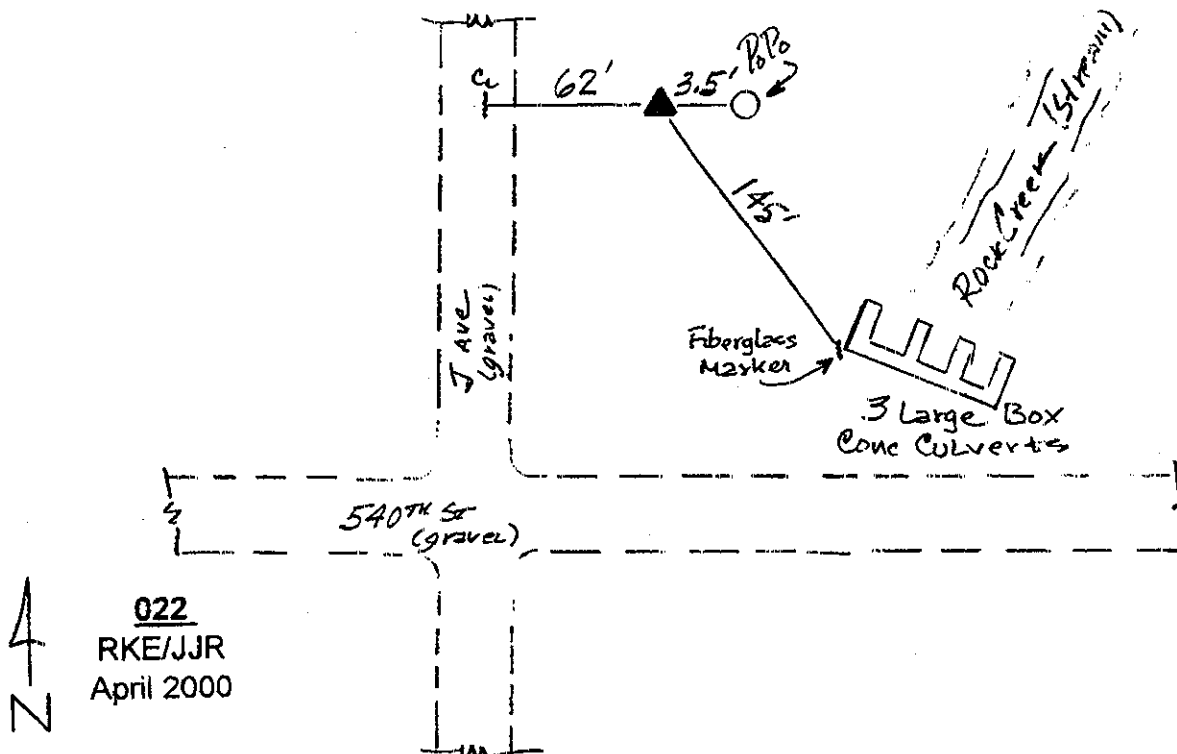
Combination Factor: 0.99988667

Designation: **CHEROKEE CO GPS CONTROL PT 2000-022**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 60ft East of "J" Ave (L48), 200ft North of 540th St Near the SW Cor of Sec 34, T92N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 23

Northing: 3753932.74(Ft)

Easting: 4335874.10(Ft)

Northing: 1144200.989(M)

Easting: 1321577.069(M)

Elev: 1461.17(Ft) NAVD_88

Elev: 445.365(M) NAVD_88

Ellip Ht: 417.981(M)

96C Geoid Ht: -27.384(M)

Latitude: 42-46-38.966382 N

Longitude: 95-40-50.320441 W

Theta: -1-28-40.51

Combination Factor: 0.99988161

Designation: **CHEROKEE CO GPS CONTROL PT 2000-023**

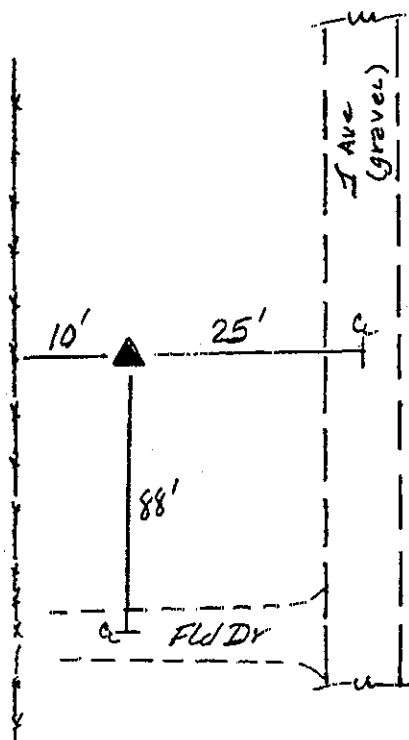
Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of "J" Ave (L48), 0.1mile South of 510th St Near the NE Cor of Sec 21, T92N, R41W

Date Printed August 29, 2000



023
RKE/JJR
April 2000



.75 mile
to 510th St

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 24

Northing: 3770728.58(Ft) Easting: 4336182.26(Ft)

Northing: 1149320.369(M) Easting: 1321670.997(M)

Elev: 1378.43(Ft) NAVD_88

Elev: 420.145(M) NAVD_88 Ellip Ht: 392.767(M) 96C Geoid Ht: -27.378(M)

Latitude: 42-49-24.899464 N Longitude: 95-40-51.999639 W

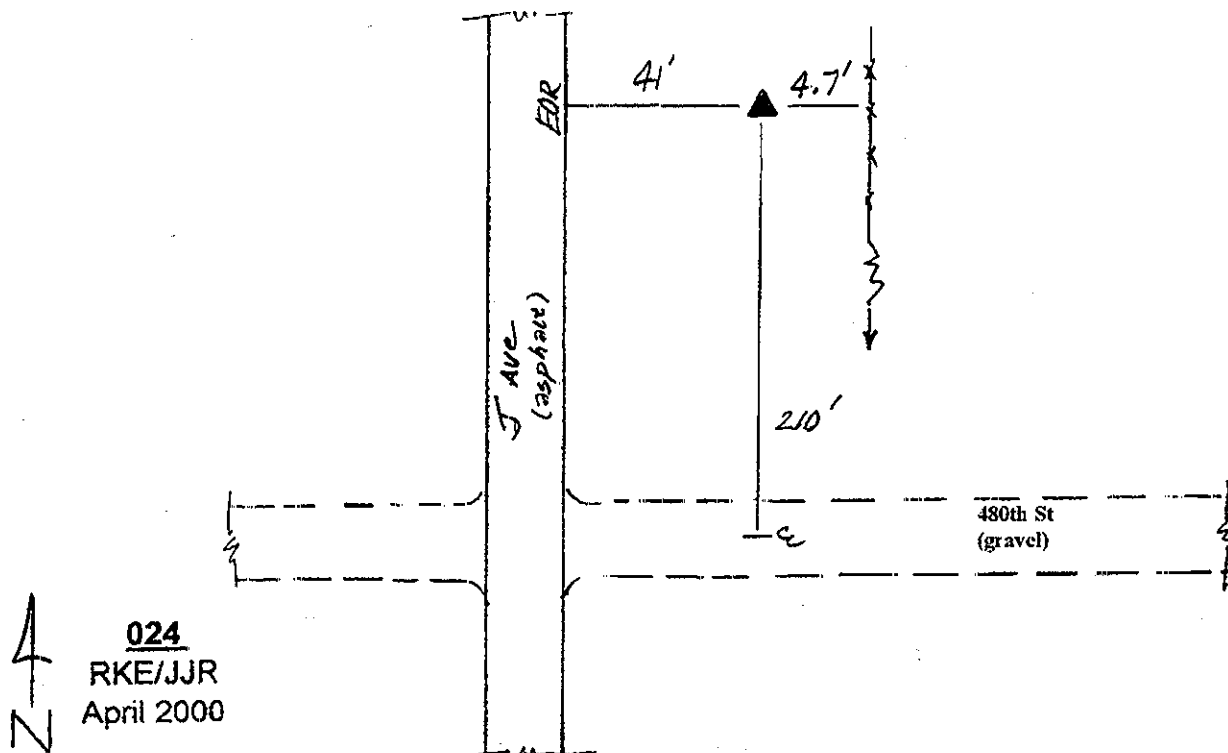
Theta: -1-28-41.65 Combination Factor: 0.99988743

Designation: **CHEROKEE CO GPS CONTROL PT 2000-024**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 40ft East of "J" Ave (L48), 210ft North of 480th St Near the SW Cor of Sec 34, T93N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 25

Northing: 3786406.06(Ft)

Easting: 4336300.84(Ft)

Northing: 1154098.877(M)

Easting: 1321707.138(M)

Elev: 1383.20(Ft) NAVD_88

Elev: 421.601(M) NAVD_88

Ellip Ht: 394.240(M)

96C Geoid Ht: -27.362(M)

Latitude: 42-51-59.739306 N

Longitude: 95-40-55.838860 W

Theta: -1-28-44.25

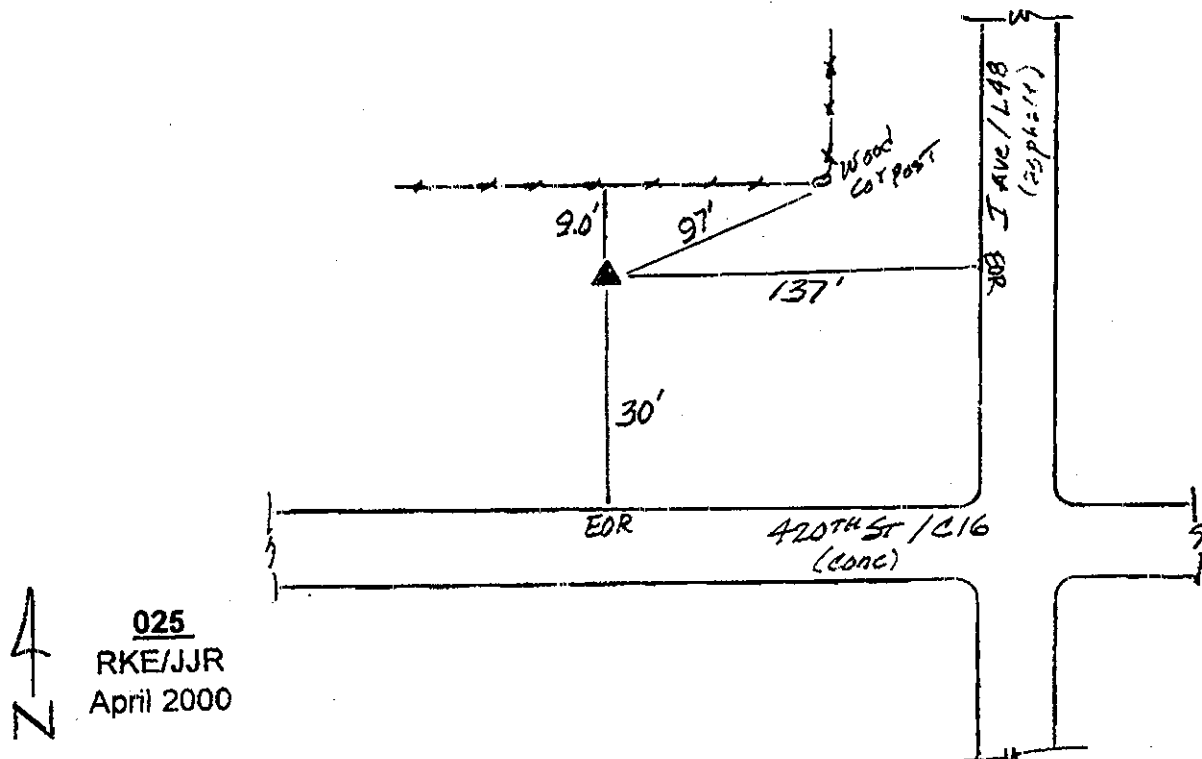
Combination Factor: 0.99988952

Designation: **CHEROKEE CO GPS CONTROL PT 2000-025**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft North of 450th St (C16), 135ft West of "J" Ave (L48) Near the SE Cor of Sec 16, T93N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 26

Northing: 3802182.66(Ft) Easting: 4336265.35(Ft)

Northing: 1158907.592(M) Easting: 1321696.322(M)

Elev: 1378.24(Ft) NAVD_88

Elev: 420.087(M) NAVD_88 Ellip Ht: 392.752(M) 96C Geoid Ht: -27.335(M)

Latitude: 42-54-35.516863 N Longitude: 95-41-01.787320 W

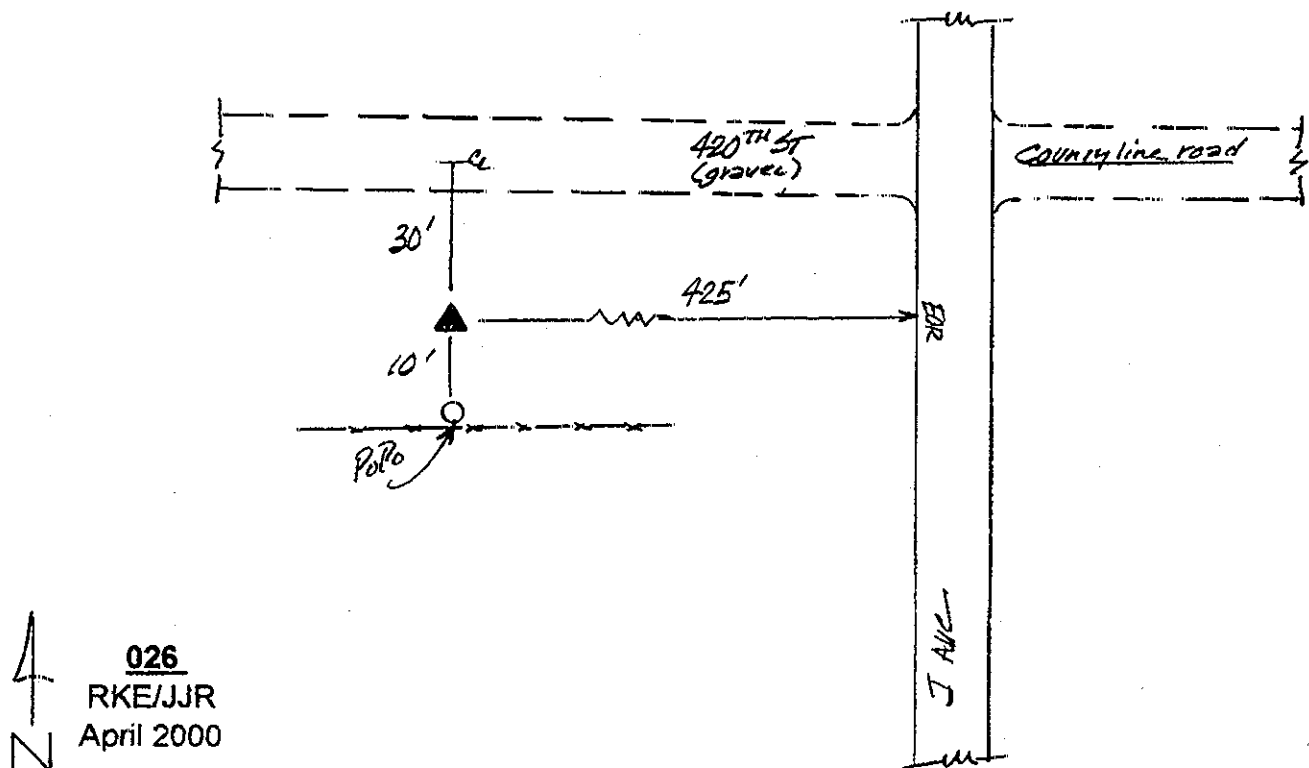
Theta: -1-28-48.28 Combination Factor: 0.99989265

Designation: **CHEROKEE CO GPS CONTROL PT 2000-026**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft South of 420th St, 0.1mile West of "J" Ave (L48), 0.1mile West of NE Cor of Sec 4, T93N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 27

Northing: 3675416.26(Ft)

Easting: 4349388.57(Ft)

Northing: 1120269.117(M)

Easting: 1325696.288(M)

Elev: 1353.75(Ft) NAVD_88

Elev: 412.623(M) NAVD_88

Ellip Ht: 385.075(M)

96C Geoid Ht: -27.549(M)

Latitude: 42-33-47.007615 N

Longitude: 95-37-22.721902 W

Theta: -1-26-19.81

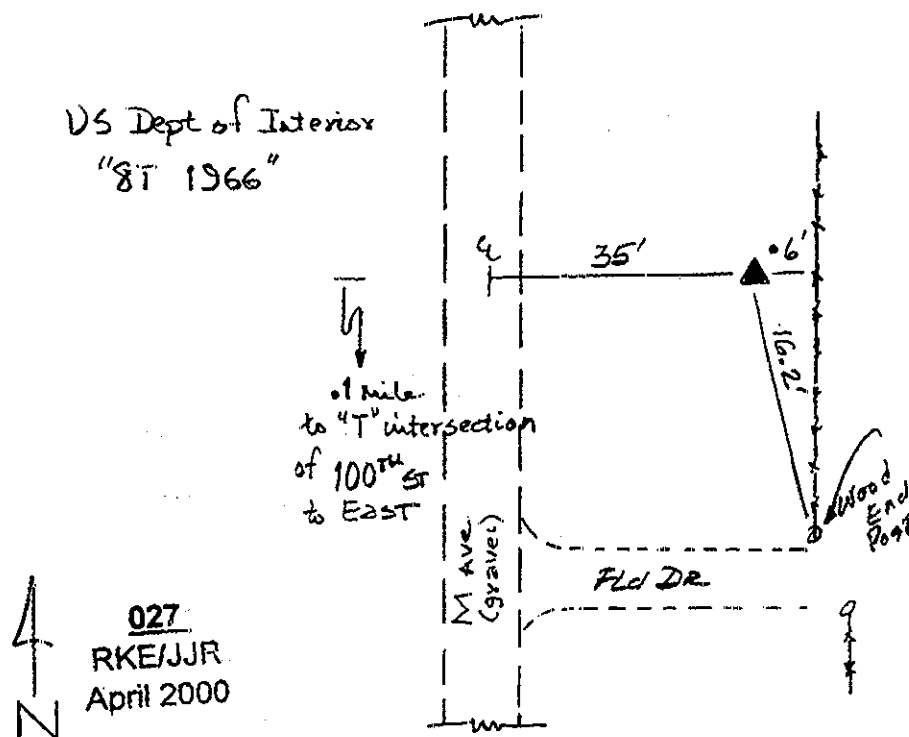
Combination Factor: 0.99988660

Designation: USGS BM "8 T 1966 1353"

Monument Type: A standard tablet set on top of a 8 ft copper coated steel rod inside a 6 in. dia. concrete tile

To Reach: 510ft North of and 40ft East of T-road intersection near the SW Cor of Sec 31, T90N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 28

Northing: 3690740.01(Ft) Easting: 4349764.04(Ft)

Northing: 1124939.804(M) Easting: 1325810.730(M)

Elev: 1268.70(Ft) NAVD_88

Elev: 386.701(M) NAVD_88 Ellip Ht: 359.165(M) 96C Geoid Ht: -27.536(M)

Latitude: 42-36-18.427434 N Longitude: 95-37-22.848013 W

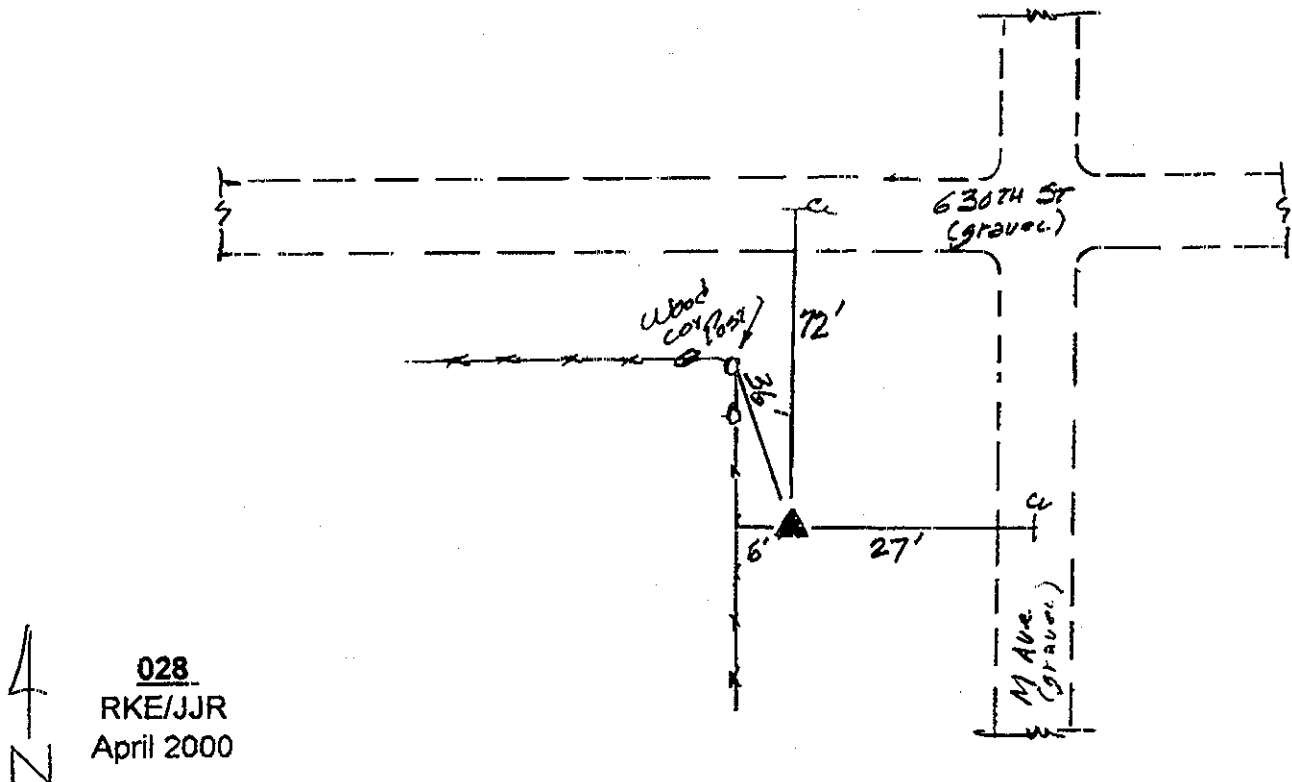
Theta: -1-26-19.90 Combination Factor: 0.99988960

Designation: **CHEROKEE CO GPS CONTROL PT 2000-028**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of "M" Ave, 70ft South of 630th St Near the NE Cor of Sec 24, T90N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 29

Northing: 3706940.13(Ft) Easting: 4349980.67(Ft)

Northing: 1129877.611(M) Easting: 1325876.759(M)

Elev: 1188.53(Ft) NAVD_88

Elev: 362.263(M) NAVD_88 Ellip Ht: 334.735(M) 96C Geoid Ht: -27.529(M)

Latitude: 42-38-58.461266 N Longitude: 95-37-25.393571 W

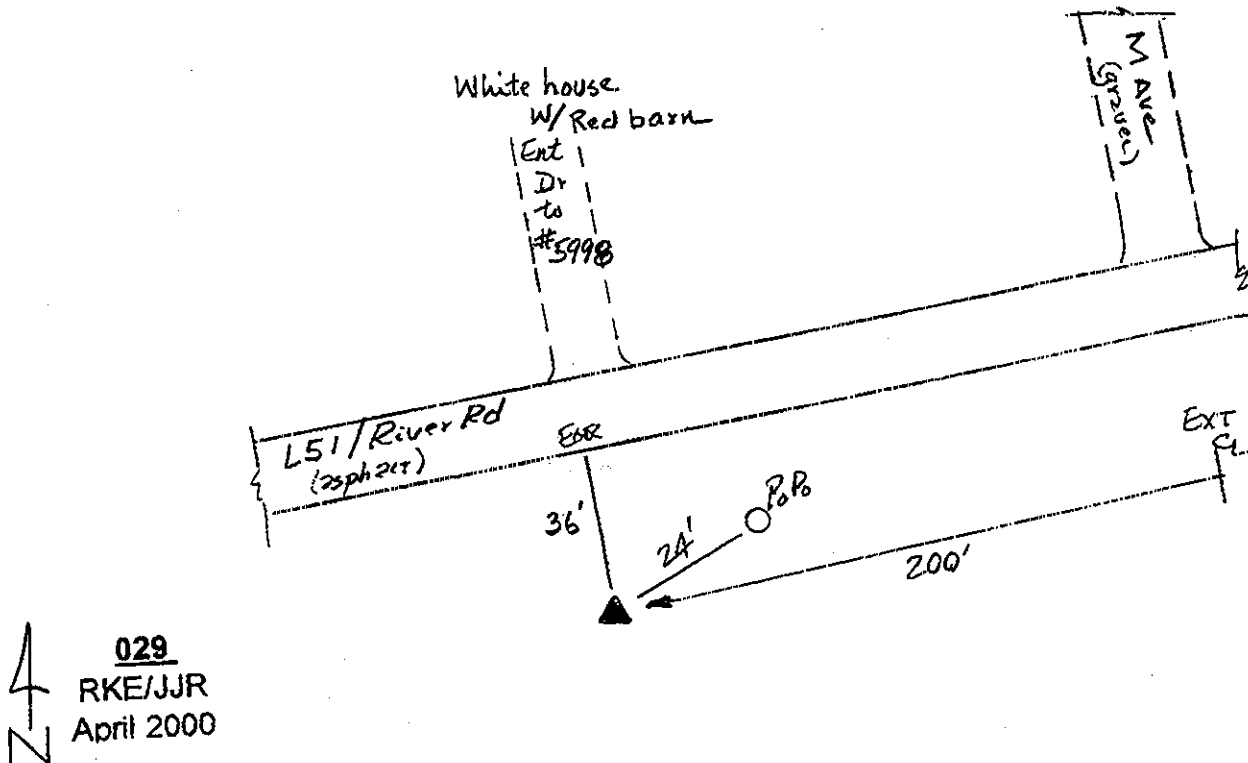
Theta: -1-26-21.62 Combination Factor: 0.99989289

Designation: **CHEROKEE CO GPS CONTROL PT 2000-029**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 35ft SE of L56, 200ft West of Section Line Near the SE Cor of Sec 36, T91N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 30

Northing: 3722456.83(Ft) Easting: 4349937.38(Ft)

Northing: 1134607.113(M) Easting: 1325863.566(M)

Elev: 1363.72(Ft) NAVD_88

Elev: 415.662(M) NAVD_88 Ellip Ht: 388.145(M) 96C Geoid Ht: -27.517(M)

Latitude: 42-41-31.680529 N Longitude: 95-37-31.192212 W

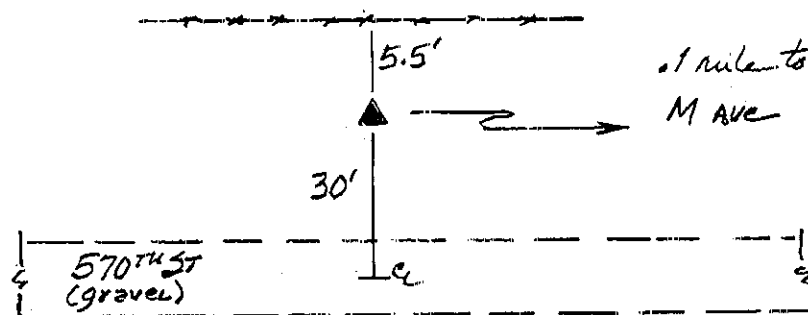
Theta: -1-26-25.55 Combination Factor: 0.99988455

Designation: **CHEROKEE CO GPS CONTROL PT 2000-030**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft North of 570th St, 0.1mile West of "M" Ave, 0.1mile West of SE Cor of Sec 13, T91N, R41W

Date Printed August 29, 2000



4
N
030
RKE/JJR
April 2000

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 31

Northing: 3738196.90(Ft) Easting: 4350846.87(Ft)

Northing: 1139404.694(M) Easting: 1326140.779(M)

Elev: 1364.66(Ft) NAVD_88

Elev: 415.949(M) NAVD_88 Ellip Ht: 388.430(M) 96C Geoid Ht: -27.520(M)

Latitude: 42-44-07.340773 N Longitude: 95-37-24.310749 W

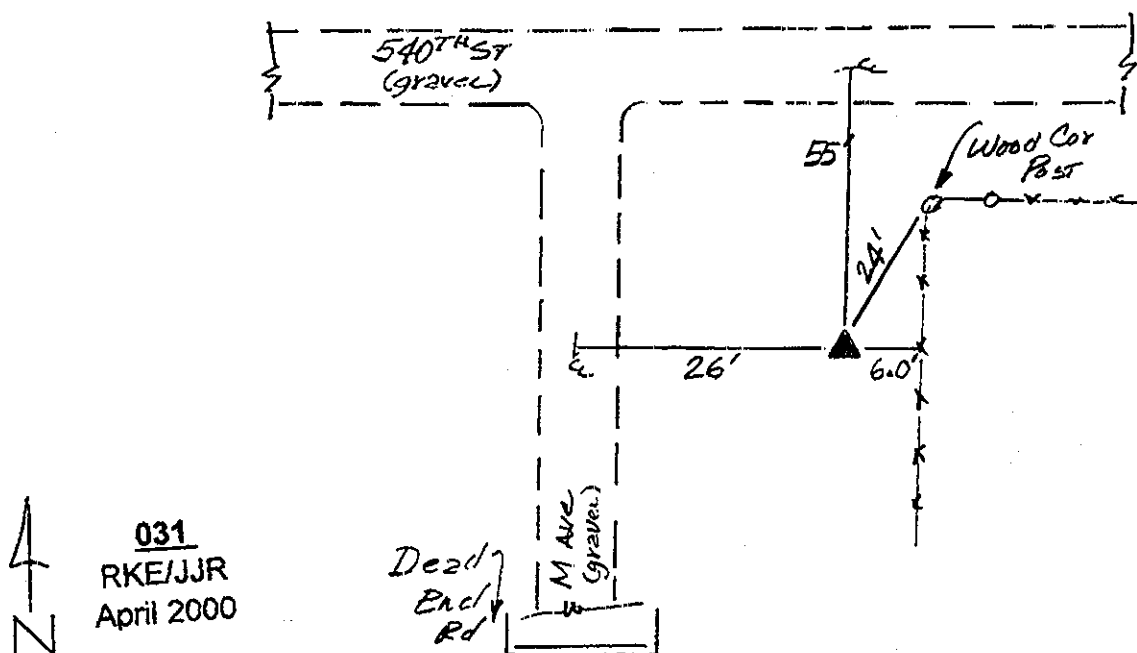
Theta: -1-26-20.89 Combination Factor: 0.99988511

Designation: **CHEROKEE CO GPS CONTROL PT 2000-031**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft East of "M" Ave, 55ft South of 540th St Near the NW Cor of Sec 6, T91N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 32

Northing: 3754154.01(Ft) Easting: 4351497.71(Ft)

Northing: 1144268.430(M) Easting: 1326339.155(M)

Elev: 1453.42(Ft) NAVD_88

Elev: 443.002(M) NAVD_88 Ellip Ht: 415.471(M) 96C Geoid Ht: -27.531(M)

Latitude: 42-46-45.078732 N Longitude: 95-37-20.960086 W

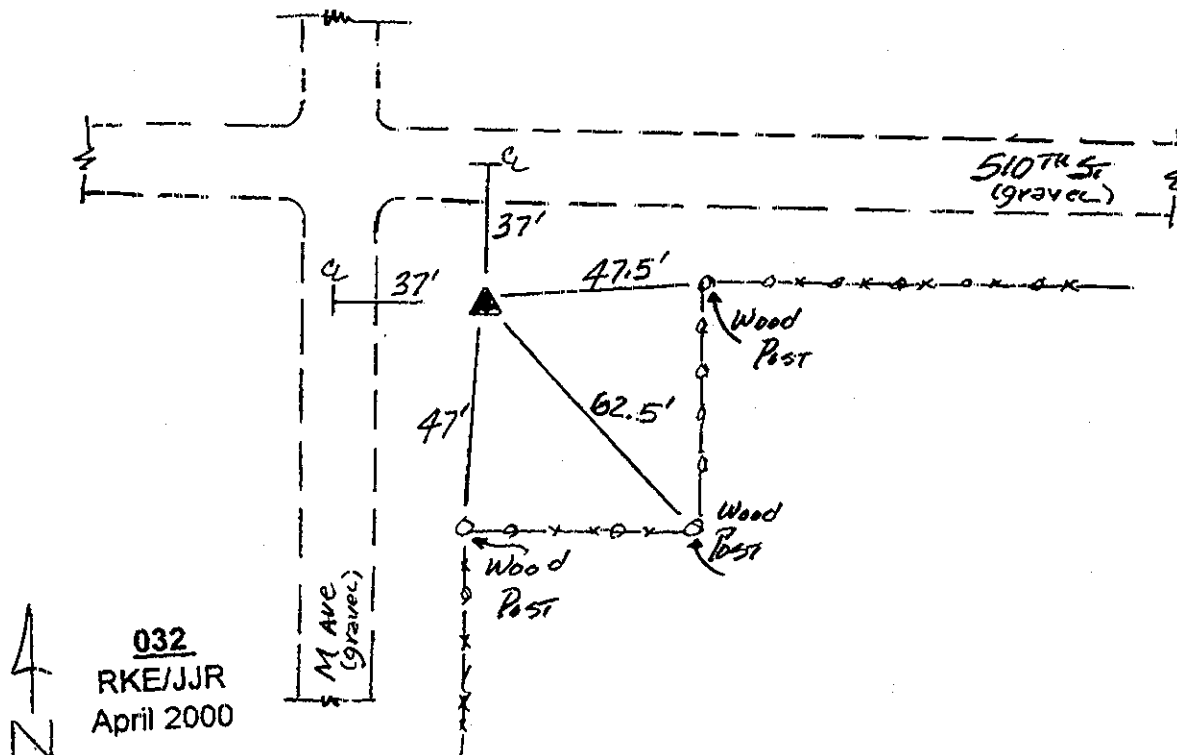
Theta: -1-26-18.62 Combination Factor: 0.99988206

Designation: **CHEROKEE CO GPS CONTROL PT 2000-032**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 35ft East of "M" Ave, 35ft South of 510th St Near the NW Cor of Sec 19, T92N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 33

Northing: 3770289.50(Ft) Easting: 4351999.78(Ft)

Northing: 1149186.538(M) Easting: 1326492.187(M)

Elev: 1371.16(Ft) NAVD_88

Elev: 417.930(M) NAVD_88 Ellip Ht: 390.388(M) 96C Geoid Ht: -27.542(M)

Latitude: 42-49-24.539899 N Longitude: 95-37-19.660490 W

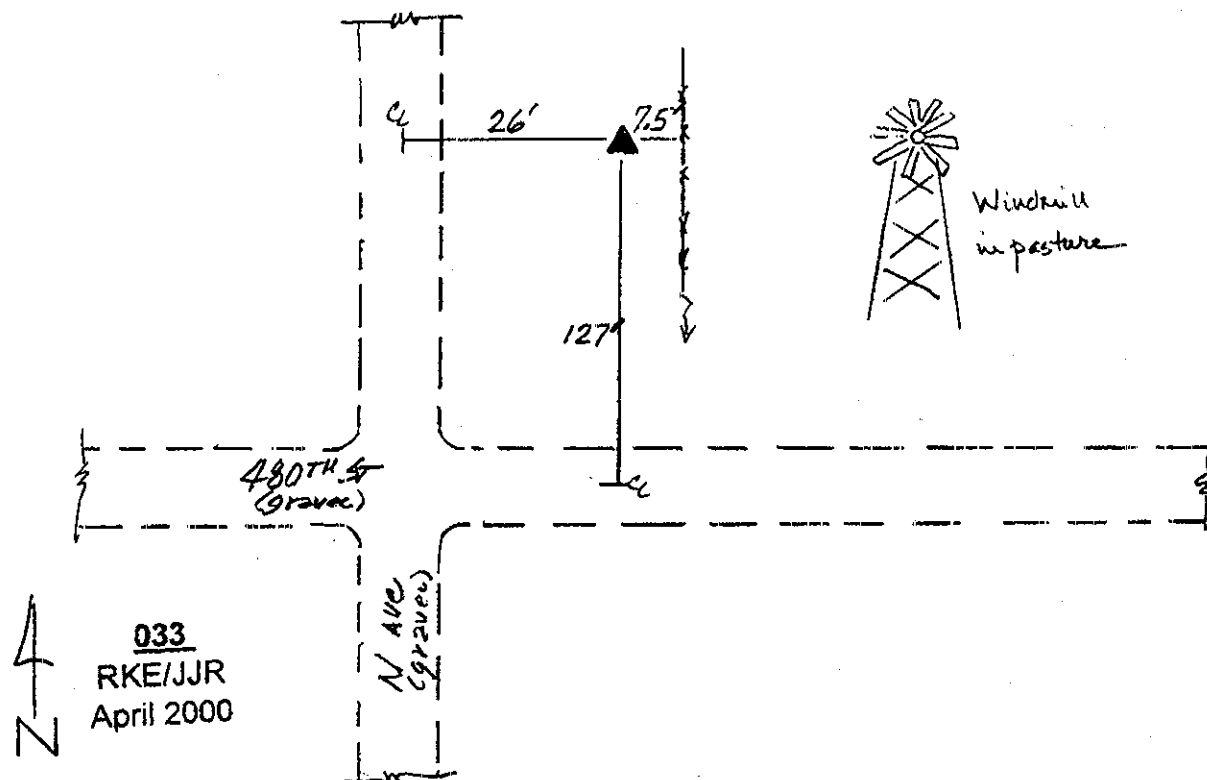
Theta: -1-26-17.74 Combination Factor: 0.99988780

Designation: **CHEROKEE CO GPS CONTROL PT 2000-033**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft East of "M" Ave, 125ft North of 480th St Near the SW Cor of Sec 31, T93N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 34

Northing: 3785930.26(Ft) Easting: 4353016.92(Ft)

Northing: 1153953.852(M) Easting: 1326802.212(M)

Elev: 1337.73(Ft) NAVD_88

Elev: 407.742(M) NAVD_88 Ellip Ht: 380.195(M) 96C Geoid Ht: -27.547(M)

Latitude: 42-51-59.241716 N Longitude: 95-37-11.277898 W

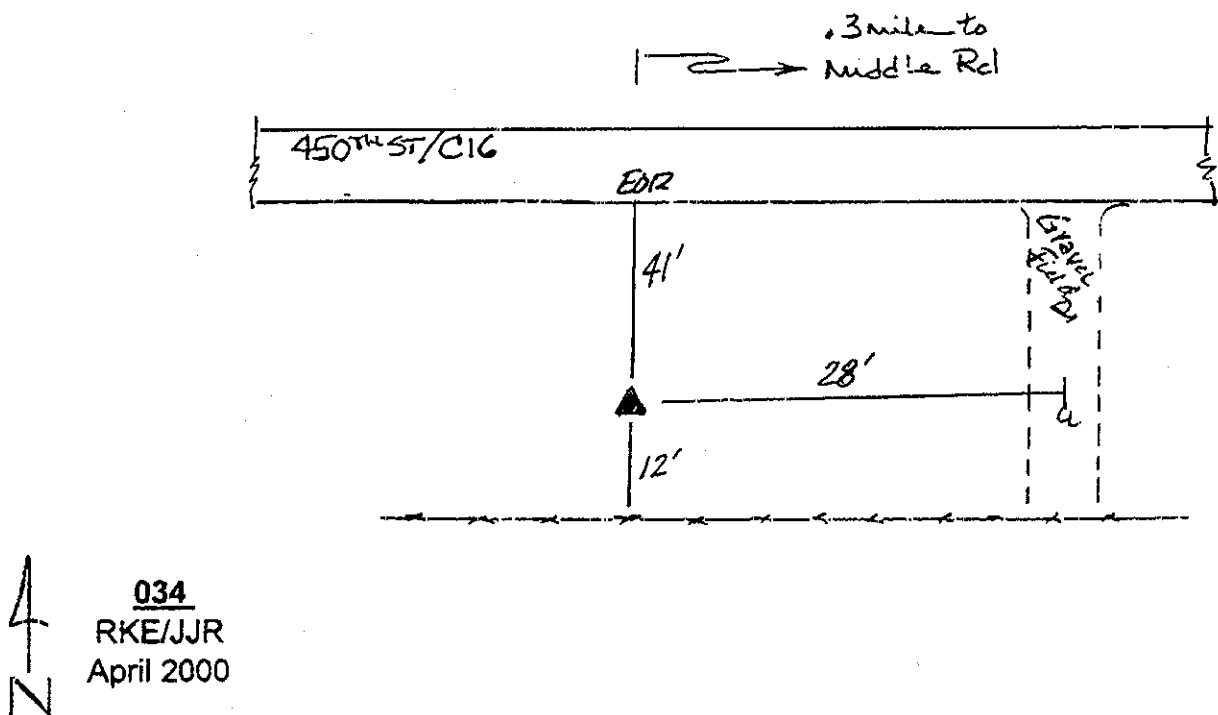
Theta: -1-26-12.06 Combination Factor: 0.99989171

Designation: **CHEROKEE CO GPS CONTROL PT 2000-034**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 40ft South of 450th St (C16), 0.2mile East of "M" Ave, 0.2mile East of NW Cor of Sec 19, T93N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 35

Northing: 3801622.15(Ft) Easting: 4352532.81(Ft)

Northing: 1158736.748(M) Easting: 1326654.655(M)

Elev: 1364.10(Ft) NAVD_88

Elev: 415.778(M) NAVD_88 Ellip Ht: 388.256(M) 96C Geoid Ht: -27.522(M)

Latitude: 42-54-34.074758 N Longitude: 95-37-23.068000 W

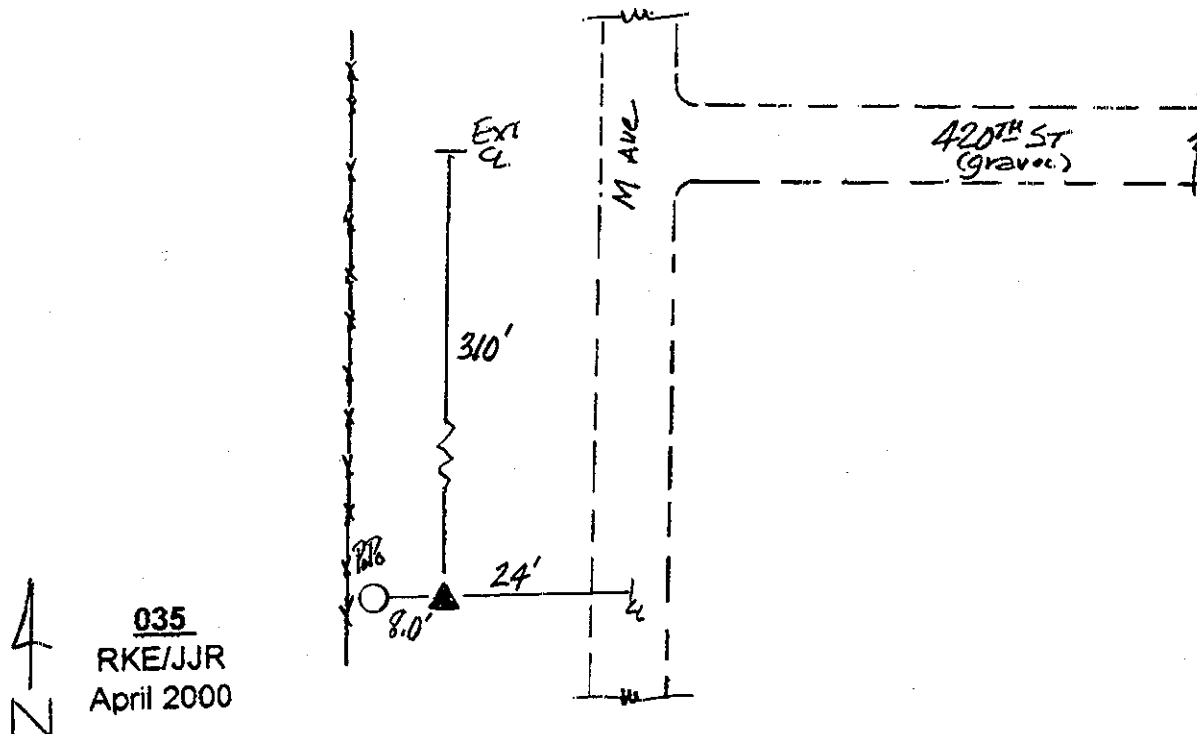
Theta: -1-26-20.05 Combination Factor: 0.99989333

Designation: **CHEROKEE CO GPS CONTROL PT 2000-035**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of "M" Ave, 310ft South of 420th St Near the NE Cor of Sec 1, T93N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 36

Northing: 3674664.96(Ft) Easting: 4364967.33(Ft)

Northing: 1120040.119(M) Easting: 1330444.704(M)

Elev: 1376.96(Ft) NAVD_88

Elev: 419.698(M) NAVD_88 Ellip Ht: 392.028(M) 96C Geoid Ht: -27.670(M)

Latitude: 42-33-43.399730 N Longitude: 95-33-54.356152 W

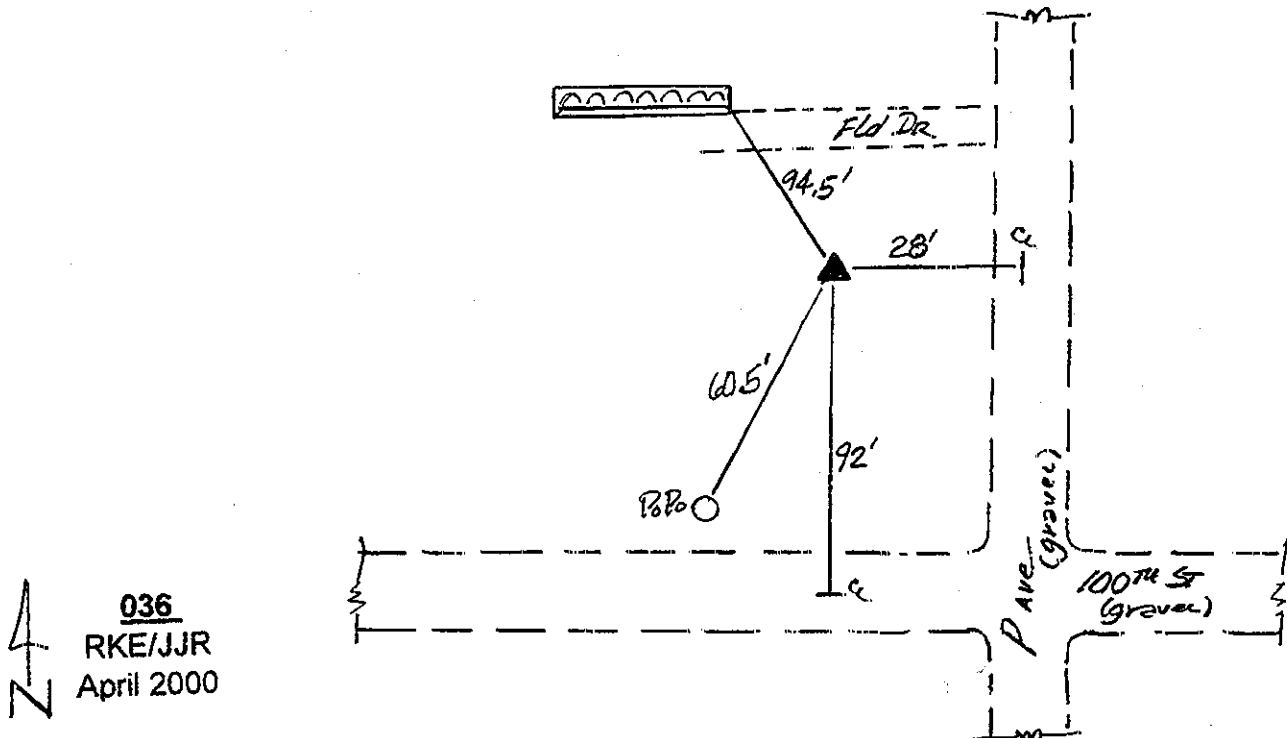
Theta: -1-23-58.59 Combination Factor: 0.99988554

Designation: **CHEROKEE CO GPS CONTROL PT 2000-036**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of "P" Ave, 95ft North of 100th St Near the SE Cor of Sec 33, T90N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 37

Northing: 3690577.71(Ft)

Easting: 4365372.96(Ft)

Northing: 1124890.336(M)

Easting: 1330568.338(M)

Elev: 1386.01(Ft) NAVD_88

Elev: 422.457(M) NAVD_88

Ellip Ht: 394.804(M)

96C Geoid Ht: -27.653(M)

Latitude: 42-36-20.643622 N

Longitude: 95-33-54.131126 W

Theta: -1-23-58.44

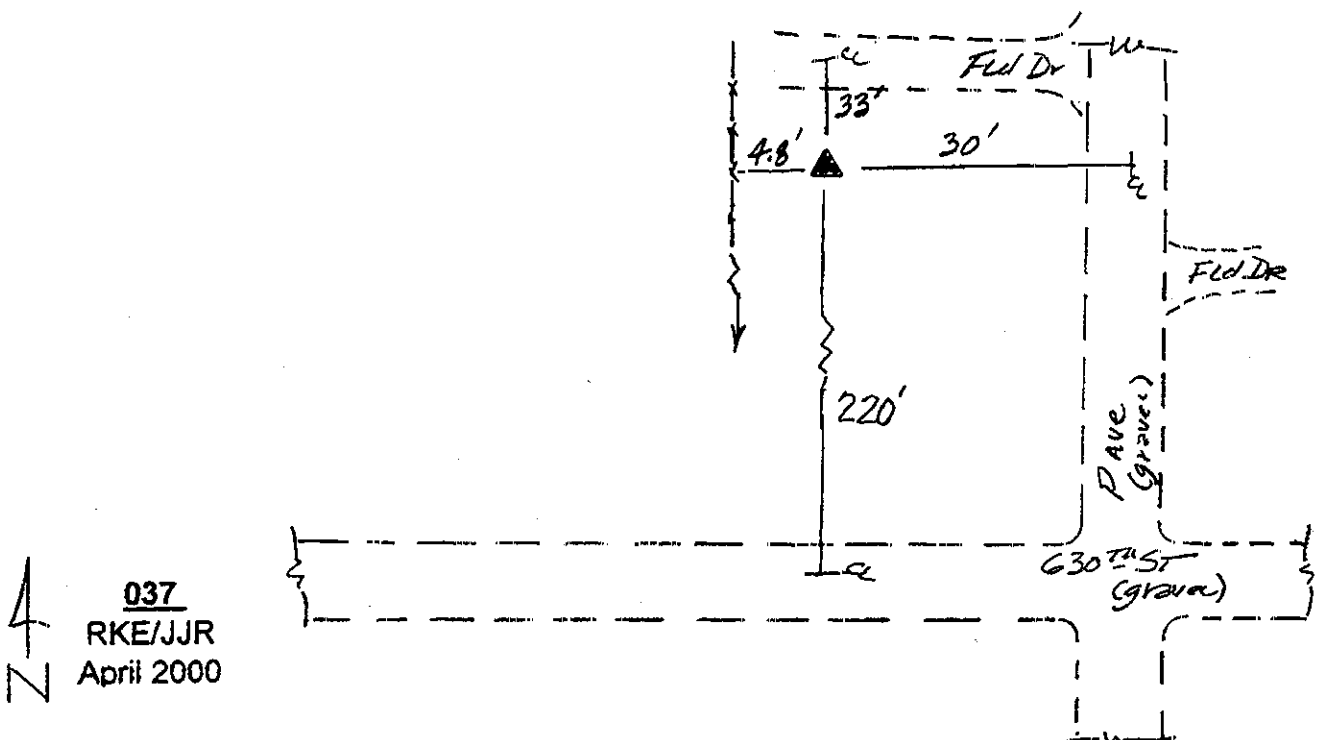
Combination Factor: 0.99988400

Designation: CHEROKEE CO GPS CONTROL PT 2000-037

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft West of "P" Ave, 220ft North of 630th St in abandoned field ent to West Near the NE Cor of Sec 21, T90N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 38

Northing: 3706071.47(Ft) Easting: 4365138.51(Ft)

Northing: 1129612.842(M) Easting: 1330496.879(M)

Elev: 1351.01(Ft) NAVD_88

Elev: 411.789(M) NAVD_88 Ellip Ht: 384.146(M) 96C Geoid Ht: -27.643(M)

Latitude: 42-38-53.594148 N Longitude: 95-34-02.331354 W

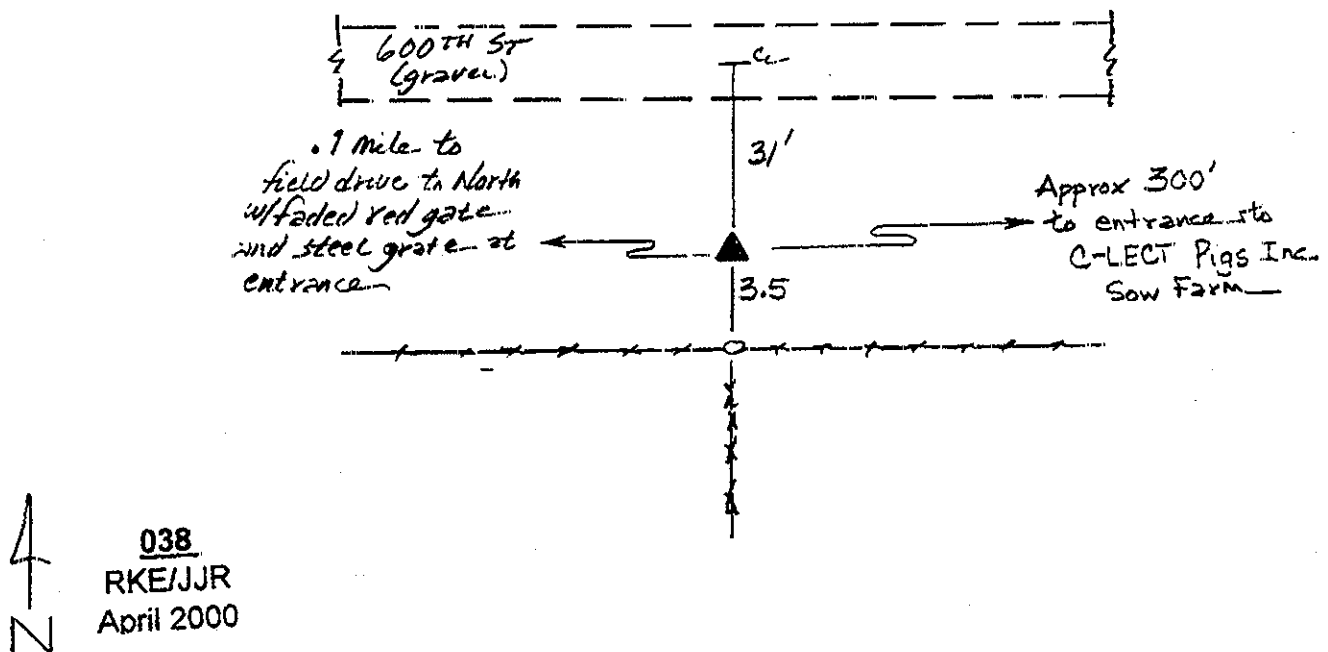
Theta: -1-24-04.00 Combination Factor: 0.99988515

Designation: **CHEROKEE CO GPS CONTROL PT 2000-038**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft South of 600th St at NW Cor of "C-LECT Pigs Inc" Near the NE Cor of Sec 4, T90N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 39

Northing: 3722109.39(Ft) Easting: 4369047.40(Ft)

Northing: 1134501.213(M) Easting: 1331688.312(M)

Elev: 1216.01(Ft) NAVD_88

Elev: 370.641(M) NAVD_88 Ellip Ht: 342.973(M) 96C Geoid Ht: -27.668(M)

Latitude: 42-41-32.915446 N Longitude: 95-33-15.254425 W

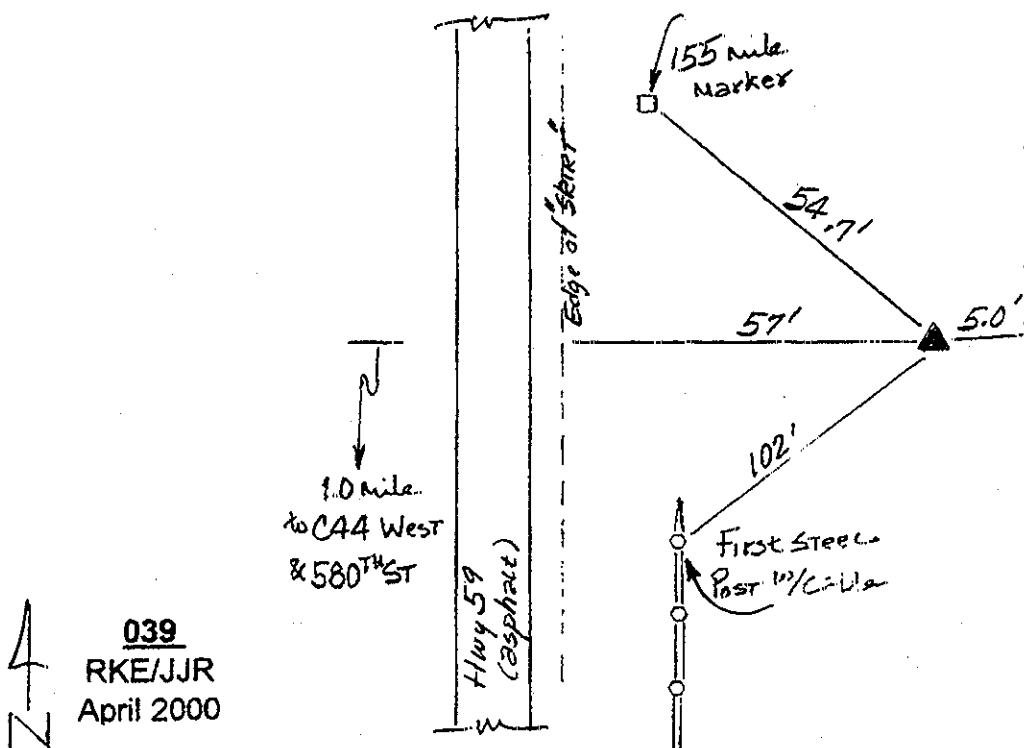
Theta: -1-23-32.09 Combination Factor: 0.99989164

