# Linn County and the City of Cedar Rapids, Iowa

# G.P.S. Survey Control Network

# 2005

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DC Inc.

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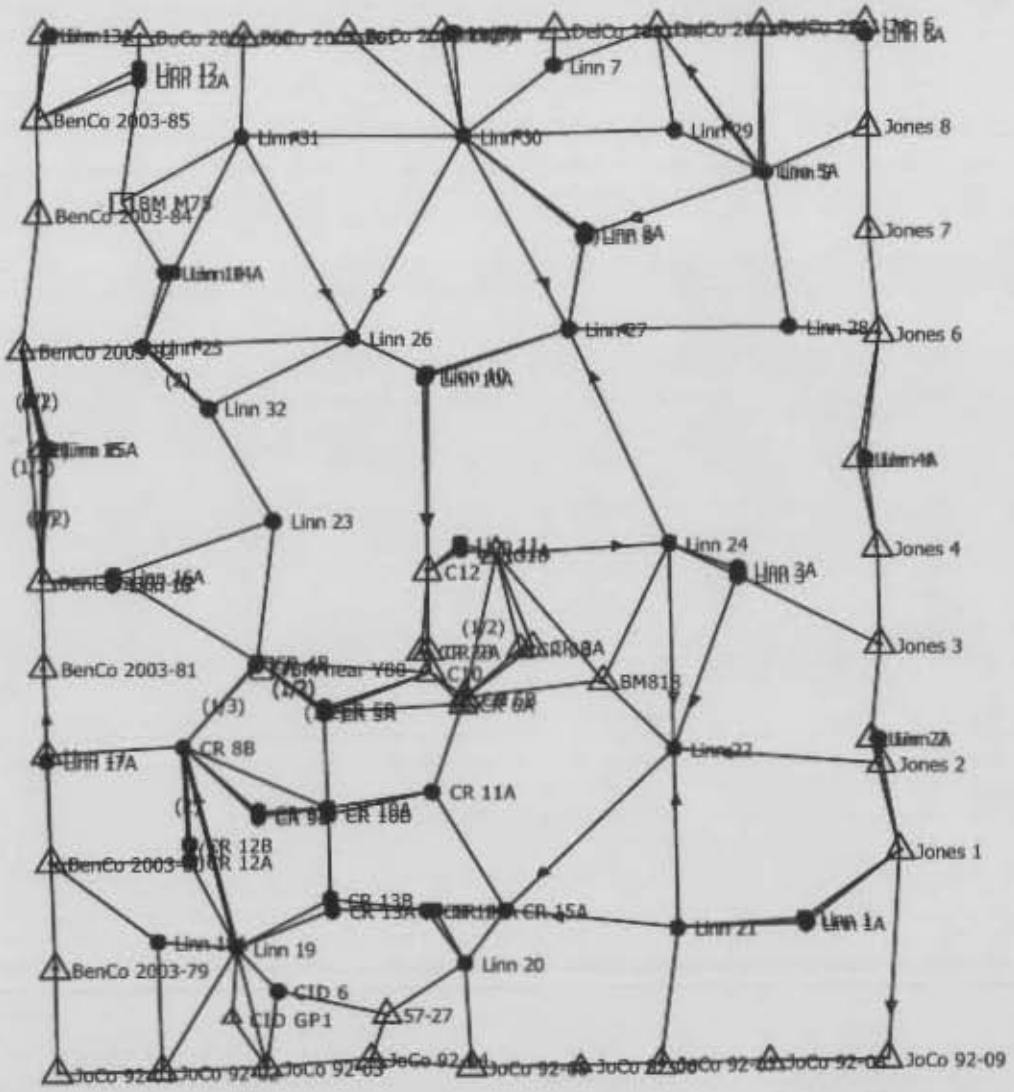


Field surveyor:
GB & DC
Computer operator:
GB
Reference:

Scale 1" to 28000 ft
0 50000 sft
US survey feet

0°00'00"

Plot Scale: 1" to 28000 ft
Printed on 5/22/2005, at 9:57:38 PM

Printed from Trimble Geomatics Office

Site: Not selected, System: US State Plane 1983
Zone: Iowa North 1401, Datum: NAD 1983 (Conus)

Project: Linn County Network Adjustment
USFeet Template

## Table of Contents

## INTRODUCTION

In 2005 Linn County, Iowa, contracted with DC Inc. partnering with Horizon's Inc. to complete a high accuracy GPS control re-survey for the purpose of establishing a county-wide survey control system and for future use in a county wide GIS system.

Fourteen (14) new control stations were added within the County along with, eighteen (18) existing Linn County GPS control points with 18 azimuth stations, fifteen (15) Cedar Rapids existing GPS control points with 15 azimuth stations, four (4) City of Marion GPS control points, nine (9) existing Johnson County GPS control points, seven (7) existing Jones County GPS control points, seven (7) existing Benton County GPS control points, three (3) existing Buchanan County GPS control points, and three (3) existing Delaware County GPS control points. An additional one (1) (57-27) HARN control point, one (1) (CID GP1)Primary Airport Control Station, one (1) (CID 6) Secondary Airport Control Station, one (1) (M 75) NGS first order benchmark, one (1) (BM818) USGS second order benchmark, one (1) Temporary Bench Mark near USGS second order bench mark Y 80 were included in the network. A total of one hundred ten (110) points were measured.

## PROJECT REQUIREMENTS

The purpose of this survey was to establish new state plane control throughout the project area, using a new horizontal and vertical control network with 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 for many different purposes, it was important that the network geometry be ideal for a strong GPS survey. The new point locations for control were selected with the needs of future multiple uses and GPS survey requirements in mind. Existing control was in many cases not in optimal locations for GPS measurements. Because of the difficultly experienced during the survey because of the poor locations, additional sessions and longer session times were required to obtain good GPS vectors. It was necessary to design additional baselines to create good geometry for the network structure.

## MONUMENTATION

To perpetuate the GPS control measurements, 13 new permanent monuments were set for Linn County and 1 existing concrete Benchmark monument was used. BERNTSEN driven aluminum rod monuments were selected for the permanent monuments. Each BERNTSEN station monument consists of one three-foot smooth rod section and one three-foot top security fluted rod section with a stamped cap fastened to the top, all constructed of aluminum material. There is a permanent magnet mounted on the underside of the monument cap for future recovery with a magnetic locator. These monuments were driven to approximately 6" below the existing ground surface. For easy access and protection, a 24" 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. For the temporary position a rebar point was set that consist of 5/8" diameter 30" long deformed rebar. A steel fence post with a plastic marking cover was placed as a witness point at each new permanent monument position.

The county engineers office was involved in the new site selections and handled the coordination of marking the various underground utility locations for each new permanent monument 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 and also throughout the project site if possible. With this in mind, existing HARN horizontal stations were recovered in and/or near Linn County along with other control that has been adjusted to the HARN. All positions in and near the county 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. In addition, two (2) HARN stations with vertical control and three (3) existing NGS and USGS benchmarks were recovered and included in this survey.

## FIELD SURVEY

Four Trimble 24 channel dual frequency Geodetic GPS receivers with Everest multi-path mitigation and high performance low elevation satellite tracking were used in this survey. Two model 5800 receivers, one R8 receiver and one R7 receiver were used for the survey. GPS observations were made during daylight and evening hours from Monday, May 16, 2005, through Thursday, May 19, 2005.

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 with only a few short periods of unacceptable coverage because of the number of satellites or bad geometry. Each measurement period during which all receivers observe satellites simultaneously lasted from 10 minutes to 150 minutes, depending on the distance being measured and the geometry of the satellite constellation. Three separate points had over 2 hours of data recorded and accordingly these points were also processed using OPUS.

## DATA ADJUSTMENT

A total number of 319 vectors were observed and processed. Based on statistical indicators from the Trimble Geomatics Office processing software, no vectors were flagged as an outlier at the 95% confidence level. Twelve (12) baselines were measured 2 or more times with 45 points occupied once, 41 points occupied twice, 19 points occupied 3 times, 4 points occupied 4 times and 1 points occupied 5 times during different sessions on the survey. After removal of trivial vectors the final network is comprised of 110 stations and 223 baselines. All data adjustment was performed using the Trimble Geomatics Office least squares adjustment software. 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 1:28,459 to 1:2,827,098 with the azimuth station baselines (extremely short lines) falling in the 1:28,459 to 1:77,000 range, the 3 mile baselines falling in the 1:400,000 to 1:700,000 range, and the 5 mile and longer baselines in the 1:1,100,000 or higher. 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 HARN point 57-27 fixed horizontally with the vertical adjustment disabled. Coordinate values on the other HARN control stations were then checked against the published values. The network fit the published HARN values within a few hundredths of a foot. Because all data fit so well the other HARN-referenced stations from other counties were added to the network and a new adjustment performed. After each adjustment a comparison of adjusted coordinates vs. published values was made. By holding all of the existing HARN stations fixed, and the control that was adjusted to the HARN, 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 03 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 beginning with 57-27. Vertical control was added station by station with the elevations on the benchmarks being then checked against the published values. All existing vertical control was integrated into the network without creating any outliers except for one point. Johnson County point 92-06 was excluded from the vertical adjustment with it missing the adjustment by more than 0.25'. It was felt that this point has been disturbed in the vertical plane and a new vertical elevation was established during this survey for this point. The completed network consists of 110 points with 51 points being constrained in either horizontal or vertical. Two points were constrained in horizontal only, two points were constrained in vertical only, and 47 points were constrained in both horizontal and vertical. All of this control fit with the network adjustment extremely well.

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 except the Johnson County point were held fixed in z. This fully constrained adjustment solved for scale and rotation. In the final adjusted network, 100% of the adjusted vectors have an estimated error of x, y and z baseline precision after adjustment was between 1:12,410 to 1:1,334,579 with the azimuth station baselines (extremely short lines) falling in the 1:12,410 to 1:69,000 range, the 3 mile baselines falling in the 1:400,000 to 1:700,000 range, and the 5 mile and longer baselines in the 1:900,000 or higher. All of the processed data and error factors were computed using a 95% confidence level factor. The results are well in excess of the first-order precision. OPUS calculations were computed on three stations within the network. The OPUS solutions compared to the final adjusted positions agreed within 0.05'$\pm$ in horizontal position and within 0.10'$\pm$ in vertical.

**CONCLUSION**

All measured point accuracies exceed first-order standards. The control point locations are within $\pm$ 0.03 ft horizontal position and within $\pm$ 0.08 ft. vertically for benchmark use. It should be noted that existing Linn County points 7A and 18 have been destroyed. Also Cedar Rapids points 1A, 1B, 7A, 7B, 8A, 11B and 15B have been destroyed. City of Marion point C1 has been destroyed by recent construction. It should also be noted that many of the existing Cedar Rapids and Linn County stations are becoming unusable for GPS observations because of obstacles. The initial planning used to place these stations did not take into account the future growth of vegetation.

# Network Adjustment Report

### *Project : LinnCo5*

| | | | |
|---|---|---|---|
| **User name** | Gary Brown | **Date & Time** | 9:51:02 PM 5/22/2005 |
| **Coordinate System** | US State Plane 1983 | **Zone** | Iowa North 1401 |
| **Project Datum** | NAD 1983/1996 | (Conus) | |
| **Vertical Datum** | NAD88 | **Geoid Model** | Geoid 03 (Conus) |
| **Coordinate Units** | US survey feet | | |
| **Distance Units** | US survey feet | | |
| **Height Units** | US survey feet | | |

## Adjustment Style Settings - 95% Confidence Limits

### *Residual Tolerances*

**To End Iterations** : 0.000033sft
**Final Convergence Cutoff** : 0.016404sft

### *Covariance Display*

**Horizontal**
**Propagated Linear Error [E]** : U.S.
**Constant Term [C]** : 0.00000000sft
**Scale on Linear Error [S]** : 1.96

**Three-Dimensional**
**Propagated Linear Error [E]** : U.S.
**Constant Term [C]** : 0.00000000sft
**Scale on Linear Error [S]** : 1.96

**Elevation Errors were used in the calculations.**

### *Adjustment Controls*

**Compute Correlations for Geoid** : True

**Horizontal and Vertical adjustment performed**

### *Set-up Errors*

**GPS**
**Error in Height of Antenna** : 0.015sft
**Centering Error** : 0.015sft

# Statistical Summary

**Successful Adjustment in 1 iteration(s)**

**Network Reference Factor** : 1.00
**Chi Square Test (α=95%)** : PASS
**Degrees of Freedom** : 482.00

## GPS Observation Statistics

**Reference Factor** : 1.00
**Redundancy Number (r)** : 450.52

## Geoid Model Statistics

**Reference Factor** : 1.00
**Redundancy Number (r)** : 31.48

## Weighting Strategies

### GPS Observations
**Alternative Scalar Applied to All Observations**

**Scalar** : 3.59

### Geoid Observations
**Alternative Scalar Applied to All Observations**

**Scalar** : 0.11

# Adjusted Coordinates

## Adjustment performed in NAD 1983/1996 HARN (Conus)

**Number of Points** : 110
**Number of Constrained Points** : 51
**Horizontal Only** : 2
**Elevation Only** : 2
**Horizontal and Elevation Only** : 47

## Adjusted Grid Coordinates

**Errors are reported using 1.96σ.**

| Point Name | Northing | N error | Easting | E error | Elevation | e error | Fix |
|---|---|---|---|---|---|---|---|
| DelCo 2001-74 | 3577248.260sft | 0.000sft | 5451805.540sft | 0.000sft | 907.870sft | 0.000sft | N E e |
| Linn 9A | 3576792.900sft | 0.000sft | 5434661.130sft | 0.000sft | 970.250sft | 0.000sft | N E e |
| CR 14B | 3442018.758sft | 0.032sft | 5431934.240sft | 0.029sft | 831.254sft | 0.102sft | |
| CR 13A | 3442038.213sft | 0.035sft | 5417635.721sft | 0.033sft | 735.851sft | 0.107sft | |
| CR 15A | 3442051.590sft | 0.031sft | 5443983.583sft | 0.027sft | 742.217sft | 0.105sft | |
| Linn 22 | 3466824.103sft | 0.028sft | 5469806.664sft | 0.024sft | 824.678sft | 0.098sft | |
| Jones 1 | 3451273.160sft | 0.000sft | 5504383.250sft | 0.000sft | 897.250sft | 0.000sft | N E e |
| Linn 1A | 3440066.382sft | 0.052sft | 5490053.242sft | 0.044sft | 800.418sft | 0.129sft | |
| JoCo 92-06 | 3418275.480sft | 0.000sft | 5455552.370sft | 0.000sft | 825.334sft | 0.091sft | N E |
| JoCo 92-05 | 3418095.140sft | 0.000sft | 5438797.780sft | 0.000sft | 793.040sft | 0.000sft | N E e |
| 57-27 | 3426048.720sft | 0.000sft | 5425898.440sft | 0.000sft | 810.720sft | 0.000sft | N E e |
| JoCo 92-04 | 3419251.410sft | 0.000sft | 5423548.420sft | 0.000sft | 846.150sft | 0.000sft | N E e |
| Linn 19 | 3436353.857sft | 0.020sft | 5403001.449sft | 0.018sft | 797.123sft | 0.096sft | |
| CID GP1 | 3425560.040sft | 0.000sft | 5402313.900sft | 0.000sft | 866.765sft | 0.089sft | N E |
| Linn 18A | 3437186.347sft | 0.033sft | 5391025.131sft | 0.029sft | 755.708sft | 0.104sft | |
| BenCo 2003-80 | 3449322.710sft | 0.000sft | 5374654.300sft | 0.000sft | 809.070sft | 0.000sft | N E e |
| Linn 17 | 3465871.040sft | 0.000sft | 5374046.590sft | 0.000sft | 854.900sft | 0.000sft | N E e |
| Linn 16A | 3493520.670sft | 0.031sft | 5384347.167sft | 0.032sft | 739.402sft | 0.092sft | |
| BenCo 2003-82 | 3492677.880sft | 0.000sft | 5373309.050sft | 0.000sft | 851.410sft | 0.000sft | N E e |
| Linn 15 | 3512931.400sft | 0.000sft | 5373540.200sft | 0.000sft | 880.820sft | 0.000sft | N E e |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CR 8B | 3467021.710sft | 0.029sft | 5394853.064sft | 0.024sft | 758.113sft | 0.100sft | |
| Linn 20 | 3433963.713sft | 0.028sft | 5437925.128sft | 0.025sft | 827.335sft | 0.090sft | |
| Linn 1 | 3440798.123sft | 0.049sft | 5489751.080sft | 0.042sft | 831.897sft | 0.125sft | |
| JoCo 92-09 | 3419415.320sft | 0.000sft | 5502485.270sft | 0.000sft | 736.350sft | 0.000sft | N E e |
| CID 6 | 3429637.117sft | 0.028sft | 5409326.353sft | 0.026sft | 860.645sft | 0.085sft | |
| JoCo 92-02 | 3417498.750sft | 0.000sft | 5391574.300sft | 0.000sft | 806.430sft | 0.000sft | N E e |
| JoCo 92-01 | 3417121.620sft | 0.000sft | 5375731.090sft | 0.000sft | 780.830sft | 0.000sft | N E e |
| CR 12A | 3449654.398sft | 0.034sft | 5395816.226sft | 0.028sft | 822.208sft | 0.106sft | |
| BenCo 2003-81 | 3479161.070sft | 0.000sft | 5373552.070sft | 0.000sft | 841.490sft | 0.000sft | N E e |
| JoCo 92-08 | 3418905.550sft | 0.000sft | 5484496.070sft | 0.000sft | 721.710sft | 0.000sft | N E e |
| BenCo 2003-83 | 3527958.200sft | 0.000sft | 5370324.100sft | 0.000sft | 826.310sft | 0.000sft | N E e |
| CR 13B | 3443845.963sft | 0.032sft | 5417407.151sft | 0.030sft | 725.226sft | 0.107sft | |
| CR 14A | 3442059.238sft | 0.038sft | 5433250.885sft | 0.034sft | 838.447sft | 0.105sft | |
| Linn 21 | 3439373.845sft | 0.032sft | 5470325.825sft | 0.028sft | 764.022sft | 0.107sft | |
| JoCo 92-03 | 3417923.380sft | 0.000sft | 5407607.030sft | 0.000sft | 795.260sft | 0.000sft | N E e |
| BenCo 2003-79 | 3433074.360sft | 0.000sft | 5375315.900sft | 0.000sft | 822.400sft | 0.000sft | N E e |
| Linn 17A | 3464945.421sft | 0.028sft | 5374009.106sft | 0.026sft | 851.307sft | 0.049sft | |
| Linn 16 | 3492191.208sft | 0.038sft | 5384273.036sft | 0.038sft | 742.152sft | 0.096sft | |
| JoCo 92-07 | 3418498.880sft | 0.000sft | 5467828.290sft | 0.000sft | 865.740sft | 0.000sft | N E e |
| C10 | 3478706.250sft | 0.000sft | 5432568.410sft | 0.000sft | 850.920sft | 0.000sft | N E e |
| CR 5A | 3472267.678sft | 0.050sft | 5416490.117sft | 0.034sft | 851.306sft | 0.123sft | |
| BM818 | 3477268.630sft | 0.000sft | 5458912.650sft | 0.000sft | 818.360sft | 0.000sft | N E e |
| Linn 24 | 3498523.203sft | 0.030sft | 5469183.143sft | 0.026sft | 878.091sft | 0.109sft | |
| Linn 3 | 3493383.231sft | 0.036sft | 5479649.104sft | 0.032sft | 865.017sft | 0.111sft | |
| Linn 2A | 3468352.780sft | 0.000sft | 5499968.580sft | 0.000sft | 909.720sft | 0.000sft | N E e |
| Jones 2 | 3464487.230sft | 0.000sft | 5501548.010sft | 0.000sft | 882.740sft | 0.000sft | N E e |
| CR 9A | 3457184.494sft | 0.042sft | 5406340.853sft | 0.036sft | 822.065sft | 0.117sft | |
| CR 4A | 3479515.004sft | 0.049sft | 5405877.465sft | 0.040sft | 828.215sft | 0.062sft | |
| Linn 32 | 3519101.254sft | 0.036sft | 5398889.027sft | 0.034sft | 818.460sft | 0.119sft | |
| Linn 23 | 3501836.879sft | 0.038sft | 5408749.132sft | 0.038sft | 816.476sft | 0.119sft | |
| Linn 25 | 3528548.225sft | 0.034sft | 5388872.906sft | 0.031sft | 858.109sft | 0.106sft | |
| Linn 11 | 3498404.872sft | 0.031sft | 5437218.280sft | 0.028sft | 843.364sft | 0.062sft | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C18 | 3496928.700sft | 0.000sft | 5442739.070sft | 0.000sft | 862.970sft | 0.000sft | N E e |
| CR 2A | 3481680.010sft | 0.000sft | 5432292.250sft | 0.000sft | 829.930sft | 0.000sft | N E e |
| CR 4B | 3480151.421sft | 0.032sft | 5406280.408sft | 0.029sft | 791.134sft | 0.056sft | |
| CR 6A | 3473579.280sft | 0.000sft | 5437661.340sft | 0.000sft | 833.580sft | 0.000sft | N E e |
| Jones 3 | 3482917.660sft | 0.000sft | 5501276.170sft | 0.000sft | 905.930sft | 0.000sft | N E e |
| Linn 2 | 3468386.314sft | 0.034sft | 5501102.485sft | 0.032sft | 938.990sft | 0.052sft | |
| CR 10A | 3457651.098sft | 0.036sft | 5416879.765sft | 0.030sft | 727.302sft | 0.114sft | |
| C12 | 3494232.910sft | 0.000sft | 5432151.560sft | 0.000sft | 836.420sft | 0.000sft | N E e |
| CR 11A | 3460241.460sft | 0.035sft | 5432824.513sft | 0.029sft | 832.460sft | 0.103sft | |
| Linn 11A | 3497523.576sft | 0.031sft | 5437242.425sft | 0.028sft | 858.568sft | 0.061sft | |
| CR 2B | 3481782.630sft | 0.000sft | 5431171.460sft | 0.000sft | 846.550sft | 0.000sft | N E e |
| CR 5B | 3473128.031sft | 0.072sft | 5416467.289sft | 0.048sft | 892.927sft | 0.177sft | |
| C9 | 3474548.680sft | 0.000sft | 5437932.280sft | 0.000sft | 852.510sft | 0.000sft | N E e |
| Linn 3A | 3494645.321sft | 0.047sft | 5479627.549sft | 0.042sft | 850.697sft | 0.119sft | |
| CR 10B | 3456818.837sft | 0.039sft | 5417021.897sft | 0.035sft | 728.754sft | 0.118sft | |
| CR 9B | 3456371.086sft | 0.043sft | 5406319.917sft | 0.036sft | 840.747sft | 0.119sft | |
| TBM near Y80 | 3479220.716sft | 0.050sft | 5406955.546sft | 0.044sft | 811.940sft | 0.000sft | e |
| Jones 4 | 3497799.260sft | 0.000sft | 5500921.520sft | 0.000sft | 948.370sft | 0.000sft | N E e |
| BenCo 2003-84 | 3549011.730sft | 0.000sft | 5372932.970sft | 0.000sft | 830.940sft | 0.000sft | N E e |
| BenCo 2003-85 | 3563602.520sft | 0.000sft | 5372774.520sft | 0.000sft | 854.360sft | 0.000sft | N E e |
| Linn 13 | 3576446.200sft | 0.000sft | 5373557.500sft | 0.000sft | 921.470sft | 0.000sft | N E e |
| BuCo 2002-261 | 3576178.040sft | 0.000sft | 5404252.980sft | 0.000sft | 875.450sft | 0.000sft | N E e |
| BuCo 2002-262 | 3576567.850sft | 0.000sft | 5420182.910sft | 0.000sft | 927.150sft | 0.000sft | N E e |
| Linn 30 | 3561085.900sft | 0.023sft | 5437816.564sft | 0.020sft | 949.032sft | 0.099sft | |
| Linn 27 | 3531254.521sft | 0.030sft | 5453945.112sft | 0.026sft | 920.948sft | 0.126sft | |
| DelCo 2001-76 | 3577996.190sft | 0.000sft | 5483365.560sft | 0.000sft | 1013.920sft | 0.000sft | N E e |
| DelCo 2001-75 | 3577562.180sft | 0.000sft | 5467626.280sft | 0.000sft | 930.240sft | 0.000sft | N E e |
| Jones 6 | 3530670.970sft | 0.000sft | 5501290.740sft | 0.000sft | 833.340sft | 0.000sft | N E e |
| Linn 4A | 3511331.800sft | 0.000sft | 5498156.770sft | 0.000sft | 965.250sft | 0.000sft | N E e |
| Linn 10 | 3524486.441sft | 0.030sft | 5432156.805sft | 0.029sft | 887.830sft | 0.123sft | |
| Linn 26 | 3529865.783sft | 0.032sft | 5420772.390sft | 0.030sft | 902.493sft | 0.125sft | |
| Linn 15A | 3512930.271sft | 0.053sft | 5374477.047sft | 0.039sft | 856.091sft | 0.076sft | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Linn 14 | 3540054.038sft | 0.045sft | 5392402.246sft | 0.040sft | 898.861sft | 0.100sft | |
| BM M75 | 3550748.254sft | 0.043sft | 5385688.785sft | 0.038sft | 806.550sft | 0.000sft | e |
| Linn 12 | 3571351.663sft | 0.033sft | 5388352.613sft | 0.030sft | 897.917sft | 0.071sft | |
| Linn 9 | 3576824.940sft | 0.031sft | 5436095.495sft | 0.029sft | 997.445sft | 0.053sft | |
| Linn 8A | 3546320.625sft | 0.049sft | 5456540.795sft | 0.036sft | 878.639sft | 0.132sft | |
| Linn 7 | 3571823.010sft | 0.033sft | 5451673.418sft | 0.028sft | 910.266sft | 0.078sft | |
| Linn 29 | 3561765.157sft | 0.033sft | 5470147.515sft | 0.030sft | 902.776sft | 0.109sft | |
| Linn 5 | 3555481.098sft | 0.028sft | 5483835.437sft | 0.024sft | 970.470sft | 0.101sft | |
| Linn 6A | 3576544.949sft | 0.026sft | 5499269.735sft | 0.025sft | 1007.246sft | 0.052sft | |
| Linn 4 | 3511506.725sft | 0.035sft | 5499194.961sft | 0.028sft | 955.008sft | 0.066sft | |
| Linn 28 | 3531726.108sft | 0.035sft | 5487505.881sft | 0.032sft | 946.544sft | 0.102sft | |
| Linn 10A | 3523848.231sft | 0.037sft | 5431755.705sft | 0.036sft | 889.564sft | 0.128sft | |
| Linn 31 | 3560798.665sft | 0.032sft | 5404029.838sft | 0.029sft | 897.682sft | 0.096sft | |
| BuCo 2002-260 | 3576343.340sft | 0.000sft | 5388423.980sft | 0.000sft | 916.990sft | 0.000sft | N E e |
| Jones 8 | 3562403.220sft | 0.000sft | 5499599.030sft | 0.000sft | 950.510sft | 0.000sft | N E e |
| Linn 14A | 3540080.015sft | 0.046sft | 5393523.999sft | 0.042sft | 892.695sft | 0.110sft | |
| Linn 12A | 3569665.458sft | 0.034sft | 5388263.589sft | 0.029sft | 889.611sft | 0.076sft | |
| Linn13A | 3576435.496sft | 0.028sft | 5374815.463sft | 0.026sft | 898.751sft | 0.053sft | |
| Linn 8 | 3545508.424sft | 0.044sft | 5456511.115sft | 0.034sft | 844.276sft | 0.131sft | |
| Linn 5A | 3555750.767sft | 0.030sft | 5483058.195sft | 0.027sft | 965.541sft | 0.107sft | |
| Linn 6 | 3578308.490sft | 0.000sft | 5499240.430sft | 0.000sft | 1038.530sft | 0.000sft | N E e |
| Jones 7 | 3546601.060sft | 0.000sft | 5499838.570sft | 0.000sft | 949.360sft | 0.000sft | N E e |
| CR 3B | 3482075.370sft | 0.000sft | 5446411.250sft | 0.000sft | 823.680sft | 0.000sft | N E e |
| CR 12B | 3452182.066sft | 0.045sft | 5395843.383sft | 0.039sft | 835.891sft | 0.118sft | |
| CR 6B | 3474712.270sft | 0.000sft | 5437840.190sft | 0.000sft | 851.250sft | 0.000sft | N E e |
| CR 3A | 3482323.330sft | 0.000sft | 5448254.740sft | 0.000sft | 809.210sft | 0.000sft | N E e |

## Adjusted Geodetic Coordinates

**Errors are reported using 1.96σ.**

| Point Name | Latitude | N error | Longitude | E error | Height | h error | Fix |
|---|---|---|---|---|---|---|---|
| DelCo 2001-74 | 42°17'47.38275"N | 0.000sft | 91°32'19.54122"W | 0.000sft | 804.902sft | 0.245sft | Lat Long e |
| Linn 9A | 42°17'46.75085"N | 0.000sft | 91°36'07.75148"W | 0.000sft | 867.537sft | 0.243sft | Lat Long e |
| CR 14B | 41°55'36.28106"N | 0.032sft | 91°37'23.83606"W | 0.029sft | 725.308sft | 0.219sft | |
| CR 13A | 41°55'39.56477"N | 0.035sft | 91°40'32.93508"W | 0.033sft | 630.099sft | 0.224sft | |
| CR 15A | 41°55'33.93193"N | 0.031sft | 91°34'44.47207"W | 0.027sft | 636.113sft | 0.219sft | |
| Linn 22 | 41°59'32.64483"N | 0.028sft | 91°28'55.14932"W | 0.024sft | 718.555sft | 0.212sft | |
| Jones 1 | 41°56'50.66043"N | 0.000sft | 91°21'22.64364"W | 0.000sft | 790.851sft | 0.251sft | Lat Long e |
| Linn 1A | 41°55'03.53054"N | 0.052sft | 91°24'35.87886"W | 0.044sft | 693.981sft | 0.258sft | |
| JoCo 92-06 | 41°51'36.49202"N | 0.000sft | 91°32'18.77339"W | 0.000sft | 718.888sft | 0.249sft | Lat Long |
| JoCo 92-05 | 41°51'38.49063"N | 0.000sft | 91°36'00.17629"W | 0.000sft | 686.668sft | 0.244sft | Lat Long e |
| 57-27 | 41°52'59.87090"N | 0.000sft | 91°38'48.29258"W | 0.000sft | 704.670sft | 0.238sft | Lat Long e |
| JoCo 92-04 | 41°51'53.24586"N | 0.000sft | 91°39'21.31108"W | 0.000sft | 739.937sft | 0.244sft | Lat Long e |
| Linn 19 | 41°54'46.49607"N | 0.020sft | 91°43'48.05985"W | 0.018sft | 691.518sft | 0.233sft | |
| CID GP1 | 41°53'00.03220"N | 0.000sft | 91°44'00.13411"W | 0.000sft | 760.957sft | 0.249sft | Lat Long |
| Linn 18A | 41°54'57.16442"N | 0.033sft | 91°46'26.19661"W | 0.029sft | 650.367sft | 0.245sft | |
| BenCo 2003-80 | 41°57'00.27748"N | 0.000sft | 91°49'59.51489"W | 0.000sft | 704.340sft | 0.246sft | Lat Long e |
| Linn 17 | 41°59'43.84116"N | 0.000sft | 91°50'03.24067"W | 0.000sft | 750.549sft | 0.237sft | Lat Long e |
| Linn 16A | 42°04'14.90263"N | 0.031sft | 91°47'39.47081"W | 0.032sft | 635.398sft | 0.222sft | |
| BenCo 2003-82 | 42°04'08.75226"N | 0.000sft | 91°50'06.01467"W | 0.000sft | 747.670sft | 0.230sft | Lat Long e |
| Linn 15 | 42°07'28.74863"N | 0.000sft | 91°49'57.65484"W | 0.000sft | 777.655sft | 0.232sft | Lat Long e |
| CR 8B | 41°59'51.06317"N | 0.029sft | 91°45'27.44562"W | 0.024sft | 653.302sft | 0.218sft | |
| Linn 20 | 41°54'15.40598"N | 0.028sft | 91°36'06.99750"W | 0.025sft | 721.212sft | 0.227sft | |
| Linn 1 | 41°55'10.83079"N | 0.049sft | 91°24'39.63509"W | 0.042sft | 725.466sft | 0.255sft | |
| JoCo 92-09 | 41°51'36.52022"N | 0.000sft | 91°21'58.39078"W | 0.000sft | 629.728sft | 0.269sft | Lat Long e |
| CID 6 | 41°53'38.84141"N | 0.028sft | 91°42'26.31131"W | 0.026sft | 754.799sft | 0.238sft | |
| JoCo 92-02 | 41°51'42.60576"N | 0.000sft | 91°46'24.25250"W | 0.000sft | 700.715sft | 0.259sft | Lat Long e |
| JoCo 92-01 | 41°51'42.02342"N | 0.000sft | 91°49'53.67743"W | 0.000sft | 675.388sft | 0.268sft | Lat Long e |
| CR 12A | 41°56'59.33578"N | 0.034sft | 91°45'19.43894"W | 0.028sft | 717.024sft | 0.229sft | |
| BenCo 2003-81 | 42°01'55.20120"N | 0.000sft | 91°50'06.32240"W | 0.000sft | 737.410sft | 0.232sft | Lat Long e |
| JoCo 92-08 | 41°51'35.90146"N | 0.000sft | 91°25'56.20459"W | 0.000sft | 615.140sft | 0.259sft | Lat Long e |
| BenCo 2003-83 | 42°09'57.79100"N | 0.000sft | 91°50'36.41758"W | 0.000sft | 723.668sft | 0.239sft | Lat Long e |
| CR 13B | 41°55'57.46764"N | 0.032sft | 91°40'35.44228"W | 0.030sft | 619.505sft | 0.222sft | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CR 14A | 41°55'36.39176"N | 0.038sft | 91°37'06.41116"W | 0.034sft | 732.484sft | 0.221sft | |
| Linn 21 | 41°55'01.42513"N | 0.032sft | 91°28'56.95059"W | 0.028sft | 657.664sft | 0.231sft | |
| JoCo 92-03 | 41°51'43.50998"N | 0.000sft | 91°42'52.30939"W | 0.000sft | 689.169sft | 0.251sft | Lat Long e |
| BenCo 2003-79 | 41°54'19.66641"N | 0.000sft | 91°49'55.00372"W | 0.000sft | 717.316sft | 0.258sft | Lat Long e |
| Linn 17A | 41°59'34.70625"N | 0.028sft | 91°50'03.97846"W | 0.026sft | 746.937sft | 0.239sft | |
| Linn 16 | 42°04'01.78660"N | 0.038sft | 91°47'40.80904"W | 0.038sft | 638.115sft | 0.225sft | |
| JoCo 92-07 | 41°51'35.85256"N | 0.000sft | 91°29'36.52762"W | 0.000sft | 759.271sft | 0.250sft | Lat Long e |
| C10 | 42°01'38.47949"N | 0.000sft | 91°37'04.64543"W | 0.000sft | 745.519sft | 0.202sft | Lat Long e |
| CR 5A | 42°00'38.36921"N | 0.050sft | 91°40'39.46669"W | 0.034sft | 746.133sft | 0.223sft | |
| BM818 | 42°01'18.33898"N | 0.000sft | 91°31'16.13458"W | 0.000sft | 712.478sft | 0.206sft | Lat Long e |
| Linn 24 | 42°04'45.85118"N | 0.030sft | 91°28'53.38210"W | 0.026sft | 772.385sft | 0.206sft | |
| Linn 3 | 42°03'52.59756"N | 0.036sft | 91°26'36.29608"W | 0.032sft | 759.097sft | 0.215sft | |
| Linn 2A | 41°59'40.43415"N | 0.000sft | 91°22'15.35248"W | 0.000sft | 803.439sft | 0.238sft | Lat Long e |
| Jones 2 | 41°59'01.86599"N | 0.000sft | 91°21'55.73549"W | 0.000sft | 776.411sft | 0.241sft | Lat Long e |
| CR 9A | 41°58'11.53804"N | 0.042sft | 91°42'58.09101"W | 0.036sft | 716.801sft | 0.222sft | |
| CR 4A | 42°01'52.18364"N | 0.049sft | 91°42'57.98662"W | 0.040sft | 723.446sft | 0.217sft | |
| Linn 32 | 42°08'24.60924"N | 0.036sft | 91°44'19.63960"W | 0.034sft | 714.824sft | 0.213sft | |
| Linn 23 | 42°05'32.04661"N | 0.038sft | 91°42'13.66040"W | 0.038sft | 712.132sft | 0.206sft | |
| Linn 25 | 42°09'59.95402"N | 0.034sft | 91°46'30.00162"W | 0.031sft | 755.034sft | 0.225sft | |
| Linn 11 | 42°04'52.00163"N | 0.031sft | 91°35'57.18394"W | 0.028sft | 738.253sft | 0.199sft | |
| C18 | 42°04'36.18990"N | 0.000sft | 91°34'44.43660"W | 0.000sft | 757.699sft | 0.197sft | Lat Long e |
| CR 2A | 42°02'07.91006"N | 0.000sft | 91°37'07.42681"W | 0.000sft | 724.599sft | 0.203sft | Lat Long e |
| CR 4B | 42°01'58.38524"N | 0.032sft | 91°42'52.47054"W | 0.029sft | 686.370sft | 0.211sft | |
| CR 6A | 42°00'46.71852"N | 0.000sft | 91°35'58.70978"W | 0.000sft | 728.005sft | 0.203sft | Lat Long e |
| Jones 3 | 42°02'03.94589"N | 0.000sft | 91°21'53.17078"W | 0.000sft | 799.727sft | 0.235sft | Lat Long e |
| Linn 2 | 41°59'40.48297"N | 0.034sft | 91°22'00.33001"W | 0.032sft | 832.701sft | 0.242sft | |
| CR 10A | 41°58'13.92590"N | 0.036sft | 91°40'38.48050"W | 0.030sft | 621.820sft | 0.215sft | |
| C12 | 42°04'11.91770"N | 0.000sft | 91°37'05.58830"W | 0.000sft | 731.331sft | 0.198sft | Lat Long e |
| CR 11A | 41°58'36.05883"N | 0.035sft | 91°37'06.69745"W | 0.029sft | 726.753sft | 0.214sft | |
| Linn 11A | 42°04'43.29233"N | 0.031sft | 91°35'57.12659"W | 0.028sft | 753.436sft | 0.199sft | |
| CR 2B | 42°02'09.16967"N | 0.000sft | 91°37'22.24497"W | 0.000sft | 741.247sft | 0.203sft | Lat Long e |
| CR 5B | 42°00'46.87133"N | 0.072sft | 91°40'39.52335"W | 0.048sft | 787.774sft | 0.258sft | |
| C9 | 42°00'56.23241"N | 0.000sft | 91°35'54.83284"W | 0.000sft | 746.934sft | 0.202sft | Lat Long e |
| Linn 3A | 42°04'05.06697"N | 0.047sft | 91°26'36.17475"W | 0.042sft | 744.797sft | 0.219sft | |
| CR 10B | 41°58'05.67582"N | 0.039sft | 91°40'36.83700"W | 0.035sft | 623.255sft | 0.217sft | |
| CR 9B | 41°58'03.50873"N | 0.043sft | 91°42'58.59527"W | 0.036sft | 735.467sft | 0.223sft | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TBM near Y80 | 42°01'49.05211"N | 0.050sft | 91°42'43.78720"W | 0.044sft | 707.143sft | 0.214sft | e |
| Jones 4 | 42°04'30.99963"N | 0.000sft | 91°21'52.88844"W | 0.000sft | 842.316sft | 0.234sft | Lat Long e |
| BenCo 2003-84 | 42°13'25.22713"N | 0.000sft | 91°49'56.26677"W | 0.000sft | 728.801sft | 0.248sft | Lat Long e |
| BenCo 2003-85 | 42°15'49.36876"N | 0.000sft | 91°49'54.54587"W | 0.000sft | 752.583sft | 0.258sft | Lat Long e |
| Linn 13 | 42°17'56.07050"N | 0.000sft | 91°49'40.75648"W | 0.000sft | 819.915sft | 0.268sft | Lat Long e |
| BuCo 2002-261 | 42°17'47.22166"N | 0.000sft | 91°42'52.45838"W | 0.000sft | 773.366sft | 0.250sft | Lat Long e |
| BuCo 2002-262 | 42°17'47.69350"N | 0.000sft | 91°39'20.42454"W | 0.000sft | 824.749sft | 0.245sft | Lat Long e |
| Linn 30 | 42°15'10.92320"N | 0.023sft | 91°35'30.49178"W | 0.020sft | 845.721sft | 0.225sft | |
| Linn 27 | 42°10'12.65356"N | 0.030sft | 91°32'05.30437"W | 0.026sft | 816.286sft | 0.205sft | |
| DelCo 2001-76 | 42°17'47.32188"N | 0.000sft | 91°25'19.47063"W | 0.000sft | 910.428sft | 0.258sft | Lat Long e |
| DelCo 2001-75 | 42°17'46.80351"N | 0.000sft | 91°28'48.98316"W | 0.000sft | 826.980sft | 0.250sft | Lat Long e |
| Jones 6 | 42°09'55.53621"N | 0.000sft | 91°21'36.96327"W | 0.000sft | 727.867sft | 0.240sft | Lat Long e |
| Linn 4A | 42°06'45.33061"N | 0.000sft | 91°22'25.02384"W | 0.000sft | 859.405sft | 0.235sft | Lat Long e |
| Linn 10 | 42°09'10.71060"N | 0.030sft | 91°36'56.57896"W | 0.029sft | 783.522sft | 0.201sft | |
| Linn 26 | 42°10'06.31791"N | 0.032sft | 91°39'26.12732"W | 0.030sft | 798.634sft | 0.205sft | |
| Linn 15A | 42°07'28.55478"N | 0.053sft | 91°49'45.22547"W | 0.039sft | 752.903sft | 0.239sft | |
| Linn 14 | 42°11'52.87926"N | 0.045sft | 91°45'40.00295"W | 0.040sft | 796.045sft | 0.232sft | |
| BM M75 | 42°13'39.85754"N | 0.043sft | 91°47'06.29523"W | 0.038sft | 704.180sft | 0.243sft | e |
| Linn 12 | 42°17'02.81569"N | 0.033sft | 91°46'25.30335"W | 0.030sft | 795.995sft | 0.255sft | |
| Linn 9 | 42°17'46.74876"N | 0.031sft | 91°35'48.66042"W | 0.029sft | 894.711sft | 0.244sft | |
| Linn 8A | 42°12'40.85007"N | 0.049sft | 91°31'26.16753"W | 0.036sft | 774.415sft | 0.222sft | |
| Linn 7 | 42°16'53.83286"N | 0.033sft | 91°32'22.97264"W | 0.028sft | 807.070sft | 0.242sft | |
| Linn 29 | 42°15'10.19743"N | 0.033sft | 91°28'20.48530"W | 0.030sft | 798.848sft | 0.240sft | |
| Linn 5 | 42°14'04.85421"N | 0.028sft | 91°25'20.58221"W | 0.024sft | 866.060sft | 0.239sft | |
| Linn 6A | 42°17'29.07409"N | 0.026sft | 91°21'48.39770"W | 0.025sft | 903.271sft | 0.269sft | |
| Linn 4 | 42°06'46.79994"N | 0.035sft | 91°22'11.19543"W | 0.028sft | 849.157sft | 0.237sft | |
| Linn 28 | 42°10'09.36195"N | 0.035sft | 91°24'39.60688"W | 0.032sft | 841.290sft | 0.228sft | |
| Linn 10A | 42°09'04.49570"N | 0.037sft | 91°37'02.09138"W | 0.036sft | 785.248sft | 0.205sft | |
| Linn 31 | 42°15'15.37324"N | 0.032sft | 91°42'59.74376"W | 0.029sft | 795.183sft | 0.236sft | |
| BuCo 2002-260 | 42°17'52.10242"N | 0.000sft | 91°46'22.99761"W | 0.000sft | 815.170sft | 0.258sft | Lat Long e |
| Jones 8 | 42°15'09.33406"N | 0.000sft | 91°21'48.77237"W | 0.000sft | 846.040sft | 0.258sft | Lat Long e |
| Linn 14A | 42°11'52.90765"N | 0.046sft | 91°45'25.09581"W | 0.042sft | 789.852sft | 0.234sft | |
| Linn 12A | 42°16'46.17955"N | 0.034sft | 91°46'26.94540"W | 0.029sft | 787.654sft | 0.254sft | |
| Linn13A | 42°17'55.71866"N | 0.028sft | 91°49'24.02290"W | 0.026sft | 797.174sft | 0.270sft | |
| Linn 8 | 42°12'32.83557"N | 0.044sft | 91°31'26.81405"W | 0.034sft | 740.024sft | 0.220sft | |
| Linn 5A | 42°14'07.70595"N | 0.030sft | 91°25'30.82330"W | 0.027sft | 861.154sft | 0.241sft | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Linn 6 | 42°17'46.49738"N | 0.000sft | 91°21'48.19451"W | 0.000sft | 934.615sft | 0.269sft | Lat Long e |
| Jones 7 | 42°12'33.21838"N | 0.000sft | 91°21'50.89637"W | 0.000sft | 844.387sft | 0.248sft | Lat Long e |
| CR 3B | 42°02'08.66826"N | 0.000sft | 91°34'00.25971"W | 0.000sft | 718.073sft | 0.201sft | Lat Long e |
| CR 12B | 41°57'24.29516"N | 0.045sft | 91°45'18.38927"W | 0.039sft | 730.759sft | 0.233sft | |
| CR 6B | 42°00'57.86853"N | 0.000sft | 91°35'56.00374"W | 0.000sft | 745.677sft | 0.202sft | Lat Long e |
| CR 3A | 42°02'10.70000"N | 0.000sft | 91°33'35.76188"W | 0.000sft | 703.579sft | 0.202sft | Lat Long e |