Designation: **CHEROKEE CO GPS CONTROL PT 2000-039**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 60ft East of Hwy 59, East of North end of Easterly guardrail North of the S 1/4 Cor of Sec 15, T91N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 40

Northing: 3736945.90(Ft) Easting: 4369495.61(Ft)

Northing: 1139023.388(M) Easting: 1331824.924(M)

Elev: 1215.64(Ft) NAVD_88

Elev: 370.528(M) NAVD_88 Ellip Ht: 342.852(M) 96C Geoid Ht: -27.676(M)

Latitude: 42-43-59.537803 N Longitude: 95-33-14.080780 W

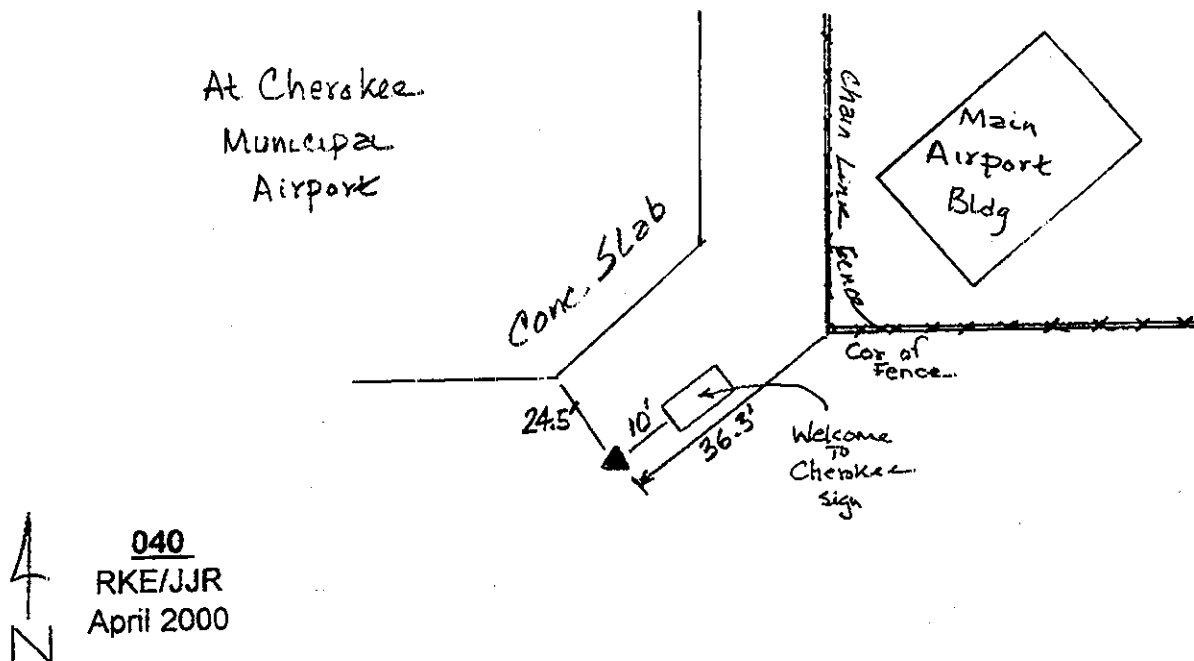
Theta: -1-23-31.30 Combination Factor: 0.99989222

Designation: **CHEROKEE CO GPS CONTROL PT 2000-040**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 10ft SouthSW of SW Corner of brick "Welcome to Cherokee" sign, South of terminal bldg at airport in the NE 1/4 of Sec 3, T91N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 41

Northing: 3755353.61(Ft) Easting: 4366888.46(Ft)

Northing: 1144634.070(M) Easting: 1331030.264(M)

Elev: 1360.53(Ft) NAVD_88

Elev: 414.689(M) NAVD_88 Ellip Ht: 387.009(M) 96C Geoid Ht: -27.680(M)

Latitude: 42-47-00.690032 N Longitude: 95-33-55.030643 W

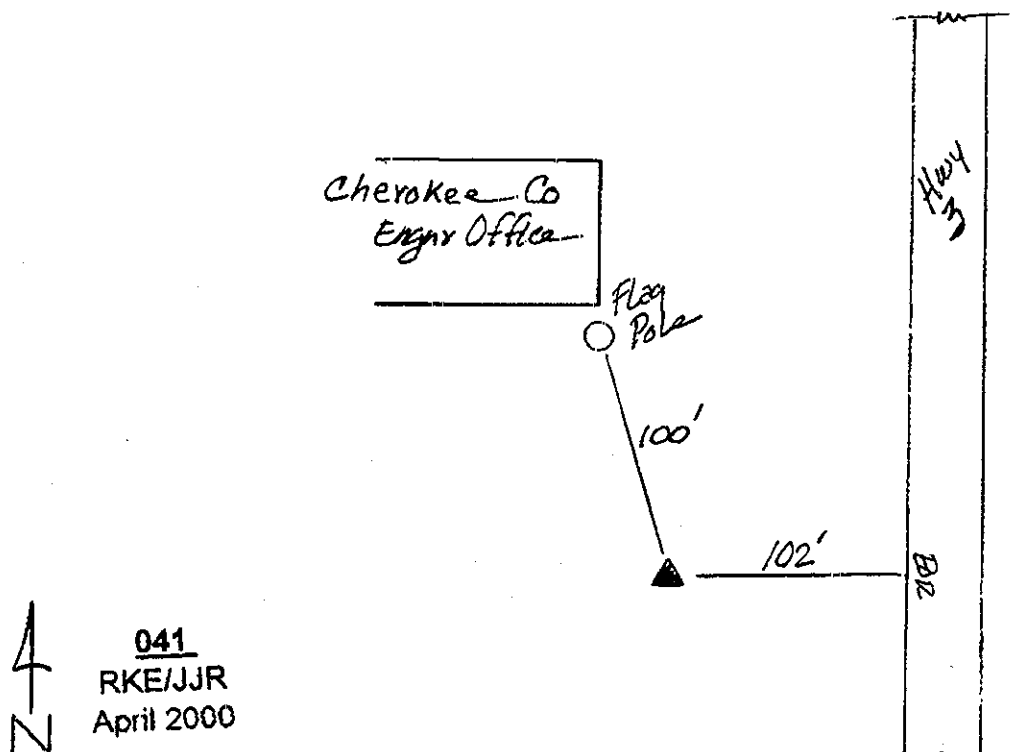
Theta: -1-23-59.05 Combination Factor: 0.99988668

Designation: **CHEROKEE CO GPS CONTROL PT 2000-041**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: Set at the Cherokee County Highway Dept. office, 100 ft West of Hwy 3 In the SE 1/4 of Sec 16, T92N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 42

Northing: 3769087.76(Ft)

Easting: 4370242.29(Ft)

Northing: 1148820.247(M)

Easting: 1332052.513(M)

Elev: 1336.85(Ft) NAVD_88

Elev: 407.471(M) NAVD_88

Ellip Ht: 379.744(M)

96C Geoid Ht: -27.728(M)

Latitude: 42-49-17.123140 N

Longitude: 95-33-14.541876 W

Theta: -1-23-31.61

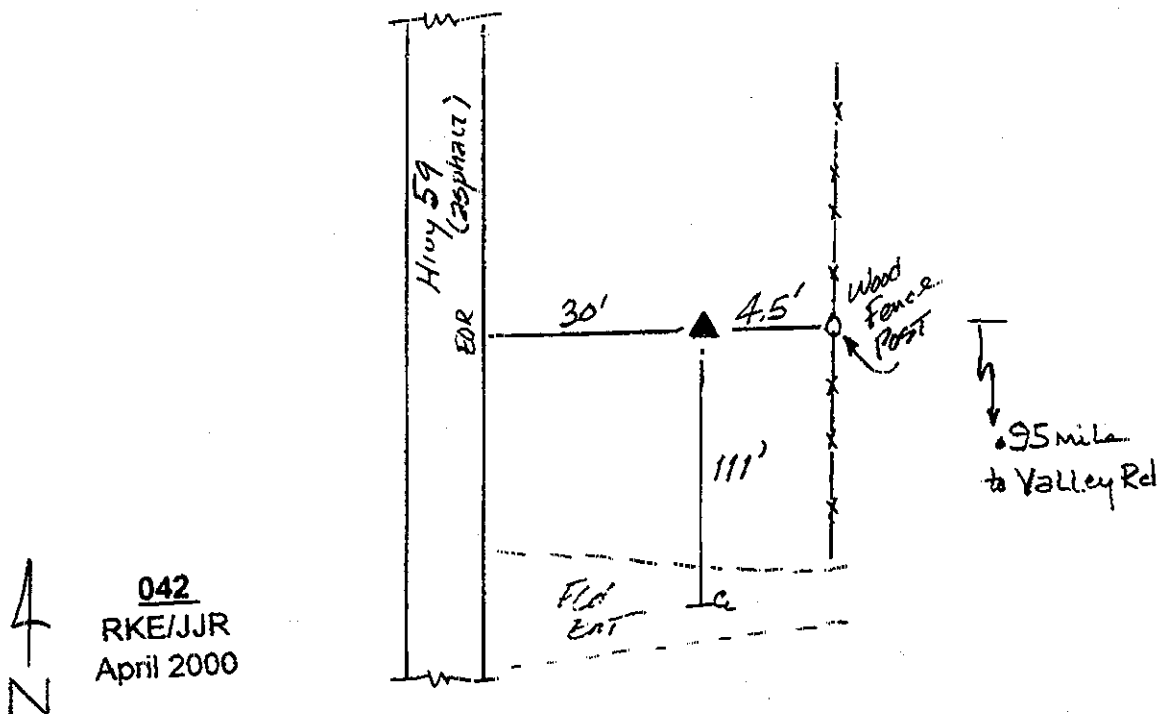
Combination Factor: 0.99988937

Designation: **CHEROKEE CO GPS CONTROL PT 2000-042**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft East of Hwy 59, 100ft North of field ent to East, South of N 1/4 Cor of Sec 3, T92N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 43

Northing: 3785373.41(Ft) Easting: 4368098.19(Ft)

Northing: 1153784.124(M) Easting: 1331398.991(M)

Elev: 1365.17(Ft) NAVD_88

Elev: 416.105(M) NAVD_88 Ellip Ht: 388.394(M) 96C Geoid Ht: -27.712(M)

Latitude: 42-51-57.428373 N Longitude: 95-33-48.637985 W

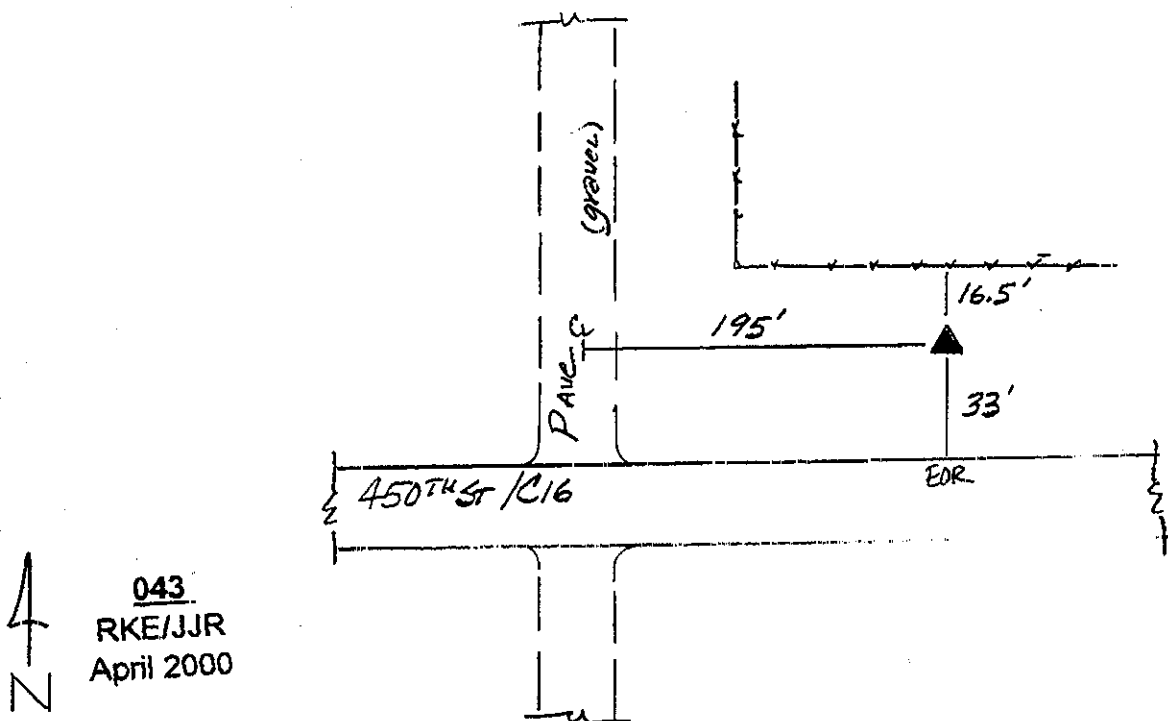
Theta: -1-23-54.72 Combination Factor: 0.99989040

Designation: **CHEROKEE CO GPS CONTROL PT 2000-043**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 35ft North of 450th St (C16), 200ft East of "P" Ave Near the SW Cor of Sec 15, T93N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 44

Northing: 3801439.00(Ft) Easting: 4368247.40(Ft)

Northing: 1158680.925(M) Easting: 1331444.469(M)

Elev: 1466.51(Ft) NAVD_88

Elev: 446.992(M) NAVD_88 Ellip Ht: 419.295(M) 96C Geoid Ht: -27.697(M)

Latitude: 42-54-36.110269 N Longitude: 95-33-51.902612 W

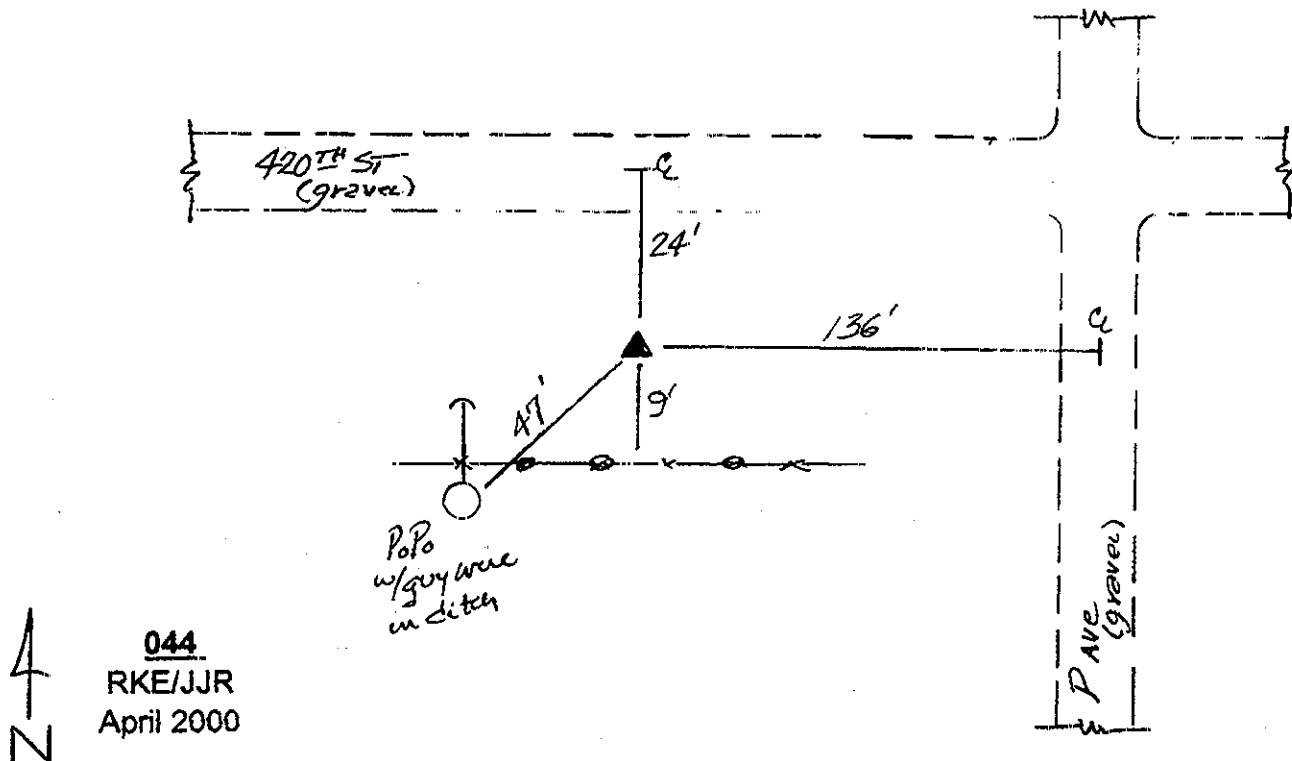
Theta: -1-23-56.93 Combination Factor: 0.99988850

Designation: **CHEROKEE CO GPS CONTROL PT 2000-044**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft South of 420th St, 135ft West of "P" Ave Near the NE Cor of Sec 4, T93N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 45

Northing: 3674379.87(Ft)

Easting: 4380882.43(Ft)

Northing: 1119953.225(M)

Easting: 1335295.634(M)

Elev: 1407.33(Ft) NAVD_88

Elev: 428.954(M) NAVD_88

Ellip Ht: 401.157(M)

96C Geoid Ht: -27.797(M)

Latitude: 42-33-44.369509 N

Longitude: 95-30-21.651863 W

Theta: -1-21-34.44

Combination Factor: 0.99988410

Designation: CHEROKEE CO GPS CONTROL PT 2000-045

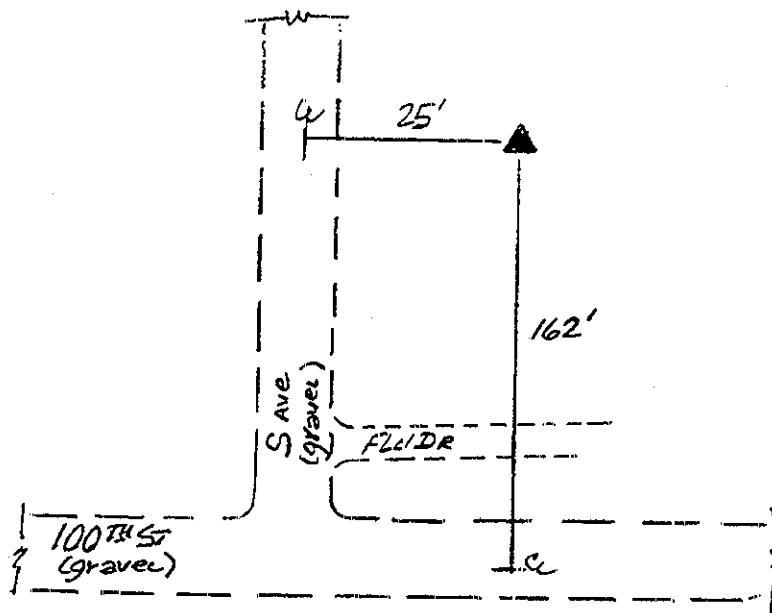
Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft East of "S" Ave, 160ft North of 100th St Near the SW Cor of Sec 31, T90N, R39W

Date Printed August 29, 2000



045
RKE/JJR
April 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 46

Northing: 3689497.89(Ft) Easting: 4381311.98(Ft)

Northing: 1124561.206(M) Easting: 1335426.563(M)

Elev: 1316.19(Ft) NAVD_88

Elev: 401.176(M) NAVD_88 Ellip Ht: 373.400(M) 96C Geoid Ht: -27.777(M)

Latitude: 42-36-13.770320 N Longitude: 95-30-20.706001 W

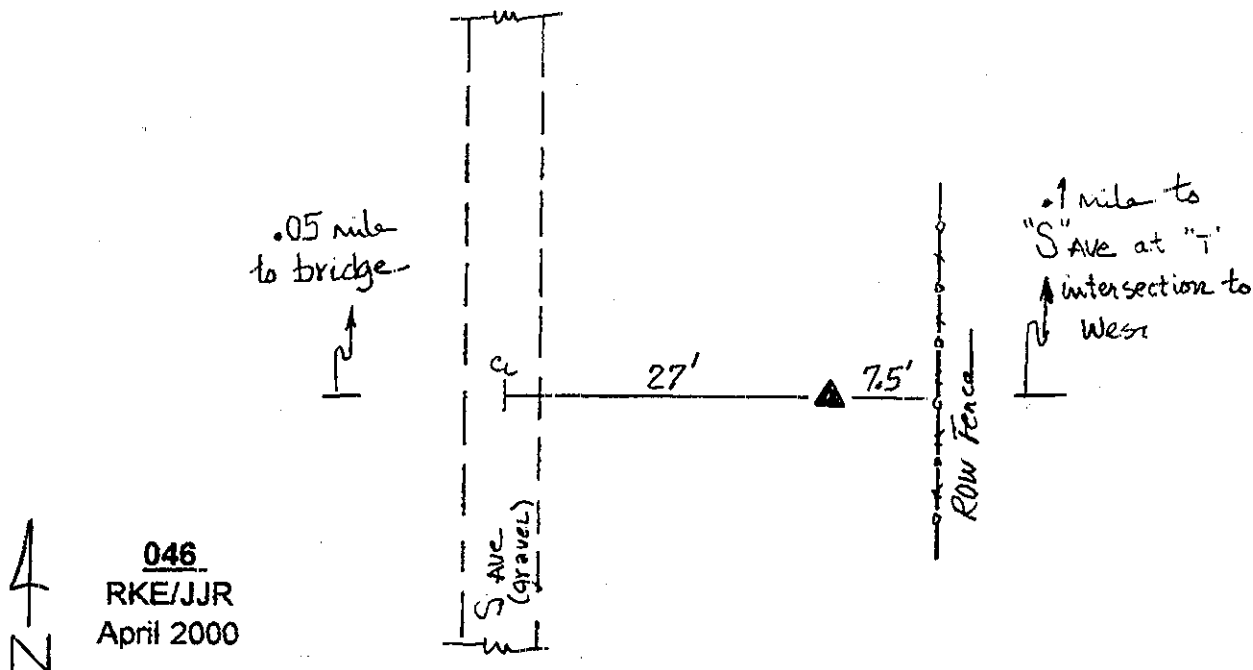
Theta: -1-21-33.79 Combination Factor: 0.99988739

Designation: **CHEROKEE CO GPS CONTROL PT 2000-046**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft East of "S" Ave, 0.1mile South of 630th St Near the NW Cor of Sec 19, T90N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 47

Northing: 3705216.64(Ft) Easting: 4381693.00(Ft)

Northing: 1129352.289(M) Easting: 1335542.697(M)

Elev: 1369.13(Ft) NAVD_88

Elev: 417.312(M) NAVD_88 Ellip Ht: 389.548(M) 96C Geoid Ht: -27.764(M)

Latitude: 42-38-49.091329 N Longitude: 95-30-20.598899 W

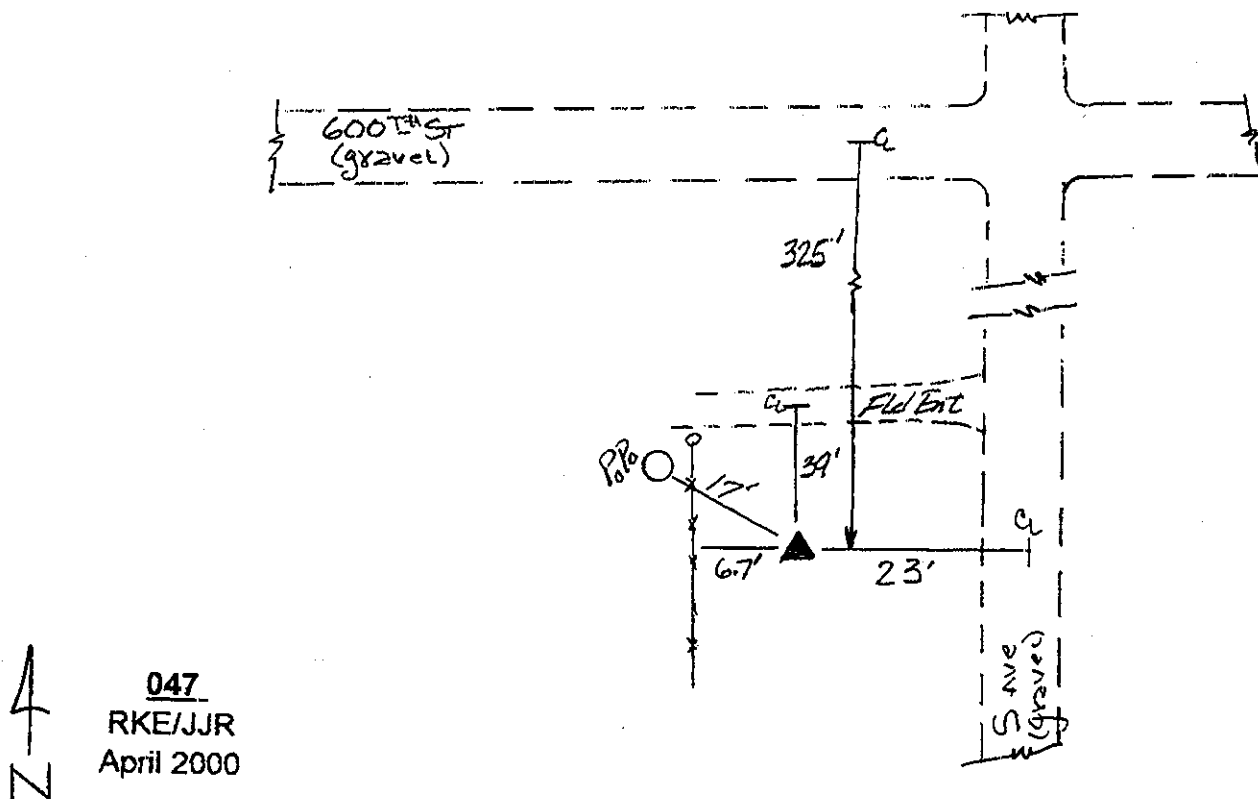
Theta: -1-21-33.72 Combination Factor: 0.99988431

Designation: **CHEROKEE CO GPS CONTROL PT 2000-047**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of "S" Ave, 325ft South of 600th St Near the NE Cor of Sec 1, T90N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 48

Northing: 3721516.71(Ft) Easting: 4382145.05(Ft)

Northing: 1134320.562(M) Easting: 1335680.483(M)

Elev: 1409.99(Ft) NAVD_88

Elev: 429.765(M) NAVD_88 Ellip Ht: 402.001(M) 96C Geoid Ht: -27.764(M)

Latitude: 42-41-30.168733 N Longitude: 95-30-19.725346 W

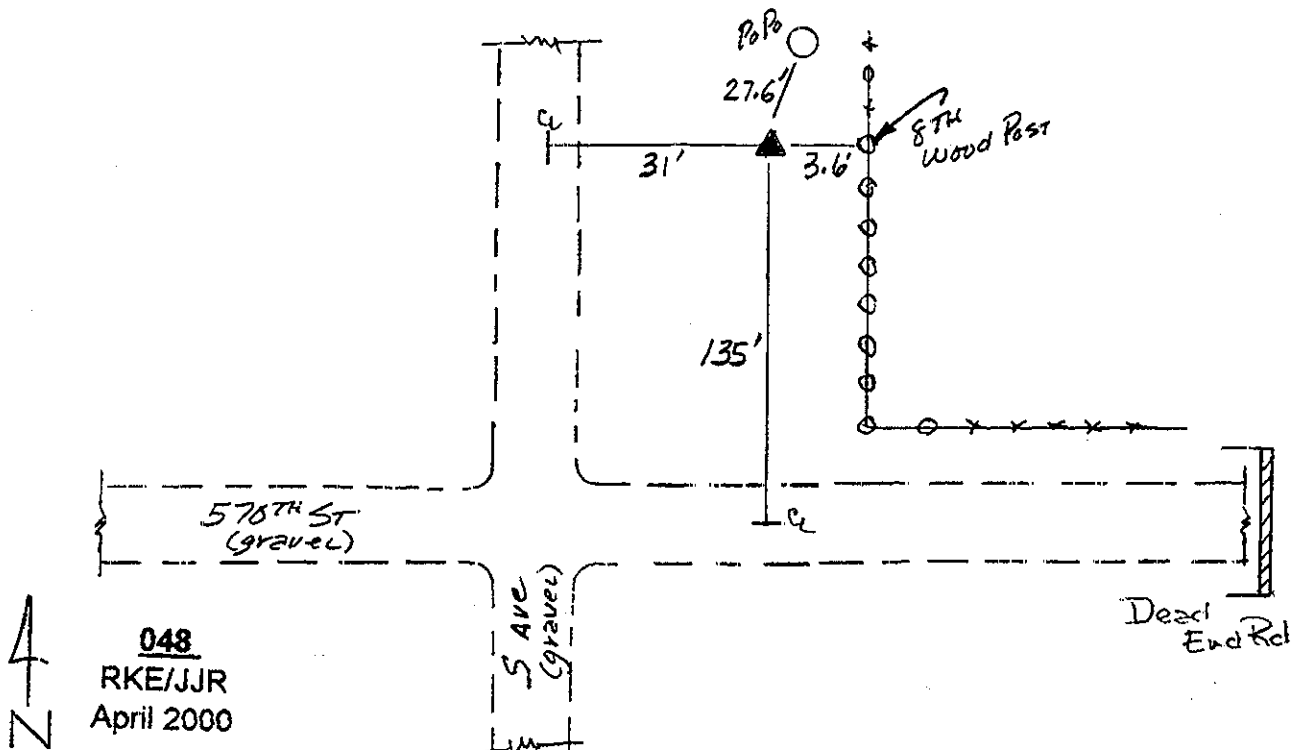
Theta: -1-21-33.13 Combination Factor: 0.99988238

Designation: **CHEROKEE CO GPS CONTROL PT 2000-048**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft East of "S" Ave, 135ft North of 570th St Near the SW Cor of Sec 18, T91N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 49

Northing: 3737881.48(Ft)

Easting: 4382579.11(Ft)

Northing: 1139308.555(M)

Easting: 1335812.785(M)

Elev: 1356.32(Ft) NAVD_88

Elev: 413.407(M) NAVD_88

Ellip Ht: 385.627(M)

96C Geoid Ht: -27.780(M)

Latitude: 42-44-11.879536 N

Longitude: 95-30-19.112155 W

Theta: -1-21-32.71

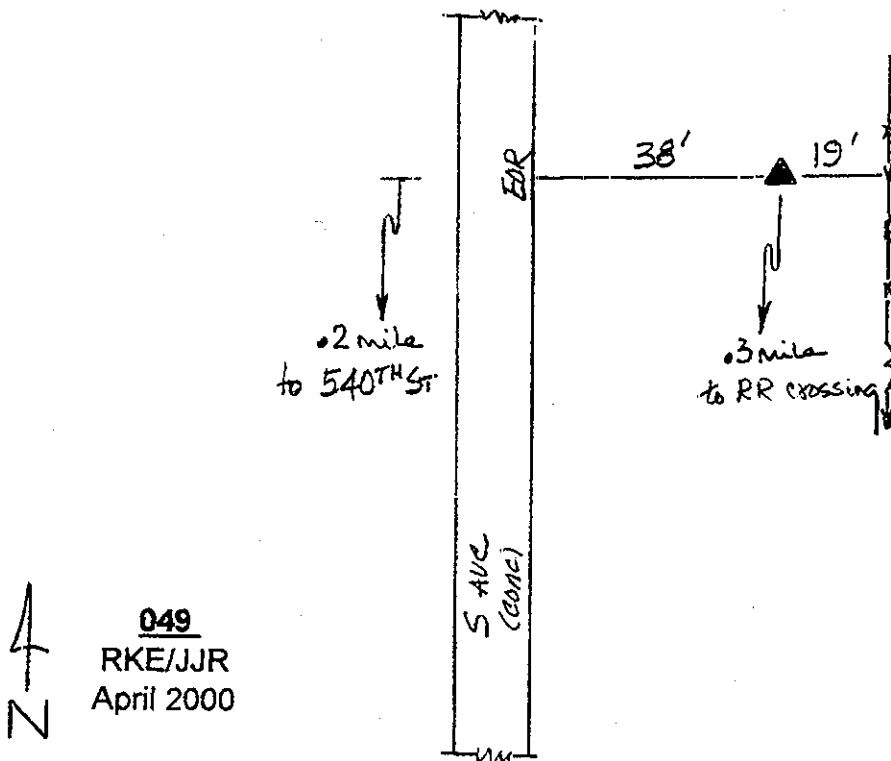
Combination Factor: 0.99988558

Designation: **CHEROKEE CO GPS CONTROL PT 2000-049**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 40ft East of "S" Ave, 0.2mile North of 540th St, 0.2mile North of SW Cor Sec 31, T92N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 50

Northing: 3752865.30(Ft) Easting: 4382465.16(Ft)

Northing: 1143875.630(M) Easting: 1335778.053(M)

Elev: 1351.58(Ft) NAVD_88

Elev: 411.961(M) NAVD_88 Ellip Ht: 384.150(M) 96C Geoid Ht: -27.811(M)

Latitude: 42-46-39.823068 N Longitude: 95-30-25.405217 W

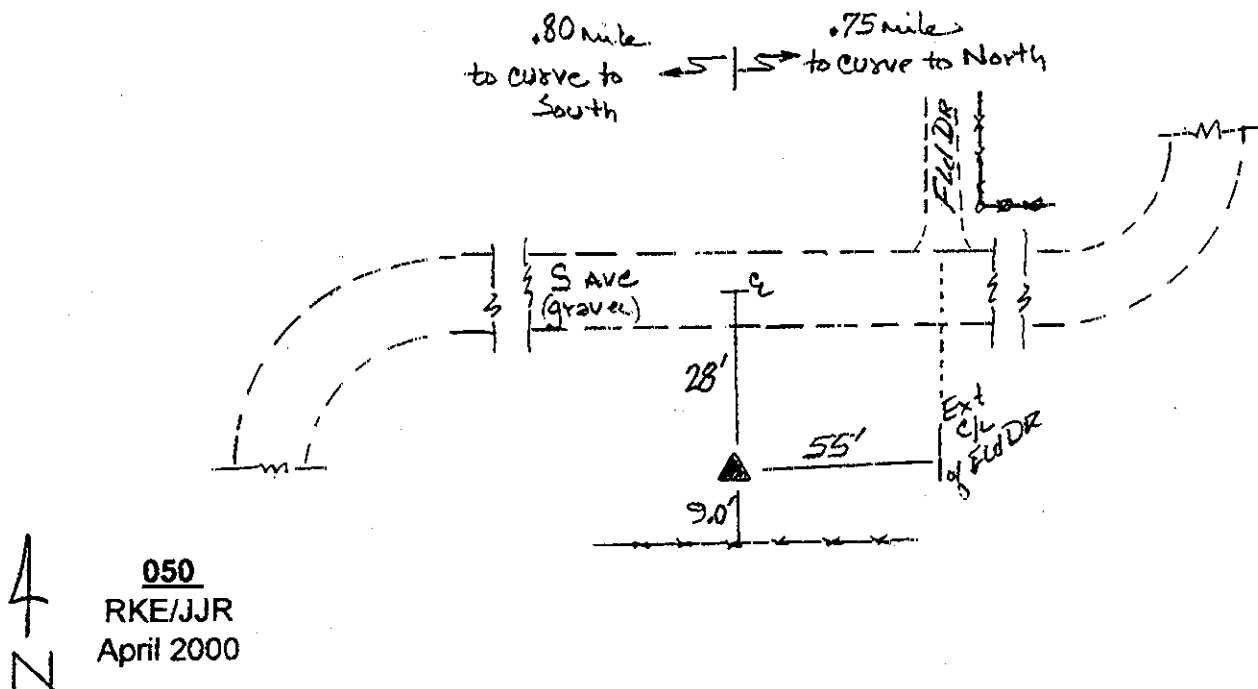
Theta: -1-21-36.98 Combination Factor: 0.99988693

Designation: **CHEROKEE CO GPS CONTROL PT 2000-050**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft South of E-W jog in "S" Ave, 0.1mile West of "S" Ave to North, 0.1mile West of NE Cor of Sec 24, T92N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 51

Northing: 3768786.16(Ft) Easting: 4383317.11(Ft)

Northing: 1148728.319(M) Easting: 1336037.728(M)

Elev: 1291.54(Ft) NAVD_88

Elev: 393.663(M) NAVD_88 Ellip Ht: 365.813(M) 96C Geoid Ht: -27.850(M)

Latitude: 42-49-17.245293 N Longitude: 95-30-19.047930 W

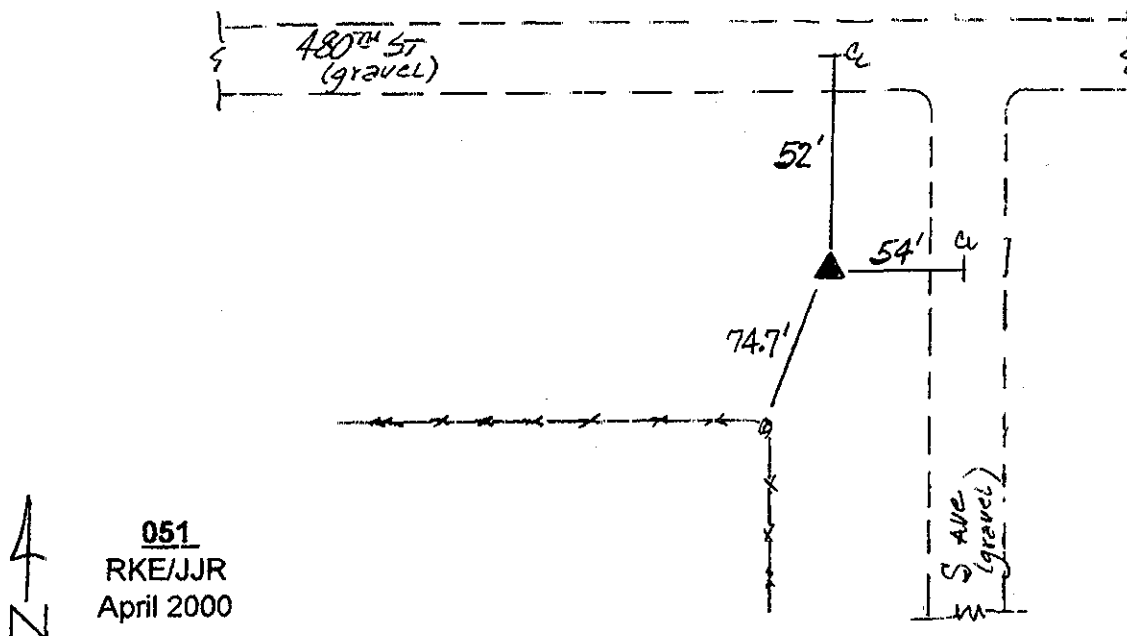
Theta: -1-21-32.67 Combination Factor: 0.99989156

Designation: **CHEROKEE CO GPS CONTROL PT 2000-051**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 55ft West of "S" Ave, 50ft South of 480th St Near the NE Cor of Sec 1, T92N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 52

Northing: 3784640.90(Ft)

Easting: 4381764.50(Ft)

Northing: 1153560.854(M)

Easting: 1335564.492(M)

Elev: 1391.10(Ft) NAVD_88

Elev: 424.008(M) NAVD_88

Ellip Ht: 396.152(M)

96C Geoid Ht: -27.856(M)

Latitude: 42-51-53.448813 N

Longitude: 95-30-44.940154 W

Theta: -1-21-50.22

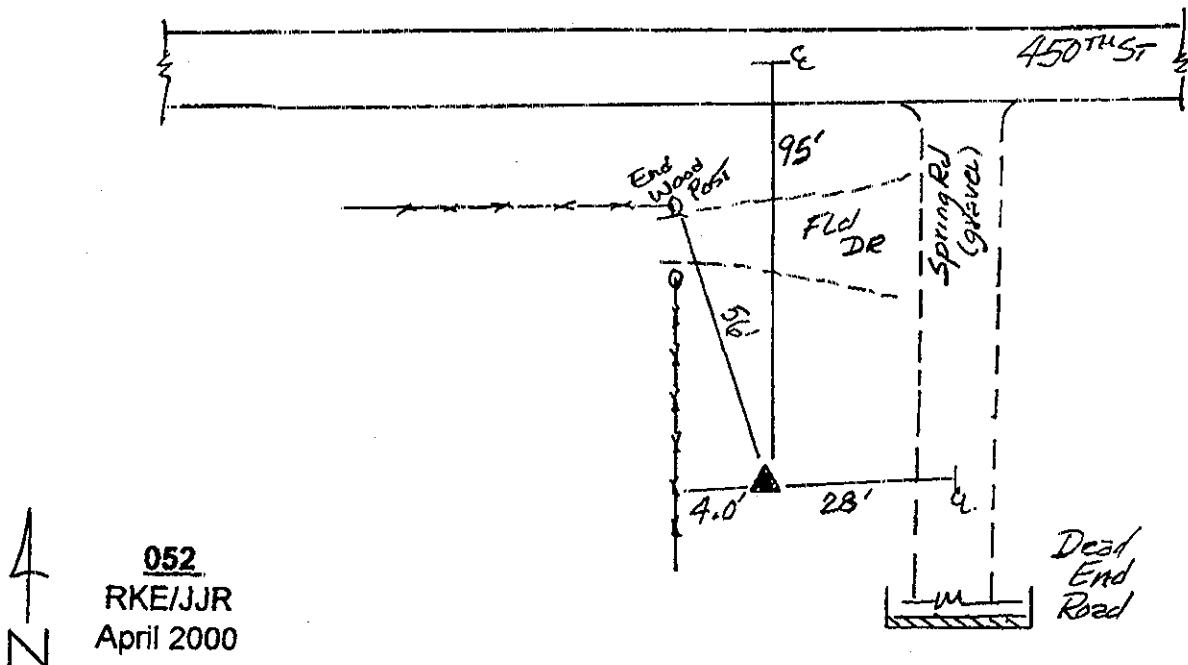
Combination Factor: 0.99988911

Designation: CHEROKEE CO GPS CONTROL PT 2000-052

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover

To Reach: 30ft West of Spring Rd, 95ft South of 450th St, 0.1mile West of Intersection N 1/4 Cor of Sec 24, T93N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 53

Northing: 3801089.27(Ft) Easting: 4384587.36(Ft)

Northing: 1158574.328(M) Easting: 1336424.900(M)

Elev: 1423.49(Ft) NAVD_88

Elev: 433.881(M) NAVD_88 Ellip Ht: 406.002(M) 96C Geoid Ht: -27.880(M)

Latitude: 42-54-36.539525 N Longitude: 95-30-12.278987 W

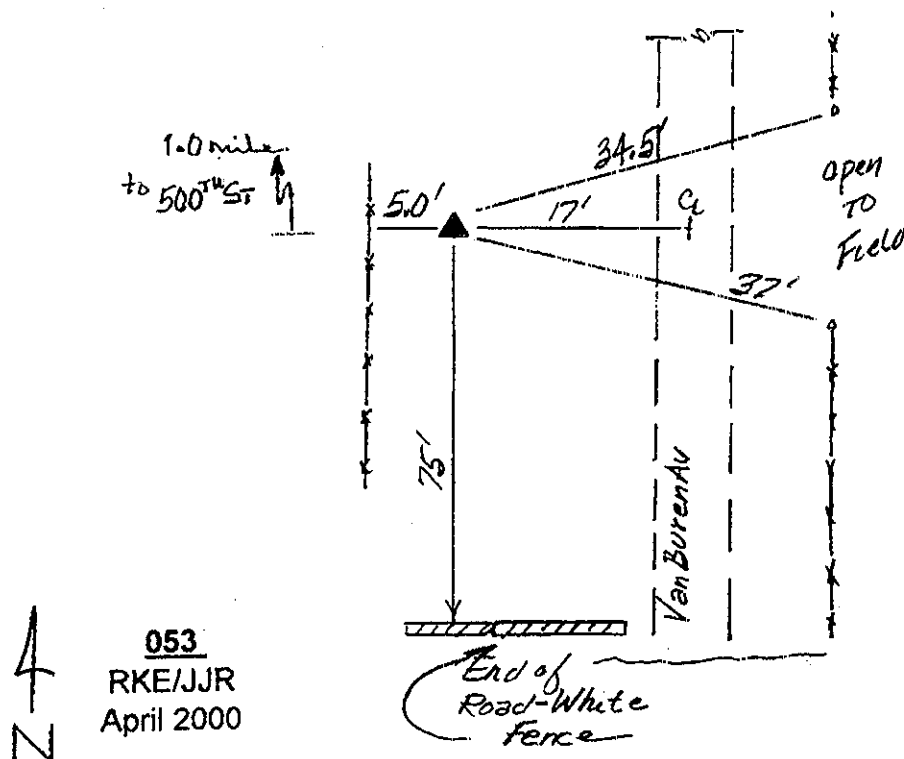
Theta: -1-21-28.08 Combination Factor: 0.99989060

Designation: **CHEROKEE CO GPS CONTROL PT 2000-053**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 20ft West of VanBuren Ave (OBrien Co), 100ft North of Co Line Near the SW Cor of Sec 31, T94N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 54

Northing: 3673844.24(Ft) Easting: 4396389.01(Ft)

Northing: 1119789.963(M) Easting: 1340022.050(M)

Elev: 1342.02(Ft) NAVD_88

Elev: 409.047(M) NAVD_88 Ellip Ht: 381.124(M) 96C Geoid Ht: -27.923(M)

Latitude: 42-33-42.662021 N Longitude: 95-26-54.326241 W

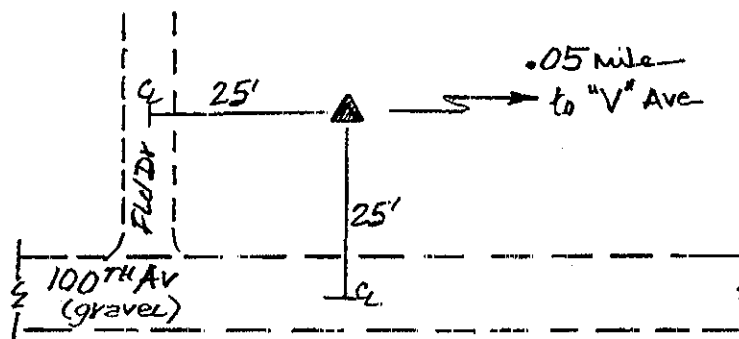
Theta: -1-19-13.92 Combination Factor: 0.99988726

Designation: **CHEROKEE CO GPS CONTROL PT 2000-054**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft North of 100th St, 0.05mile West of "V" Ave, 0.05mile West of SE Cor of Sec 33, T90N, R39W

Date Printed August 29, 2000



054
RKE/JJR
April 2000

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 55

Northing: 3689711.64(Ft) Easting: 4397185.05(Ft)

Northing: 1124626.357(M) Easting: 1340264.683(M)

Elev: 1359.66(Ft) NAVD_88

Elev: 414.425(M) NAVD_88 Ellip Ht: 386.524(M) 96C Geoid Ht: -27.901(M)

Latitude: 42-36-19.546496 N Longitude: 95-26-48.574117 W

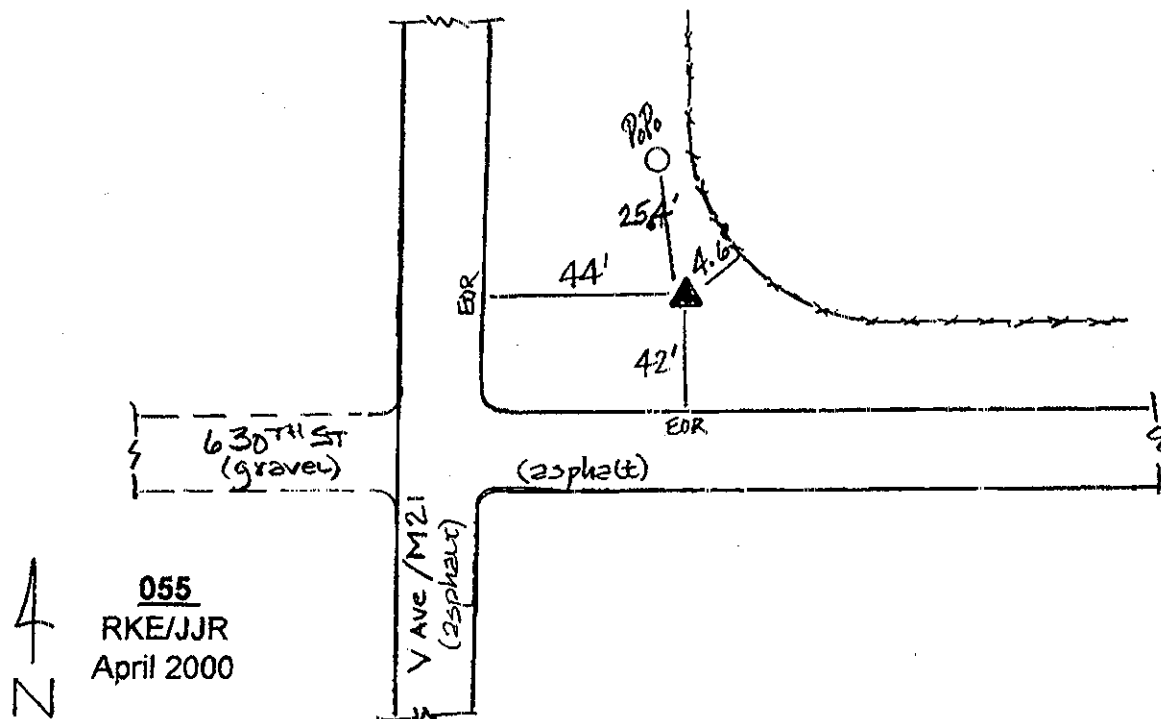
Theta: -1-19-10.02 Combination Factor: 0.99988530

Designation: **CHEROKEE CO GPS CONTROL PT 2000-055**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 45ft East of "V" Ave (M21), 40ft North of 630th St Near the SW Cor of Sec 15, T90N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 56

Northing: 3705781.67(Ft) Easting: 4397444.59(Ft)

Northing: 1129524.511(M) Easting: 1340343.791(M)

Elev: 1366.81(Ft) NAVD_88

Elev: 416.605(M) NAVD_88 Ellip Ht: 388.719(M) 96C Geoid Ht: -27.886(M)

Latitude: 42-38-58.308850 N Longitude: 95-26-50.053740 W

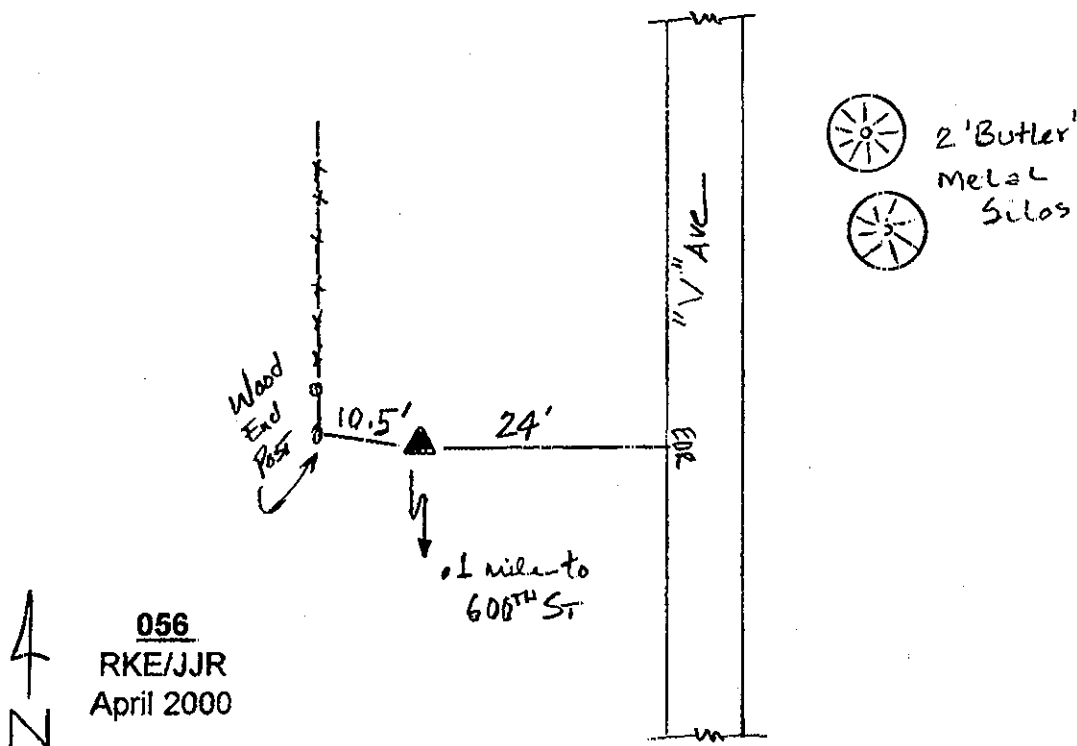
Theta: -1-19-11.03 Combination Factor: 0.99988442

Designation: **CHEROKEE CO GPS CONTROL PT 2000-056**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of "V" Ave (M21), 0.1 mile North of 600th St, 0.1 mile North of SE Cor of Sec 33, T91N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 57

Northing: 3719200.09(Ft) Easting: 4397829.59(Ft)

Northing: 1133614.456(M) Easting: 1340461.141(M)

Elev: 1419.01(Ft) NAVD_88

Elev: 432.514(M) NAVD_88 Ellip Ht: 404.627(M) 96C Geoid Ht: -27.887(M)

Latitude: 42-41-10.912381 N Longitude: 95-26-49.038029 W

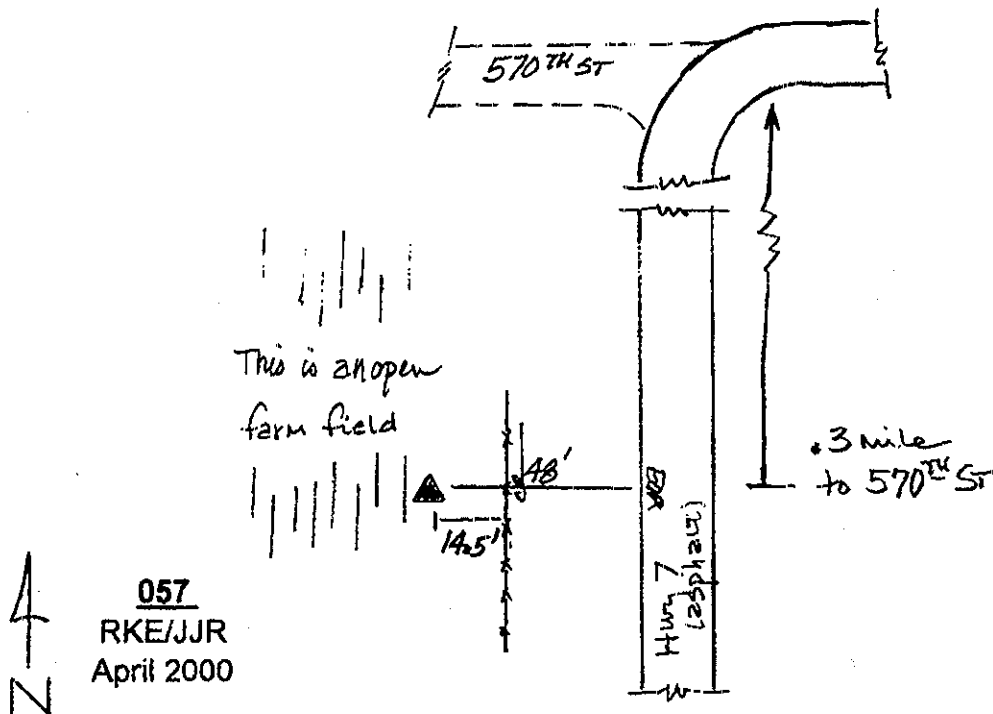
Theta: -1-19-10.34 Combination Factor: 0.99988193

Designation: **CHEROKEE CO GPS CONTROL PT 2000-057**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 50ft West of "V" Ave (Hwy 7), 0.3mile South of 570th St, Near the E 1/4 Cor of Sec 22, T91N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 58

Northing: 3736651.57(Ft) Easting: 4398397.24(Ft)

Northing: 1138933.675(M) Easting: 1340634.159(M)

Elev: 1347.25(Ft) NAVD_88

Elev: 410.641(M) NAVD_88 Ellip Ht: 382.731(M) 96C Geoid Ht: -27.911(M)