# Control Coordinate Comparisons

**Values shown are control coord minus adjusted coord.**

| Point Name | ΔNorthing | ΔEasting | ΔElevation | ΔHeight |
|---|---|---|---|---|
| JoCo 92-06 | N/A | N/A | 0.256sft | N/A |

# Adjusted Observations

## Adjustment performed in NAD 1983/1996 HARN (Conus)

## GPS Observations

**GPS Transformation Group**: <GPS Default>

**Deflection in Longitude** : 0°00'00.4850" **(1.96σ)** : 0°00'00.4293"
**Deflection in Latitude** : 0°00'00.2309" **(1.96σ)** : 0°00'00.4085"
**Azimuth Rotation** : -0°00'00.0951" **(1.96σ)** : 0°00'00.0473"
**Network Scale** : 0.99999931 **(1.96σ)** : 0.00000023
**Number of Observations** : 223
**Number of Outliers** : 0

**Observation Adjustment (Critical Tau = 3.96). Any outliers are in red.**

| Obs. ID | From Pt. | To Pt. | | Observation | A-posteriori Error (1.96σ) | Residual | Stand. Residual |
|---|---|---|---|---|---|---|---|
| B240 | Linn 30 | Linn 9A | Az. | 349°56'02.6444" | 0°00'00.2677" | 0°00'01.0385" | 3.88 |
| | | | ΔHt. | 21.841sft | 0.039sft | -0.001sft | -0.05 |
| | | | Dist. | 16021.308sft | 0.023sft | -0.004sft | -0.17 |
| B190 | DelCo 2001-76 | DelCo 2001-75 | Az. | 269°49'42.9898" | 0°00'00.0473" | -0°00'00.7842" | -2.02 |
| | | | ΔHt. | -83.410sft | 0.060sft | 0.015sft | 0.31 |
| | | | Dist. | 15745.783sft | 0.004sft | -0.085sft | -3.44 |
| B260 | DelCo 2001-75 | DelCo 2001-74 | Az. | 270°13'55.0610" | 0°00'00.0473" | -0°00'00.1673" | -0.51 |
| | | | ΔHt. | -22.040sft | 0.048sft | 0.013sft | 0.52 |
| | | | Dist. | 15824.377sft | 0.004sft | -0.076sft | -3.34 |
| B43 | JoCo 92-09 | JoCo 92-08 | Az. | 269°49'21.3563" | 0°00'00.0473" | -0°00'00.7328" | -1.96 |
| | | | ΔHt. | -14.545sft | 0.075sft | 0.002sft | 0.05 |
| | | | Dist. | 17995.619sft | 0.004sft | 0.090sft | 3.17 |
| B72 | JoCo 92-08 | JoCo 92-07 | Az. | 270°00'12.1794" | 0°00'00.0473" | 0°00'00.2753" | 0.85 |
| | | | ΔHt. | 144.170sft | 0.059sft | -0.025sft | -1.04 |
| | | | Dist. | 16671.996sft | 0.004sft | -0.072sft | -2.97 |
| B196 | Linn 10 | Linn 26 | Az. | 296°34'06.5273" | 0°00'00.5608" | -0°00'00.7386" | -2.84 |
| | | | ΔHt. | 15.146sft | 0.052sft | -0.007sft | -0.41 |
| | | | Dist. | 12591.545sft | 0.034sft | -0.018sft | -1.10 |
| B76 | JoCo 92-03 | CID GP1 | Az. | 326°28'59.9639" | 0°00'00.0473" | 0°00'01.4429" | 2.82 |

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|---|---|---|---|---|---|---|---|
| | | | ΔHt. | 71.809sft | 0.055sft | -0.045sft | -2.06 |
| | | | Dist. | 9291.320sft | 0.002sft | -0.040sft | -1.68 |
| B13 | Linn 19 | CID GP1 | Az. | 184°50'39.4073" | 0°00'00.3490" | -0°00'01.1484" | -2.81 |
| | | | ΔHt. | 69.430sft | 0.057sft | 0.033sft | 1.15 |
| | | | Dist. | 10815.308sft | 0.020sft | -0.007sft | -0.29 |
| B185 | BuCo 2002-261 | BuCo 2002-262 | Az. | 89°48'30.2904" | 0°00'00.0473" | -0°00'00.2392" | -0.79 |
| | | | ΔHt. | 51.346sft | 0.047sft | -0.015sft | -0.79 |
| | | | Dist. | 15935.226sft | 0.004sft | 0.060sft | 2.68 |
| B258 | Linn 9A | BuCo 2002-262 | Az. | 270°23'44.0340" | 0°00'00.0473" | -0°00'00.9653" | -2.28 |
| | | | ΔHt. | -42.754sft | 0.046sft | -0.005sft | -0.15 |
| | | | Dist. | 14480.448sft | 0.003sft | 0.068sft | 2.53 |
| B209 | Linn 6A | DelCo 2001-76 | Az. | 276°39'41.8233" | 0°00'00.3331" | 0°00'00.6166" | 2.52 |
| | | | ΔHt. | 7.197sft | 0.045sft | -0.016sft | -0.68 |
| | | | Dist. | 15970.773sft | 0.025sft | 0.014sft | 0.74 |
| B227 | Linn 6A | Jones 8 | Az. | 180°06'50.7598" | 0°00'00.3690" | 0°00'00.0280" | 0.11 |
| | | | ΔHt. | -57.246sft | 0.050sft | 0.011sft | 0.60 |
| | | | Dist. | 14145.990sft | 0.026sft | 0.047sft | 2.52 |
| B31 | Linn 19 | JoCo 92-02 | Az. | 212°25'02.4152" | 0°00'00.1815" | 0°00'00.1199" | 0.57 |
| | | | ΔHt. | 9.205sft | 0.054sft | 0.012sft | 0.27 |
| | | | Dist. | 22046.718sft | 0.020sft | 0.059sft | 2.52 |
| B276 | Linn 9 | Linn 9A | Az. | 270°00'36.6934" | 0°00'04.5272" | 0°00'02.5516" | 0.98 |
| | | | ΔHt. | -27.170sft | 0.043sft | 0.000sft | -0.01 |
| | | | Dist. | 1434.770sft | 0.029sft | -0.043sft | -2.49 |
| B1 | DelCo 2001-74 | Linn 9A | Az. | 269°48'27.3879" | 0°00'00.0473" | 0°00'00.1428" | 0.54 |
| | | | ΔHt. | 62.676sft | 0.045sft | 0.042sft | 1.23 |
| | | | Dist. | 17151.023sft | 0.004sft | -0.053sft | -2.44 |
| B154 | C12 | CR 2B | Az. | 185°46'35.1399" | 0°00'00.0473" | 0°00'01.0880" | 2.34 |
| | | | ΔHt. | 9.906sft | 0.055sft | -0.060sft | -1.05 |
| | | | Dist. | 12488.757sft | 0.003sft | 0.040sft | 1.23 |
| B273 | BuCo 2002-260 | Linn13A | Az. | 271°33'29.7995" | 0°00'00.4232" | 0°00'00.2201" | 0.76 |
| | | | ΔHt. | -17.964sft | 0.045sft | -0.020sft | -1.00 |
| | | | Dist. | 13609.282sft | 0.026sft | 0.043sft | 2.33 |
| B219 | BuCo 2002-260 | Linn 13 | Az. | 271°34'00.0813" | 0°00'00.0473" | 0°00'00.3342" | 0.87 |
| | | | ΔHt. | 4.780sft | 0.047sft | -0.015sft | -0.42 |
| | | | Dist. | 14867.331sft | 0.003sft | 0.057sft | 2.32 |

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| B244 | DelCo 2001-76 | Linn 5A | Az. | 182°11'59.5402" | 0°00'00.2448" | -0°00'00.5467" | -2.32 |
| | | | ΔHt. | -49.296sft | 0.069sft | -0.092sft | -1.12 |
| | | | Dist. | 22248.202sft | 0.030sft | 0.026sft | 0.74 |
| B131 | Jones 3 | Linn 2A | Az. | 186°34'37.8257" | 0°00'00.0473" | -0°00'00.4555" | -1.42 |
| | | | ΔHt. | 3.700sft | 0.047sft | -0.011sft | -0.67 |
| | | | Dist. | 14623.303sft | 0.003sft | -0.055sft | -2.31 |
| B315 | Linn 5 | Linn 28 | Az. | 172°37'28.7186" | 0°00'00.2910" | 0°00'00.2243" | 1.36 |
| | | | ΔHt. | -24.804sft | 0.059sft | -0.049sft | -2.28 |
| | | | Dist. | 24037.389sft | 0.037sft | 0.010sft | 0.53 |
| B278 | Linn 7 | DelCo 2001-74 | Az. | 2°43'24.9900" | 0°00'01.0801" | 0°00'01.4814" | 2.28 |
| | | | ΔHt. | -2.162sft | 0.052sft | -0.003sft | -0.15 |
| | | | Dist. | 5427.033sft | 0.033sft | 0.011sft | 0.66 |
| B117 | Linn 3 | Jones 3 | Az. | 117°13'01.0769" | 0°00'00.3122" | 0°00'00.3488" | 1.43 |
| | | | ΔHt. | 40.568sft | 0.071sft | 0.008sft | 0.24 |
| | | | Dist. | 24026.105sft | 0.033sft | -0.049sft | -2.24 |
| B175 | BM818 | Linn 22 | Az. | 135°08'04.4250" | 0°00'00.3482" | 0°00'00.6514" | 2.22 |
| | | | ΔHt. | 6.040sft | 0.055sft | 0.031sft | 1.28 |
| | | | Dist. | 15091.792sft | 0.027sft | 0.035sft | 1.54 |
| B113 | C10 | CR 4B | Az. | 274°25'18.3423" | 0°00'00.2597" | -0°00'00.5532" | -2.20 |
| | | | ΔHt. | -59.085sft | 0.071sft | -0.022sft | -0.38 |
| | | | Dist. | 26327.498sft | 0.029sft | -0.016sft | -0.66 |
| B245 | Linn 6 | DelCo 2001-76 | Az. | 270°19'15.2372" | 0°00'00.0473" | 0°00'00.6404" | 2.14 |
| | | | ΔHt. | -24.149sft | 0.045sft | -0.018sft | -0.78 |
| | | | Dist. | 15878.467sft | 0.004sft | 0.017sft | 0.76 |
| B140 | CR 2B | C10 | Az. | 156°50'59.8314" | 0°00'00.0473" | -0°00'03.4533" | -2.14 |
| | | | ΔHt. | 4.266sft | 0.041sft | 0.027sft | 0.53 |
| | | | Dist. | 3378.671sft | 0.001sft | -0.007sft | -0.25 |
| B104 | Linn 2A | Jones 2 | Az. | 159°13'06.4765" | 0°00'00.0473" | 0°00'00.0619" | 0.05 |
| | | | ΔHt. | -27.036sft | 0.037sft | 0.007sft | 0.20 |
| | | | Dist. | 4175.707sft | 0.001sft | 0.055sft | 2.08 |
| B249 | Linn 10 | C12 | Az. | 181°17'13.0604" | 0°00'00.2040" | 0°00'00.0648" | 0.47 |
| | | | ΔHt. | -52.223sft | 0.059sft | 0.017sft | 0.55 |
| | | | Dist. | 30253.745sft | 0.031sft | -0.042sft | -2.04 |
| B187 | Linn 30 | BuCo 2002-262 | Az. | 312°34'31.7316" | 0°00'00.2004" | -0°00'00.1722" | -0.61 |
| | | | ΔHt. | -20.913sft | 0.047sft | 0.010sft | 0.25 |
| | | | Dist. | 23466.363sft | 0.021sft | -0.050sft | -2.02 |

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|---|---|---|---|---|---|---|---|
| B212 | Jones 6 | Linn 28 | **Az.** | 275°49'37.4576" | 0°00'00.5275" | 0°00'00.5506" | 2.00 |
| | | | **ΔHt.** | 113.457sft | 0.059sft | 0.019sft | 0.96 |
| | | | **Dist.** | 13825.404sft | 0.032sft | -0.033sft | -1.90 |
| B168 | CR 2B | CR 2A | **Az.** | 96°30'13.1778" | 0°00'00.0473" | -0°00'02.5787" | -0.33 |
| | | | **ΔHt.** | -16.650sft | 0.028sft | 0.038sft | 0.45 |
| | | | **Dist.** | 1125.471sft | 0.000sft | 0.066sft | 1.97 |
| B204 | Linn 30 | Linn 9 | **Az.** | 355°03'09.7665" | 0°00'00.4101" | 0°00'00.4759" | 1.96 |
| | | | **ΔHt.** | 49.012sft | 0.045sft | 0.000sft | 0.00 |
| | | | **Dist.** | 15833.344sft | 0.034sft | -0.011sft | -0.57 |
| B152 | Linn 25 | BenCo 2003-83 | **Az.** | 269°20'48.9708" | 0°00'00.3836" | -0°00'00.4695" | -1.79 |
| | | | **ΔHt.** | -31.322sft | 0.067sft | -0.019sft | -0.48 |
| | | | **Dist.** | 18558.483sft | 0.032sft | 0.042sft | 1.92 |
| B316 | Linn 17 | CR 8B | **Az.** | 87°57'49.8214" | 0°00'00.2956" | -0°00'00.4965" | -1.90 |
| | | | **ΔHt.** | -97.294sft | 0.067sft | 0.028sft | 0.61 |
| | | | **Dist.** | 20837.972sft | 0.025sft | -0.011sft | -0.49 |
| B32 | JoCo 92-02 | JoCo 92-01 | **Az.** | 269°48'22.5267" | 0°00'00.0473" | 0°00'00.4743" | 1.31 |
| | | | **ΔHt.** | -25.289sft | 0.069sft | 0.012sft | 0.28 |
| | | | **Dist.** | 15846.998sft | 0.004sft | -0.050sft | -1.90 |
| B203 | Linn 30 | Linn 26 | **Az.** | 209°55'29.1218" | 0°00'00.1818" | 0°00'00.2370" | 1.89 |
| | | | **ΔHt.** | -47.079sft | 0.057sft | 0.013sft | 0.35 |
| | | | **Dist.** | 35570.435sft | 0.035sft | 0.013sft | 0.51 |
| B7 | Linn 22 | CR 15A | **Az.** | 227°33'24.3169" | 0°00'00.2079" | -0°00'00.1076" | -0.63 |
| | | | **ΔHt.** | -82.406sft | 0.061sft | 0.039sft | 0.88 |
| | | | **Dist.** | 35783.413sft | 0.034sft | 0.049sft | 1.87 |
| B188 | Linn 30 | Linn 27 | **Az.** | 152°53'42.7816" | 0°00'00.1726" | 0°00'00.1905" | 1.43 |
| | | | **ΔHt.** | -29.504sft | 0.053sft | 0.002sft | 0.05 |
| | | | **Dist.** | 33913.017sft | 0.033sft | -0.048sft | -1.78 |
| B91 | JoCo 92-03 | JoCo 92-02 | **Az.** | 269°41'33.4474" | 0°00'00.0473" | -0°00'00.6040" | -1.74 |
| | | | **ΔHt.** | 11.584sft | 0.055sft | -0.080sft | -1.78 |
| | | | **Dist.** | 16037.644sft | 0.004sft | 0.023sft | 0.98 |
| B226 | Linn 5 | DelCo 2001-75 | **Az.** | 325°07'35.3036" | 0°00'00.1971" | 0°00'00.2584" | 1.14 |
| | | | **ΔHt.** | -39.017sft | 0.061sft | 0.019sft | 0.25 |
| | | | **Dist.** | 27392.610sft | 0.026sft | -0.055sft | -1.75 |
| B134 | CR 11A | CR 10A | **Az.** | 262°02'50.2532" | 0°00'00.4922" | -0°00'00.5610" | -1.72 |
| | | | **ΔHt.** | -104.897sft | 0.079sft | -0.060sft | -0.90 |

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|---|---|---|---|---|---|---|---|
| | | | **Dist.** | 16153.486sft | 0.033sft | 0.004sft | 0.18 |
| B274 | Linn 12 | BuCo 2002-260 | **Az.** | 1°59'20.6895" | 0°00'01.2310" | 0°00'01.2298" | 1.71 |
| | | | **ΔHt.** | 19.181sft | 0.048sft | -0.009sft | -0.42 |
| | | | **Dist.** | 4992.349sft | 0.033sft | -0.027sft | -1.53 |
| B222 | Linn 9 | BuCo 2002-262 | **Az.** | 270°21'50.6542" | 0°00'00.4098" | -0°00'00.6041" | -1.70 |
| | | | **ΔHt.** | -69.925sft | 0.052sft | -0.001sft | -0.03 |
| | | | **Dist.** | 15915.188sft | 0.029sft | 0.020sft | 0.82 |
| B224 | DelCo 2001-75 | Linn 7 | **Az.** | 251°34'55.5192" | 0°00'00.3960" | -0°00'00.2428" | -0.75 |
| | | | **ΔHt.** | -19.878sft | 0.061sft | -0.006sft | -0.13 |
| | | | **Dist.** | 16954.362sft | 0.029sft | -0.037sft | -1.69 |
| B261 | DelCo 2001-75 | Linn 5A | **Az.** | 146°05'20.2864" | 0°00'00.2125" | 0°00'00.1242" | 0.79 |
| | | | **ΔHt.** | 34.115sft | 0.059sft | -0.072sft | -1.68 |
| | | | **Dist.** | 26719.353sft | 0.029sft | -0.030sft | -1.39 |
| B207 | Linn 29 | Linn 30 | **Az.** | 270°10'13.0773" | 0°00'00.2334" | -0°00'00.1179" | -0.72 |
| | | | **ΔHt.** | 46.949sft | 0.076sft | -0.040sft | -0.63 |
| | | | **Dist.** | 32338.988sft | 0.033sft | -0.037sft | -1.66 |
| B232 | Linn 26 | Linn 25 | **Az.** | 268°53'00.0071" | 0°00'00.2317" | -0°00'00.1390" | -0.75 |
| | | | **ΔHt.** | -43.525sft | 0.061sft | 0.008sft | 0.17 |
| | | | **Dist.** | 31927.196sft | 0.032sft | 0.041sft | 1.66 |
| B114 | C10 | CR 6A | **Az.** | 136°27'59.1543" | 0°00'00.0473" | -0°00'01.6772" | -1.65 |
| | | | **ΔHt.** | -17.532sft | 0.045sft | -0.029sft | -0.56 |
| | | | **Dist.** | 7226.532sft | 0.002sft | -0.035sft | -1.01 |
| B2 | DelCo 2001-74 | Linn 9A | **Az.** | 269°48'27.3879" | 0°00'00.0473" | 0°00'00.1513" | 0.57 |
| | | | **ΔHt.** | 62.676sft | 0.045sft | 0.057sft | 1.64 |
| | | | **Dist.** | 17151.023sft | 0.004sft | 0.010sft | 0.44 |
| B230 | Linn 28 | Linn 27 | **Az.** | 270°36'37.1918" | 0°00'00.2555" | 0°00'00.1749" | 0.93 |
| | | | **ΔHt.** | -24.923sft | 0.074sft | -0.067sft | -1.30 |
| | | | **Dist.** | 33564.633sft | 0.036sft | -0.040sft | -1.64 |
| B90 | CID 6 | JoCo 92-03 | **Az.** | 189°33'54.2922" | 0°00'00.4544" | 0°00'00.3624" | 1.19 |
| | | | **ΔHt.** | -65.638sft | 0.040sft | 0.029sft | 1.62 |
| | | | **Dist.** | 11838.768sft | 0.028sft | 0.001sft | 0.04 |
| B304 | C18 | CR 3B | **Az.** | 167°24'54.7948" | 0°00'00.0473" | -0°00'00.4912" | -1.58 |
| | | | **ΔHt.** | -39.650sft | 0.039sft | -0.017sft | -0.70 |
| | | | **Dist.** | 15300.493sft | 0.004sft | 0.039sft | 1.62 |
| B118 | Jones 2 | Linn 2 | **Az.** | 354°55'40.9730" | 0°00'01.7159" | -0°00'00.3715" | -0.42 |

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|---|---|---|---|---|---|---|---|
| | | | ΔHt. | 56.296sft | 0.046sft | -0.002sft | -0.12 |
| | | | Dist. | 3924.394sft | 0.034sft | 0.029sft | 1.61 |
| B162 | CR 10B | CR 11A | Az. | 79°00'54.4753" | 0°00'00.5214" | -0°00'00.5428" | -1.59 |
| | | | ΔHt. | 103.464sft | 0.085sft | 0.079sft | 1.03 |
| | | | Dist. | 16168.704sft | 0.036sft | 0.002sft | 0.11 |
| B35 | BenCo 2003-81 | BenCo 2003-82 | Az. | 0°05'54.0339" | 0°00'00.0473" | 0°00'00.2660" | 0.72 |
| | | | ΔHt. | 10.275sft | 0.052sft | -0.018sft | -0.77 |
| | | | Dist. | 13518.945sft | 0.003sft | -0.039sft | -1.58 |
| B173 | Jones 4 | Jones 3 | Az. | 180°04'55.1440" | 0°00'00.0473" | -0°00'00.5471" | -1.58 |
| | | | ΔHt. | -42.605sft | 0.056sft | -0.016sft | -0.70 |
| | | | Dist. | 14885.782sft | 0.003sft | -0.040sft | -1.50 |
| B303 | CR 5A | CR 6A | Az. | 87°41'25.2332" | 0°00'00.4852" | -0°00'00.8470" | -1.58 |
| | | | ΔHt. | -18.177sft | 0.103sft | -0.067sft | -0.70 |
| | | | Dist. | 21211.577sft | 0.035sft | 0.026sft | 0.78 |
| B132 | Linn 2A | Linn 2 | Az. | 89°44'56.3443" | 0°00'06.2535" | 0°00'04.9251" | 1.58 |
| | | | ΔHt. | 29.259sft | 0.046sft | 0.003sft | 0.18 |
| | | | Dist. | 1134.384sft | 0.032sft | 0.010sft | 0.58 |
| B279 | Linn 5A | Linn 29 | Az. | 296°23'03.4274" | 0°00'00.4977" | 0°00'00.2028" | 0.88 |
| | | | ΔHt. | -62.268sft | 0.062sft | -0.027sft | -1.13 |
| | | | Dist. | 14243.224sft | 0.033sft | -0.025sft | -1.57 |
| B280 | Linn 5 | Linn 5A | Az. | 290°32'33.3158" | 0°00'08.3312" | 0°00'00.8032" | 0.19 |
| | | | ΔHt. | -4.903sft | 0.055sft | 0.031sft | 1.56 |
| | | | Dist. | 822.716sft | 0.030sft | -0.021sft | -1.30 |
| B208 | DelCo 2001-76 | Linn 5 | Az. | 180°12'45.7835" | 0°00'00.2196" | -0°00'00.2490" | -1.18 |
| | | | ΔHt. | -44.392sft | 0.063sft | -0.032sft | -0.53 |
| | | | Dist. | 22520.657sft | 0.028sft | 0.045sft | 1.53 |
| B12 | 57-27 | JoCo 92-04 | Az. | 200°19'39.5616" | 0°00'00.0473" | 0°00'00.9958" | 1.41 |
| | | | ΔHt. | 35.266sft | 0.041sft | 0.044sft | 1.51 |
| | | | Dist. | 7191.784sft | 0.002sft | 0.020sft | 0.74 |
| B237 | Linn13A | BenCo 2003-85 | Az. | 190°10'22.3586" | 0°00'00.4215" | 0°00'00.4631" | 1.51 |
| | | | ΔHt. | -44.599sft | 0.047sft | -0.014sft | -0.55 |
| | | | Dist. | 12994.664sft | 0.028sft | 0.003sft | 0.13 |
| B108 | CR 8B | CR 4A | Az. | 42°36'25.3379" | 0°00'00.5487" | -0°00'00.7130" | -1.50 |
| | | | ΔHt. | 70.132sft | 0.082sft | -0.051sft | -0.54 |
| | | | Dist. | 16661.750sft | 0.047sft | 0.026sft | 0.58 |

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|---|---|---|---|---|---|---|---|
| B128 | CR 6A | CR 11A | **Az.** | 201°13'13.8766" | 0°00'00.4269" | -0°00'00.2969" | -0.91 |
| | | | **ΔHt.** | -1.254sft | 0.057sft | 0.022sft | 0.65 |
| | | | **Dist.** | 14187.547sft | 0.034sft | 0.040sft | 1.50 |
| B267 | Linn 26 | Linn 32 | **Az.** | 245°03'20.9693" | 0°00'00.3129" | 0°00'00.0147" | 0.08 |
| | | | **ΔHt.** | -83.769sft | 0.061sft | -0.007sft | -0.18 |
| | | | **Dist.** | 24387.976sft | 0.034sft | 0.030sft | 1.50 |
| B314 | CR 3A | CR 3B | **Az.** | 263°39'15.0514" | 0°00'00.0473" | 0°00'01.0941" | 0.40 |
| | | | **ΔHt.** | 14.499sft | 0.029sft | 0.008sft | 0.25 |
| | | | **Dist.** | 1860.079sft | 0.000sft | -0.036sft | -1.50 |
| B74 | Linn 20 | 57-27 | **Az.** | 237°56'11.3001" | 0°00'00.3847" | -0°00'00.4337" | -1.50 |
| | | | **ΔHt.** | -16.521sft | 0.044sft | -0.028sft | -1.34 |
| | | | **Dist.** | 14396.985sft | 0.026sft | -0.011sft | -0.55 |
| B246 | Jones 7 | Jones 6 | **Az.** | 176°14'20.1413" | 0°00'00.0473" | 0°00'00.1885" | 0.64 |
| | | | **ΔHt.** | -116.539sft | 0.054sft | 0.041sft | 1.48 |
| | | | **Dist.** | 15996.446sft | 0.004sft | 0.014sft | 0.51 |
| B263 | Jones 8 | Jones 7 | **Az.** | 180°34'46.1224" | 0°00'00.0473" | 0°00'00.4452" | 1.46 |
| | | | **ΔHt.** | -1.671sft | 0.057sft | 0.032sft | 0.95 |
| | | | **Dist.** | 15804.371sft | 0.004sft | 0.010sft | 0.34 |
| B285 | Linn 10A | C12 | **Az.** | 180°30'36.6941" | 0°00'00.2501" | 0°00'00.1081" | 0.65 |
| | | | **ΔHt.** | -53.950sft | 0.069sft | -0.002sft | -0.04 |
| | | | **Dist.** | 29618.172sft | 0.037sft | -0.035sft | -1.46 |
| B257 | BuCo 2002-261 | Linn 31 | **Az.** | 182°02'28.6441" | 0°00'00.3929" | -0°00'00.0969" | -0.36 |
| | | | **ΔHt.** | 21.801sft | 0.054sft | 0.037sft | 1.45 |
| | | | **Dist.** | 15381.464sft | 0.033sft | -0.006sft | -0.29 |
| B47 | Linn 18A | JoCo 92-02 | **Az.** | 179°34'19.1932" | 0°00'00.3094" | 0°00'00.2337" | 1.23 |
| | | | **ΔHt.** | 50.326sft | 0.064sft | -0.046sft | -1.45 |
| | | | **Dist.** | 19694.511sft | 0.033sft | 0.024sft | 1.22 |
| B70 | Linn 21 | Linn 22 | **Az.** | 0°17'01.8319" | 0°00'00.2373" | 0°00'00.0762" | 0.50 |
| | | | **ΔHt.** | 60.921sft | 0.059sft | -0.003sft | -0.10 |
| | | | **Dist.** | 27454.536sft | 0.037sft | 0.035sft | 1.43 |
| B51 | Linn 15 | BenCo 2003-83 | **Az.** | 349°02'58.2649" | 0°00'00.0473" | -0°00'00.4278" | -1.43 |
| | | | **ΔHt.** | -53.962sft | 0.036sft | -0.002sft | -0.07 |
| | | | **Dist.** | 15367.302sft | 0.004sft | -0.023sft | -1.00 |
| B290 | Linn 8 | Linn 8A | **Az.** | 3°25'54.7116" | 0°00'07.6275" | 0°00'09.6098" | 1.43 |
| | | | **ΔHt.** | 34.393sft | 0.055sft | 0.030sft | 0.63 |

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|---|---|---|---|---|---|---|---|
| | | | Dist. | 812.761sft | 0.041sft | 0.006sft | 0.19 |
| B143 | C9 | BM818 | Az. | 83°54'07.9591" | 0°00'00.0473" | 0°00'00.0104" | 0.03 |
| | | | ΔHt. | -34.502sft | 0.058sft | 0.066sft | 1.14 |
| | | | Dist. | 21155.740sft | 0.005sft | 0.041sft | 1.43 |
| B265 | Linn 24 | Linn 27 | Az. | 336°24'12.7084" | 0°00'00.1905" | 0°00'00.0799" | 0.71 |
| | | | ΔHt. | 43.973sft | 0.066sft | 0.015sft | 0.45 |
| | | | Dist. | 36104.859sft | 0.038sft | -0.033sft | -1.41 |
| B18 | Linn 16A | BenCo 2003-82 | Az. | 266°47'22.6806" | 0°00'00.5914" | -0°00'00.4948" | -1.40 |
| | | | ΔHt. | 112.298sft | 0.052sft | -0.010sft | -0.43 |
| | | | Dist. | 11070.243sft | 0.032sft | 0.011sft | 0.63 |
| B200 | BenCo 2003-85 | Linn 12 | Az. | 64°40'59.5291" | 0°00'00.3917" | 0°00'00.5093" | 1.37 |
| | | | ΔHt. | 43.384sft | 0.053sft | 0.014sft | 0.33 |
| | | | Dist. | 17399.559sft | 0.030sft | 0.022sft | 0.84 |
| B286 | Linn 32 | Linn 25 | Az. | 314°31'06.6302" | 0°00'00.4123" | -0°00'00.3748" | -1.36 |
| | | | ΔHt. | 40.244sft | 0.041sft | -0.018sft | -0.76 |
| | | | Dist. | 13768.559sft | 0.029sft | 0.000sft | -0.02 |
| B142 | C10 | C9 | Az. | 129°03'18.3296" | 0°00'00.0473" | -0°00'01.4181" | -1.36 |
| | | | ΔHt. | 1.398sft | 0.044sft | -0.014sft | -0.32 |
| | | | Dist. | 6786.431sft | 0.002sft | -0.021sft | -0.70 |
| B14 | Linn 19 | Linn 18A | Az. | 275°10'32.3998" | 0°00'00.5852" | -0°00'00.4219" | -1.35 |
| | | | ΔHt. | -41.121sft | 0.063sft | -0.031sft | -0.95 |
| | | | Dist. | 12004.835sft | 0.031sft | 0.017sft | 1.01 |
| B318 | CR 6A | CR 6B | Az. | 10°15'30.3534" | 0°00'00.0473" | -0°00'02.4772" | -0.61 |
| | | | ΔHt. | 17.673sft | 0.023sft | 0.046sft | 1.33 |
| | | | Dist. | 1147.007sft | 0.000sft | -0.019sft | -0.71 |
| B228 | Jones 8 | Linn 5 | Az. | 247°44'25.8132" | 0°00'00.3294" | -0°00'00.6012" | -1.26 |
| | | | ΔHt. | 20.050sft | 0.066sft | 0.012sft | 0.17 |
| | | | Dist. | 17216.924sft | 0.026sft | -0.038sft | -1.32 |
| B45 | 57-27 | CID 6 | Az. | 283°28'24.5509" | 0°00'00.3357" | -0°00'00.2127" | -0.86 |
| | | | ΔHt. | 50.173sft | 0.045sft | 0.024sft | 1.31 |
| | | | Dist. | 16955.499sft | 0.026sft | 0.020sft | 1.10 |
| B272 | BuCo 2002-260 | Linn 12A | Az. | 182°32'46.5936" | 0°00'00.9029" | 0°00'01.0623" | 1.28 |
| | | | ΔHt. | -27.523sft | 0.052sft | 0.028sft | 0.52 |
| | | | Dist. | 6680.023sft | 0.034sft | -0.026sft | -0.76 |
| B294 | C9 | CR 6A | Az. | 196°54'14.1629" | 0°00'00.0473" | 0°00'05.7837" | 1.26 |

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| | | | ΔHt. | -18.929sft | 0.021sft | -0.033sft | -1.07 |
| | | | Dist. | 1006.540sft | 0.000sft | -0.018sft | -0.72 |
| B236 | Linn 12A | BenCo 2003-85 | Az. | 249°47'32.9283" | 0°00'00.4211" | 0°00'00.3583" | 1.08 |
| | | | ΔHt. | -35.040sft | 0.052sft | 0.017sft | 0.48 |
| | | | Dist. | 16633.917sft | 0.030sft | 0.027sft | 1.24 |
| B306 | C9 | CR 6B | Az. | 331°54'43.6294" | 0°00'00.0473" | -0°00'30.1430" | -1.23 |
| | | | ΔHt. | -1.256sft | 0.012sft | 0.011sft | 0.40 |
| | | | Dist. | 187.727sft | 0.000sft | 0.027sft | 1.19 |
| B83 | CR 13B | Linn 19 | Az. | 243°45'27.2576" | 0°00'00.3839" | -0°00'00.0926" | -0.41 |
| | | | ΔHt. | 72.040sft | 0.046sft | 0.011sft | 0.44 |
| | | | Dist. | 16236.998sft | 0.030sft | 0.022sft | 1.22 |
| B275 | Linn 31 | Linn 26 | Az. | 152°47'03.0539" | 0°00'00.2045" | 0°00'00.0268" | 0.20 |
| | | | ΔHt. | 3.379sft | 0.058sft | 0.018sft | 0.55 |
| | | | Dist. | 35174.018sft | 0.035sft | -0.026sft | -1.21 |
| B34 | BenCo 2003-80 | BenCo 2003-81 | Az. | 359°00'50.7053" | 0°00'00.0473" | -0°00'00.0913" | -0.48 |
| | | | ΔHt. | 33.106sft | 0.055sft | 0.008sft | 0.16 |
| | | | Dist. | 29858.252sft | 0.007sft | -0.040sft | -1.17 |
| B147 | Jones 2 | Linn 22 | Az. | 275°39'24.3866" | 0°00'00.1887" | -0°00'00.0112" | -0.07 |
| | | | ΔHt. | -57.778sft | 0.060sft | 0.017sft | 0.63 |
| | | | Dist. | 31826.747sft | 0.025sft | 0.025sft | 1.17 |
| B135 | CR 10A | CR 8B | Az. | 294°16'50.8930" | 0°00'00.2901" | -0°00'00.4036" | -1.15 |
| | | | ΔHt. | 31.545sft | 0.058sft | 0.095sft | 1.12 |
| | | | Dist. | 23936.682sft | 0.029sft | -0.018sft | -0.58 |
| B61 | JoCo 92-03 | Linn 19 | Az. | 347°10'46.9476" | 0°00'00.2022" | 0°00'00.2541" | 1.14 |
| | | | ΔHt. | 2.380sft | 0.041sft | 0.009sft | 0.29 |
| | | | Dist. | 18996.483sft | 0.020sft | 0.000sft | -0.01 |
| B22 | CR 13A | Linn 19 | Az. | 250°00'30.5963" | 0°00'00.4314" | -0°00'00.1098" | -0.47 |
| | | | ΔHt. | 61.448sft | 0.050sft | 0.017sft | 0.61 |
| | | | Dist. | 15699.006sft | 0.032sft | 0.020sft | 1.14 |
| B146 | Jones 1 | Jones 2 | Az. | 349°20'34.5012" | 0°00'00.0473" | -0°00'00.1443" | -0.34 |
| | | | ΔHt. | -14.419sft | 0.055sft | 0.037sft | 1.12 |
| | | | Dist. | 13514.537sft | 0.003sft | 0.022sft | 0.72 |
| B180 | BenCo 2003-84 | BenCo 2003-83 | Az. | 188°11'38.6683" | 0°00'00.0473" | 0°00'00.2573" | 1.11 |
| | | | ΔHt. | -5.149sft | 0.056sft | 0.000sft | -0.02 |
| | | | Dist. | 21214.980sft | 0.005sft | 0.003sft | 0.11 |

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| B296 | Linn 5 | Linn 8 | Az. | 251°21'25.1868" | 0°00'00.3270" | -0°00'00.2575" | -1.10 |
| | | | ΔHt. | -125.981sft | 0.079sft | -0.043sft | -0.72 |
| | | | Dist. | 29088.024sft | 0.040sft | -0.017sft | -0.45 |
| B319 | C18 | CR 3A | Az. | 160°36'47.1937" | 0°00'00.0473" | 0°00'00.0253" | 0.07 |
| | | | ΔHt. | -54.148sft | 0.042sft | -0.004sft | -0.09 |
| | | | Dist. | 15612.117sft | 0.004sft | 0.033sft | 1.10 |
| B60 | JoCo 92-04 | JoCo 92-03 | Az. | 266°29'14.4210" | 0°00'00.0473" | -0°00'00.1844" | -0.52 |
| | | | ΔHt. | -50.731sft | 0.046sft | -0.010sft | -0.39 |
| | | | Dist. | 15995.911sft | 0.004sft | 0.025sft | 1.09 |
| B130 | Linn 24 | Linn 22 | Az. | 180°14'28.1008" | 0°00'00.2005" | 0°00'00.0583" | 0.35 |
| | | | ΔHt. | -53.865sft | 0.061sft | -0.063sft | -1.09 |
| | | | Dist. | 31705.025sft | 0.036sft | -0.018sft | -0.57 |
| B291 | CR 15A | CR 11A | Az. | 329°46'24.8010" | 0°00'00.3761" | -0°00'00.1918" | -0.43 |
| | | | ΔHt. | 90.686sft | 0.082sft | -0.144sft | -1.08 |
| | | | Dist. | 21339.510sft | 0.043sft | 0.061sft | 0.95 |
| B239 | Linn 30 | Linn 31 | Az. | 270°48'20.9810" | 0°00'00.2124" | -0°00'00.1254" | -0.80 |
| | | | ΔHt. | -50.457sft | 0.056sft | -0.014sft | -0.38 |
| | | | Dist. | 33788.893sft | 0.031sft | 0.024sft | 1.06 |
| B73 | JoCo 92-07 | JoCo 92-06 | Az. | 270°19'01.4879" | 0°00'00.0473" | 0°00'00.0107" | 0.03 |
| | | | ΔHt. | -40.354sft | 0.053sft | -0.003sft | -0.22 |
| | | | Dist. | 12277.405sft | 0.003sft | 0.025sft | 1.06 |
| B233 | Linn 15 | BenCo 2003-83 | Az. | 349°02'58.2649" | 0°00'00.0473" | -0°00'00.2264" | -0.69 |
| | | | ΔHt. | -53.962sft | 0.036sft | -0.005sft | -0.19 |
| | | | Dist. | 15367.302sft | 0.004sft | -0.030sft | -1.05 |
| B211 | Jones 6 | Linn 4 | Az. | 187°41'28.0703" | 0°00'00.3106" | 0°00'00.3091" | 1.04 |
| | | | ΔHt. | 121.274sft | 0.083sft | 0.069sft | 1.01 |
| | | | Dist. | 19278.725sft | 0.035sft | 0.005sft | 0.13 |
| B59 | JoCo 92-05 | Linn 20 | Az. | 358°08'23.9297" | 0°00'00.3293" | -0°00'00.0028" | -0.01 |
| | | | ΔHt. | 34.564sft | 0.045sft | -0.021sft | -1.04 |
| | | | Dist. | 15891.925sft | 0.028sft | -0.002sft | -0.11 |
| B148 | CR 13B | CR 10B | Az. | 359°32'05.3780" | 0°00'00.5448" | -0°00'00.0313" | -0.14 |
| | | | ΔHt. | 3.765sft | 0.064sft | 0.019sft | 0.81 |
| | | | Dist. | 12978.283sft | 0.038sft | 0.015sft | 1.03 |
| B270 | Linn 12A | BM M75 | Az. | 188°55'13.7275" | 0°00'00.4096" | -0°00'00.0388" | -0.22 |
| | | | ΔHt. | -83.487sft | 0.064sft | 0.009sft | 0.26 |