Latitude: 42-44-03.385120 N Longitude: 95-26-46.818791 W

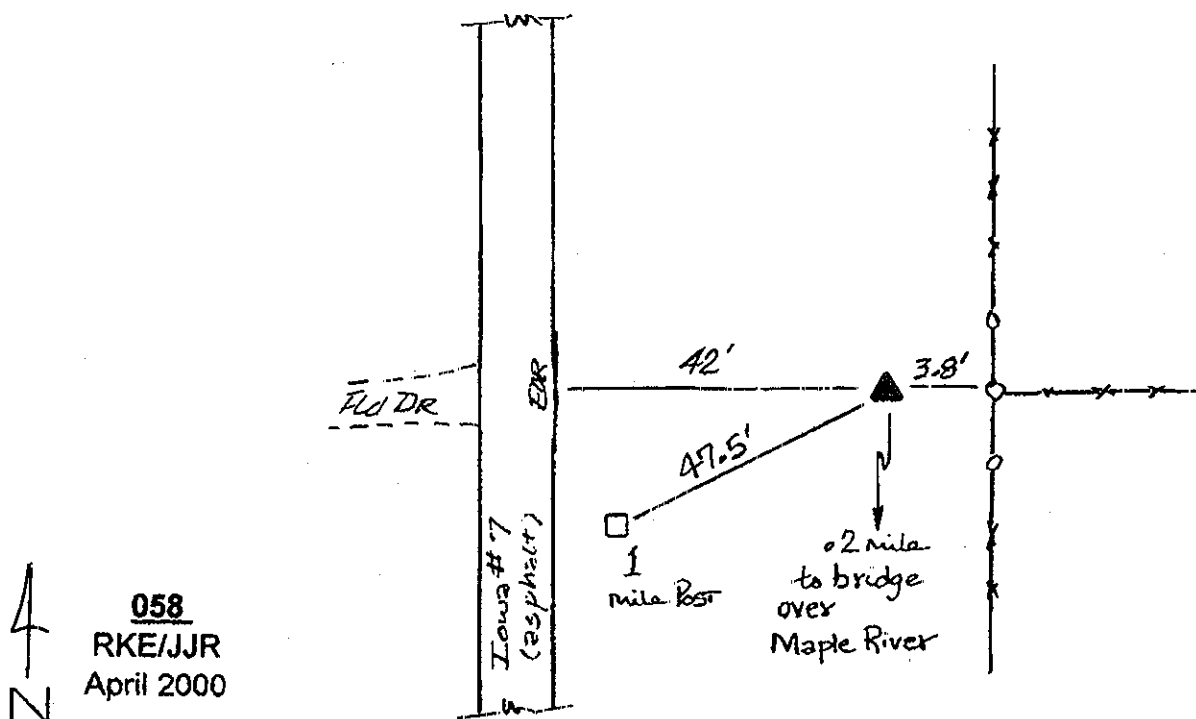
Theta: -1-19-08.83 Combination Factor: 0.99988599

Designation: **CHEROKEE CO GPS CONTROL PT 2000-058**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 45ft East of "V" Ave (Hwy 7) on Section Line to East Near the NW Cor of Sec 3, T91N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 59

Northing: 3752198.00(Ft) Easting: 4398713.84(Ft)

Northing: 1143672.236(M) Easting: 1340730.661(M)

Elev: 1378.30(Ft) NAVD_88

Elev: 420.108(M) NAVD_88 Ellip Ht: 392.165(M) 96C Geoid Ht: -27.943(M)

Latitude: 42-46-36.985974 N Longitude: 95-26-47.373553 W

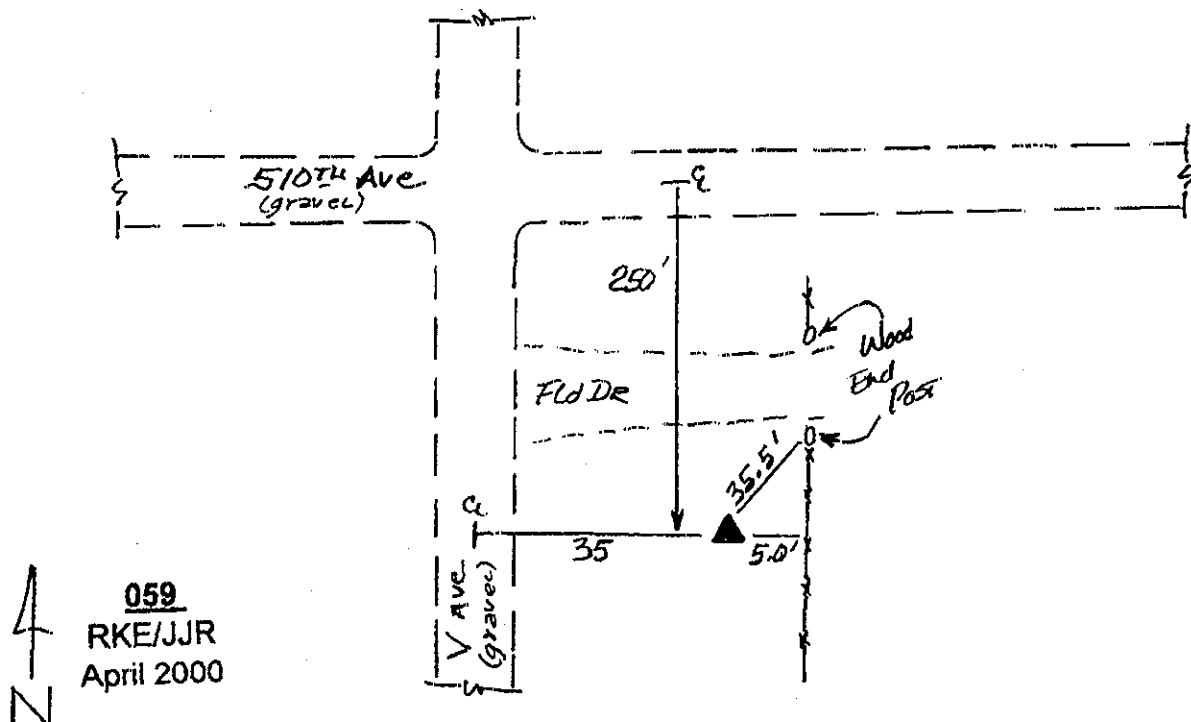
Theta: -1-19-09.21 Combination Factor: 0.99988565

Designation: CHEROKEE CO GPS CONTROL PT 2000-059

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 35ft East of "V" Ave, 250ft South of 510th St Near the NW Cor of Sec 22, T92N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 60

Northing: 3768438.00(Ft) Easting: 4399157.87(Ft)

Northing: 1148622.201(M) Easting: 1340866.000(M)

Elev: 1420.34(Ft) NAVD_88

Elev: 432.922(M) NAVD_88 Ellip Ht: 404.942(M) 96C Geoid Ht: -27.979(M)

Latitude: 42-49-17.463795 N Longitude: 95-26-46.434021 W

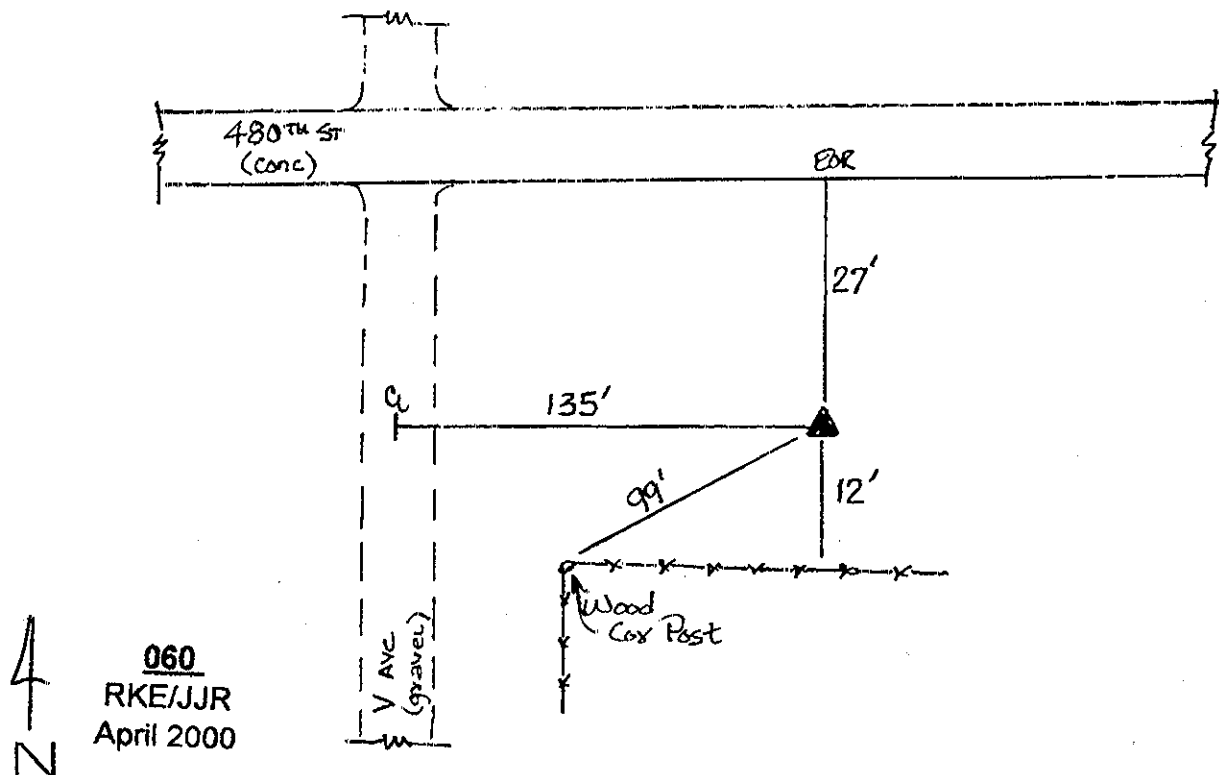
Theta: -1-19-08.57 Combination Factor: 0.99988542

Designation: **CHEROKEE CO GPS CONTROL PT 2000-060**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft South of 480th St (C25), 135ft East of "V" Ave Near the NW Cor of Sec 3, T92N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 61

Northing: 3784174.42(Ft) Easting: 4399203.05(Ft)

Northing: 1153418.670(M) Easting: 1340879.770(M)

Elev: 1377.34(Ft) NAVD_88

Elev: 419.815(M) NAVD_88 Ellip Ht: 391.800(M) 96C Geoid Ht: -28.014(M)

Latitude: 42-51-52.876194 N Longitude: 95-26-50.691802 W

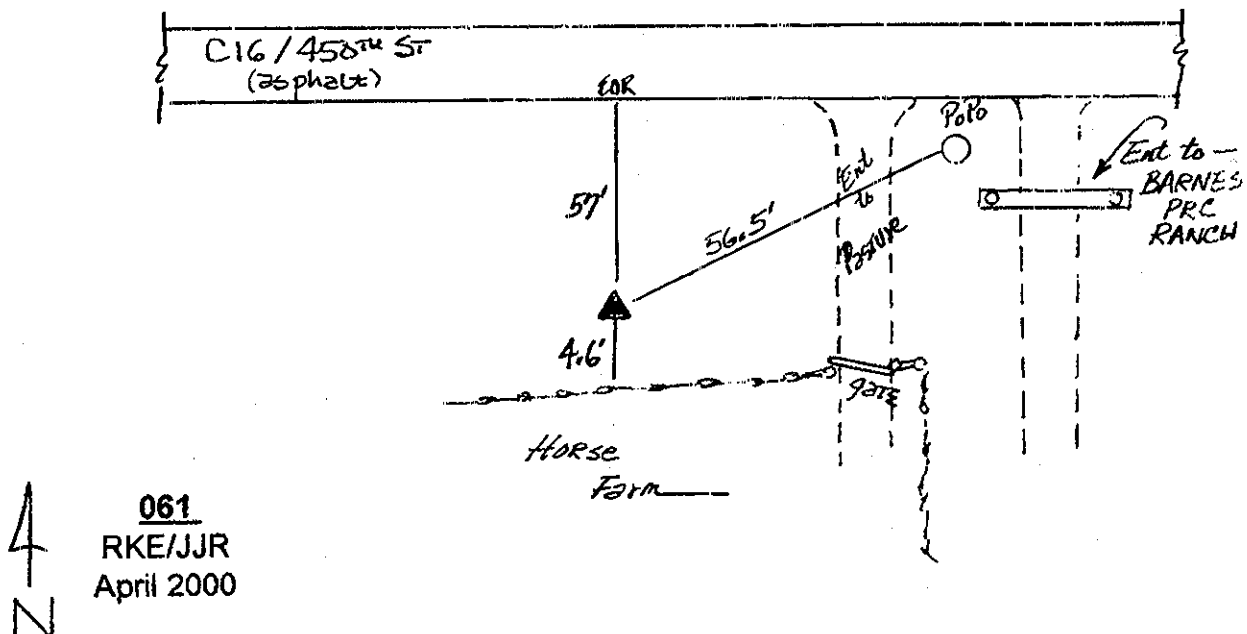
Theta: -1-19-11.46 Combination Factor: 0.99988979

Designation: **CHEROKEE CO GPS CONTROL PT 2000-061**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 60ft South of 450th St (C16), 80ft West of Ent to Barnes Ranch Near the NE Cor of Sec 21, T93N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 62

Northing: 3799551.34(Ft)

Easting: 4399659.70(Ft)

Northing: 1158105.565(M)

Easting: 1341018.959(M)

Elev: 1357.28(Ft) NAVD_88

Elev: 413.700(M) NAVD_88

Ellip Ht: 385.666(M)

96C Geoid Ht: -28.034(M)

Latitude: 42-54-24.830540 N

Longitude: 95-26-49.316531 W

Theta: -1-19-10.53

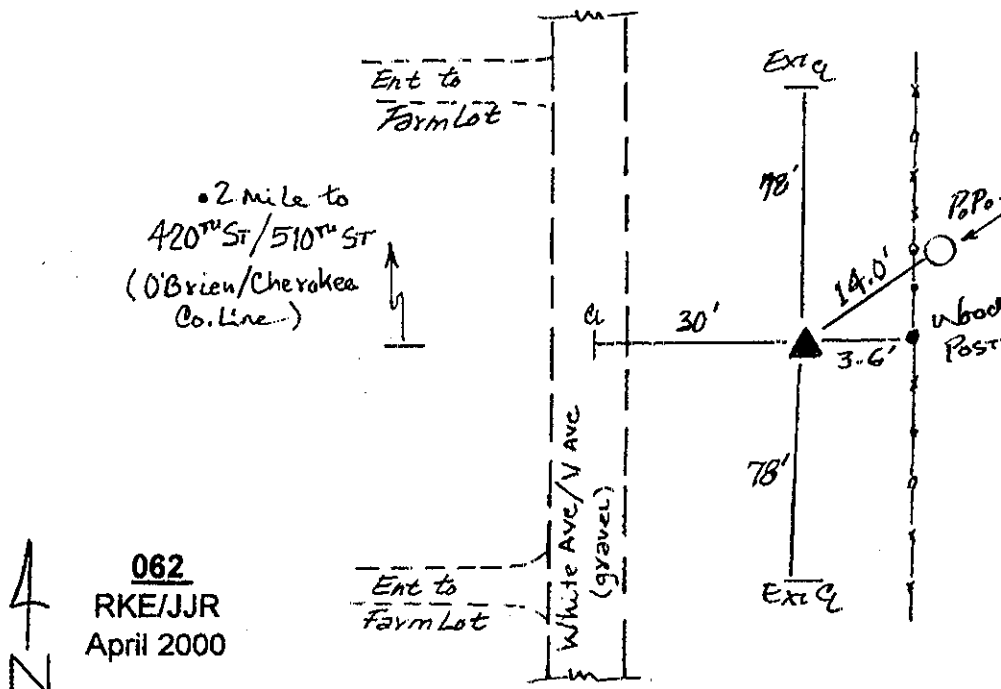
Combination Factor: 0.99989355

Designation: **CHEROKEE CO GPS CONTROL PT 2000-062**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft East of "V" Ave, 0.2mile South of Co Line, 0.2mile South of NW Cor of Sec 3, T93N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 63

Northing: 3673639.87(Ft) Easting: 4412647.68(Ft)

Northing: 1119727.672(M) Easting: 1344977.704(M)

Elev: 1315.28(Ft) NAVD_88

Elev: 400.898(M) NAVD_88 Ellip Ht: 372.855(M) 96C Geoid Ht: -28.043(M)

Latitude: 42-33-44.287779 N Longitude: 95-23-17.055132 W

Theta: -1-16-46.67 Combination Factor: 0.99988854

Designation: CHEROKEE CO GPS CONTROL PT 2000-063

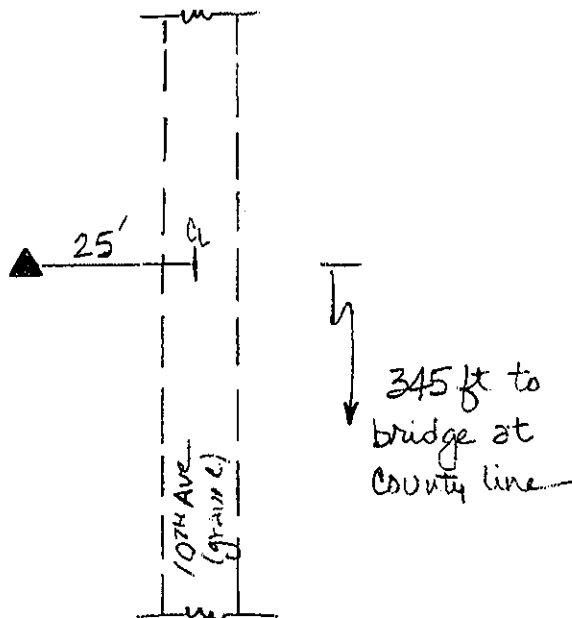
Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of 10th Ave, 200ft North of Co Line Near the SE Cor of Sec 36, T90N, R39W

Date Printed August 29, 2000

4
N

063
RKE/JJR
April 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 64

Northing: 3689371.98(Ft) Easting: 4412827.44(Ft)

Northing: 1124522.829(M) Easting: 1345032.494(M)

Elev: 1350.91(Ft) NAVD_88

Elev: 411.758(M) NAVD_88 Ellip Ht: 383.738(M) 96C Geoid Ht: -28.020(M)

Latitude: 42-36-19.697088 N Longitude: 95-23-19.350039 W

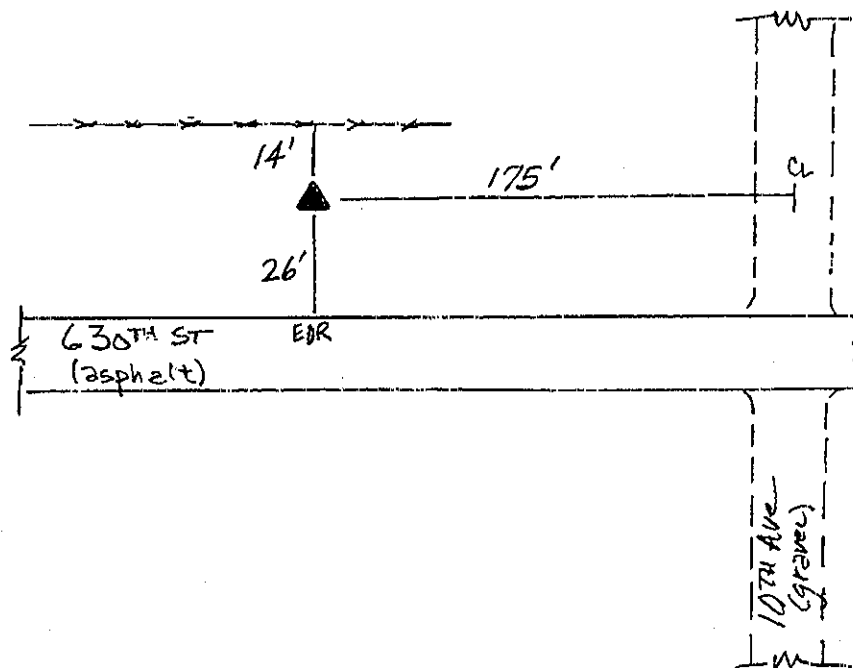
Theta: -1-16-48.22 Combination Factor: 0.99988574

Designation: **CHEROKEE CO GPS CONTROL PT 2000-064**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft North of 630th St (C65), 175ft West of 10th Ave Near the SE Cor of Sec 13, T90N, R39W

Date Printed August 29, 2000



064
RKE/JJR
April 2000

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 65

Northing: 3704761.76(Ft) Easting: 4413276.75(Ft)

Northing: 1129213.642(M) Easting: 1345169.445(M)

Elev: 1406.63(Ft) NAVD_88

Elev: 428.742(M) NAVD_88 Ellip Ht: 400.734(M) 96C Geoid Ht: -28.009(M)

Latitude: 42-38-51.784005 N Longitude: 95-23-17.939624 W

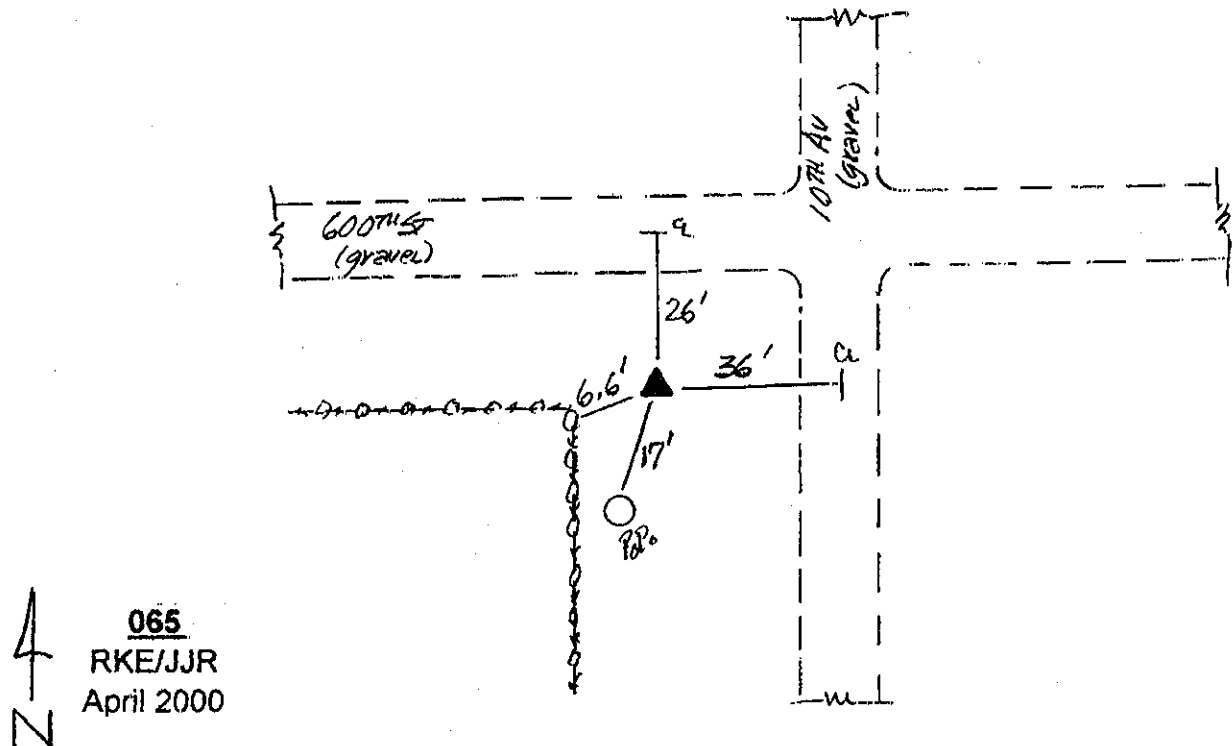
Theta: -1-16-47.27 Combination Factor: 0.99988255

Designation: **CHEROKEE CO GPS CONTROL PT 2000-065**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft South of 600th St, 35ft West of 10th Ave Near the NE Cor of Sec 1, T90N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 66

Northing: 3720611.58(Ft) Easting: 4413591.40(Ft)

Northing: 1134044.679(M) Easting: 1345265.351(M)

Elev: 1475.27(Ft) NAVD_88

Elev: 449.663(M) NAVD_88 Ellip Ht: 421.649(M) 96C Geoid Ht: -28.014(M)

Latitude: 42-41-28.383476 N Longitude: 95-23-18.467625 W

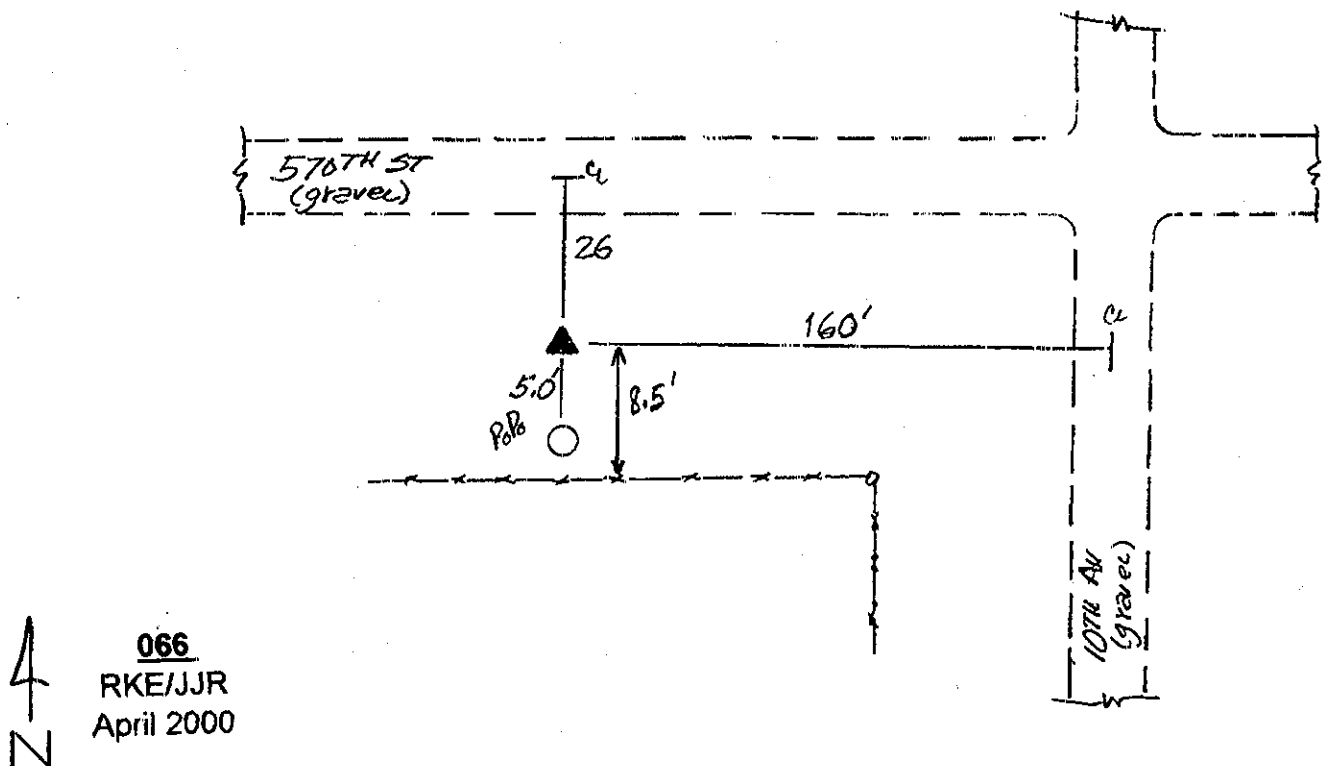
Theta: -1-16-47.62 Combination Factor: 0.99987929

Designation: CHEROKEE CO GPS CONTROL PT 2000-066

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft South of 570th St, 160ft West of 10th Ave Near the NE Cor of Sec 24, T91N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 67

Northing: 3736350.08(Ft) Easting: 4414183.73(Ft)

Northing: 1138841.781(M) Easting: 1345445.892(M)

Elev: 1382.30(Ft) NAVD_88

Elev: 421.326(M) NAVD_88 Ellip Ht: 393.283(M) 96C Geoid Ht: -28.044(M)

Latitude: 42-44-03.943452 N Longitude: 95-23-15.243139 W

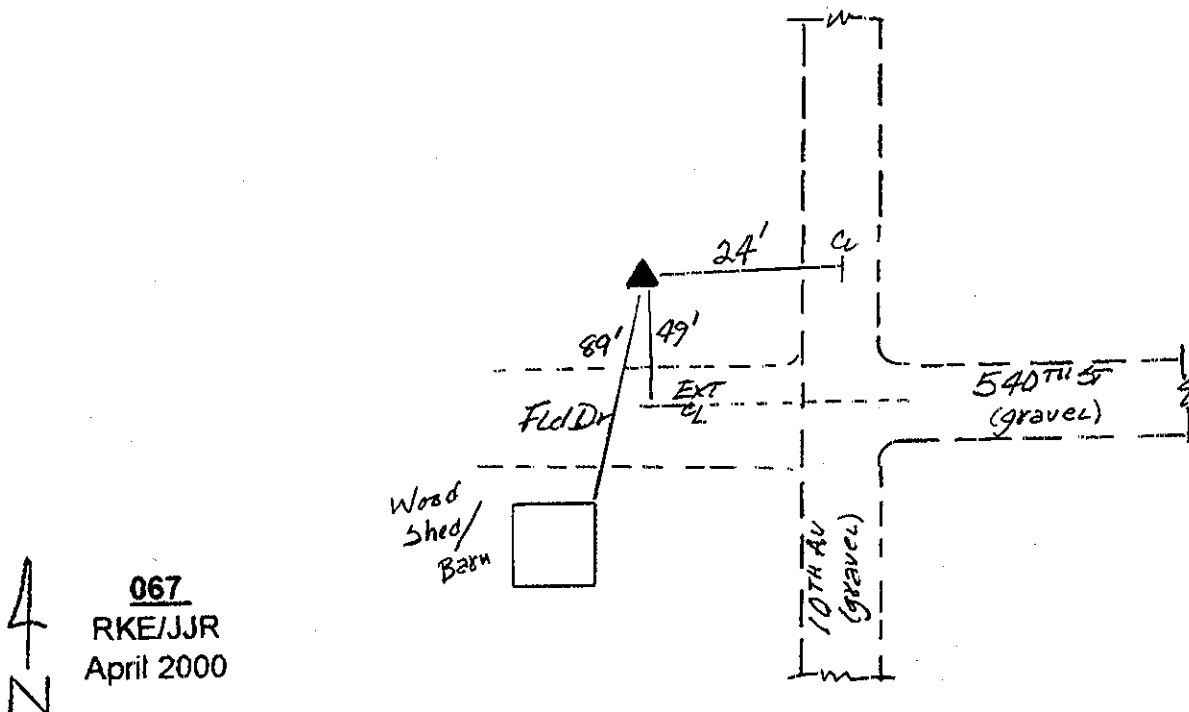
Theta: -1-16-45.44 Combination Factor: 0.99988433

Designation: CHEROKEE CO GPS CONTROL PT 2000-067

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of 10th Ave, 50ft North of 540th St to the East Near the SE Cor of Sec 36, T92N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 68

Northing: 3752149.25(Ft) Easting: 4414442.13(Ft)

Northing: 1143657.379(M) Easting: 1345524.653(M)

Elev: 1424.40(Ft) NAVD_88

Elev: 434.159(M) NAVD_88 Ellip Ht: 406.084(M) 96C Geoid Ht: -28.075(M)

Latitude: 42-46-40.027742 N Longitude: 95-23-16.508890 W

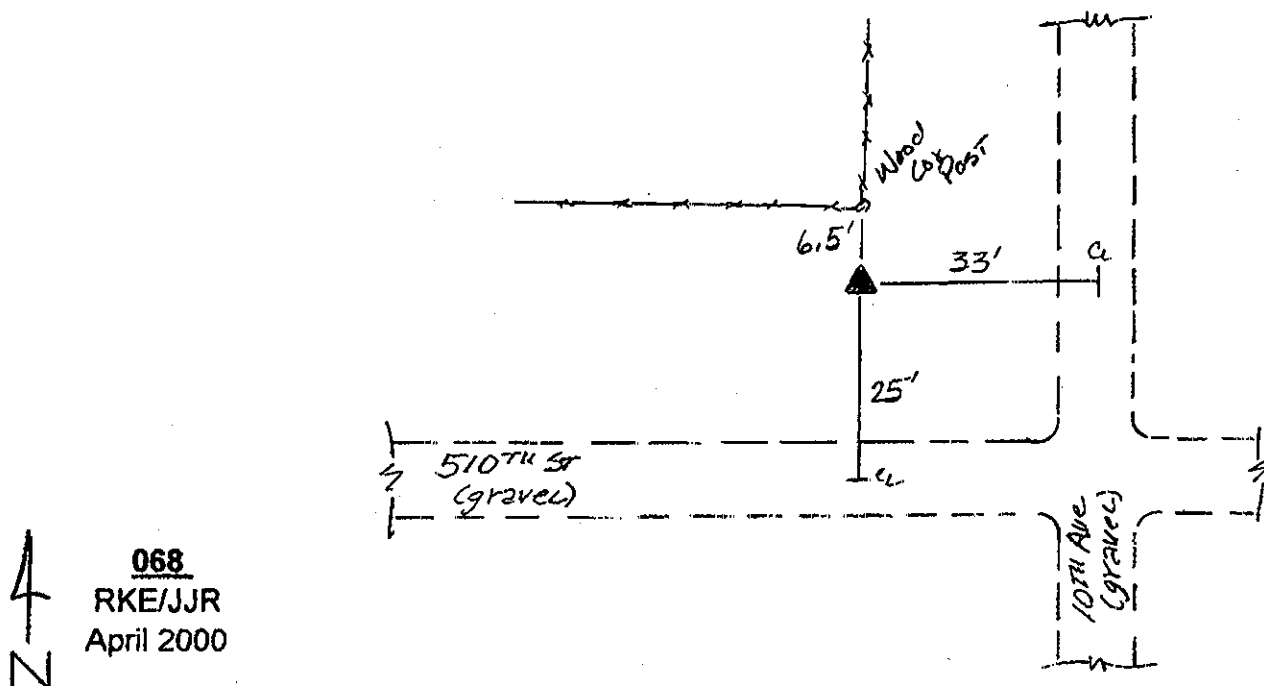
Theta: -1-16-46.30 Combination Factor: 0.99988349

Designation: **CHEROKEE CO GPS CONTROL PT 2000-068**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft West of 10th Ave, 25ft North of 510th St Near the SE Cor of Sec 13, T92N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 69

Northing: 3768264.78(Ft) Easting: 4414773.54(Ft)

Northing: 1148569.401(M) Easting: 1345625.667(M)

Elev: 1425.60(Ft) NAVD_88

Elev: 434.524(M) NAVD_88 Ellip Ht: 406.418(M) 96C Geoid Ht: -28.106(M)

Latitude: 42-49-19.250838 N Longitude: 95-23-16.891751 W

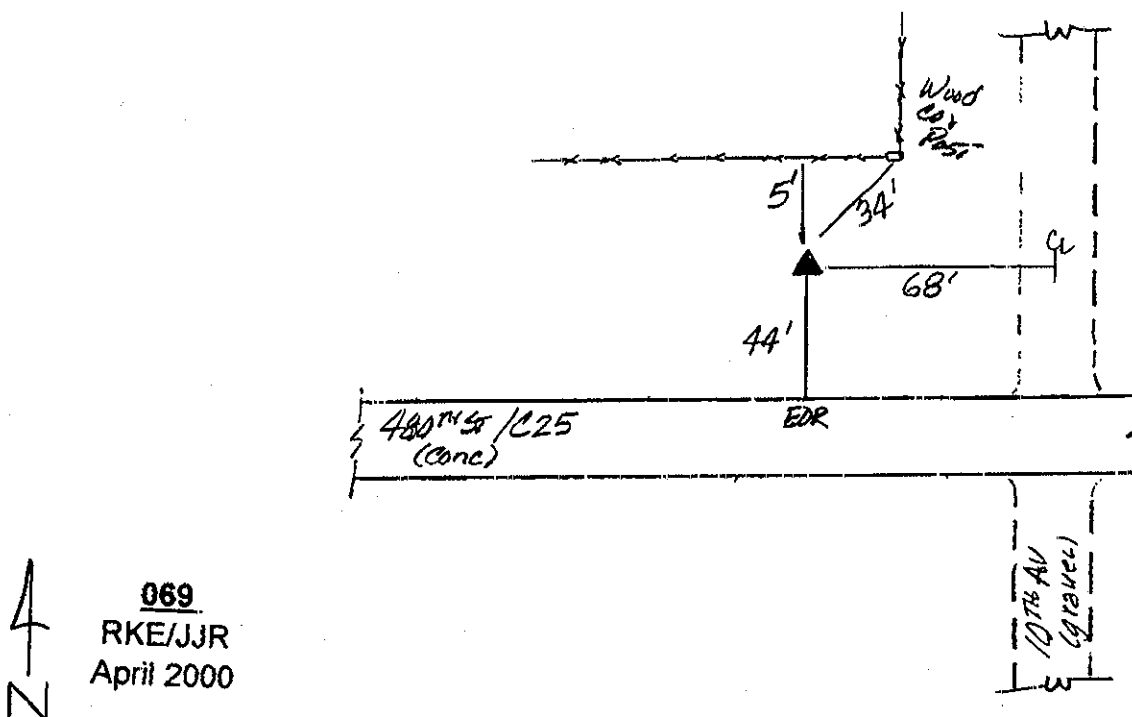
Theta: -1-16-46.56 Combination Factor: 0.99988521

Designation: **CHEROKEE CO GPS CONTROL PT 2000-069**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 45ft North of 480th St (C25), 70ft West of 10th Ave Near the SE Cor of Sec 36, T93N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 70

Northing: 3784025.32(Ft) Easting: 4415052.65(Ft)

Northing: 1153373.225(M) Easting: 1345710.738(M)

Elev: 1513.27(Ft) NAVD_88

Elev: 461.246(M) NAVD_88 Ellip Ht: 433.109(M) 96C Geoid Ht: -28.137(M)

Latitude: 42-51-54.955264 N Longitude: 95-23-17.870936 W

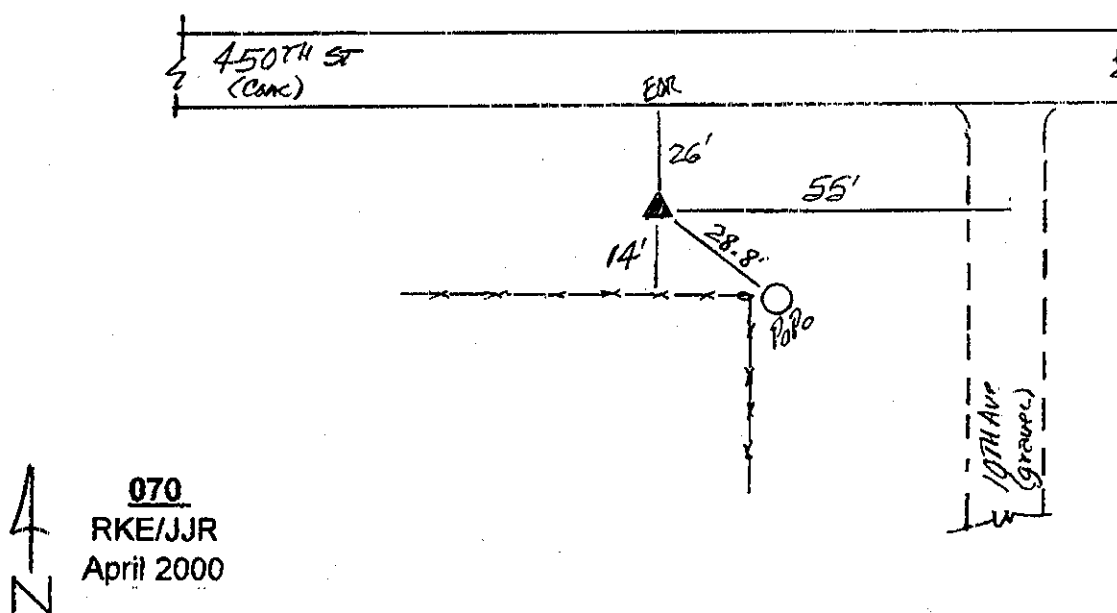
Theta: -1-16-47.22 Combination Factor: 0.99988334

Designation: **CHEROKEE CO GPS CONTROL PT 2000-070**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft South of 450th St (C16), 55ft West of 10th Ave Near the NE Cor of Sec 24, T93N, R39W

Date Printed August 29, 2000



2-71

2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 72

Northing: 3745549.17(Ft) Easting: 4374093.47(Ft)

Northing: 1141645.672(M) Easting: 1333226.355(M)

Elev: 1208.92(Ft) NAVD_88

Elev: 368.479(M) NAVD_88 Ellip Ht: 340.751(M) 96C Geoid Ht: -27.729(M)

Latitude: 42-45-25.596289 N Longitude: 95-32-15.266917 W

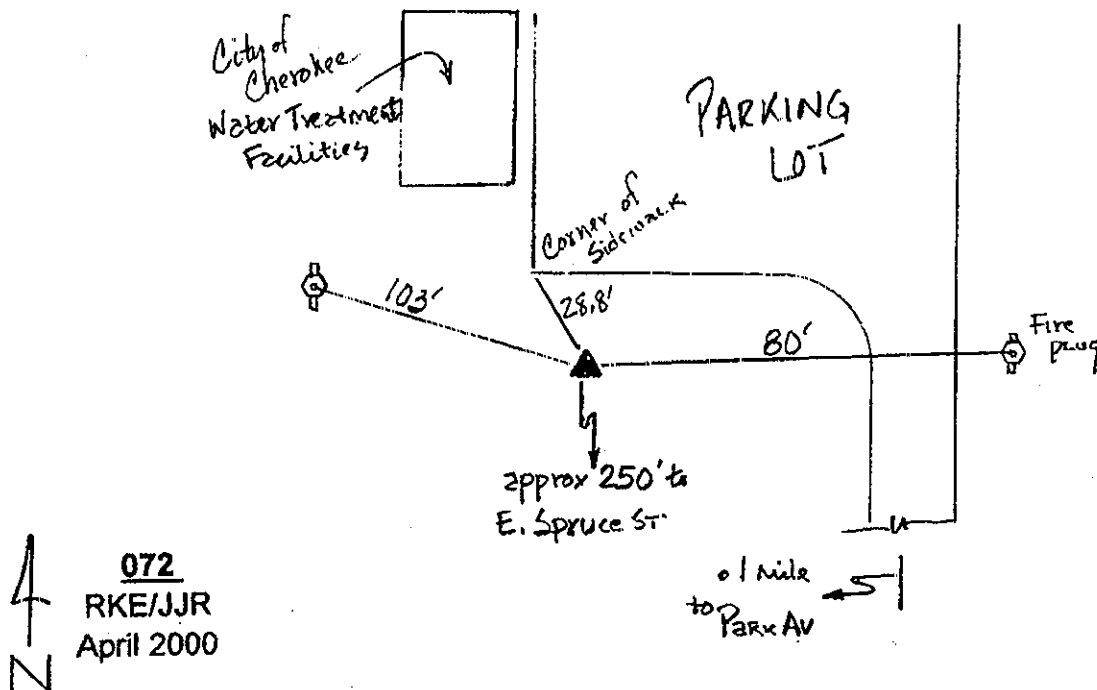
Theta: -1-22-51.44 Combination Factor: 0.99989311

Designation: **CHEROKEE CO GPS CONTROL PT 2000-072**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 15ft South of Corner of sidewalk at the City of Cherokee Spruce St Water Treatment Plant
Near the Ctr of Sec 26, T92N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 73

Northing: 3744884.17(Ft) Easting: 4364686.90(Ft)

Northing: 1141442.979(M) Easting: 1330359.228(M)

Elev: 1340.60(Ft) NAVD_88

Elev: 408.616(M) NAVD_88 Ellip Ht: 380.970(M) 96C Geoid Ht: -27.646(M)

Latitude: 42-45-16.770721 N Longitude: 95-34-21.104201 W

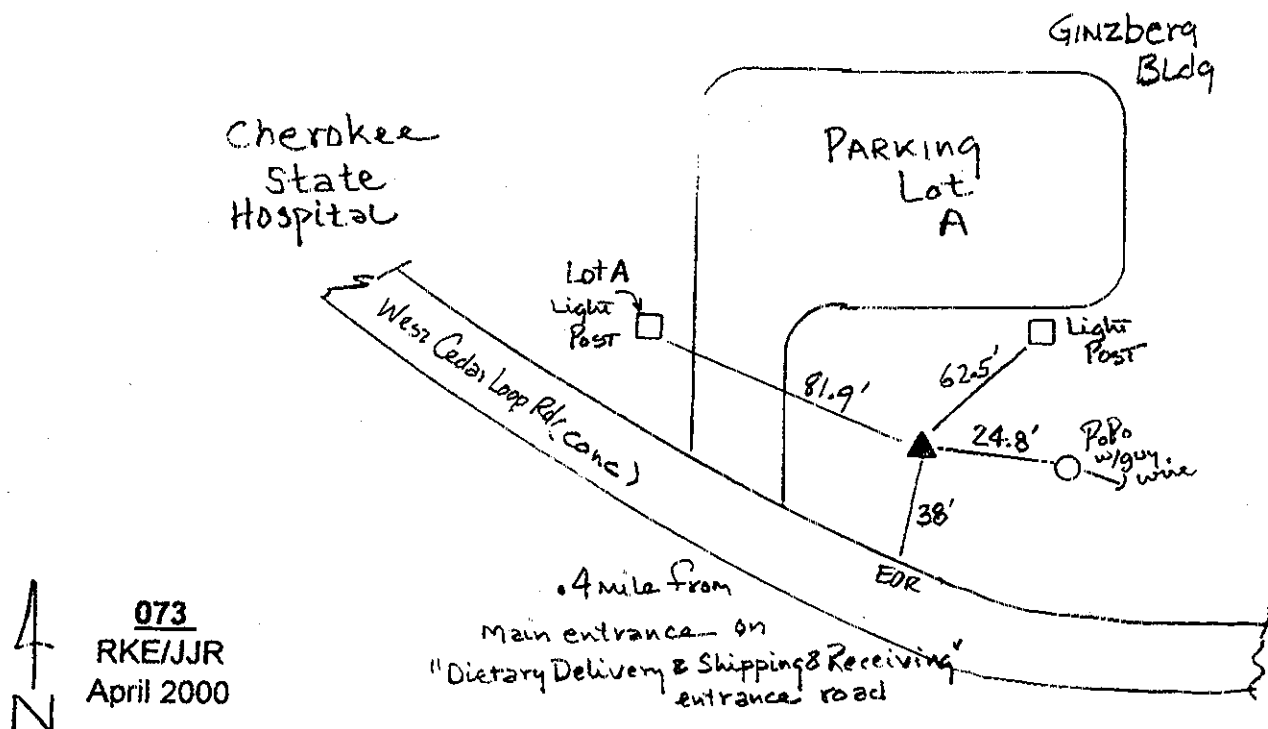
Theta: -1-24-16.72 Combination Factor: 0.99988674

Designation: **CHEROKEE CO GPS CONTROL PT 2000-073**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 45ft NE of West Cedar Loop Rd, 45ft SE of Ent to Prkng Lot on South Side of "GINZBERG" at Cherokee State Hospital In the SE 1/4 of Sec 28, T92N, R40W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 74

Northing: 3742580.97(Ft) Easting: 4370283.96(Ft)

Northing: 1140740.960(M) Easting: 1332065.215(M)

Elev: 1194.09(Ft) NAVD_88

Elev: 363.959(M) NAVD_88 Ellip Ht: 336.270(M) 96C Geoid Ht: -27.689(M)

Latitude: 42-44-55.374533 N Longitude: 95-33-05.352311 W

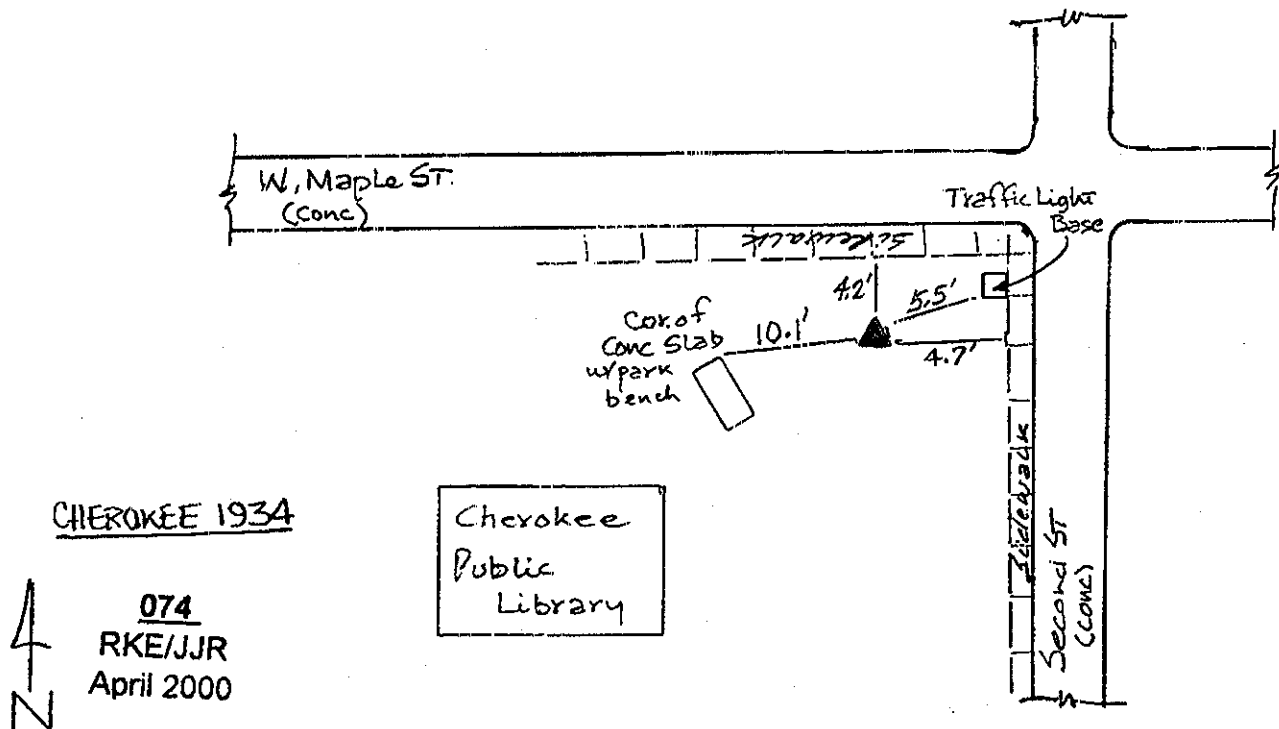
Theta: -1-23-25.38 Combination Factor: 0.99989360

Designation: NGS BM "CHEROKEE"

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 75

Northing: 3759470.12(Ft) Easting: 4374722.43(Ft)

Northing: 1145888.785(M) Easting: 1333418.064(M)

Elev: 1276.81(Ft) NAVD_88

Elev: 389.172(M) NAVD_88 Ellip Ht: 361.413(M) 96C Geoid Ht: -27.759(M)

Latitude: 42-47-43.218337 N Longitude: 95-32-11.332984 W

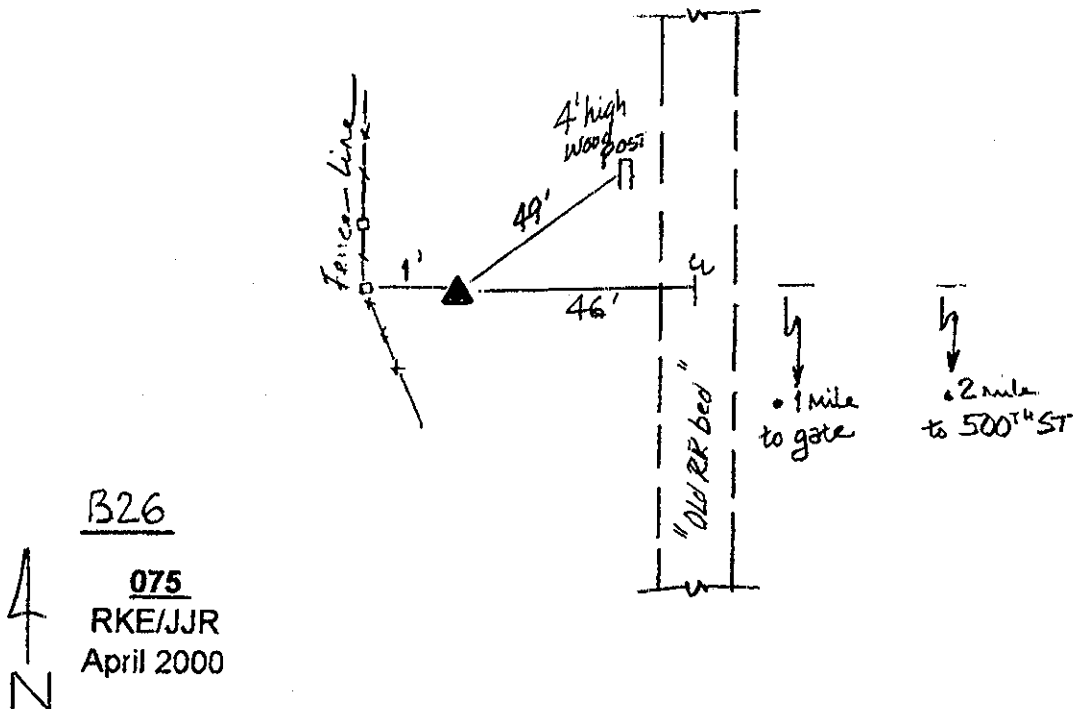
Theta: -1-22-48.77 Combination Factor: 0.99989113

Designation: NGS BM "B 26"

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 76

Northing: 3699610.17(Ft) Easting: 4345371.86(Ft)

Northing: 1127643.437(M) Easting: 1324471.993(M)

Elev: 1184.74(Ft) NAVD_88

Elev: 361.110(M) NAVD_88 Ellip Ht: 333.611(M) 96C Geoid Ht: -27.500(M)

Latitude: 42-37-44.928535 N Longitude: 95-38-24.564849 W

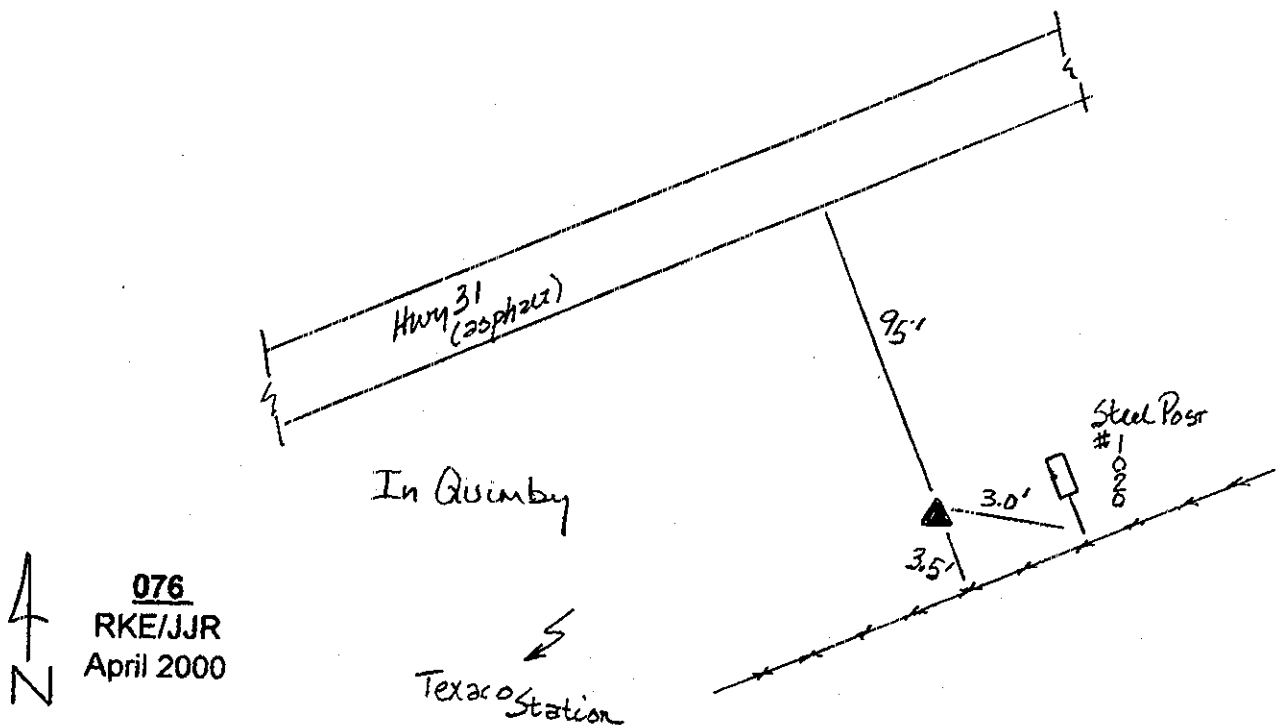
Theta: -1-27-01.73 Combination Factor: 0.99989324

Designation: **CHEROKEE CO GPS CONTROL PT 2000-076**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 95ft SE of Hwy 31 in the town of Quimby, IA, in the NW 1/4 of Sec 12, T90N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 77

Northing: 3680025.68(Ft) Easting: 4324511.74(Ft)

Northing: 1121674.071(M) Easting: 1318113.816(M)

Elev: 1155.51(Ft) NAVD_88

Elev: 352.199(M) NAVD_88 Ellip Ht: 324.831(M) 96C Geoid Ht: -27.368(M)

Latitude: 42-34-26.221162 N Longitude: 95-42-56.656941 W

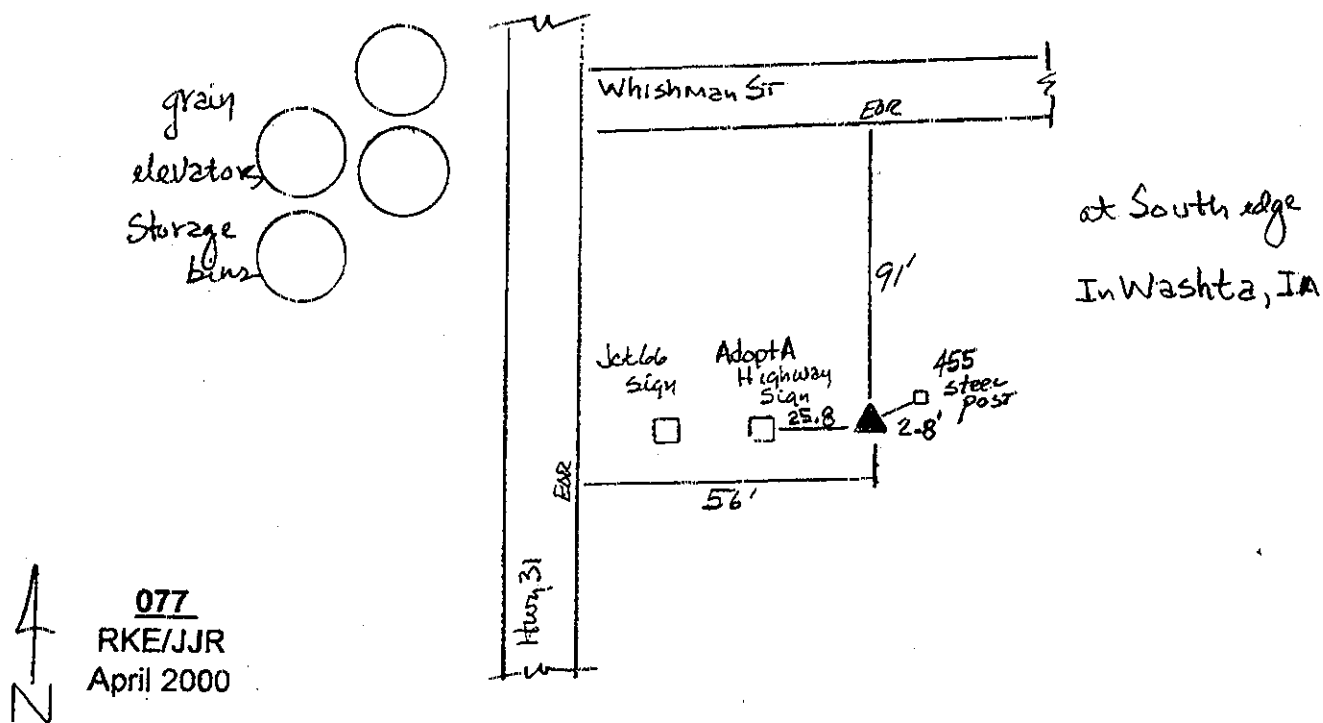
Theta: -1-30-06.14 Combination Factor: 0.99989573

Designation: **CHEROKEE CO GPS CONTROL PT 2000-077**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 55ft East of Hwy 31, 90ft South of Whishman St in the town of Washta, IA, in the NW 1/4 of Sec 32, T90N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 78

Northing: 3728965.25(Ft) Easting: 4400143.09(Ft)

Northing: 1136590.883(M) Easting: 1341166.296(M)

Elev: 1384.44(Ft) NAVD_88

Elev: 421.977(M) NAVD_88 Ellip Ht: 394.064(M) 96C Geoid Ht: -27.913(M)

Latitude: 42-42-47.874631 N Longitude: 95-26-21.068273 W

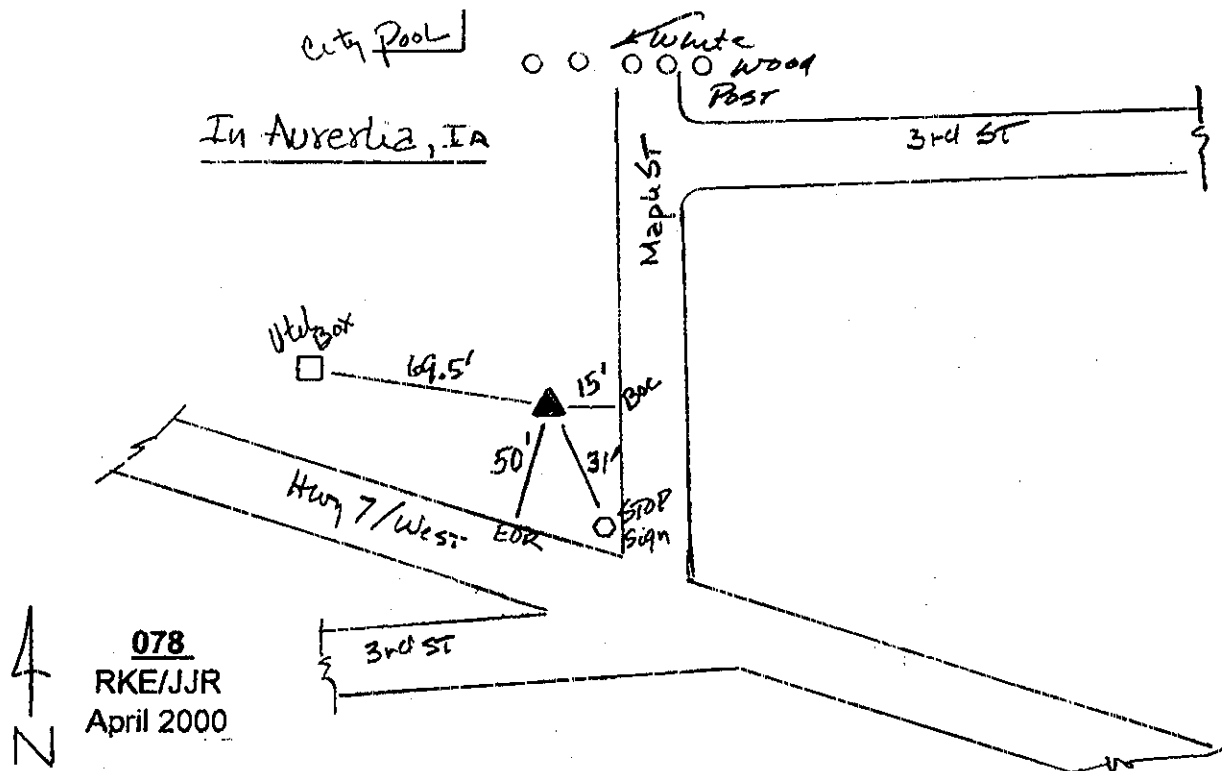
Theta: -1-18-51.38 Combination Factor: 0.99988385

Designation: **CHEROKEE CO GPS CONTROL PT 2000-078**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 50ft NNE of Hwy 7, 15ft West of Maple St in the town of Aurelia, IA, near the center of Sec 10, T91N, R39W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 79

Northing: 3760503.53(Ft) Easting: 4348406.70(Ft)

Northing: 1146203.770(M) Easting: 1325397.013(M)

Elev: 1399.54(Ft) NAVD_88

Elev: 426.580(M) NAVD_88 Ellip Ht: 399.076(M) 96C Geoid Ht: -27.504(M)

Latitude: 42-47-47.011163 N Longitude: 95-38-04.545806 W

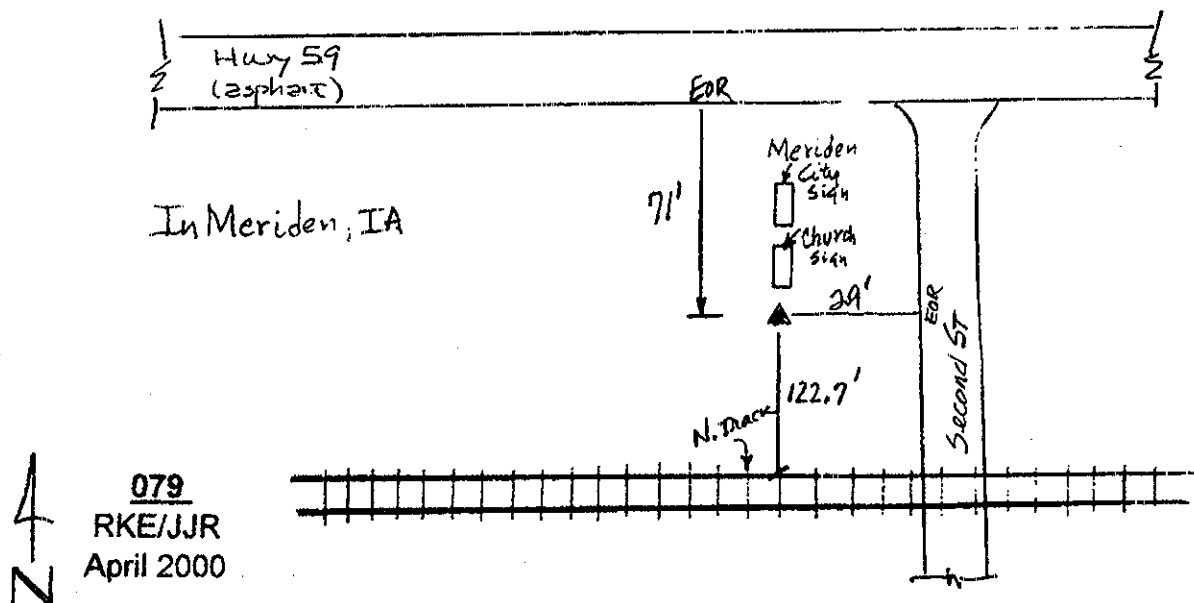
Theta: -1-26-48.16 Combination Factor: 0.99988526

Designation: **CHEROKEE CO GPS CONTROL PT 2000-079**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 80ft South of Hwy 3, 30ft West of 2nd St in the town of Meriden, IA, near the South 1/4 Cor of Sec 12, T92N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 80

Northing: 3767191.65(Ft) Easting: 4326486.09(Ft)

Northing: 1148242.311(M) Easting: 1318715.596(M)

Elev: 1458.64(Ft) NAVD_88

Elev: 444.592(M) NAVD_88 Ellip Ht: 417.309(M) 96C Geoid Ht: -27.284(M)

Latitude: 42-48-47.482450 N Longitude: 95-43-00.825153 W

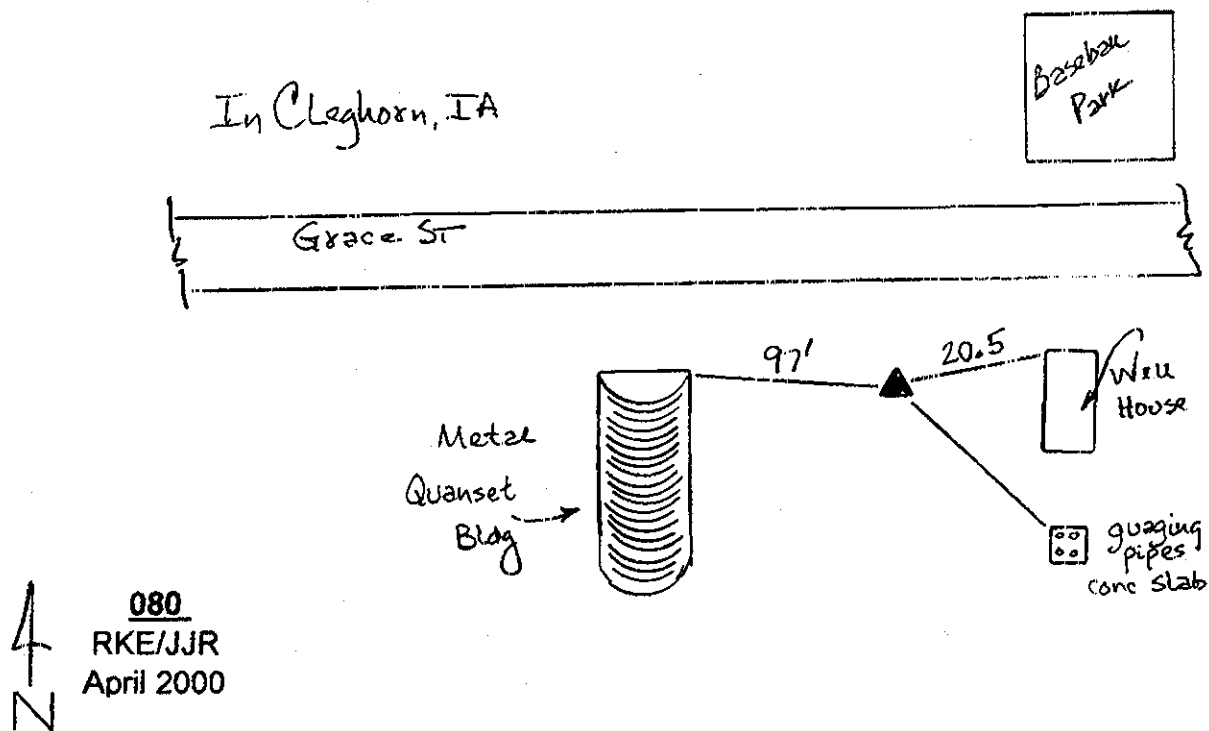
Theta: -1-30-08.96 Combination Factor: 0.99988310

Designation: **CHEROKEE CO GPS CONTROL PT 2000-080**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 50ft South of Grace St in Cleghorn, IA, near the well house in the SW 1/4 of Sec 5, T92N, R41W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 81

Northing: 3770562.63(Ft) Easting: 4374064.27(Ft)

Northing: 1149269.789(M) Easting: 1333217.456(M)

Elev: 1345.28(Ft) NAVD_88

Elev: 410.041(M) NAVD_88 Ellip Ht: 382.274(M) 96C Geoid Ht: -27.767(M)

Latitude: 42-49-32.601706 N Longitude: 95-32-23.748225 W

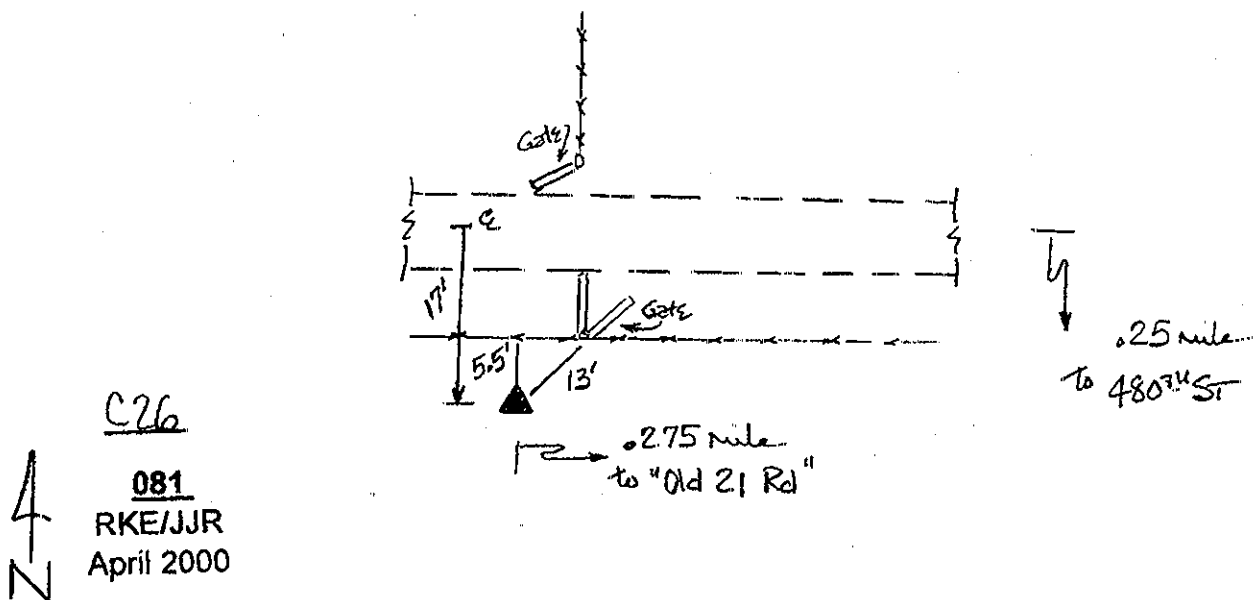
Theta: -1-22-57.19 Combination Factor: 0.99988918

Designation: NGS BM "C 26"

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 82

Northing: 3803124.82(Ft) Easting: 4289293.85(Ft)

Northing: 1159194.762(M) Easting: 1307379.380(M)

Elev: 1441.38(Ft) NAVD_88

Elev: 439.334(M) NAVD_88 Ellip Ht: 412.465(M) 96C Geoid Ht: -26.869(M)

Latitude: 42-54-32.354717 N Longitude: 95-51-33.089412 W

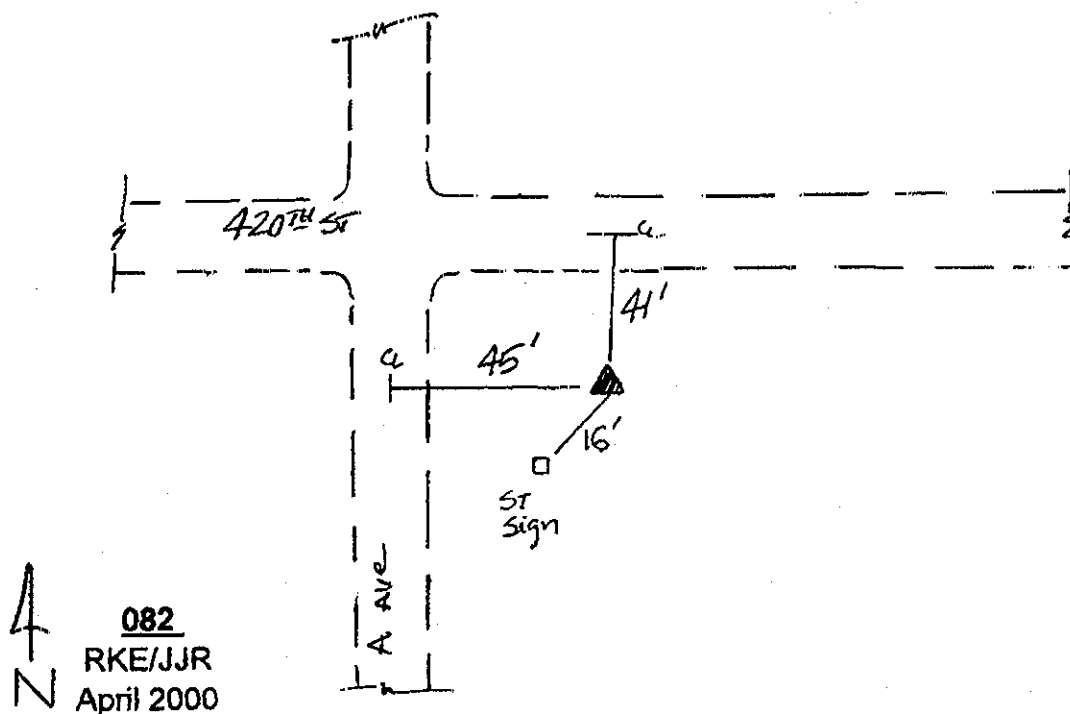
Theta: -1-35-56.15 Combination Factor: 0.99988950

Designation: **CHEROKEE CO GPS CONTROL PT 2000-082**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 45ft East of A Ave., 40ft South of 420th St Near the NW Cor of Sec 6, T93N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 116

Northing: 3803824.81(Ft) Easting: 4273486.88(Ft)

Northing: 1159408.120(M) Easting: 1302561.407(M)

Elev: 1434.00(Ft) NAVD_88

Elev: 437.084(M) NAVD_88 Ellip Ht: 410.346(M) 96C Geoid Ht: -26.738(M)

Latitude: 42-54-34.855100 N Longitude: 95-55-05.679591 W

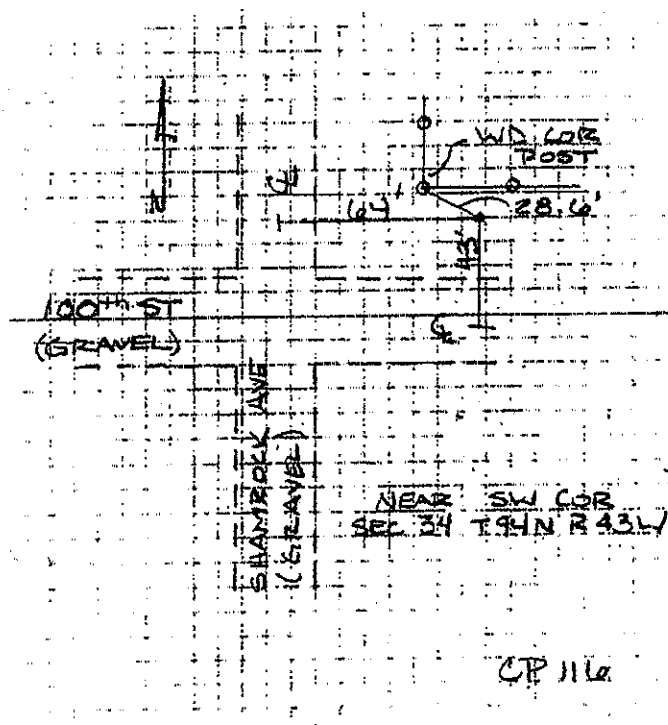
Theta: -1-38-20.23 Combination Factor: 0.99988988

Designation: PLYMOUTH CO GPS CONTROL PT 95-116

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 40ft North of 100th St, 60ft East of Shamrock Ave, near the SW Cor of Sec 34, T94N, R43W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 117

Northing: 3676139.51(Ft) Easting: 4285500.74(Ft)

Northing: 1120489.563(M) Easting: 1306223.238(M)

Elev: 1316.18(Ft) NAVD_88

Elev: 401.174(M) NAVD_88 Ellip Ht: 374.107(M) 96C Geoid Ht: -27.067(M)

Latitude: 42-33-37.417673 N Longitude: 95-51-36.408247 W

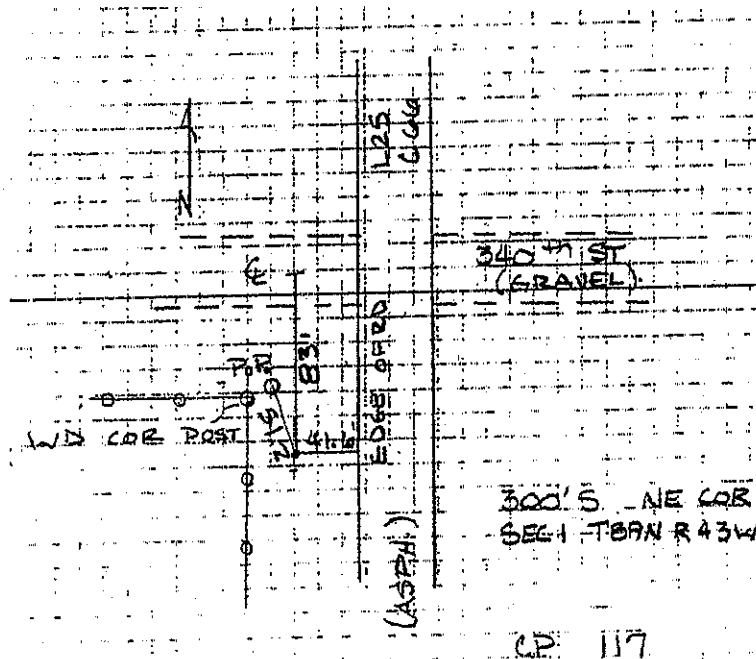
Theta: -1-35-58.39 Combination Factor: 0.99988841

Designation: PLYMOUTH CO GPS CONTROL PT 95-117

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft West of Almond Ave, 300ft South of 340th St, near the NE Cor of Sec 1, T89N, R43W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 118

Northing: 3692110.15(Ft) Easting: 4286142.54(Ft)

Northing: 1125357.423(M) Easting: 1306418.859(M)

Elev: 1405.25(Ft) NAVD_88

Elev: 428.320(M) NAVD_88 Ellip Ht: 401.274(M) 96C Geoid Ht: -27.046(M)

Latitude: 42-36-15.297897 N Longitude: 95-51-33.790711 W

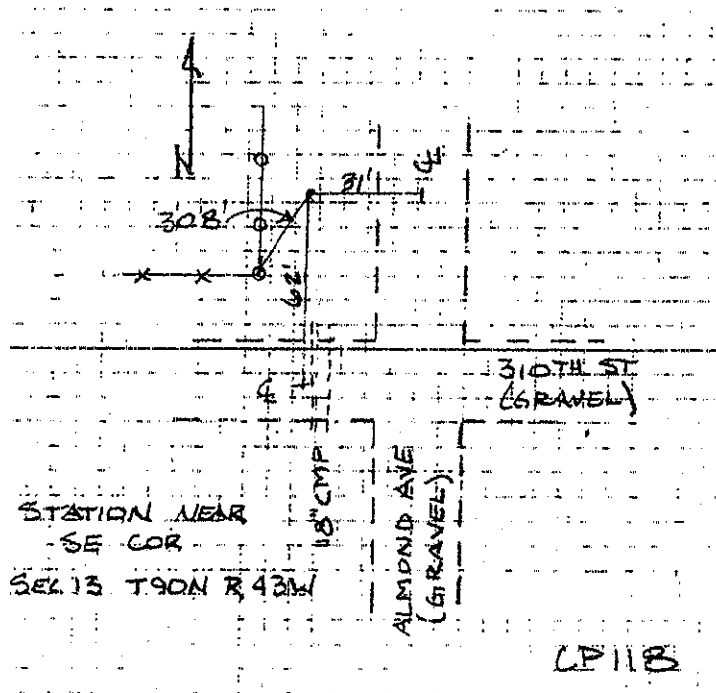
Theta: -1-35-56.62 Combination Factor: 0.99988301

Designation: PLYMOUTH CO GPS CONTROL PT 95-118

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of Almond Ave, 60ft North of 30th St, near the SE Cor of Sec 13, T90N, R43W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 119

Northing: 3708337.30(Ft) Easting: 4286488.26(Ft)

Northing: 1130303.471(M) Easting: 1306524.234(M)

Elev: 1307.77(Ft) NAVD_88

Elev: 398.609(M) NAVD_88 Ellip Ht: 371.582(M) 96C Geoid Ht: -27.027(M)

Latitude: 42-38-55.628433 N Longitude: 95-51-35.225725 W

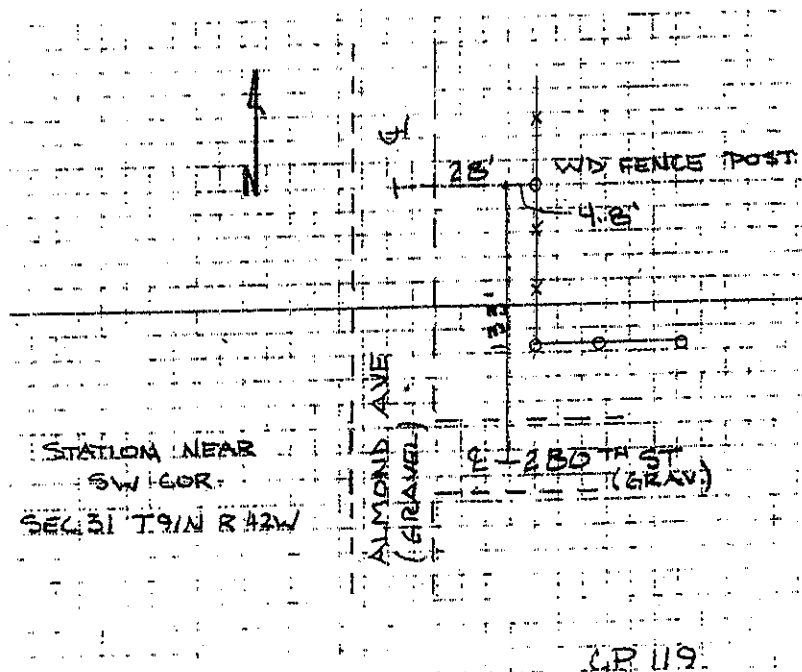
Theta: -1-35-57.59 Combination Factor: 0.99988712

Designation: PLYMOUTH CO GPS CONTROL PT 95-119

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft East of Almond Ave, 130ft North of 280th St, near the SW Cor of Sec 31, T91N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 120

Northing: 3723747.45(Ft) Easting: 4286810.99(Ft)

Northing: 1135000.494(M) Easting: 1306622.603(M)

Elev: 1366.34(Ft) NAVD_88

Elev: 416.461(M) NAVD_88 Ellip Ht: 389.457(M) 96C Geoid Ht: -27.004(M)

Latitude: 42-41-27.883933 N Longitude: 95-51-36.665103 W

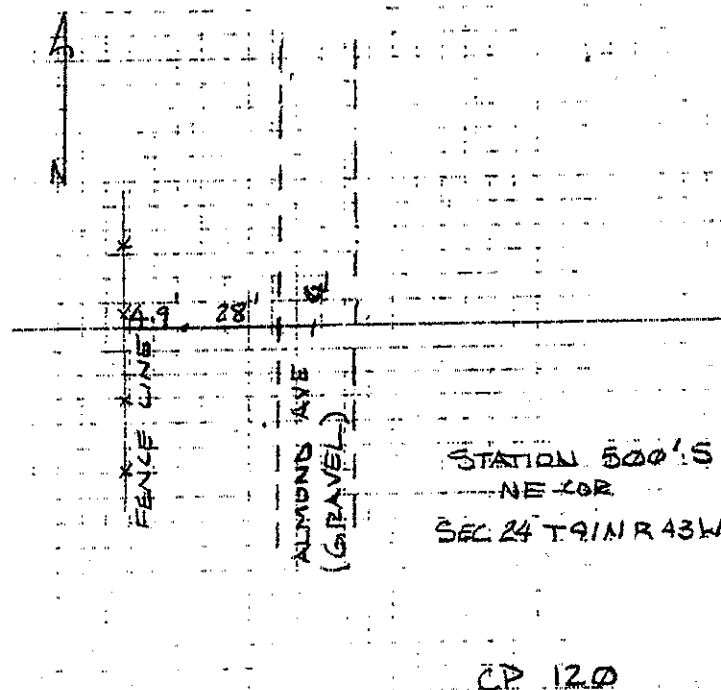
Theta: -1-35-58.57 Combination Factor: 0.99988434

Designation: PLYMOUTH CO GPS CONTROL PT 95-120

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of Almond Ave, 500ft South of 250th St, near the NE Cor of Sec 24, T91N, R43W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 121

Northing: 3739108.18(Ft) Easting: 4287133.45(Ft)

Northing: 1139682.452(M) Easting: 1306720.889(M)

Elev: 1419.97(Ft) NAVD_88

Elev: 432.808(M) NAVD_88 Ellip Ht: 405.833(M) 96C Geoid Ht: -26.975(M)

Latitude: 42-43-59.650166 N Longitude: 95-51-38.091596 W

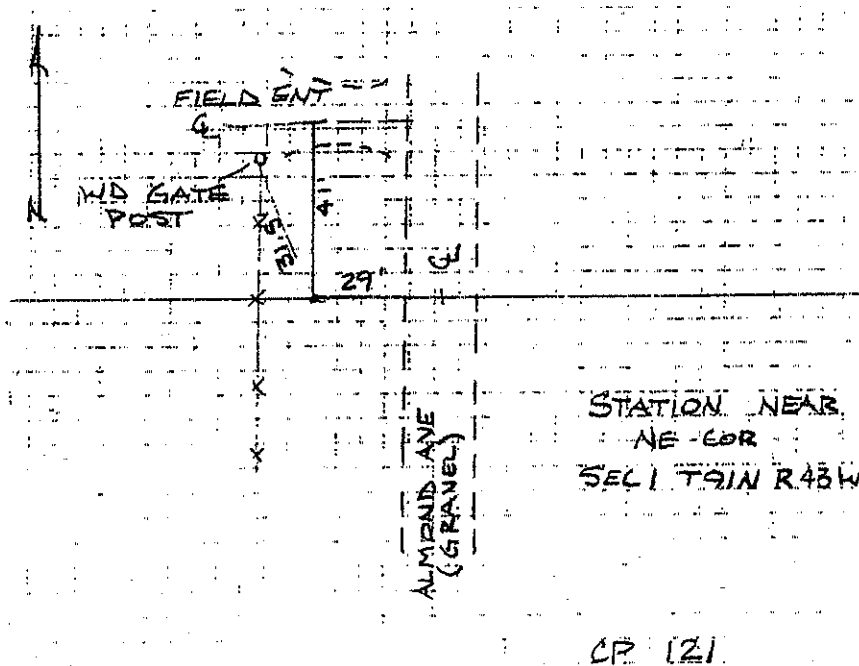
Theta: -1-35-59.54 Combination Factor: 0.99988234

Designation: PLYMOUTH CO GPS CONTROL PT 95-121

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 30ft West of Almond Ave, 800ft South of 220th St, near the NE Cor of Sec 1 T91N, R43W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 122

Northing: 3755618.75(Ft) Easting: 4287886.25(Ft)

Northing: 1144714.883(M) Easting: 1306950.343(M)

Elev: 1408.26(Ft) NAVD_88

Elev: 429.240(M) NAVD_88 Ellip Ht: 402.291(M) 96C Geoid Ht: -26.949(M)

Latitude: 42-46-42.887612 N Longitude: 95-51-34.182140 W

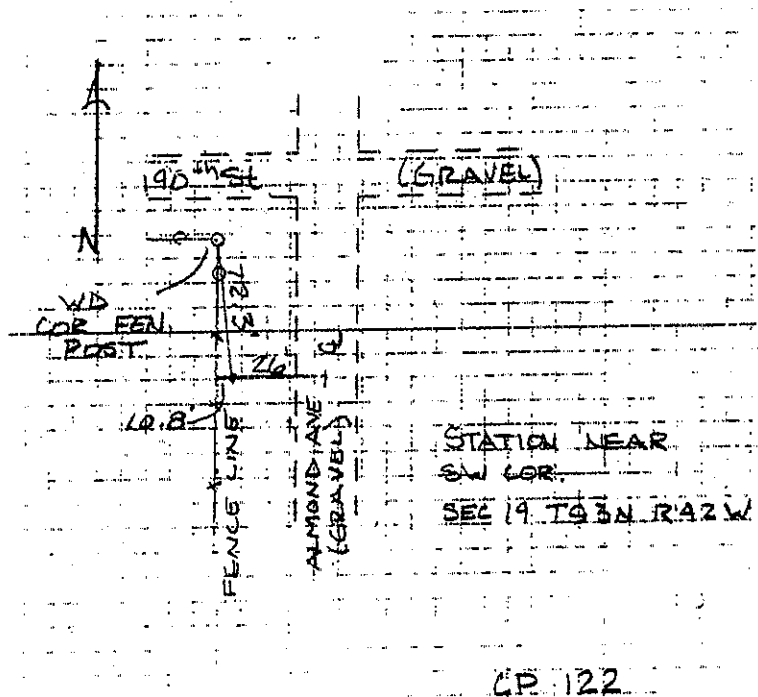
Theta: -1-35-56.89 Combination Factor: 0.99988411

Designation: **PLYMOUTH CO GPS CONTROL PT 95-122**

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft West of Almond Ave, 100ft South of 190th St, near the NE Cor of Sec 24, T92N, R43W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 123

Northing: 3771667.49(Ft) Easting: 4288609.65(Ft)

Northing: 1149606.551(M) Easting: 1307170.837(M)

Elev: 1428.11(Ft) NAVD_88

Elev: 435.288(M) NAVD_88 Ellip Ht: 408.364(M) 96C Geoid Ht: -26.924(M)

Latitude: 42-49-21.555279 N Longitude: 95-51-30.488492 W

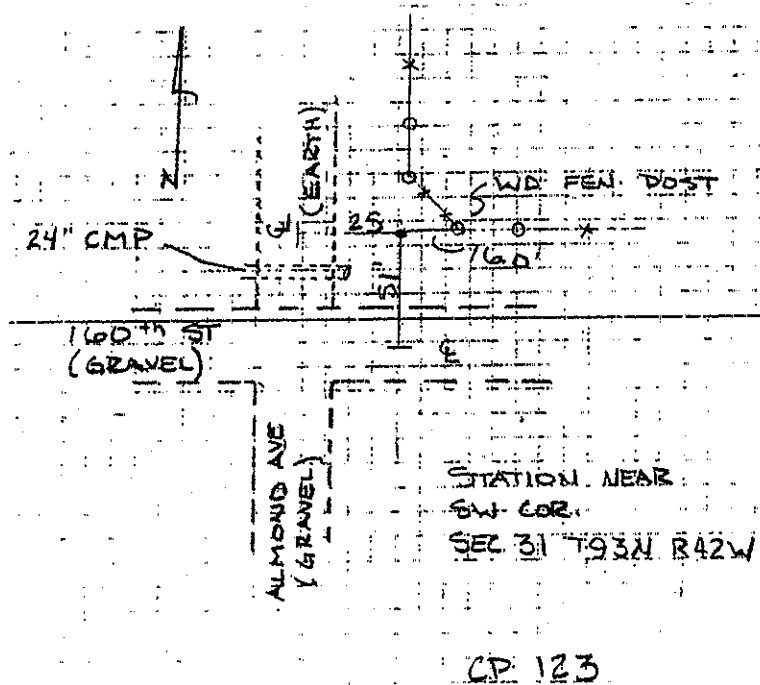
Theta: -1-35-54.38 Combination Factor: 0.99988494

Designation: PLYMOUTH CO GPS CONTROL PT 95-123

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 20ft East of Almond Ave, 40ft North of 160th St, near the SW Cor of Sec 31, T93N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 124

Northing: 3787407.68(Ft) Easting: 4288943.68(Ft)

Northing: 1154404.170(M) Easting: 1307272.648(M)

Elev: 1421.95(Ft) NAVD_88

Elev: 433.412(M) NAVD_88 Ellip Ht: 406.518(M) 96C Geoid Ht: -26.894(M)

Latitude: 42-51-57.067373 N Longitude: 95-51-31.900730 W

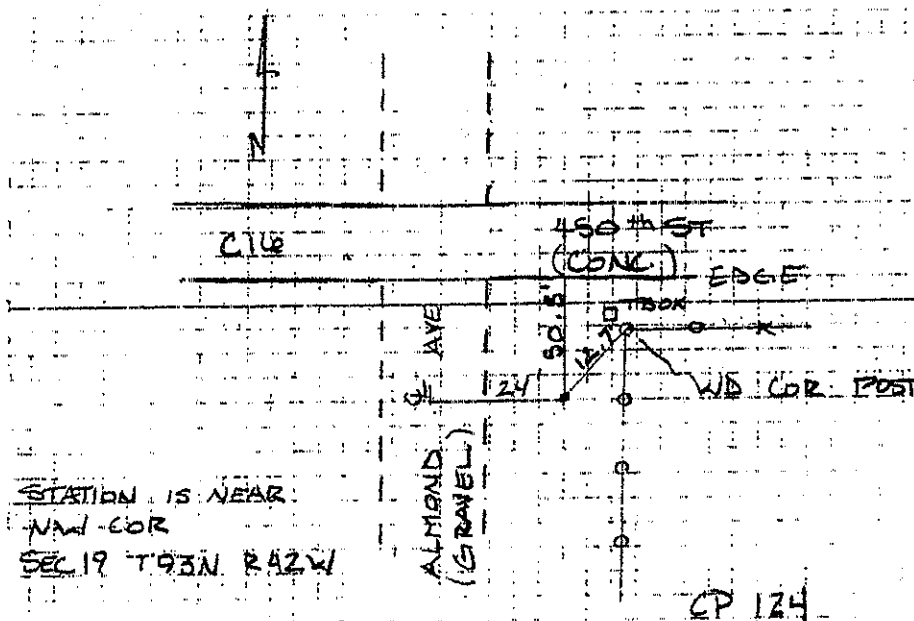
Theta: -1-35-55.34 Combination Factor: 0.99988755

Designation: PLYMOUTH CO GPS CONTROL PT 95-124

Monument Type: 5/8" dia driven aluminum rod with a 2-1/2" dia aluminum cap and permanent magnet encased in a 5" dia PVC pipe with an aluminum access cover.

To Reach: 25ft East of Almond Ave, 50ft South of "C 16", near the NW Cor of Sec 19, T93N, R42W

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 201

Northing: 3771974.34(Ft) Easting: 4302945.26(Ft)

Northing: 1149700.079(M) Easting: 1311540.338(M)

Elev: 1473.75(Ft) NAVD_88

Elev: 449.201(M) NAVD_88 Ellip Ht: 422.150(M) 96C Geoid Ht: -27.051(M)

Latitude: 42-49-28.490546 N Longitude: 95-48-18.303075 W

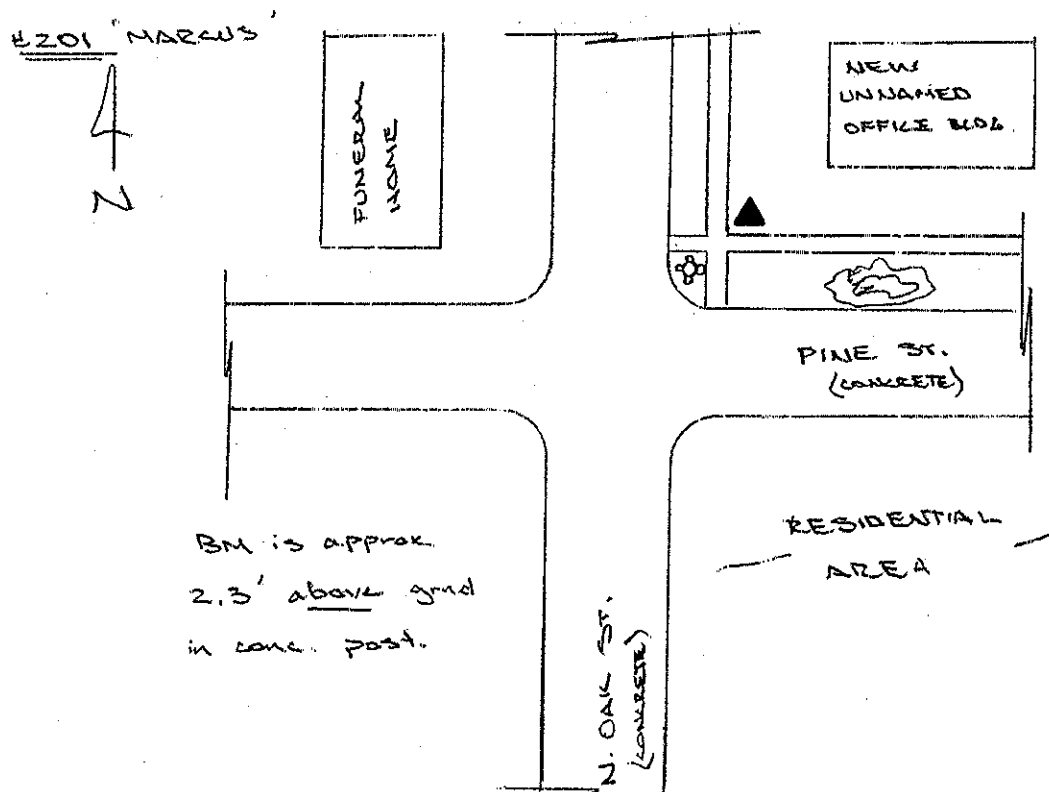
Theta: -1-33-44.13 Combination Factor: 0.99988287

Designation: "MARCUS" NGS 2nd order vertical control station PID NL0477

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 202

Northing: 3771218.63(Ft) Easting: 4309695.43(Ft)

Northing: 1149469.737(M) Easting: 1313597.794(M)

Elev: 1416.71(Ft) NAVD_88

Elev: 431.813(M) NAVD_88 Ellip Ht: 404.696(M) 96C Geoid Ht: -27.117(M)

Latitude: 42-49-22.836270 N Longitude: 95-46-47.479361 W

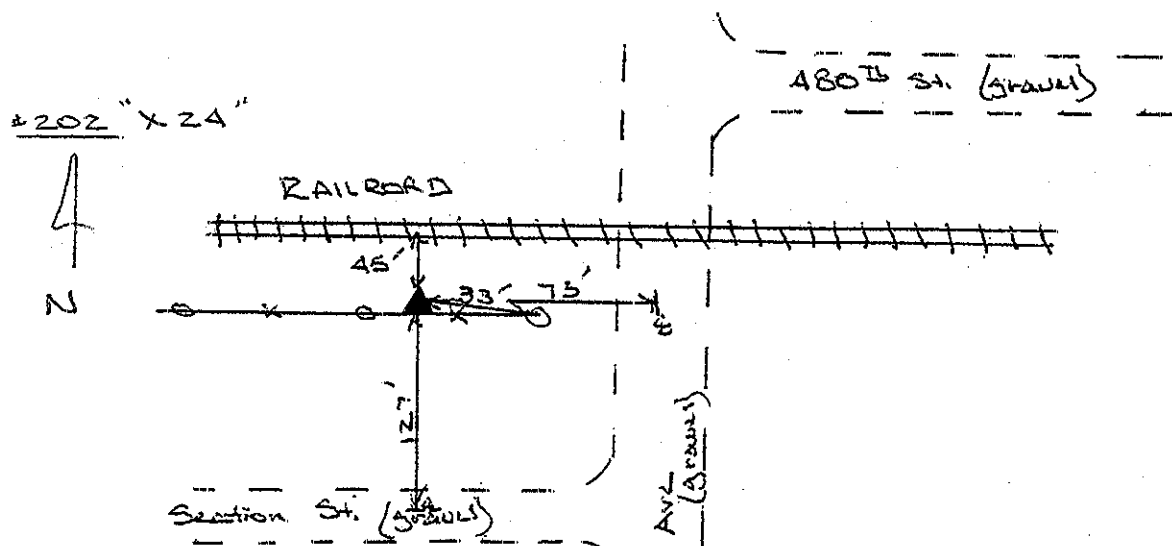
Theta: -1-32-42.57 Combination Factor: 0.99988553

Designation: "X 24" NGS 2nd order vertical control station PID NL0476

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 300

Northing: 3804844.43(Ft)

Easting: 4245073.21(Ft)

Northing: 1159718.901(M)

Easting: 1293900.902(M)

Elev: 1423.13(Ft) NAVD_88

Elev: 433.770(M) NAVD_88

Ellip Ht: 407.250(M)

96C Geoid Ht: -26.521(M)

Latitude: 42-54-36.718970 N

Longitude: 96-01-27.734990 W

Theta: -1-42-39.16

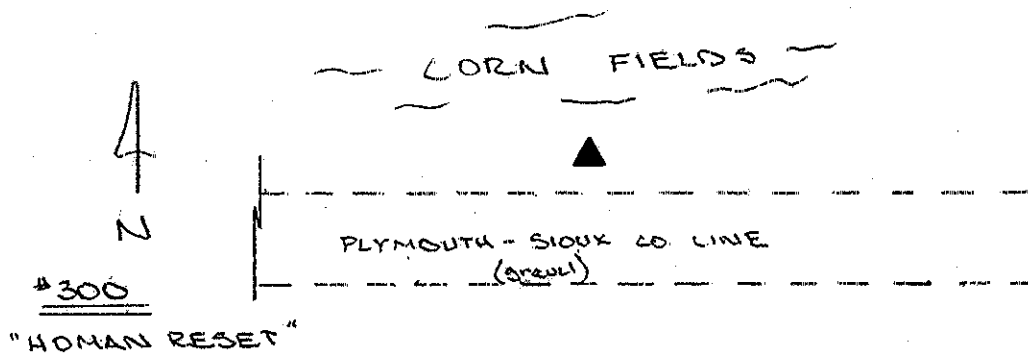
Combination Factor: 0.99989040

Designation: CBN control station "HOMAN RESET" PID NM1615

Monument Type: A standard disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 301

Northing: 3643358.17(Ft) Easting: 4320293.02(Ft)

Northing: 1110497.790(M) Easting: 1316827.947(M)

Elev: 1206.53(Ft) NAVD_88

Elev: 367.750(M) NAVD_88 Ellip Ht: 340.346(M) 96C Geoid Ht: -27.404(M)

Latitude: 42-28-23.030860 N Longitude: 95-43-40.109580 W

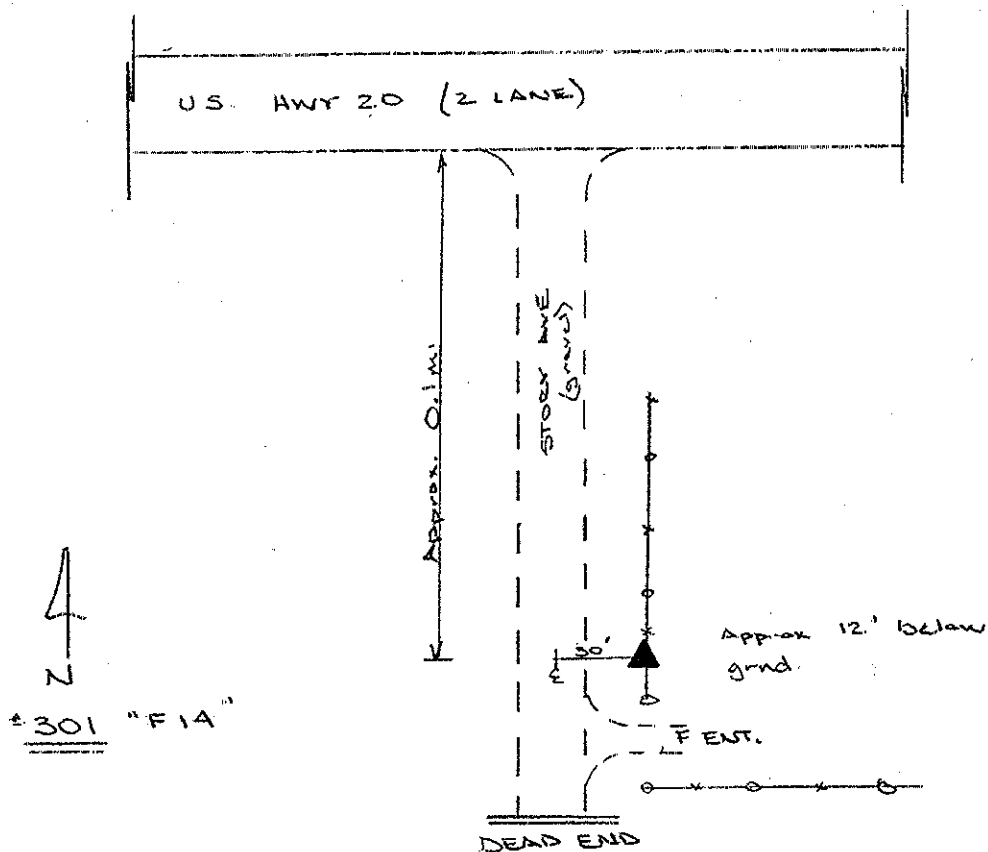
Theta: -1-30-35.59 Combination Factor: 0.99989770

Designation: FBN control station "F 14" PID NL0374

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 302

Northing: 3801329.35(Ft) Easting: 4374579.07(Ft)

Northing: 1158647.505(M) Easting: 1333374.367(M)

Elev: 1407.61(Ft) NAVD_88

Elev: 429.041(M) NAVD_88 Ellip Ht: 401.272(M) 96C Geoid Ht: -27.769(M)

Latitude: 42-54-36.545906 N Longitude: 95-32-26.807784 W

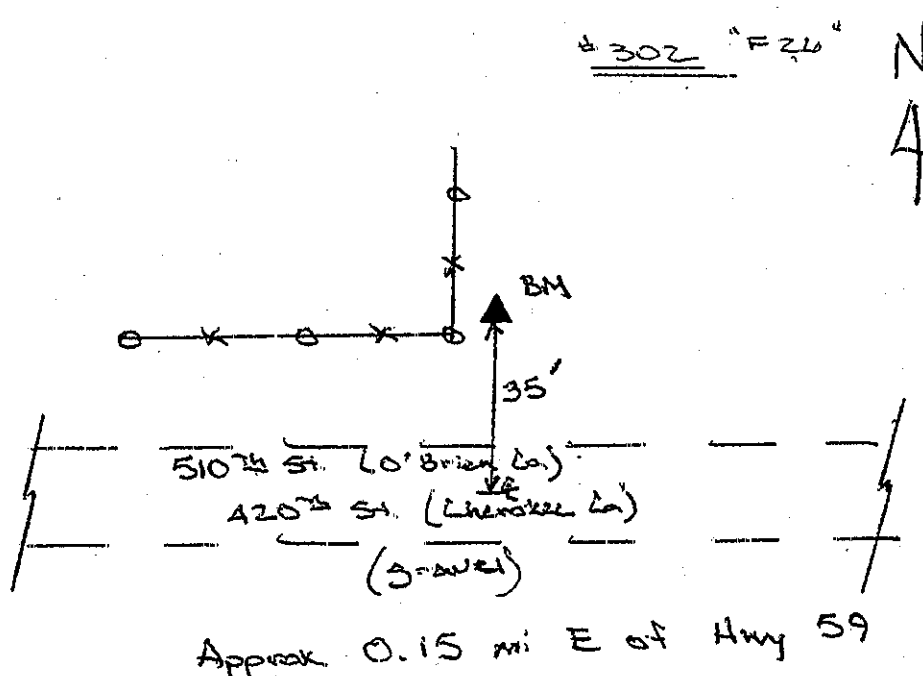
Theta: -1-22-59.26 Combination Factor: 0.99989134

Designation: "F 26" NGS 2nd order vertical control station PID NL0518

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 303

Northing: 3837024.41(Ft) Easting: 4416037.38(Ft)

Northing: 1169527.379(M) Easting: 1346010.886(M)

Elev: 1421.84(Ft) NAVD_88

Elev: 433.378(M) NAVD_88 Ellip Ht: 405.256(M) 96C Geoid Ht: -28.122(M)

Latitude: 43-00-38.551385 N Longitude: 95-23-20.552407 W

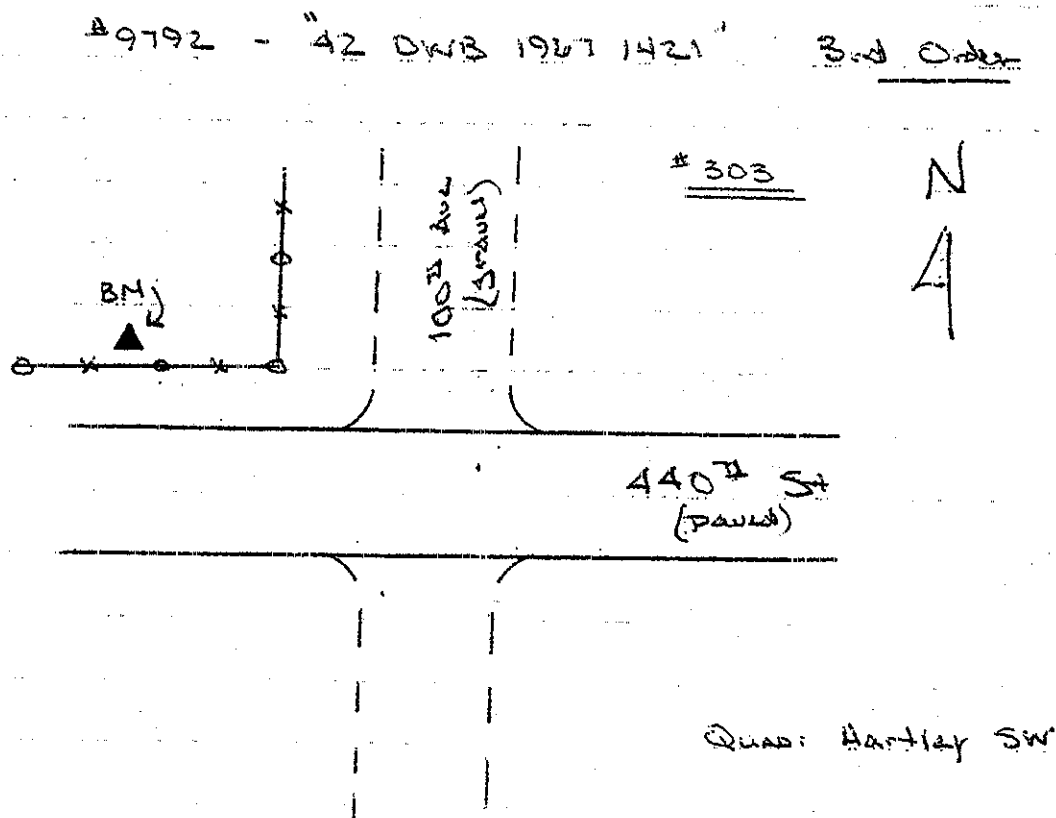
Theta: -1-16-49.04 Combination Factor: 0.99989967

Designation: "42 DWB 1967 1421" USGS 3rd order vertical control station

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the USGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 304

Northing: 3800271.78(Ft) Easting: 4420839.96(Ft)

Northing: 1158325.154(M) Easting: 1347474.715(M)

Elev: 1416.01(Ft) NAVD_88

Elev: 431.602(M) NAVD_88 Ellip Ht: 403.400(M) 96C Geoid Ht: -28.202(M)

Latitude: 42-54-36.665355 N Longitude: 95-22-04.997171 W

Theta: -1-15-57.83 Combination Factor: 0.99989101

Designation: "57 T 1968 1416" USGS 3rd order vertical control station

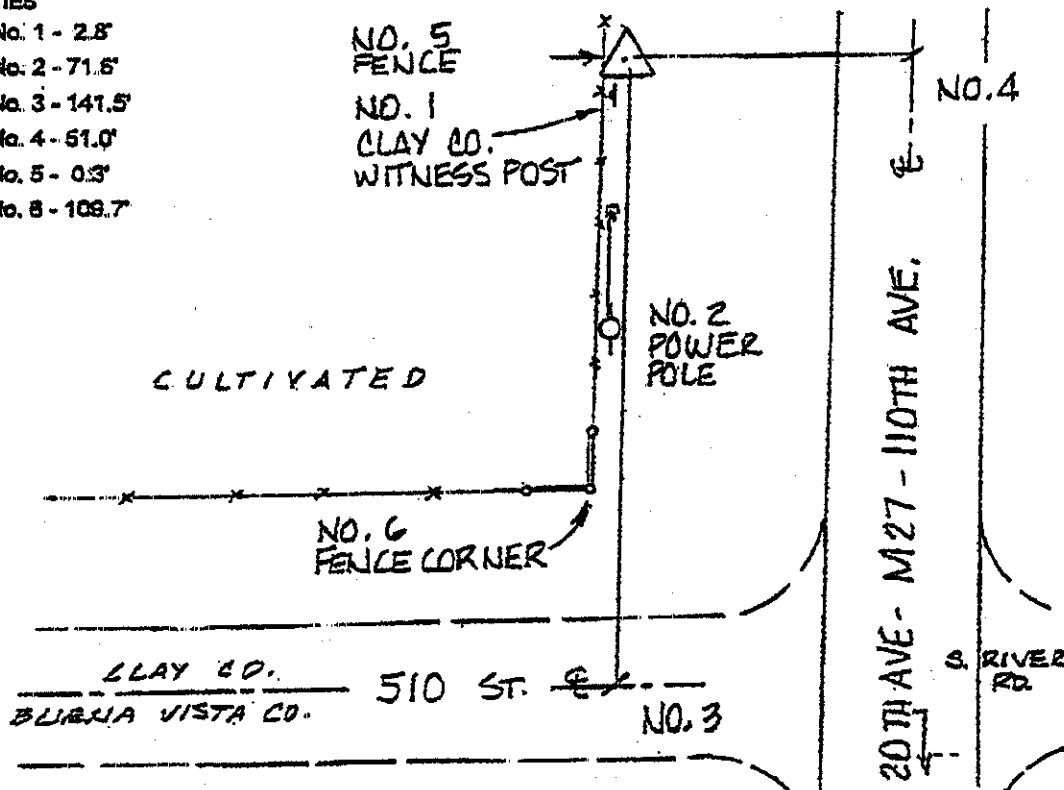
Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the USGS data sheet for complete station description****