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| | | | Dist. | 19092.161sft | 0.045sft | -0.022sft | -1.03 |
| B64 | BenCo 2003-80 | Linn 17A | Az. | 358°45'53.0933" | 0°00'00.3491" | 0°00'00.0055" | 0.02 |
| | | | ΔHt. | 42.616sft | 0.055sft | 0.035sft | 1.00 |
| | | | Dist. | 15635.725sft | 0.029sft | -0.016sft | -0.65 |
| B193 | Jones 6 | Linn 4A | Az. | 190°39'18.1854" | 0°00'00.0473" | 0°00'00.3495" | 1.00 |
| | | | ΔHt. | 131.525sft | 0.075sft | -0.038sft | -0.47 |
| | | | Dist. | 19591.687sft | 0.005sft | -0.025sft | -0.48 |
| B68 | CR 14B | CR 13B | Az. | 278°26'26.2291" | 0°00'00.4561" | -0°00'00.1228" | -0.49 |
| | | | ΔHt. | -105.766sft | 0.047sft | 0.021sft | 0.90 |
| | | | Dist. | 14641.135sft | 0.030sft | 0.016sft | 0.98 |
| B206 | Linn 7 | Linn 30 | Az. | 233°33'27.9689" | 0°00'00.4084" | -0°00'00.1332" | -0.47 |
| | | | ΔHt. | 38.673sft | 0.063sft | 0.011sft | 0.25 |
| | | | Dist. | 17530.435sft | 0.033sft | 0.021sft | 0.96 |
| B217 | Linn 31 | BM M75 | Az. | 242°29'12.8598" | 0°00'00.3978" | -0°00'00.2203" | -0.96 |
| | | | ΔHt. | -90.969sft | 0.064sft | 0.042sft | 0.96 |
| | | | Dist. | 20914.781sft | 0.040sft | 0.019sft | 0.79 |
| B151 | Linn 23 | Linn 16A | Az. | 252°23'52.2675" | 0°00'00.2944" | -0°00'00.0537" | -0.38 |
| | | | ΔHt. | -76.684sft | 0.065sft | 0.012sft | 0.51 |
| | | | Dist. | 25780.184sft | 0.036sft | 0.015sft | 0.92 |
| B156 | C9 | CR 11A | Az. | 200°56'07.6525" | 0°00'00.3988" | -0°00'00.2804" | -0.91 |
| | | | ΔHt. | -20.183sft | 0.057sft | -0.001sft | -0.04 |
| | | | Dist. | 15191.420sft | 0.035sft | 0.024sft | 0.86 |
| B123 | Linn 23 | CR 4B | Az. | 187°42'43.3049" | 0°00'00.3912" | 0°00'00.0377" | 0.10 |
| | | | ΔHt. | -25.778sft | 0.084sft | 0.013sft | 0.15 |
| | | | Dist. | 21825.496sft | 0.037sft | -0.017sft | -0.90 |
| B102 | Linn 24 | Linn 3 | Az. | 117°31'27.8838" | 0°00'00.6029" | 0°00'00.2011" | 0.53 |
| | | | ΔHt. | -13.318sft | 0.058sft | -0.017sft | -0.47 |
| | | | Dist. | 11660.006sft | 0.032sft | -0.019sft | -0.90 |
| B241 | Linn 30 | Linn 8 | Az. | 131°05'47.8340" | 0°00'00.3362" | 0°00'00.0184" | 0.06 |
| | | | ΔHt. | -105.758sft | 0.066sft | -0.002sft | -0.03 |
| | | | Dist. | 24334.619sft | 0.039sft | -0.036sft | -0.89 |
| B205 | Linn 30 | Linn 8A | Az. | 129°33'05.4386" | 0°00'00.3722" | 0°00'00.2048" | 0.57 |
| | | | ΔHt. | -71.366sft | 0.068sft | 0.026sft | 0.39 |
| | | | Dist. | 23846.149sft | 0.042sft | -0.038sft | -0.89 |
| B178 | CR 4B | TBM near Y80 | Az. | 145°15'09.8622" | 0°00'06.6015" | -0°00'01.1740" | -0.48 |

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| | | | ΔHt. | 20.770sft | 0.048sft | -0.017sft | -0.88 |
| | | | Dist. | 1149.784sft | 0.038sft | 0.004sft | 0.31 |
| B5 | CR 14B | CR 13A | Az. | 271°20'58.5948" | 0°00'00.4901" | -0°00'00.1700" | -0.65 |
| | | | ΔHt. | -95.174sft | 0.051sft | 0.017sft | 0.60 |
| | | | Dist. | 14298.119sft | 0.032sft | 0.015sft | 0.87 |
| B229 | Linn 4A | Linn 4 | Az. | 81°52'37.7896" | 0°00'06.8413" | -0°00'01.0657" | -0.21 |
| | | | ΔHt. | -10.250sft | 0.061sft | -0.018sft | -0.50 |
| | | | Dist. | 1052.833sft | 0.028sft | 0.017sft | 0.87 |
| B153 | Linn 11A | C12 | Az. | 238°24'36.2877" | 0°00'01.0430" | -0°00'00.2368" | -0.34 |
| | | | ΔHt. | -22.096sft | 0.043sft | -0.005sft | -0.23 |
| | | | Dist. | 6061.801sft | 0.029sft | 0.017sft | 0.86 |
| B125 | Linn 11 | C12 | Az. | 231°49'11.7909" | 0°00'00.9459" | -0°00'00.1891" | -0.30 |
| | | | ΔHt. | -6.914sft | 0.042sft | -0.004sft | -0.21 |
| | | | Dist. | 6563.307sft | 0.029sft | 0.017sft | 0.86 |
| B195 | Linn 27 | Linn 10 | Az. | 254°04'31.0880" | 0°00'00.3052" | 0°00'00.0637" | 0.34 |
| | | | ΔHt. | -32.720sft | 0.058sft | -0.017sft | -0.47 |
| | | | Dist. | 22815.631sft | 0.031sft | 0.017sft | 0.86 |
| B271 | Linn 12A | Linn 12 | Az. | 4°11'30.5089" | 0°00'03.9890" | 0°00'00.5250" | 0.29 |
| | | | ΔHt. | 8.344sft | 0.044sft | -0.005sft | -0.33 |
| | | | Dist. | 1688.607sft | 0.036sft | -0.013sft | -0.86 |
| B85 | Linn 21 | JoCo 92-07 | Az. | 188°11'23.5036" | 0°00'00.2851" | 0°00'00.0650" | 0.36 |
| | | | ΔHt. | 101.591sft | 0.055sft | -0.015sft | -0.85 |
| | | | Dist. | 21023.045sft | 0.032sft | 0.000sft | 0.00 |
| B160 | Linn 2A | Jones 1 | Az. | 166°57'02.2073" | 0°00'00.0473" | -0°00'00.3631" | -0.76 |
| | | | ΔHt. | -12.616sft | 0.062sft | 0.027sft | 0.43 |
| | | | Dist. | 17640.596sft | 0.004sft | 0.036sft | 0.85 |
| B255 | Linn 13 | Linn13A | Az. | 91°37'14.5725" | 0°00'04.5661" | 0°00'02.4707" | 0.74 |
| | | | ΔHt. | -22.743sft | 0.047sft | 0.012sft | 0.49 |
| | | | Dist. | 1258.050sft | 0.026sft | 0.016sft | 0.85 |
| B111 | Linn 11 | C18 | Az. | 106°15'29.1039" | 0°00'01.1199" | -0°00'00.6118" | -0.84 |
| | | | ΔHt. | 19.432sft | 0.042sft | 0.005sft | 0.22 |
| | | | Dist. | 5714.744sft | 0.028sft | 0.005sft | 0.28 |
| B82 | Linn 19 | CR 12A | Az. | 332°49'14.2555" | 0°00'00.4113" | -0°00'00.0831" | -0.31 |
| | | | ΔHt. | 25.538sft | 0.047sft | 0.004sft | 0.24 |
| | | | Dist. | 15116.845sft | 0.033sft | 0.017sft | 0.82 |

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|---|---|---|---|---|---|---|---|
| B16 | Linn 18A | BenCo 2003-80 | **Az.** | 307°43'14.0180" | 0°00'00.3327" | -0°00'00.2343" | -0.52 |
| | | | **ΔHt.** | 54.025sft | 0.077sft | 0.071sft | 0.82 |
| | | | **Dist.** | 20378.234sft | 0.031sft | -0.017sft | -0.47 |
| B26 | Jones 1 | JoCo 92-09 | **Az.** | 184°51'44.1642" | 0°00'00.0473" | 0°00'00.0280" | 0.12 |
| | | | **ΔHt.** | -161.153sft | 0.094sft | -0.032sft | -0.43 |
| | | | **Dist.** | 31913.231sft | 0.007sft | 0.036sft | 0.81 |
| B55 | Linn 21 | CR 15A | **Az.** | 277°10'16.2020" | 0°00'00.2837" | -0°00'00.1255" | -0.81 |
| | | | **ΔHt.** | -21.485sft | 0.055sft | 0.015sft | 0.61 |
| | | | **Dist.** | 26477.191sft | 0.033sft | 0.002sft | 0.12 |
| B109 | Linn 32 | Linn 23 | **Az.** | 151°27'43.2223" | 0°00'00.3907" | 0°00'00.0695" | 0.47 |
| | | | **ΔHt.** | -2.734sft | 0.062sft | 0.015sft | 0.78 |
| | | | **Dist.** | 19881.815sft | 0.039sft | -0.009sft | -0.59 |
| B252 | Linn 31 | Linn 14A | **Az.** | 208°05'48.5683" | 0°00'00.3638" | -0°00'00.1796" | -0.77 |
| | | | **ΔHt.** | -5.327sft | 0.080sft | -0.004sft | -0.05 |
| | | | **Dist.** | 23230.614sft | 0.046sft | 0.020sft | 0.66 |
| B307 | C9 | CR 3A | **Az.** | 54°18'09.2376" | 0°00'00.0473" | 0°00'00.0997" | 0.25 |
| | | | **ΔHt.** | -43.371sft | 0.039sft | -0.006sft | -0.19 |
| | | | **Dist.** | 12922.677sft | 0.003sft | -0.018sft | -0.77 |
| B251 | Linn 15 | BenCo 2003-82 | **Az.** | 181°47'01.8944" | 0°00'00.0473" | 0°00'00.2428" | 0.73 |
| | | | **ΔHt.** | -30.006sft | 0.054sft | 0.010sft | 0.21 |
| | | | **Dist.** | 20254.932sft | 0.005sft | 0.036sft | 0.77 |
| B129 | C18 | Linn 24 | **Az.** | 87°51'06.0819" | 0°00'00.2346" | 0°00'00.1757" | 0.77 |
| | | | **ΔHt.** | 14.626sft | 0.063sft | -0.003sft | -0.07 |
| | | | **Dist.** | 26492.137sft | 0.026sft | 0.005sft | 0.21 |
| B49 | Linn 17 | BenCo 2003-81 | **Az.** | 358°59'52.6201" | 0°00'00.0473" | -0°00'00.0173" | -0.05 |
| | | | **ΔHt.** | -13.123sft | 0.041sft | 0.007sft | 0.29 |
| | | | **Dist.** | 13299.085sft | 0.003sft | -0.018sft | -0.76 |
| B52 | CR 12A | CR 8B | **Az.** | 358°00'29.0919" | 0°00'00.3199" | -0°00'00.0415" | -0.10 |
| | | | **ΔHt.** | -63.700sft | 0.051sft | 0.028sft | 0.49 |
| | | | **Dist.** | 17393.671sft | 0.033sft | 0.040sft | 0.76 |
| B139 | Linn 11A | C18 | **Az.** | 97°27'54.4046" | 0°00'01.1713" | -0°00'00.5848" | -0.75 |
| | | | **ΔHt.** | 4.250sft | 0.042sft | 0.005sft | 0.22 |
| | | | **Dist.** | 5528.749sft | 0.028sft | 0.008sft | 0.43 |
| B21 | Linn 19 | CR 8B | **Az.** | 346°19'11.4798" | 0°00'00.1671" | 0°00'00.0351" | 0.20 |
| | | | **ΔHt.** | -38.163sft | 0.049sft | -0.037sft | -0.75 |

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|---|---|---|---|---|---|---|---|
| | | | Dist. | 31731.172sft | 0.031sft | -0.008sft | -0.24 |
| B116 | Linn 3 | Linn 22 | Az. | 201°43'39.5567" | 0°00'00.2515" | -0°00'00.1186" | -0.75 |
| | | | ΔHt. | -40.547sft | 0.064sft | -0.027sft | -0.65 |
| | | | Dist. | 28323.987sft | 0.038sft | -0.004sft | -0.19 |
| B220 | BuCo 2002-261 | BuCo 2002-260 | Az. | 271°48'29.5497" | 0°00'00.0473" | -0°00'00.2419" | -0.74 |
| | | | ΔHt. | 41.843sft | 0.054sft | 0.014sft | 0.55 |
| | | | Dist. | 15830.388sft | 0.004sft | -0.003sft | -0.15 |
| B126 | C12 | CR 2A | Az. | 180°37'59.5468" | 0°00'00.0473" | 0°00'00.0390" | 0.08 |
| | | | ΔHt. | -6.745sft | 0.054sft | -0.026sft | -0.43 |
| | | | Dist. | 12553.647sft | 0.003sft | 0.025sft | 0.73 |
| B10 | JoCo 92-06 | JoCo 92-05 | Az. | 270°42'44.3887" | 0°00'00.0473" | -0°00'00.3049" | -0.72 |
| | | | ΔHt. | -32.180sft | 0.072sft | -0.004sft | -0.11 |
| | | | Dist. | 16754.815sft | 0.004sft | -0.009sft | -0.30 |
| B6 | CR 15A | CR 14B | Az. | 271°08'44.0769" | 0°00'00.5135" | -0°00'00.2220" | -0.72 |
| | | | ΔHt. | 89.224sft | 0.037sft | 0.010sft | 0.53 |
| | | | Dist. | 12049.037sft | 0.028sft | 0.010sft | 0.60 |
| B20 | Linn 19 | CR 8B | Az. | 346°19'11.4798" | 0°00'00.1671" | -0°00'00.0238" | -0.11 |
| | | | ΔHt. | -38.163sft | 0.049sft | 0.005sft | 0.09 |
| | | | Dist. | 31731.172sft | 0.031sft | 0.034sft | 0.72 |
| B225 | DelCo 2001-75 | Linn 29 | Az. | 172°18'02.9354" | 0°00'00.3853" | 0°00'00.0900" | 0.40 |
| | | | ΔHt. | -28.154sft | 0.062sft | 0.022sft | 0.71 |
| | | | Dist. | 15997.443sft | 0.033sft | 0.011sft | 0.61 |
| B63 | BenCo 2003-80 | BenCo 2003-79 | Az. | 178°47'52.6728" | 0°00'00.0473" | 0°00'00.1153" | 0.36 |
| | | | ΔHt. | 12.958sft | 0.065sft | 0.009sft | 0.19 |
| | | | Dist. | 16261.345sft | 0.004sft | 0.026sft | 0.70 |
| B122 | CR 4A | CR 4B | Az. | 33°32'55.2133" | 0°00'09.4599" | -0°00'03.1520" | -0.70 |
| | | | ΔHt. | -37.076sft | 0.057sft | -0.011sft | -0.41 |
| | | | Dist. | 753.247sft | 0.039sft | 0.007sft | 0.40 |
| B295 | C18 | C9 | Az. | 193°25'25.2879" | 0°00'00.0473" | -0°00'00.0883" | -0.35 |
| | | | ΔHt. | -10.777sft | 0.042sft | -0.018sft | -0.45 |
| | | | Dist. | 22890.299sft | 0.005sft | 0.018sft | 0.69 |
| B94 | Linn 17A | BenCo 2003-81 | Az. | 359°17'14.5002" | 0°00'00.3824" | -0°00'00.0087" | -0.03 |
| | | | ΔHt. | -9.510sft | 0.046sft | 0.011sft | 0.47 |
| | | | Dist. | 14222.838sft | 0.028sft | -0.013sft | -0.69 |
| B312 | CR 5A | CR 4B | Az. | 308°54'34.3974" | 0°00'00.7525" | -0°00'00.3654" | -0.68 |

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| | | | ΔHt. | -59.730sft | 0.100sft | 0.019sft | 0.27 |
| | | | Dist. | 12899.167sft | 0.042sft | -0.019sft | -0.63 |
| B144 | Linn 3A | Linn 3 | Az. | 180°24'55.3936" | 0°00'05.8958" | 0°00'01.4351" | 0.68 |
| | | | ΔHt. | 14.300sft | 0.052sft | 0.000sft | 0.02 |
| | | | Dist. | 1262.273sft | 0.038sft | 0.001sft | 0.06 |
| B179 | Linn 16A | CR 4B | Az. | 122°31'13.4843" | 0°00'00.2830" | -0°00'00.1024" | -0.49 |
| | | | ΔHt. | 50.907sft | 0.080sft | 0.059sft | 0.68 |
| | | | Dist. | 25686.560sft | 0.036sft | -0.021sft | -0.62 |
| B40 | Linn 20 | CR 14B | Az. | 324°38'47.3298" | 0°00'00.5850" | -0°00'00.2521" | -0.67 |
| | | | ΔHt. | 4.119sft | 0.037sft | 0.008sft | 0.38 |
| | | | Dist. | 10038.333sft | 0.028sft | 0.009sft | 0.48 |
| B213 | Linn 10 | Linn 10A | Az. | 213°25'31.6474" | 0°00'09.5945" | 0°00'02.8042" | 0.67 |
| | | | ΔHt. | 1.728sft | 0.054sft | -0.002sft | -0.12 |
| | | | Dist. | 753.796sft | 0.034sft | -0.009sft | -0.59 |
| B30 | CID 6 | Linn 19 | Az. | 317°56'08.8019" | 0°00'00.6437" | -0°00'00.2580" | -0.67 |
| | | | ΔHt. | -63.259sft | 0.044sft | -0.010sft | -0.41 |
| | | | Dist. | 9225.680sft | 0.029sft | -0.010sft | -0.55 |
| B86 | Linn 1 | Linn 21 | Az. | 267°13'19.0318" | 0°00'00.4679" | 0°00'00.1467" | 0.66 |
| | | | ΔHt. | -67.756sft | 0.081sft | -0.011sft | -0.30 |
| | | | Dist. | 19476.798sft | 0.038sft | 0.005sft | 0.28 |
| B264 | Linn 4A | Jones 4 | Az. | 169°53'39.5058" | 0°00'00.0473" | -0°00'00.2224" | -0.62 |
| | | | ΔHt. | -17.109sft | 0.052sft | -0.020sft | -0.63 |
| | | | Dist. | 13812.134sft | 0.003sft | -0.002sft | -0.07 |
| B8 | Jones 1 | Linn 1A | Az. | 233°25'31.5687" | 0°00'00.5996" | 0°00'00.3834" | 0.63 |
| | | | ΔHt. | -96.847sft | 0.106sft | -0.016sft | -0.14 |
| | | | Dist. | 18191.279sft | 0.044sft | -0.017sft | -0.44 |
| B23 | CR 15A | Linn 20 | Az. | 218°08'16.3926" | 0°00'00.5625" | -0°00'00.2296" | -0.63 |
| | | | ΔHt. | 85.105sft | 0.037sft | 0.007sft | 0.33 |
| | | | Dist. | 10105.057sft | 0.029sft | 0.007sft | 0.35 |
| B184 | Linn 13 | BenCo 2003-85 | Az. | 184°37'18.2107" | 0°00'00.0473" | 0°00'00.2472" | 0.63 |
| | | | ΔHt. | -67.343sft | 0.047sft | -0.016sft | -0.47 |
| | | | Dist. | 12867.927sft | 0.003sft | 0.012sft | 0.45 |
| B259 | Linn 8 | Linn 27 | Az. | 191°32'39.2327" | 0°00'00.4594" | 0°00'00.1865" | 0.63 |
| | | | ΔHt. | 76.254sft | 0.057sft | -0.015sft | -0.45 |
| | | | Dist. | 14483.309sft | 0.040sft | 0.011sft | 0.43 |

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| B19 | Linn 15 | BenCo 2003-82 | Az. | 181°47'01.8944" | 0°00'00.0473" | 0°00'00.1878" | 0.61 |
| | | | ΔHt. | -30.006sft | 0.054sft | -0.001sft | -0.02 |
| | | | Dist. | 20254.932sft | 0.005sft | 0.009sft | 0.27 |
| B231 | Linn 27 | Linn 10A | Az. | 252°52'25.8171" | 0°00'00.3376" | 0°00'00.1320" | 0.61 |
| | | | ΔHt. | -30.993sft | 0.069sft | 0.003sft | 0.06 |
| | | | Dist. | 23393.148sft | 0.036sft | 0.004sft | 0.18 |
| B107 | CR 9A | CR 8B | Az. | 311°46'58.3619" | 0°00'00.4650" | -0°00'00.1477" | -0.60 |
| | | | ΔHt. | -63.461sft | 0.054sft | 0.000sft | 0.01 |
| | | | Dist. | 15123.903sft | 0.033sft | -0.004sft | -0.22 |
| B136 | CR 4B | CR 8B | Az. | 222°14'39.4402" | 0°00'00.3924" | -0°00'00.1851" | -0.59 |
| | | | ΔHt. | -33.054sft | 0.069sft | 0.024sft | 0.46 |
| | | | Dist. | 17405.952sft | 0.036sft | 0.011sft | 0.39 |
| B158 | Linn 24 | Linn 3A | Az. | 111°44'15.0022" | 0°00'00.7681" | 0°00'00.0967" | 0.25 |
| | | | ΔHt. | -27.617sft | 0.066sft | 0.001sft | 0.03 |
| | | | Dist. | 11141.083sft | 0.039sft | -0.011sft | -0.59 |
| B101 | BM818 | Linn 24 | Az. | 27°07'54.2700" | 0°00'00.2433" | -0°00'00.1202" | -0.52 |
| | | | ΔHt. | 59.906sft | 0.061sft | -0.006sft | -0.14 |
| | | | Dist. | 23605.842sft | 0.028sft | -0.015sft | -0.59 |
| B33 | CR 12A | BenCo 2003-80 | Az. | 270°17'02.5359" | 0°00'00.3383" | -0°00'00.0737" | -0.23 |
| | | | ΔHt. | -12.634sft | 0.065sft | 0.025sft | 0.52 |
| | | | Dist. | 21164.019sft | 0.028sft | 0.012sft | 0.58 |
| B305 | CR 4B | CR 5B | Az. | 125°47'40.8400" | 0°00'01.0436" | 0°00'00.0032" | 0.00 |
| | | | ΔHt. | 101.372sft | 0.160sft | 0.063sft | 0.57 |
| | | | Dist. | 12373.271sft | 0.059sft | 0.023sft | 0.55 |
| B197 | BenCo 2003-83 | Linn 15A | Az. | 165°40'28.8360" | 0°00'00.5240" | -0°00'00.1729" | -0.56 |
| | | | ΔHt. | 29.209sft | 0.073sft | 0.006sft | 0.15 |
| | | | Dist. | 15591.400sft | 0.053sft | -0.013sft | -0.44 |
| B177 | CR 10A | CR 9B | Az. | 264°19'25.2919" | 0°00'00.7285" | -0°00'00.2292" | -0.56 |
| | | | ΔHt. | 113.671sft | 0.058sft | 0.000sft | -0.01 |
| | | | Dist. | 10636.933sft | 0.032sft | 0.005sft | 0.28 |
| B141 | C10 | CR 5B | Az. | 252°10'00.0179" | 0°00'00.8530" | 0°00'00.4293" | 0.56 |
| | | | ΔHt. | 42.287sft | 0.166sft | 0.026sft | 0.13 |
| | | | Dist. | 17039.868sft | 0.050sft | 0.008sft | 0.16 |
| B289 | C9 | CR 3B | Az. | 49°41'37.2315" | 0°00'00.0473" | 0°00'00.2286" | 0.56 |
| | | | ΔHt. | -28.872sft | 0.035sft | -0.001sft | -0.03 |

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| | | | **Dist.** | 11337.629sft | 0.003sft | 0.005sft | 0.21 |
| B281 | Linn 6 | Linn 6A | **Az.** | 180°29'45.8244" | 0°00'02.9470" | 0°00'01.1135" | 0.54 |
| | | | **ΔHt.** | -31.346sft | 0.042sft | -0.003sft | -0.22 |
| | | | **Dist.** | 1763.842sft | 0.026sft | -0.001sft | -0.07 |
| B115 | C18 | BM818 | **Az.** | 141°51'33.5890" | 0°00'00.0473" | -0°00'00.0914" | -0.34 |
| | | | **ΔHt.** | -45.280sft | 0.059sft | 0.038sft | 0.53 |
| | | | **Dist.** | 25457.768sft | 0.006sft | 0.013sft | 0.31 |
| B183 | BenCo 2003-85 | BenCo 2003-84 | **Az.** | 180°30'30.2008" | 0°00'00.0473" | 0°00'00.1420" | 0.41 |
| | | | **ΔHt.** | -23.797sft | 0.052sft | 0.008sft | 0.36 |
| | | | **Dist.** | 14592.040sft | 0.003sft | -0.015sft | -0.52 |
| B112 | CR 2A | C10 | **Az.** | 175°58'09.8673" | 0°00'00.0473" | 0°00'01.0358" | 0.52 |
| | | | **ΔHt.** | 20.917sft | 0.040sft | 0.010sft | 0.16 |
| | | | **Dist.** | 2986.534sft | 0.001sft | -0.016sft | -0.44 |
| B25 | Jones 1 | Linn 1 | **Az.** | 235°51'14.6681" | 0°00'00.5752" | 0°00'00.2716" | 0.51 |
| | | | **ΔHt.** | -65.362sft | 0.101sft | -0.004sft | -0.04 |
| | | | **Dist.** | 17994.693sft | 0.042sft | -0.005sft | -0.14 |
| B150 | CR 4A | TBM near Y80 | **Az.** | 106°28'38.2976" | 0°00'07.5252" | 0°00'00.1543" | 0.05 |
| | | | **ΔHt.** | -16.306sft | 0.055sft | 0.004sft | 0.18 |
| | | | **Dist.** | 1117.518sft | 0.035sft | -0.007sft | -0.51 |
| B163 | CR 9B | CR 8B | **Az.** | 314°05'42.7239" | 0°00'00.4611" | -0°00'00.1272" | -0.49 |
| | | | **ΔHt.** | -82.126sft | 0.059sft | -0.004sft | -0.10 |
| | | | **Dist.** | 15649.798sft | 0.035sft | -0.005sft | -0.28 |
| B121 | CR 10A | CR 9A | **Az.** | 268°42'00.0047" | 0°00'00.7086" | -0°00'00.1764" | -0.48 |
| | | | **ΔHt.** | 95.006sft | 0.055sft | -0.002sft | -0.08 |
| | | | **Dist.** | 10549.030sft | 0.031sft | 0.004sft | 0.22 |
| B17 | BenCo 2003-80 | Linn 17 | **Az.** | 359°01'35.3535" | 0°00'00.0473" | -0°00'00.1026" | -0.28 |
| | | | **ΔHt.** | 46.229sft | 0.052sft | 0.028sft | 0.47 |
| | | | **Dist.** | 16559.169sft | 0.004sft | -0.009sft | -0.25 |
| B268 | Linn 15A | Linn 15 | **Az.** | 271°12'04.8635" | 0°00'11.6854" | 0°00'02.6851" | 0.46 |
| | | | **ΔHt.** | 24.755sft | 0.071sft | 0.007sft | 0.23 |
| | | | **Dist.** | 936.856sft | 0.039sft | -0.005sft | -0.23 |
| B269 | Linn 14A | Linn 25 | **Az.** | 203°08'48.6396" | 0°00'00.6344" | -0°00'00.1585" | -0.43 |
| | | | **ΔHt.** | -34.819sft | 0.077sft | 0.001sft | 0.02 |
| | | | **Dist.** | 12434.650sft | 0.042sft | 0.006sft | 0.23 |
| B69 | CR 14B | CR 14A | **Az.** | 89°30'39.3664" | 0°00'05.1844" | -0°00'00.7518" | -0.26 |

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|---|---|---|---|---|---|---|---|
| | | | ΔHt. | 7.174sft | 0.041sft | -0.010sft | -0.43 |
| | | | Dist. | 1317.228sft | 0.031sft | 0.007sft | 0.42 |
| B234 | Linn 14 | Linn 14A | Az. | 89°51'06.7474" | 0°00'06.8736" | -0°00'00.9937" | -0.43 |
| | | | ΔHt. | -6.195sft | 0.054sft | 0.001sft | 0.08 |
| | | | Dist. | 1122.077sft | 0.035sft | -0.001sft | -0.06 |
| B110 | Linn 32 | Linn 25 | Az. | 314°31'06.6302" | 0°00'00.4123" | 0°00'00.1157" | 0.42 |
| | | | ΔHt. | 40.244sft | 0.041sft | 0.009sft | 0.33 |
| | | | Dist. | 13768.559sft | 0.029sft | 0.001sft | 0.06 |
| B170 | C9 | CR 6A | Az. | 196°54'14.1629" | 0°00'00.0473" | -0°00'00.7344" | -0.16 |
| | | | ΔHt. | -18.929sft | 0.021sft | -0.006sft | -0.24 |
| | | | Dist. | 1006.540sft | 0.000sft | -0.010sft | -0.42 |
| B27 | JoCo 92-05 | JoCo 92-04 | Az. | 275°37'24.4989" | 0°00'00.0473" | -0°00'00.1369" | -0.42 |
| | | | ΔHt. | 53.307sft | 0.044sft | -0.002sft | -0.08 |
| | | | Dist. | 15292.462sft | 0.004sft | 0.008sft | 0.33 |
| B62 | BenCo 2003-79 | JoCo 92-01 | Az. | 179°38'22.6772" | 0°00'00.0473" | -0°00'00.1411" | -0.41 |
| | | | ΔHt. | -41.945sft | 0.069sft | 0.010sft | 0.25 |
| | | | Dist. | 15957.520sft | 0.004sft | -0.007sft | -0.24 |
| B292 | CR 12A | CR 12B | Az. | 1°47'52.5884" | 0°00'02.8105" | -0°00'00.0836" | -0.07 |
| | | | ΔHt. | 13.739sft | 0.062sft | -0.009sft | -0.41 |
| | | | Dist. | 2527.755sft | 0.039sft | -0.001sft | -0.05 |
| B301 | CR 8B | CR 12B | Az. | 177°21'46.4882" | 0°00'00.4854" | -0°00'00.0173" | -0.08 |
| | | | ΔHt. | 77.439sft | 0.066sft | 0.014sft | 0.40 |
| | | | Dist. | 14872.382sft | 0.040sft | -0.001sft | -0.08 |
| B54 | CR 15A | CR 14A | Az. | 271°20'33.1701" | 0°00'00.6326" | -0°00'00.1365" | -0.40 |
| | | | ΔHt. | 96.397sft | 0.040sft | 0.007sft | 0.33 |
| | | | Dist. | 10732.389sft | 0.030sft | 0.001sft | 0.07 |
| B277 | Linn 8A | Linn 8 | Az. | 183°25'55.1460" | 0°00'07.6278" | -0°00'02.0213" | -0.40 |
| | | | ΔHt. | -34.392sft | 0.055sft | 0.013sft | 0.39 |
| | | | Dist. | 812.761sft | 0.041sft | 0.006sft | 0.19 |
| B302 | CR 5A | CR 10A | Az. | 179°42'28.9812" | 0°00'00.5365" | 0°00'00.1287" | 0.40 |
| | | | ΔHt. | -124.329sft | 0.104sft | 0.021sft | 0.32 |
| | | | Dist. | 14621.548sft | 0.053sft | 0.003sft | 0.09 |
| B223 | Linn 8A | Linn 27 | Az. | 191°06'52.2618" | 0°00'00.4482" | 0°00'00.0905" | 0.37 |
| | | | ΔHt. | 41.862sft | 0.058sft | 0.005sft | 0.18 |
| | | | Dist. | 15288.367sft | 0.044sft | 0.008sft | 0.35 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| B199 | Linn 14 | BM M75 | **Az.** | 329°03'33.2442" | 0°00'00.6335" | -0°00'00.0835" | -0.36 |
| | | | **ΔHt.** | -91.837sft | 0.056sft | 0.000sft | 0.01 |
| | | | **Dist.** | 12627.115sft | 0.039sft | -0.002sft | -0.18 |
| B65 | Linn 16 | BenCo 2003-82 | **Az.** | 273°41'49.8723" | 0°00'00.7171" | -0°00'00.0775" | -0.27 |
| | | | **ΔHt.** | 109.582sft | 0.057sft | 0.004sft | 0.20 |
| | | | **Dist.** | 10974.777sft | 0.038sft | 0.005sft | 0.36 |
| B80 | Linn 16A | Linn 16 | **Az.** | 184°20'51.0638" | 0°00'05.9268" | 0°00'00.8856" | 0.35 |
| | | | **ΔHt.** | 2.717sft | 0.059sft | 0.005sft | 0.21 |
| | | | **Dist.** | 1331.526sft | 0.039sft | 0.004sft | 0.26 |
| B176 | CR 10A | CR 10B | **Az.** | 171°32'37.8970" | 0°00'08.0940" | -0°00'00.6114" | -0.17 |
| | | | **ΔHt.** | 1.434sft | 0.063sft | -0.001sft | -0.03 |
| | | | **Dist.** | 844.294sft | 0.037sft | -0.005sft | -0.35 |
| B181 | BenCo 2003-82 | BenCo 2003-83 | **Az.** | 356°17'32.2720" | 0°00'00.0473" | 0°00'00.0713" | 0.34 |
| | | | **ΔHt.** | -23.956sft | 0.056sft | 0.018sft | 0.33 |
| | | | **Dist.** | 35406.653sft | 0.008sft | -0.004sft | -0.08 |
| B287 | CR 5A | CR 5B | **Az.** | 359°42'54.8262" | 0°00'11.1298" | -0°00'00.4175" | -0.08 |
| | | | **ΔHt.** | 41.642sft | 0.155sft | -0.019sft | -0.28 |
| | | | **Dist.** | 860.646sft | 0.069sft | -0.010sft | -0.33 |
| B198 | Linn 14 | Linn 25 | **Az.** | 198°13'53.5473" | 0°00'00.6379" | -0°00'00.1117" | -0.30 |
| | | | **ΔHt.** | -41.014sft | 0.072sft | 0.002sft | 0.04 |
| | | | **Dist.** | 12035.168sft | 0.041sft | 0.001sft | 0.04 |
| B42 | Linn 1A | Linn 1 | **Az.** | 338°58'44.3267" | 0°00'09.6466" | -0°00'00.0918" | -0.03 |
| | | | **ΔHt.** | 31.486sft | 0.066sft | -0.005sft | -0.29 |
| | | | **Dist.** | 791.649sft | 0.042sft | 0.004sft | 0.30 |
| B79 | Linn 17 | Linn 17A | **Az.** | 183°26'52.6294" | 0°00'05.8345" | 0°00'00.5556" | 0.14 |
| | | | **ΔHt.** | -3.612sft | 0.043sft | -0.005sft | -0.30 |
| | | | **Dist.** | 926.364sft | 0.028sft | 0.004sft | 0.22 |
| B84 | Linn 20 | CR 14A | **Az.** | 331°17'05.1112" | 0°00'00.6987" | -0°00'00.0834" | -0.20 |
| | | | **ΔHt.** | 11.293sft | 0.041sft | 0.002sft | 0.09 |
| | | | **Dist.** | 9347.758sft | 0.032sft | 0.005sft | 0.28 |
| B99 | C10 | CR 5A | **Az.** | 249°27'05.6801" | 0°00'00.5661" | -0°00'00.0218" | -0.03 |
| | | | **ΔHt.** | 0.646sft | 0.104sft | -0.034sft | -0.25 |
| | | | **Dist.** | 17319.379sft | 0.038sft | -0.011sft | -0.21 |
| B71 | Linn 1A | Linn 21 | **Az.** | 269°24'20.0545" | 0°00'00.4921" | 0°00'00.0660" | 0.23 |
| | | | **ΔHt.** | -36.271sft | 0.087sft | 0.013sft | 0.23 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Dist. | 19738.955sft | 0.041sft | -0.002sft | -0.09 |
| B298 | CR 8B | CR 12A | Az. | 178°00'23.7367" | 0°00'00.3202" | 0°00'00.0204" | 0.08 |
| | | | ΔHt. | 63.701sft | 0.051sft | 0.013sft | 0.22 |
| | | | Dist. | 17393.671sft | 0.033sft | -0.001sft | -0.05 |
| B215 | Linn 15A | BenCo 2003-82 | Az. | 184°25'58.8619" | 0°00'00.4088" | -0°00'00.1406" | -0.19 |
| | | | ΔHt. | -5.251sft | 0.085sft | -0.023sft | -0.16 |
| | | | Dist. | 20286.137sft | 0.053sft | -0.021sft | -0.17 |
| B53 | CR 13A | CR 13B | Az. | 354°01'48.4161" | 0°00'03.4988" | 0°00'00.1086" | 0.06 |
| | | | ΔHt. | -10.591sft | 0.046sft | 0.000sft | -0.02 |
| | | | Dist. | 1822.092sft | 0.032sft | 0.003sft | 0.18 |
| B283 | Linn 4 | Jones 4 | Az. | 174°15'52.9566" | 0°00'00.4266" | 0°00'00.0066" | 0.02 |
| | | | ΔHt. | -6.858sft | 0.056sft | 0.003sft | 0.17 |
| | | | Dist. | 13815.832sft | 0.035sft | 0.000sft | 0.00 |
| B149 | CR 9A | CR 9B | Az. | 182°41'00.1625" | 0°00'08.0747" | -0°00'00.2026" | -0.05 |
| | | | ΔHt. | 18.666sft | 0.054sft | -0.002sft | -0.09 |
| | | | Dist. | 813.661sft | 0.037sft | -0.001sft | -0.07 |
| B167 | Linn 11 | Linn 11A | Az. | 179°43'08.0724" | 0°00'07.5450" | 0°00'00.1144" | 0.03 |
| | | | ΔHt. | 15.182sft | 0.041sft | 0.000sft | -0.01 |
| | | | Dist. | 881.628sft | 0.036sft | 0.000sft | 0.00 |

## Geoid Observations

**Number of Observations** : 110
**Number of Outliers** : 0

**Observation Adjustment (Critical Tau = 3.96). Any outliers are in red.**

| Observation ID | Point Name | Separation | A-posteriori Error (1.96σ) | Residual | Standardized Residual |
|---|---|---|---|---|---|
| G141 | JoCo 92-03 | -106.091sft | 0.251sft | -0.132sft | -1.87 |
| G145 | JoCo 92-07 | -106.469sft | 0.250sft | 0.094sft | 1.32 |
| G108 | Linn 9A | -102.713sft | 0.243sft | -0.098sft | -1.25 |
| G136 | JoCo 92-08 | -106.570sft | 0.259sft | 0.078sft | 1.24 |
| G186 | Jones 6 | -105.473sft | 0.240sft | -0.098sft | -1.23 |
| G194 | Linn 9 | -102.734sft | 0.244sft | -0.090sft | -1.18 |
| G201 | Linn 28 | -105.254sft | 0.247sft | -0.087sft | -1.18 |

| | | | | | |
|---|---|---|---|---|---|
| G200 | Linn 4 | -105.852sft | 0.236sft | -0.095sft | -1.14 |
| G187 | Linn 4A | -105.845sft | 0.235sft | -0.096sft | -1.14 |
| G183 | Linn 27 | -104.662sft | 0.243sft | -0.088sft | -1.13 |
| G188 | Linn 10 | -104.308sft | 0.235sft | -0.091sft | -1.09 |
| G202 | Linn 10A | -104.316sft | 0.235sft | -0.091sft | -1.08 |
| G189 | Linn 26 | -103.859sft | 0.241sft | -0.084sft | -1.06 |
| G182 | Linn 30 | -103.312sft | 0.251sft | -0.074sft | -1.05 |
| G130 | JoCo 92-09 | -106.622sft | 0.269sft | 0.053sft | 1.04 |
| G209 | Linn 8 | -104.252sft | 0.252sft | -0.071sft | -1.02 |
| G195 | Linn 8A | -104.224sft | 0.252sft | -0.070sft | -1.00 |
| G120 | CID GP1 | -105.808sft | 0.257sft | -0.064sft | -0.99 |
| G192 | BM M75 | -102.370sft | 0.243sft | -0.075sft | -0.97 |
| G206 | Linn 14A | -102.843sft | 0.246sft | -0.072sft | -0.97 |
| G211 | Linn 6 | -103.915sft | 0.269sft | -0.049sft | -0.96 |
| G191 | Linn 14 | -102.816sft | 0.246sft | -0.072sft | -0.96 |
| G114 | Linn 1A | -106.437sft | 0.262sft | 0.057sft | 0.95 |
| G159 | C18 | -105.271sft | 0.197sft | -0.101sft | -0.95 |
| G158 | Linn 11 | -105.111sft | 0.203sft | -0.097sft | -0.94 |
| G199 | Linn 6A | -103.975sft | 0.269sft | -0.047sft | -0.93 |
| G129 | Linn 1 | -106.431sft | 0.261sft | 0.056sft | 0.93 |
| G168 | Linn 11A | -105.132sft | 0.202sft | -0.096sft | -0.93 |
| G140 | Linn 21 | -106.358sft | 0.255sft | 0.061sft | 0.91 |
| G149 | Linn 24 | -105.705sft | 0.229sft | -0.079sft | -0.89 |
| G166 | C12 | -105.089sft | 0.198sft | -0.087sft | -0.82 |
| G117 | 57-27 | -106.050sft | 0.238sft | 0.067sft | 0.82 |
| G115 | JoCo 92-06 | -106.447sft | 0.254sft | 0.055sft | 0.81 |
| G157 | Linn 25 | -103.075sft | 0.244sft | -0.062sft | -0.81 |
| G181 | BuCo 2002-262 | -102.401sft | 0.245sft | -0.061sft | -0.80 |
| G172 | Linn 3A | -105.901sft | 0.234sft | -0.066sft | -0.79 |
| G155 | Linn 32 | -103.636sft | 0.240sft | -0.063sft | -0.78 |
| G212 | Jones 7 | -104.973sft | 0.248sft | -0.057sft | -0.78 |

| | | | | | |
|---|---|---|---|---|---|
| G176 | Jones 4 | -106.054sft | 0.234sft | -0.066sft | -0.78 |
| G203 | Linn 31 | -102.500sft | 0.254sft | -0.052sft | -0.77 |
| G150 | Linn 3 | -105.920sft | 0.234sft | -0.064sft | -0.76 |
| G198 | Linn 5 | -104.411sft | 0.260sft | -0.045sft | -0.73 |
| G210 | Linn 5A | -104.387sft | 0.260sft | -0.045sft | -0.72 |
| G177 | BenCo 2003-84 | -102.139sft | 0.248sft | -0.053sft | -0.72 |
| G205 | Jones 8 | -104.470sft | 0.258sft | -0.046sft | -0.72 |
| G128 | Linn 20 | -106.123sft | 0.245sft | 0.051sft | 0.67 |
| G111 | CR 15A | -106.104sft | 0.244sft | 0.046sft | 0.60 |
| G197 | Linn 29 | -103.928sft | 0.258sft | -0.038sft | -0.60 |
| G131 | CID 6 | -105.846sft | 0.253sft | -0.041sft | -0.60 |
| G156 | Linn 23 | -104.344sft | 0.227sft | -0.053sft | -0.59 |
| G113 | Jones 1 | -106.399sft | 0.251sft | 0.042sft | 0.59 |
| G135 | BenCo 2003-81 | -104.080sft | 0.232sft | -0.050sft | -0.59 |
| G139 | CR 14A | -105.963sft | 0.242sft | 0.045sft | 0.58 |
| G109 | CR 14B | -105.946sft | 0.242sft | 0.045sft | 0.57 |
| G118 | JoCo 92-04 | -106.213sft | 0.244sft | -0.042sft | -0.55 |
| G213 | CR 3B | -105.607sft | 0.201sft | -0.052sft | -0.50 |
| G216 | CR 3A | -105.631sft | 0.202sft | -0.050sft | -0.48 |
| G137 | BenCo 2003-83 | -102.642sft | 0.239sft | -0.038sft | -0.47 |
| G190 | Linn 15A | -103.189sft | 0.233sft | -0.039sft | -0.46 |
| G126 | Linn 15 | -103.165sft | 0.232sft | -0.039sft | -0.45 |
| G185 | DelCo 2001-75 | -103.260sft | 0.250sft | -0.032sft | -0.44 |
| G207 | Linn 12A | -101.957sft | 0.261sft | -0.026sft | -0.43 |
| G148 | BM818 | -105.882sft | 0.206sft | -0.043sft | -0.43 |
| G124 | Linn 16A | -104.004sft | 0.234sft | -0.033sft | -0.39 |
| G144 | Linn 16 | -104.036sft | 0.234sft | -0.033sft | -0.39 |
| G193 | Linn 12 | -101.922sft | 0.261sft | -0.023sft | -0.39 |
| G133 | JoCo 92-01 | -105.442sft | 0.268sft | -0.019sft | -0.38 |
| G196 | Linn 7 | -103.196sft | 0.250sft | -0.027sft | -0.37 |
| G119 | Linn 19 | -105.605sft | 0.255sft | -0.023sft | -0.35 |

| | | | | | |
|---|---|---|---|---|---|
| G123 | Linn 17 | -104.351sft | 0.237sft | -0.028sft | -0.34 |
| G143 | Linn 17A | -104.370sft | 0.239sft | -0.027sft | -0.34 |
| G132 | JoCo 92-02 | -105.715sft | 0.259sft | -0.021sft | -0.33 |
| G125 | BenCo 2003-82 | -103.740sft | 0.230sft | -0.028sft | -0.33 |
| G146 | C10 | -105.401sft | 0.202sft | -0.034sft | -0.32 |
| G160 | CR 2A | -105.331sft | 0.203sft | -0.033sft | -0.32 |
| G163 | Jones 3 | -106.203sft | 0.235sft | -0.027sft | -0.32 |
| G169 | CR 2B | -105.303sft | 0.203sft | -0.031sft | -0.30 |
| G204 | BuCo 2002-260 | -101.820sft | 0.258sft | -0.018sft | -0.29 |
| G215 | CR 6B | -105.573sft | 0.202sft | -0.029sft | -0.28 |
| G121 | Linn 18A | -105.341sft | 0.259sft | -0.018sft | -0.28 |
| G122 | BenCo 2003-80 | -104.730sft | 0.246sft | -0.020sft | -0.27 |
| G151 | Linn 2A | -106.281sft | 0.238sft | 0.022sft | 0.27 |
| G171 | C9 | -105.576sft | 0.202sft | -0.028sft | -0.27 |
| G110 | CR 13A | -105.752sft | 0.245sft | 0.019sft | 0.25 |
| G138 | CR 13B | -105.721sft | 0.245sft | 0.018sft | 0.24 |
| G164 | Linn 2 | -106.289sft | 0.239sft | 0.018sft | 0.23 |
| G184 | DelCo 2001-76 | -103.492sft | 0.258sft | 0.013sft | 0.21 |
| G167 | CR 11A | -105.707sft | 0.227sft | 0.016sft | 0.18 |
| G178 | BenCo 2003-85 | -101.777sft | 0.258sft | -0.010sft | -0.16 |
| G173 | CR 10B | -105.500sft | 0.236sft | 0.013sft | 0.16 |
| G165 | CR 10A | -105.482sft | 0.236sft | 0.012sft | 0.15 |
| G152 | Jones 2 | -106.329sft | 0.241sft | 0.012sft | 0.15 |
| G180 | BuCo 2002-261 | -102.084sft | 0.250sft | -0.010sft | -0.14 |
| G134 | CR 12A | -105.185sft | 0.251sft | -0.010sft | -0.14 |
| G127 | CR 8B | -104.811sft | 0.238sft | -0.010sft | -0.13 |
| G162 | CR 6A | -105.575sft | 0.203sft | -0.013sft | -0.13 |
| G214 | CR 12B | -105.132sft | 0.249sft | -0.009sft | -0.12 |
| G208 | Linn13A | -101.577sft | 0.269sft | -0.004sft | -0.07 |
| G107 | DelCo 2001-74 | -102.968sft | 0.245sft | -0.005sft | -0.07 |
| G142 | BenCo 2003-79 | -105.084sft | 0.258sft | -0.004sft | -0.06 |

| | | | | | |
|---|---|---|---|---|---|
| G179 | Linn 13 | -101.555sft | 0.268sft | -0.002sft | -0.05 |
| G112 | Linn 22 | -106.123sft | 0.234sft | -0.004sft | -0.04 |
| G116 | JoCo 92-05 | -106.372sft | 0.244sft | -0.003sft | -0.04 |
| G161 | CR 4B | -104.763sft | 0.215sft | -0.003sft | -0.03 |
| G153 | CR 9A | -105.264sft | 0.241sft | 0.002sft | 0.03 |
| G174 | CR 9B | -105.280sft | 0.242sft | 0.002sft | 0.03 |
| G170 | CR 5B | -105.153sft | 0.220sft | -0.002sft | -0.03 |
| G154 | CR 4A | -104.769sft | 0.216sft | -0.002sft | -0.02 |
| G147 | CR 5A | -105.173sft | 0.221sft | -0.001sft | -0.01 |
| G175 | TBM near Y80 | -104.797sft | 0.214sft | 0.000sft | 0.00 |

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **57-27**

**Designation:** Federal Base Network (FBN) Control Station, 1ST order vertical PID: MG0566

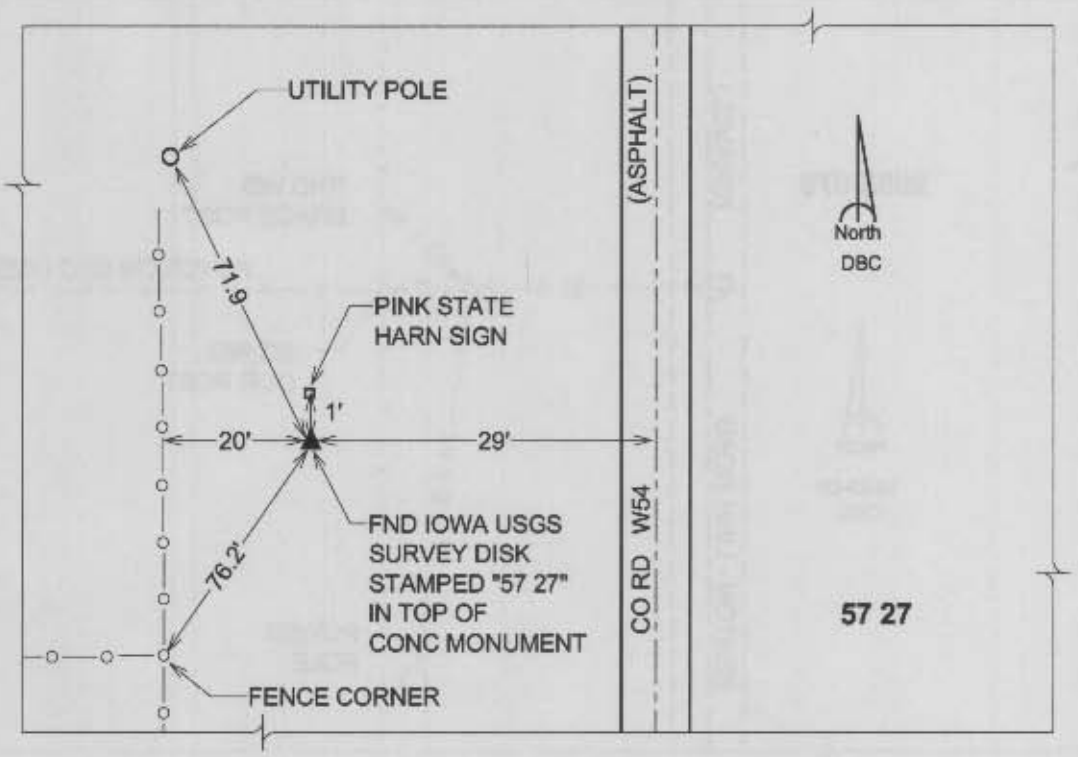
Northing: **3426048.72**sft Easting: **5425898.44**sft

Orthometric Height: **810.72**sft Ellipsoid Height: **704.67**sft **Geoid03**

Latitude: **41°52'59.87090"N** Longitude: **91°38'48.29258"W**

Mapping Angle: **1°15'22"** Combination Scale Factor: **1.00000471**

**Monument Type:** CGS+SS brass survey disk stamped " 57 27" and set in the top of a concrete monument.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **57-27**

**Designation:** Federal Base Network (FBN) Control Station, 1ST order vertical PID: MG0566

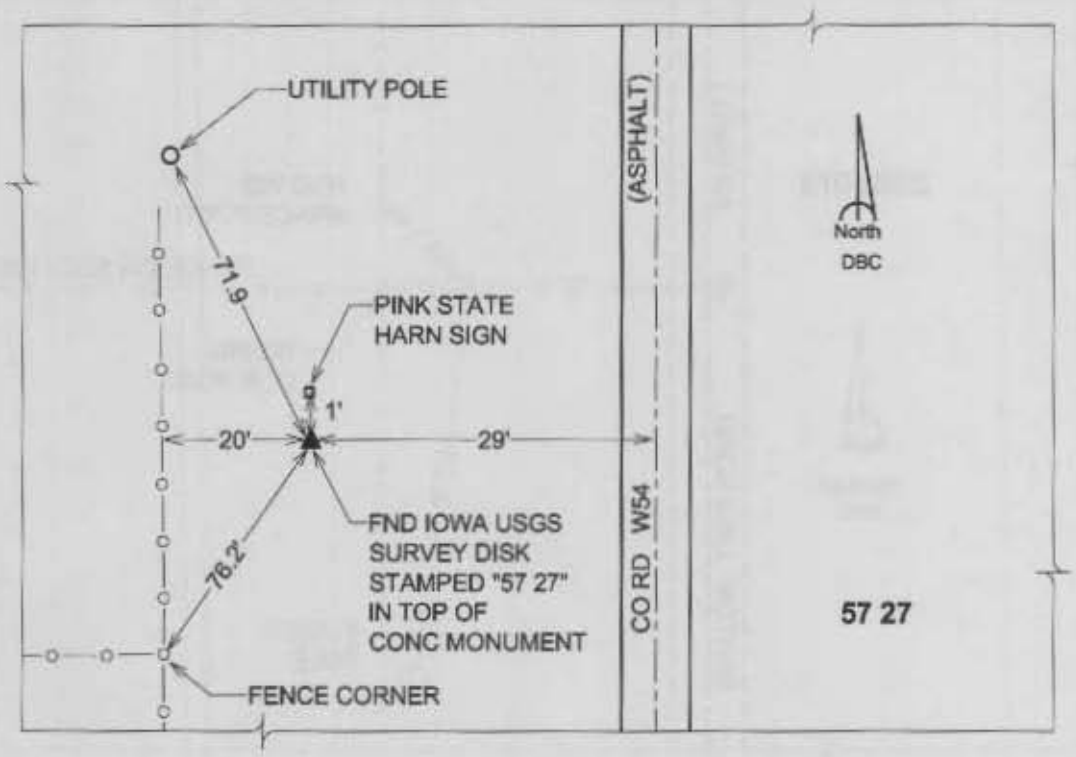
Northing: **3426048.72**sft Easting: **5425898.44**sft

Orthometric Height: **810.72**sft Ellipsoid Height: **704.67**sft **Geoid03**

Latitude: **41°52'59.87090"N** Longitude: **91°38'48.29258"W**

Mapping Angle: **1°15'22"** Combination Scale Factor: **1.00000471**

**Monument Type:** CGS+SS brass survey disk stamped " 57 27" and set in the top of a concrete monument.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BenCo 2003-80**

**Designation:** BENTON CO. GPS CONTROL PT. 2003-080, set by DCI for Benton Co. in 2003

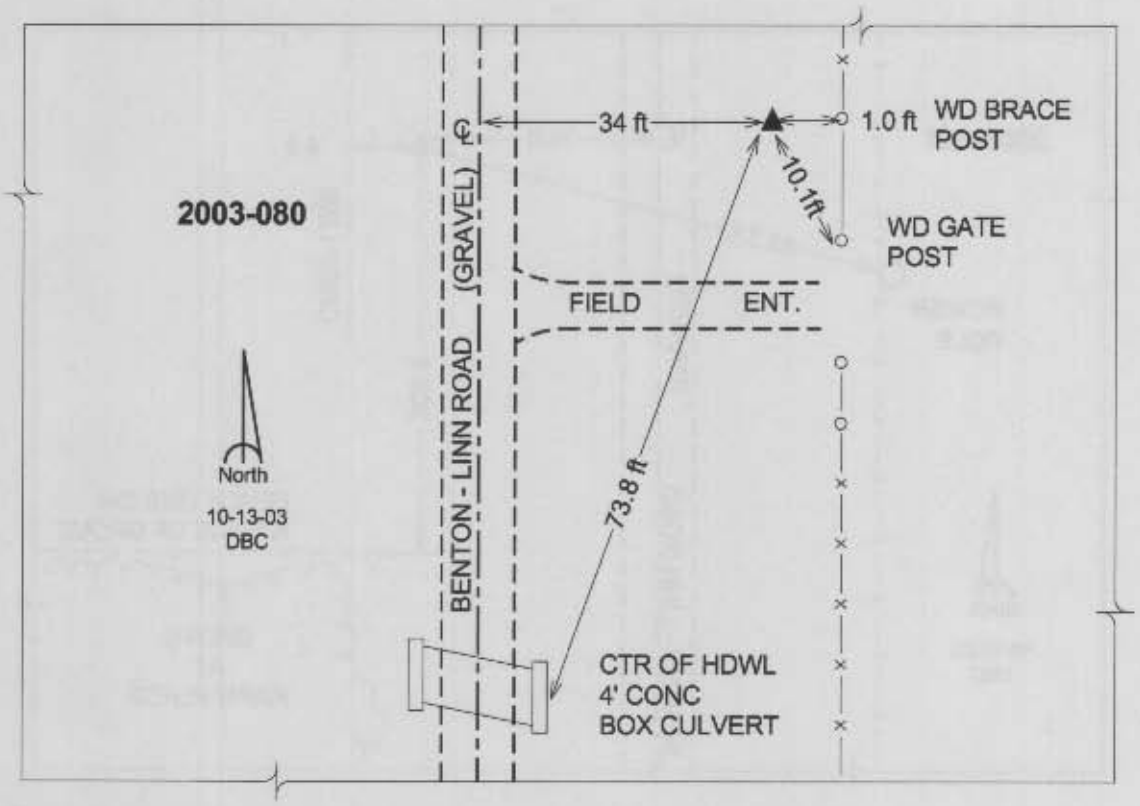
Northing: **3449322.71**sft Easting: **5374654.30**sft

Orthometric Height: **809.07**sft Ellipsoid Height: **704.34**sft **Geoid03**

Latitude: **41°57'00.27748"N** Longitude: **91°49'59.51489"W**

Mapping Angle: **1°07'47"** Combination Scale Factor: **0.99998960**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BenCo 2003-81**

**Designation:** BENTON CO. GPS CONTROL PT. 2003-081, set by DCI for Benton Co. in 2003

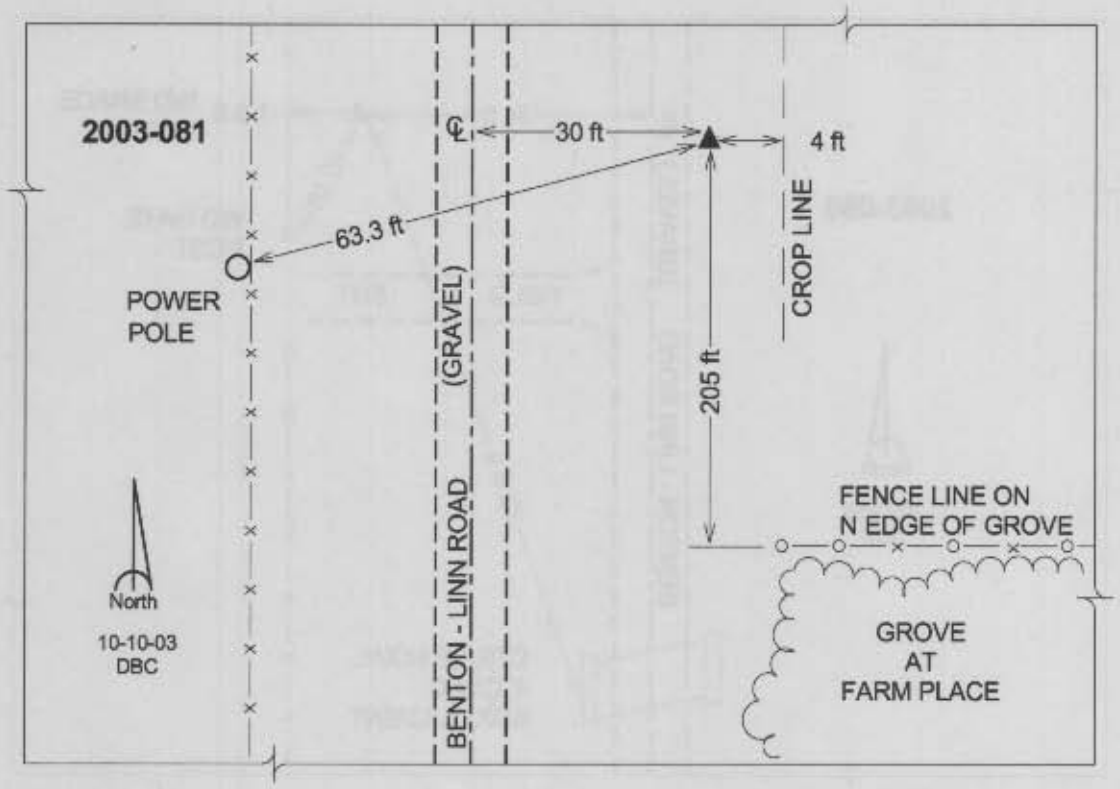
Northing: **3479161.07**sft Easting: **5373552.07**sft

Orthometric Height: **841.49**sft Ellipsoid Height: **737.41**sft **Geoid03**

Latitude: **42°01'55.20120"N** Longitude: **91°50'06.32240"W**

Mapping Angle: **1°07'42"** Combination Scale Factor: **0.99997129**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BenCo 2003-82**

**Designation:** BENTON CO. GPS CONTROL PT. 2003-082, set by DCI for Benton Co. in 2003

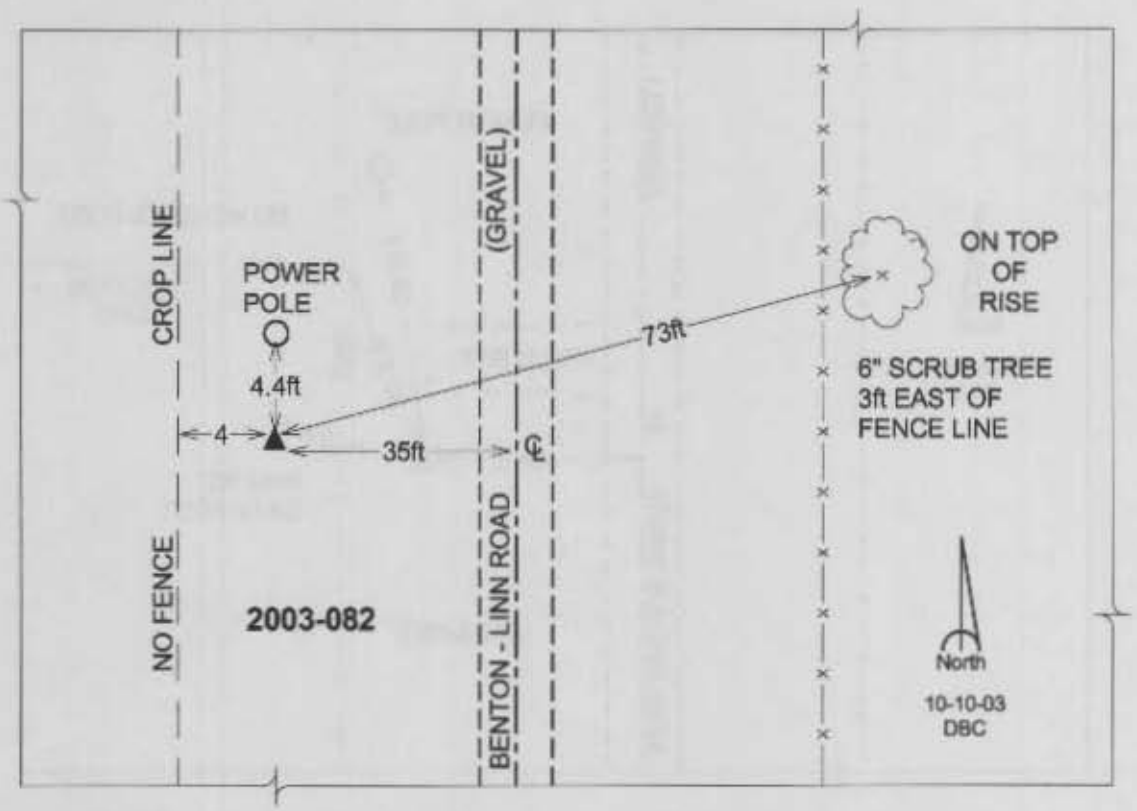
Northing: **3492677.88**sft Easting: **5373309.05**sft

Orthometric Height: **851.41**sft Ellipsoid Height: **747.67**sft **Geoid03**

Latitude: **42°04'08.75226"N** Longitude: **91°50'06.01467"W**

Mapping Angle: **1°07'42"** Combination Scale Factor: **0.99996388**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BenCo 2003-83**

**Designation:** BENTON CO. GPS CONTROL PT. 2003-083, set by DCI for Benton Co. in 2003

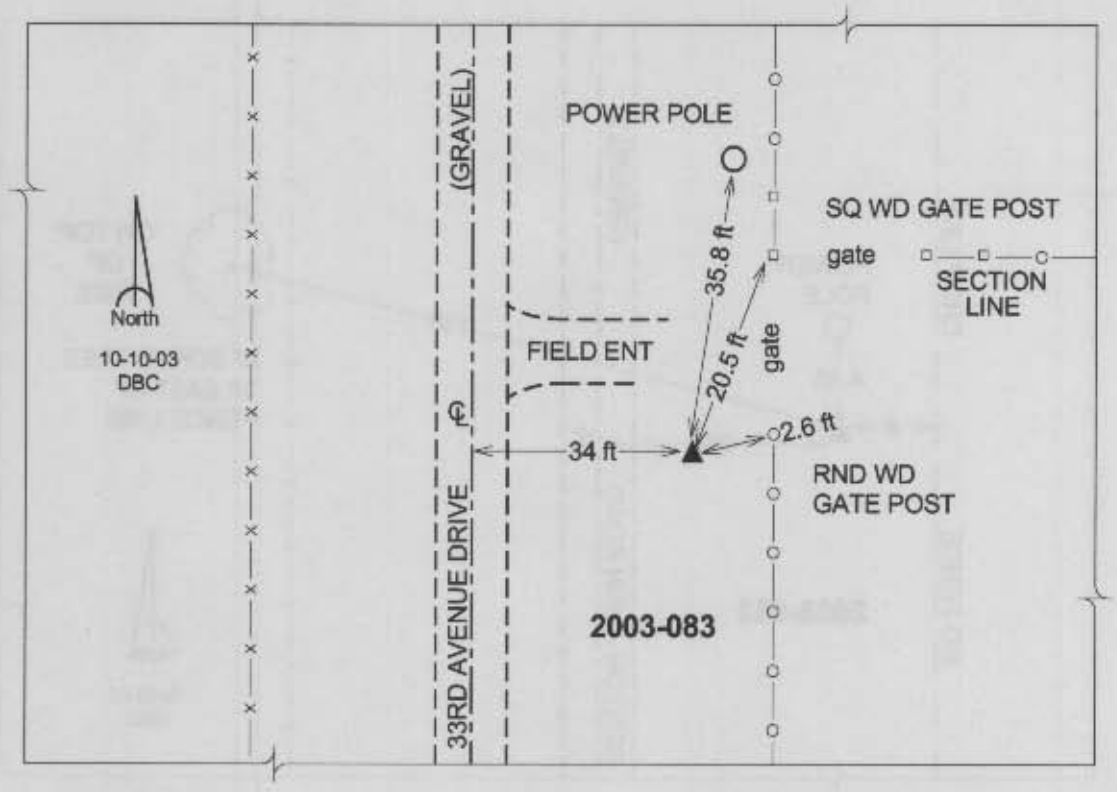
Northing: **3527958.20**sft Easting: **5370324.10**sft

Orthometric Height: **826.31**sft Ellipsoid Height: **723.67**sft **Geoid03**

Latitude: **42°09'57.79100"N** Longitude: **91°50'36.41758"W**

Mapping Angle: **1°07'22"** Combination Scale Factor: **0.99994892**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BenCo 2003-84**

**Designation:** BENTON CO. GPS CONTROL PT. 2003-084, set by DCI for Benton Co. in 2003

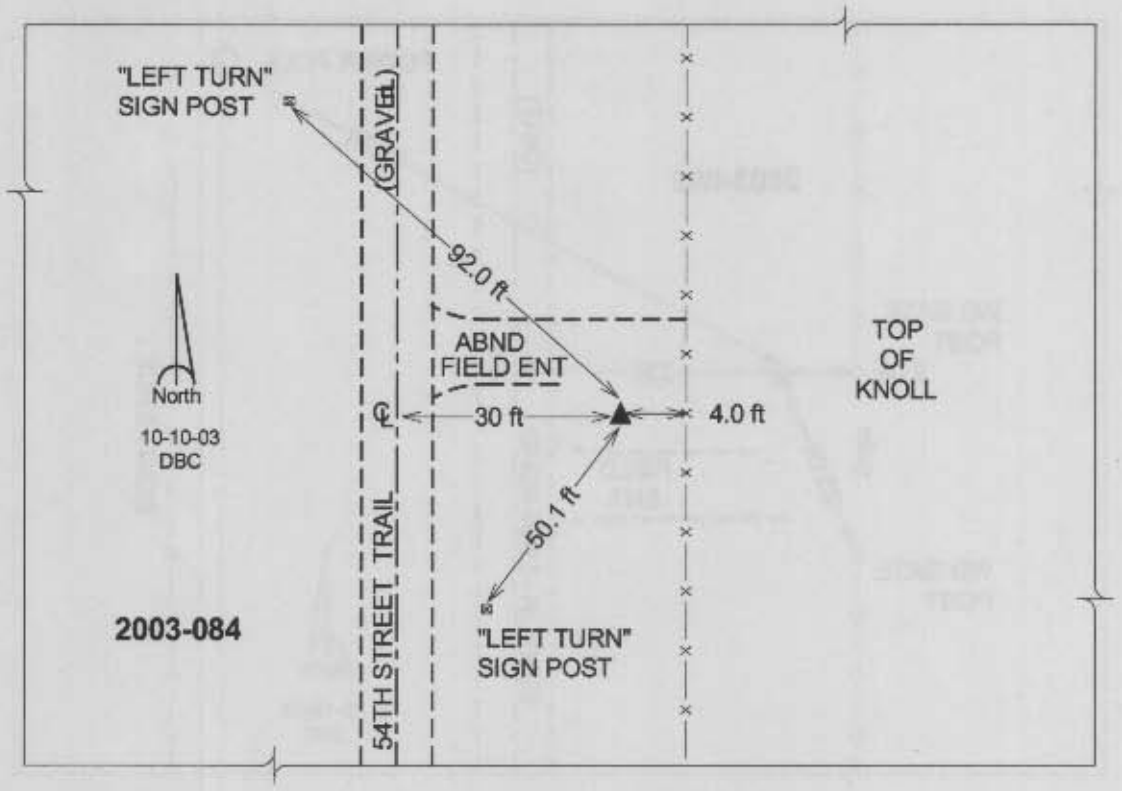
Northing: **3549011.73**sft Easting: **5372932.97**sft

Orthometric Height: **830.94**sft Ellipsoid Height: **728.80**sft **Geoid03**

Latitude: **42°13'25.22713"N** Longitude: **91°49'56.26677"W**

Mapping Angle: **1°07'49"** Combination Scale Factor: **0.99994043**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BenCo 2003-85**

**Designation:** BENTON CO. GPS CONTROL PT. 2003-085, set by DCI for Benton Co. in 2003

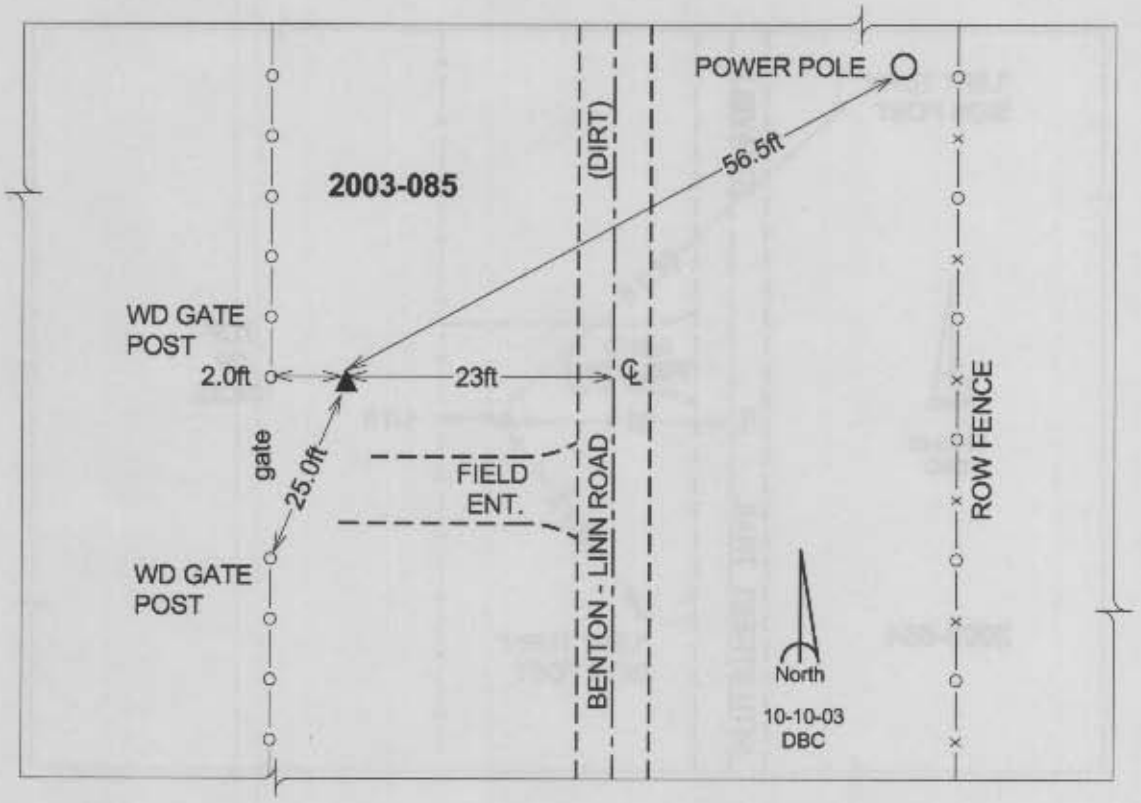
Northing: **3563602.52**sft Easting: **5372774.52**sft

Orthometric Height: **854.36**sft Ellipsoid Height: **752.58**sft **Geoid03**

Latitude: **42°15'49.36876"N** Longitude: **91°49'54.54587"W**

Mapping Angle: **1°07'50"** Combination Scale Factor: **0.99993417**

**Monument Type:** Bemtsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BM M75**

**Designation:** NGS 2nd order vertical control station. PID: NJ0569 DESIGNATION: M 75

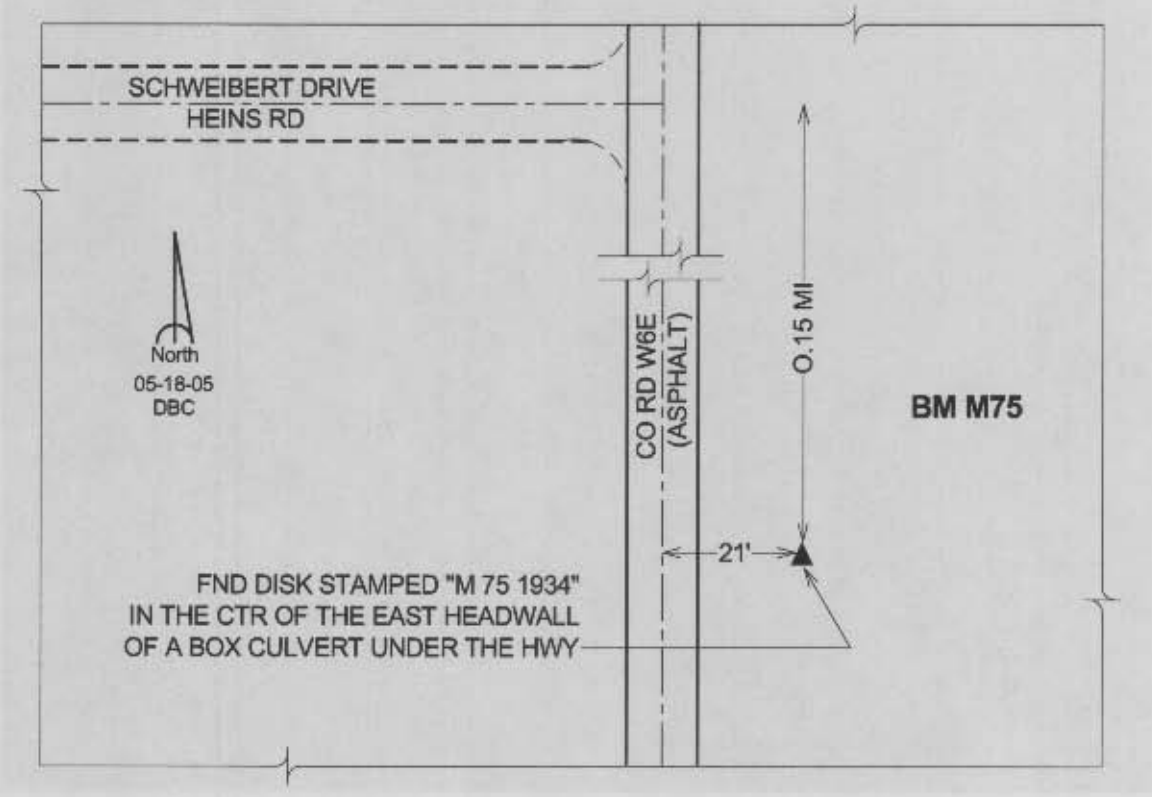
Northing: **3550748.25**sft Easting: **5385688.79**sft

Orthometric Height: **806.55**sft Ellipsoid Height: **704.18**sft **Geoid03**

Latitude: **42°13'39.85754"N** Longitude: **91°47'06.29523"W**

Mapping Angle: **1°09'44"** Combination Scale Factor: **0.99994107**

**Monument Type:** Brass disk stamped "M 75 1934" and set in the top of the center of the SE headwall of a concrete box culvert under Co Rd W6E




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BM818**

**Designation:** USGS 3rd order bench mark

Northing: **3477268.63**sft Easting: **5458912.65**sft

Orthometric Height: **818.36**sft Ellipsoid Height: **712.48**sft **Geoid03**

Latitude: **42°01'18.33898"N** Longitude: **91°31'16.13458"W**

Mapping Angle: **1°20'28"** Combination Scale Factor: **0.99997446**

**Monument Type:** Brass disk stamped "1 CDL 1966" and set in the top of a concrete monument.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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BuCo 2002-260**

**Designation:** BUCHANNAN CO GPS CONTROL PT. 2002-260, set by ASI in 2002

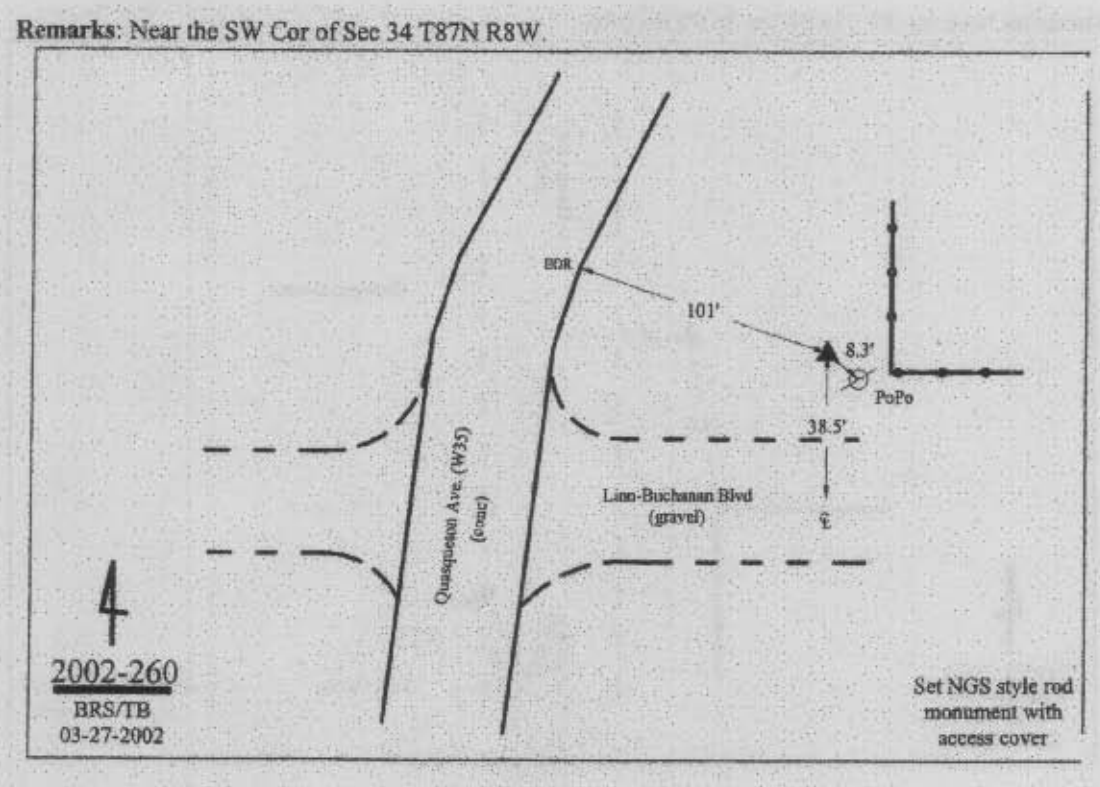
Northing: **3576343.34**sft Easting: **5388423.98**sft

Orthometric Height: **916.99**sft Ellipsoid Height: **815.17**sft **Geoid03**

Latitude: **42°17'52.10242"N** Longitude: **91°46'22.99761"W**

Mapping Angle: **1°10'14"** Combination Scale Factor: **0.99992719**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BuCo 2002-261**

**Designation:** BUCHANNAN CO GPS CONTROL PT. 2002-261, set by ASI in 2002

Northing: **3576178.04**sft Easting: **5404252.98**sft

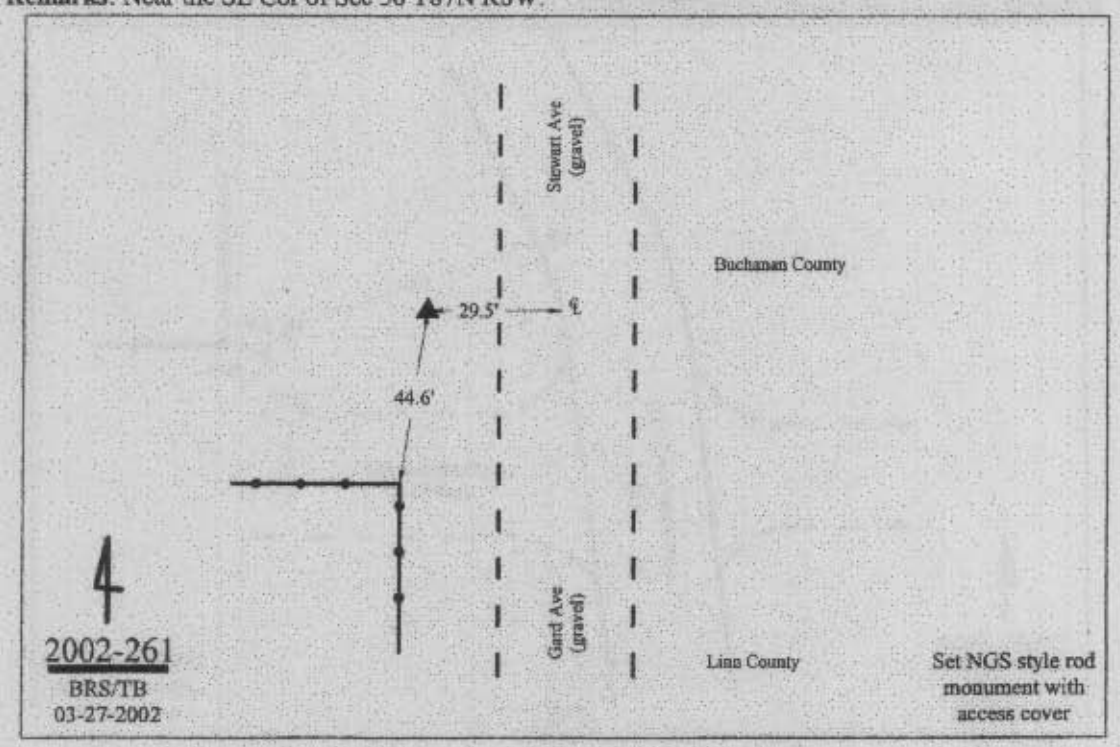
Orthometric Height: **875.45**sft Ellipsoid Height: **773.37**sft **Geoid03**

Latitude: **42°17'47.22166"N** Longitude: **91°42'52.45838"W**

Mapping Angle: **1°12'36"** Combination Scale Factor: **0.99992934**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