Date Printed August 29, 2000

TIES

No. 1 - 2.8'
No. 2 - 71.6'
No. 3 - 141.5'
No. 4 - 51.0'
No. 5 - 0.3'
No. 6 - 109.7'



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 305

Northing: 3804488.25(Ft) Easting: 4452651.88(Ft)

Northing: 1159610.338(M) Easting: 1357171.007(M)

Elev: 1388.13(Ft) NAVD_88

Elev: 423.105(M) NAVD_88 Ellip Ht: 394.684(M) 96C Geoid Ht: -28.421(M)

Latitude: 42-55-25.028166 N Longitude: 95-14-58.776427 W

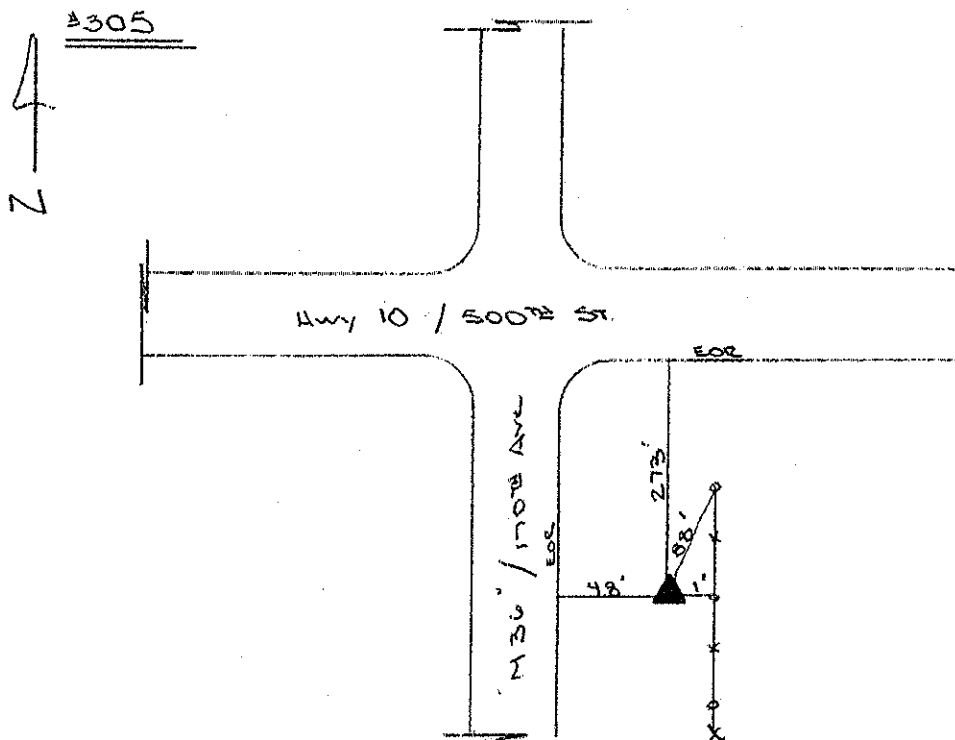
Theta: -1-11-08.96 Combination Factor: 0.99989339

Designation: "65 T 1968 1387" USGS 3rd order vertical control station

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the USGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 306

Northing: 3775319.29(Ft) Easting: 4430781.13(Ft)

Northing: 1150719.622(M) Easting: 1350504.789(M)

Elev: 1542.59(Ft) NAVD_88

Elev: 470.181(M) NAVD_88 Ellip Ht: 441.934(M) 96C Geoid Ht: -28.248(M)

Latitude: 42-50-32.394080 N Longitude: 95-19-44.186610 W

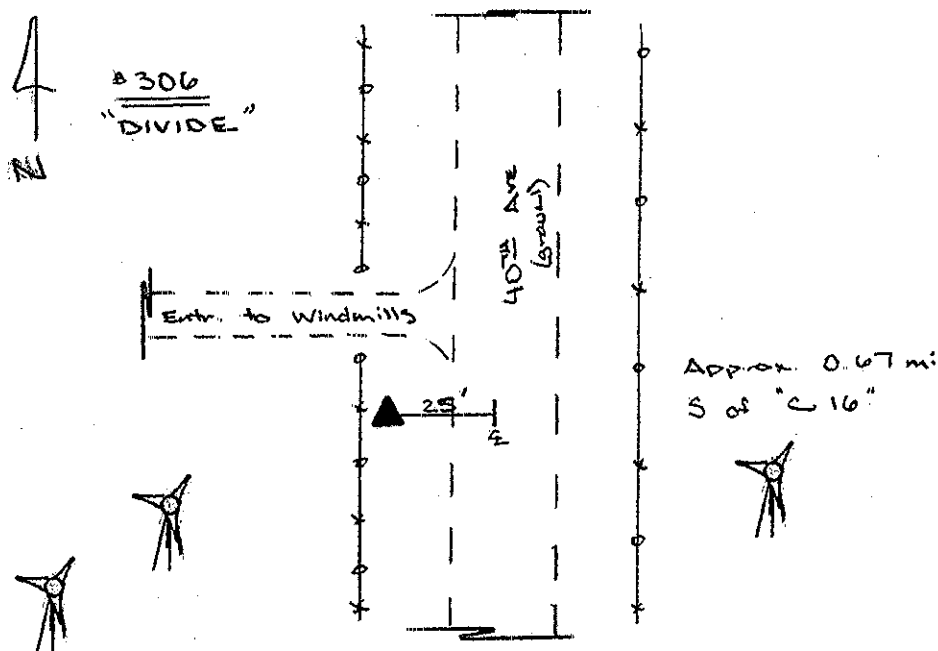
Theta: -1-14-22.40 Combination Factor: 0.99988066

Designation: CBN control station "DIVIDE" PID NL0581

Monument Type: A standard disk set in the top of a concrete post

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 307

Northing: 3703037.55(Ft)

Easting: 4461074.86(Ft)

Northing: 1128688.103(M)

Easting: 1359738.338(M)

Elev: 1438.73(Ft) NAVD_88

Elev: 438.526(M) NAVD_88

Ellip Ht: **410.181(M)**

96C Geoid Ht: -28.345(M)

Latitude: 42-38-44.805030 N

Longitude: 95-12-37.999422 W

Theta: -1-09-33.55

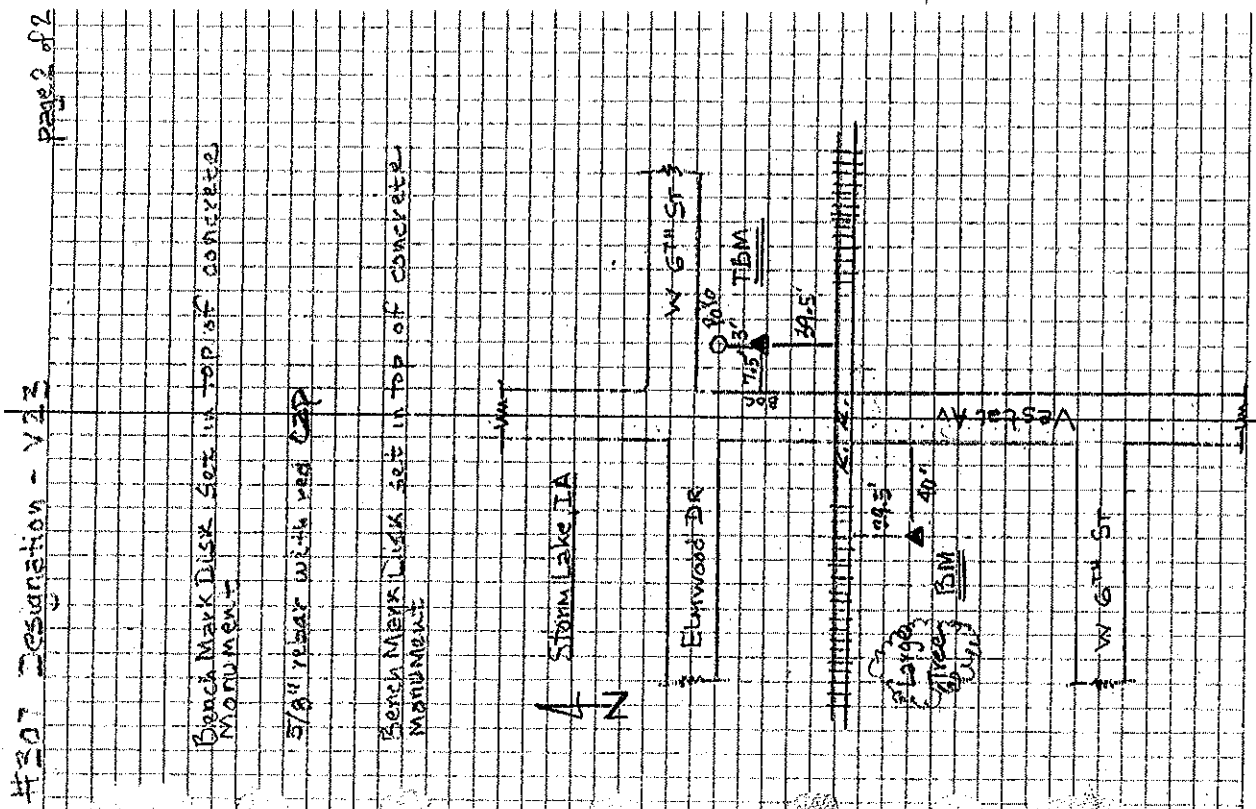
Combination Factor: 0.99988108

Designation: TBM for NGS 2nd order vertical control station "V 23" PID NL0259

Monument Type: 5/8" x 30" deformed rebar with a red survey cap

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 308

Northing: 3701943.84(Ft)

Easting: 4463304.07(Ft)

Northing: 1128354.738(M)

Easting: 1360417.801(M)

Elev: 1433.64(Ft) NAVD_88

Elev: 436.974(M) NAVD_88

Ellip Ht: 408.617(M)

96C Geoid Ht: -28.358(M)

Latitude: 42-38-34.447588 N

Longitude: 95-12-07.881926 W

Theta: -1-09-13.14

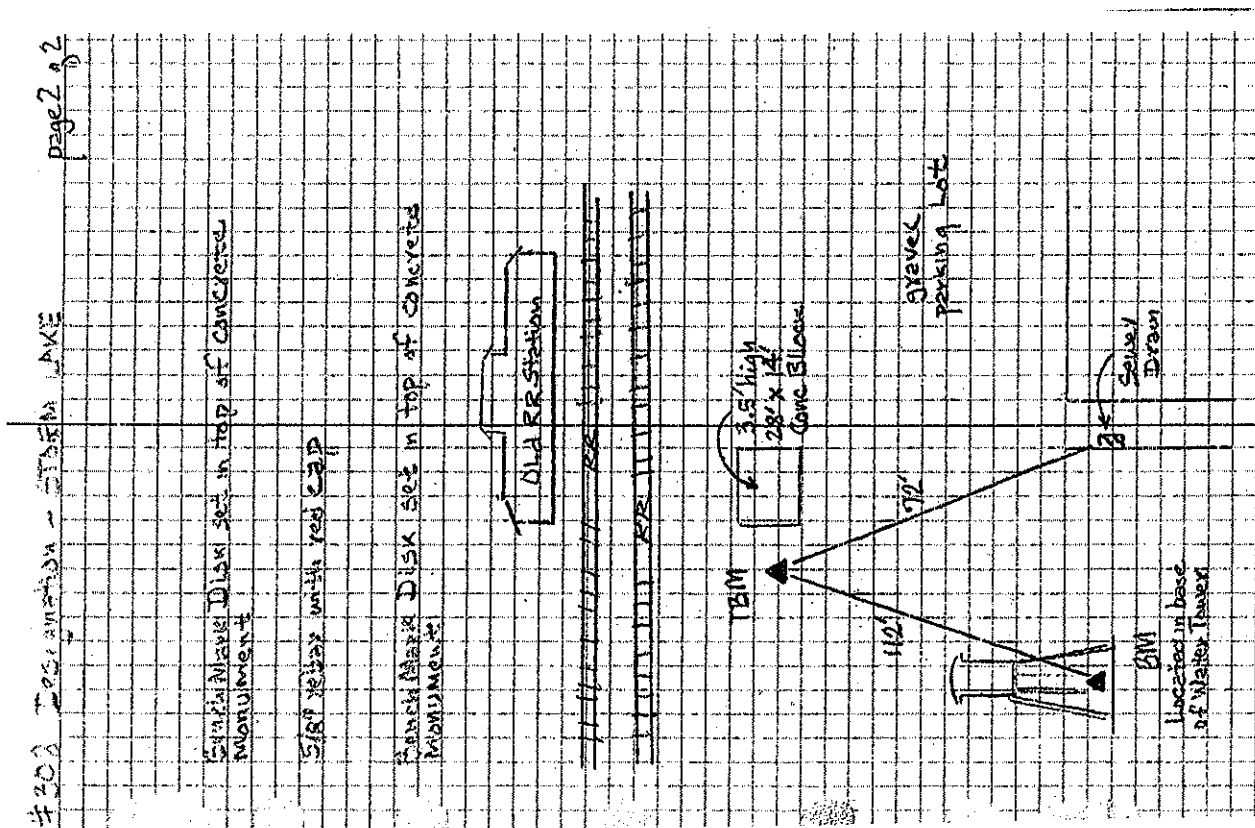
Combination Factor: 0.99988134

Designation: TBM for NGS 2nd order vertical control station "STORM LAKE" PID NL0258

Monument Type: 5/8" x 30" deformed rebar with a red survey cap

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 309

Northing: 3687141.52(Ft) Easting: 4452581.19(Ft)

Northing: 1123842.984(M) Easting: 1357149.461(M)

Elev: 1472.68(Ft) NAVD_88

Elev: 448.872(M) NAVD_88 Ellip Ht: 420.585(M) 96C Geoid Ht: -28.287(M)

Latitude: 42-36-06.098390 N Longitude: 95-14-27.248840 W

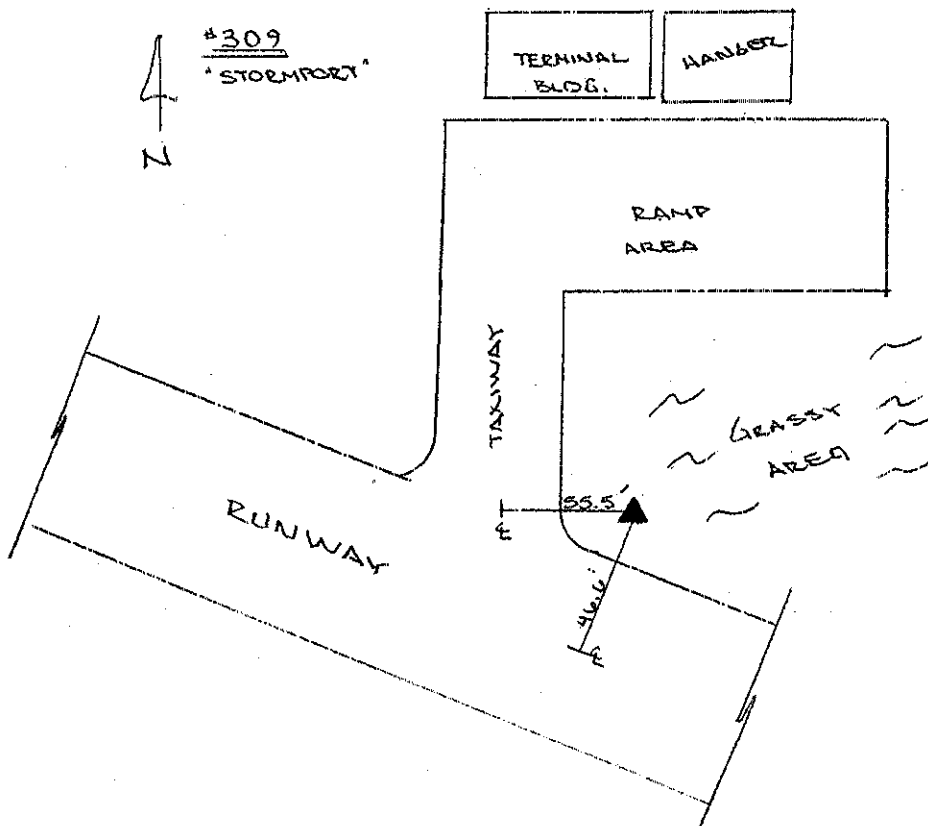
Theta: -1-10-47.59 Combination Factor: 0.99988003

Designation: CBN control station "STORMPORT" PID NL0936

Monument Type: 5/8" dia driven aluminum rod encased in a greased filled sleeve protected by a 5" dia PVC pipe with an aluminum access cover.

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 310

Northing: 3646099.58(Ft)

Easting: 4455818.20(Ft)

Northing: 1111333.374(M)

Easting: 1358136.102(M)

Elev: 1372.30(Ft) NAVD_88

Elev: 418.278(M) NAVD_88

Ellip Ht: 389.925(M)

96C Geoid Ht: -28.353(M)

Latitude: 42-29-21.407313 N

Longitude: 95-13-32.771993 W

Theta: -1-10-10.67

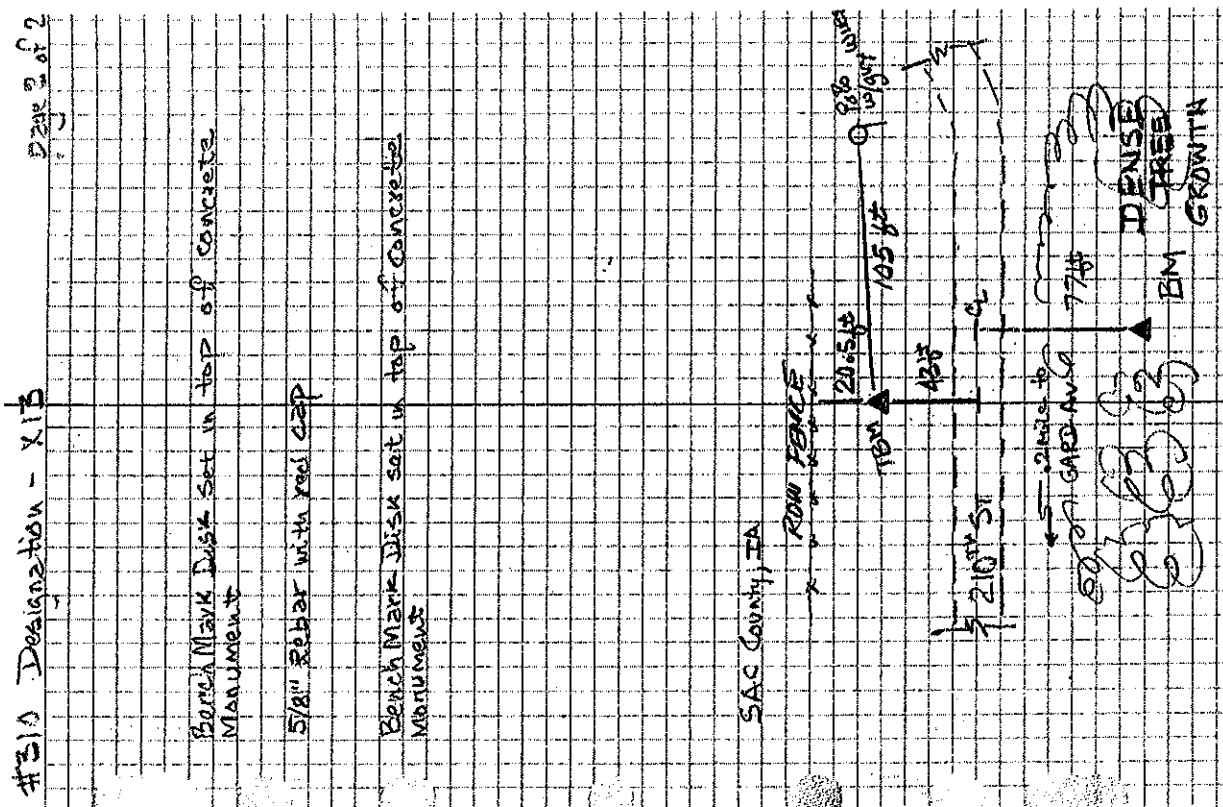
Combination Factor: 0.99988901

Designation: TBM for NGS 1st order vertical control station "X 13" PID NL0317

Monument Type: 5/8" x 30" deformed rebar with a red survey cap

To Reach: ****See the current NGS data sheet for complete station description****

Date Printed August 29, 2000



2000
Cherokee County, Iowa
Iowa North Zone (1401)
NAD_83(1996)

Point Number: 311

Northing: 3640603.22(Ft) Easting: 4461135.79(Ft)

Northing: 1109658.082(M) Easting: 1359756.908(M)

Elev: 1380.90(Ft) NAVD_88

Elev: 420.899(M) NAVD_88 Ellip Ht: 392.508(M) 96C Geoid Ht: -28.392(M)

Latitude: 42-28-28.188461 N Longitude: 95-12-20.329916 W

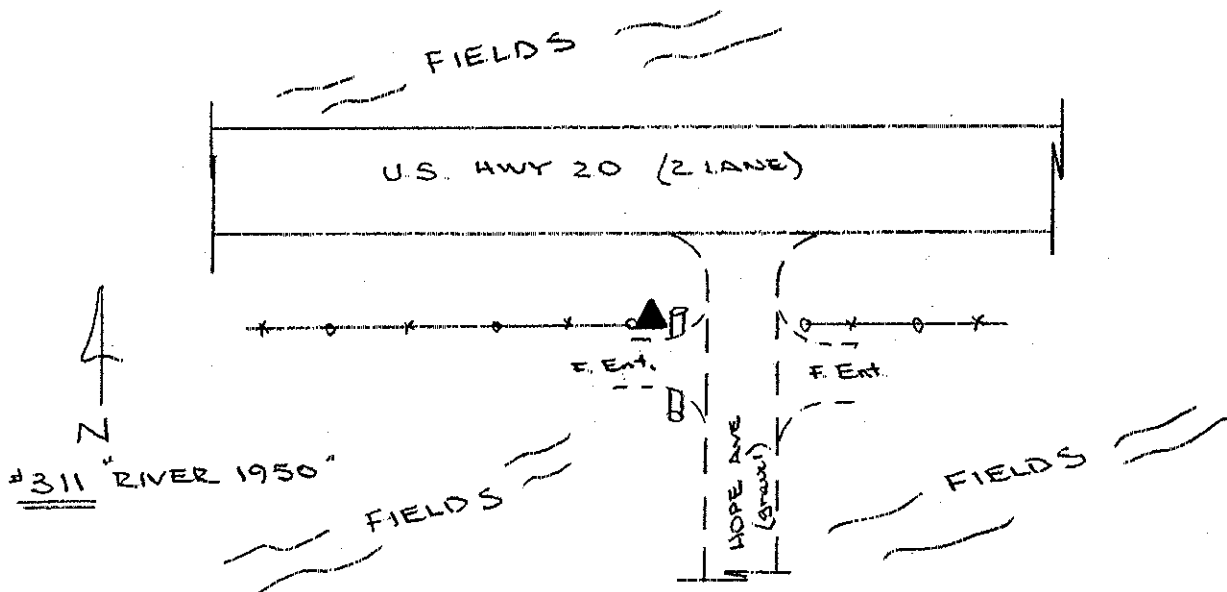
Theta: -1-09-21.58 Combination Factor: 0.99988943

Designation: "RIVER 1950" 3rd order vertical control station

Monument Type: A standard bench disk set in the top of a concrete post

To Reach: ****See the USGS data sheet for complete station description****

Date Printed August 29, 2000





Project: Cherokee County, Iowa

STAR*NET-GPS Version 5.106
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Serial Number 20720
Run Date: Wed Aug 9 2000 16:59:10

Summary of Files Used

Project Directory	D:\005699_2\216\ADJ_FT
Input Data File	216FT.DAT
Output Listing (This File)	216FT.LST
Coordinates	216FT.PTS
Positions	216FT.POS
Project Parameters	216FT.PRJ
Error Log	216FT.ERR
Plot File	216FT.SPL

Adjustment Options

STAR*NET Run Mode	: Adjust with Error Propagation
Type of Adjustment	: 3D
Input Order for Coordinates	: N,E,Elev
Coordinate System	: Lambert NAD83 IA North 1401
Avg Project Geoid Height in Meters	: 0.0000
Linear Units	: US Feet
Input Order for Angle Stations	: At-From-To
Max Iterations; Convergence Limit	: 10; 0.0100
Correct Zeniths for Curve & Refract	: No
Adjust 3D Obs for Vert Divergence	: No
3D Data Input Mode	: Slope/Zenith
Earth Radius	: 20906000.000 US Feet
Coefficient of Refraction	: 0.070
Geoid Modeling	: Yes
GPS Vector Std Error Factors	: 1.0000 (Horiz), 1.8500 (Vert)
GPS Vector Centering (Meters)	: 0.00300
GPS Vector Transformations	: Solve Scale & Rotations

Summary of Controlling Stations

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Fixed Stations	N	E	Elev	Description
0301	3643358.1660	4320293.0231	1206.5300	IaHARN "F 14"
Partially Fixed	N	E	Elev	Description
	StdErr	StdErr	StdErr	
0027	3675416.1712	4349388.3751	1353.7500	USGS BM "8 T 1968 1353"
	FREE	FREE	FIXED	
0071	3800284.6823	4415461.0178	1374.6900	Clay Co. GPS Pt #7009
	FREE	FREE	FIXED	
0074	3742581.1127	4370284.3889	1194.0900	NGS BM "CHEROKEE"
	FREE	FREE	FIXED	
0075	3759470.1999	4374722.8037	1276.8100	NGS BM "B 26"
	FREE	FREE	FIXED	
0081	3770562.6573	4374064.6345	1345.2800	NGS BM "C 26"
	FREE	FREE	FIXED	
0116	3803824.7983	4273486.7133	1434.0000	Plymouth Co. 95-116
	FREE	FREE	FIXED	
0117	3676139.3450	4285500.9636	1316.1800	Plymouth Co. 95-117
	FREE	FREE	FIXED	
0118	3692109.8837	4286142.7646	1405.2500	Plymouth Co. 95-118
	FREE	FREE	FIXED	
0119	3708336.9796	4286488.4912	1307.7700	Plymouth Co. 95-119
	FREE	FREE	FIXED	
0120	3723747.0574	4286811.2273	1366.3400	Plymouth Co. 95-120
	FREE	FREE	FIXED	
0121	3739107.6979	4287133.6927	1419.9700	Plymouth Co. 95-121
	FREE	FREE	FIXED	
0122	3755618.9973	4287885.9735	1408.2600	Plymouth Co. 95-122
	FREE	FREE	FIXED	
0123	3771667.6460	4288609.3787	1428.1100	Plymouth Co. 95-123
	FREE	FREE	FIXED	
0124	3787407.7561	4288943.4156	1421.9500	Plymouth Co. 95-124
	FREE	FREE	FIXED	
0201	3771974.4386	4302944.9225	1473.7500	NGS BM "MARCUS"
	FREE	FREE	FIXED	
0202	3771218.8106	4309695.0418	1416.7100	NGS BM "X 24"
	FREE	FREE	FIXED	
0300	3804844.4282	4245073.2080	1422.9300	IaHARN "HOMAN RESET"
	FIXED	FIXED	FREE	
0302	3801329.2286	4374579.4578	1407.6100	NGS BM "F 26"
	FREE	FREE	FIXED	
0304	3800271.6554	4420840.0688	1416.0100	USGS BM "57 T 1968 1416"
	FREE	FREE	FIXED	
0306	3775319.2917	4430781.1272	1543.0000	IaHARN "DIVIDE"
	FIXED	FIXED	FREE	
0307	3703037.4549	4461074.7687	1438.7300	TBM for NGS BM "V 23"
	FREE	FREE	FIXED	
0308	3701943.7075	4463304.0297	1433.6400	TBM for NGS BM "STORM LAKE"
	FREE	FREE	FIXED	

Partially Fixed	N StdErr	E StdErr	Elev StdErr	Description
0309	3687141.5239 FIXED	4452581.1892 FIXED	1472.8000 FREE	IaHARN "STORMPORT"
0310	3646099.7884 FREE	4455818.1684 FREE	1372.3000 FIXED	TBM for NGS BM "X 13"
0311	3640603.4491 FREE	4461135.7414 FREE	1380.9000 FIXED	USGS BM "RIVER 1950"

Free Stations	N	E	Elev	Description
0001	3675813.1575	4301572.1642	1308.5800	Woodbury Co. GPS Pt #8017
0009	3675228.7753	4317256.1163	1151.8000	Woodbury Co. GPS Pt #8016
0303	3837024.0188	4416037.4932	1422.0600	USGS BM "42 DWB 1967 1421"
0305	3804488.1144	4452651.7996	1388.0300	USGS BM "65 T 1968 1387"

Statistical Summary

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Number of Stations	=	105
Number of Observations	=	786
Number of Unknowns	=	288
Number of Redundant Obs	=	498

Observation	Count	Sum Squares of StdRes	Error Factor
GPS Deltas	786	544.97	1.05
Total	786	544.97	1.05

Adjustment Passes the Chi Square Test at 5% Level

Adjusted Coordinates (US Feet)

Station	Northing	Easting	Elev	Description
0001	3675813.33	4301572.04	1308.69	Woodbury Co. GPS Pt #8017
0002	3691623.10	4302002.54	1373.39	
0003	3707722.82	4302410.22	1424.96	
0004	3723713.78	4302827.68	1319.37	
0005	3739322.39	4303156.48	1366.35	
0006	3755328.86	4303864.72	1420.24	
0007	3787048.24	4304763.30	1469.15	
0008	3802815.71	4305106.59	1452.55	
0009	3675228.93	4317256.10	1151.93	Woodbury Co. GPS Pt #8016
0010	3691386.02	4317766.58	1204.21	
0011	3707382.88	4318255.28	1262.65	
0012	3723247.28	4318280.76	1375.73	
0013	3738956.88	4319038.42	1351.22	
0014	3754983.92	4319778.76	1421.39	
0015	3770513.82	4320334.55	1426.63	
0016	3786819.67	4320598.44	1428.39	
0017	3801915.30	4320909.83	1389.45	
0018	3675269.09	4333444.74	1303.59	
0019	3690846.03	4335488.25	1164.35	
0020	3706934.65	4334571.63	1330.34	
0021	3722590.13	4334820.37	1277.89	
0022	3738804.65	4335063.72	1332.02	
0023	3753932.74	4335874.10	1461.17	
0024	3770728.58	4336182.26	1378.43	
0025	3786406.06	4336300.84	1383.20	
0026	3802182.66	4336265.35	1378.24	
0027	3675416.26	4349388.57	1353.75	USGS BM "8 T 1968 1353"
0028	3690740.01	4349764.04	1268.70	
0029	3706940.13	4349980.67	1188.53	
0030	3722456.83	4349937.38	1363.72	
0031	3738196.90	4350846.87	1364.66	
0032	3754154.01	4351497.71	1453.42	
0033	3770289.50	4351999.78	1371.16	
0034	3785930.26	4353016.92	1337.73	
0035	3801622.15	4352532.81	1364.10	
0036	3674664.96	4364967.33	1376.96	
0037	3690577.71	4365372.96	1386.01	
0038	3706071.47	4365138.51	1351.01	
0039	3722109.39	4369047.40	1216.01	
0040	3736945.90	4369495.61	1215.64	
0041	3755353.61	4366888.46	1360.53	
0042	3769087.76	4370242.29	1336.85	
0043	3785373.41	4368098.19	1365.17	
0044	3801439.00	4368247.40	1466.51	
0045	3674379.87	4380882.43	1407.33	
0046	3689497.89	4381311.98	1316.19	
0047	3705216.64	4381693.00	1369.13	
0048	3721516.71	4382145.05	1409.99	
0049	3737881.48	4382579.11	1356.32	
0050	3752865.30	4382465.16	1351.58	
0051	3768786.16	4383317.11	1291.54	
0052	3784640.90	4381764.50	1391.10	
0053	3801089.27	4384587.36	1423.49	
0054	3673844.24	4396389.01	1342.02	

Adjusted Coordinates (US Feet)

Station	Northing	Easting	Elev	Description
0055	3689711.64	4397185.05	1359.66	
0056	3705781.67	4397444.59	1366.81	
0057	3719200.09	4397829.59	1419.01	
0058	3736651.57	4398397.24	1347.25	
0059	3752198.00	4398713.84	1378.30	
0060	3768438.00	4399157.87	1420.34	
0061	3784174.42	4399203.05	1377.34	
0062	3799551.34	4399659.70	1357.28	
0063	3673639.87	4412647.68	1315.28	
0064	3689371.98	4412827.44	1350.91	
0065	3704761.76	4413276.75	1406.63	
0066	3720611.58	4413591.40	1475.27	
0067	3736350.08	4414183.73	1382.30	
0068	3752149.25	4414442.13	1424.40	
0069	3768264.78	4414773.54	1425.60	
0070	3784025.32	4415052.65	1513.27	
0071	3800284.82	4415460.86	1374.69	Clay Co. GPS Pt #7009
0072	3745549.17	4374093.47	1208.92	
0073	3744884.17	4364686.90	1340.60	
0074	3742580.97	4370283.96	1194.09	NGS BM "CHEROKEE"
0075	3759470.12	4374722.43	1276.81	NGS BM "B 26"
0076	3699610.17	4345371.86	1184.74	
0077	3680025.68	4324511.74	1155.51	
0078	3728965.25	4400143.09	1384.44	
0079	3760503.53	4348406.70	1399.54	
0080	3767191.65	4326486.09	1458.64	
0081	3770562.63	4374064.27	1345.28	NGS BM "C 26"
0082	3803124.82	4289293.85	1441.38	
0116	3803824.81	4273486.88	1434.00	Plymouth Co. 95-116
0117	3676139.51	4285500.74	1316.18	Plymouth Co. 95-117
0118	3692110.15	4286142.54	1405.25	Plymouth Co. 95-118
0119	3708337.30	4286488.26	1307.77	Plymouth Co. 95-119
0120	3723747.45	4286810.99	1366.34	Plymouth Co. 95-120
0121	3739108.18	4287133.45	1419.97	Plymouth Co. 95-121
0122	3755618.75	4287886.25	1408.26	Plymouth Co. 95-122
0123	3771667.49	4288609.65	1428.11	Plymouth Co. 95-123
0124	3787407.68	4288943.68	1421.95	Plymouth Co. 95-124
0201	3771974.34	4302945.26	1473.75	NGS BM "MARCUS"
0202	3771218.63	4309695.43	1416.71	NGS BM "X 24"
0300	3804844.43	4245073.21	1423.13	IaHARN "HOMAN RESET"
0301	3643358.17	4320293.02	1206.53	IaHARN "F 14"
0302	3801329.35	4374579.07	1407.61	NGS BM "F 26"
0303	3837024.41	4416037.38	1421.84	USGS BM "42 DWB 1967 1421"
0304	3800271.78	4420839.96	1416.01	USGS BM "57 T 1968 1416"
0305	3804488.25	4452651.88	1388.13	USGS BM "65 T 1968 1387"
0306	3775319.29	4430781.13	1542.59	IaHARN "DIVIDE"
0307	3703037.55	4461074.86	1438.73	TBM for NGS BM "V 23"
0308	3701943.84	4463304.07	1433.64	TBM for NGS BM "STORM LAKE"
0309	3687141.52	4452581.19	1472.68	IaHARN "STORMPORT"
0310	3646099.58	4455818.20	1372.30	TBM for NGS BM "X 13"
0311	3640603.22	4461135.79	1380.90	USGS BM "RIVER 1950"

Adjusted Positions and Ellipsoid Heights (US Feet)

Station	Latitude (N)	Longitude (W)	Ellip Ht	Geoid Ht
0001	42-33-38.572299	95-48-01.613701	1219.47	-89.22
0002	42-36-14.805894	95-48-01.611262	1284.26	-89.14
0003	42-38-53.895321	95-48-02.019635	1335.90	-89.06
0004	42-41-31.912344	95-48-02.258020	1230.38	-89.00
0005	42-44-06.128615	95-48-03.544948	1277.43	-88.92
0006	42-46-44.374326	95-47-59.892747	1331.38	-88.86
0007	42-51-57.823341	95-47-59.417459	1380.44	-88.71
0008	42-54-33.606424	95-48-00.569408	1363.93	-88.62
0009	42-33-36.963627	95-44-31.898409	1062.30	-89.64
0010	42-36-16.647814	95-44-30.804292	1114.65	-89.56
0011	42-38-54.742975	95-44-29.943099	1173.17	-89.49
0012	42-41-31.407486	95-44-35.234408	1286.32	-89.41
0013	42-44-06.734088	95-44-30.670247	1261.85	-89.37
0014	42-46-45.189330	95-44-26.444553	1332.05	-89.34
0015	42-49-18.685781	95-44-24.511985	1337.33	-89.30
0016	42-51-59.766424	95-44-26.771056	1339.17	-89.22
0017	42-54-28.907782	95-44-27.964135	1300.30	-89.14
0018	42-33-41.544380	95-40-55.661383	1213.57	-90.02
0019	42-36-15.889095	95-40-33.720497	1074.35	-90.00
0020	42-38-54.532159	95-40-51.523175	1240.42	-89.92
0021	42-41-29.193432	95-40-53.601227	1188.03	-89.87
0022	42-44-09.372413	95-40-55.947704	1242.18	-89.84
0023	42-46-38.966382	95-40-50.320441	1371.33	-89.84
0024	42-49-24.899464	95-40-51.999638	1288.61	-89.82
0025	42-51-59.739306	95-40-55.838860	1293.44	-89.77
0026	42-54-35.516863	95-41-01.787319	1288.55	-89.68
0027	42-33-47.007615	95-37-22.721902	1263.37	-90.38
0028	42-36-18.427434	95-37-22.848013	1178.36	-90.34
0029	42-38-58.461267	95-37-25.393572	1098.21	-90.32
0030	42-41-31.680530	95-37-31.192212	1273.44	-90.28
0031	42-44-07.340774	95-37-24.310749	1274.37	-90.29
0032	42-46-45.078732	95-37-20.960085	1363.09	-90.32
0033	42-49-24.539899	95-37-19.660489	1280.80	-90.36
0034	42-51-59.241716	95-37-11.277897	1247.36	-90.38
0035	42-54-34.074758	95-37-23.068000	1273.80	-90.30
0036	42-33-43.399731	95-33-54.356152	1286.18	-90.78
0037	42-36-20.643622	95-33-54.131126	1295.29	-90.72
0038	42-38-53.594149	95-34-02.331354	1260.32	-90.69
0039	42-41-32.915446	95-33-15.254425	1125.24	-90.78
0040	42-43-59.537803	95-33-14.080780	1124.84	-90.80
0041	42-47-00.690032	95-33-55.030643	1269.71	-90.81
0042	42-49-17.123141	95-33-14.541876	1245.88	-90.97
0043	42-51-57.428374	95-33-48.637984	1274.26	-90.92
0044	42-54-36.110270	95-33-51.902612	1375.64	-90.87
0045	42-33-44.369510	95-30-21.651863	1316.13	-91.20
0046	42-36-13.770321	95-30-20.706001	1225.06	-91.13
0047	42-38-49.091329	95-30-20.598899	1278.04	-91.09
0048	42-41-30.168734	95-30-19.725346	1318.90	-91.09
0049	42-44-11.879537	95-30-19.112155	1265.18	-91.14
0050	42-46-39.823068	95-30-25.405217	1260.33	-91.24
0051	42-49-17.245293	95-30-19.047930	1200.17	-91.37
0052	42-51-53.448813	95-30-44.940154	1299.71	-91.39
0053	42-54-36.539526	95-30-12.278987	1332.02	-91.47
0054	42-33-42.662021	95-26-54.326242	1250.41	-91.61

Adjusted Positions and Ellipsoid Heights (US Feet)

Station	Latitude(N)	Longitude(W)	Ellip Ht	Geoid Ht
0055	42-36-19.546496	95-26-48.574117	1268.12	-91.54
0056	42-38-58.308851	95-26-50.053740	1275.32	-91.49
0057	42-41-10.912382	95-26-49.038029	1327.52	-91.49
0058	42-44-03.385120	95-26-46.818791	1255.68	-91.57
0059	42-46-36.985975	95-26-47.373553	1286.63	-91.68
0060	42-49-17.463795	95-26-46.434021	1328.55	-91.80
0061	42-51-52.876194	95-26-50.691802	1285.43	-91.91
0062	42-54-24.830541	95-26-49.316531	1265.31	-91.97
0063	42-33-44.287779	95-23-17.055132	1223.28	-92.00
0064	42-36-19.697089	95-23-19.350040	1258.98	-91.93
0065	42-38-51.784006	95-23-17.939624	1314.74	-91.89
0066	42-41-28.383476	95-23-18.467625	1383.36	-91.91
0067	42-44-03.943452	95-23-15.243139	1290.29	-92.01
0068	42-46-40.027742	95-23-16.508889	1332.29	-92.11
0069	42-49-19.250838	95-23-16.891751	1333.39	-92.21
0070	42-51-54.955264	95-23-17.870936	1420.96	-92.31
0071	42-54-35.613922	95-23-17.266736	1282.30	-92.39
0072	42-45-25.596289	95-32-15.266917	1117.95	-90.97
0073	42-45-16.770722	95-34-21.104200	1249.90	-90.70
0074	42-44-55.374533	95-33-05.352310	1103.25	-90.84
0075	42-47-43.218337	95-32-11.332984	1185.74	-91.07
0076	42-37-44.928536	95-38-24.564849	1094.52	-90.22
0077	42-34-26.221163	95-42-56.656941	1065.72	-89.79
0078	42-42-47.874631	95-26-21.068273	1292.86	-91.58
0079	42-47-47.011164	95-38-04.545805	1309.30	-90.24
0080	42-48-47.482450	95-43-00.825152	1369.12	-89.51
0081	42-49-32.601707	95-32-23.748224	1254.18	-91.10
0082	42-54-32.354717	95-51-33.089412	1353.23	-88.15
0116	42-54-34.855100	95-55-05.679591	1346.28	-87.72
0117	42-33-37.417671	95-51-36.408249	1227.38	-88.80
0118	42-36-15.297899	95-51-33.790711	1316.52	-88.73
0119	42-38-55.628435	95-51-35.225726	1219.10	-88.67
0120	42-41-27.883935	95-51-36.665103	1277.74	-88.60
0121	42-43-59.650168	95-51-38.091597	1331.47	-88.50
0122	42-46-42.887611	95-51-34.182141	1319.84	-88.42
0123	42-49-21.555279	95-51-30.488491	1339.78	-88.33
0124	42-51-57.067373	95-51-31.900730	1333.71	-88.24
0201	42-49-28.490548	95-48-18.303076	1385.00	-88.75
0202	42-49-22.836270	95-46-47.479360	1327.74	-88.97
0300	42-54-36.718970	96-01-27.734990	1336.12	-87.01
0301	42-28-23.030860	95-43-40.109580	1116.62	-89.91
0302	42-54-36.545908	95-32-26.807785	1316.50	-91.11
0303	43-00-38.551386	95-23-20.552407	1329.58	-92.26
0304	42-54-36.665358	95-22-04.997171	1323.48	-92.53
0305	42-55-25.028166	95-14-58.776427	1294.89	-93.25
0306	42-50-32.394080	95-19-44.186610	1449.91	-92.68
0307	42-38-44.805032	95-12-37.999422	1345.74	-93.00
0308	42-38-34.447588	95-12-07.881926	1340.60	-93.04
0309	42-36-06.098390	95-14-27.248840	1379.87	-92.81
0310	42-29-21.407314	95-13-32.771994	1279.28	-93.02
0311	42-28-28.188461	95-12-20.329916	1287.75	-93.15

Adjusted Coordinates (Meters)

Station	Northing	Easting	Elev	Description
0001	1120390.142	1311121.781	398.890	Woodbury Co. GPS Pt #8017
0002	1125208.972	1311252.998	418.611	
0003	1130116.175	1311377.259	434.328	
0004	1134990.232	1311504.501	402.145	
0005	1139747.743	1311604.720	416.463	
0006	1144626.526	1311820.589	432.890	
0007	1154294.613	1312094.477	447.797	
0008	1159100.548	1312199.113	442.739	
0009	1120212.019	1315902.291	351.110	Woodbury Co. GPS Pt #8016
0010	1125136.710	1316057.886	367.043	
0011	1130012.563	1316206.842	384.858	
0012	1134848.040	1316214.608	419.323	
0013	1139636.336	1316445.542	411.853	
0014	1144521.387	1316671.201	433.241	
0015	1149254.910	1316840.603	434.837	
0016	1154224.943	1316921.037	435.374	
0017	1158826.102	1317015.951	423.504	
0018	1120224.260	1320836.598	397.334	
0019	1124972.119	1321459.460	354.895	
0020	1129875.940	1321180.074	405.487	
0021	1134647.742	1321255.890	389.503	
0022	1139589.936	1321330.064	406.001	
0023	1144200.989	1321577.069	445.365	
0024	1149320.369	1321670.997	420.145	
0025	1154098.877	1321707.138	421.601	
0026	1158907.592	1321696.322	420.087	
0027	1120269.117	1325696.288	412.623	USGS BM "8 T 1968 1353"
0028	1124939.804	1325810.730	386.701	
0029	1129877.611	1325876.759	362.263	
0030	1134607.113	1325863.566	415.662	
0031	1139404.694	1326140.779	415.949	
0032	1144268.430	1326339.155	443.002	
0033	1149186.538	1326492.187	417.930	
0034	1153953.852	1326802.212	407.742	
0035	1158736.748	1326654.655	415.778	
0036	1120040.119	1330444.704	419.698	
0037	1124890.336	1330568.338	422.457	
0038	1129612.842	1330496.879	411.789	
0039	1134501.213	1331688.312	370.641	
0040	1139023.388	1331824.924	370.528	
0041	1144634.070	1331030.264	414.689	
0042	1148820.247	1332052.513	407.471	
0043	1153784.124	1331398.991	416.105	
0044	1158680.925	1331444.469	446.992	
0045	1119953.225	1335295.634	428.954	
0046	1124561.206	1335426.563	401.176	
0047	1129352.289	1335542.697	417.312	
0048	1134320.562	1335680.483	429.765	
0049	1139308.555	1335812.785	413.407	
0050	1143875.630	1335778.053	411.961	
0051	1148728.319	1336037.728	393.663	
0052	1153560.854	1335564.492	424.008	
0053	1158574.328	1336424.900	433.881	
0054	1119789.963	1340022.050	409.047	

Adjusted Coordinates (Meters)

Station	Northing	Easting	Elev	Description
0055	1124626.357	1340264.683	414.425	
0056	1129524.511	1340343.791	416.605	
0057	1133614.456	1340461.141	432.514	
0058	1138933.675	1340634.159	410.641	
0059	1143672.236	1340730.661	420.108	
0060	1148622.201	1340866.000	432.922	
0061	1153418.670	1340879.770	419.815	
0062	1158105.565	1341018.959	413.700	
0063	1119727.672	1344977.704	400.898	
0064	1124522.829	1345032.494	411.758	
0065	1129213.642	1345169.445	428.742	
0066	1134044.679	1345265.351	449.663	
0067	1138841.781	1345445.892	421.326	
0068	1143657.379	1345524.653	434.159	
0069	1148569.401	1345625.667	434.524	
0070	1153373.225	1345710.738	461.246	
0071	1158329.131	1345835.162	419.007	Clay Co. GPS Pt #7009
0072	1141645.672	1333226.355	368.479	
0073	1141442.979	1330359.228	408.616	
0074	1140740.960	1332065.215	363.959	NGS BM "CHEROKEE"
0075	1145888.785	1333418.064	389.172	NGS BM "B 26"
0076	1127643.437	1324471.993	361.110	
0077	1121674.071	1318113.816	352.199	
0078	1136590.883	1341166.296	421.977	
0079	1146203.770	1325397.013	426.580	
0080	1148242.311	1318715.596	444.592	
0081	1149269.789	1333217.456	410.041	NGS BM "C 26"
0082	1159194.762	1307379.380	439.334	
0116	1159408.120	1302561.407	437.084	Plymouth Co. 95-116
0117	1120489.563	1306223.238	401.174	Plymouth Co. 95-117
0118	1125357.423	1306418.859	428.320	Plymouth Co. 95-118
0119	1130303.471	1306524.234	398.609	Plymouth Co. 95-119
0120	1135000.494	1306622.603	416.461	Plymouth Co. 95-120
0121	1139682.452	1306720.889	432.808	Plymouth Co. 95-121
0122	1144714.883	1306950.343	429.240	Plymouth Co. 95-122
0123	1149606.551	1307170.837	435.288	Plymouth Co. 95-123
0124	1154404.170	1307272.648	433.412	Plymouth Co. 95-124
0201	1149700.079	1311540.338	449.201	NGS BM "MARCUS"
0202	1149469.737	1313597.794	431.813	NGS BM "X 24"
0300	1159718.901	1293900.902	433.770	IaHARN "HOMAN RESET"
0301	1110497.790	1316827.947	367.750	IaHARN "F 14"
0302	1158647.505	1333374.367	429.041	NGS BM "F 26"
0303	1169527.379	1346010.886	433.378	USGS BM "42 DWB 1967 1421"
0304	1158325.154	1347474.715	431.602	USGS BM "57 T 1968 1416"
0305	1159610.338	1357171.007	423.105	USGS BM "65 T 1968 1387"
0306	1150719.622	1350504.789	470.181	IaHARN "DIVIDE"
0307	1128688.103	1359738.338	438.526	TBM for NGS BM "V 23"
0308	1128354.738	1360417.801	436.974	TBM for NGS BM "STORM LAKE"
0309	1123842.984	1357149.461	448.872	IaHARN "STORMPORT"
0310	1111333.374	1358136.102	418.278	TBM for NGS BM "X 13"
0311	1109658.082	1359756.908	420.899	USGS BM "RIVER 1950"

Adjusted Positions and Ellipsoid Heights (Meters)

Station	Latitude(N)	Longitude(W)	Ellip Ht	Geoid Ht
0001	42-33-38.572298	95-48-01.613700	371.696	-27.193
0002	42-36-14.805894	95-48-01.611262	391.442	-27.169
0003	42-38-53.895319	95-48-02.019635	407.184	-27.144
0004	42-41-31.912342	95-48-02.258020	375.019	-27.126
0005	42-44-06.128614	95-48-03.544948	389.361	-27.102
0006	42-46-44.374326	95-47-59.892746	405.805	-27.085
0007	42-51-57.823340	95-47-59.417460	420.758	-27.039
0008	42-54-33.606424	95-48-00.569408	415.727	-27.012
0009	42-33-36.963626	95-44-31.898409	323.788	-27.322
0010	42-36-16.647812	95-44-30.804292	339.745	-27.298
0011	42-38-54.742974	95-44-29.943098	357.582	-27.275
0012	42-41-31.407485	95-44-35.234408	392.070	-27.253
0013	42-44-06.734086	95-44-30.670246	384.612	-27.241
0014	42-46-45.189330	95-44-26.444554	406.009	-27.232
0015	42-49-18.685782	95-44-24.511986	407.618	-27.220
0016	42-51-59.766425	95-44-26.771057	408.179	-27.195
0017	42-54-28.907782	95-44-27.964135	396.333	-27.171
0018	42-33-41.544380	95-40-55.661383	369.896	-27.438
0019	42-36-15.889095	95-40-33.720497	327.462	-27.433
0020	42-38-54.532158	95-40-51.523175	378.080	-27.408
0021	42-41-29.193431	95-40-53.601227	362.111	-27.392
0022	42-44-09.372413	95-40-55.947704	378.618	-27.383
0023	42-46-38.966382	95-40-50.320441	417.981	-27.384
0024	42-49-24.899464	95-40-51.999639	392.767	-27.378
0025	42-51-59.739306	95-40-55.838860	394.240	-27.362
0026	42-54-35.516863	95-41-01.787320	392.752	-27.335
0027	42-33-47.007615	95-37-22.721902	385.075	-27.549
0028	42-36-18.427434	95-37-22.848013	359.165	-27.536
0029	42-38-58.461266	95-37-25.393571	334.735	-27.529
0030	42-41-31.680529	95-37-31.192212	388.145	-27.517
0031	42-44-07.340773	95-37-24.310749	388.430	-27.520
0032	42-46-45.078732	95-37-20.960086	415.471	-27.531
0033	42-49-24.539899	95-37-19.660490	390.388	-27.542
0034	42-51-59.241716	95-37-11.277898	380.195	-27.547
0035	42-54-34.074758	95-37-23.068000	388.256	-27.522
0036	42-33-43.399730	95-33-54.356152	392.028	-27.670
0037	42-36-20.643622	95-33-54.131126	394.804	-27.653
0038	42-38-53.594148	95-34-02.331354	384.146	-27.643
0039	42-41-32.915446	95-33-15.254425	342.973	-27.668
0040	42-43-59.537803	95-33-14.080780	342.852	-27.676
0041	42-47-00.690032	95-33-55.030643	387.009	-27.680
0042	42-49-17.123140	95-33-14.541876	379.744	-27.728
0043	42-51-57.428373	95-33-48.637985	388.394	-27.712
0044	42-54-36.110269	95-33-51.902612	419.295	-27.697
0045	42-33-44.369509	95-30-21.651863	401.157	-27.797
0046	42-36-13.770320	95-30-20.706001	373.400	-27.777
0047	42-38-49.091329	95-30-20.598899	389.548	-27.764
0048	42-41-30.168733	95-30-19.725346	402.001	-27.764
0049	42-44-11.879536	95-30-19.112155	385.627	-27.780
0050	42-46-39.823068	95-30-25.405217	384.150	-27.811
0051	42-49-17.245293	95-30-19.047930	365.813	-27.850
0052	42-51-53.448813	95-30-44.940154	396.152	-27.856
0053	42-54-36.539525	95-30-12.278987	406.002	-27.880
0054	42-33-42.662021	95-26-54.326241	381.124	-27.923

Adjusted Positions and Ellipsoid Heights (Meters)

Station	Latitude(N)	Longitude(W)	Ellip Ht	Geoid Ht
0055	42-36-19.546496	95-26-48.574117	386.524	-27.901
0056	42-38-58.308850	95-26-50.053740	388.719	-27.886
0057	42-41-10.912381	95-26-49.038029	404.627	-27.887
0058	42-44-03.385120	95-26-46.818791	382.731	-27.911
0059	42-46-36.985974	95-26-47.373553	392.165	-27.943
0060	42-49-17.463795	95-26-46.434021	404.942	-27.979
0061	42-51-52.876194	95-26-50.691802	391.800	-28.014
0062	42-54-24.830540	95-26-49.316531	385.666	-28.034
0063	42-33-44.287779	95-23-17.055132	372.855	-28.043
0064	42-36-19.697088	95-23-19.350039	383.738	-28.020
0065	42-38-51.784005	95-23-17.939624	400.734	-28.009
0066	42-41-28.383476	95-23-18.467625	421.649	-28.014
0067	42-44-03.943452	95-23-15.243139	393.283	-28.044
0068	42-46-40.027742	95-23-16.508890	406.084	-28.075
0069	42-49-19.250838	95-23-16.891751	406.418	-28.106
0070	42-51-54.955264	95-23-17.870936	433.109	-28.137
0071	42-54-35.613922	95-23-17.266736	390.847	-28.161
0072	42-45-25.596289	95-32-15.266917	340.751	-27.729
0073	42-45-16.770721	95-34-21.104201	380.970	-27.646
0074	42-44-55.374533	95-33-05.352311	336.270	-27.689
0075	42-47-43.218337	95-32-11.332984	361.413	-27.759
0076	42-37-44.928535	95-38-24.564849	333.611	-27.500
0077	42-34-26.221162	95-42-56.656941	324.831	-27.368
0078	42-42-47.874631	95-26-21.068273	394.064	-27.913
0079	42-47-47.011163	95-38-04.545806	399.076	-27.504
0080	42-48-47.482450	95-43-00.825153	417.309	-27.284
0081	42-49-32.601706	95-32-23.748225	382.274	-27.767
0082	42-54-32.354717	95-51-33.089412	412.465	-26.869
0116	42-54-34.855100	95-55-05.679591	410.346	-26.738
0117	42-33-37.417673	95-51-36.408247	374.107	-27.067
0118	42-36-15.297897	95-51-33.790711	401.274	-27.046
0119	42-38-55.628433	95-51-35.225725	371.582	-27.027
0120	42-41-27.883933	95-51-36.665103	389.457	-27.004
0121	42-43-59.650166	95-51-38.091596	405.833	-26.975
0122	42-46-42.887612	95-51-34.182140	402.291	-26.949
0123	42-49-21.555279	95-51-30.488492	408.364	-26.924
0124	42-51-57.067373	95-51-31.900730	406.518	-26.894
0201	42-49-28.490546	95-48-18.303075	422.150	-27.051
0202	42-49-22.836270	95-46-47.479361	404.696	-27.117
0300	42-54-36.718970	96-01-27.734990	407.250	-26.521
0301	42-28-23.030860	95-43-40.109580	340.346	-27.404
0302	42-54-36.545906	95-32-26.807784	401.272	-27.769
0303	43-00-38.551385	95-23-20.552407	405.256	-28.122
0304	42-54-36.665355	95-22-04.997171	403.400	-28.202
0305	42-55-25.028166	95-14-58.776427	394.684	-28.421
0306	42-50-32.394080	95-19-44.186610	441.934	-28.248
0307	42-38-44.805030	95-12-37.999422	410.181	-28.345
0308	42-38-34.447588	95-12-07.881926	408.617	-28.358
0309	42-36-06.098390	95-14-27.248840	420.585	-28.287
0310	42-29-21.407313	95-13-32.771993	389.925	-28.353
0311	42-28-28.188461	95-12-20.329916	392.508	-28.392