**Remarks:** Near the SE Cor of Sec 36 T87N R8W.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **BuCo 2002-262**

**Designation:** BUCHANNAN CO GPS CONTROL PT. 2002-262, set by ASI in 2002

Northing: **3576567.85**sft Easting: **5420182.91**sft

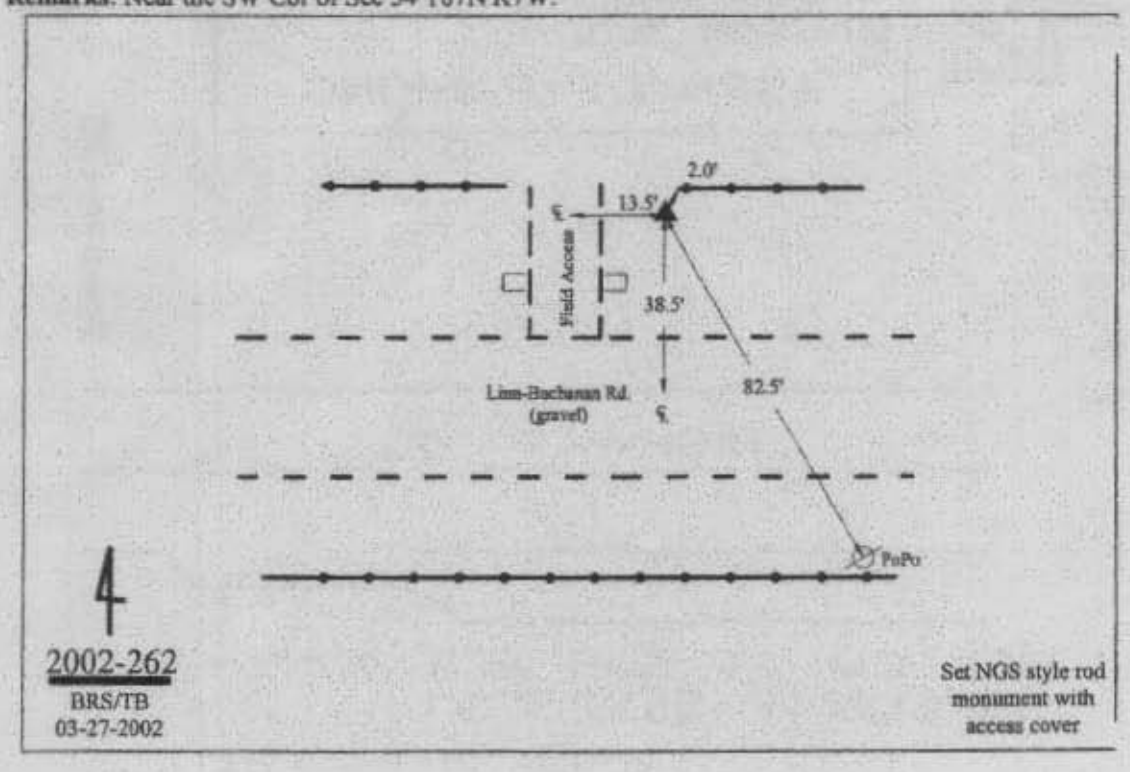
Orthometric Height: **927.15**sft Ellipsoid Height: **824.75**sft **Geoid03**

Latitude: **42°17'47.69350"N** Longitude: **91°39'20.42454"W**

Mapping Angle: **1°15'00"** Combination Scale Factor: **0.99992687**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

**Remarks:** Near the SW Cor of Sec 34 T87N R7W.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **C09**

**Designation:** City of Marion core control point C09, set by Snyder & Assoc in 2004

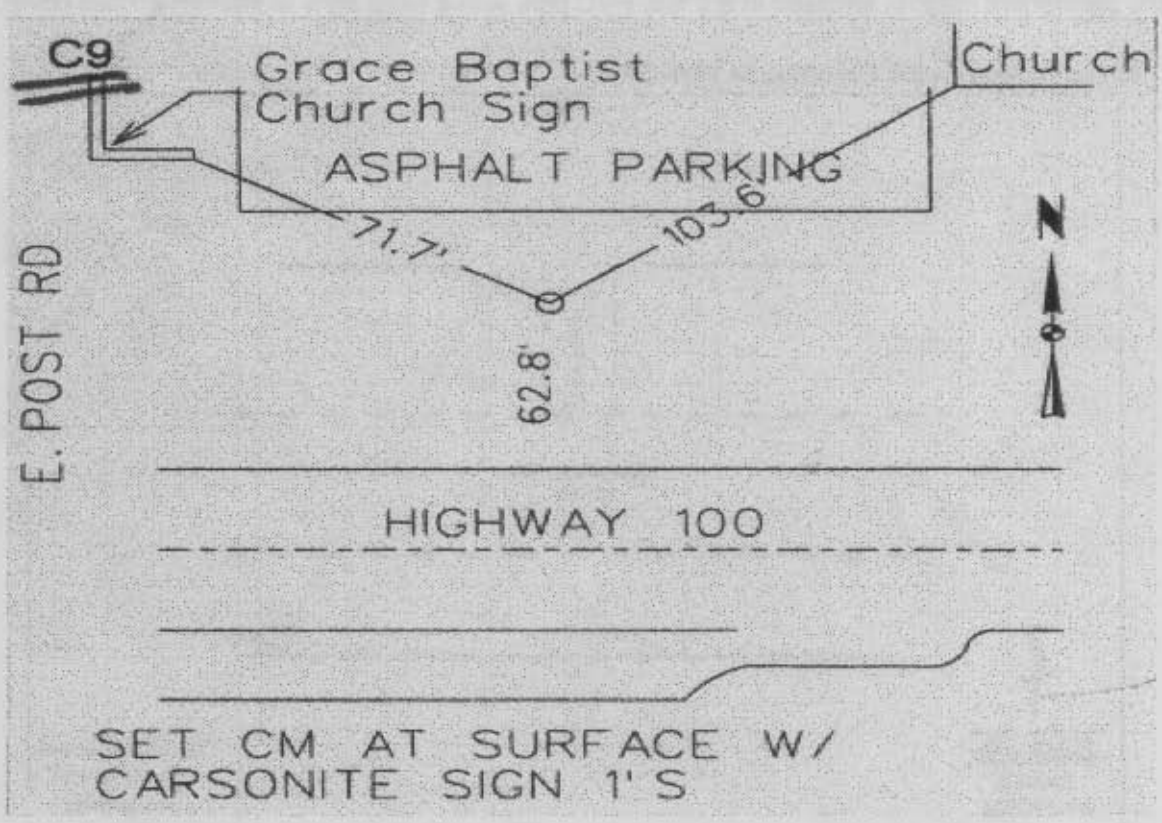
Northing: **3474548.68**sft Easting: **5437932.28**sft

Orthometric Height: **852.51**sft Ellipsoid Height: **746.93**sft **Geoid03**

Latitude: **42°00'56.23241"N** Longitude: **91°35'54.83284"W**

Mapping Angle: **1°17'19"** Combination Scale Factor: **0.99997402**

**Monument Type:** 6"dia. poured in-place concrete monument with a brass survey cap



**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **C10**

**Designation:** City of Marion core control point C10, set by Snyder & Assoc in 2004

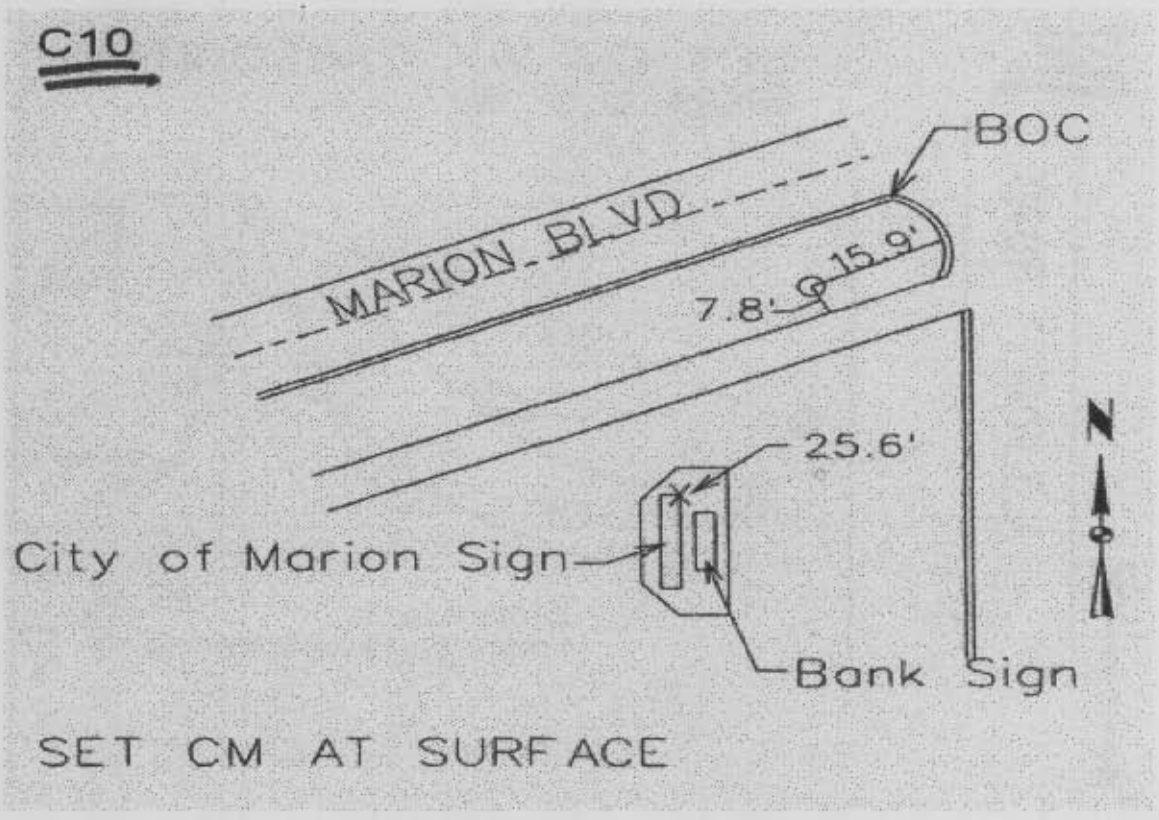
Northing: **3478706.25**sft Easting: **5432568.41**sft

Orthometric Height: **850.92**sft Ellipsoid Height: **745.52**sft **Geoid03**

Latitude: **42°01'38.47949"N** Longitude: **91°37'04.64543"W**

Mapping Angle: **1°16'32"** Combination Scale Factor: **0.99997180**

**Monument Type:** 6"dia. poured in-place concrete monument with a brass survey cap



**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **C12**

**Designation:** City of Marion core control point C12, set by Snyder & Assoc in 2004

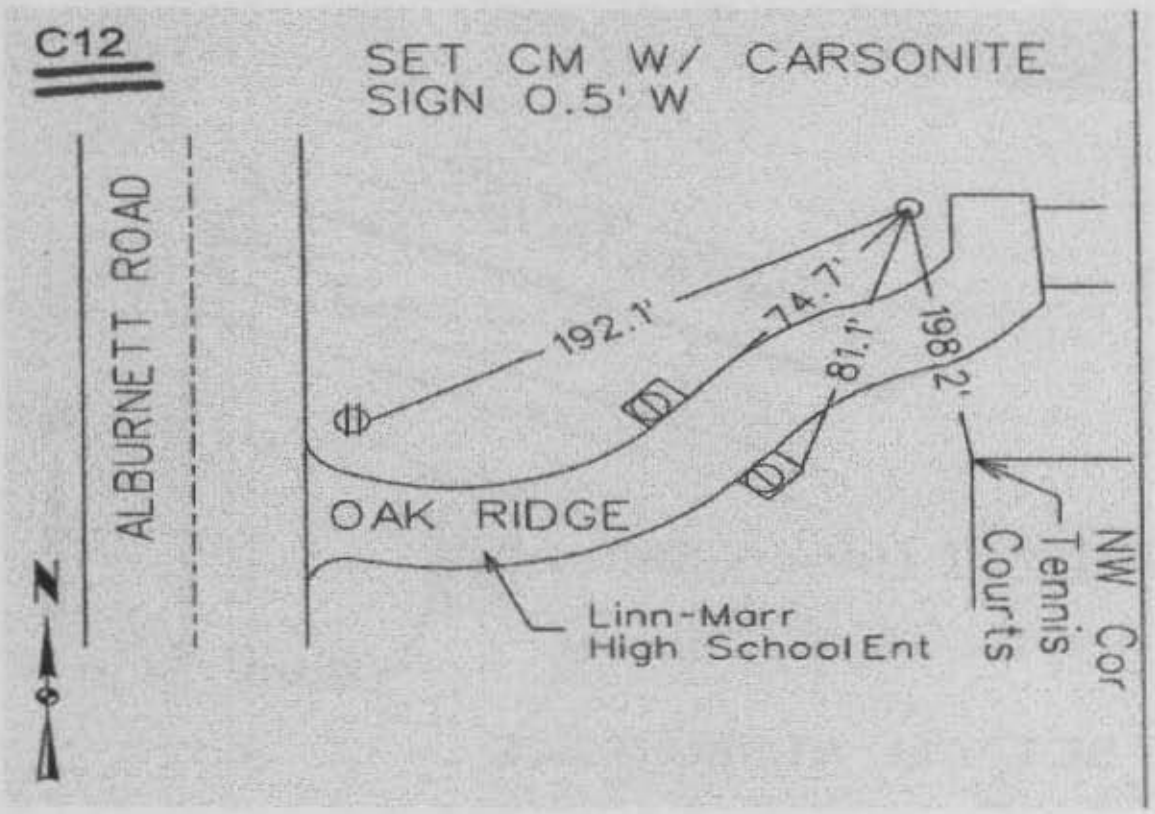
Northing: **3494232.91**sft Easting: **5432151.56**sft

Orthometric Height: **836.42**sft Ellipsoid Height: **731.33**sft **Geoid03**

Latitude: **42°04'11.91770"N** Longitude: **91°37'05.58830"W**

Mapping Angle: **1°16'31"** Combination Scale Factor: **0.99996451**

**Monument Type:** 6"dia. poured in-place concrete monument with a brass survey cap

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **C18**

**Designation:** City of Marion core control point C18, set by Snyder & Assoc in 2004

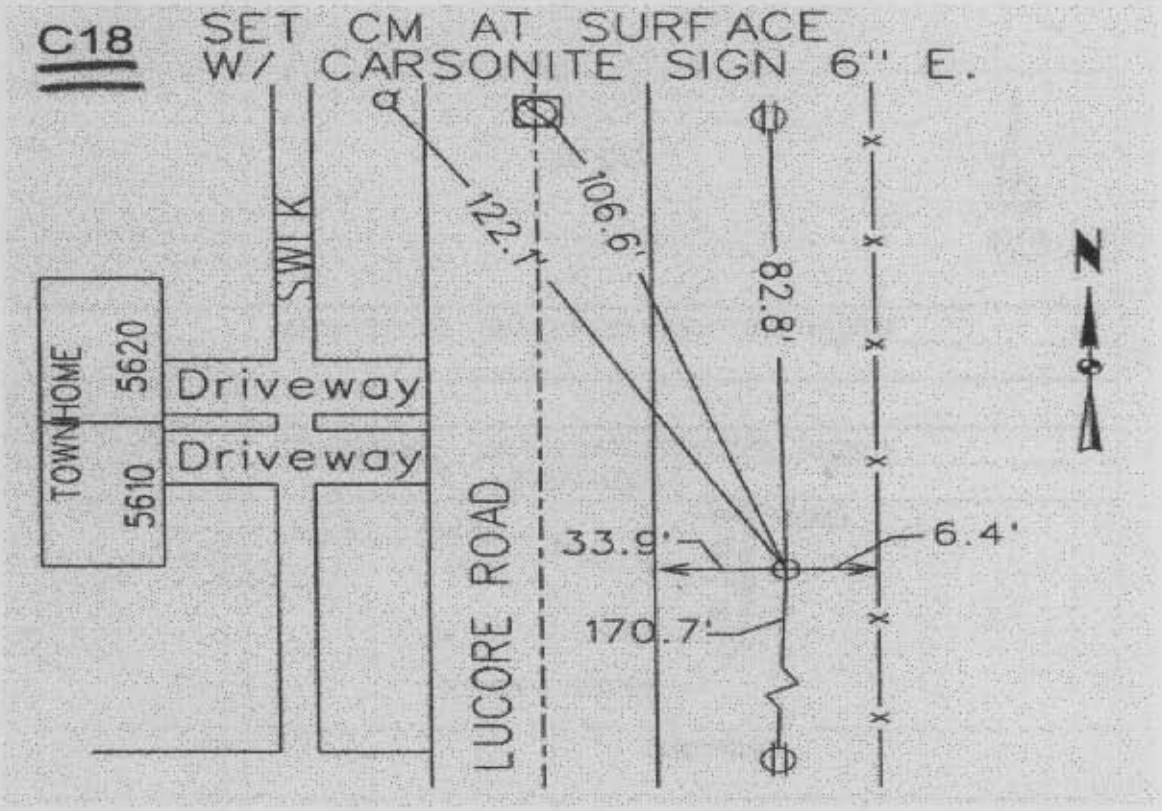
Northing: **3496928.70**sft Easting: **5442739.07**sft

Orthometric Height: **862.97**sft Ellipsoid Height: **757.70**sft **Geoid03**

Latitude: **42°04'36.18990"N** Longitude: **91°34'44.43660"W**

Mapping Angle: **1°18'07"** Combination Scale Factor: **0.99996204**

**Monument Type:** 6"dia. poured in-place concrete monument with a brass survey cap




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CID GP1**

**Designation:** Primary Airport Control Station (PACS), Horiz. only PID: AJ8568

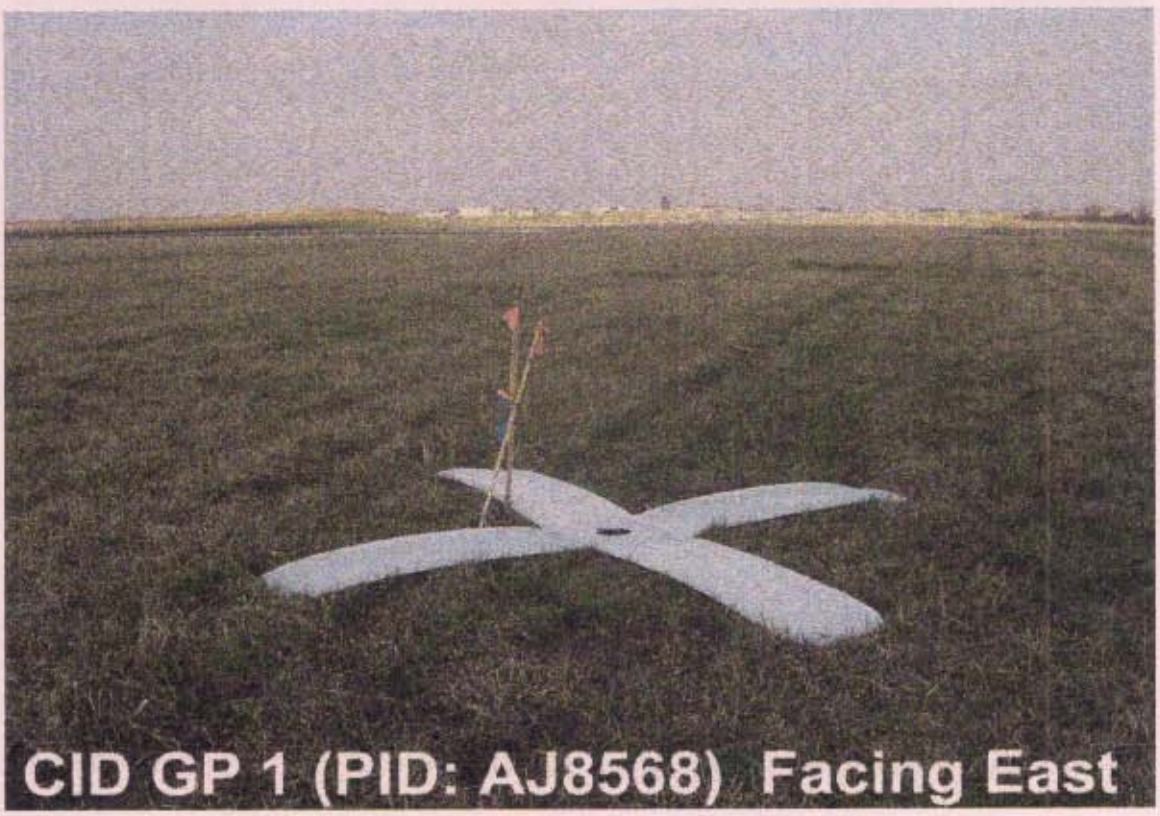
Northing: **3425560.04**sft Easting: **5402313.90**sft

Orthometric Height: **866.77**sft Ellipsoid Height: **760.96**sft **Geoid03**

Latitude: **41°53'00.03220"N** Longitude: **91°44'00.13411"W**

Mapping Angle: **1°11'50"** Combination Scale Factor: **1.00000201**

**Monument Type:** Stainless steel rod in PVC sleeve with aluminum access cover.



**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CID 006**

**Designation:** CID 6, Set by others.

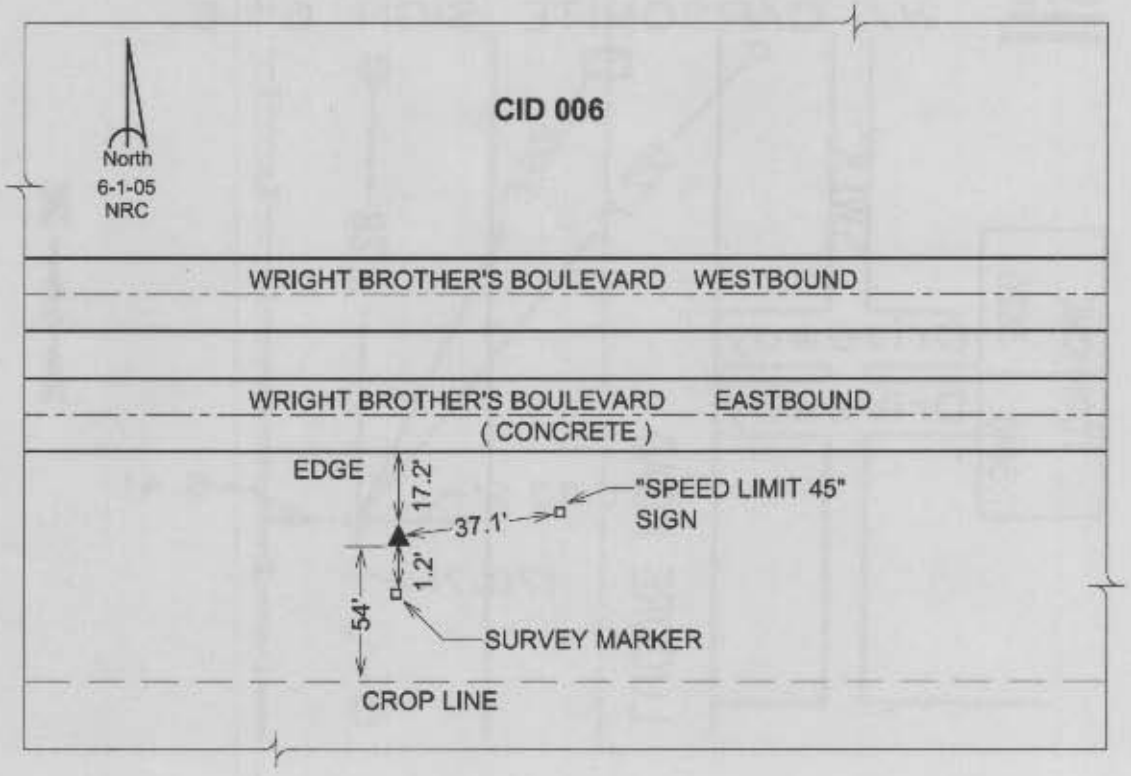
Northing: **3429637.12**sft Easting: **5409326.35**sft

Orthometric Height: **860.65**sft Ellipsoid Height: **754.80**sft **Geoid03**

Latitude: **41°53'38.84141"N** Longitude: **91°42'26.31131"W**

Mapping Angle: **1°12'54"** Combination Scale Factor: **0.99999978**

**Monument Type:** Rod monument with an aluminum cap stamped "CID 6" encased in a 5" dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 10A**

**Designation:** Station 10A, Set by Aero-Metric for the City of Cedar Rapids in 1995

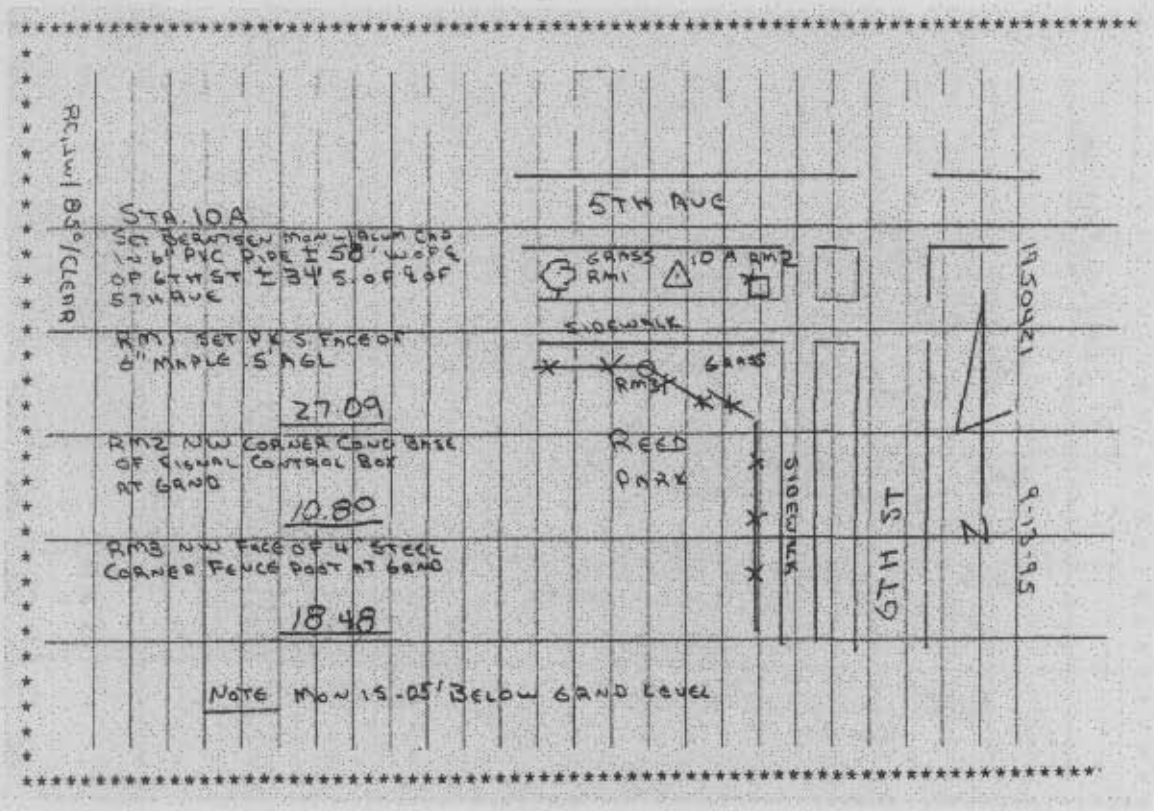
Northing: **3457651.10**sft Easting: **5416879.77**sft

Orthometric Height: **727.30**sft Ellipsoid Height: **621.82**sft **Geoid03**

Latitude: **41°58'13.92590"N** Longitude: **91°40'38.48050"W**

Mapping Angle: **1°14'07"** Combination Scale Factor: **0.99998917**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 10B**

**Designation:** Station 10B, Set by Aero-Metric for the City of Cedar Rapids in 1995

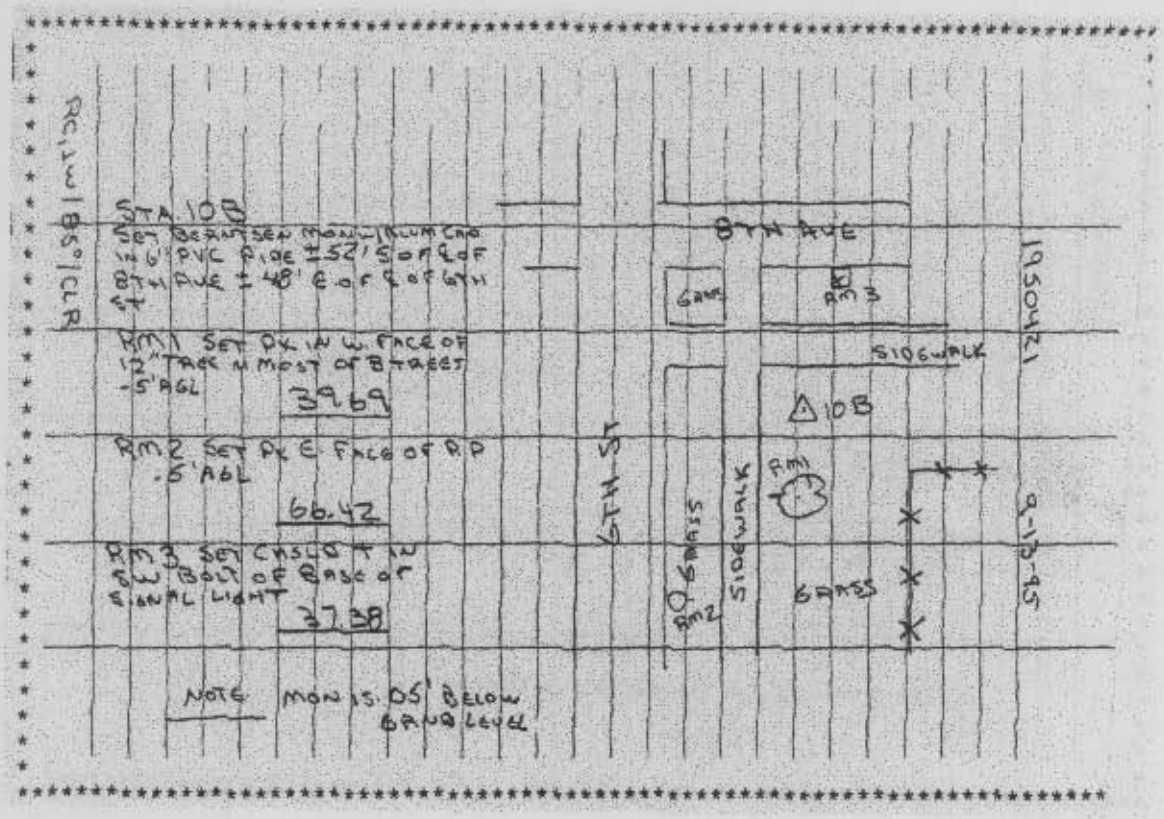
Northing: **3456818.84**sft Easting: **5417021.90**sft

Orthometric Height: **728.75**sft Ellipsoid Height: **623.26**sft **Geoid03**

Latitude: **41°58'05.67582"N** Longitude: **91°40'36.83700"W**

Mapping Angle: **1°14'08"** Combination Scale Factor: **0.99998958**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 11A**

**Designation:** Station 11A, Set by Aero-Metric for the City of Cedar Rapids in 1995

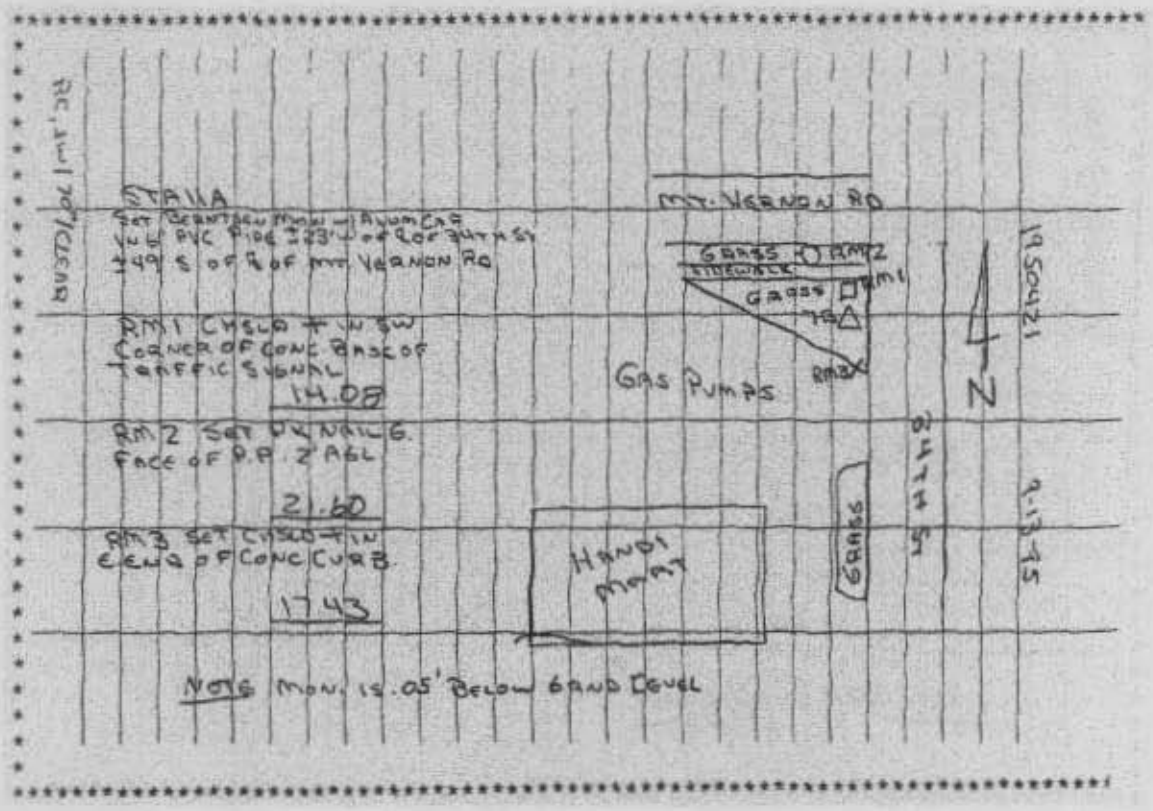
Northing: **3460241.46**sft Easting: **5432824.51**sft

Orthometric Height: **832.46**sft Ellipsoid Height: **726.75**sft **Geoid03**

Latitude: **41°58'36.05883"N** Longitude: **91°37'06.69745"W**

Mapping Angle: **1°16'31"** Combination Scale Factor: **0.99998287**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe



**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 12A**

**Designation:** Station 12A, Set by Aero-Metric for the City of Cedar Rapids in 1995

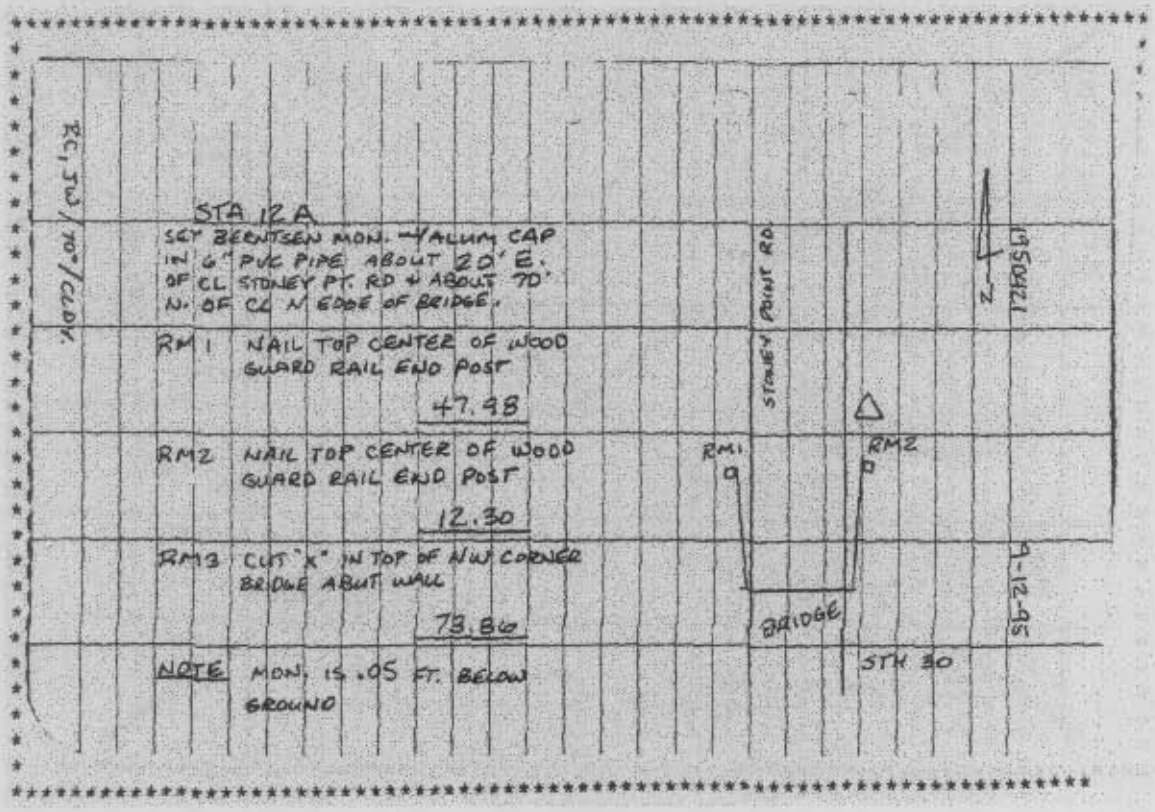
Northing: **3449654.40**sft Easting: **5395816.23**sft

Orthometric Height: **822.21**sft Ellipsoid Height: **717.02**sft **Geoid03**

Latitude: **41°56'59.33578"N** Longitude: **91°45'19.43894"W**

Mapping Angle: **1°10'57"** Combination Scale Factor: **0.99998905**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 12B**

**Designation:** Station 12B, Set by Aero-Metric for the City of Cedar Rapids in 1995

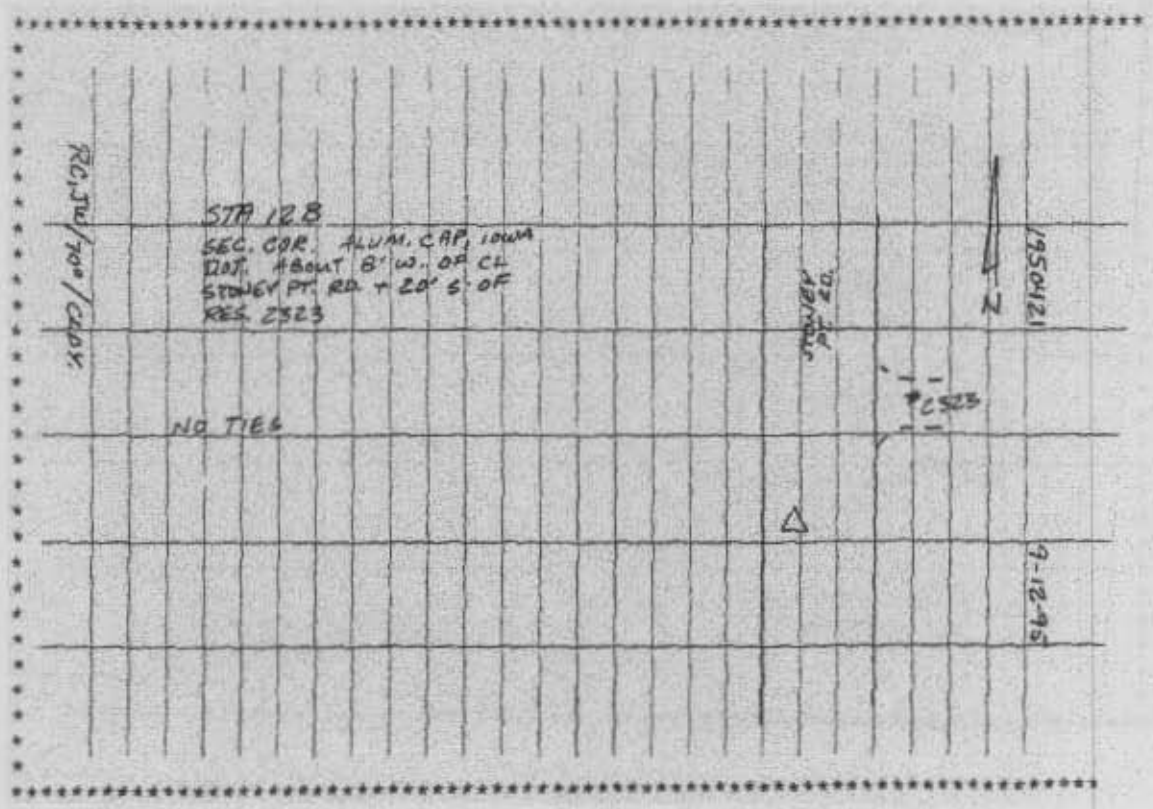
Northing: **3452182.07**sft Easting: **5395843.38**sft

Orthometric Height: **835.89**sft Ellipsoid Height: **730.76**sft **Geoid03**

Latitude: **41°57'24.29516"N** Longitude: **91°45'18.38927"W**

Mapping Angle: **1°10'57"** Combination Scale Factor: **0.99998690**

**Monument Type:** IA-DOT ALUMINUM CAP MISSING/DESTROYED. RECOVERED HOLE IN CONCRETE FROM STEM OF CAP. POINT OBSERVED IS APPROX. 0.25FT BELOW SURFACE OF EXISTING CONCRETE SLAB.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 13A**

**Designation:** Station 13A, Set by Aero-Metric for the City of Cedar Rapids in 1995

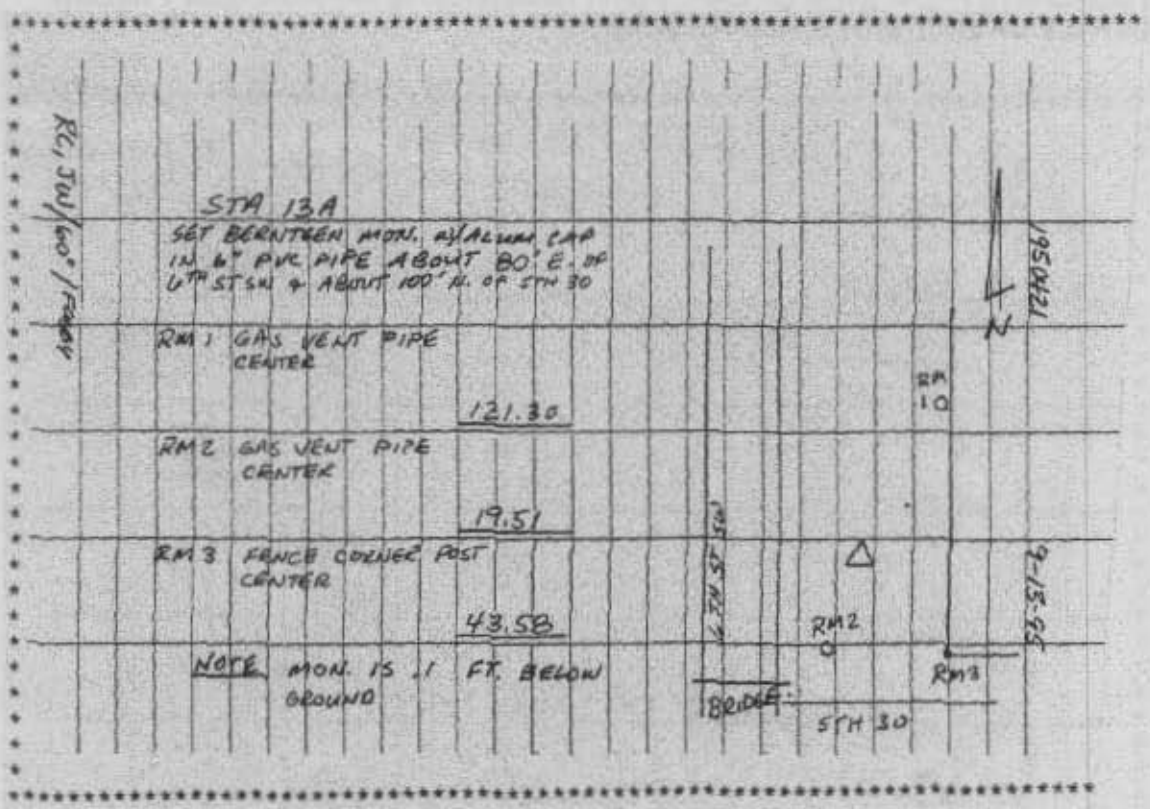
Northing: **3442038.21**sft Easting: **5417635.72**sft