Adjusted Observations and Residuals

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Adjusted GPS Vector Observations Sorted by Names (US Feet)

Datum Transformations			StdDev		
Scale Factor	0.999998543343	:	1.456657 PPM	0.1024	(Solved)
Rotation Around North Axis	:	0.080362 Sec	0.0433	(Solved)	
Rotation Around East Axis	:	0.300877 Sec	0.0499	(Solved)	
Rotation Around Vert Axis	:	-0.012937 Sec	0.0223	(Solved)	

From To	Component	Adj Value	Residual	StdErr	StdRes
(V93 Day214 (A) 13:07 O001002A.214)					
0001	Delta-N	15817.4330	-0.0041	0.0223	0.2
0002	Delta-E	0.1834	-0.0055	0.0181	0.3
	Delta-U	58.8135	-0.0397	0.0350	1.1
	Length	15817.5423			
(V95 Day214 (B) 13:48 O001077B.214)					
0001	Delta-N	4835.4213	-0.0145	0.0248	0.6
0077	Delta-E	22818.9366	0.0051	0.0190	0.3
	Delta-U	-166.7403	0.0448	0.0408	1.1
	Length	23326.2292			
(V94 Day214 (A) 13:08 O001117A.214)					
0001	Delta-N	-111.2338	-0.0052	0.0218	0.2
0117	Delta-E	-16075.9946	-0.0103	0.0178	0.6
	Delta-U	1.7453	-0.1543	0.0339	4.6 *
	Length	16076.3796			
(V96 Day214 (A) 13:07 O001118A.214)					
0001	Delta-N	15872.7908	0.0016	0.0229	0.1
0118	Delta-E	-15869.0296	-0.0151	0.0183	0.8
	Delta-U	85.0330	0.0377	0.0361	1.0
	Length	22445.0177			
(V209 Day214 (G) 17:30 O003119G.214)					
0003	Delta-N	181.0464	-0.0178	0.0261	0.7
0119	Delta-E	-15934.5603	-0.0249	0.0230	1.1
	Delta-U	-122.8572	0.0719	0.0438	1.6
	Length	15936.0623			
(V216 Day214 (I) 18:45 O004013I.214)					
0004	Delta-N	15680.3289	-0.0014	0.0259	0.1
0013	Delta-E	15791.7357	-0.0045	0.0195	0.2
	Delta-U	19.6503	-0.0519	0.0422	1.2
	Length	22254.2584			
(V215 Day214 (H) 18:06 O004119H.214)					
0004	Delta-N	-15817.1491	0.0085	0.0286	0.3
0119	Delta-E	-15916.7448	0.0071	0.0214	0.3
	Delta-U	-23.3273	-0.0163	0.0486	0.3
	Length	22439.3742			
(V73 Day213 (I) 19:16 O005013I.213)					
0005	Delta-N	66.8636	0.0021	0.0292	0.1
0013	Delta-E	15887.7838	-0.0067	0.0222	0.3
	Delta-U	-21.6092	0.0090	0.0491	0.2
	Length	15887.9392			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V72 Day213 (I) 19:16 O005121I.213)					
0005	Delta-N	-650.2588	0.0095	0.0269	0.4
0121	Delta-E	-16013.1280	0.0121	0.0220	0.5
	Delta-U	47.9202	0.0327	0.0447	0.7
	Length	16026.3970			
(V66 Day213 (H) 18:28 O006122H.213)					
0006	Delta-N	-144.8842	0.0057	0.0292	0.2
0122	Delta-E	-15982.2622	0.0023	0.0220	0.1
	Delta-U	-17.6217	-0.0287	0.0496	0.6
	Length	15982.9286			
(V65 Day213 (H) 18:26 O006123H.213)					
0006	Delta-N	15919.4399	0.0023	0.0250	0.1
0123	Delta-E	-15695.6500	0.0096	0.0188	0.5
	Delta-U	-3.5154	0.0554	0.0408	1.4
	Length	22355.8048			
(V13 Day213 (B) 14:06 O007008B.213)					
0007	Delta-N	15772.7264	-0.0143	0.0253	0.6
0008	Delta-E	-85.7335	0.0057	0.0195	0.3
	Delta-U	-22.4375	-0.0028	0.0415	0.1
	Length	15772.9754			
(V14 Day213 (B) 14:04 O007017B.213)					
0007	Delta-N	15302.4367	-0.0225	0.0268	0.8
0017	Delta-E	15737.8356	0.0141	0.0208	0.7
	Delta-U	-91.6305	-0.0014	0.0447	0.0
	Length	21951.1375			
(V17 Day213 (G) 17:53 O007123G.213)					
0007	Delta-N	-15816.2143	0.0284	0.0280	1.0
0123	Delta-E	-15731.0750	-0.0321	0.0253	1.3
	Delta-U	-52.5665	0.0519	0.0475	1.1
	Length	22307.4454			
(V15 Day213 (G) 17:53 O007201G.213)					
0007	Delta-N	-15119.5063	0.0461	0.0314	1.5
0201	Delta-E	-1407.5010	-0.0011	0.0279	0.0
	Delta-U	-0.9761	-0.0227	0.0540	0.4
	Length	15184.8784			
(V18 Day213 (B) 14:06 O008017B.213)					
0008	Delta-N	-470.1771	-0.0087	0.0248	0.4
0017	Delta-E	15823.5706	0.0079	0.0194	0.4
	Delta-U	-69.6129	0.0064	0.0404	0.2
	Length	15830.7075			
(V88 Day214 (B) 13:50 O009001B.214)					
0009	Delta-N	168.2619	0.0109	0.0216	0.5
0001	Delta-E	-15695.7586	-0.0172	0.0172	1.0
	Delta-U	151.3060	-0.0659	0.0340	1.9
	Length	15697.3897			
(V92 Day214 (C) 14:45 O009010C.214)					
0009	Delta-N	16166.6473	-0.0285	0.0330	0.9
0010	Delta-E	81.8304	0.0282	0.0238	1.2
	Delta-U	46.1166	0.0731	0.0588	1.2
	Length	16166.9202			
(V91 Day214 (C) 14:48 O009018C.214)					
0009	Delta-N	469.4986	-0.0553	0.0313	1.8
0018	Delta-E	16183.6480	0.0301	0.0218	1.4
	Delta-U	145.0107	0.0932	0.0557	1.7
	Length	16191.1062			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V89 Day214(B) 13:50 0009077B.214)					
0009	Delta-N	4987.9886	-0.0021	0.0268	0.1
0077	Delta-E	7126.6163	-0.0123	0.0201	0.6
	Delta-U	1.6182	-0.0254	0.0449	0.6
	Length	8698.7753			
(V113 Day214(C) 14:48 0010018C.214)					
0010	Delta-N	-15697.2783	-0.0138	0.0260	0.5
0018	Delta-E	16101.7609	-0.0033	0.0188	0.2
	Delta-U	86.8047	0.0268	0.0444	0.6
	Length	22487.3028			
(V106 Day214(G) 17:30 0011003G.214)					
0011	Delta-N	-80.2982	-0.0092	0.0320	0.3
0003	Delta-E	-15850.3503	-0.0019	0.0283	0.1
	Delta-U	156.7484	-0.0188	0.0559	0.3
	Length	15851.3288			
(V108 Day214(I) 18:46 0011004I.214)					
0011	Delta-N	15917.9070	0.0252	0.0311	0.8
0004	Delta-E	-15856.9248	-0.0089	0.0240	0.4
	Delta-U	45.1713	0.1074	0.0528	2.0
	Length	22468.2858			
(V105 Day214(F) 16:30 0011010F.214)					
0011	Delta-N	-16005.8958	0.0006	0.0240	0.0
0010	Delta-E	-64.4100	-0.0018	0.0193	0.1
	Delta-U	-64.6779	0.0204	0.0386	0.5
	Length	16006.1561			
(V110 Day214(I) 18:46 0011012I.214)					
0011	Delta-N	15861.3090	-0.0007	0.0280	0.0
0012	Delta-E	-395.1870	-0.0188	0.0215	0.9
	Delta-U	107.1420	0.0345	0.0466	0.7
	Length	15866.5930			
(V109 Day214(I) 18:46 0011013I.214)					
0011	Delta-N	31587.2298	0.0153	0.0347	0.4
0013	Delta-E	-54.2683	-0.0152	0.0256	0.6
	Delta-U	64.8335	0.0318	0.0598	0.5
	Length	31587.3430			
(V112 Day214(F) 16:30 0011029F.214)					
0011	Delta-N	398.5702	0.0326	0.0273	1.2
0029	Delta-E	31729.3100	0.0141	0.0212	0.7
	Delta-U	-98.9938	-0.0593	0.0454	1.3
	Length	31731.9676			
(V107 Day214(G) 17:30 0011119G.214)					
0011	Delta-N	111.8484	-0.0304	0.0271	1.1
0119	Delta-E	-31784.6832	-0.0069	0.0227	0.3
	Delta-U	21.8416	0.0452	0.0461	1.0
	Length	31784.8875			
(V207 Day214(I) 18:45 0012004I.214)					
0012	Delta-N	56.3761	0.0230	0.0302	0.8
0004	Delta-E	-15461.7399	0.0045	0.0226	0.2
	Delta-U	-61.6362	0.0686	0.0510	1.3
	Length	15461.9655			
(V208 Day214(I) 18:45 0012013I.214)					
0012	Delta-N	15725.9544	0.0214	0.0287	0.7
0013	Delta-E	340.6446	0.0008	0.0222	0.0
	Delta-U	-30.3706	0.0022	0.0479	0.0
	Length	15729.6726			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V75 Day213 (J) 19:54 0013014J.213)					
0013	Delta-N	16042.8876	0.0066	0.0281	0.2
0014	Delta-E	315.1613	-0.0085	0.0226	0.4
	Delta-U	64.0618	-0.0087	0.0481	0.2
	Length	16046.1108			
(V76 Day213 (J) 19:51 0013022J.213)					
0013	Delta-N	272.7760	0.0168	0.0299	0.6
0022	Delta-E	16025.4926	-0.0364	0.0248	1.5
	Delta-U	-25.7989	-0.0263	0.0516	0.5
	Length	16027.8347			
(V77 Day213 (J) 19:54 0014022J.213)					
0014	Delta-N	-15770.2564	0.0001	0.0310	0.0
0022	Delta-E	15710.1134	-0.0244	0.0257	1.0
	Delta-U	-101.7392	-0.0278	0.0538	0.5
	Length	22260.2561			
(V31 Day213 (J) 19:51 0015013J.213)					
0015	Delta-N	-31583.7136	-0.0141	0.0354	0.4
0013	Delta-E	-459.6205	0.0011	0.0281	0.0
	Delta-U	-99.4143	-0.0416	0.0628	0.7
	Length	31587.2141			
(V32 Day213 (J) 19:54 0015014J.213)					
0015	Delta-N	-15540.9476	-0.0083	0.0329	0.3
0014	Delta-E	-144.1356	-0.0146	0.0267	0.5
	Delta-U	-11.0827	-0.0200	0.0577	0.3
	Length	15541.6200			
(V33 Day213 (J) 19:51 0015022J.213)					
0015	Delta-N	-31311.2240	-0.0126	0.0332	0.4
0022	Delta-E	15565.8782	-0.0445	0.0263	1.7
	Delta-U	-124.4497	-0.0348	0.0583	0.6
	Length	34967.1961			
(V27 Day213 (E) 16:01 0015024E.213)					
0015	Delta-N	634.6585	0.0000	0.0262	0.0
0024	Delta-E	15838.2191	0.0126	0.0219	0.6
	Delta-U	-54.7209	0.0117	0.0430	0.3
	Length	15851.0242			
(V28 Day213 (E) 16:01 0015080E.213)					
0015	Delta-N	-3158.3775	-0.0124	0.0266	0.5
0080	Delta-E	6238.1206	0.0099	0.0217	0.5
	Delta-U	30.6213	0.0058	0.0437	0.1
	Length	6992.1695			
(V26 Day213 (F) 16:34 0016015F.213)					
0016	Delta-N	-16308.9478	-0.0100	0.0244	0.4
0015	Delta-E	168.3692	0.0001	0.0192	0.0
	Delta-U	-8.2347	-0.0187	0.0393	0.5
	Length	16309.8189			
(V25 Day213 (F) 16:34 0016202F.213)					
0016	Delta-N	-15886.2837	-0.0018	0.0265	0.1
0202	Delta-E	-10486.8924	0.0006	0.0207	0.0
	Delta-U	-20.1087	0.0610	0.0437	1.4
	Length	19035.4755			
(V24 Day213 (F) 16:33 0017015F.213)					
0017	Delta-N	-31409.1828	-0.0189	0.0276	0.7
0015	Delta-E	257.2892	0.0000	0.0211	0.0
	Delta-U	13.3556	0.0173	0.0460	0.4
	Length	31410.2394			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V22 Day213 (F) 16:34 0017016F.213)					
0017	Delta-N	-15100.2459	-0.0114	0.0242	0.5
0016	Delta-E	88.8559	0.0005	0.0191	0.0
	Delta-U	33.3833	0.0299	0.0389	0.8
	Length	15100.5442			
(V19 Day213 (C) 14:38 0017025C.213)					
0017	Delta-N	-15097.4287	0.0197	0.0296	0.7
0025	Delta-E	15798.4102	0.0032	0.0217	0.1
	Delta-U	-18.3086	-0.0417	0.0517	0.8
	Length	21852.2872			
(V20 Day213 (C) 14:38 0017026C.213)					
0017	Delta-N	674.3767	0.0163	0.0253	0.6
0026	Delta-E	15344.6562	0.0020	0.0181	0.1
	Delta-U	-17.3839	-0.0315	0.0427	0.7
	Length	15359.4778			
(V21 Day213 (C) 14:40 0017035C.213)					
0017	Delta-N	545.3189	0.0081	0.0282	0.3
0035	Delta-E	31622.9503	0.0149	0.0196	0.8
	Delta-U	-50.3767	-0.0638	0.0488	1.3
	Length	31627.6919			
(V23 Day213 (F) 16:33 0017202F.213)					
0017	Delta-N	-30986.5522	-0.0160	0.0280	0.6
0202	Delta-E	-10397.9740	0.0021	0.0212	0.1
	Delta-U	1.8323	0.0754	0.0466	1.6
	Length	32684.6184			
(V116 Day214 (D) 15:22 0018027D.214)					
0018	Delta-N	558.6704	-0.0132	0.0228	0.6
0027	Delta-E	15936.5042	0.0009	0.0192	0.0
	Delta-U	43.7278	-0.0041	0.0366	0.1
	Length	15946.3536			
(V117 Day214 (D) 15:22 0018028D.214)					
0018	Delta-N	15888.6604	-0.0298	0.0224	1.3
0028	Delta-E	15916.2996	-0.0001	0.0182	0.0
	Delta-U	-47.2768	0.0345	0.0359	1.0
	Length	22489.5611			
(V118 Day214 (D) 15:22 0018036D.214)					
0018	Delta-N	209.6179	-0.0116	0.0263	0.4
0036	Delta-E	31531.2306	0.0092	0.0216	0.4
	Delta-U	48.8794	0.0132	0.0443	0.3
	Length	31531.9653			
(V129 Day214 (E) 15:59 0019029E.214)					
0019	Delta-N	16463.4950	-0.0179	0.0282	0.6
0029	Delta-E	14074.8885	0.0061	0.0227	0.3
	Delta-U	12.6603	0.0363	0.0469	0.8
	Length	21659.8549			
(V128 Day214 (E) 16:01 0019076E.214)					
0019	Delta-N	9016.5677	-0.0033	0.0234	0.1
0076	Delta-E	9655.7930	0.0034	0.0187	0.2
	Delta-U	16.0090	-0.0123	0.0369	0.3
	Length	13211.0971			
(V145 Day214 (M) 16:30 0038056M.214)					
0020	Delta-N	-15978.6451	0.0238	0.0257	0.9
0010	Delta-E	-16400.1018	-0.0145	0.0202	0.7
	Delta-U	-138.3142	-0.0095	0.0420	0.2
	Length	22897.5887			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V184 Day214 (M) 16:30 0046056M.214)					
0020	Delta-N	27.2004	0.0045	0.0256	0.2
0011	Delta-E	-16324.2592	-0.0190	0.0203	0.9
	Delta-U	-73.5981	-0.0109	0.0419	0.3
	Length	16324.4478			
(V194 Day214 (J) 19:16 0020012J.214)					
0020	Delta-N	15888.7890	-0.0027	0.0231	0.1
0012	Delta-E	-16708.1502	0.0182	0.0181	1.0
	Delta-U	33.2243	0.0062	0.0365	0.2
	Length	23056.8212			
(V195 Day214 (J) 19:17 0020021J.214)					
0020	Delta-N	15658.4163	-0.0100	0.0225	0.4
0021	Delta-E	-155.2018	0.0142	0.0183	0.8
	Delta-U	-58.2387	0.0050	0.0352	0.1
	Length	15659.2938			
(V200 Day214 (J) 19:17 0021012J.214)					
0021	Delta-N	230.1909	0.0081	0.0264	0.3
0012	Delta-E	-16552.9493	0.0043	0.0193	0.2
	Delta-U	91.7583	0.0031	0.0433	0.1
	Length	16554.8041			
(V81 Day213 (K) 20:31 0022023K.213)					
0022	Delta-N	15145.7521	-0.0062	0.0241	0.3
0023	Delta-E	419.7054	-0.0176	0.0183	1.0
	Delta-U	123.6702	0.0055	0.0383	0.1
	Length	15152.0710			
(V82 Day213 (K) 20:32 0022031K.213)					
0022	Delta-N	-200.1950	-0.0238	0.0294	0.8
0031	Delta-E	15795.3720	-0.0267	0.0223	1.2
	Delta-U	26.2314	-0.0453	0.0493	0.9
	Length	15796.6624			
(V83 Day213 (K) 20:32 0023031K.213)					
0023	Delta-N	-15346.1573	-0.0112	0.0314	0.4
0031	Delta-E	15375.3844	-0.0169	0.0247	0.7
	Delta-U	-108.2606	-0.0156	0.0530	0.3
	Length	21723.6901			
(V50 Day213 (E) 16:00 0024080E.213)					
0024	Delta-N	-3786.3143	-0.0051	0.0218	0.2
0080	Delta-E	-9602.8141	-0.0105	0.0179	0.6
	Delta-U	77.9724	-0.0072	0.0337	0.2
	Length	10322.6109			
(V40 Day213 (C) 14:40 0025035C.213)					
0025	Delta-N	15631.6453	0.0132	0.0241	0.5
0035	Delta-E	15835.5084	0.0034	0.0184	0.2
	Delta-U	-31.4486	-0.0283	0.0398	0.7
	Length	22251.1269			
(V38 Day213 (C) 14:38 0026025C.213)					
0026	Delta-N	-15772.1106	0.0013	0.0229	0.1
0025	Delta-E	443.0213	0.0006	0.0176	0.0
	Delta-U	-1.1017	-0.0039	0.0373	0.1
	Length	15778.3314			
(V39 Day213 (C) 14:40 0026035C.213)					
0026	Delta-N	-140.1351	0.0140	0.0255	0.5
0035	Delta-E	16278.2223	0.0017	0.0184	0.1
	Delta-U	-21.0794	-0.0254	0.0430	0.6
	Length	16278.8391			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V124 Day214 (D) 15:22 0027036D.214)					
0027	Delta-N	-359.9421	0.0055	0.0230	0.2
0036	Delta-E	15594.4705	0.0019	0.0188	0.1
	Delta-U	17.0000	0.0103	0.0371	0.3
	Length	15598.6331			
(V144 Day214 (M) 15:54 0038056M.214)					
0028	Delta-N	-252.5132	-0.0157	0.0237	0.7
0019	Delta-E	-14275.4319	0.0076	0.0188	0.4
	Delta-U	-108.8688	0.0099	0.0376	0.3
	Length	14278.0801			
(V119 Day214 (D) 15:22 0028027D.214)					
0028	Delta-N	-15330.0652	0.0219	0.0219	1.0
0027	Delta-E	9.4373	-0.0004	0.0180	0.0
	Delta-U	79.3560	-0.0344	0.0349	1.0
	Length	15330.2735			
(V122 Day214 (E) 15:59 0028029E.214)					
0028	Delta-N	16202.1616	-0.0518	0.0308	1.7
0029	Delta-E	-190.2450	-0.0119	0.0250	0.5
	Delta-U	-86.4158	0.0464	0.0522	0.9
	Length	16203.5089			
(V123 Day214 (D) 15:22 0028036D.214)					
0028	Delta-N	-15690.0133	0.0251	0.0239	1.1
0036	Delta-E	15603.9079	0.0038	0.0194	0.2
	Delta-U	96.0847	-0.0232	0.0392	0.6
	Length	22128.4362			
(V121 Day214 (E) 16:01 0028076E.214)					
0028	Delta-N	8758.0039	-0.0241	0.0241	1.0
0076	Delta-E	-4614.0058	-0.0077	0.0199	0.4
	Delta-U	-86.1702	0.0348	0.0386	0.9
	Length	9899.4499			
(V131 Day214 (F) 16:30 0029020F.214)					
0029	Delta-N	-392.5792	-0.0230	0.0239	1.0
0020	Delta-E	-15405.7699	0.0330	0.0192	1.7
	Delta-U	136.5480	0.0093	0.0384	0.2
	Length	15411.3760			
(V132 Day214 (K) 19:54 0029030K.214)					
0029	Delta-N	15512.4917	0.0214	0.0243	0.9
0030	Delta-E	-433.0769	-0.0037	0.0204	0.2
	Delta-U	169.4871	-0.0107	0.0400	0.3
	Length	15519.4613			
(V133 Day214 (K) 19:55 0029037K.214)					
0029	Delta-N	-15972.4599	-0.0241	0.0237	1.0
0037	Delta-E	15800.2368	-0.0068	0.0196	0.3
	Delta-U	184.9850	0.0515	0.0389	1.3
	Length	22467.7809			
(V134 Day214 (K) 19:54 0029038K.214)					
0029	Delta-N	-487.7028	-0.0197	0.0206	1.0
0038	Delta-E	15176.5967	-0.0136	0.0178	0.8
	Delta-U	156.6037	-0.0043	0.0319	0.1
	Length	15185.2384			
(V197 Day214 (J) 19:18 0030012J.214)					
0030	Delta-N	-5.5686	0.0268	0.0244	1.1
0012	Delta-E	-31670.1018	-0.0057	0.0187	0.3
	Delta-U	-11.0384	0.0073	0.0393	0.2
	Length	31670.1042			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V149 Day214 (M) 19:18 0038056M.214)					
0030	Delta-N	-15905.3274	0.0284	0.0223	1.3
0020	Delta-E	-14972.3907	-0.0232	0.0179	1.3
	Delta-U	-44.4444	-0.0095	0.0348	0.3
	Length	21843.8527			
(V198 Day214 (J) 19:18 0030021J.214)					
0030	Delta-N	-246.7725	0.0170	0.0232	0.7
0021	Delta-E	-15117.2474	-0.0101	0.0181	0.6
	Delta-U	-90.8604	-0.0031	0.0368	0.1
	Length	15119.5344			
(V150 Day214 (M) 19:55 0038056M.214)					
0030	Delta-N	-31484.6449	-0.0487	0.0234	2.1
0037	Delta-E	16233.9138	0.0001	0.0195	0.0
	Delta-U	-8.2254	0.0541	0.0383	1.4
	Length	35423.4794			
(V84 Day213 (N) 22:29 0031030N.213)					
0031	Delta-N	-15759.7343	-0.0446	0.0322	1.4
0030	Delta-E	-513.9508	-0.0507	0.0252	2.0
	Delta-U	-6.9090	0.0214	0.0550	0.4
	Length	15768.1140			
(V307 Day216 (A) 12:27 0031032A.216)					
0031	Delta-N	15970.2889	-0.0061	0.0228	0.3
0032	Delta-E	249.9004	0.0233	0.0190	1.2
	Delta-U	82.6341	0.0086	0.0364	0.2
	Length	15972.4578			
(V308 Day216 (A) 12:27 0031073A.216)					
0031	Delta-N	7033.5487	0.0083	0.0227	0.4
0073	Delta-E	13669.2364	0.0059	0.0188	0.3
	Delta-U	-30.1114	-0.0073	0.0363	0.2
	Length	15372.6946			
(V78 Day213 (K) 20:33 0032022K.213)					
0032	Delta-N	-15758.8221	-0.0245	0.0295	0.8
0022	Delta-E	-16045.2772	0.0266	0.0225	1.2
	Delta-U	-133.0139	0.0348	0.0494	0.7
	Length	22490.1998			
(V79 Day213 (K) 20:33 0032023K.213)					
0032	Delta-N	-613.4685	-0.0004	0.0298	0.0
0023	Delta-E	-15614.9538	0.0147	0.0241	0.6
	Delta-U	2.4147	-0.0236	0.0498	0.5
	Length	15627.0001			
(V46 Day213 (D) 15:20 0033024D.213)					
0033	Delta-N	41.9426	0.0059	0.0291	0.2
0024	Delta-E	-15825.3108	-0.0103	0.0228	0.5
	Delta-U	1.8388	-0.0031	0.0502	0.1
	Length	15825.3665			
(V47 Day213 (L) 21:07 0033032L.213)					
0033	Delta-N	-16144.8796	-0.0210	0.0315	0.7
0032	Delta-E	-96.9275	0.0068	0.0270	0.3
	Delta-U	76.0292	-0.0076	0.0541	0.1
	Length	16145.3495			
(V49 Day213 (L) 21:07 0033041L.213)					
0033	Delta-N	-14559.0868	-0.0416	0.0295	1.4
0041	Delta-E	15260.5762	0.0327	0.0258	1.3
	Delta-U	-21.7428	-0.0110	0.0501	0.2
	Length	21091.5307			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V48 Day213 (L) 21:07 O033079L.213)					
0033	Delta-N	-9874.1822	-0.0183	0.0269	0.7
0079	Delta-E	-3346.7038	0.0121	0.0239	0.5
	Delta-U	25.8888	-0.0199	0.0448	0.4
	Length	10425.9566			
(V44 Day213 (D) 15:15 O034024D.213)					
0034	Delta-N	-15620.6831	-0.0114	0.0281	0.4
0024	Delta-E	-16450.0533	-0.0110	0.0226	0.5
	Delta-U	28.9358	-0.0184	0.0479	0.4
	Length	22685.0354			
(V45 Day213 (D) 15:20 O034033D.213)					
0034	Delta-N	-15663.0619	-0.0152	0.0274	0.6
0033	Delta-E	-624.7436	0.0085	0.0216	0.4
	Delta-U	27.5369	0.0206	0.0465	0.4
	Length	15675.5405			
(V42 Day213 (D) 15:15 O035024D.213)					
0035	Delta-N	-31297.7732	-0.0322	0.0275	1.2
0024	Delta-E	-15571.3563	-0.0148	0.0221	0.7
	Delta-U	-14.4733	-0.0059	0.0467	0.1
	Length	34957.3734			
(V43 Day213 (D) 15:20 O035033D.213)					
0035	Delta-N	-31339.5351	-0.0396	0.0249	1.6
0033	Delta-E	253.9549	-0.0051	0.0197	0.3
	Delta-U	-16.5665	0.0147	0.0413	0.4
	Length	31340.5684			
(V41 Day213 (D) 15:13 O035034D.213)					
0035	Delta-N	-15676.4327	-0.0206	0.0245	0.8
0034	Delta-E	878.0883	-0.0016	0.0202	0.1
	Delta-U	-32.3721	0.0021	0.0402	0.1
	Length	15701.0391			
(V125 Day214 (L) 20:51 O036037L.214)					
0036	Delta-N	15919.7302	0.0237	0.0273	0.9
0037	Delta-E	16.8306	0.0066	0.0239	0.3
	Delta-U	3.0637	-0.0278	0.0455	0.6
	Length	15919.7394			
(V126 Day214 (L) 20:52 O036045L.214)					
0036	Delta-N	103.7331	-0.0080	0.0264	0.3
0045	Delta-E	15919.1287	0.0040	0.0229	0.2
	Delta-U	23.8979	0.0200	0.0437	0.5
	Length	15919.4846			
(V127 Day214 (L) 20:52 O036046L.214)					
0036	Delta-N	15229.4046	0.0141	0.0277	0.5
0046	Delta-E	15979.2486	0.0099	0.0240	0.4
	Delta-U	-72.7457	0.0120	0.0465	0.3
	Length	22074.3389			
(V135 Day214 (K) 19:52 O038030K.214)					
0038	Delta-N	16010.6025	0.0477	0.0221	2.2
0030	Delta-E	-15599.0034	0.0080	0.0189	0.4
	Delta-U	1.2066	-0.0084	0.0352	0.2
	Length	22353.2615			
(V136 Day214 (K) 19:55 O038037K.214)					
0038	Delta-N	-15485.1689	0.0029	0.0250	0.1
0037	Delta-E	613.2911	0.0068	0.0209	0.3
	Delta-U	29.1945	0.0419	0.0415	1.0
	Length	15497.3364			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V137 Day214 (M) 21:19 0038046M.214)					
0038	Delta-N	-16174.9617	-0.0382	0.0233	1.6
0046	Delta-E	16575.7249	-0.0161	0.0190	0.8
	Delta-U	-48.1069	-0.0265	0.0374	0.7
	Length	23160.0163			
(V154 Day214 (N) 21:19 0038047N.214)					
0038	Delta-N	-449.8468	-0.0389	0.0210	1.8
0047	Delta-E	16572.3305	-0.0117	0.0179	0.7
	Delta-U	11.1589	-0.0176	0.0324	0.5
	Length	16578.4385			
(V64 Day213 (N) 22:29 0039030N.213)					
0039	Delta-N	-116.9858	-0.0481	0.0508	0.9
0030	Delta-E	-19114.9952	-0.0090	0.0283	0.3
	Delta-U	139.4943	-0.0028	0.0898	0.0
	Length	19115.8622			
(V63 Day213 (N) 22:27 0039031N.213)					
0039	Delta-N	15642.3232	-0.0136	0.0328	0.4
0031	Delta-E	-18588.1375	0.0309	0.0255	1.2
	Delta-U	135.0662	0.0606	0.0561	1.1
	Length	24294.4309			
(V61 Day213 (N) 22:29 0040030N.213)					
0040	Delta-N	-14961.6074	-0.0432	0.0603	0.7
0030	Delta-E	-19202.6511	-0.0406	0.0318	1.3
	Delta-U	134.4302	-0.0099	0.1073	0.1
	Length	24343.5736			
(V59 Day213 (N) 22:27 0040031N.213)					
0040	Delta-N	797.6987	0.0113	0.0321	0.4
0031	Delta-E	-18675.7325	0.0226	0.0251	0.9
	Delta-U	141.2068	0.0360	0.0548	0.7
	Length	18693.2942			
(V62 Day213 (N) 22:27 0040039N.213)					
0040	Delta-N	-14844.5963	0.0177	0.0288	0.6
0039	Delta-E	-87.6548	-0.0177	0.0225	0.8
	Delta-U	-4.9010	-0.0230	0.0481	0.5
	Length	14844.8559			
(V173 Day214 (M) 22:35 0047056M.214)					
0040	Delta-N	8713.3544	0.0259	0.0255	1.0
0072	Delta-E	4387.9655	-0.0043	0.0214	0.2
	Delta-U	-9.1594	-0.0146	0.0417	0.4
	Length	9755.8634			
(V60 Day213 (M) 21:51 0040073M.213)					
0040	Delta-N	7819.9911	-0.0299	0.0283	1.1
0073	Delta-E	-5000.6889	0.0120	0.0223	0.5
	Delta-U	123.0123	0.0256	0.0478	0.5
	Length	9283.0104			
(V53 Day213 (L) 21:01 0041032L.213)					
0041	Delta-N	-1575.3752	0.0276	0.0295	0.9
0032	Delta-E	-15358.6367	-0.0210	0.0247	0.9
	Delta-U	87.6956	-0.0010	0.0501	0.0
	Length	15439.4695			
(V56 Day213 (M) 21:51 0041040M.213)					
0041	Delta-N	-18340.4690	0.0321	0.0277	1.2
0040	Delta-E	3056.3475	-0.0110	0.0220	0.5
	Delta-U	-153.1788	-0.0670	0.0466	1.4
	Length	18594.0186			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V54 Day213 (M) 21:51 O041073M.213)					
0041	Delta-N	-10521.2634	0.0023	0.0281	0.1
0073	Delta-E	-1945.3768	0.0059	0.0215	0.3
	Delta-U	-22.5699	-0.0327	0.0476	0.7
	Length	10699.6254			
(V55 Day213 (M) 21:39 O041074M.213)					
0041	Delta-N	-12687.2125	0.0055	0.0269	0.2
0074	Delta-E	3706.8812	-0.0102	0.0208	0.5
	Delta-U	-170.6701	-0.0289	0.0452	0.6
	Length	13218.7540			
(V256 Day215 (A) 12:22 O041075A.215)					
0041	Delta-N	4307.1153	-0.0263	0.0255	1.0
0075	Delta-E	7731.9079	0.0155	0.0213	0.7
	Delta-U	-85.8441	0.0665	0.0423	1.6
	Length	8851.0457			
(V244 Day215 (B) 13:10 O042033B.215)					
0042	Delta-N	758.2997	0.0012	0.0230	0.1
0033	Delta-E	-18268.3355	0.0040	0.0182	0.2
	Delta-U	26.9559	0.0066	0.0364	0.2
	Length	18284.0867			
(V245 Day215 (C) 13:50 O042043C.215)					
0042	Delta-N	16230.5326	-0.0122	0.0253	0.5
0043	Delta-E	-2539.3924	0.0030	0.0195	0.2
	Delta-U	21.9419	-0.0754	0.0415	1.8
	Length	16428.0000			
(V246 Day215 (C) 13:52 O042052C.215)					
0042	Delta-N	15830.2357	-0.0072	0.0267	0.3
0052	Delta-E	11142.1768	0.0007	0.0206	0.0
	Delta-U	44.8890	-0.0761	0.0445	1.7
	Length	19358.3698			
(V251 Day215 (D) 14:22 O043035D.215)					
0043	Delta-N	15865.7096	-0.0476	0.0314	1.5
0035	Delta-E	-15958.9893	-0.0170	0.0227	0.7
	Delta-U	-12.5243	0.0294	0.0546	0.5
	Length	22503.5606			
(V252 Day215 (D) 14:21 O043044D.215)					
0043	Delta-N	16066.2362	-0.0074	0.0239	0.3
0044	Delta-E	-242.9684	-0.0028	0.0181	0.2
	Delta-U	95.2240	-0.0267	0.0392	0.7
	Length	16068.3555			
(V253 Day215 (D) 14:20 O043302D.215)					
0043	Delta-N	16111.1185	0.0143	0.0229	0.6
0302	Delta-E	6090.1733	0.0056	0.0186	0.3
	Delta-U	35.1706	-0.0848	0.0369	2.3
	Length	17223.8088			
(V262 Day215 (D) 14:22 O044035D.215)					
0044	Delta-N	-200.6130	-0.0428	0.0276	1.5
0035	Delta-E	-15716.0200	-0.0103	0.0203	0.5
	Delta-U	-107.7204	0.0386	0.0469	0.8
	Length	15717.6694			
(V193 Day214 (L) 20:52 O045037L.214)					
0045	Delta-N	15827.0853	0.0304	0.0230	1.3
0037	Delta-E	-15891.2420	0.0025	0.0207	0.1
	Delta-U	-32.8340	-0.0553	0.0367	1.5
	Length	22428.3143			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V177 Day214 (L) 20:52 0046037L.214)					
0046	Delta-N	701.4623	0.0065	0.0245	0.3
0037	Delta-E	-15961.9836	-0.0026	0.0217	0.1
	Delta-U	64.1429	-0.0458	0.0399	1.1
	Length	15977.5181			
(V178 Day214 (L) 20:52 0046045L.214)					
0046	Delta-N	-15125.6919	-0.0259	0.0202	1.3
0045	Delta-E	-70.7908	-0.0080	0.0182	0.4
	Delta-U	85.5668	0.0008	0.0304	0.0
	Length	15126.0996			
(V172 Day214 (M) 22:01 0047056M.214)					
0047	Delta-N	16589.7840	-0.0186	0.0232	0.8
0039	Delta-E	-13044.1769	0.0088	0.0185	0.5
	Delta-U	-163.4266	0.0265	0.0369	0.7
	Length	21104.4591			
(V157 Day214 (M) 21:17 0047046M.214)					
0047	Delta-N	-15725.1145	0.0008	0.0212	0.0
0046	Delta-E	-8.0113	-0.0004	0.0179	0.0
	Delta-U	-58.9244	-0.0144	0.0329	0.4
	Length	15725.2270			
(V158 Day214 (M) 21:58 0047046M.214)					
0047	Delta-N	16308.1063	-0.0071	0.0223	0.3
0048	Delta-E	65.2440	0.0047	0.0180	0.3
	Delta-U	34.5092	0.0147	0.0350	0.4
	Length	16308.2734			
(V176 Day214 (N) 22:01 0047049N.214)					
0047	Delta-N	32680.3752	-0.0116	0.0252	0.5
0049	Delta-E	110.9619	0.0008	0.0196	0.0
	Delta-U	-38.3882	0.0033	0.0411	0.1
	Length	32680.5862			
(V191 Day214 (M) 22:01 0046056M.214)					
0048	Delta-N	281.8698	-0.0056	0.0259	0.2
0039	Delta-E	-13109.4194	0.0100	0.0212	0.5
	Delta-U	-197.7566	0.0092	0.0426	0.2
	Length	13113.9405			
(V202 Day214 (N) 22:01 0048049N.214)					
0048	Delta-N	16372.3207	-0.0030	0.0223	0.1
0049	Delta-E	45.7651	-0.0025	0.0180	0.1
	Delta-U	-60.1117	0.0085	0.0350	0.2
	Length	16372.4950			
(V203 Day214 (N) 22:01 0049039N.214)					
0049	Delta-N	-16090.3115	-0.0078	0.0231	0.3
0039	Delta-E	-13155.2167	0.0071	0.0184	0.4
	Delta-U	-150.2884	0.0109	0.0368	0.3
	Length	20784.1391			
(V156 Day214 (N) 22:35 0038047N.214)					
0049	Delta-N	-1245.7684	-0.0196	0.0257	0.8
0040	Delta-E	-13059.0200	0.0058	0.0221	0.3
	Delta-U	-144.4419	0.0182	0.0422	0.4
	Length	13119.1008			
(V139 Day214 (M) 22:35 0038046M.214)					
0049	Delta-N	14978.5753	0.0481	0.0413	1.2
0050	Delta-E	-469.3573	-0.0109	0.0249	0.4
	Delta-U	-10.2019	-0.0027	0.0724	0.0
	Length	14985.9307			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V206 Day214(O) 22:34 O049072O.214)					
0049	Delta-N	7465.0591	-0.0007	0.0279	0.0
0072	Delta-E	-8666.0348	-0.0048	0.0231	0.2
	Delta-U	-150.3445	-0.0273	0.0466	0.6
	Length	11438.9628			
(V254 Day215(A) 12:22 O050041A.215)					
0050	Delta-N	2118.0856	0.0324	0.0224	1.4
0041	Delta-E	-15633.1297	-0.0189	0.0187	1.0
	Delta-U	3.4532	-0.0242	0.0356	0.7
	Length	15775.9640			
(V255 Day215(A) 12:22 O050075A.215)					
0050	Delta-N	6419.8543	0.0078	0.0248	0.3
0075	Delta-E	-7898.1886	-0.0042	0.0208	0.2
	Delta-U	-77.0578	0.0356	0.0407	0.9
	Length	10178.4994			
(V234 Day215(B) 13:10 O051033B.215)					
0051	Delta-N	760.2798	-0.0032	0.0248	0.1
0033	Delta-E	-31347.6310	0.0113	0.0190	0.6
	Delta-U	57.1854	0.0052	0.0401	0.1
	Length	31356.9013			
(V231 Day215(A) 12:23 O051041A.215)					
0051	Delta-N	-13819.9461	0.0332	0.0249	1.3
0041	Delta-E	-16107.2346	-0.0279	0.0208	1.3
	Delta-U	58.7675	-0.0006	0.0410	0.0
	Length	21223.5098			
(V236 Day215(B) 13:07 O051042B.215)					
0051	Delta-N	-8.5846	-0.0094	0.0216	0.4
0042	Delta-E	-13079.7238	0.0074	0.0173	0.4
	Delta-U	41.6294	-0.0138	0.0333	0.4
	Length	13079.7929			
(V238 Day215(C) 13:49 O051043C.215)					
0051	Delta-N	16223.4139	-0.0187	0.0228	0.8
0043	Delta-E	-15609.7426	-0.0085	0.0177	0.5
	Delta-U	61.9991	-0.0578	0.0363	1.6
	Length	22513.7084			
(V232 Day215(A) 12:23 O051050A.215)					
0051	Delta-N	-15938.3559	0.0015	0.0224	0.1
0050	Delta-E	-474.1493	-0.0100	0.0187	0.5
	Delta-U	54.0512	0.0411	0.0357	1.2
	Length	15945.4986			
(V239 Day215(C) 13:52 O051052C.215)					
0051	Delta-N	15815.2047	-0.0188	0.0219	0.9
0052	Delta-E	-1928.4242	-0.0055	0.0174	0.3
	Delta-U	93.4840	-0.0674	0.0343	2.0
	Length	15932.6162			
(V240 Day215(I) 19:01 O051060I.215)					
0051	Delta-N	27.6727	0.0055	0.0289	0.2
0060	Delta-E	15846.3460	0.0061	0.0226	0.3
	Delta-U	122.3795	-0.0011	0.0484	0.0
	Length	15846.8428			
(V241 Day215(I) 19:03 O051068I.215)					
0051	Delta-N	-15895.7549	0.0254	0.0281	0.9
0068	Delta-E	31514.4683	0.0199	0.0208	1.0
	Delta-U	102.3441	0.0008	0.0468	0.0
	Length	35296.5609			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V233 Day215 (A) 12:23 O051075A.215)					
0051	Delta-N	-9518.2791	0.0073	0.0231	0.3
0075	Delta-E	-8372.2017	-0.0067	0.0198	0.3
	Delta-U	-18.2855	0.0527	0.0371	1.4
	Length	12676.4243			
(V235 Day215 (B) 13:11 O051081B.215)					
0051	Delta-N	1556.6907	-0.0039	0.0210	0.2
0081	Delta-E	-9293.3867	0.0067	0.0171	0.4
	Delta-U	51.8970	0.0406	0.0321	1.3
	Length	9423.0046			
(V247 Day215 (C) 13:52 O052043C.215)					
0052	Delta-N	407.0646	0.0013	0.0212	0.1
0043	Delta-E	-13681.3560	-0.0021	0.0170	0.1
	Delta-U	-29.9169	0.0135	0.0328	0.4
	Length	13687.4431			
(V248 Day215 (E) 14:53 O052053E.215)					
0052	Delta-N	16512.7139	0.0018	0.0296	0.1
0053	Delta-E	2430.7942	-0.0004	0.0215	0.0
	Delta-U	25.6661	-0.0690	0.0514	1.3
	Length	16690.6902			
(V250 Day215 (E) 14:53 O052062E.215)					
0052	Delta-N	15333.8336	0.0221	0.0343	0.6
0062	Delta-E	17537.0492	0.0105	0.0241	0.4
	Delta-U	-47.3556	-0.1122	0.0608	1.8
	Length	23295.4242			
(V249 Day215 (E) 14:53 O052302E.215)					
0052	Delta-N	16514.4912	-0.0180	0.0248	0.7
0302	Delta-E	-7581.4471	-0.0122	0.0183	0.7
	Delta-U	8.9215	-0.0755	0.0413	1.8
	Length	18171.5942			
(V261 Day215 (E) 14:53 O053062E.215)					
0053	Delta-N	-1180.4508	0.0199	0.0245	0.8
0062	Delta-E	15106.1363	0.0082	0.0186	0.4
	Delta-U	-72.2018	-0.0284	0.0406	0.7
	Length	15152.3606			
(V302 Day216 (O) 00:01 O054045O.215)					
0054	Delta-N	178.1450	0.0206	0.0214	1.0
0045	Delta-E	-15516.5808	0.0077	0.0180	0.4
	Delta-U	59.9870	-0.0295	0.0328	0.9
	Length	15517.7193			
(V303 Day216 (O) 00:01 O054055O.215)					
0054	Delta-N	15883.3247	0.0027	0.0213	0.1
0055	Delta-E	430.2018	0.0061	0.0181	0.3
	Delta-U	11.6951	-0.0115	0.0328	0.4
	Length	15889.1540			
(V336 Day216 (C) 17:37 O054063C.216)					
0054	Delta-N	170.3860	-0.0241	0.0213	1.1
0063	Delta-E	16260.8506	0.0039	0.0179	0.2
	Delta-U	-33.4455	0.0239	0.0331	0.7
	Length	16261.7776			
(V334 Day216 (C) 17:36 O054310C.216)					
0054	Delta-N	-26370.7992	-0.0193	0.0319	0.6
0310	Delta-E	60059.2808	-0.0164	0.0238	0.7
	Delta-U	-73.8925	0.0584	0.0555	1.1
	Length	65593.7629			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V335 Day216(D) 18:32 0054311D.216)					
0054	Delta-N	-31743.7713	-0.0435	0.0405	1.1
0311	Delta-E	65502.6726	-0.0182	0.0262	0.7
	Delta-U	-89.2116	0.0049	0.0709	0.1
	Length	72789.2512			
(V304 Day216(A) 00:02 0055045A.215)					
0055	Delta-N	-15704.9108	0.0156	0.0228	0.7
0045	Delta-E	-15947.0798	0.0017	0.0188	0.1
	Delta-U	36.0193	-0.0166	0.0361	0.5
	Length	22382.0212			
(V295 Day215(A) 23:59 0056045A.215)					
0056	Delta-N	-31778.5758	0.0315	0.0245	1.3
0045	Delta-E	-15836.3435	-0.0033	0.0202	0.2
	Delta-U	10.6051	-0.0120	0.0396	0.3
	Length	35505.8835			
(V297 Day215(N) 23:25 0056047N.215)					
0056	Delta-N	-927.7704	-0.0128	0.0275	0.5
0047	Delta-E	-15736.1901	0.0150	0.0232	0.6
	Delta-U	-3.2016	0.0158	0.0466	0.3
	Length	15763.5163			
(V298 Day216(O) 00:01 0056054O.215)					
0056	Delta-N	-31956.8465	0.0150	0.0244	0.6
0054	Delta-E	-319.7643	-0.0105	0.0199	0.5
	Delta-U	-49.4181	0.0213	0.0393	0.5
	Length	31958.4845			
(V296 Day216(A) 00:01 0056055A.215)					
0056	Delta-N	-16073.5644	0.0198	0.0286	0.7
0055	Delta-E	110.6598	-0.0074	0.0231	0.3
	Delta-U	-13.4103	-0.0054	0.0481	0.1
	Length	16073.9509			
(V284 Day215(N) 23:22 0057047N.215)					
0057	Delta-N	-14352.9846	0.0149	0.0271	0.5
0047	Delta-E	-15812.1053	0.0150	0.0217	0.7
	Delta-U	-60.3825	0.0463	0.0458	1.0
	Length	21354.9640			
(V281 Day215(K) 20:47 0057049K.215)					
0057	Delta-N	18327.3243	-0.0123	0.0333	0.4
0049	Delta-E	-15678.4058	0.0149	0.0281	0.5
	Delta-U	-76.2085	0.0301	0.0575	0.5
	Length	24118.6449			
(V279 Day215(N) 23:25 0057056N.215)					
0057	Delta-N	-13425.2689	0.0253	0.0228	1.1
0056	Delta-E	-75.9122	-0.0069	0.0197	0.3
	Delta-U	-56.5275	0.0000	0.0366	0.0
	Length	13425.6026			
(V285 Day215(L) 21:20 0057065L.215)					
0057	Delta-N	-14080.4199	-0.0097	0.0226	0.4
0065	Delta-E	15777.3774	0.0018	0.0182	0.1
	Delta-U	-23.4870	-0.0295	0.0359	0.8
	Length	21146.7353			
(V283 Day215(L) 21:33 0057066L.215)					
0057	Delta-N	1774.2951	-0.0024	0.0215	0.1
0066	Delta-E	15726.9973	-0.0054	0.0177	0.3
	Delta-U	49.8647	-0.0130	0.0334	0.4
	Length	15826.8460			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V282 Day215(K) 20:46 0057078K.215)					
0057	Delta-N	9816.9740	-0.0132	0.0279	0.5
0078	Delta-E	2088.2456	0.0078	0.0243	0.3
	Delta-U	-37.0542	0.0382	0.0468	0.8
	Length	10036.6888			
(V300 Day215(K) 20:47 0058049K.215)					
0058	Delta-N	865.5498	0.0144	0.0328	0.4
0049	Delta-E	-15844.0346	-0.0075	0.0287	0.3
	Delta-U	3.5060	-0.0515	0.0566	0.9
	Length	15867.6596			
(V318 Day216(A) 14:34 0058067A.216)					
0058	Delta-N	62.0231	-0.0150	0.0230	0.7
0067	Delta-E	15791.0481	0.0051	0.0179	0.3
	Delta-U	28.6638	0.0383	0.0376	1.0
	Length	15791.1959			
(V301 Day215(K) 20:46 0058078K.215)					
0058	Delta-N	-7644.9599	0.0179	0.0279	0.6
0078	Delta-E	1922.5544	-0.0043	0.0237	0.2
	Delta-U	35.6846	-0.0345	0.0468	0.7
	Length	7883.0769			
(V316 Day216(A) 14:34 0059058A.216)					
0059	Delta-N	-15551.3392	0.0209	0.0246	0.8
0058	Delta-E	41.4040	0.0018	0.0181	0.1
	Delta-U	-36.7659	-0.0329	0.0413	0.8
	Length	15551.4378			
(V317 Day216(A) 14:17 0059067A.216)					
0059	Delta-N	-15489.3086	0.0051	0.0256	0.2
0067	Delta-E	15832.4520	0.0082	0.0183	0.5
	Delta-U	-8.0871	0.0069	0.0435	0.2
	Length	22149.1599			
(V267 Day215(F) 15:36 0061071F.215)					
0061	Delta-N	16482.3937	0.0107	0.0266	0.4
0071	Delta-E	15884.0945	0.0093	0.0198	0.5
	Delta-U	-15.6359	-0.0190	0.0438	0.4
	Length	22890.4784			
(V263 Day215(F) 15:35 0062061F.215)					
0062	Delta-N	-15385.0112	0.0094	0.0249	0.4
0061	Delta-E	-102.4298	0.0086	0.0189	0.5
	Delta-U	14.4354	-0.0161	0.0402	0.4
	Length	15385.3589			
(V265 Day215(F) 15:36 0062071F.215)					
0062	Delta-N	1097.3174	0.0199	0.0252	0.8
0071	Delta-E	15781.7395	0.0170	0.0189	0.9
	Delta-U	11.0196	-0.0475	0.0409	1.2
	Length	15819.8460			
(V264 Day215(F) 15:43 0062303F.215)					
0062	Delta-N	37844.2252	0.0094	0.0298	0.3
0303	Delta-E	15511.8957	0.0106	0.0217	0.5
	Delta-U	24.2905	-0.0155	0.0503	0.3
	Length	40899.9374			
(V338 Day216(C) 17:37 0063310C.216)					
0063	Delta-N	-26572.3839	0.0000	0.0309	0.0
0310	Delta-E	43779.5274	0.0218	0.0227	1.0
	Delta-U	-6.6828	0.0397	0.0533	0.7
	Length	51212.6805			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V339 Day216(D) 18:32 O063311D.216)					
0063	Delta-N	-31949.2328	0.0002	0.0343	0.0
0311	Delta-E	49219.0999	0.0261	0.0234	1.1
	Delta-U	-17.8225	-0.0267	0.0590	0.5
	Length	58679.4136			
(V329 Day216(C) 17:37 O064054C.216)					
0064	Delta-N	-15892.8768	-0.0394	0.0248	1.6
0054	Delta-E	-16089.2346	0.0077	0.0195	0.4
	Delta-U	-20.8148	-0.0143	0.0407	0.4
	Length	22615.2037			
(V331 Day216(B) 16:01 O064063B.216)					
0064	Delta-N	-15733.9380	0.0203	0.0245	0.8
0063	Delta-E	171.7529	0.0096	0.0191	0.5
	Delta-U	-41.6566	0.0159	0.0395	0.4
	Length	15734.9306			
(V327 Day216(C) 17:37 O064310C.216)					
0064	Delta-N	-42305.9796	0.0092	0.0307	0.3
0310	Delta-E	43951.4801	-0.0030	0.0221	0.1
	Delta-U	-68.7187	0.0398	0.0531	0.7
	Length	61004.3706			
(V328 Day216(D) 18:32 O064311D.216)					
0064	Delta-N	-47682.7776	0.0263	0.0345	0.8
0311	Delta-E	49391.0930	-0.0140	0.0241	0.6
	Delta-U	-83.9541	-0.0764	0.0595	1.3
	Length	68652.2716			
(V294 Day215(N) 23:19 O065047N.215)					
0065	Delta-N	-250.6864	0.0054	0.0300	0.2
0047	Delta-E	-31589.6276	0.0115	0.0254	0.5
	Delta-U	-60.4912	0.0259	0.0516	0.5
	Length	31590.6802			
(V291 Day215(N) 23:25 O065056N.215)					
0065	Delta-N	666.1205	0.0252	0.0264	1.0
0056	Delta-E	-15852.8019	-0.0017	0.0227	0.1
	Delta-U	-45.4160	-0.0032	0.0444	0.1
	Length	15866.8556			
(V324 Day216(A) 15:17 O065063A.216)					
0065	Delta-N	-31131.6183	-0.0029	0.0269	0.1
0063	Delta-E	66.1945	0.0101	0.0215	0.5
	Delta-U	-114.7162	-0.0495	0.0448	1.1
	Length	31131.9000			
(V326 Day216(B) 16:04 O065064B.216)					
0065	Delta-N	-15397.7145	-0.0124	0.0245	0.5
0064	Delta-E	-105.4857	0.0000	0.0191	0.0
	Delta-U	-61.4593	-0.0140	0.0394	0.4
	Length	15398.1985			
(V292 Day215(M) 22:12 O065307M.215)					
0065	Delta-N	-656.3121	-0.0258	0.0299	0.9
0307	Delta-E	47830.2650	0.0426	0.0228	1.9
	Delta-U	-23.6135	0.0084	0.0518	0.2
	Length	47834.7734			
(V293 Day215(M) 22:20 O065308M.215)					
0065	Delta-N	-1700.0914	0.0097	0.0372	0.3
0308	Delta-E	50083.5877	-0.0265	0.0270	1.0
	Delta-U	-34.0694	-0.0578	0.0652	0.9
	Length	50112.4458			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V289 Day215(L) 21:33 O066065L.215)					
0066	Delta-N	-15854.7399	-0.0074	0.0243	0.3
0065	Delta-E	39.4615	0.0131	0.0186	0.7
	Delta-U	-74.6610	-0.0124	0.0395	0.3
	Length	15854.9648			
(V287 Day215(M) 22:12 O066307M.215)					
0066	Delta-N	-16510.9508	0.0601	0.0492	1.2
0307	Delta-E	47869.7275	-0.0190	0.0297	0.6
	Delta-U	-98.8627	-0.0232	0.0910	0.3
	Length	50637.2598			
(V288 Day215(M) 22:20 O066308M.215)					
0066	Delta-N	-17554.7180	-0.0076	0.0429	0.2
0308	Delta-E	50123.0520	-0.0259	0.0302	0.9
	Delta-U	-110.1153	-0.0026	0.0763	0.0
	Length	53108.3853			
(V276 Day215(L) 21:20 O067057L.215)					
0067	Delta-N	-17512.8581	0.0105	0.0226	0.5
0057	Delta-E	-15969.0278	0.0121	0.0185	0.7
	Delta-U	23.7756	0.0259	0.0358	0.7
	Length	23700.4348			
(V278 Day215(L) 21:18 O067065L.215)					
0067	Delta-N	-31604.3473	0.0009	0.0236	0.0
0065	Delta-E	-201.5358	0.0121	0.0191	0.6
	Delta-U	0.4847	-0.0069	0.0379	0.2
	Length	31604.9898			
(V277 Day215(L) 21:33 O067066L.215)					
0067	Delta-N	-15749.6678	0.0103	0.0277	0.4
0066	Delta-E	-240.8301	0.0038	0.0210	0.2
	Delta-U	87.1024	0.0101	0.0466	0.2
	Length	15751.7498			
(V271 Day215(J) 19:37 O068058J.215)					
0068	Delta-N	-15853.8687	-0.0072	0.0318	0.2
0058	Delta-E	-15696.5924	-0.0097	0.0258	0.4
	Delta-U	-88.5308	0.0186	0.0552	0.3
	Length	22309.9978			
(V314 Day216(A) 14:15 O068059A.216)					
0068	Delta-N	-302.5050	0.0308	0.0269	1.1
0059	Delta-E	-15727.2269	0.0115	0.0196	0.6
	Delta-U	-51.5626	-0.0328	0.0462	0.7
	Length	15730.2204			
(V270 Day215(I) 19:03 O068060I.215)					
0068	Delta-N	15945.2215	-0.0168	0.0406	0.4
0060	Delta-E	-15645.9475	-0.0015	0.0264	0.1
	Delta-U	-15.6435	0.0131	0.0709	0.2
	Length	22339.3376			
(V315 Day216(A) 14:17 O068067A.216)					
0068	Delta-N	-15802.8023	0.0464	0.0318	1.5
0067	Delta-E	94.4689	0.0169	0.0222	0.8
	Delta-U	-48.0021	-0.0522	0.0563	0.9
	Length	15803.1576			
(V228 Day215(I) 19:01 O069051I.215)					
0069	Delta-N	-181.1657	0.0064	0.0302	0.2
0051	Delta-E	-31463.5811	-0.0092	0.0233	0.4
	Delta-U	-156.8207	0.0066	0.0511	0.1
	Length	31464.4935			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V229 Day215 (I) 19:01 0069060I.215)					
0069	Delta-N	-175.5390	0.0039	0.0310	0.1
0060	Delta-E	-15617.4134	-0.0046	0.0222	0.2
	Delta-U	-10.6530	-0.0068	0.0524	0.1
	Length	15618.4036			
(V230 Day215 (I) 19:03 0069068I.215)					
0069	Delta-N	-16120.7480	0.0295	0.0321	0.9
0068	Delta-E	28.5542	0.0057	0.0239	0.2
	Delta-U	-7.3394	-0.0097	0.0547	0.2
	Length	16120.7750			
(V225 Day215 (H) 18:31 0070069H.215)					
0070	Delta-N	-15764.6173	0.0286	0.0283	1.0
0069	Delta-E	72.9782	0.0146	0.0219	0.7
	Delta-U	-93.5420	-0.0017	0.0473	0.0
	Length	15765.0637			
(V310 Day216 (A) 13:22 0070071A.216)					
0070	Delta-N	16266.3047	-0.0270	0.0225	1.2
0071	Delta-E	44.9684	-0.0178	0.0176	1.0
	Delta-U	-144.9687	-0.0115	0.0356	0.3
	Length	16267.0128			
(V223 Day215 (G) 17:46 0070304G.215)					
0070	Delta-N	16373.4440	-0.0001	0.0263	0.0
0304	Delta-E	5423.5939	-0.0100	0.0233	0.4
	Delta-U	-104.5716	0.0340	0.0442	0.8
	Length	17248.6514			
(V311 Day216 (A) 13:24 0070305A.216)					
0070	Delta-N	21299.9776	-0.0123	0.0274	0.4
0305	Delta-E	37136.7026	-0.0083	0.0198	0.4
	Delta-U	-169.8151	-0.0097	0.0459	0.2
	Length	42811.8274			
(V268 Day215 (F) 15:43 0071303F.215)					
0071	Delta-N	36747.0870	-0.0091	0.0293	0.3
0303	Delta-E	-244.1344	-0.0102	0.0213	0.5
	Delta-U	14.9985	0.0148	0.0493	0.3
	Length	36747.9010			
(V312 Day216 (A) 13:24 0071305A.216)					
0071	Delta-N	5033.6167	0.0116	0.0266	0.4
0305	Delta-E	37091.7443	0.0080	0.0194	0.4
	Delta-U	-20.8462	0.0090	0.0441	0.2
	Length	37431.7409			
(V218 Day214 (O) 22:35 0072050O.214)					
0072	Delta-N	7516.5987	0.0360	0.0305	1.2
0050	Delta-E	8193.8628	-0.0114	0.0244	0.5
	Delta-U	139.4393	-0.0565	0.0518	1.1
	Length	11120.1658			
(V309 Day216 (A) 12:24 0073032A.216)					
0073	Delta-N	8944.7916	-0.0152	0.0225	0.7
0032	Delta-E	-13414.0176	0.0189	0.0187	1.0
	Delta-U	107.0035	0.0138	0.0359	0.4
	Length	16123.1701			
(V58 Day213 (M) 21:51 0074040M.213)					
0074	Delta-N	-5653.1384	0.0079	0.0254	0.3
0040	Delta-E	-651.4615	-0.0076	0.0201	0.4
	Delta-U	20.8108	0.0329	0.0420	0.8
	Length	5690.5895			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V57 Day213 (M) 21:51 0074073M.213)					
0074	Delta-N	2166.9627	-0.0087	0.0275	0.3
0073	Delta-E	-5651.9297	0.0005	0.0208	0.0
	Delta-U	145.7846	0.0387	0.0464	0.8
	Length	6054.8567			
(V130 Day214 (E) 16:01 0076029E.214)					
0076	Delta-N	7445.0534	-0.0310	0.0256	1.2
0029	Delta-E	4422.2527	-0.0044	0.0212	0.2
	Delta-U	1.9025	0.0258	0.0416	0.6
	Length	8659.3962			
(V104 Day214 (C) 14:45 0077010C.214)					
0077	Delta-N	11180.8479	-0.0229	0.0295	0.8
0010	Delta-E	-7041.3091	-0.0070	0.0204	0.3
	Delta-U	44.7731	-0.0164	0.0519	0.3
	Length	13213.3796			
(V103 Day214 (C) 14:48 0077018C.214)					
0077	Delta-N	-4521.3532	-0.0330	0.0316	1.0
0018	Delta-E	9055.5708	-0.0096	0.0221	0.4
	Delta-U	145.3929	-0.0069	0.0561	0.1
	Length	10122.6052			
(V305 Day215 (K) 20:47 0078049K.215)					
0078	Delta-N	8512.0019	0.0070	0.0340	0.2
0049	Delta-E	-17765.8650	0.0051	0.0293	0.2
	Delta-U	-36.9238	0.0060	0.0590	0.1
	Length	19699.7842			
(V51 Day213 (L) 21:07 0079032L.213)					
0079	Delta-N	-6270.1924	-0.0015	0.0317	0.0
0032	Delta-E	3250.7118	-0.0111	0.0272	0.4
	Delta-U	52.5864	-0.0094	0.0545	0.2
	Length	7062.9460			
(V52 Day213 (L) 21:07 0079041L.213)					
0079	Delta-N	-4682.1756	-0.0186	0.0278	0.7
0041	Delta-E	18607.9649	0.0197	0.0233	0.8
	Delta-U	-48.3876	-0.0144	0.0466	0.3
	Length	19188.0554			
(V242 Day215 (B) 13:11 0081033B.215)					
0081	Delta-N	-805.4748	-0.0040	0.0237	0.2
0033	Delta-E	-22053.9106	0.0054	0.0186	0.3
	Delta-U	15.0079	-0.0487	0.0378	1.3
	Length	22068.6200			
(V243 Day215 (B) 13:11 0081042B.215)					
0081	Delta-N	-1566.8305	-0.0061	0.0198	0.3
0042	Delta-E	-3785.6977	0.0001	0.0165	0.0
	Delta-U	-8.7054	-0.0573	0.0294	1.9
	Length	4097.1381			
(V8 Day213 (B) 14:04 0082007B.213)					
0082	Delta-N	-15640.3944	0.0193	0.0233	0.8
0007	Delta-E	15913.8046	-0.0022	0.0178	0.1
	Delta-U	15.2786	0.0203	0.0375	0.5
	Length	22313.0308			
(V6 Day213 (B) 14:06 0082008B.213)					
0082	Delta-N	132.2800	0.0067	0.0288	0.2
0008	Delta-E	15816.9387	0.0028	0.0212	0.1
	Delta-U	4.7271	0.0134	0.0489	0.3
	Length	15817.4926			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V7 Day213(B) 14:04 0082017B.213)					
0082	Delta-N	-326.7975	-0.0008	0.0311	0.0
0017	Delta-E	31640.7783	0.0101	0.0234	0.4
	Delta-U	-76.8242	0.0264	0.0535	0.5
	Length	31642.5591			
(V9 Day213(A) 12:53 0082124A.213)					
0082	Delta-N	-15722.5099	-0.0024	0.0220	0.1
0124	Delta-E	88.5295	0.0051	0.0176	0.3
	Delta-U	-25.4564	-0.0252	0.0342	0.7
	Length	15722.7798			
(V4 Day213(A) 12:53 0116082A.213)					
0116	Delta-N	-247.6093	0.0070	0.0220	0.3
0082	Delta-E	15822.2423	0.0017	0.0176	0.1
	Delta-U	0.9707	0.0049	0.0342	0.1
	Length	15824.1797			
(V5 Day213(A) 12:53 0116124A.213)					
0116	Delta-N	-15970.0529	0.0027	0.0232	0.1
0124	Delta-E	15921.7852	0.0061	0.0182	0.3
	Delta-U	-24.7472	-0.0261	0.0367	0.7
	Length	22550.9744			
(V97 Day214(A) 13:08 0117002A.214)					
0117	Delta-N	15939.9862	0.0045	0.0238	0.2
0002	Delta-E	16064.9939	0.0022	0.0190	0.1
	Delta-U	44.6526	0.1200	0.0382	3.1 *
	Length	22631.1551			
(V98 Day214(A) 13:08 0117118A.214)					
0117	Delta-N	15984.1669	0.0086	0.0217	0.4
0118	Delta-E	195.7706	-0.0051	0.0177	0.3
	Delta-U	83.0438	0.1948	0.0337	5.8 *
	Length	15985.5814			
(V99 Day214(A) 13:07 0118002A.214)					
0118	Delta-N	-44.2876	0.0005	0.0237	0.0
0002	Delta-E	15869.2232	0.0041	0.0192	0.2
	Delta-U	-38.2768	-0.0720	0.0380	1.9
	Length	15869.3312			
(V100 Day214(G) 17:30 0118003G.214)					
0118	Delta-N	16062.4143	-0.0263	0.0350	0.8
0003	Delta-E	15827.5217	-0.0379	0.0297	1.3
	Delta-U	7.2501	0.1685	0.0623	2.7
	Length	22550.2028			
(V102 Day214(G) 17:30 0118011G.214)					
0118	Delta-N	16164.6390	0.0028	0.0277	0.1
0011	Delta-E	31677.4898	-0.0135	0.0249	0.5
	Delta-U	-173.5334	0.1310	0.0471	2.8
	Length	35563.8726			
(V101 Day214(G) 17:30 0118119G.214)					
0118	Delta-N	16232.2916	-0.0297	0.0316	0.9
0119	Delta-E	-107.2489	-0.0070	0.0278	0.3
	Delta-U	-103.7045	0.1453	0.0550	2.6
	Length	16232.9771			
(V212 Day214(H) 18:14 0120004H.214)					
0120	Delta-N	413.4940	-0.0045	0.0221	0.2
0004	Delta-E	16013.1807	-0.0029	0.0181	0.2
	Delta-U	-53.4948	-0.0833	0.0348	2.4
	Length	16018.6078			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V210 Day214(H) 18:14 O120119H.214)					
0120	Delta-N	-15414.8699	0.0176	0.0231	0.8
0119	Delta-E	107.5750	0.0050	0.0188	0.3
	Delta-U	-64.3565	-0.1212	0.0370	3.3 *
	Length	15415.3796			
(V211 Day214(H) 18:14 O120121H.214)					
0120	Delta-N	15365.5318	-0.0022	0.0214	0.1
0121	Delta-E	-106.4683	-0.0073	0.0181	0.4
	Delta-U	48.0946	-0.0476	0.0333	1.4
	Length	15365.9759			
(V214 Day214(H) 18:12 O121004H.214)					
0121	Delta-N	-14951.8833	-0.0027	0.0239	0.1
0004	Delta-E	16119.7186	0.0062	0.0191	0.3
	Delta-U	-112.6726	-0.0426	0.0387	1.1
	Length	21986.7423			
(V74 Day213(I) 19:11 O121013I.213)					
0121	Delta-N	739.6367	-0.0055	0.0284	0.2
0013	Delta-E	31900.3353	-0.0163	0.0222	0.7
	Delta-U	-93.9245	-0.0247	0.0476	0.5
	Length	31909.0469			
(V213 Day214(H) 18:12 O121119H.214)					
0121	Delta-N	-30780.3096	0.0232	0.0244	1.0
0119	Delta-E	214.1870	0.0136	0.0197	0.7
	Delta-U	-135.0998	-0.0739	0.0398	1.9
	Length	30781.3513			
(V69 Day213(I) 19:16 O122005I.213)					
0122	Delta-N	-15865.6548	0.0121	0.0274	0.4
0005	Delta-E	15720.8418	0.0055	0.0218	0.3
	Delta-U	-54.3695	0.0421	0.0455	0.9
	Length	22335.3268			
(V71 Day213(I) 19:11 O122013I.213)					
0122	Delta-N	-15787.7556	0.0044	0.0288	0.2
0013	Delta-E	31608.5548	0.0013	0.0230	0.1
	Delta-U	-87.8364	0.0719	0.0483	1.5
	Length	35332.1621			
(V70 Day213(I) 19:10 O122121I.213)					
0122	Delta-N	-16527.0558	0.0200	0.0302	0.7
0121	Delta-E	-291.7913	0.0127	0.0228	0.6
	Delta-U	5.0589	0.0925	0.0511	1.8
	Length	16529.6322			
(V68 Day213(H) 18:28 O123122H.213)					
0123	Delta-N	-16064.5037	0.0096	0.0227	0.4
0122	Delta-E	-275.4831	-0.0019	0.0188	0.1
	Delta-U	-26.1374	-0.0732	0.0360	2.0
	Length	16066.8868			
(V67 Day213(G) 17:52 O123201G.213)					
0123	Delta-N	706.7098	0.0404	0.0310	1.3
0201	Delta-E	14323.1202	-0.0064	0.0283	0.2
	Delta-U	40.3122	-0.0105	0.0534	0.2
	Length	14340.6009			
(V10 Day213(H) 18:27 O124006H.213)					
0124	Delta-N	-31653.5990	0.0085	0.0288	0.3
0006	Delta-E	15812.0103	0.0166	0.0229	0.7
	Delta-U	-32.3417	0.0511	0.0488	1.0
	Length	35383.2028			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V12 Day213 (H) 18:28 O124122H.213)					
0124	Delta-N	-31809.6314	0.0067	0.0317	0.2
0122	Delta-E	-170.1556	0.0191	0.0256	0.7
	Delta-U	-38.1428	0.0356	0.0545	0.7
	Length	31810.1094			
(V11 Day213 (H) 18:27 O124123H.213)					
0124	Delta-N	-15745.1508	0.0120	0.0318	0.4
0123	Delta-E	105.2529	0.0131	0.0245	0.5
	Delta-U	0.1049	0.1130	0.0548	2.1
	Length	15745.5025			
(V30 Day213 (F) 16:29 O015202F.213)					
0202	Delta-N	-417.7140	-0.0123	0.0237	0.5
0015	Delta-E	10655.4611	-0.0122	0.0188	0.6
	Delta-U	6.8642	-0.0268	0.0378	0.7
	Length	10663.6478			
(V34 Day213 (E) 16:01 O202024E.213)					
0202	Delta-N	224.4075	0.0364	0.0273	1.3
0024	Delta-E	26493.3496	0.0066	0.0225	0.3
	Delta-U	-55.8956	0.0165	0.0452	0.4
	Length	26494.3589			
(V35 Day213 (E) 16:01 O202080E.213)					
0202	Delta-N	-3573.1527	0.0197	0.0265	0.7
0080	Delta-E	16895.0838	0.0056	0.0220	0.3
	Delta-U	34.2502	0.0056	0.0435	0.1
	Length	17268.8289			
(V36 Day213 (G) 17:54 O202201G.213)					
0202	Delta-N	573.4919	-0.0670	0.0286	2.3
0201	Delta-E	-6768.8754	0.0046	0.0258	0.2
	Delta-U	56.1593	-0.0999	0.0486	2.1
	Length	6793.3586			
(V2 Day213 (A) 13:00 O300082A.213)					
0300	Delta-N	-398.4414	0.0206	0.0272	0.8
0082	Delta-E	44257.0542	0.0110	0.0202	0.5
	Delta-U	-29.6375	0.0131	0.0452	0.3
	Length	44258.8576			
(V1 Day213 (A) 13:00 O300116A.213)					
0300	Delta-N	-170.7859	0.0128	0.0244	0.5
0116	Delta-E	28434.5254	0.0089	0.0188	0.5
	Delta-U	-9.1408	0.0081	0.0393	0.2
	Length	28435.0398			
(V3 Day213 (A) 13:00 O300124A.213)					
0300	Delta-N	-16120.7468	0.0191	0.0276	0.7
0124	Delta-E	44376.3896	0.0156	0.0204	0.8
	Delta-U	-55.6460	-0.0135	0.0460	0.3
	Length	47213.8277			
(V85 Day214 (B) 13:58 O301001B.214)					
0301	Delta-N	31954.0134	-0.0187	0.0259	0.7
0001	Delta-E	-19571.7953	-0.0112	0.0189	0.6
	Delta-U	69.3205	-0.1007	0.0432	2.3
	Length	37471.5752			
(V86 Day214 (B) 13:58 O301009B.214)					
0301	Delta-N	31782.8603	-0.0263	0.0256	1.0
0009	Delta-E	-3876.0378	0.0045	0.0186	0.2
	Delta-U	-78.8225	-0.0491	0.0425	1.2
	Length	32018.4336			