Orthometric Height: **735.85**sft Ellipsoid Height: **630.10**sft **Geoid03**

Latitude: **41°55'39.56477"N** Longitude: **91°40'32.93508"W**

Mapping Angle: **1°14'11"** Combination Scale Factor: **0.99999807**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 13B**

**Designation:** Station 13B, Set by Aero-Metric for the City of Cedar Rapids in 1995

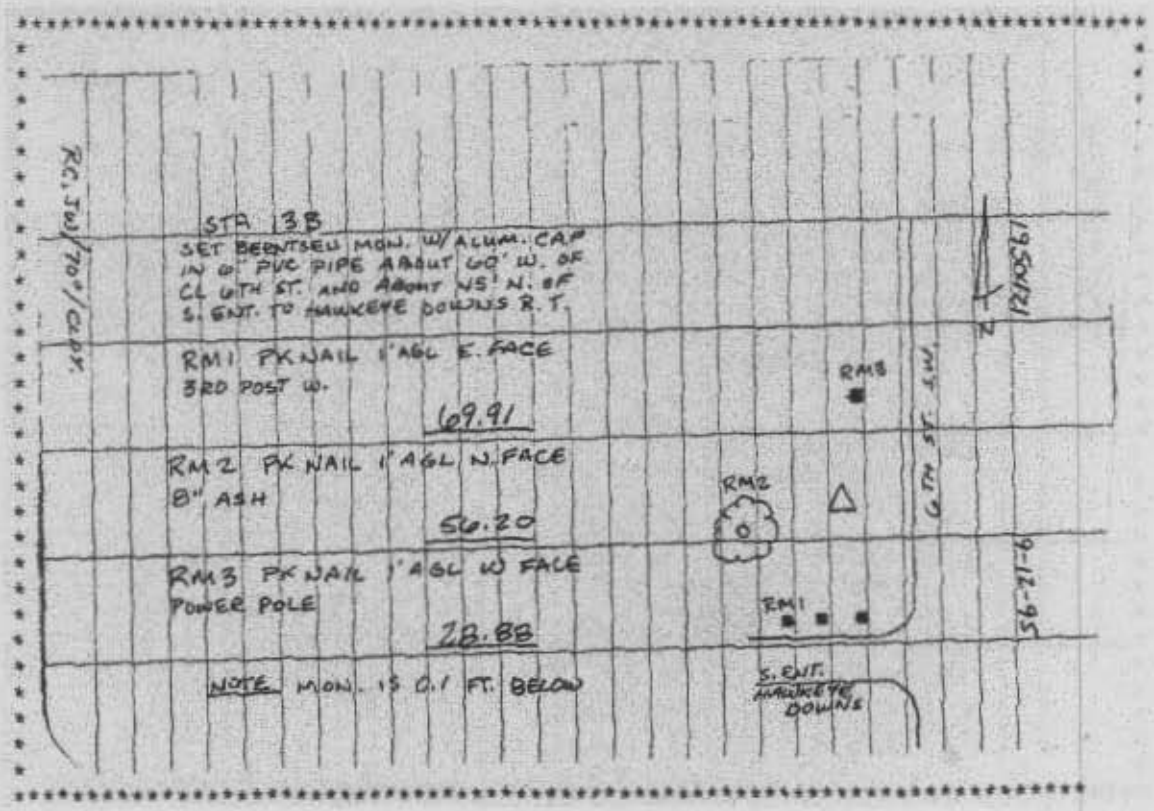
Northing: **3443845.96**sft Easting: **5417407.15**sft

Orthometric Height: **725.23**sft Ellipsoid Height: **619.51**sft **Geoid03**

Latitude: **41°55'57.46764"N** Longitude: **91°40'35.44228"W**

Mapping Angle: **1°14'09"** Combination Scale Factor: **0.99999747**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 14A**

**Designation:** Station 14A, Set by Aero-Metric for the City of Cedar Rapids in 1995

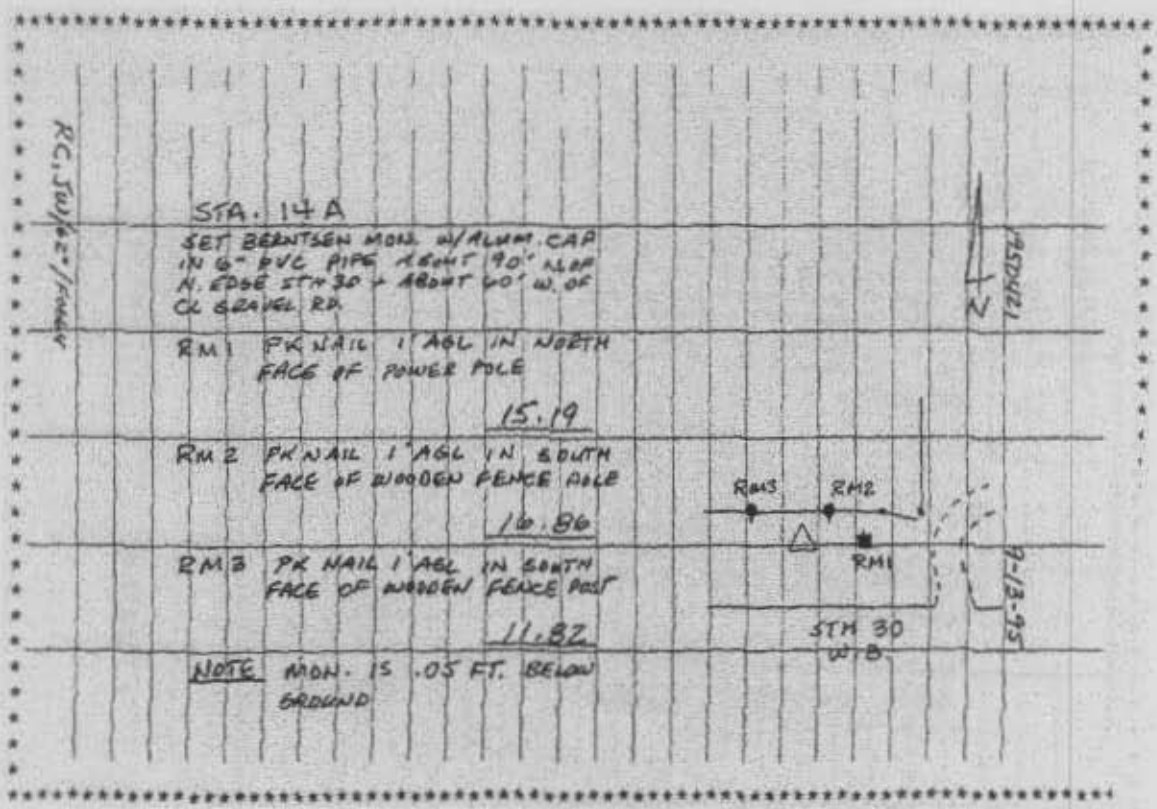
Northing: **3442059.24**sft Easting: **5433250.89**sft

Orthometric Height: **838.45**sft Ellipsoid Height: **732.48**sft **Geoid03**

Latitude: **41°55'36.39176"N** Longitude: **91°37'06.41116"W**

Mapping Angle: **1°16'31"** Combination Scale Factor: **0.99999338**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe



**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 14B**

**Designation:** Station 14B, Set by Aero-Metric for the City of Cedar Rapids in 1995

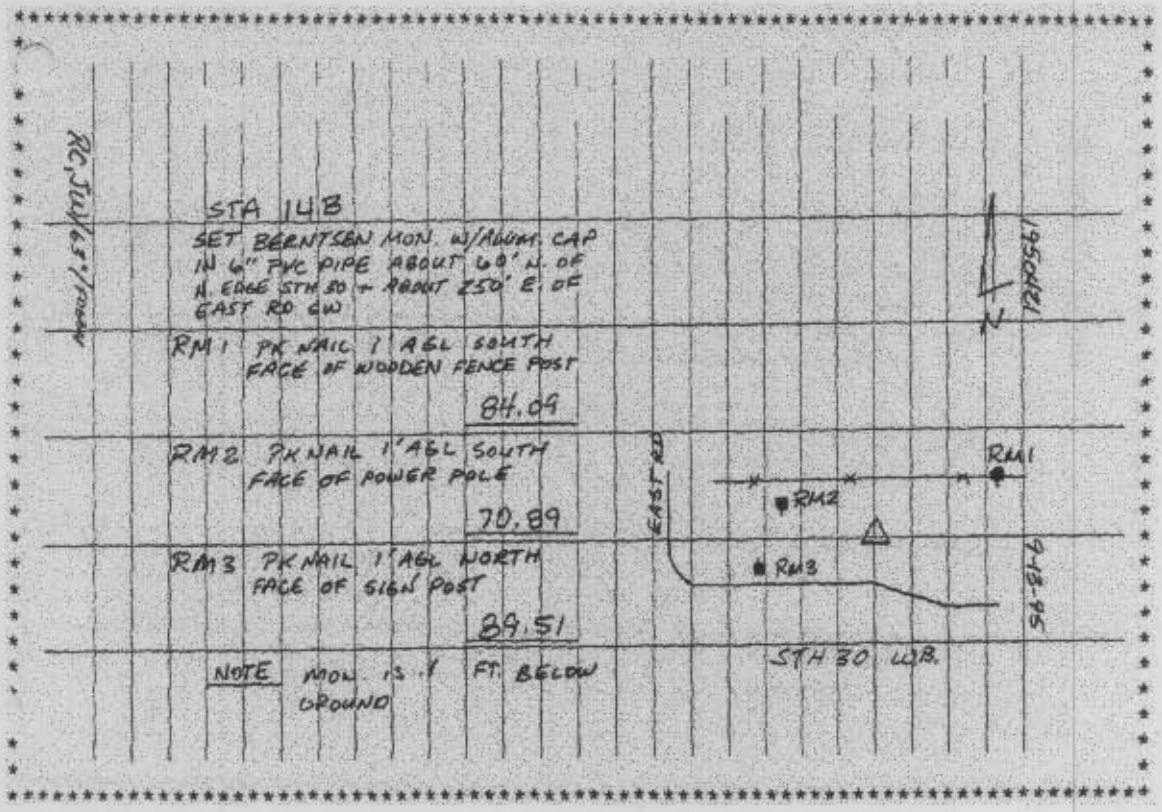
Northing: **3442018.76**sft Easting: **5431934.24**sft

Orthometric Height: **831.25**sft Ellipsoid Height: **725.31**sft **Geoid03**

Latitude: **41°55'36.28106"N** Longitude: **91°37'23.83606"W**

Mapping Angle: **1°16'19"** Combination Scale Factor: **0.99999373**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 15A**

**Designation:** Station 15A, Set by Aero-Metric for the City of Cedar Rapids in 1995

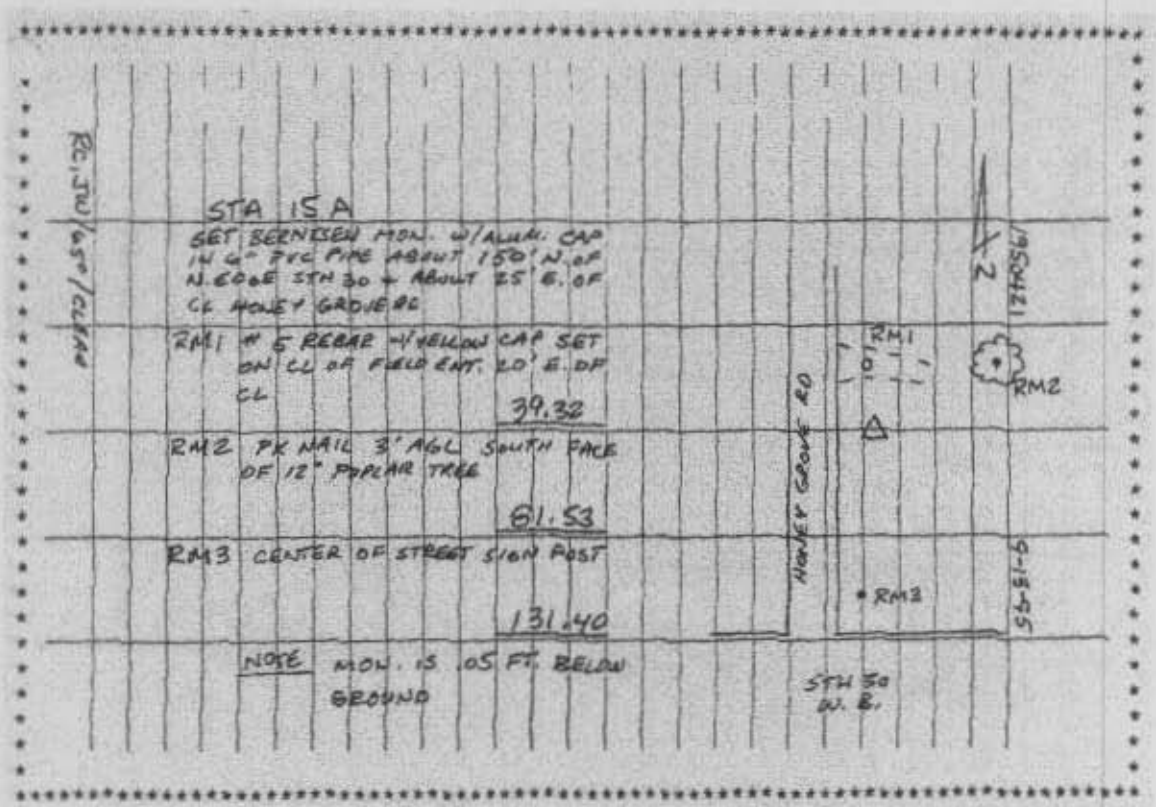
Northing: **3442051.59**sft Easting: **5443983.58**sft

Orthometric Height: **742.22**sft Ellipsoid Height: **636.11**sft **Geoid03**

Latitude: **41°55'33.93193"N** Longitude: **91°34'44.47207"W**

Mapping Angle: **1°18'07"** Combination Scale Factor: **0.99999813**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 2A**

**Designation:** Station 2A, Set by Aero-Metric for the City of Cedar Rapids in 1995

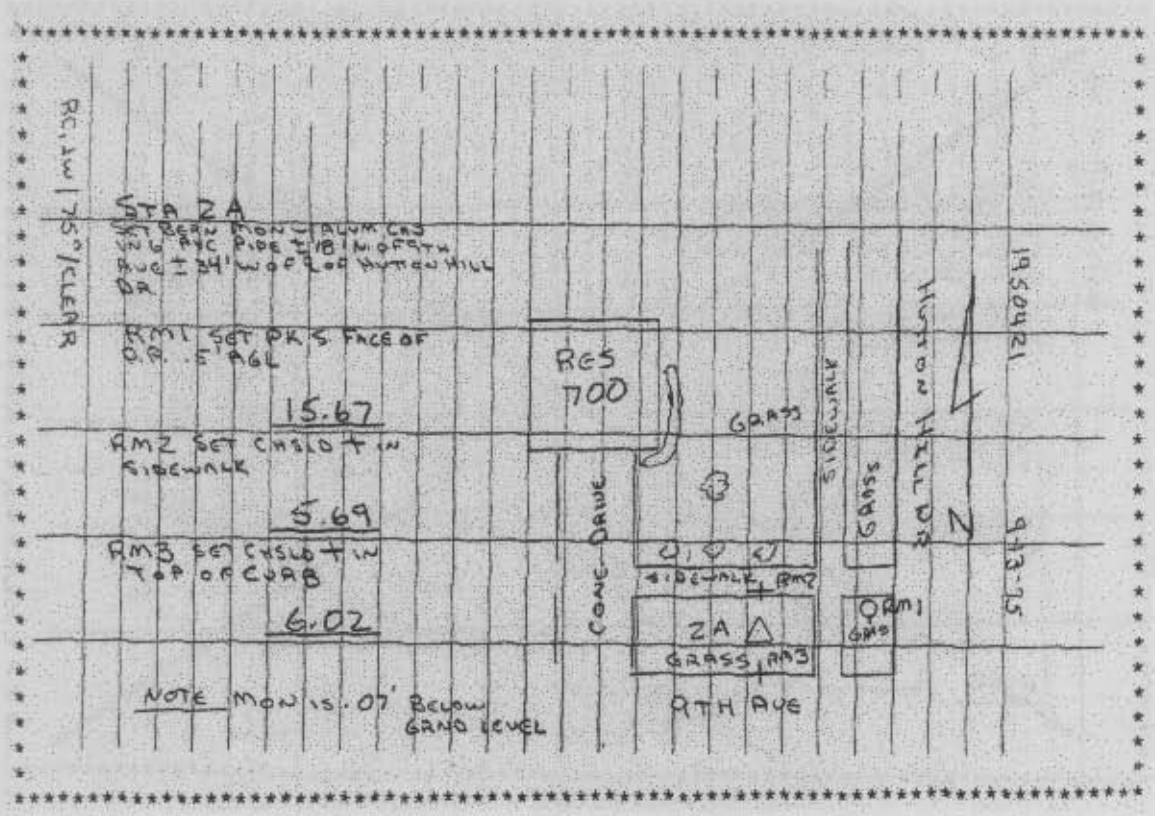
Northing: **3481680.01**sft Easting: **5432292.25**sft

Orthometric Height: **829.93**sft Ellipsoid Height: **724.60**sft **Geoid03**

Latitude: **42°02'07.91006"N** Longitude: **91°37'07.42681"W**

Mapping Angle: **1°16'30"** Combination Scale Factor: **0.99997122**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 2B**

**Designation:** Station 2B, Set by Aero-Metric for the City of Cedar Rapids in 1995

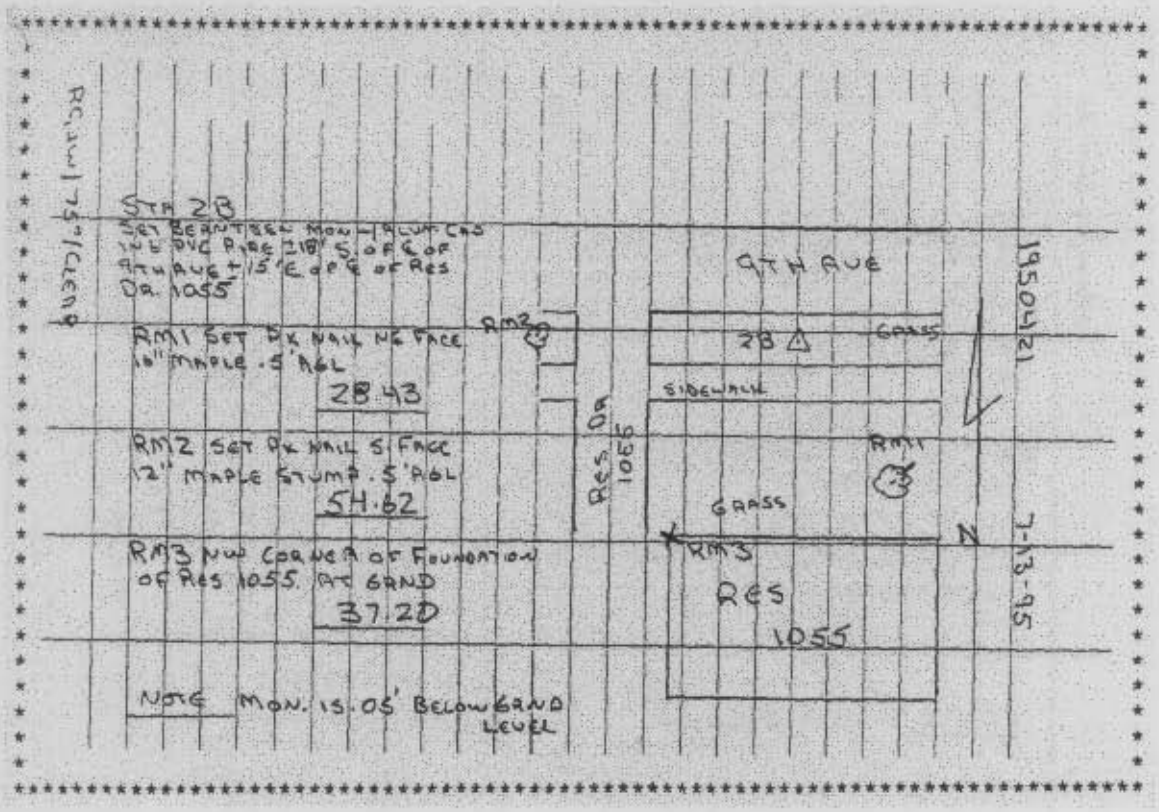
Northing: **3481782.63**sft Easting: **5431171.46**sft

Orthometric Height: **846.55**sft Ellipsoid Height: **741.25**sft **Geoid03**

Latitude: **42°02'09.16967"N** Longitude: **91°37'22.24497"W**

Mapping Angle: **1°16'20"** Combination Scale Factor: **0.99997036**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 3A**

**Designation:** Station 3A, Set by Aero-Metric for the City of Cedar Rapids in 1995

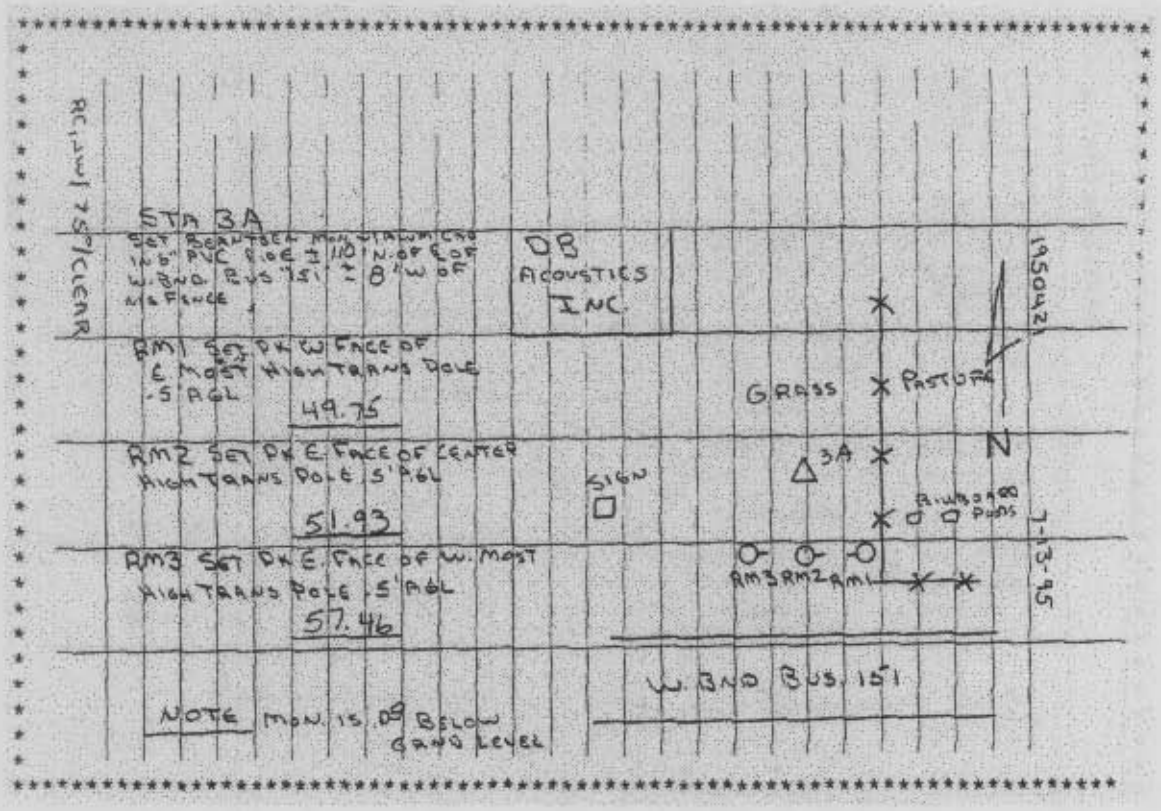
Northing: **3482323.33**sft Easting: **5448254.74**sft

Orthometric Height: **809.21**sft Ellipsoid Height: **703.58**sft **Geoid03**

Latitude: **42°02'10.70000"N** Longitude: **91°33'35.76188"W**

Mapping Angle: **1°18'54"** Combination Scale Factor: **0.99997208**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 3B**

**Designation:** Station 3B, Set by Aero-Metric for the City of Cedar Rapids in 1995

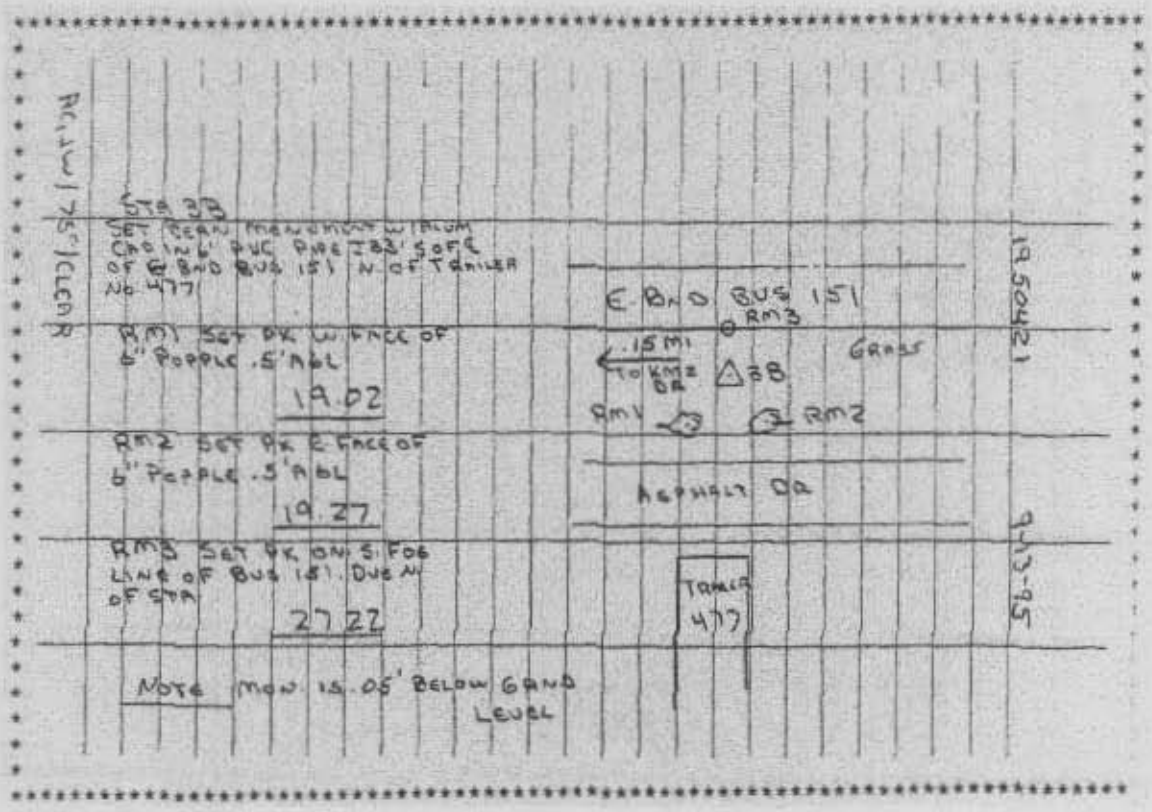
Northing: **3482075.37**sft Easting: **5446411.25**sft

Orthometric Height: **823.68**sft Ellipsoid Height: **718.07**sft **Geoid03**

Latitude: **42°02'08.66826"N** Longitude: **91°34'00.25971"W**

Mapping Angle: **1°18'37"** Combination Scale Factor: **0.99997149**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 4A**

**Designation:** Station 4A, Set by Aero-Metric for the City of Cedar Rapids in 1995

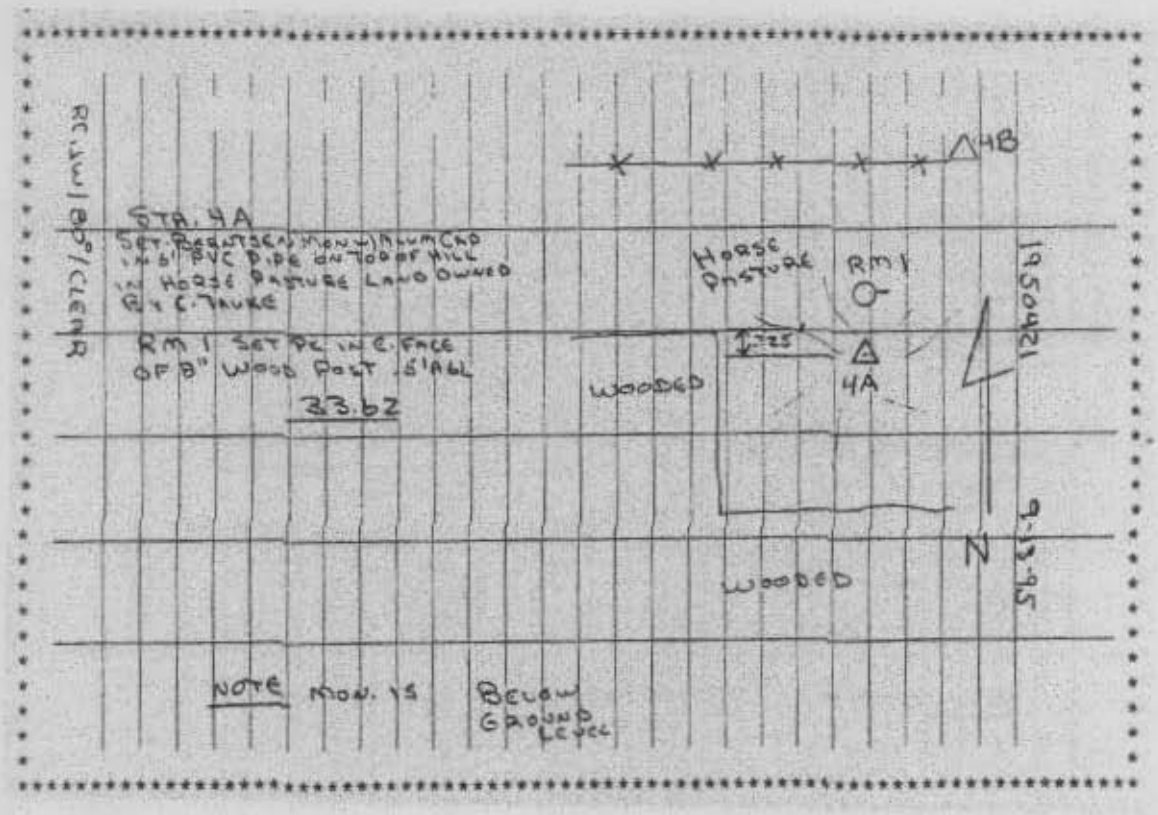
Northing: **3479515.00**sft Easting: **5405877.47**sft

Orthometric Height: **828.22**sft Ellipsoid Height: **723.45**sft **Geoid03**

Latitude: **42°01'52.18364"N** Longitude: **91°42'57.98662"W**

Mapping Angle: **1°12'32"** Combination Scale Factor: **0.99997211**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 4B**

**Designation:** Station 4B, Set by Aero-Metric for the City of Cedar Rapids in 1995

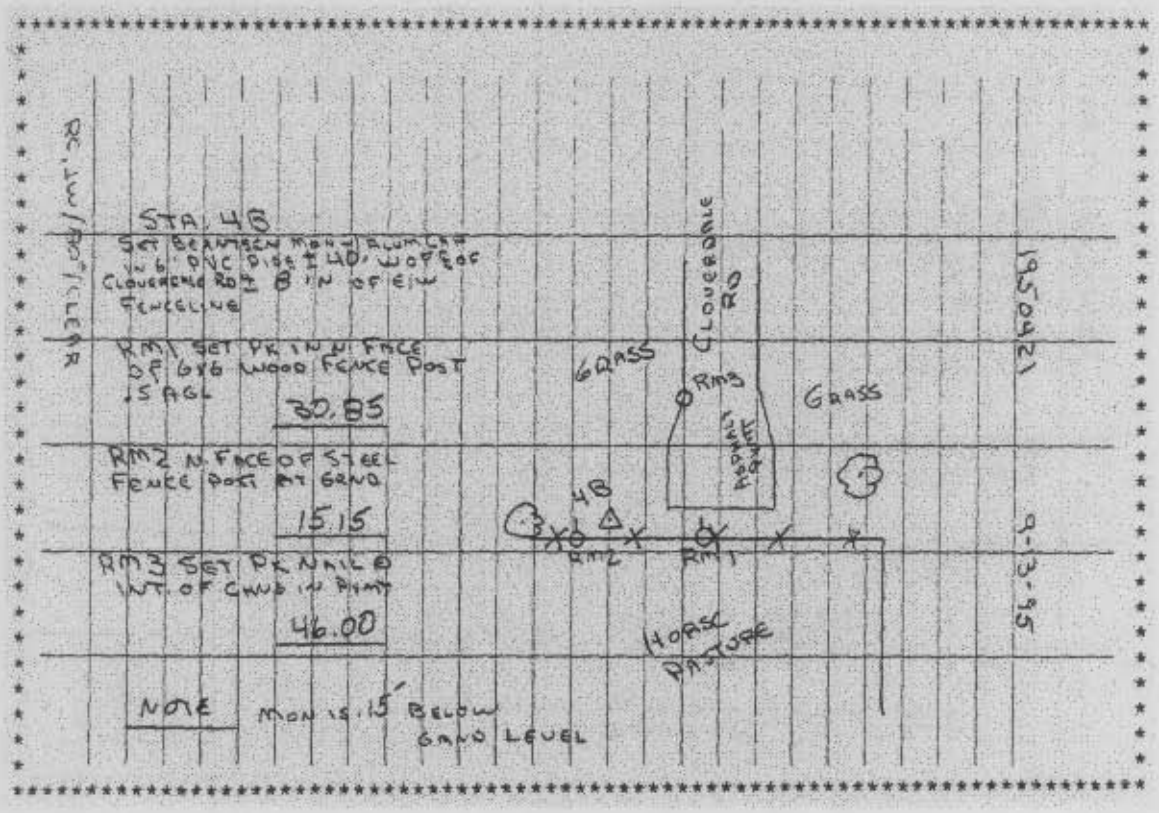
Northing: **3480151.42**sft Easting: **5406280.41**sft

Orthometric Height: **791.13**sft Ellipsoid Height: **686.37**sft **Geoid03**

Latitude: **42°01'58.38524"N** Longitude: **91°42'52.47054"W**

Mapping Angle: **1°12'36"** Combination Scale Factor: **0.99997355**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 5A**

**Designation:** Station 5A, Set by Aero-Metric for the City of Cedar Rapids in 1995

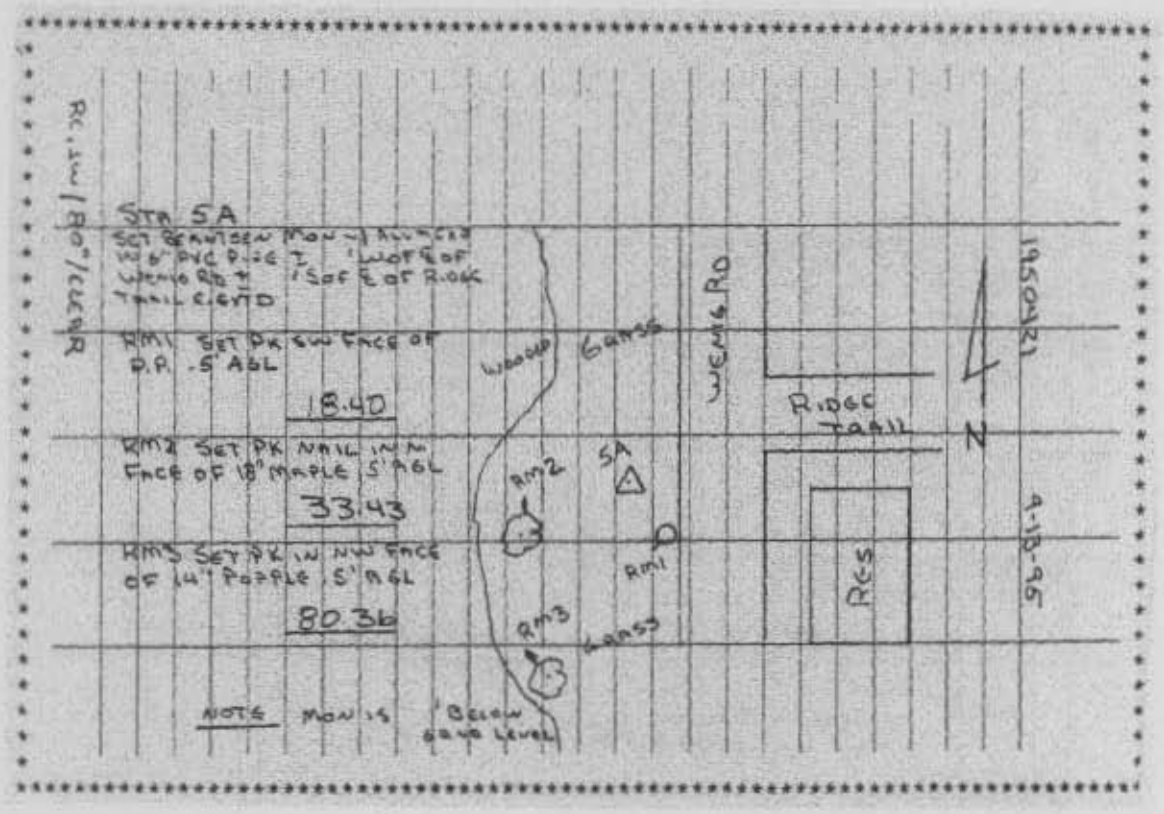
Northing: **3472267.68**sft Easting: **5416490.12**sft

Orthometric Height: **851.31**sft Ellipsoid Height: **746.13**sft **Geoid03**

Latitude: **42°00'38.36921"N** Longitude: **91°40'39.46669"W**

Mapping Angle: **1°14'06"** Combination Scale Factor: **0.99997504**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 5B**

**Designation:** Station 5B, Set by Aero-Metric for the City of Cedar Rapids in 1995

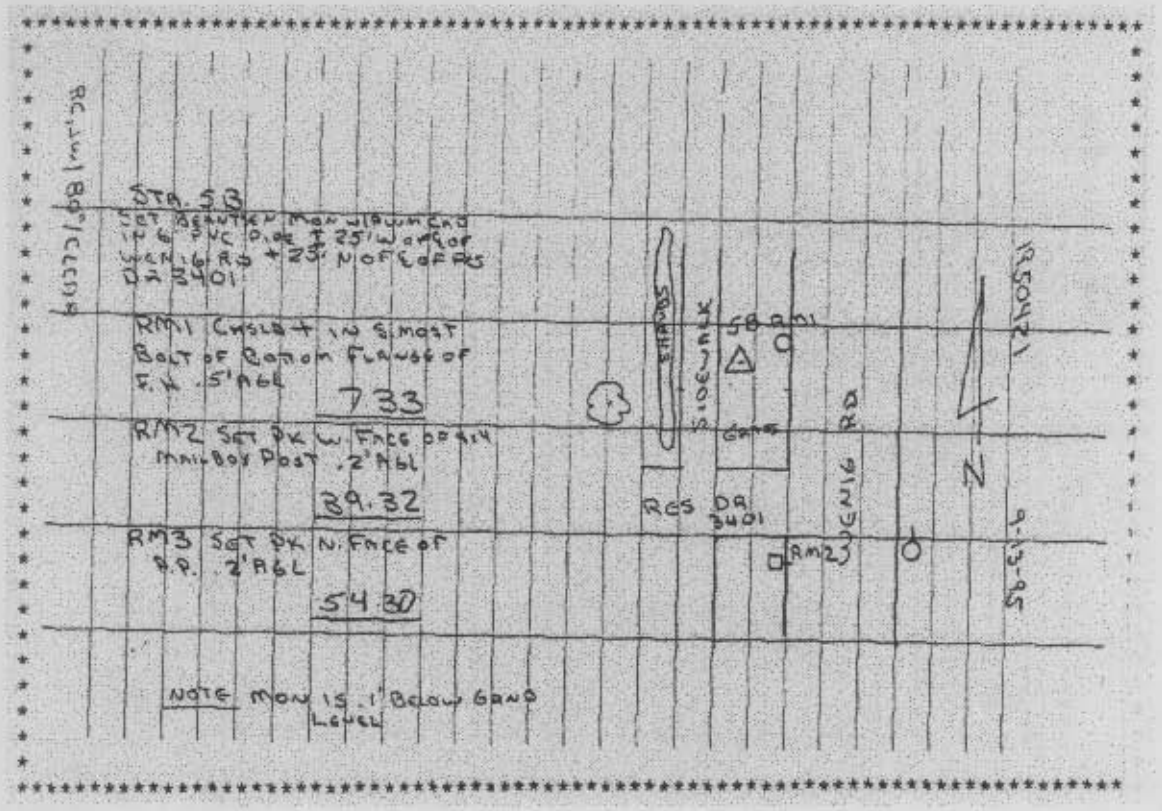
Northing: **3473128.03**sft Easting: **5416467.29**sft

Orthometric Height: **892.93**sft Ellipsoid Height: **787.77**sft **Geoid03**

Latitude: **42°00'46.87133"N** Longitude: **91°40'39.52335"W**

Mapping Angle: **1°14'06"** Combination Scale Factor: **0.99997258**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 6A**

**Designation:** Station 6A, Set by Aero-Metric for the City of Cedar Rapids in 1995

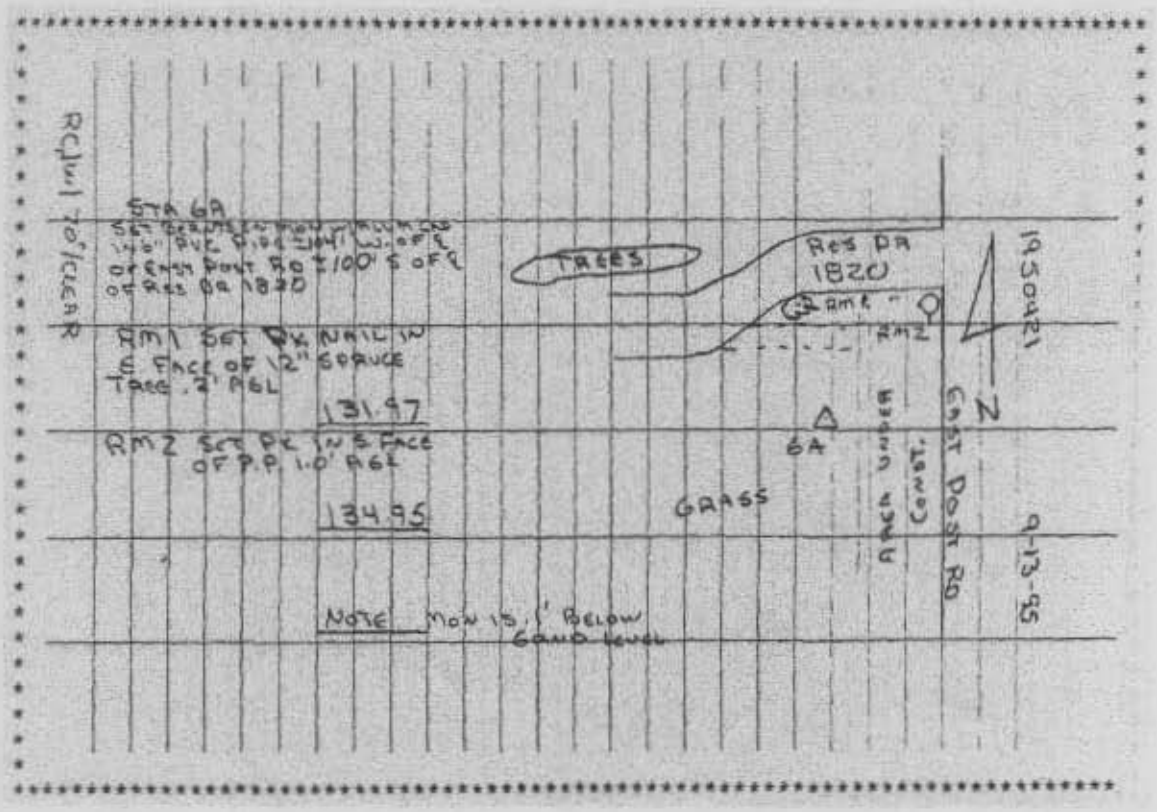
Northing: **3473579.28**sft Easting: **5437661.34**sft

Orthometric Height: **833.58**sft Ellipsoid Height: **728.01**sft **Geoid03**

Latitude: **42°00'46.71852"N** Longitude: **91°35'58.70978"W**

Mapping Angle: **1°17'17"** Combination Scale Factor: **0.99997544**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 6B**

**Designation:** Station 6B, Set by Aero-Metric for the City of Cedar Rapids in 1995

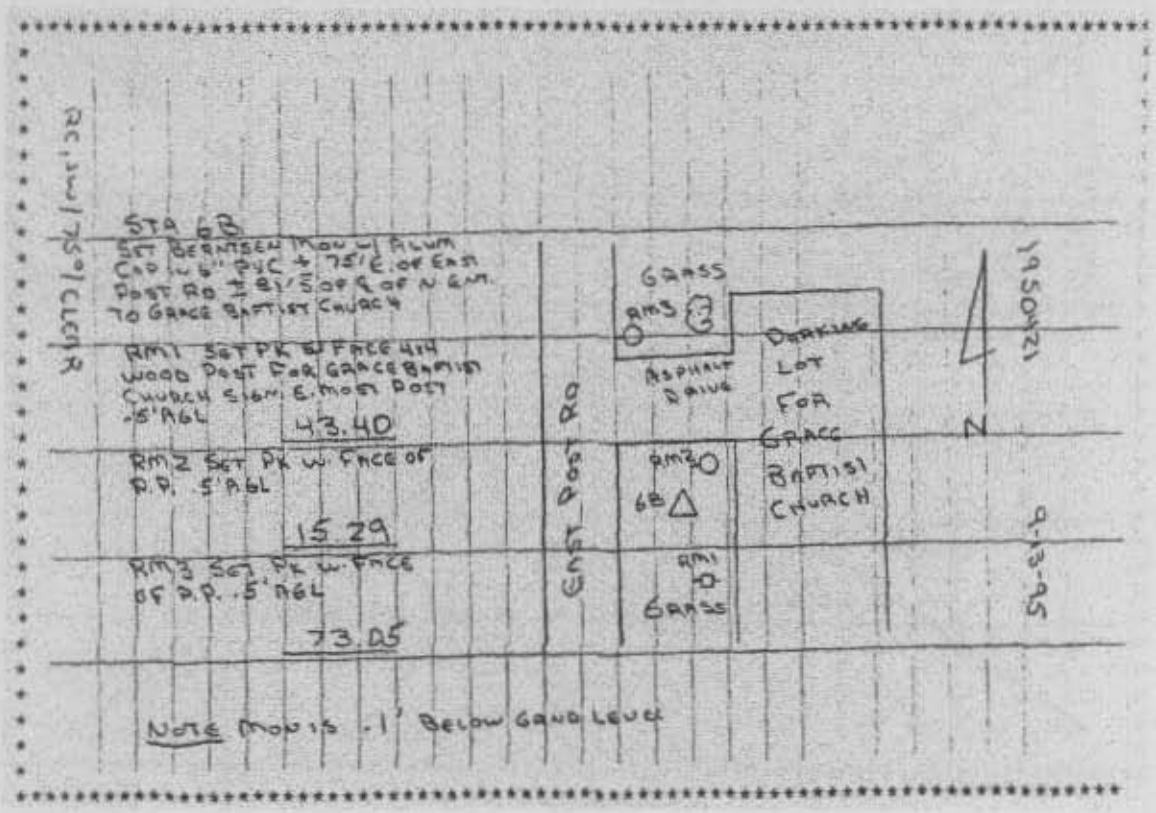
Northing: **3474712.27**sft Easting: **5437840.19**sft

Orthometric Height: **851.25**sft Ellipsoid Height: **745.68**sft **Geoid03**

Latitude: **42°00'57.86853"N** Longitude: **91°35'56.00374"W**

Mapping Angle: **1°17'18"** Combination Scale Factor: **0.99997399**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 8B**

**Designation:** Station 8B, Set by Aero-Metric for the City of Cedar Rapids in 1995

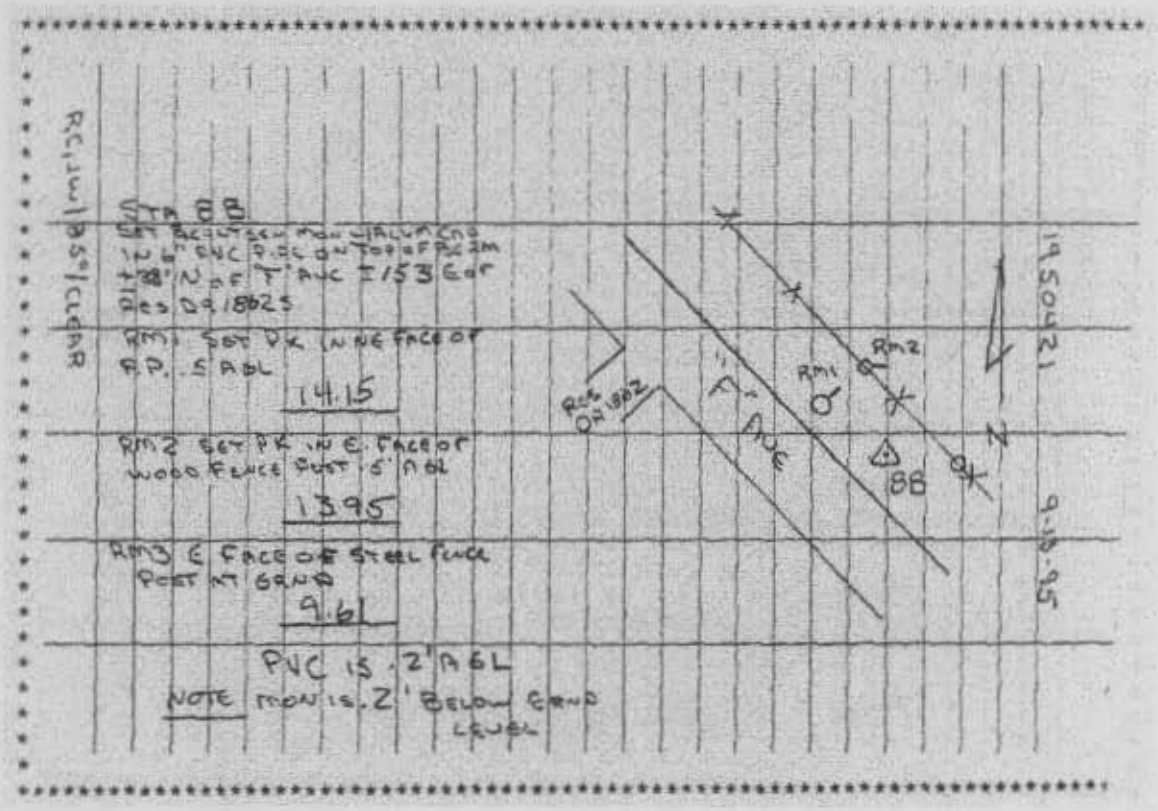
Northing: **3467021.71**sft Easting: **5394853.06**sft

Orthometric Height: **758.11**sft Ellipsoid Height: **653.30**sft **Geoid03**

Latitude: **41°59'51.06317"N** Longitude: **91°45'27.44562"W**

Mapping Angle: **1°10'51"** Combination Scale Factor: **0.99998210**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 9A**

**Designation:** Station 9A, Set by Aero-Metric for the City of Cedar Rapids in 1995

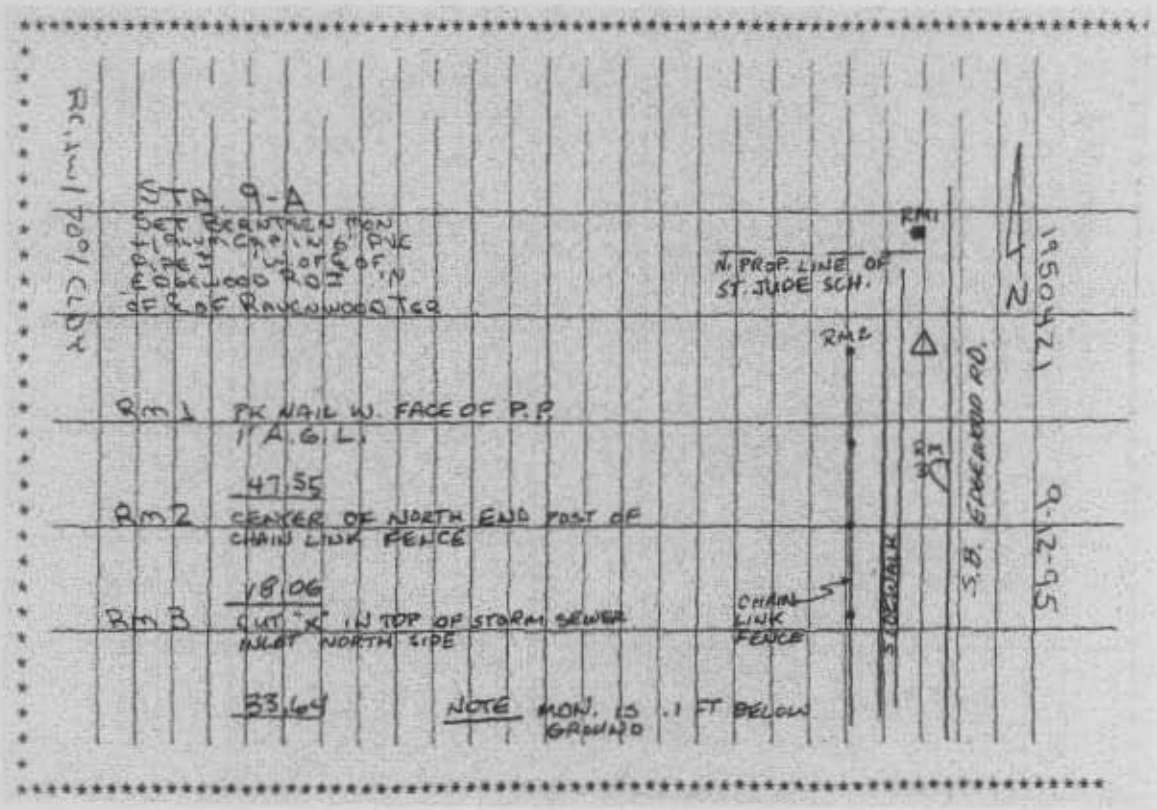
Northing: **3457184.49**sft Easting: **5406340.85**sft

Orthometric Height: **822.07**sft Ellipsoid Height: **716.80**sft **Geoid03**

Latitude: **41°58'11.53804"N** Longitude: **91°42'58.09101"W**

Mapping Angle: **1°12'32"** Combination Scale Factor: **0.99998478**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **CR 9B**

**Designation:** Station 9B, Set by Aero-Metric for the City of Cedar Rapids in 1995

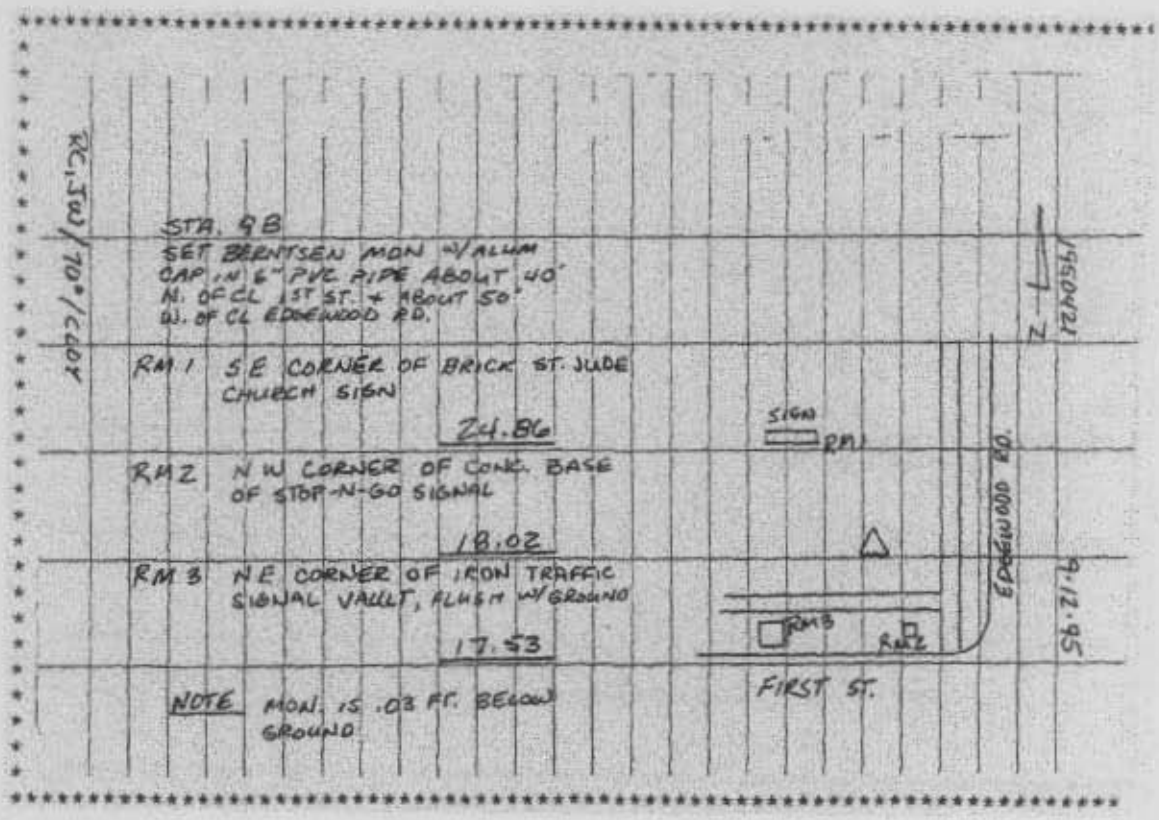
Northing: **3456371.09**sft Easting: **5406319.92**sft

Orthometric Height: **840.75**sft Ellipsoid Height: **735.47**sft **Geoid03**

Latitude: **41°58'03.50873"N** Longitude: **91°42'58.59527"W**

Mapping Angle: **1°12'32"** Combination Scale Factor: **0.99998436**

**Monument Type:** Berntsen monument with aluminum cap set in an open 6" dia. PVC pipe




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **DelCo 2001-74**

**Designation:** DELAWARE CO. GPS CONTROL PT. 2001-074, set by ASI in 2001

Northing: **3577248.26**sft Easting: **5451805.54**sft

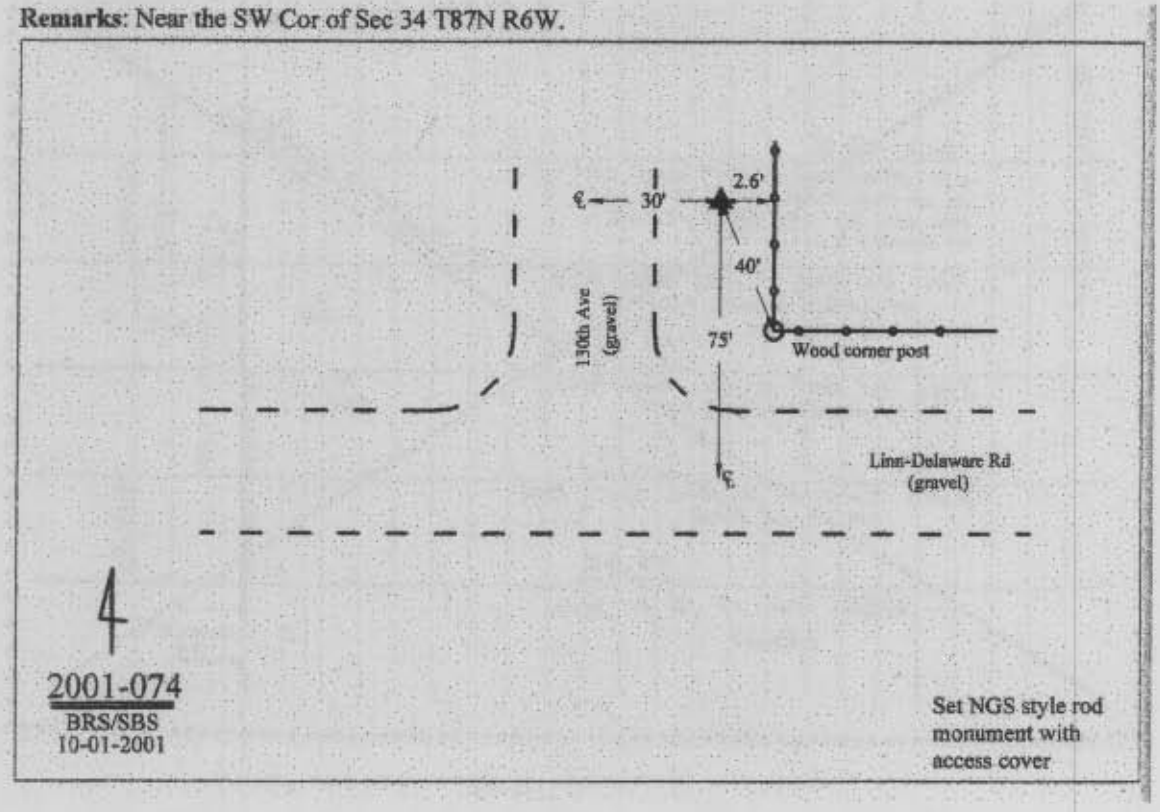
Orthometric Height: **907.87**sft Ellipsoid Height: **804.90**sft **Geoid03**

Latitude: **42°17'47.38275"N** Longitude: **91°32'19.54122"W**

Mapping Angle: **1°19'45"** Combination Scale Factor: **0.99992783**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

**Remarks**: Near the SW Cor of Sec 34 T87N R6W.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **DelCo 2001-75**

**Designation:** DELAWARE CO. GPS CONTROL PT. 2001-075, set by ASI in 2001

Northing: **3577562.18**sft Easting: **5467626.28**sft

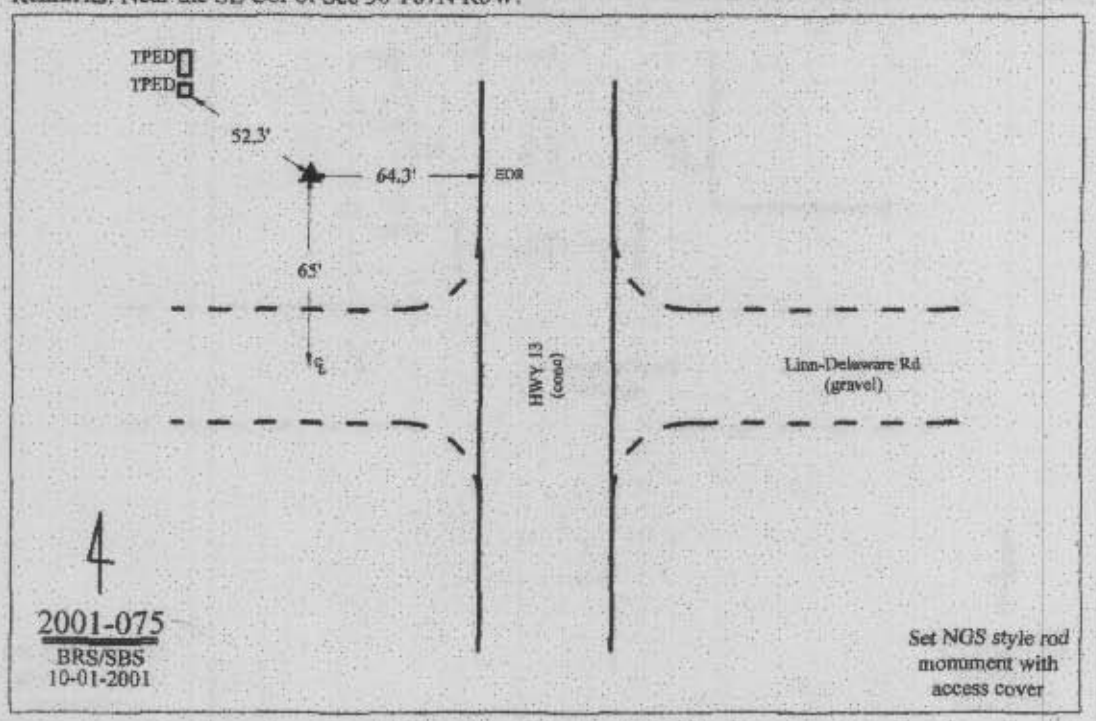
Orthometric Height: **930.24**sft Ellipsoid Height: **826.98**sft **Geoid03**

Latitude: **42°17'46.80351"N** Longitude: **91°28'48.98316"W**

Mapping Angle: **1°22'08"** Combination Scale Factor: **0.99992679**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

**Remarks:** Near the SE Cor of Sec 36 T87N R6W.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **DelCo 2001-76**

**Designation:** DELAWARE CO. GPS CONTROL PT. 2001-076, set by ASI in 2001

Northing: **3577996.19**sft Easting: **5483365.56**sft

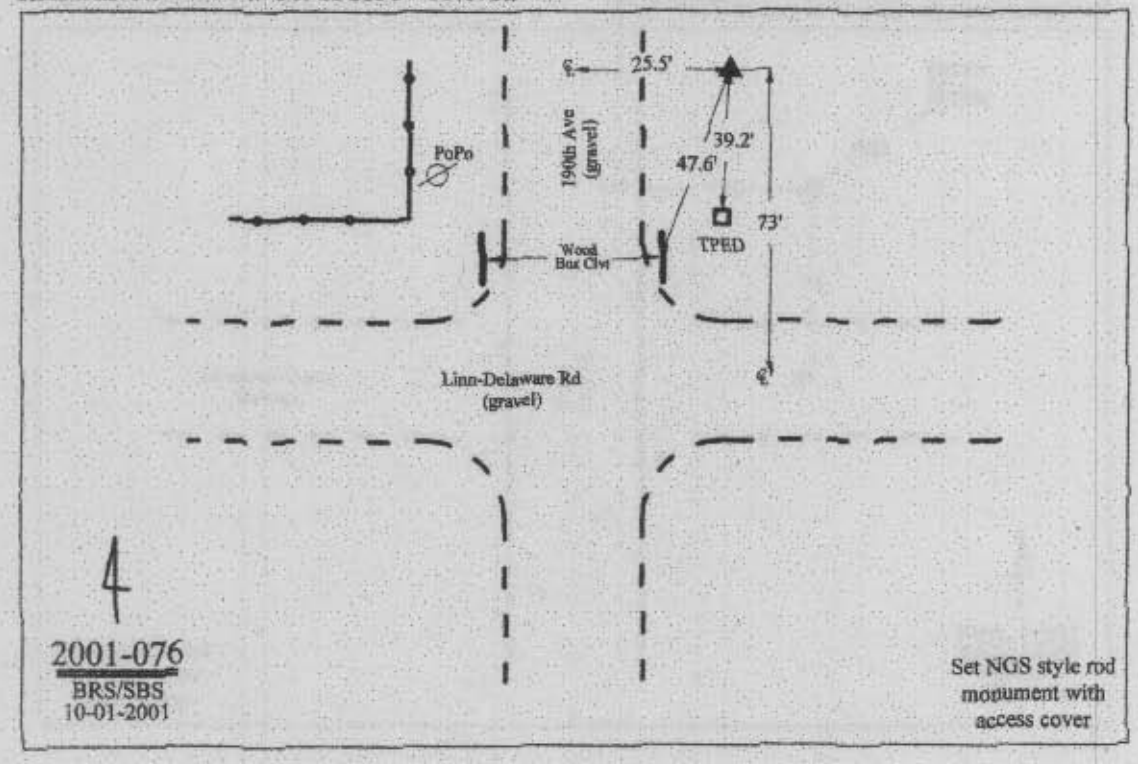
Orthometric Height: **1013.92**sft Ellipsoid Height: **910.43**sft **Geoid03**

Latitude: **42°17'47.32188"N** Longitude: **91°25'19.47063"W**

Mapping Angle: **1°24'30"** Combination Scale Factor: **0.99992279**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

**Remarks**: Near the SW Cor of Sec 34 T87N R5W.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-01**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-01, set by ASI for Johnson Co. in 1992

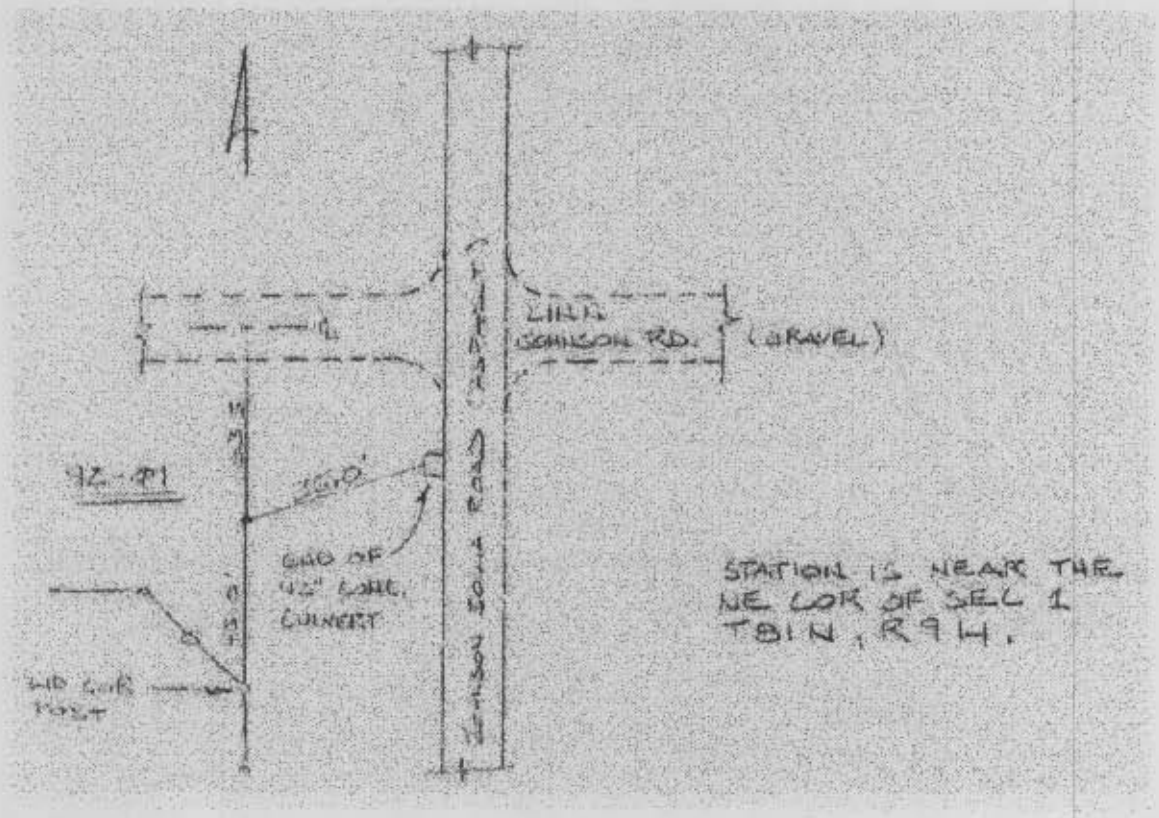
Northing: **3417121.62**sft Easting: **5375731.09**sft

Orthometric Height: **780.83**sft Ellipsoid Height: **675.39**sft **Geoid03**

Latitude: **41°51'42.02342"N** Longitude: **91°49'53.67743"W**

Mapping Angle: **1°07'51"** Combination Scale Factor: **1.00001129**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-02**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-02 set by ASI for Johnson Co. in 1992

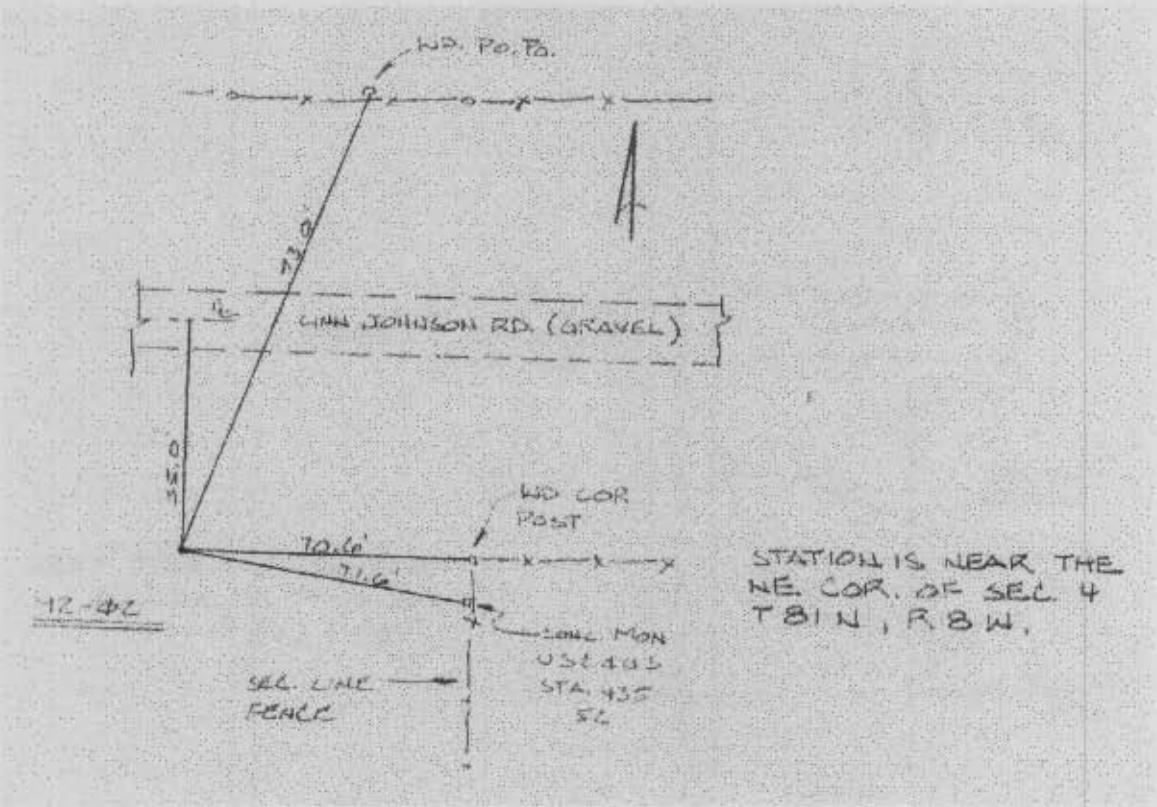
Northing: **3417498.75**sft Easting: **5391574.30**sft

Orthometric Height: **806.43**sft Ellipsoid Height: **700.72**sft **Geoid03**

Latitude: **41°51'42.60576"N** Longitude: **91°46'24.25250"W**

Mapping Angle: **1°10'13"** Combination Scale Factor: **1.00001005**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-03**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-03, set by ASI for Johnson Co. in 1992

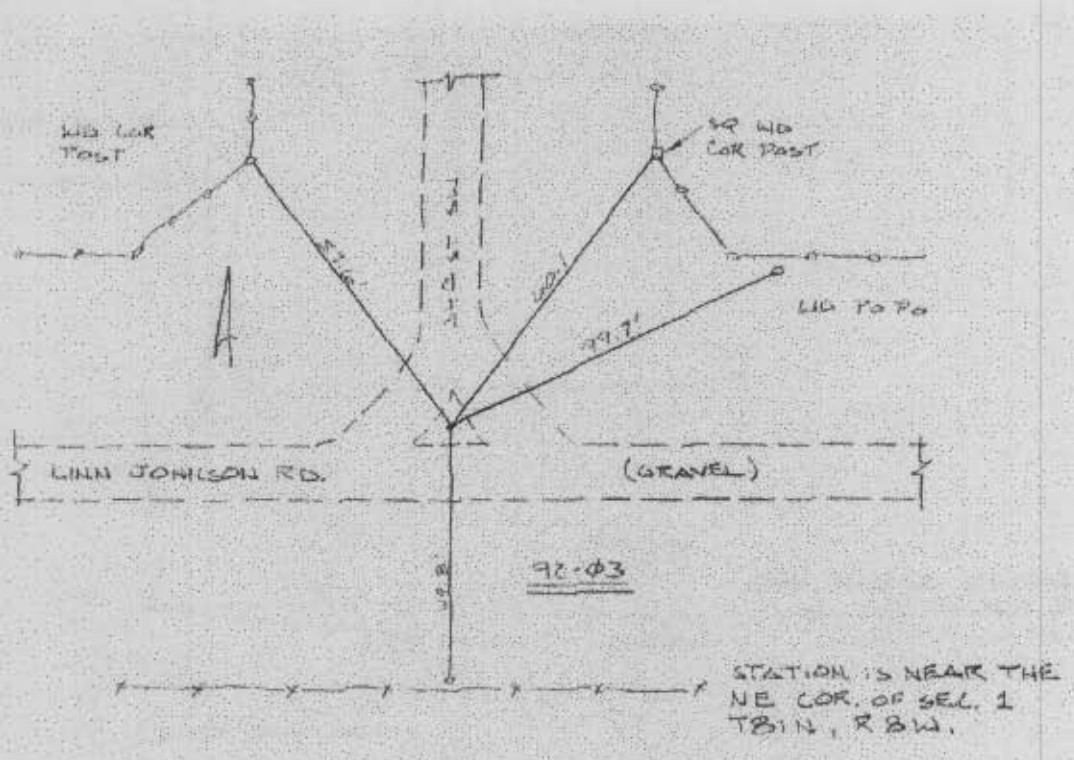
Northing: **3417923.38**sft Easting: **5407607.03**sft

Orthometric Height: **795.26**sft Ellipsoid Height: **689.17**sft **Geoid03**

Latitude: **41°51'43.50998"N** Longitude: **91°42'52.30939"W**

Mapping Angle: **1°12'36"** Combination Scale Factor: **1.00001054**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-04**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-04, set by ASI for Johnson Co. in 1992

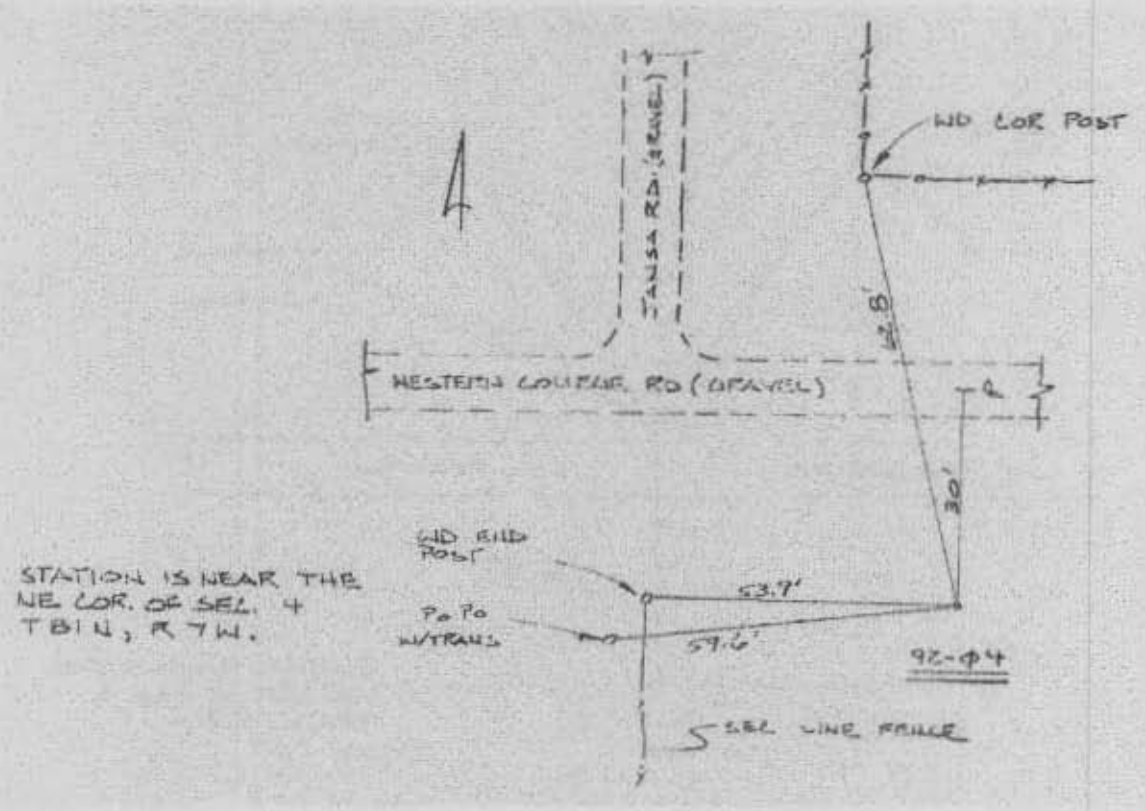
Northing: **3419251.41**sft Easting: **5423548.42**sft

Orthometric Height: **846.15**sft Ellipsoid Height: **739.94**sft **Geoid03**

Latitude: **41°51'53.24586"N** Longitude: **91°39'21.31108"W**

Mapping Angle: **1°14'59"** Combination Scale Factor: **1.00000746**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-05**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-05, set by ASI for Johnson Co. in 1992

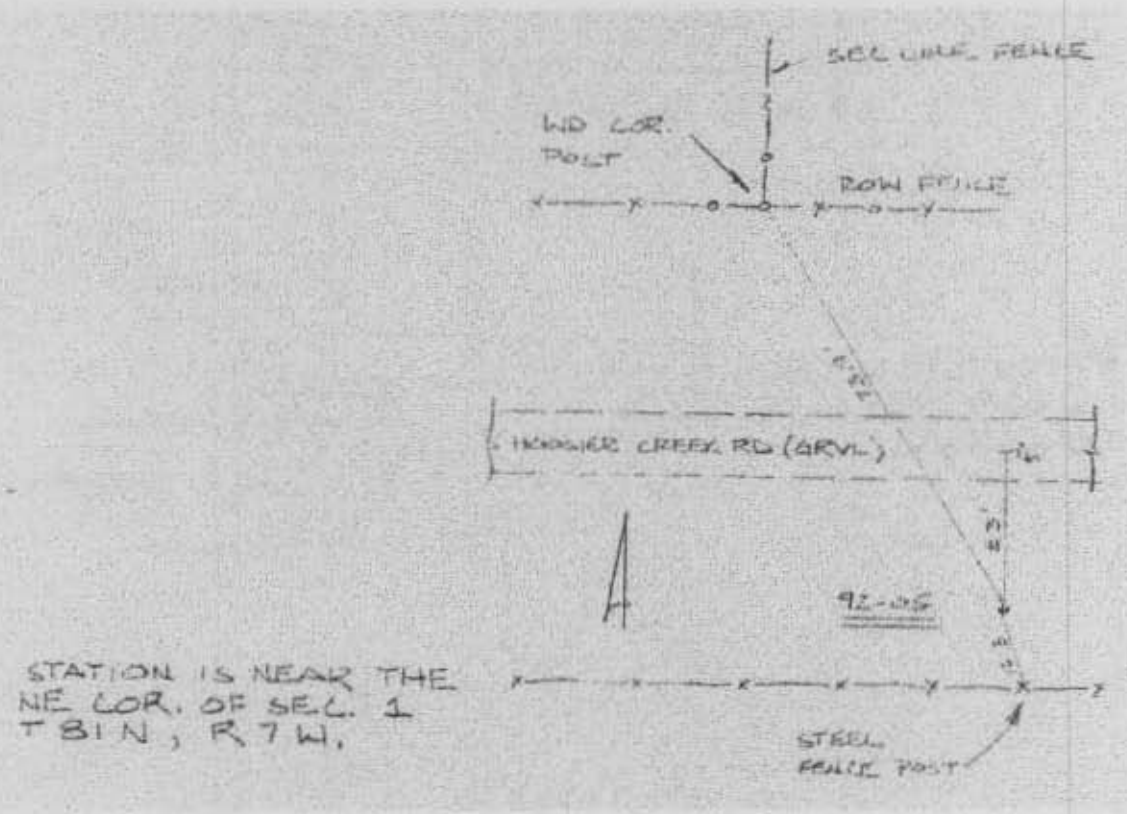
Northing: **3418095.14**sft Easting: **5438797.78**sft

Orthometric Height: **793.04**sft Ellipsoid Height: **686.67**sft **Geoid03**

Latitude: **41°51'38.49063"N** Longitude: **91°36'00.17629"W**

Mapping Angle: **1°17'16"** Combination Scale Factor: **1.00001099**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-06**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-06, set by ASI for Johnson Co. in 1992

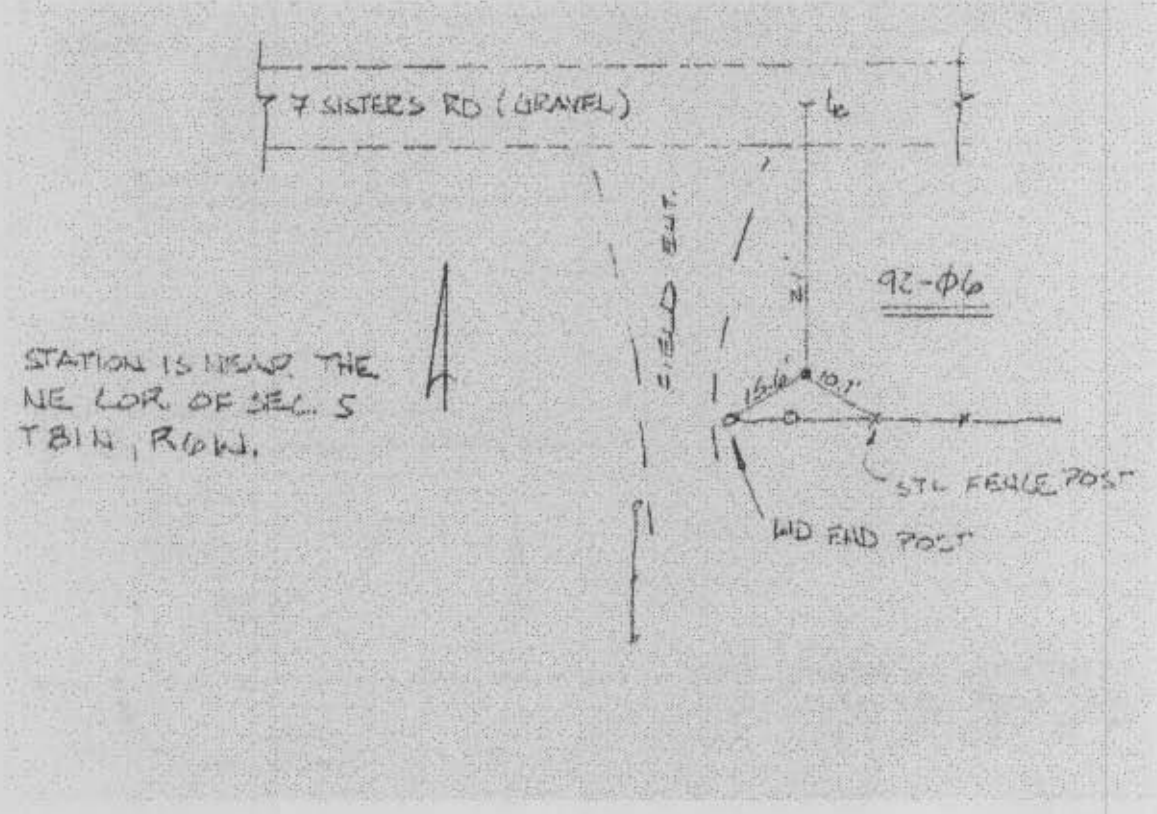
Northing: **3418275.48**sft Easting: **5455552.37**sft