From To	Component	Adj Value	Residual	StdErr	StdRes
(V87 Day214(B) 13:58 O301077B.214)					
0301	Delta-N	36769.6373	-0.0293	0.0255	1.2
0077	Delta-E	3251.4251	-0.0080	0.0189	0.4
	Delta-U	-83.4761	-0.0602	0.0423	1.4
	Length	36913.2085			
(V257 Day215(D) 14:22 O302035D.215)					
0302	Delta-N	-239.4164	-0.0702	0.0296	2.4
0035	Delta-E	-22049.2132	-0.0191	0.0213	0.9
	Delta-U	-54.2910	0.0943	0.0510	1.8
	Length	22050.5798			
(V258 Day215(D) 14:21 O302044D.215)					
0302	Delta-N	-43.2180	-0.0253	0.0246	1.0
0044	Delta-E	-6333.1708	-0.0067	0.0190	0.4
	Delta-U	58.1786	0.0573	0.0406	1.4
	Length	6333.5855			
(V259 Day215(E) 14:52 O302053E.215)					
0302	Delta-N	1.5762	0.0160	0.0220	0.7
0053	Delta-E	10012.2467	0.0073	0.0174	0.4
	Delta-U	13.1216	0.0113	0.0351	0.3
	Length	10012.2554			
(V260 Day215(E) 14:53 O302062E.215)					
0302	Delta-N	-1172.1665	0.0322	0.0318	1.0
0062	Delta-E	25118.8694	0.0209	0.0223	0.9
	Delta-U	-66.2965	-0.0272	0.0559	0.5
	Length	25146.2914			
(V226 Day215(G) 17:46 O304071G.215)					
0304	Delta-N	-105.8138	0.0225	0.0293	0.8
0071	Delta-E	-5378.6405	-0.0162	0.0251	0.6
	Delta-U	-41.8729	-0.1748	0.0503	3.5 *
	Length	5379.8442			
(V221 Day215(H) 18:34 O306069H.215)					
0306	Delta-N	-7399.9655	0.0052	0.0324	0.2
0069	Delta-E	-15853.0229	-0.0272	0.0242	1.1
	Delta-U	-123.8314	-0.0099	0.0557	0.2
	Length	17495.5183			
(V220 Day215(H) 18:34 O306070H.215)					
0306	Delta-N	8364.7354	-0.0279	0.0310	0.9
0070	Delta-E	-15914.9620	-0.0386	0.0239	1.6
	Delta-U	-36.6507	0.0024	0.0530	0.0
	Length	17979.3259			
(V306 Day215(M) 22:20 O307308M.215)					
0307	Delta-N	-1048.5135	-0.0090	0.0262	0.3
0308	Delta-E	2251.1418	0.0273	0.0202	1.4
	Delta-U	-5.2808	0.0566	0.0441	1.3
	Length	2483.3541			
(V322 Day216(B) 16:02 O309063B.216)					
0309	Delta-N	-14322.7028	0.0263	0.0304	0.9
0063	Delta-E	-39651.3521	0.0138	0.0221	0.6
	Delta-U	-199.0181	0.0107	0.0513	0.2
	Length	42159.3305			
(V323 Day216(B) 16:02 O309064B.216)					
0309	Delta-N	1411.5139	0.0221	0.0299	0.7
0064	Delta-E	-39795.7071	0.0080	0.0218	0.4
	Delta-U	-158.6990	-0.0024	0.0504	0.0
	Length	39821.0480			

From	Component	Adj Value	Residual	StdErr	StdRes
To					
(V320 Day216(B) 16:04 0309065B.216)					
0309	Delta-N	16809.0659	0.0303	0.0305	1.0
0065	Delta-E	-39663.4986	0.0022	0.0222	0.1
	Delta-U	-109.3831	0.0103	0.0516	0.2
	Length	43078.4143			

GPS Residual Summary (US Feet)

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(Sorted by 3D Residual Lengths)

From	To	N	E	Up	2D	3D	Length	VectID
0117	0118	0.009	-0.005	0.195	0.010	0.195	15986	98
0304	0071	0.022	-0.016	-0.175	0.028	0.177	5380	226
0118	0003	-0.026	-0.038	0.168	0.046	0.175	22550	100
0001	0117	-0.005	-0.010	-0.154	0.012	0.155	16076	94
0118	0119	-0.030	-0.007	0.145	0.030	0.148	16233	101
0118	0011	0.003	-0.013	0.131	0.014	0.132	35564	102
0120	0119	0.018	0.005	-0.121	0.018	0.123	15415	210
0202	0201	-0.067	0.005	-0.100	0.067	0.120	6793	36
0117	0002	0.005	0.002	0.120	0.005	0.120	22631	97
0302	0035	-0.070	-0.019	0.094	0.073	0.119	22051	257
0052	0062	0.022	0.010	-0.112	0.024	0.115	23295	250
0124	0123	0.012	0.013	0.113	0.018	0.114	15746	11
0009	0018	-0.055	0.030	0.093	0.063	0.113	16191	91
0011	0004	0.025	-0.009	0.107	0.027	0.111	22468	108
0301	0001	-0.019	-0.011	-0.101	0.022	0.103	37472	85
0122	0121	0.020	0.013	0.092	0.024	0.095	16530	70
0043	0302	0.014	0.006	-0.085	0.015	0.086	17224	253
0120	0004	-0.005	-0.003	-0.083	0.005	0.083	16019	212
0009	0010	-0.029	0.028	0.073	0.040	0.083	16167	92
0064	0311	0.026	-0.014	-0.076	0.030	0.082	68652	328
0052	0302	-0.018	-0.012	-0.076	0.022	0.079	18172	249
0121	0119	0.023	0.014	-0.074	0.027	0.079	30781	213
0003	0119	-0.018	-0.025	0.072	0.031	0.078	15936	209
0017	0202	-0.016	0.002	0.075	0.016	0.077	32685	23
0042	0052	-0.007	0.001	-0.076	0.007	0.076	19358	246
0042	0043	-0.012	0.003	-0.075	0.013	0.076	16428	245
0041	0040	0.032	-0.011	-0.067	0.034	0.075	18594	56
0123	0122	0.010	-0.002	-0.073	0.010	0.074	16067	68
0041	0075	-0.026	0.016	0.066	0.031	0.073	8851	256
0030	0037	-0.049	0.000	0.054	0.049	0.073	35423	150
0012	0004	0.023	0.004	0.069	0.023	0.072	15462	207
0118	0002	0.000	0.004	-0.072	0.004	0.072	15869	99
0122	0013	0.004	0.001	0.072	0.005	0.072	35332	71
0068	0067	0.046	0.017	-0.052	0.049	0.072	15803	315
0031	0030	-0.045	-0.051	0.021	0.067	0.071	15768	84
0028	0029	-0.052	-0.012	0.046	0.053	0.071	16204	122
0051	0052	-0.019	-0.005	-0.067	0.020	0.070	15933	239
0039	0031	-0.014	0.031	0.061	0.034	0.069	24294	63
0011	0029	0.033	0.014	-0.059	0.036	0.069	31732	112
0052	0053	0.002	0.000	-0.069	0.002	0.069	16691	248
0009	0001	0.011	-0.017	-0.066	0.020	0.069	15697	88
0072	0050	0.036	-0.011	-0.056	0.038	0.068	11120	218
0301	0077	-0.029	-0.008	-0.060	0.030	0.067	36913	87
0007	0123	0.028	-0.032	0.052	0.043	0.067	22307	17
0066	0307	0.060	-0.019	-0.023	0.063	0.067	50637	287
0017	0035	0.008	0.015	-0.064	0.017	0.066	31628	21
0065	0308	0.010	-0.027	-0.058	0.028	0.064	50112	293
0054	0310	-0.019	-0.016	0.058	0.025	0.064	65594	334
0307	0308	-0.009	0.027	0.057	0.029	0.064	2483	306
0045	0037	0.030	0.003	-0.055	0.030	0.063	22428	193
0302	0044	-0.025	-0.007	0.057	0.026	0.063	6334	258

From	To	N	E	Up	2D	3D	Length	VectID
0051	0043	-0.019	-0.008	-0.058	0.020	0.061	22514	238
0016	0202	-0.002	0.001	0.061	0.002	0.061	19035	25
0040	0030	-0.043	-0.041	-0.010	0.059	0.060	24344	61
0044	0035	-0.043	-0.010	0.039	0.044	0.059	15718	262
0043	0035	-0.048	-0.017	0.029	0.050	0.058	22504	251
0015	0022	-0.013	-0.045	-0.035	0.046	0.058	34967	33
0022	0031	-0.024	-0.027	-0.045	0.036	0.058	15797	82
0081	0042	-0.006	0.000	-0.057	0.006	0.058	4097	243
0029	0037	-0.024	-0.007	0.051	0.025	0.057	22468	133
0006	0123	0.002	0.010	0.055	0.010	0.056	22356	65
0301	0009	-0.026	0.005	-0.049	0.027	0.056	32018	86
0011	0119	-0.030	-0.007	0.045	0.031	0.055	31785	107
0124	0006	0.008	0.017	0.051	0.019	0.054	35383	10
0062	0071	0.020	0.017	-0.048	0.026	0.054	15820	265
0033	0041	-0.042	0.033	-0.011	0.053	0.054	21091	49
0058	0049	0.014	-0.007	-0.051	0.016	0.054	15868	300
0051	0075	0.007	-0.007	0.053	0.010	0.054	12676	233
0004	0013	-0.001	-0.005	-0.052	0.005	0.052	22254	216
0007	0201	0.046	-0.001	-0.023	0.046	0.051	15185	15
0057	0047	0.015	0.015	0.046	0.021	0.051	21355	284
0065	0063	-0.003	0.010	-0.049	0.011	0.051	31132	324
0065	0307	-0.026	0.043	0.008	0.050	0.051	47835	292
0032	0022	-0.025	0.027	0.035	0.036	0.050	22490	78
0049	0050	0.048	-0.011	-0.003	0.049	0.049	14986	139
0038	0046	-0.038	-0.016	-0.027	0.041	0.049	23160	137
0081	0033	-0.004	0.005	-0.049	0.007	0.049	22069	242
0038	0030	0.048	0.008	-0.008	0.048	0.049	22353	135
0039	0030	-0.048	-0.009	-0.003	0.049	0.049	19116	64
0120	0121	-0.002	-0.007	-0.048	0.008	0.048	15366	211
0013	0022	0.017	-0.036	-0.026	0.040	0.048	16028	76
0306	0070	-0.028	-0.039	0.002	0.048	0.048	17979	220
0054	0311	-0.043	-0.018	0.005	0.047	0.047	72789	335
0001	0077	-0.014	0.005	0.045	0.015	0.047	23326	95
0302	0062	0.032	0.021	-0.027	0.038	0.047	25146	260
0068	0059	0.031	0.012	-0.033	0.033	0.046	15730	314
0046	0037	0.006	-0.003	-0.046	0.007	0.046	15978	177
0017	0025	0.020	0.003	-0.042	0.020	0.046	21852	19
0018	0028	-0.030	0.000	0.035	0.030	0.046	22490	117
0063	0310	0.000	0.022	0.040	0.022	0.045	51213	338
0050	0041	0.032	-0.019	-0.024	0.038	0.045	15776	254
0038	0047	-0.039	-0.012	-0.018	0.041	0.044	16578	154
0122	0005	0.012	0.005	0.042	0.013	0.044	22335	69
0040	0031	0.011	0.023	0.036	0.025	0.044	18693	59
0015	0013	-0.014	0.001	-0.042	0.014	0.044	31587	31
0051	0041	0.033	-0.028	-0.001	0.043	0.043	21224	231
0121	0004	-0.003	0.006	-0.043	0.007	0.043	21987	214
0028	0076	-0.024	-0.008	0.035	0.025	0.043	9899	121
0064	0054	-0.039	0.008	-0.014	0.040	0.043	22615	329
0038	0037	0.003	0.007	0.042	0.007	0.043	15497	136
0035	0033	-0.040	-0.005	0.015	0.040	0.043	31341	43
0051	0050	0.002	-0.010	0.041	0.010	0.042	15945	232
0123	0201	0.040	-0.006	-0.010	0.041	0.042	14341	67
0058	0067	-0.015	0.005	0.038	0.016	0.041	15791	318
0051	0081	-0.004	0.007	0.041	0.008	0.041	9423	235
0029	0020	-0.023	0.033	0.009	0.040	0.041	15411	131
0057	0078	-0.013	0.008	0.038	0.015	0.041	10037	282

From	To	N	E	Up	2D	3D	Length	VectID
0040	0073	-0.030	0.012	0.026	0.032	0.041	9283	60
0064	0310	0.009	-0.003	0.040	0.010	0.041	61004	327
0124	0122	0.007	0.019	0.036	0.020	0.041	31810	12
0019	0029	-0.018	0.006	0.036	0.019	0.041	21660	129
0028	0027	0.022	0.000	-0.034	0.022	0.041	15330	119
0001	0118	0.002	-0.015	0.038	0.015	0.041	22445	96
0202	0024	0.036	0.007	0.017	0.037	0.041	26494	34
0076	0029	-0.031	-0.004	0.026	0.031	0.041	8659	130
0001	0002	-0.004	-0.005	-0.040	0.007	0.040	15818	93
0074	0073	-0.009	0.000	0.039	0.009	0.040	6055	57
0011	0012	-0.001	-0.019	0.034	0.019	0.039	15867	110
0058	0078	0.018	-0.004	-0.035	0.018	0.039	7883	301
0059	0058	0.021	0.002	-0.033	0.021	0.039	15551	316
0011	0013	0.015	-0.015	0.032	0.022	0.038	31587	109
0030	0020	0.028	-0.023	-0.010	0.037	0.038	21844	149
0063	0311	0.000	0.026	-0.027	0.026	0.037	58679	339
0036	0037	0.024	0.007	-0.028	0.025	0.037	15920	125
0014	0022	0.000	-0.024	-0.028	0.024	0.037	22260	77
0054	0045	0.021	0.008	-0.029	0.022	0.037	15518	302
0050	0075	0.008	-0.004	0.036	0.009	0.037	10178	255
0005	0121	0.010	0.012	0.033	0.015	0.036	16026	72
0035	0024	-0.032	-0.015	-0.006	0.035	0.036	34957	42
0057	0049	-0.012	0.015	0.030	0.019	0.036	24119	281
0053	0062	0.020	0.008	-0.028	0.022	0.036	15152	261
0017	0026	0.016	0.002	-0.031	0.016	0.035	15359	20
0070	0304	0.000	-0.010	0.034	0.010	0.035	17249	223
0077	0018	-0.033	-0.010	-0.007	0.034	0.035	10123	103
0041	0032	0.028	-0.021	-0.001	0.035	0.035	15439	53
0074	0040	0.008	-0.008	0.033	0.011	0.035	5691	58
0028	0036	0.025	0.004	-0.023	0.025	0.034	22128	123
0070	0071	-0.027	-0.018	-0.012	0.032	0.034	16267	310
0054	0063	-0.024	0.004	0.024	0.024	0.034	16262	336
0040	0039	0.018	-0.018	-0.023	0.025	0.034	14845	62
0056	0045	0.031	-0.003	-0.012	0.032	0.034	35506	295
0047	0039	-0.019	0.009	0.026	0.021	0.034	21104	172
0041	0073	0.002	0.006	-0.033	0.006	0.033	10700	54
0051	0068	0.025	0.020	0.001	0.032	0.032	35297	241
0070	0069	0.029	0.015	-0.002	0.032	0.032	15765	225
0309	0065	0.030	0.002	0.010	0.030	0.032	43078	320
0017	0016	-0.011	0.001	0.030	0.011	0.032	15101	22
0202	0015	-0.012	-0.012	-0.027	0.017	0.032	10664	30
0309	0063	0.026	0.014	0.011	0.030	0.032	42159	322
0069	0068	0.029	0.006	-0.010	0.030	0.032	16121	230
0025	0035	0.013	0.003	-0.028	0.014	0.031	22251	40
0041	0074	0.006	-0.010	-0.029	0.012	0.031	13219	55
0057	0065	-0.010	0.002	-0.030	0.010	0.031	21147	285
0079	0041	-0.019	0.020	-0.014	0.027	0.031	19188	52
0067	0057	0.010	0.012	0.026	0.016	0.030	23700	276
0010	0018	-0.014	-0.003	0.027	0.014	0.030	22487	113
0040	0072	0.026	-0.004	-0.015	0.026	0.030	9756	173
0121	0013	-0.006	-0.016	-0.025	0.017	0.030	31909	74
0033	0079	-0.018	0.012	-0.020	0.022	0.030	10426	48
0020	0010	0.024	-0.014	-0.010	0.028	0.029	22898	145
0306	0069	0.005	-0.027	-0.010	0.028	0.029	17495	221
0006	0122	0.006	0.002	-0.029	0.006	0.029	15983	66
0026	0035	0.014	0.002	-0.025	0.014	0.029	16279	39

From	To	N	E	Up	2D	3D	Length	VectID
0077	0010	-0.023	-0.007	-0.016	0.024	0.029	13213	104
0065	0047	0.005	0.012	0.026	0.013	0.029	31591	294
0030	0012	0.027	-0.006	0.007	0.027	0.028	31670	197
0009	0077	-0.002	-0.012	-0.025	0.012	0.028	8699	89
0082	0017	-0.001	0.010	0.026	0.010	0.028	31643	7
0300	0124	0.019	0.016	-0.013	0.025	0.028	47214	3
0056	0054	0.015	-0.010	0.021	0.018	0.028	31958	298
0082	0007	0.019	-0.002	0.020	0.019	0.028	22313	8
0043	0044	-0.007	-0.003	-0.027	0.008	0.028	16068	252
0073	0032	-0.015	0.019	0.014	0.024	0.028	16123	309
0032	0023	0.000	0.015	-0.024	0.015	0.028	15627	79
0049	0072	-0.001	-0.005	-0.027	0.005	0.028	11439	206
0064	0063	0.020	0.010	0.016	0.022	0.028	15735	331
0049	0040	-0.020	0.006	0.018	0.020	0.027	13119	156
0046	0045	-0.026	-0.008	0.001	0.027	0.027	15126	178
0066	0308	-0.008	-0.026	-0.003	0.027	0.027	53108	288
0034	0033	-0.015	0.008	0.021	0.017	0.027	15676	45
0116	0124	0.003	0.006	-0.026	0.007	0.027	22551	5
0300	0082	0.021	0.011	0.013	0.023	0.027	44259	2
0007	0017	-0.022	0.014	-0.001	0.027	0.027	21951	14
0057	0056	0.025	-0.007	0.000	0.026	0.026	13426	279
0015	0014	-0.008	-0.015	-0.020	0.017	0.026	15542	32
0082	0124	-0.002	0.005	-0.025	0.006	0.026	15723	9
0017	0015	-0.019	0.000	0.017	0.019	0.026	31410	24
0031	0032	-0.006	0.023	0.009	0.024	0.026	15972	307
0023	0031	-0.011	-0.017	-0.016	0.020	0.026	21724	83
0065	0056	0.025	-0.002	-0.003	0.025	0.025	15867	291
0056	0047	-0.013	0.015	0.016	0.020	0.025	15764	297
0029	0038	-0.020	-0.014	-0.004	0.024	0.024	15185	134
0034	0024	-0.011	-0.011	-0.018	0.016	0.024	22685	44
0029	0030	0.021	-0.004	-0.011	0.022	0.024	15519	132
0061	0071	0.011	0.009	-0.019	0.014	0.024	22890	267
0309	0064	0.022	0.008	-0.002	0.023	0.024	39821	323
0033	0032	-0.021	0.007	-0.008	0.022	0.023	16145	47
0055	0045	0.016	0.002	-0.017	0.016	0.023	22382	304
0020	0011	0.004	-0.019	-0.011	0.020	0.022	16324	184
0068	0058	-0.007	-0.010	0.019	0.012	0.022	22310	271
0036	0045	-0.008	0.004	0.020	0.009	0.022	15919	126
0056	0055	0.020	-0.007	-0.005	0.021	0.022	16074	296
0012	0013	0.021	0.001	0.002	0.021	0.022	15730	208
0068	0060	-0.017	-0.001	0.013	0.017	0.021	22339	270
0202	0080	0.020	0.006	0.006	0.020	0.021	17269	35
0016	0015	-0.010	0.000	-0.019	0.010	0.021	16310	26
0036	0046	0.014	0.010	0.012	0.017	0.021	22074	127
0011	0003	-0.009	-0.002	-0.019	0.009	0.021	15851	106
0062	0303	0.009	0.011	-0.015	0.014	0.021	40900	264
0302	0053	0.016	0.007	0.011	0.018	0.021	10012	259
0035	0034	-0.021	-0.002	0.002	0.021	0.021	15701	41
0062	0061	0.009	0.009	-0.016	0.013	0.021	15385	263
0011	0010	0.001	-0.002	0.020	0.002	0.020	16006	105
0071	0303	-0.009	-0.010	0.015	0.014	0.020	36748	268
0028	0019	-0.016	0.008	0.010	0.017	0.020	14278	144
0030	0021	0.017	-0.010	-0.003	0.020	0.020	15120	198
0018	0036	-0.012	0.009	0.013	0.015	0.020	31532	118
0004	0119	0.008	0.007	-0.016	0.011	0.020	22439	215
0066	0065	-0.007	0.013	-0.012	0.015	0.020	15855	289

From	To	N	E	Up	2D	3D	Length	VectID
0022	0023	-0.006	-0.018	0.005	0.019	0.019	15152	81
0020	0012	-0.003	0.018	0.006	0.018	0.019	23057	194
0065	0064	-0.012	0.000	-0.014	0.012	0.019	15398	326
0051	0042	-0.009	0.007	-0.014	0.012	0.018	13080	236
0020	0021	-0.010	0.014	0.005	0.017	0.018	15659	195
0070	0305	-0.012	-0.008	-0.010	0.015	0.018	42812	311
0300	0116	0.013	0.009	0.008	0.016	0.018	28435	1
0015	0024	0.000	0.013	0.012	0.013	0.017	15851	27
0047	0048	-0.007	0.005	0.015	0.009	0.017	16308	158
0015	0080	-0.012	0.010	0.006	0.016	0.017	6992	28
0071	0305	0.012	0.008	0.009	0.014	0.017	37432	312
0007	0008	-0.014	0.006	-0.003	0.015	0.016	15773	13
0082	0008	0.007	0.003	0.013	0.007	0.015	15817	6
0049	0039	-0.008	0.007	0.011	0.011	0.015	20784	203
0067	0066	0.010	0.004	0.010	0.011	0.015	15752	277
0048	0039	-0.006	0.010	0.009	0.011	0.015	13114	191
0079	0032	-0.001	-0.011	-0.009	0.011	0.015	7063	51
0047	0046	0.001	0.000	-0.014	0.001	0.014	15725	157
0057	0066	-0.002	-0.005	-0.013	0.006	0.014	15827	283
0067	0065	0.001	0.012	-0.007	0.012	0.014	31605	278
0013	0014	0.007	-0.009	-0.009	0.011	0.014	16046	75
0018	0027	-0.013	0.001	-0.004	0.013	0.014	15946	116
0052	0043	0.001	-0.002	0.014	0.002	0.014	13687	247
0024	0080	-0.005	-0.010	-0.007	0.012	0.014	10323	50
0008	0017	-0.009	0.008	0.006	0.012	0.013	15831	18
0054	0055	0.003	0.006	-0.012	0.007	0.013	15889	303
0019	0076	-0.003	0.003	-0.012	0.005	0.013	13211	128
0069	0051	0.006	-0.009	0.007	0.011	0.013	31464	228
0051	0033	-0.003	0.011	0.005	0.012	0.013	31357	234
0031	0073	0.008	0.006	-0.007	0.010	0.013	15373	308
0033	0024	0.006	-0.010	-0.003	0.012	0.012	15825	46
0047	0049	-0.012	0.001	0.003	0.012	0.012	32681	176
0059	0067	0.005	0.008	0.007	0.010	0.012	22149	317
0027	0036	0.006	0.002	0.010	0.006	0.012	15599	124
0005	0013	0.002	-0.007	0.009	0.007	0.011	15888	73
0078	0049	0.007	0.005	0.006	0.009	0.011	19700	305
0021	0012	0.008	0.004	0.003	0.009	0.010	16555	200
0048	0049	-0.003	-0.003	0.009	0.004	0.009	16372	202
0069	0060	0.004	-0.005	-0.007	0.006	0.009	15618	229
0116	0082	0.007	0.002	0.005	0.007	0.009	15824	4
0051	0060	0.005	0.006	-0.001	0.008	0.008	15847	240
0042	0033	0.001	0.004	0.007	0.004	0.008	18284	244
0026	0025	0.001	0.001	-0.004	0.001	0.004	15778	38

Adjusted Azimuths and Horizontal Distances (US Feet)

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(Relative Confidence of Azimuth is in Seconds)

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0001	0002	1-33-35.20	15815.6386 15817.4316	0.40	0.0382	2.4177
0001	0077	79-35-41.44	23323.2472 23325.7593	0.34	0.0298	1.2787
0001	0117	271-09-45.78	16074.6127 16076.4034	0.48	0.0307	1.9099
0001	0118	316-33-57.35	22442.2804 22444.8415	0.28	0.0321	1.4294
0003	0119	272-12-36.56	15933.8169 15935.6599	0.61	0.0411	2.5785
0004	0013	46-45-43.46	22251.7361 22254.2695	0.32	0.0325	1.4585
0004	0119	226-44-20.60	22436.8663 22439.4050	0.31	0.0323	1.4404
0005	0013	91-19-06.15	15886.1357 15887.9571	0.59	0.0355	2.2320
0005	0121	269-14-02.65	16024.4675 16026.3317	0.59	0.0362	2.2575
0006	0122	271-02-21.68	15981.0941 15982.9502	0.60	0.0363	2.2705
0006	0123	316-57-51.48	22353.2491 22355.8367	0.36	0.0408	1.8240
0007	0008	1-14-50.16	15771.2085 15772.9886	0.43	0.0428	2.7146
0007	0017	47-21-44.70	21948.5798 21951.0242	0.34	0.0346	1.5782
0007	0123	226-24-14.43	22304.8794 22307.4418	0.38	0.0398	1.7847
0007	0201	186-52-37.67	15183.1384 15184.8987	0.60	0.0499	3.2862
0008	0017	93-15-39.52	15828.8719 15830.6052	0.56	0.0333	2.1022
0009	0001	272-08-01.94	15694.9414 15696.6278	0.49	0.0288	1.8357
0009	0010	1-48-34.71	16165.1517 16166.8580	0.40	0.0415	2.5694
0009	0018	89-51-28.32	16188.6880 16190.4253	0.54	0.0315	1.9440
0009	0077	56-31-51.84	8697.8834 8698.7879	0.85	0.0307	3.5241
0010	0018	135-47-26.26	22484.6643 22487.1189	0.31	0.0364	1.6168
0011	0003	271-13-44.44	15848.7031 15850.5188	0.63	0.0419	2.6423
0011	0004	316-37-45.19	22465.7293 22468.2465	0.30	0.0346	1.5386
0011	0010	181-44-59.38	16004.3261 16006.0714	0.38	0.0374	2.3354
0011	0012	0-05-31.29	15864.4124 15866.2116	0.36	0.0357	2.2479

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0011	0013	1-25-14.97	31583.7061 31587.2623	0.19	0.0377	1.1925
0011	0029	90-47-58.42	31728.4771 31731.9296	0.24	0.0293	0.9234
0011	0119	271-43-15.23	31781.3550 31784.9050	0.24	0.0311	0.9773
0012	0004	271-43-44.97	15460.1157 15461.8892	0.55	0.0316	2.0469
0012	0013	2-45-40.20	15727.8633 15729.6754	0.40	0.0394	2.5040
0013	0014	2-38-41.38	16044.1279 16045.9795	0.51	0.0483	3.0110
0013	0022	90-32-39.36	16026.0246 16027.8484	0.54	0.0342	2.1315
0014	0022	136-37-41.15	22257.5506 22260.1081	0.41	0.0469	2.1080
0015	0013	182-21-07.11	31583.5437 31587.1678	0.22	0.0424	1.3426
0015	0014	182-02-58.63	15539.8418 15541.6406	0.55	0.0507	3.2603
0015	0022	155-05-05.08	34963.1225 34967.1167	0.22	0.0432	1.2361
0015	0024	89-13-24.99	15849.1718 15850.9749	0.47	0.0294	1.8532
0015	0080	118-22-17.31	6991.2976 6992.1082	1.15	0.0356	5.0900
0016	0015	180-55-37.85	16307.9846 16309.8414	0.40	0.0403	2.4702
0016	0202	214-56-53.96	19033.3377 19035.4997	0.40	0.0386	2.0270
0017	0015	181-02-58.42	31406.7555 31410.2611	0.19	0.0357	1.1379
0017	0016	181-10-54.28	15098.8484 15100.5151	0.44	0.0408	2.7031
0017	0025	135-13-09.25	21849.9314 21852.3190	0.35	0.0396	1.8114
0017	0026	89-00-09.10	15357.8443 15359.4981	0.56	0.0305	1.9879
0017	0035	90-31-52.10	31624.3393 31627.7317	0.23	0.0266	0.8420
0017	0202	200-04-07.48	32681.0140 32684.6530	0.20	0.0363	1.1102
0018	0027	89-28-16.11	15944.5128 15946.3013	0.49	0.0316	1.9812
0018	0028	46-31-43.26	22487.0780 22489.5672	0.30	0.0314	1.3969
0018	0036	91-05-52.61	31528.3812 31531.9323	0.24	0.0300	0.9509
0019	0029	42-00-08.67	21657.5720 21659.8737	0.37	0.0393	1.8144
0019	0076	48-26-07.69	13209.7000 13211.1015	0.61	0.0374	2.8319
0020	0010	227-13-26.07	22894.7447 22897.2776	0.32	0.0342	1.4917

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0020	0011	271-34-25.03	16322.5026 16324.3354	0.43	0.0272	1.6637
0020	0012	315-02-17.69	23054.1590 23056.8101	0.27	0.0308	1.3378
0020	0021	0-54-36.94	15657.4637 15659.2279	0.40	0.0379	2.4232
0021	0012	272-16-30.89	16552.6568 16554.5388	0.50	0.0310	1.8703
0022	0023	3-03-58.68	15149.7858 15151.5416	0.47	0.0442	2.9203
0022	0031	92-12-18.52	15794.8528 15796.6549	0.52	0.0312	1.9753
0023	0031	136-25-24.37	21720.9725 21723.5063	0.39	0.0421	1.9404
0024	0080	249-57-33.39	10321.1289 10322.3132	0.78	0.0332	3.2147
0025	0035	46-51-00.84	22248.7357 22251.1516	0.36	0.0355	1.5960
0026	0025	179-52-16.05	15776.6337 15778.3525	0.42	0.0421	2.6708
0026	0035	91-58-24.25	16277.1171 16278.8587	0.52	0.0304	1.8670
0027	0036	92-45-39.69	15596.8648 15598.6415	0.50	0.0316	2.0251
0028	0019	270-25-31.79	14276.1836 14277.7239	0.59	0.0329	2.3072
0028	0027	181-24-12.91	15328.3434 15330.0591	0.42	0.0373	2.4340
0028	0029	0-45-58.05	16201.5706 16203.3332	0.38	0.0360	2.2201
0028	0036	136-35-47.30	22125.7188 22128.2066	0.30	0.0333	1.5031
0028	0076	333-39-25.62	9898.0342 9899.1090	0.72	0.0394	3.9764
0029	0020	269-58-46.61	15409.0418 15410.7444	0.46	0.0274	1.7811
0029	0030	359-50-24.61	15516.7664 15518.4936	0.34	0.0313	2.0161
0029	0037	136-44-59.58	22464.4438 22466.9501	0.28	0.0314	1.3986
0029	0038	93-16-47.66	15182.7125 15184.3973	0.44	0.0275	1.8087
0030	0012	271-25-49.21	31666.4895 31670.1525	0.23	0.0271	0.8570
0030	0020	224-42-35.38	21841.3552 21843.8602	0.27	0.0282	1.2910
0030	0021	270-30-18.76	15117.6031 15119.3174	0.52	0.0300	1.9860
0030	0037	154-09-51.01	35419.4216 35423.5234	0.17	0.0336	0.9492
0031	0030	183-18-25.13	15766.3195 15768.1359	0.43	0.0426	2.7035
0031	0032	2-20-08.21	15970.3737 15972.2335	0.36	0.0340	2.1295

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0031	0073	64-12-39.36	15370.9456 15372.6991	0.47	0.0304	1.9768
0032	0022	226-57-16.24	22487.3079 22489.9085	0.34	0.0353	1.5683
0032	0023	269-11-19.05	15625.1770 15627.0232	0.60	0.0363	2.3208
0033	0024	271-35-24.19	15823.6119 15825.3901	0.51	0.0312	1.9695
0033	0032	181-46-56.04	16143.3040 16145.1622	0.41	0.0387	2.3979
0033	0041	135-05-26.53	21089.1812 21091.5595	0.30	0.0320	1.5160
0033	0079	200-09-41.60	10424.7492 10425.9323	0.79	0.0440	4.2202
0034	0024	227-55-04.76	22682.5270 22685.0320	0.38	0.0394	1.7372
0034	0033	183-43-14.84	15673.7981 15675.5266	0.46	0.0432	2.7555
0035	0024	207-53-24.78	34953.5859 34957.4204	0.20	0.0361	1.0329
0035	0033	180-58-28.64	31337.1784 31340.6111	0.18	0.0346	1.1040
0035	0034	178-13-58.54	15699.3508 15701.0387	0.44	0.0418	2.6629
0036	0037	1-27-36.65	15917.9241 15919.7589	0.41	0.0367	2.3059
0036	0045	91-01-34.38	15917.6489 15919.4820	0.49	0.0324	2.0340
0036	0046	47-46-33.41	22071.7814 22074.2875	0.33	0.0345	1.5629
0038	0030	317-08-49.66	22350.7171 22353.2911	0.27	0.0310	1.3848
0038	0037	179-07-59.12	15495.5292 15497.3184	0.37	0.0330	2.1317
0038	0046	135-42-00.02	23157.3902 23160.0242	0.28	0.0321	1.3881
0038	0047	92-57-21.53	16576.5451 16578.4557	0.42	0.0282	1.6994
0039	0030	271-02-29.70	19113.1798 19115.3182	0.47	0.0323	1.6918
0039	0031	311-28-24.83	24291.2984 24294.0099	0.33	0.0381	1.5705
0040	0030	233-28-05.97	24340.4404 24343.1571	0.35	0.0366	1.5055
0040	0031	273-50-16.04	18690.6455 18692.7259	0.42	0.0304	1.6257
0040	0039	181-43-49.23	14843.2721 14844.8766	0.43	0.0390	2.6304
0040	0072	28-07-17.19	9754.8278 9755.8749	0.81	0.0420	4.3095
0040	0073	328-47-38.80	9281.1555 9282.1814	0.70	0.0361	3.8870
0041	0032	265-32-35.51	15437.4271 15439.2120	0.48	0.0295	1.9077

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0041	0040	171-56-19.05	18591.4241 18593.4802	0.31	0.0355	1.9088
0041	0073	191-52-31.38	10698.4097 10699.6220	0.57	0.0361	3.3780
0041	0074	165-06-45.78	13216.2721 13217.7244	0.53	0.0426	3.2248
0041	0075	62-16-46.02	8849.6778 8850.6611	0.90	0.0342	3.8669
0042	0033	273-46-08.28	18282.0462 18284.0827	0.38	0.0267	1.4595
0042	0043	352-29-59.36	16426.1890 16427.9984	0.35	0.0356	2.1688
0042	0052	36-31-55.63	19356.1789 19358.3232	0.35	0.0337	1.7393
0043	0035	316-13-49.82	22501.1608 22503.5943	0.29	0.0339	1.5070
0043	0044	0-31-55.61	16066.2811 16068.0579	0.40	0.0403	2.5084
0043	0302	22-06-20.47	17221.9013 17223.7813	0.34	0.0327	1.8967
0044	0035	270-40-03.79	15715.6508 15717.3649	0.57	0.0324	2.0646
0045	0037	316-14-37.31	22425.7376 22428.3382	0.30	0.0329	1.4653
0046	0037	273-52-32.51	15975.5635 15977.3894	0.43	0.0291	1.8218
0046	0045	181-37-39.13	15124.1180 15125.8464	0.40	0.0333	2.2012
0047	0039	323-10-55.85	21101.5725 21103.9369	0.29	0.0327	1.5504
0047	0046	181-23-18.79	15723.3641 15725.1595	0.37	0.0340	2.1611
0047	0048	1-35-18.91	16306.3419 16308.2448	0.39	0.0378	2.3205
0047	0049	1-33-14.05	32676.8655 32680.6289	0.17	0.0329	1.0079
0048	0039	272-35-27.37	13111.0501 13112.5315	0.63	0.0321	2.4450
0048	0049	1-31-09.68	16370.5296 16372.4296	0.38	0.0377	2.3029
0049	0039	220-37-40.91	20781.3833 20783.6986	0.31	0.0311	1.4960
0049	0040	265-54-35.31	13116.9139 13118.3711	0.57	0.0289	2.1997
0049	0050	359-33-51.45	14984.2458 14985.9507	0.45	0.0434	2.8987
0049	0072	312-06-04.29	11436.7668 11438.0325	0.74	0.0411	3.5954
0050	0041	279-04-33.86	15774.2011 15775.9865	0.45	0.0290	1.8387
0050	0075	310-27-55.28	10177.1121 10178.2415	0.76	0.0373	3.6617
0051	0033	272-44-53.84	31353.3916 31356.8480	0.20	0.0244	0.7778

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0051	0041	230-43-46.40	21221.0749 21223.4280	0.29	0.0282	1.3297
0051	0042	271-19-17.11	13078.3015 13079.7340	0.48	0.0244	1.8693
0051	0043	317-27-48.24	22511.1656 22513.6201	0.26	0.0303	1.3456
0051	0050	183-03-47.00	15943.6409 15945.4073	0.37	0.0351	2.1997
0051	0052	354-24-25.31	15930.5799 15932.3275	0.34	0.0335	2.1050
0051	0060	91-15-32.66	15844.5816 15846.3482	0.65	0.0374	2.3605
0051	0068	118-07-31.23	35292.4013 35296.3688	0.23	0.0348	0.9871
0051	0075	222-41-37.13	12675.0575 12676.4349	0.59	0.0357	2.8158
0051	0081	280-52-05.15	9421.8319 9422.8648	0.75	0.0283	3.0002
0052	0043	273-04-05.21	13685.9327 13687.4415	0.49	0.0257	1.8814
0052	0053	9-44-17.45	16688.8433 16690.6822	0.41	0.0427	2.5561
0052	0062	50-11-55.08	23292.9027 23295.4341	0.36	0.0370	1.5879
0052	0302	336-42-18.24	18169.6172 18171.6124	0.31	0.0339	1.8660
0053	0062	95-49-34.01	15150.6031 15152.2381	0.59	0.0336	2.2156
0054	0045	271-58-42.06	15515.8315 15517.6051	0.45	0.0280	1.8029
0054	0055	2-52-19.25	15887.3589 15889.1662	0.41	0.0379	2.3870
0054	0063	90-43-12.54	16259.9585 16261.7810	0.43	0.0271	1.6682
0054	0310	115-01-32.28	65586.5398 65593.8595	0.15	0.0418	0.6380
0054	0311	117-10-33.51	72781.2509 72789.3554	0.15	0.0462	0.6348
0055	0045	226-45-28.24	22379.4227 22382.0033	0.33	0.0350	1.5643
0056	0045	207-48-30.18	35501.7989 35505.9108	0.18	0.0338	0.9514
0056	0047	267-56-44.19	15761.7189 15763.5414	0.46	0.0298	1.8931
0056	0054	181-53-34.86	31954.8677 31958.5191	0.19	0.0354	1.1067
0056	0055	180-55-30.99	16072.1204 16073.9715	0.43	0.0409	2.5449
0057	0047	229-05-19.84	21352.4430 21354.9389	0.31	0.0306	1.4345
0057	0049	320-46-25.13	24115.7961 24118.6000	0.28	0.0352	1.4590
0057	0056	181-38-36.62	13423.9511 13425.5197	0.46	0.0351	2.6171

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0057	0065	133-03-59.92	21144.2732 21146.7634	0.27	0.0282	1.3334
0057	0066	84-52-57.87	15824.8838 15826.7730	0.48	0.0290	1.8344
0057	0078	13-19-42.17	10035.4675 10036.6430	0.84	0.0465	4.6289
0058	0049	274-26-45.66	15865.8703 15867.6823	0.56	0.0359	2.2610
0058	0067	91-05-38.76	15789.3703 15791.1834	0.48	0.0293	1.8556
0058	0078	167-12-11.13	7882.0930 7883.0002	1.08	0.0481	6.1071
0059	0058	181-10-00.04	15549.6525 15551.4285	0.42	0.0423	2.7224
0059	0067	135-41-29.67	22146.6455 22149.1928	0.33	0.0385	1.7402
0061	0071	45-15-39.36	22888.0258 22890.5124	0.40	0.0432	1.8873
0062	0061	181-42-03.75	15383.7001 15385.3671	0.49	0.0485	3.1513
0062	0071	87-20-32.12	15818.1739 15819.8623	0.53	0.0306	1.9326
0062	0303	23-36-28.19	40895.7116 40899.9449	0.23	0.0534	1.3048
0063	0310	122-32-07.89	51207.0388 51212.7291	0.19	0.0428	0.8358
0063	0311	124-16-04.72	58672.9623 58679.4686	0.18	0.0471	0.8027
0064	0054	226-37-54.71	22612.6691 22615.2359	0.30	0.0312	1.3811
0064	0063	180-39-16.69	15733.1357 15734.9119	0.36	0.0352	2.2349
0064	0310	135-11-13.45	60997.5889 61004.4588	0.15	0.0463	0.7584
0064	0311	135-16-18.25	68644.6522 68652.3686	0.15	0.0512	0.7454
0065	0047	270-49-30.48	31587.0301 31590.7097	0.23	0.0284	0.8982
0065	0056	273-41-09.24	15864.9838 15866.8322	0.45	0.0288	1.8122
0065	0063	181-09-28.68	31128.2428 31131.8089	0.20	0.0381	1.2239
0065	0064	181-40-20.30	15396.3345 15398.1189	0.39	0.0372	2.4169
0065	0307	92-03-57.29	47829.1975 47834.8406	0.23	0.0410	0.8568
0065	0308	93-13-26.15	50106.6159 50112.5200	0.24	0.0434	0.8671
0066	0065	181-08-14.23	15852.9498 15854.8382	0.37	0.0362	2.2858
0066	0307	110-18-35.79	50631.2690 50637.3265	0.23	0.0455	0.8990
0066	0308	110-34-54.50	53102.1076 53108.4526	0.22	0.0474	0.8925

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence Azi Dist PPM
0067	0057	223-38-21.36	23697.6709 23700.4409	0.28 0.0310 1.3095
0067	0065	181-38-40.73	31601.3373 31605.0242	0.19 0.0354 1.1188
0067	0066	182-09-19.20	15749.6346 15751.4967	0.41 0.0401 2.5454
0068	0058	225-59-37.97	22307.3282 22309.8997	0.37 0.0375 1.6793
0068	0059	270-10-39.23	15728.3640 15730.1794	0.59 0.0334 2.1254
0068	0060	316-49-20.05	22336.7895 22339.3707	0.43 0.0493 2.2062
0068	0067	180-56-13.25	15801.2887 15803.1236	0.40 0.0410 2.5926
0069	0051	270-56-58.48	31460.7531 31464.2620	0.27 0.0320 1.0160
0069	0060	270-38-08.03	15616.6373 15618.4280	0.69 0.0380 2.4357
0069	0068	181-10-41.19	16118.9325 16120.7973	0.44 0.0466 2.8904
0070	0069	181-00-52.37	15763.0175 15764.8423	0.50 0.0496 3.1452
0070	0071	1-26-17.43	16264.6245 16266.4444	0.39 0.0391 2.4023
0070	0304	19-36-24.91	17246.4538 17248.4003	0.54 0.0496 2.8766
0070	0305	61-26-35.86	42806.9331 42811.7085	0.24 0.0417 0.9753
0071	0303	0-53-56.46	36744.1065 36747.9215	0.23 0.0557 1.5171
0071	0305	83-33-05.93	37427.8050 37431.7988	0.28 0.0378 1.0108
0072	0050	48-50-57.90	11118.0480 11119.2709	0.84 0.0426 3.8303
0073	0032	305-06-03.32	16120.9340 16122.7976	0.43 0.0323 2.0010
0074	0040	187-57-50.71	5689.9471 5690.5565	1.22 0.0421 7.4052
0074	0073	292-22-02.29	6052.4251 6053.0899	1.43 0.0360 5.9484
0076	0029	32-09-36.61	8658.4819 8659.4079	0.88 0.0395 4.5622
0077	0010	329-18-01.49	13211.9100 13213.3081	0.51 0.0396 2.9973
0077	0018	118-02-02.97	10120.4519 10121.5412	0.80 0.0352 3.4735
0078	0049	296-54-51.51	19697.5250 19699.7956	0.50 0.0438 2.2259
0079	0032	154-02-33.83	7061.9296 7062.7512	1.20 0.0462 6.5393
0079	0041	105-34-13.60	19185.8578 19188.0452	0.47 0.0389 2.0279
0081	0033	269-17-26.82	22066.1795 22068.6394	0.34 0.0293 1.3284

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0081	0042	248-53-55.60	4096.6825 4097.1362	1.72	0.0289	7.0534
0082	0007	136-06-09.22	22310.5356 22313.0478	0.31	0.0347	1.5553
0082	0008	91-07-11.47	15815.7632 15817.5146	0.58	0.0336	2.1258
0082	0017	92-11-27.09	31639.1113 31642.5659	0.26	0.0305	0.9635
0082	0124	181-16-34.72	15721.0363 15722.7894	0.37	0.0356	2.2615
0116	0082	92-32-08.21	15822.4585 15824.2037	0.50	0.0302	1.9086
0116	0124	136-43-32.68	22548.4951 22551.0047	0.31	0.0357	1.5849
0117	0002	46-49-23.92	22628.5485 22631.1175	0.34	0.0360	1.5903
0117	0118	2-18-04.54	15983.5277 15985.3550	0.39	0.0374	2.3426
0118	0002	91-45-32.16	15867.4801 15869.3240	0.51	0.0318	2.0066
0118	0003	46-10-37.30	22547.5734 22550.2282	0.45	0.0472	2.0919
0118	0011	64-33-51.68	35559.5931 35563.6391	0.23	0.0349	0.9822
0118	0119	1-13-13.81	16230.8411 16232.7073	0.47	0.0432	2.6597
0120	0004	90-07-13.58	16016.7294 16018.5635	0.48	0.0305	1.9068
0120	0119	181-11-59.13	15413.5275 15415.2894	0.42	0.0383	2.4866
0120	0121	1-12-09.36	15364.1104 15365.9033	0.41	0.0369	2.4012
0121	0004	134-26-50.70	21984.0031 21986.5430	0.29	0.0318	1.4469
0121	0013	90-16-18.14	31905.3248 31909.0223	0.24	0.0295	0.9260
0121	0119	181-12-04.24	30777.6379 30781.1889	0.20	0.0366	1.1893
0122	0005	136-51-42.63	22332.7411 22335.3200	0.38	0.0424	1.8999
0122	0013	118-08-25.03	35328.1059 35332.1698	0.22	0.0340	0.9637
0122	0121	182-36-38.17	16527.7203 16529.6510	0.42	0.0424	2.5646
0123	0122	182-34-51.16	16065.0410 16066.8967	0.41	0.0393	2.4437
0123	0201	88-46-25.60	14338.8882 14340.5528	0.74	0.0455	3.1732
0124	0006	155-03-18.47	35379.2016 35383.2534	0.22	0.0455	1.2850
0124	0122	181-54-18.66	31806.5156 31810.1504	0.22	0.0422	1.3264
0124	0123	181-12-56.51	15743.7316 15745.5232	0.44	0.0416	2.6426

From	To	Grid Azimuth	Grid Dist Grnd Dist	95% RelConfidence		
				Azi	Dist	PPM
0202	0015	93-47-24.53	10662.4374 10663.6607	0.66	0.0275	2.5826
0202	0024	91-03-35.83	26491.3669 26494.3727	0.29	0.0309	1.1659
0202	0080	103-29-12.38	17266.8098 17268.8071	0.49	0.0347	2.0119
0202	0201	276-23-16.59	6792.3416 6793.1283	1.54	0.0449	6.6126
0300	0082	92-13-37.00	44254.0635 44258.9258	0.18	0.0295	0.6665
0300	0116	92-03-18.61	28431.9623 28435.0839	0.29	0.0315	1.1068
0300	0124	111-40-32.99	47208.6685 47213.9026	0.16	0.0311	0.6583
0301	0001	330-01-21.12	37467.4855 37471.4882	0.17	0.0369	0.9847
0301	0009	354-33-24.47	32015.1315 32018.4323	0.18	0.0379	1.1852
0301	0077	6-33-47.57	36909.4076 36913.2249	0.16	0.0378	1.0242
0302	0035	270-45-39.19	22048.2009 22050.5740	0.37	0.0296	1.3418
0302	0044	270-59-31.57	6332.6225 6333.3196	1.34	0.0314	4.9541
0302	0053	91-22-26.98	10011.1680 10012.2595	0.82	0.0308	3.0802
0302	0062	94-03-18.09	25143.5766 25146.2798	0.35	0.0325	1.2935
0304	0071	270-08-20.39	5379.1141 5379.6952	1.99	0.0448	8.3273
0306	0069	246-13-01.18	17493.1101 17495.1579	0.53	0.0367	2.0995
0306	0070	298-57-55.50	17977.2096 17979.3308	0.55	0.0432	2.4010
0307	0308	116-08-02.34	2483.0578 2483.3527	4.07	0.0430	17.3186
0309	0063	251-19-09.95	42154.2336 42159.1065	0.20	0.0325	0.7709
0309	0064	273-12-40.74	39816.2710 39820.9286	0.21	0.0308	0.7742
0309	0065	294-08-48.34	43073.3245 43078.4331	0.17	0.0306	0.7100

Convergence Angles and Grid Factors at Stations

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(Grid Azimuth = Geodetic Azimuth - Convergence)

(Elevation Factor Includes a Geoid Height Correction at Each Station)

Station	Convergence Angle	Scale	x	Elevation	=	Combined
0001	-1-33-32.82	0.99994710		0.99994167		0.99988878
0002	-1-33-32.82	0.99994598		0.99993857		0.99988456
0003	-1-33-33.09	0.99994542		0.99993610		0.99988153
0004	-1-33-33.26	0.99994546		0.99994115		0.99988661
0005	-1-33-34.13	0.99994606		0.99993890		0.99988496
0006	-1-33-31.65	0.99994725		0.99993632		0.99988357
0007	-1-33-31.33	0.99995135		0.99993397		0.99988533
0008	-1-33-32.11	0.99995424		0.99993476		0.99988901
0009	-1-31-10.69	0.99994712		0.99994919		0.99989631
0010	-1-31-09.94	0.99994597		0.99994669		0.99989266
0011	-1-31-09.36	0.99994542		0.99994389		0.99988931
0012	-1-31-12.95	0.99994546		0.99993848		0.99988394
0013	-1-31-09.85	0.99994606		0.99993965		0.99988571
0014	-1-31-06.99	0.99994726		0.99993629		0.99988355
0015	-1-31-05.68	0.99994898		0.99993604		0.99988502
0016	-1-31-07.21	0.99995138		0.99993595		0.99988733
0017	-1-31-08.02	0.99995415		0.99993781		0.99989196
0018	-1-28-44.13	0.99994708		0.99994195		0.99988903
0019	-1-28-29.26	0.99994597		0.99994861		0.99989459
0020	-1-28-41.33	0.99994542		0.99994067		0.99988610
0021	-1-28-42.74	0.99994545		0.99994318		0.99988863
0022	-1-28-44.33	0.99994608		0.99994059		0.99988667
0023	-1-28-40.51	0.99994720		0.99993441		0.99988161
0024	-1-28-41.65	0.99994906		0.99993837		0.99988743
0025	-1-28-44.25	0.99995138		0.99993813		0.99988952
0026	-1-28-48.28	0.99995428		0.99993837		0.99989265
0027	-1-26-19.81	0.99994703		0.99993957		0.99988660
0028	-1-26-19.90	0.99994596		0.99994364		0.99988960
0029	-1-26-21.62	0.99994542		0.99994747		0.99989289
0030	-1-26-25.55	0.99994546		0.99993909		0.99988455
0031	-1-26-20.89	0.99994606		0.99993905		0.99988511
0032	-1-26-18.62	0.99994726		0.99993480		0.99988206
0033	-1-26-17.74	0.99994906		0.99993874		0.99988780
0034	-1-26-12.06	0.99995137		0.99994034		0.99989171
0035	-1-26-20.05	0.99995425		0.99993907		0.99989333
0036	-1-23-58.59	0.99994706		0.99993848		0.99988554
0037	-1-23-58.44	0.99994595		0.99993805		0.99988400
0038	-1-24-04.00	0.99994543		0.99993972		0.99988515
0039	-1-23-32.09	0.99994546		0.99994618		0.99989164
0040	-1-23-31.30	0.99994602		0.99994620		0.99989222
0041	-1-23-59.05	0.99994741		0.99993927		0.99988668
0042	-1-23-31.61	0.99994896		0.99994041		0.99988937
0043	-1-23-54.72	0.99995134		0.99993905		0.99989040
0044	-1-23-56.93	0.99995429		0.99993420		0.99988850
0045	-1-21-34.44	0.99994705		0.99993705		0.99988410
0046	-1-21-33.79	0.99994599		0.99994140		0.99988739
0047	-1-21-33.72	0.99994543		0.99993887		0.99988431
0048	-1-21-33.13	0.99994546		0.99993692		0.99988238
0049	-1-21-32.71	0.99994609		0.99993949		0.99988558

Station	Convergence Angle	Scale	x	Factors Elevation	=	Combined
0050	-1-21-36.98	0.99994721		0.99993972		0.99988693
0051	-1-21-32.67	0.99994896		0.99994260		0.99989156
0052	-1-21-50.22	0.99995128		0.99993783		0.99988911
0053	-1-21-28.08	0.99995430		0.99993629		0.99989060
0054	-1-19-13.92	0.99994707		0.99994019		0.99988726
0055	-1-19-10.02	0.99994596		0.99993935		0.99988530
0056	-1-19-11.03	0.99994542		0.99993900		0.99988442
0057	-1-19-10.34	0.99994542		0.99993650		0.99988193
0058	-1-19-08.83	0.99994604		0.99993994		0.99988599
0059	-1-19-09.21	0.99994718		0.99993846		0.99988565
0060	-1-19-08.57	0.99994896		0.99993646		0.99988542
0061	-1-19-11.46	0.99995127		0.99993852		0.99988979
0062	-1-19-10.53	0.99995407		0.99993948		0.99989355
0063	-1-16-46.67	0.99994705		0.99994149		0.99988854
0064	-1-16-48.22	0.99994595		0.99993978		0.99988574
0065	-1-16-47.27	0.99994543		0.99993712		0.99988255
0066	-1-16-47.62	0.99994545		0.99993383		0.99987929
0067	-1-16-45.44	0.99994604		0.99993828		0.99988433
0068	-1-16-46.30	0.99994721		0.99993628		0.99988349
0069	-1-16-46.56	0.99994899		0.99993622		0.99988521
0070	-1-16-47.22	0.99995130		0.99993204		0.99988334
0071	-1-16-46.81	0.99995428		0.99993867		0.99989295
0072	-1-22-51.44	0.99994658		0.99994653		0.99989311
0073	-1-24-16.72	0.99994652		0.99994022		0.99988674
0074	-1-23-25.38	0.99994637		0.99994723		0.99989360
0075	-1-22-48.77	0.99994784		0.99994329		0.99989113
0076	-1-27-01.73	0.99994559		0.99994765		0.99989324
0077	-1-30-06.14	0.99994670		0.99994903		0.99989573
0078	-1-18-51.38	0.99994568		0.99993816		0.99988385
0079	-1-26-48.16	0.99994788		0.99993738		0.99988526
0080	-1-30-08.96	0.99994858		0.99993451		0.99988310
0081	-1-22-57.19	0.99994916		0.99994001		0.99988918
0082	-1-35-56.15	0.99995422		0.99993527		0.99988950
0116	-1-38-20.23	0.99995427		0.99993561		0.99988988
0117	-1-35-58.39	0.99994711		0.99994129		0.99988841
0118	-1-35-56.62	0.99994598		0.99993703		0.99988301
0119	-1-35-57.59	0.99994542		0.99994169		0.99988712
0120	-1-35-58.57	0.99994545		0.99993889		0.99988434
0121	-1-35-59.54	0.99994602		0.99993632		0.99988234
0122	-1-35-56.89	0.99994724		0.99993687		0.99988411
0123	-1-35-54.38	0.99994902		0.99993592		0.99988494
0124	-1-35-55.34	0.99995134		0.99993621		0.99988755
0201	-1-33-44.13	0.99994911		0.99993376		0.99988287
0202	-1-32-42.57	0.99994903		0.99993649		0.99988553
0300	-1-42-39.16	0.99995431		0.99993609		0.99989040
0301	-1-30-35.59	0.99995111		0.99994659		0.99989770
0302	-1-22-59.26	0.99995430		0.99993703		0.99989134
0303	-1-16-49.04	0.99996326		0.99993641		0.99989967
0304	-1-15-57.83	0.99995431		0.99993670		0.99989101
0305	-1-11-08.96	0.99995532		0.99993807		0.99989339
0306	-1-14-22.40	0.99995000		0.99993065		0.99988066
0307	-1-09-33.55	0.99994544		0.99993563		0.99988108
0308	-1-09-13.14	0.99994546		0.99993588		0.99988134
0309	-1-10-47.59	0.99994603		0.99993400		0.99988003
0310	-1-10-10.67	0.99995019		0.99993881		0.99988901

Station	Convergence Angle	----- Factors -----				
		Scale	x	Elevation	=	Combined
0311	-1-09-21.58	0.99995102		0.99993841		0.99988943

Error Propagation

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Station Coordinate Standard Deviations (US Feet)

Station	N	E	Elev
0001	0.01569	0.01206	0.01684
0002	0.02102	0.01669	0.02259
0003	0.02363	0.01971	0.03070
0004	0.01918	0.01502	0.01853
0005	0.02256	0.01775	0.02739
0006	0.02190	0.01697	0.02684
0007	0.01888	0.01484	0.02298
0008	0.02156	0.01675	0.02976
0009	0.01548	0.01159	0.02242
0010	0.01745	0.01328	0.02379
0011	0.01658	0.01299	0.01856
0012	0.01824	0.01412	0.02300
0013	0.01727	0.01350	0.01916
0014	0.02355	0.01882	0.03404
0015	0.01879	0.01481	0.01956
0016	0.02234	0.01767	0.02624
0017	0.01822	0.01444	0.02058
0018	0.01744	0.01330	0.02053
0019	0.02254	0.01789	0.03050
0020	0.01731	0.01344	0.02203
0021	0.02076	0.01609	0.02865
0022	0.01951	0.01537	0.02594
0023	0.02353	0.01855	0.03304
0024	0.01963	0.01563	0.02143
0025	0.02305	0.01773	0.03106
0026	0.02310	0.01780	0.03103
0027	0.02049	0.01645	0.00000
0028	0.01860	0.01468	0.02074
0029	0.01677	0.01320	0.02086
0030	0.01659	0.01284	0.02120
0031	0.01861	0.01465	0.02327
0032	0.01907	0.01523	0.02300
0033	0.01800	0.01421	0.01737
0034	0.02281	0.01828	0.02964
0035	0.01913	0.01526	0.02070
0036	0.01802	0.01444	0.02072
0037	0.01722	0.01382	0.02223
0038	0.01716	0.01370	0.02212
0039	0.01853	0.01425	0.02471
0040	0.01844	0.01434	0.02099
0041	0.01807	0.01429	0.01744
0042	0.01952	0.01532	0.01786
0043	0.01977	0.01556	0.01843
0044	0.02342	0.01841	0.02625
0045	0.01705	0.01376	0.02194
0046	0.01750	0.01411	0.02258
0047	0.01610	0.01265	0.02057
0048	0.02044	0.01615	0.02829
0049	0.01747	0.01371	0.02263
0050	0.01978	0.01552	0.02143

Station	N	E	Elev
0051	0.01714	0.01345	0.01430
0052	0.02013	0.01589	0.01918
0053	0.02415	0.01908	0.02532
0054	0.01704	0.01340	0.02135
0055	0.02029	0.01626	0.02807
0056	0.01708	0.01356	0.02310
0057	0.01691	0.01323	0.02250
0058	0.02024	0.01599	0.02934
0059	0.02263	0.01721	0.03427
0060	0.02425	0.01821	0.03603
0061	0.02793	0.02143	0.03223
0062	0.02298	0.01809	0.02218
0063	0.01688	0.01292	0.02269
0064	0.01666	0.01256	0.02314
0065	0.01529	0.01163	0.01967
0066	0.01982	0.01523	0.02659
0067	0.01843	0.01435	0.02582
0068	0.01978	0.01526	0.02822
0069	0.01878	0.01445	0.02932
0070	0.02079	0.01619	0.02307
0071	0.02342	0.01850	0.00000
0072	0.02261	0.01816	0.03104
0073	0.01984	0.01564	0.02294
0074	0.02261	0.01763	0.00000
0075	0.02163	0.01745	0.00000
0076	0.02218	0.01774	0.02994
0077	0.01556	0.01164	0.02320
0078	0.02315	0.01907	0.03497
0079	0.02318	0.01910	0.03103
0080	0.02254	0.01804	0.02596
0081	0.02084	0.01654	0.00000
0082	0.01550	0.01203	0.01888
0116	0.01652	0.01284	0.00000
0117	0.02104	0.01684	0.00000
0118	0.01878	0.01516	0.00000
0119	0.01963	0.01590	0.00000
0120	0.02184	0.01763	0.00000
0121	0.01965	0.01562	0.00000
0122	0.01865	0.01470	0.00000
0123	0.01933	0.01540	0.00000
0124	0.01559	0.01199	0.00000
0201	0.02351	0.01990	0.00000
0202	0.02000	0.01583	0.00000
0300	0.00000	0.00000	0.02672
0301	0.00000	0.00000	0.00000
0302	0.02109	0.01678	0.00000
0303	0.03108	0.02447	0.03818
0304	0.02840	0.02376	0.00000
0305	0.02896	0.02256	0.03486
0306	0.00000	0.00000	0.04427
0307	0.02681	0.02028	0.00000
0308	0.02795	0.02108	0.00000
0309	0.00000	0.00000	0.03457
0310	0.02449	0.01859	0.00000
0311	0.02689	0.01958	0.00000

Station Coordinate Error Ellipses (US Feet)

Confidence Region = 95%

Station	Semi-Major Axis	Semi-Minor Axis	Azimuth of Major Axis	Elev
0001	0.03844	0.02945	175-56	0.03302
0002	0.05147	0.04080	176-30	0.04427
0003	0.05791	0.04814	174-40	0.06018
0004	0.04697	0.03669	175-58	0.03632
0005	0.05524	0.04339	176-26	0.05369
0006	0.05363	0.04146	176-03	0.05262
0007	0.04622	0.03626	176-27	0.04504
0008	0.05279	0.04095	176-46	0.05833
0009	0.03794	0.02828	175-22	0.04395
0010	0.04275	0.03242	175-19	0.04663
0011	0.04062	0.03173	175-48	0.03639
0012	0.04467	0.03451	176-29	0.04508
0013	0.04229	0.03299	176-27	0.03755
0014	0.05769	0.04596	175-28	0.06672
0015	0.04602	0.03621	176-35	0.03833
0016	0.05470	0.04319	176-59	0.05143
0017	0.04461	0.03531	177-15	0.04033
0018	0.04274	0.03245	174-54	0.04024
0019	0.05520	0.04373	176-20	0.05979
0020	0.04239	0.03285	176-12	0.04317
0021	0.05083	0.03933	176-40	0.05616
0022	0.04777	0.03757	176-11	0.05085
0023	0.05760	0.04537	177-20	0.06476
0024	0.04808	0.03819	176-19	0.04200
0025	0.05649	0.04328	175-12	0.06088
0026	0.05659	0.04347	175-31	0.06082
0027	0.05020	0.04019	175-32	0.00000
0028	0.04558	0.03586	175-39	0.04066
0029	0.04109	0.03224	176-00	0.04089
0030	0.04062	0.03137	176-21	0.04155
0031	0.04558	0.03580	176-34	0.04561
0032	0.04668	0.03724	176-38	0.04508
0033	0.04406	0.03472	176-41	0.03405
0034	0.05586	0.04466	175-54	0.05810
0035	0.04684	0.03731	176-52	0.04057
0036	0.04413	0.03528	175-45	0.04061
0037	0.04219	0.03378	175-53	0.04358
0038	0.04203	0.03348	175-52	0.04336
0039	0.04539	0.03482	176-36	0.04843
0040	0.04517	0.03505	176-31	0.04115
0041	0.04424	0.03492	176-21	0.03418
0042	0.04780	0.03745	176-32	0.03500
0043	0.04841	0.03804	176-38	0.03612
0044	0.05736	0.04499	176-12	0.05145
0045	0.04174	0.03366	177-09	0.04301
0046	0.04285	0.03449	176-18	0.04425
0047	0.03944	0.03091	176-14	0.04033
0048	0.05006	0.03946	176-28	0.05545
0049	0.04278	0.03350	176-31	0.04435
0050	0.04845	0.03792	175-57	0.04200
0051	0.04197	0.03286	176-15	0.02803

Station	Semi-Major Axis	Semi-Minor Axis	Azimuth of Major Axis	Elev
0052	0.04930	0.03884	176-16	0.03760
0053	0.05916	0.04661	175-53	0.04964
0054	0.04170	0.03277	177-40	0.04184
0055	0.04966	0.03976	176-51	0.05502
0056	0.04182	0.03313	176-11	0.04528
0057	0.04141	0.03232	176-05	0.04411
0058	0.04957	0.03906	175-40	0.05750
0059	0.05546	0.04200	174-58	0.06717
0060	0.05938	0.04451	176-43	0.07063
0061	0.06840	0.05238	176-27	0.06317
0062	0.05628	0.04420	176-02	0.04348
0063	0.04132	0.03159	177-56	0.04447
0064	0.04079	0.03070	177-14	0.04535
0065	0.03745	0.02843	176-35	0.03854
0066	0.04856	0.03720	175-52	0.05212
0067	0.04515	0.03505	175-37	0.05060
0068	0.04845	0.03727	175-41	0.05530
0069	0.04599	0.03530	176-18	0.05747
0070	0.05090	0.03957	176-23	0.04522
0071	0.05735	0.04520	176-12	0.00000
0072	0.05536	0.04439	176-43	0.06085
0073	0.04860	0.03822	176-10	0.04496
0074	0.05538	0.04308	176-07	0.00000
0075	0.05298	0.04264	176-06	0.00000
0076	0.05430	0.04335	176-27	0.05869
0077	0.03813	0.02841	175-20	0.04548
0078	0.05668	0.04660	176-10	0.06855
0079	0.05675	0.04670	176-30	0.06082
0080	0.05518	0.04411	176-42	0.05088
0081	0.05102	0.04044	176-32	0.00000
0082	0.03794	0.02942	177-08	0.03700
0116	0.04044	0.03138	176-53	0.00000
0117	0.05152	0.04114	175-50	0.00000
0118	0.04600	0.03704	175-59	0.00000
0119	0.04810	0.03881	174-36	0.00000
0120	0.05350	0.04307	175-24	0.00000
0121	0.04814	0.03816	175-54	0.00000
0122	0.04567	0.03591	176-10	0.00000
0123	0.04735	0.03763	176-16	0.00000
0124	0.03817	0.02931	176-42	0.00000
0201	0.05756	0.04864	176-04	0.00000
0202	0.04896	0.03870	176-29	0.00000
0300	0.00000	0.00000	0-00	0.05237
0301	0.00000	0.00000	0-00	0.00000
0302	0.05163	0.04103	176-45	0.00000
0303	0.07609	0.05983	176-56	0.07483
0304	0.06955	0.05806	175-34	0.00000
0305	0.07096	0.05509	175-28	0.06833
0306	0.00000	0.00000	0-00	0.08677
0307	0.06571	0.04950	175-25	0.00000
0308	0.06847	0.05148	175-47	0.00000
0309	0.00000	0.00000	0-00	0.06776
0310	0.05994	0.04546	177-49	0.00000
0311	0.06581	0.04788	178-08	0.00000



Aerial Services, Inc.
2120 Center Street
PO Box 336
Cedar Falls, IA 50613
319-277-0436 TEL
319-277-0437 FAX

September 19, 2000

Attn: Alice Welch, P.E.
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

RE: Cherokee County GPS Network Report
ASI #A00-5699(2)

Dear Alice,

Aerial Services, Inc. has completed the GPS survey network and monumentation for Cherokee County, Iowa. Enclosed is a copy of the GPS network report detailing the permanent monuments set and the GPS survey data for this project. Please feel free to use this information in any of your future projects in that area.

Please call Dan Corbin or myself if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Benjamin R. Sullivan", written in a cursive style.

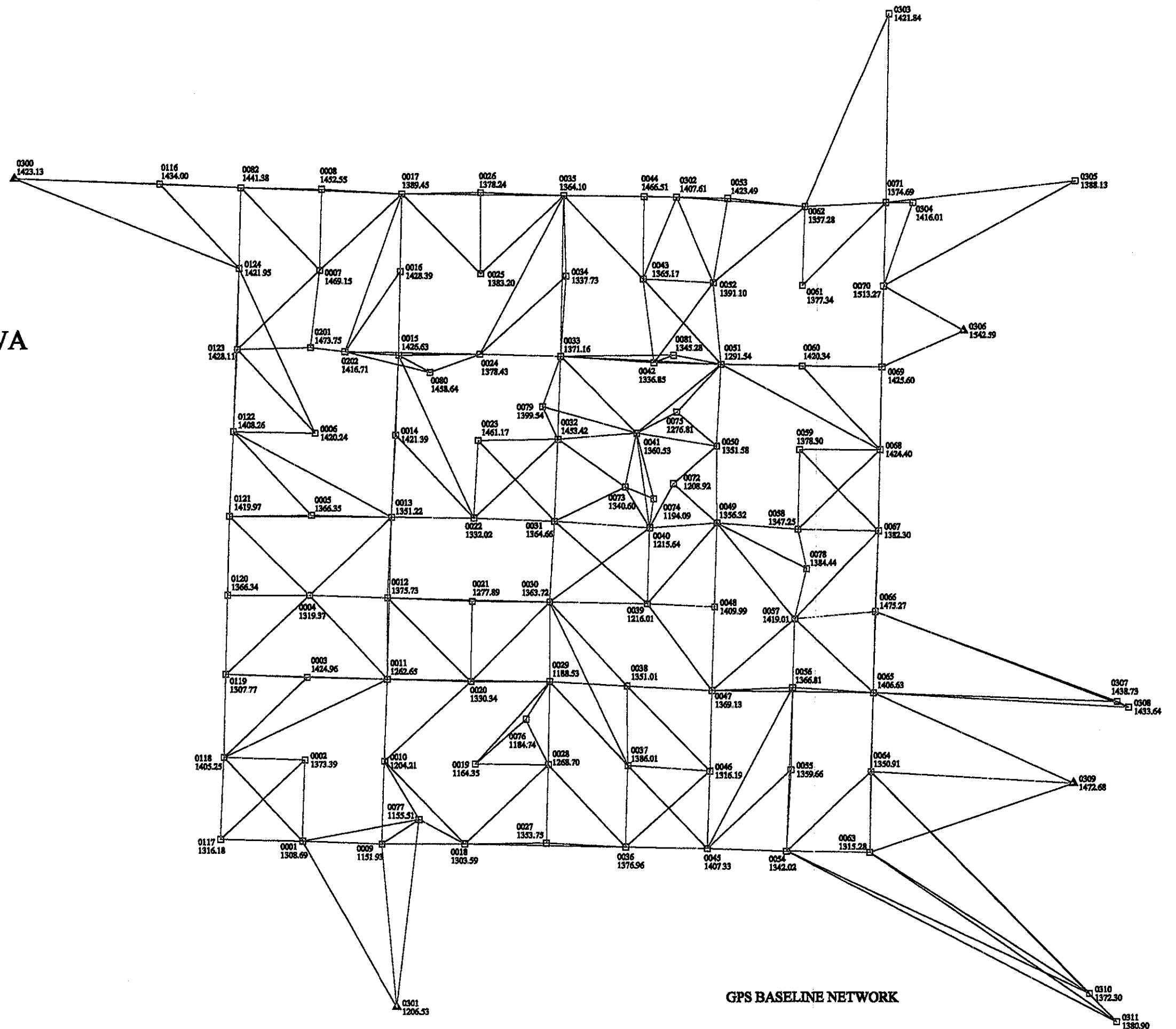
Benjamin R. Sullivan
CAD & GPS Supervisor
bsullivan@asi-gis.com

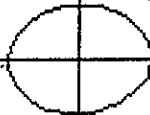
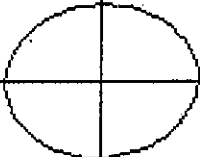
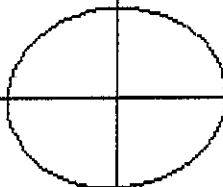
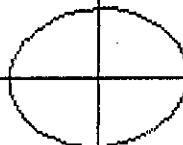
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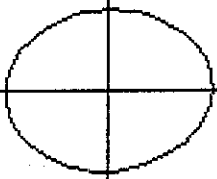
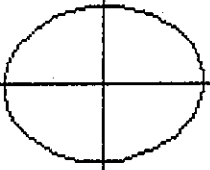
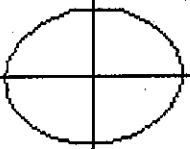
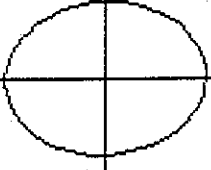
CHEROKEE COUNTY, IOWA

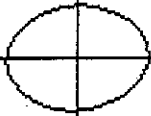
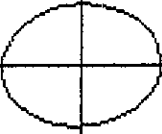
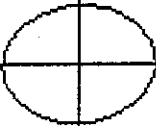
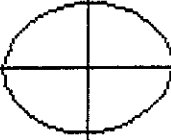


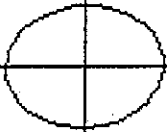
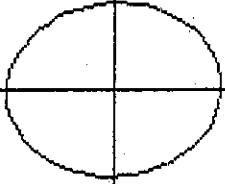
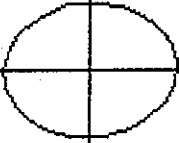
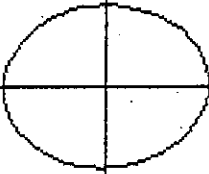
Scale: 1 in = 20,000 ft
 Date Printed: 08-31-2000
 Horiz. Datum: NAD_83(1996)
 Vert. Datum: NAVD_88
 Units: US FEET

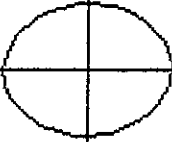
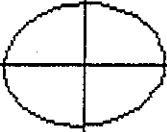
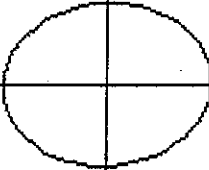
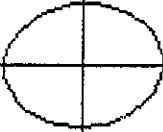


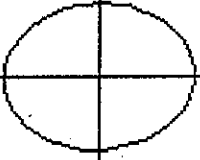
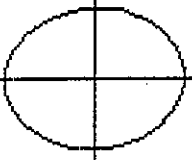
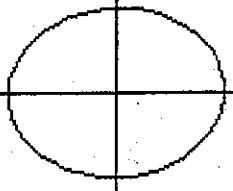
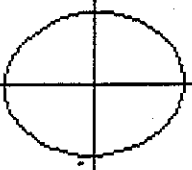
Station: 0001	Azim:176 Deg	Station: 0002	Azim:177 Deg
			
SemiMaj: 0.03844	SemiMin: 0.02945	SemiMaj: 0.05147	SemiMin: 0.04080
Station: 0003	Azim:175 Deg	Station: 0004	Azim:176 Deg
			
SemiMaj: 0.05791	SemiMin: 0.04814	SemiMaj: 0.04697	SemiMin: 0.03669
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print			

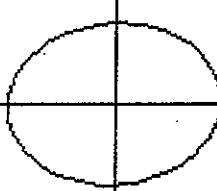
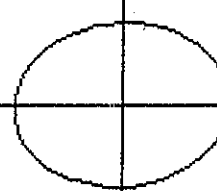
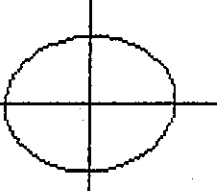
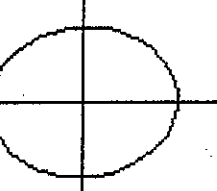
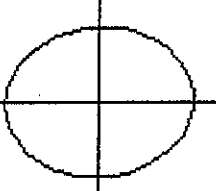
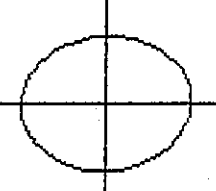
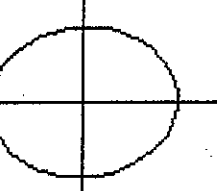
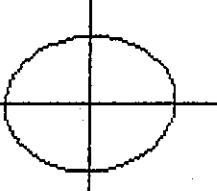
Station: 0005	Azim:176 Deg	Station: 0006	Azim:176 Deg
			
SemiMaj: 0.05524	SemiMin: 0.04339	SemiMaj: 0.05363	SemiMin: 0.04146
Station: 0007	Azim:176 Deg	Station: 0008	Azim:177 Deg
SemiMaj: 0.04622	SemiMin: 0.03626	SemiMaj: 0.05279	SemiMin: 0.04095
216FT ESC to EXIT PgUp PgDn Home to Move S to Scale P to Print			

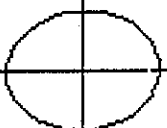
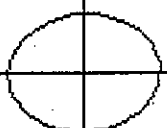
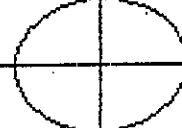
Station: 0009	Azim:175 Deg	Station: 0010	Azim:175 Deg
			
SemiMaj: 0.03794	SemiMin: 0.02828	SemiMaj: 0.04275	SemiMin: 0.03242
Station: 0011	Azim:176 Deg	Station: 0012	Azim:176 Deg
			
SemiMaj: 0.04062	SemiMin: 0.03173	SemiMaj: 0.04467	SemiMin: 0.03451
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

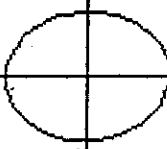
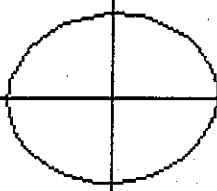
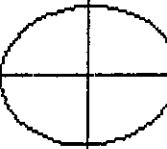
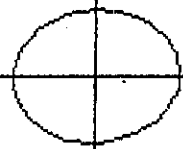
Station: 0013	Azim:176 Deg	Station: 0014	Azim:175 Deg
			
SemiMaj: 0.04229	SemiMin: 0.03299	SemiMaj: 0.05769	SemiMin: 0.04596
Station: 0015	Azim:177 Deg	Station: 0016	Azim:177 Deg
			
SemiMaj: 0.04602	SemiMin: 0.03621	SemiMaj: 0.05470	SemiMin: 0.04319
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! \$ to Scale ! P to Print			

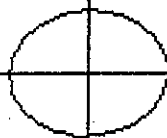
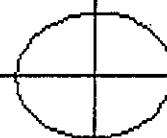
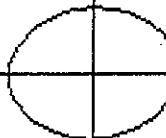
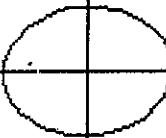
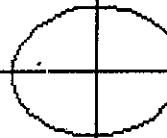
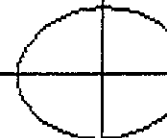
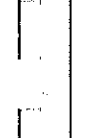
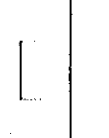
Station: 0017	Azim:177 Deg	Station: 0018	Azim:175 Deg
			
SemiMaj: 0.04461	SemiMin: 0.03531	SemiMaj: 0.04274	SemiMin: 0.03245
Station: 0019	Azim:176 Deg	Station: 0020	Azim:176 Deg
			
SemiMaj: 0.05520	SemiMin: 0.04373	SemiMaj: 0.04239	SemiMin: 0.03285
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print			

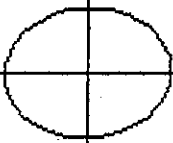
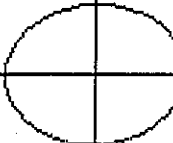
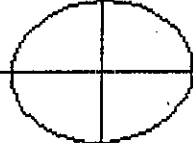
Station: 0021	Azim:177 Deg	Station: 0022	Azim:176 Deg
			
SemiMaj: 0.05083	SemiMin: 0.03933	SemiMaj: 0.04777	SemiMin: 0.03757
Station: 0023	Azim:177 Deg	Station: 0024	Azim:176 Deg
			
SemiMaj: 0.05760	SemiMin: 0.04537	SemiMaj: 0.04808	SemiMin: 0.03819
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

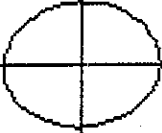
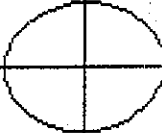
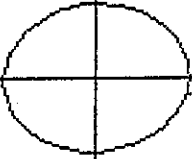
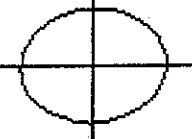
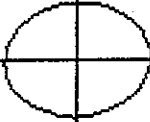
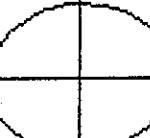
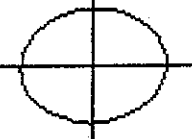
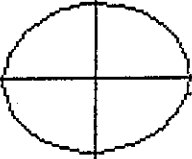
Station: 0025	Azim:175 Deg	Station: 0026	Azim:176 Deg
			
SemiMaj: 0.05649	SemiMin: 0.04328	SemiMaj: 0.05659	SemiMin: 0.04347
Station: 0027	Azim:176 Deg	Station: 0028	Azim:176 Deg
			
SemiMaj: 0.05020	SemiMin: 0.04019	SemiMaj: 0.04558	SemiMin: 0.03586
216FT	! ESC to EXIT	! PgUp PgDn Home to Move	! S to Scale ! P to Print

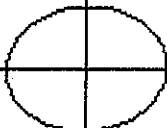
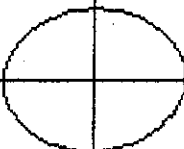
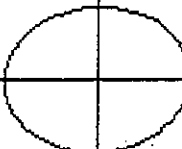
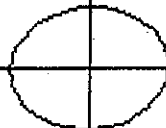
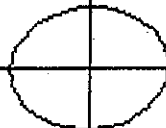
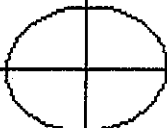
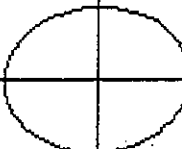
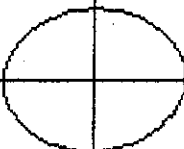
Station: 0029	Azim:176 Deg	Station: 0030	Azim:176 Deg
			
SemiMaj: 0.04109	SemiMin: 0.03224	SemiMaj: 0.04062	SemiMin: 0.03137
Station: 0031	Azim:177 Deg	Station: 0032	Azim:177 Deg
			
SemiMaj: 0.04558	SemiMin: 0.03580	SemiMaj: 0.04668	SemiMin: 0.03724
216FT	! ESC to EXIT	! PgUp PgDn Home to Move	! S to Scale ! P to Print

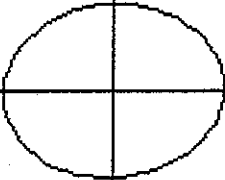
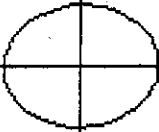
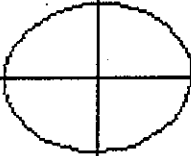
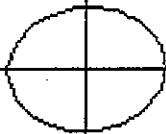
Station: 0033	Azim:177 Deg	Station: 0034	Azim:176 Deg
			
SemiMaj: 0.04406	SemiMin: 0.03472	SemiMaj: 0.05586	SemiMin: 0.04466
Station: 0035	Azim:177 Deg	Station: 0036	Azim:176 Deg
SemiMaj: 0.04684	SemiMin: 0.03731	SemiMaj: 0.04413	SemiMin: 0.03528
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print			

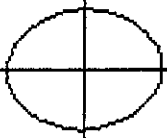
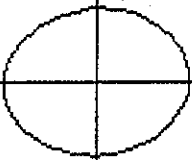
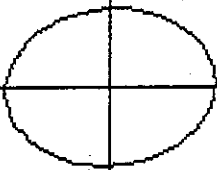
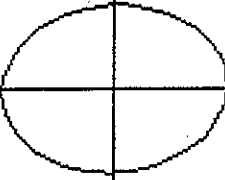
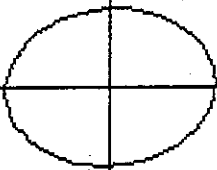
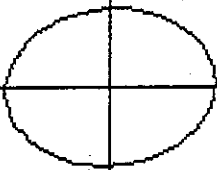
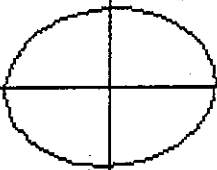
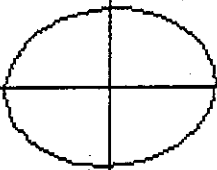
Station: 0037	Azim:176 Deg	Station: 0038	Azim:176 Deg
			
SemiMaj: 0.04219	SemiMin: 0.03378	SemiMaj: 0.04203	SemiMin: 0.03348
Station: 0039	Azim:177 Deg	Station: 0040	Azim:177 Deg
			
SemiMaj: 0.04539	SemiMin: 0.03482	SemiMaj: 0.04517	SemiMin: 0.03505
216FT	ESC to EXIT	ESC to EXIT	ESC to EXIT
	PgUp PgDn Home to Move	S to Scale	P to Print

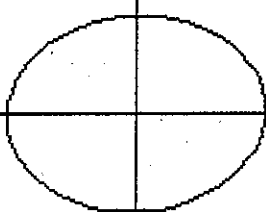
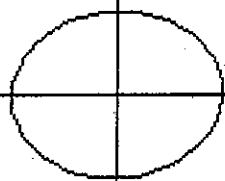
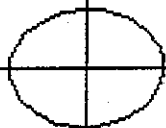
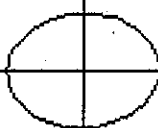
Station: 0041	Azim:176 Deg	Station: 0042	Azim:177 Deg
			
SemiMaj: 0.04424	SemiMin: 0.03492	SemiMaj: 0.04780	SemiMin: 0.03745
Station: 0043	Azim:177 Deg	Station: 0044	Azim:176 Deg
SemiMaj: 0.04841	SemiMin: 0.03804	SemiMaj: 0.05736	SemiMin: 0.04499
216FT ESC to EXIT PgUp PgDn Home to Move S to Scale P to Print			

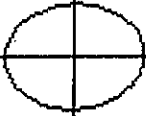
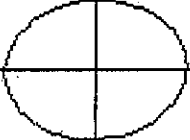
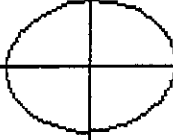
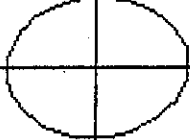
Station: 0045	Azim:177 Deg	Station: 0046	Azim:176 Deg
			
SemiMaj: 0.04174	SemiMin: 0.03366	SemiMaj: 0.04285	SemiMin: 0.03449
Station: 0047	Azim:176 Deg	Station: 0048	Azim:176 Deg
			
SemiMaj: 0.03944	SemiMin: 0.03091	SemiMaj: 0.05006	SemiMin: 0.03946
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

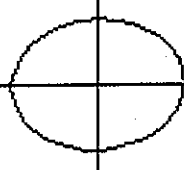
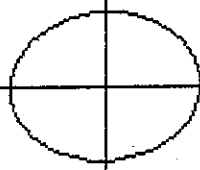
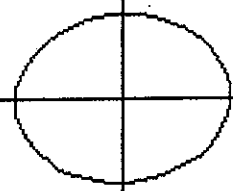
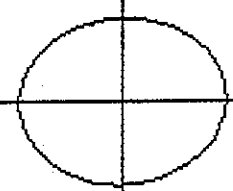
Station: 0049	Azim:177 Deg	Station: 0050	Azim:176 Deg
			
SemiMaj: 0.04278	SemiMin: 0.03350	SemiMaj: 0.04845	SemiMin: 0.03792
Station: 0051	Azim:176 Deg	Station: 0052	Azim:176 Deg
			
SemiMaj: 0.04197	SemiMin: 0.03286	SemiMaj: 0.04930	SemiMin: 0.03884
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

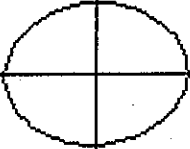
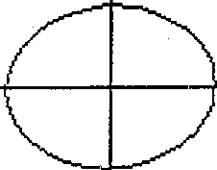
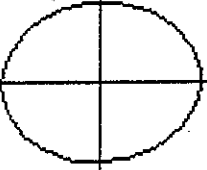
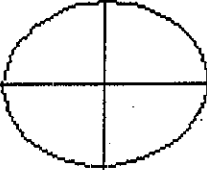
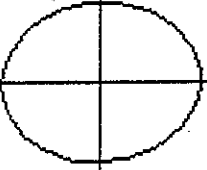
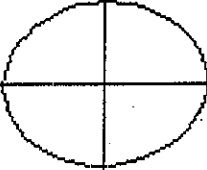
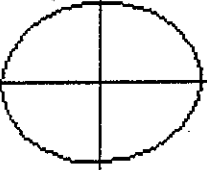
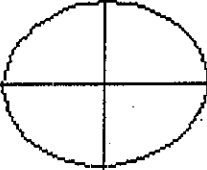
Station: 0053	Azim:176 Deg	Station: 0054	Azim:178 Deg
			
SemiMaj: 0.05916	SemiMin: 0.04661	SemiMaj: 0.04170	SemiMin: 0.03277
Station: 0055	Azim:177 Deg	Station: 0056	Azim:176 Deg
			
SemiMaj: 0.04966	SemiMin: 0.03976	SemiMaj: 0.04182	SemiMin: 0.03313
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

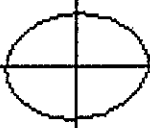
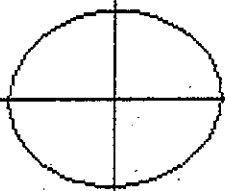
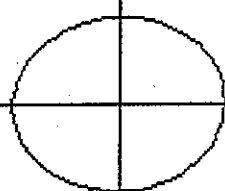
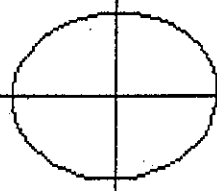
Station: 0057	Azim:176 Deg	Station: 0058	Azim:176 Deg
			
SemiMaj: 0.04141	SemiMin: 0.03232	SemiMaj: 0.04957	SemiMin: 0.03906
Station: 0059	Azim:175 Deg	Station: 0060	Azim:177 Deg
			
SemiMaj: 0.05546	SemiMin: 0.04200	SemiMaj: 0.05938	SemiMin: 0.04451
216FT	ESC to EXIT	ESC to EXIT	ESC to EXIT
	PgUp PgDn Home to Move		
	! \$ to Scale		
	P to Print		

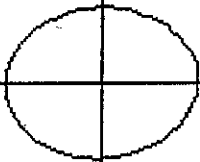
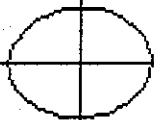
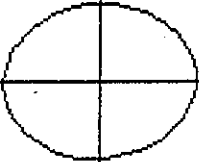
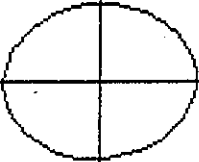
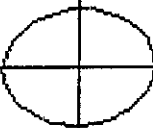
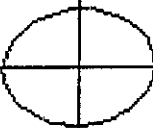
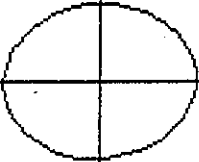
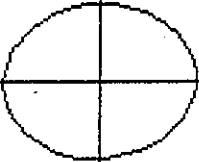
Station: 0061	Azim:176 Deg	Station: 0062	Azim:176 Deg
			
SemiMaj: 0.06840	SemiMin: 0.05238	SemiMaj: 0.05628	SemiMin: 0.04420
Station: 0063	Azim:178 Deg	Station: 0064	Azim:177 Deg
			
SemiMaj: 0.04132	SemiMin: 0.03159	SemiMaj: 0.04079	SemiMin: 0.03070
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print			

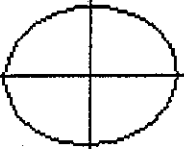
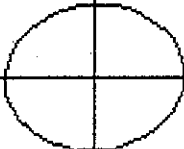
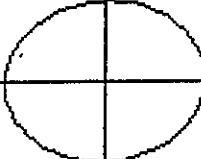
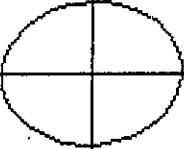
Station: 0065	Azim:177 Deg	Station: 0066	Azim:176 Deg
			
SemiMaj: 0.03745	SemiMin: 0.02843	SemiMaj: 0.04856	SemiMin: 0.03720
Station: 0067	Azim:176 Deg	Station: 0068	Azim:176 Deg
SemiMaj: 0.04515	SemiMin: 0.03505	SemiMaj: 0.04845	SemiMin: 0.03727
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

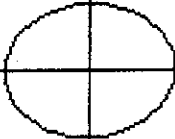
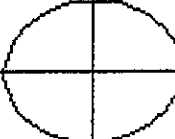
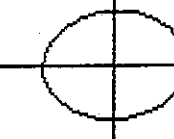
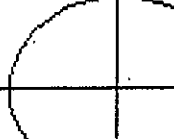
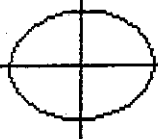
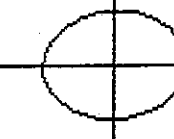
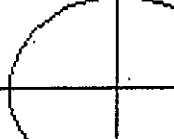
Station: 0069	Azim:176 Deg	Station: 0070	Azim:176 Deg
			
SemiMaj: 0.04599	SemiMin: 0.03530	SemiMaj: 0.05090	SemiMin: 0.03957
Station: 0071	Azim:176 Deg	Station: 0072	Azim:177 Deg
			
SemiMaj: 0.05735	SemiMin: 0.04520	SemiMaj: 0.05536	SemiMin: 0.04439
216FT	! ESC to EXIT	! PgUp PgDn Home to Move	! S to Scale ! P to Print

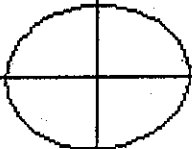
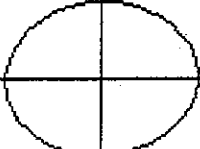
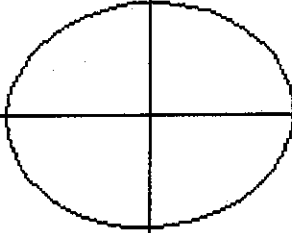
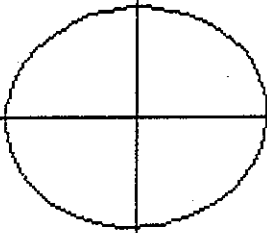
Station: 0073	Azim:176 Deg	Station: 0074	Azim:176 Deg
			
SemiMaj: 0.04860	SemiMin: 0.03822	SemiMaj: 0.05538	SemiMin: 0.04308
Station: 0075	Azim:176 Deg	Station: 0076	Azim:176 Deg
			
SemiMaj: 0.05298	SemiMin: 0.04264	SemiMaj: 0.05430	SemiMin: 0.04335
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print		216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print	

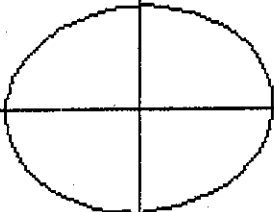
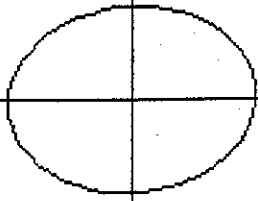
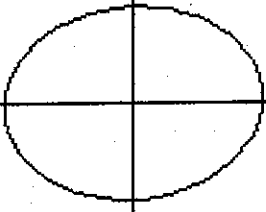
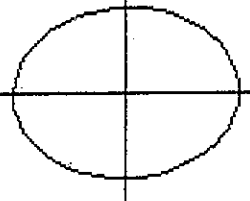
Station: 0077	Azim:175 Deg	Station: 0078	Azim:176 Deg
			
SemiMaj: 0.03813	SemiMin: 0.02841	SemiMaj: 0.05668	SemiMin: 0.04660
Station: 0079	Azim:177 Deg	Station: 0080	Azim:177 Deg
			
SemiMaj: 0.05675	SemiMin: 0.04670	SemiMaj: 0.05518	SemiMin: 0.04411
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print			

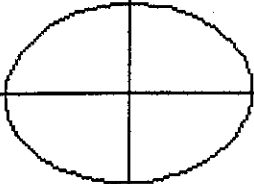
Station: 0081	Azim:177 Deg	Station: 0082	Azim:177 Deg
			
SemiMaj: 0.05102	SemiMin: 0.04044	SemiMaj: 0.03794	SemiMin: 0.02942
Station: 0116	Azim:177 Deg	Station: 0117	Azim:176 Deg
			
SemiMaj: 0.04044	SemiMin: 0.03138	SemiMaj: 0.05152	SemiMin: 0.04114
216FT	! ESC to EXIT	! PgUp PgDn Home to Move	! S to Scale ! P to Print

Station: 0118	Azim:176 Deg	Station: 0119	Azim:175 Deg
			
SemiMaj: 0.04600	SemiMin: 0.03704	SemiMaj: 0.04810	SemiMin: 0.03881
Station: 0120	Azim:175 Deg	Station: 0121	Azim:176 Deg
			
SemiMaj: 0.05350	SemiMin: 0.04307	SemiMaj: 0.04814	SemiMin: 0.03816
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! \$ to Scale ! P to Print			

Station: 0122	Azim:176 Deg	Station: 0123	Azim:176 Deg
			
SemiMaj: 0.04567	SemiMin: 0.03591	SemiMaj: 0.04735	SemiMin: 0.03763
Station: 0124	Azim:177 Deg	Station: 0201	Azim:176 Deg
			
SemiMaj: 0.03817	SemiMin: 0.02931	SemiMaj: 0.05756	SemiMin: 0.04864
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

Station: 0202	Azim:176 Deg	Station: 0302	Azim:177 Deg
			
SemiMaj: 0.04896	SemiMin: 0.03870	SemiMaj: 0.05163	SemiMin: 0.04103
Station: 0303	Azim:177 Deg	Station: 0304	Azim:176 Deg
			
SemiMaj: 0.07609	SemiMin: 0.05983	SemiMaj: 0.06955	SemiMin: 0.05806
216FT : ESC to EXIT : PgUp PgDn Home to Move : S to Scale : P to Print			

Station: 0305	Azim:175 Deg	Station: 0307	Azim:175 Deg
			
SemiMaj: 0.07096	SemiMin: 0.05509	SemiMaj: 0.06571	SemiMin: 0.04950
Station: 0308	Azim:176 Deg	Station: 0310	Azim:178 Deg
			
SemiMaj: 0.06847	SemiMin: 0.05148	SemiMaj: 0.05994	SemiMin: 0.04546
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print			

Station: 0311  SemiMaj: 0.06581 SemiMin: 0.04788	Azim:178 Deg
216FT ! ESC to EXIT ! PgUp PgDn Home to Move ! S to Scale ! P to Print	