Orthometric Height: **825.33**sft Ellipsoid Height: **718.89**sft **Geoid03**

Latitude: **41°51'36.49202"N** Longitude: **91°32'18.77339"W**

Mapping Angle: **1°19'46"** Combination Scale Factor: **1.00000959**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-07**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-07, set by ASI for Johnson Co. in 1992

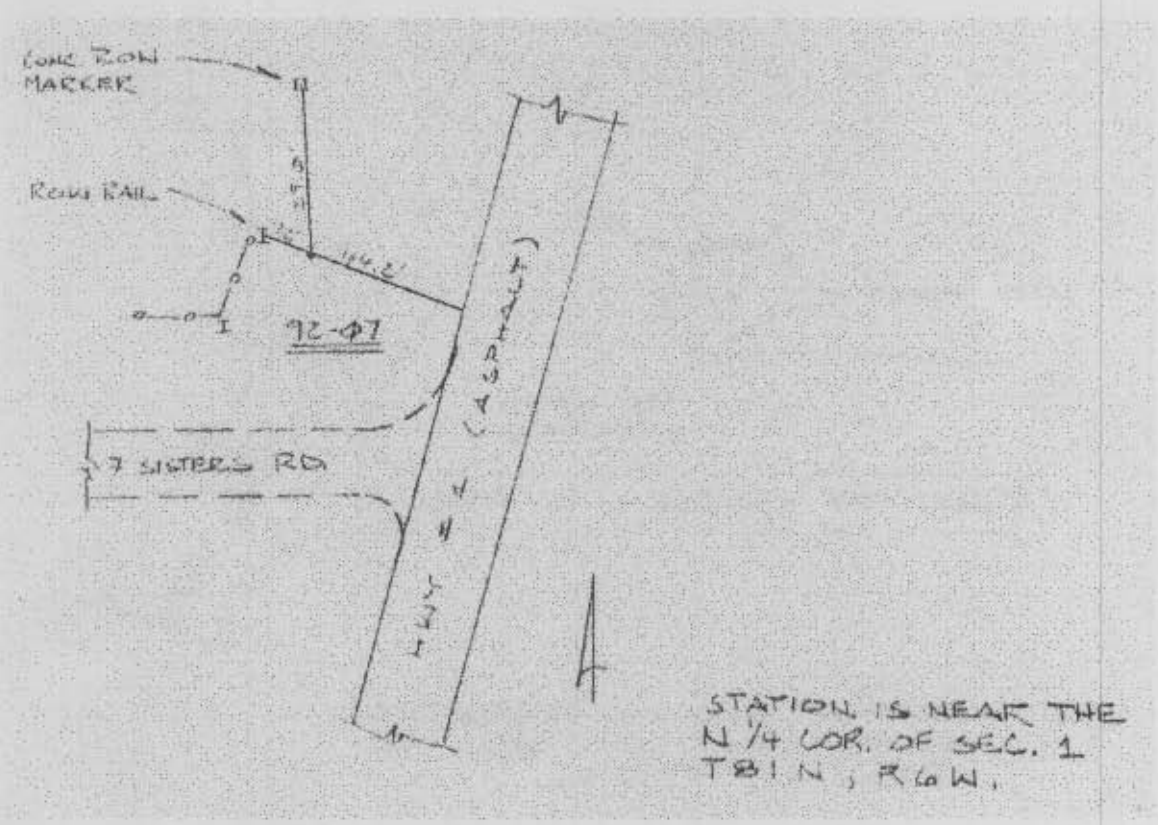
Northing: **3418498.88**sft Easting: **5467828.29**sft

Orthometric Height: **865.74**sft Ellipsoid Height: **759.27**sft **Geoid03**

Latitude: **41°51'35.85256"N** Longitude: **91°29'36.52762"W**

Mapping Angle: **1°21'36"** Combination Scale Factor: **1.00000771**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-08**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-08, set by ASI for Johnson Co. in 1992

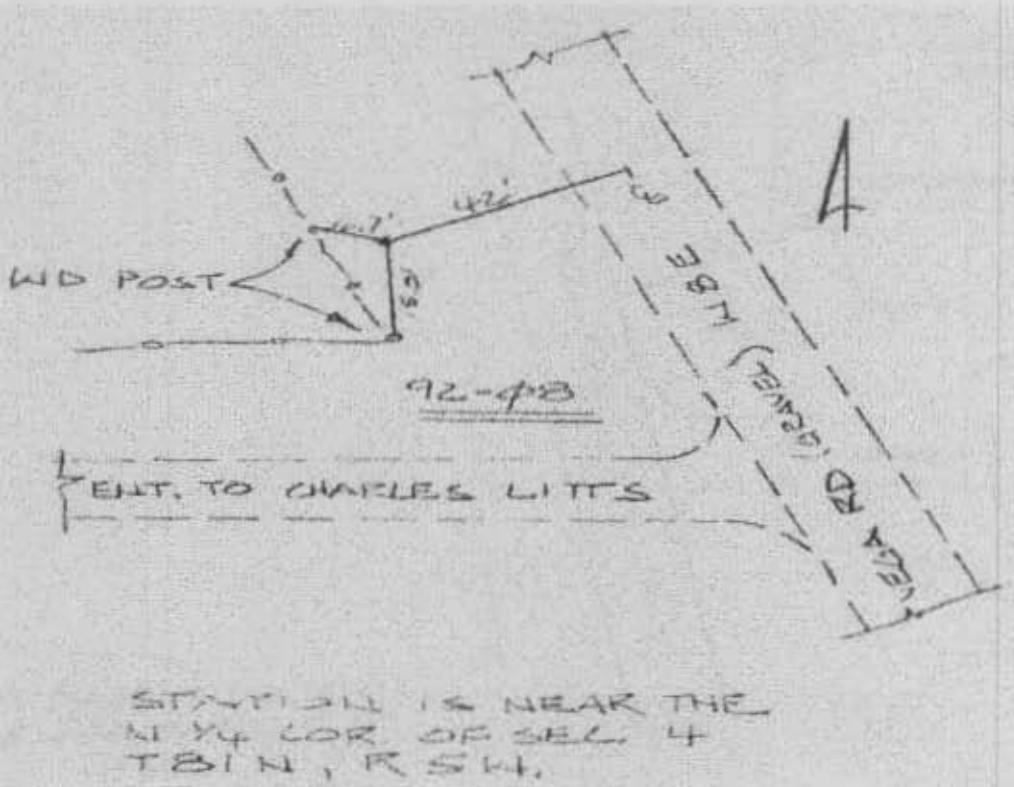
Northing: **3418905.55**sft Easting: **5484496.07**sft

Orthometric Height: **721.71**sft Ellipsoid Height: **615.14**sft **Geoid03**

Latitude: **41°51'35.90146"N** Longitude: **91°25'56.20459"W**

Mapping Angle: **1°24'05"** Combination Scale Factor: **1.00001458**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **JoCo 92-09**

**Designation:** JOHNSON CO. GPS CONTROL PT. 92-09, set by ASI for Johnson Co. in 1992

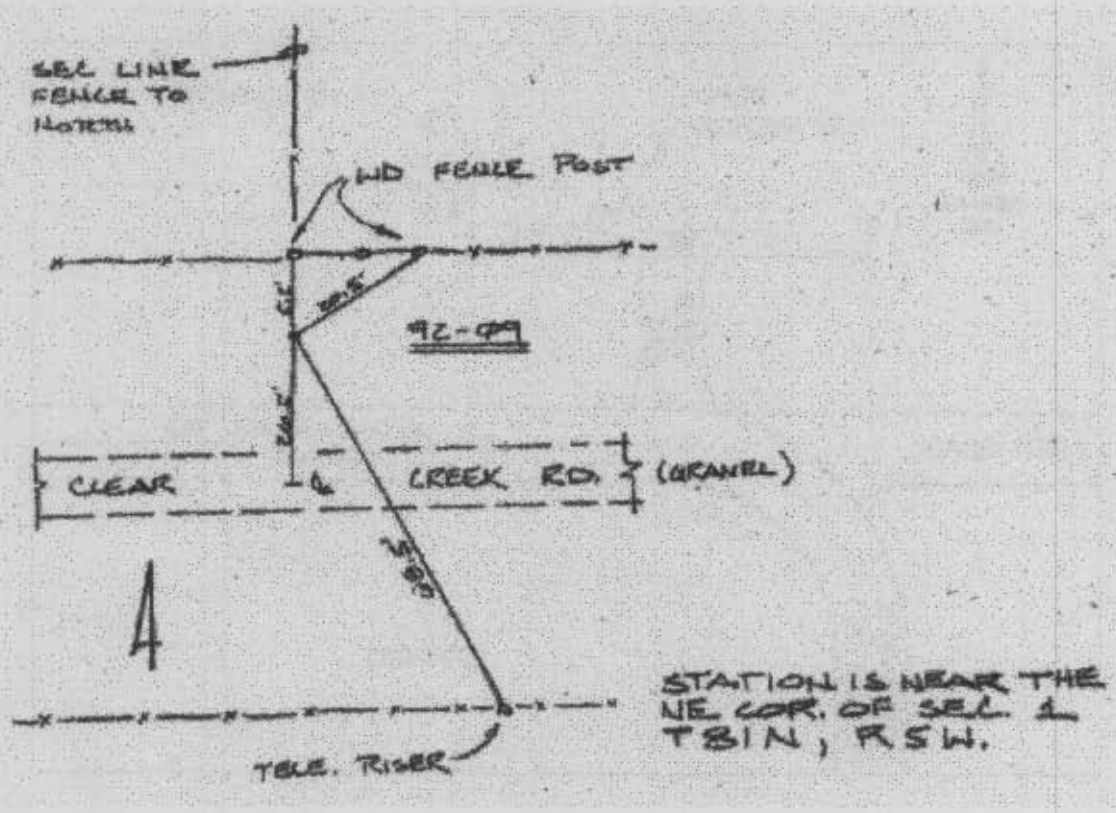
Northing: **3419415.32**sft Easting: **5502485.27**sft

Orthometric Height: **736.35**sft Ellipsoid Height: **629.73**sft **Geoid03**

Latitude: **41°51'36.52022"N** Longitude: **91°21'58.39078"W**

Mapping Angle: **1°26'46"** Combination Scale Factor: **1.00001384**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 6"dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Jones 1**

**Designation:** JONES CO. GPS CONTROL PT. 2004-001, set by DCI for Jones Co. in 2004

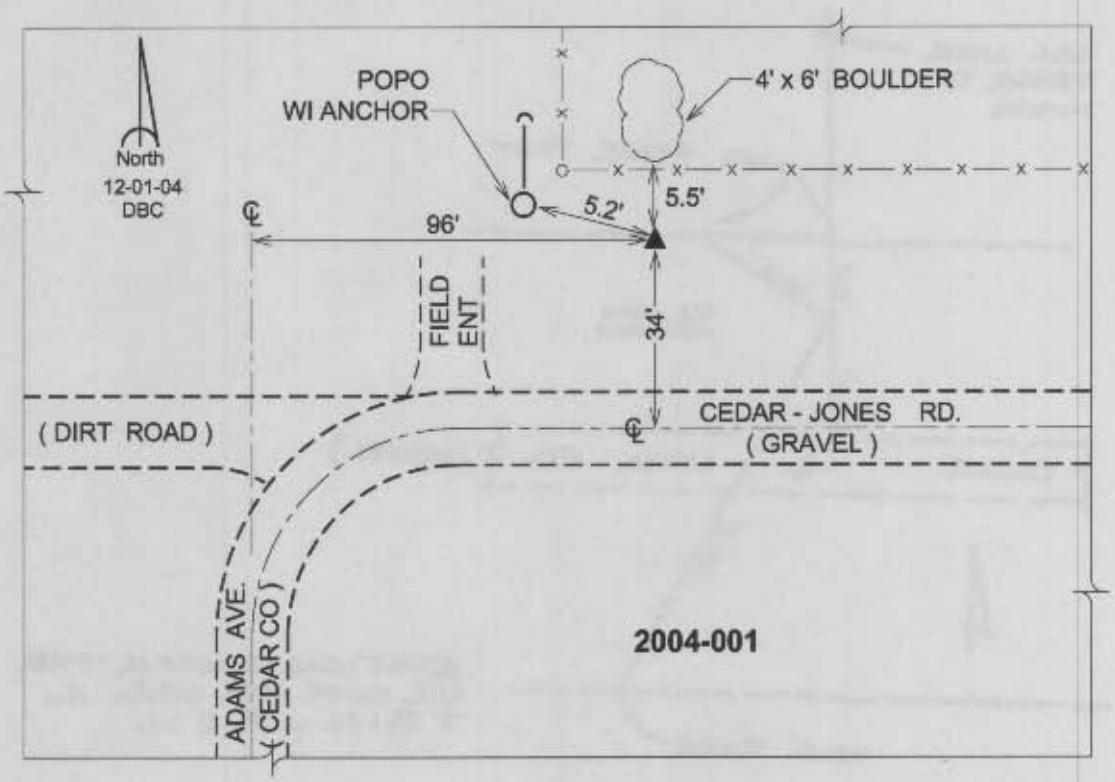
Northing: **3451273.16**sft Easting: **5504383.25**sft

Orthometric Height: **897.25**sft Ellipsoid Height: **790.85**sft **Geoid03**

Latitude: **41°56'50.66043"N** Longitude: **91°21'22.64364"W**

Mapping Angle: **1°27'10"** Combination Scale Factor: **0.99998605**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Jones 2**

**Designation:** JONES CO. GPS CONTROL PT. 2004-002, set by DCI for Jones Co. in 2004

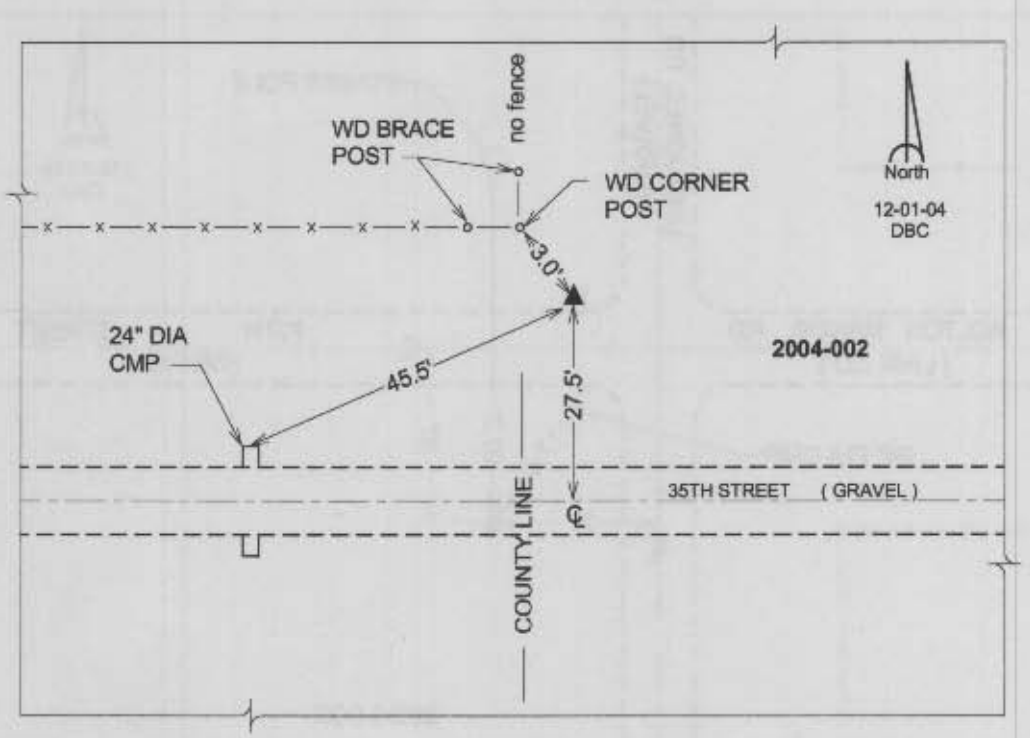
Northing: **3464487.23**sft Easting: **5501548.01**sft

Orthometric Height: **882.74**sft Ellipsoid Height: **776.41**sft **Geoid03**

Latitude: **41°59'01.86599"N** Longitude: **91°21'55.73549"W**

Mapping Angle: **1°26'48"** Combination Scale Factor: **0.99997902**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Jones 3**

**Designation:** JONES CO. GPS CONTROL PT. 2004-003, set by DCI for Jones Co. in 2004

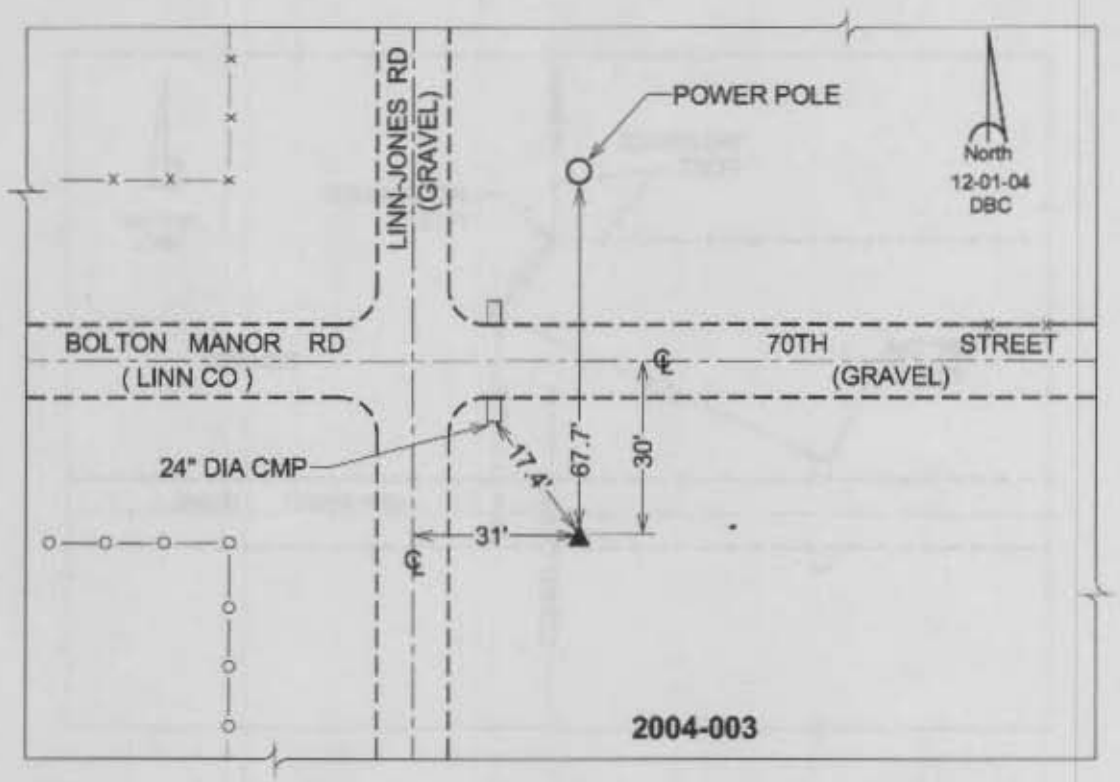
Northing: **3482917.66**sft Easting: **5501276.17**sft

Orthometric Height: **905.93**sft Ellipsoid Height: **799.73**sft **Geoid03**

Latitude: **42°02'03.94589"N** Longitude: **91°21'53.17078"W**

Mapping Angle: **1°26'50"** Combination Scale Factor: **0.99996785**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Jones 4**

**Designation:** JONES CO. GPS CONTROL PT. 2004-004, set by DCI for Jones Co. in 2004

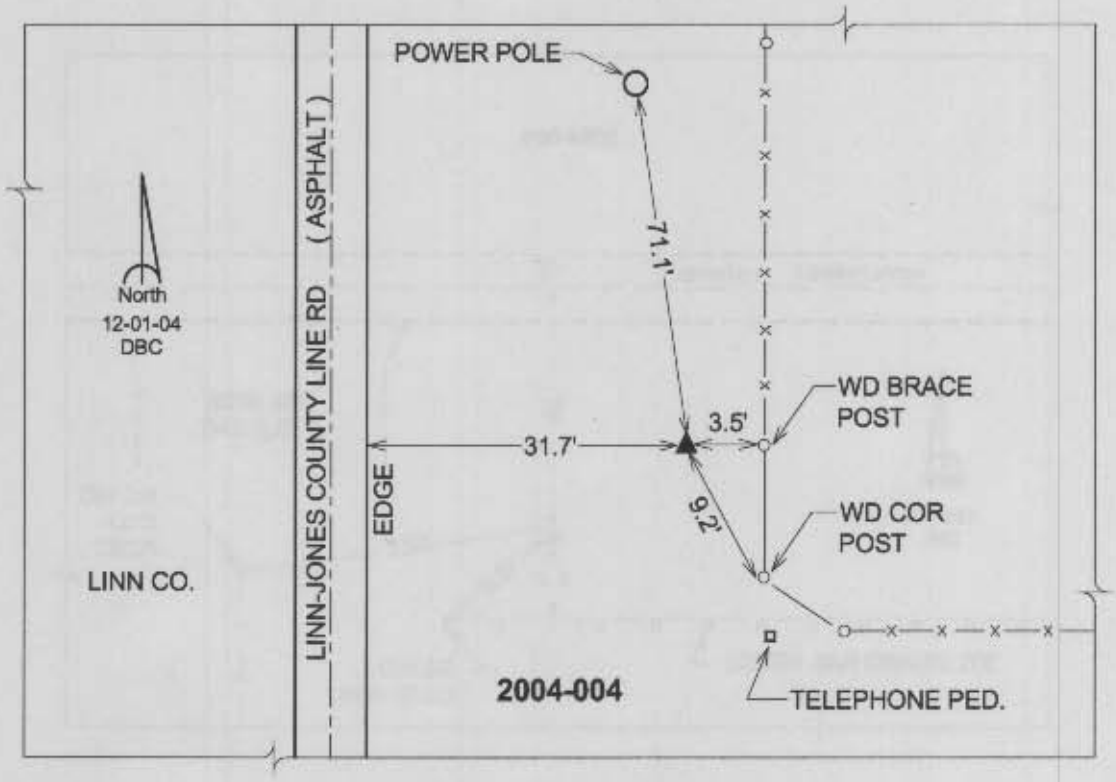
Northing: **3497799.26**sft Easting: **5500921.52**sft

Orthometric Height: **948.37**sft Ellipsoid Height: **842.32**sft **Geoid03**

Latitude: **42°04'30.99963"N** Longitude: **91°21'52.88844"W**

Mapping Angle: **1°26'50"** Combination Scale Factor: **0.99995826**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Jones 6**

**Designation:** JONES CO. GPS CONTROL PT. 2004-006, set by DCI for Jones Co. in 2004

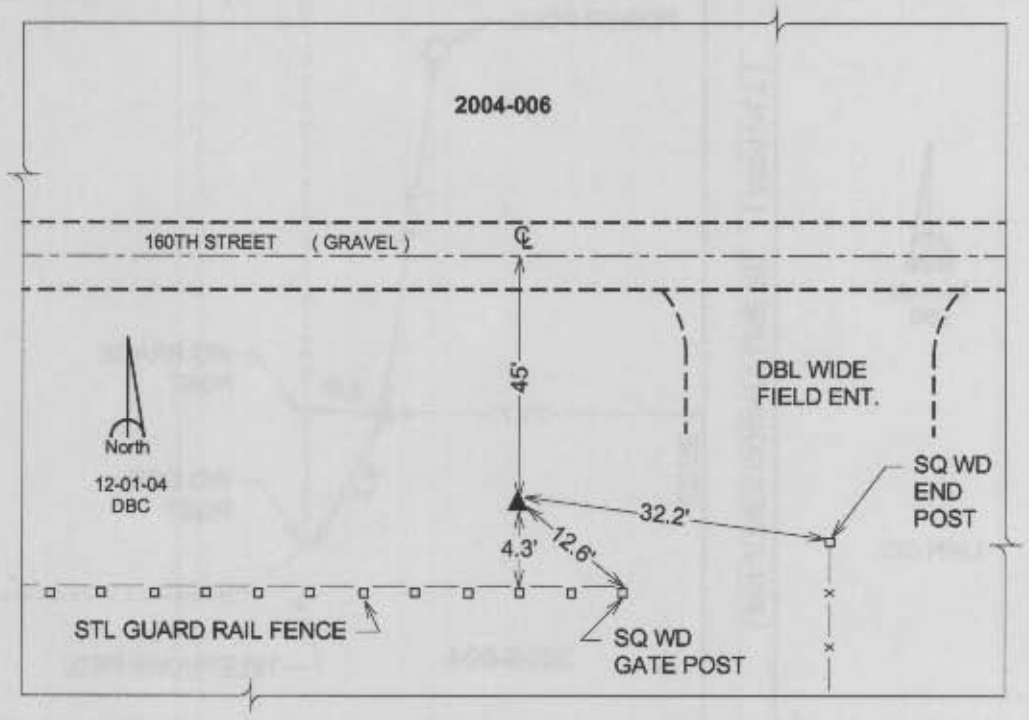
Northing: **3530670.97**sft Easting: **5501290.74**sft

Orthometric Height: **833.34**sft Ellipsoid Height: **727.87**sft **Geoid03**

Latitude: **42°09'55.53621"N** Longitude: **91°21'36.96327"W**

Mapping Angle: **1°27'01"** Combination Scale Factor: **0.99994881**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Jones 7**

**Designation:** JONES CO. GPS CONTROL PT. 2004-007, set by DCI for Jones Co. in 2004

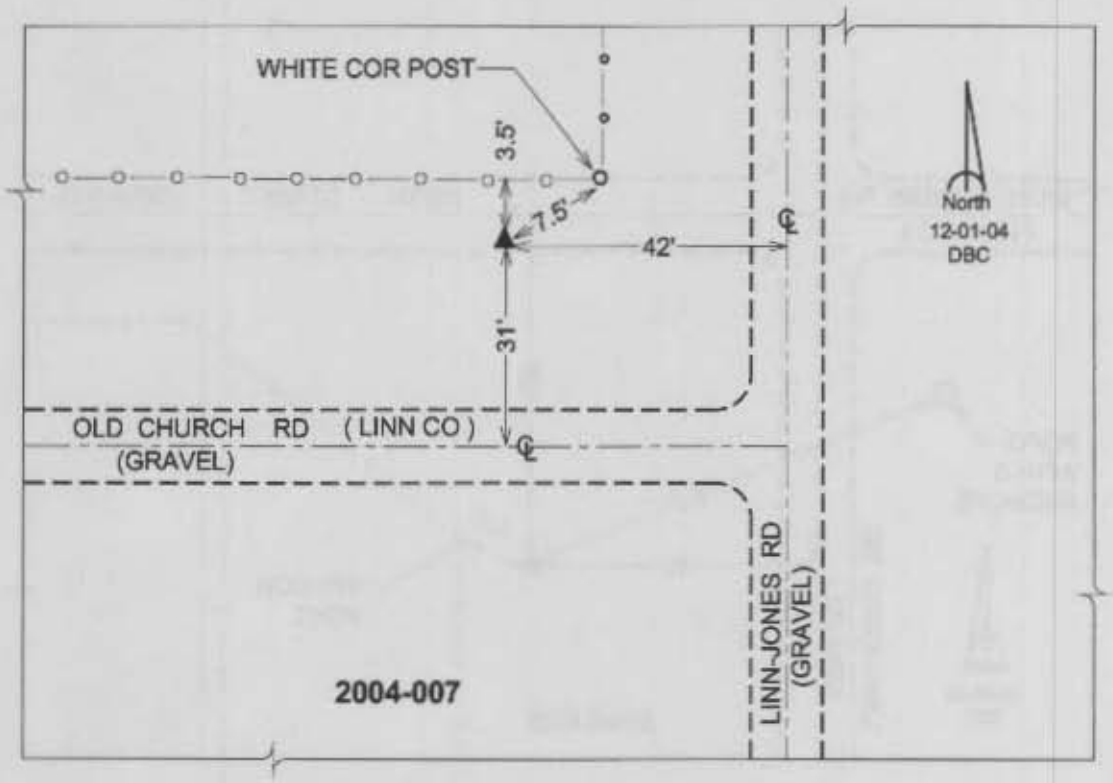
Northing: **3546601.06**sft Easting: **5499838.57**sft

Orthometric Height: **949.36**sft Ellipsoid Height: **844.39**sft **Geoid03**

Latitude: **42°12'33.21838"N** Longitude: **91°21'50.89637"W**

Mapping Angle: **1°26'51"** Combination Scale Factor: **0.99993689**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Jones 8**

**Designation:** JONES CO. GPS CONTROL PT. 2004-008, set by DCI for Jones Co. in 2004

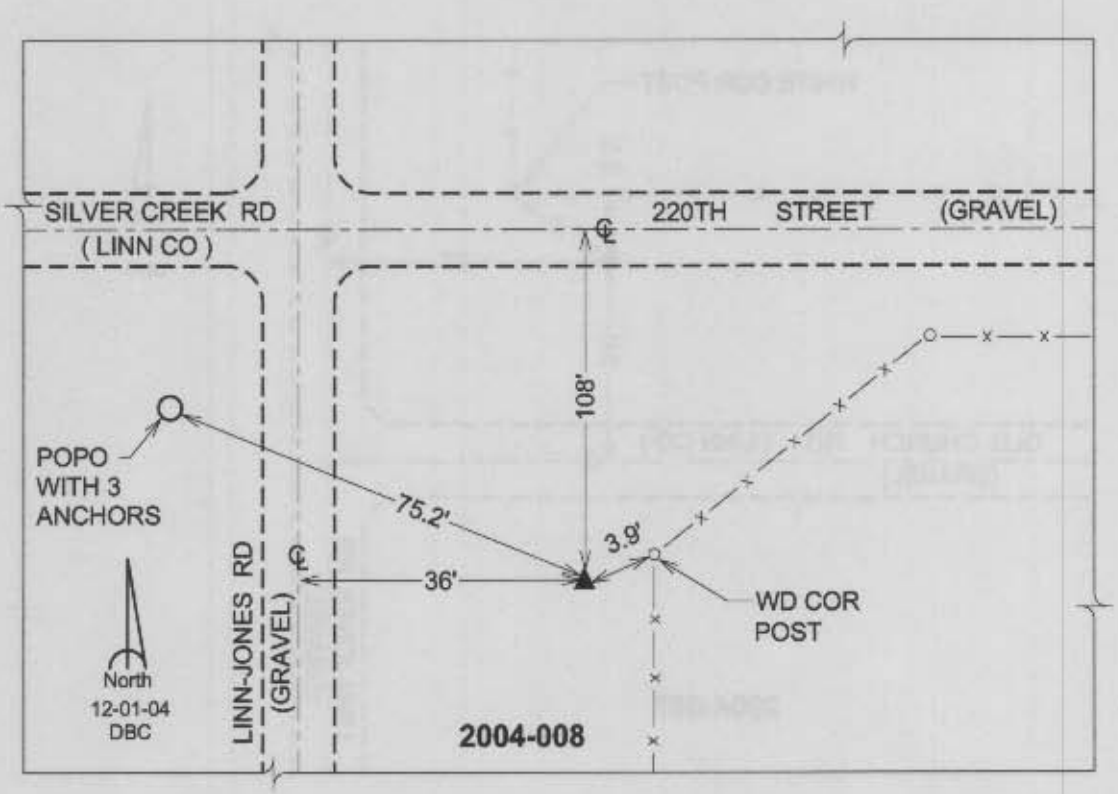
Northing: **3562403.22**sft Easting: **5499599.03**sft

Orthometric Height: **950.51**sft Ellipsoid Height: **846.04**sft **Geoid03**

Latitude: **42°15'09.33406"N** Longitude: **91°21'48.77237"W**

Mapping Angle: **1°26'53"** Combination Scale Factor: **0.99993108**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 1**

**Designation:** Station 1, Set by the Surdex Corp. for Linn County in 2000

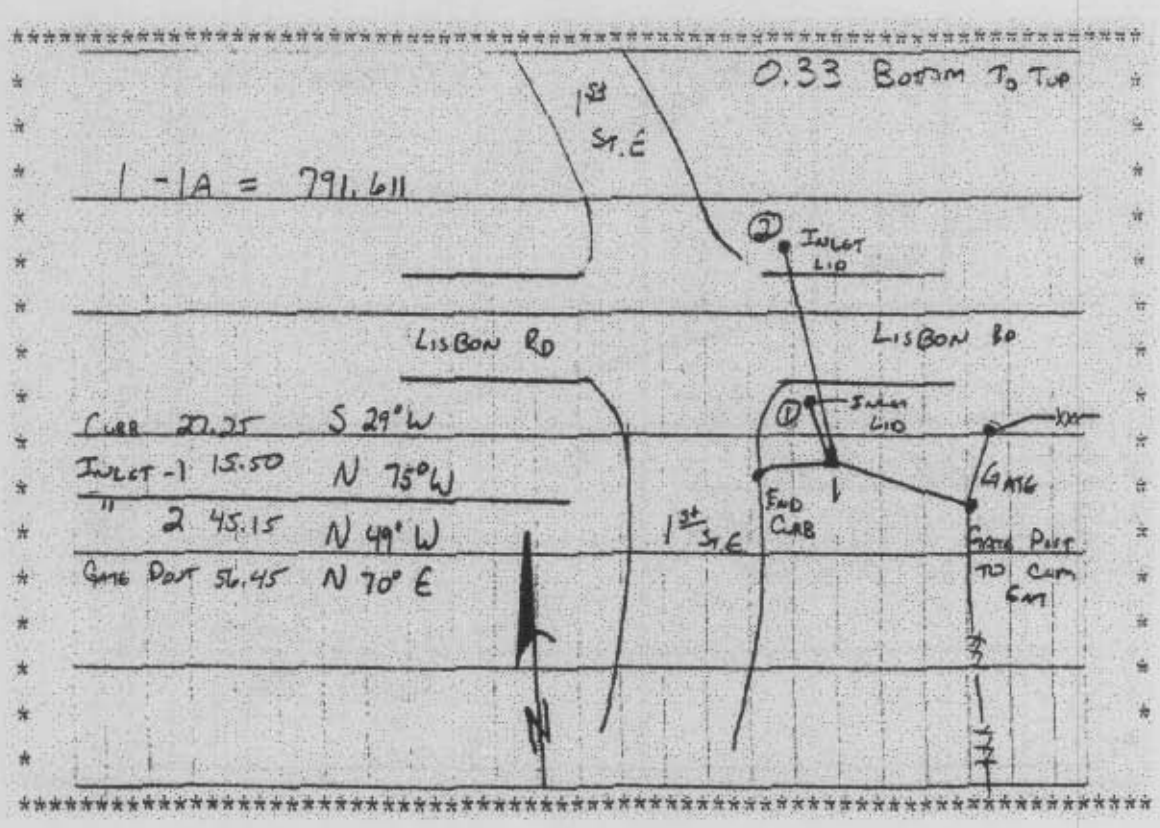
Northing: **3440798.12**sft Easting: **5489751.08**sft

Orthometric Height: **831.90**sft Ellipsoid Height: **725.47**sft **Geoid03**

Latitude: **41°55'10.83079"N** Longitude: **91°24'39.63509"W**

Mapping Angle: **1°24'57"** Combination Scale Factor: **0.99999531**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 10**

**Designation:** Station 10, Set by the Surdex Corp. for Linn County in 2000

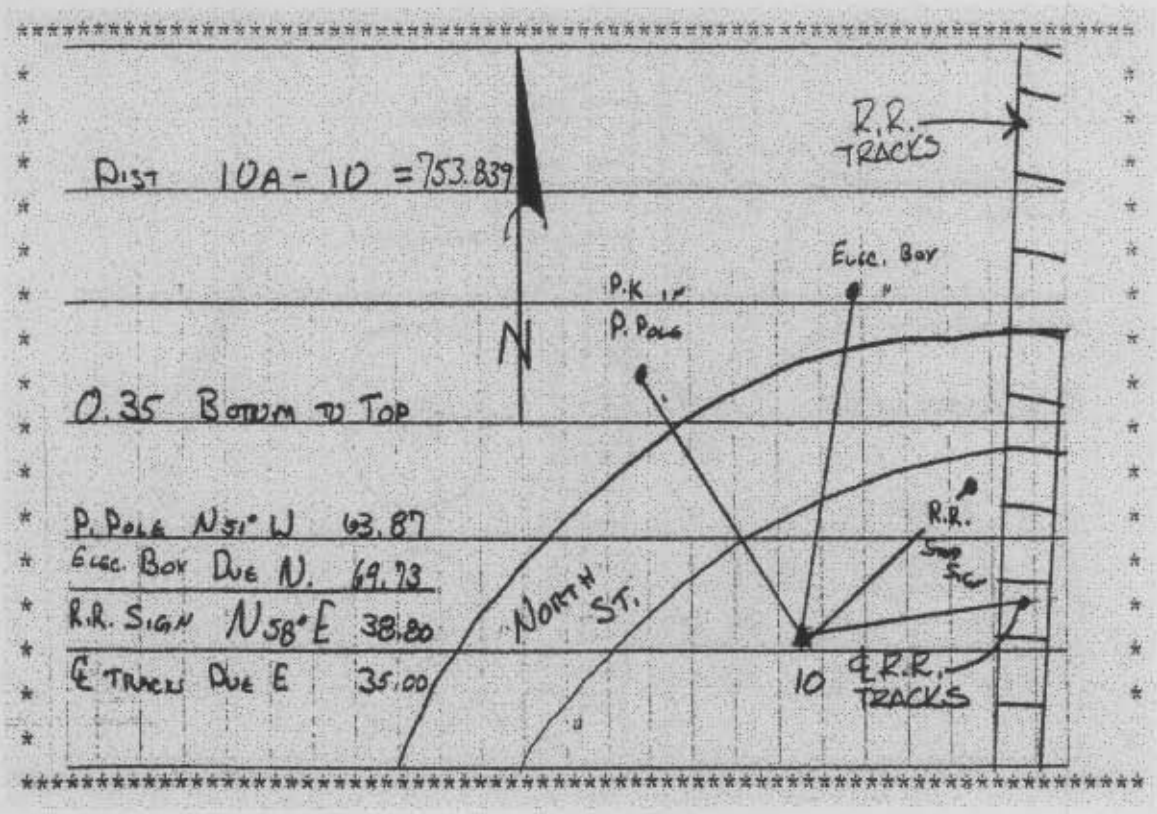
Northing: **3524486.44**sft Easting: **5432156.81**sft

Orthometric Height: **887.83**sft Ellipsoid Height: **783.52**sft **Geoid03**

Latitude: **42°09'10.71060"N** Longitude: **91°36'56.57896"W**

Mapping Angle: **1°16'37"** Combination Scale Factor: **0.99994807**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 10**

**Designation:** Station 10, Set by the Surdex Corp. for Linn County in 2000

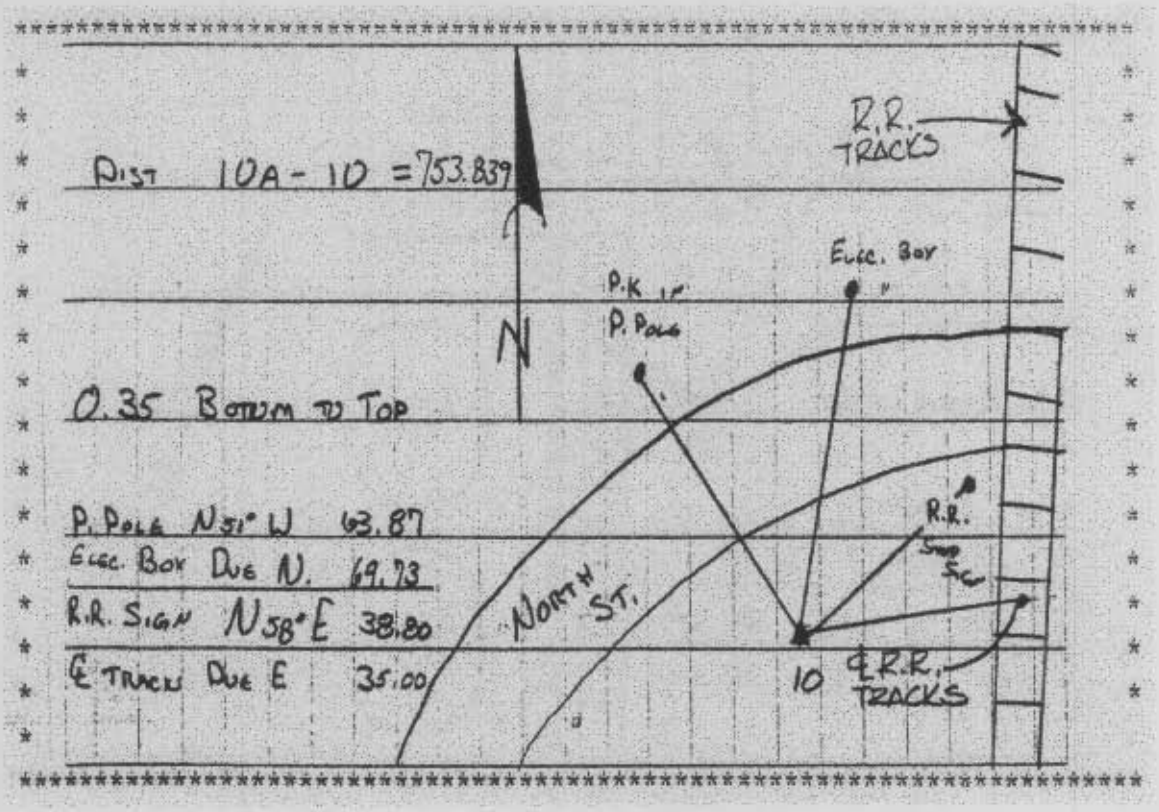
Northing: **3524486.44**sft Easting: **5432156.81**sft

Orthometric Height: **887.83**sft Ellipsoid Height: **783.52**sft **Geoid03**

Latitude: **42°09'10.71060"N** Longitude: **91°36'56.57896"W**

Mapping Angle: **1°16'37"** Combination Scale Factor: **0.99994807**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 11**

**Designation:** Station 11, Set by the Surdex Corp. for Linn County in 2000

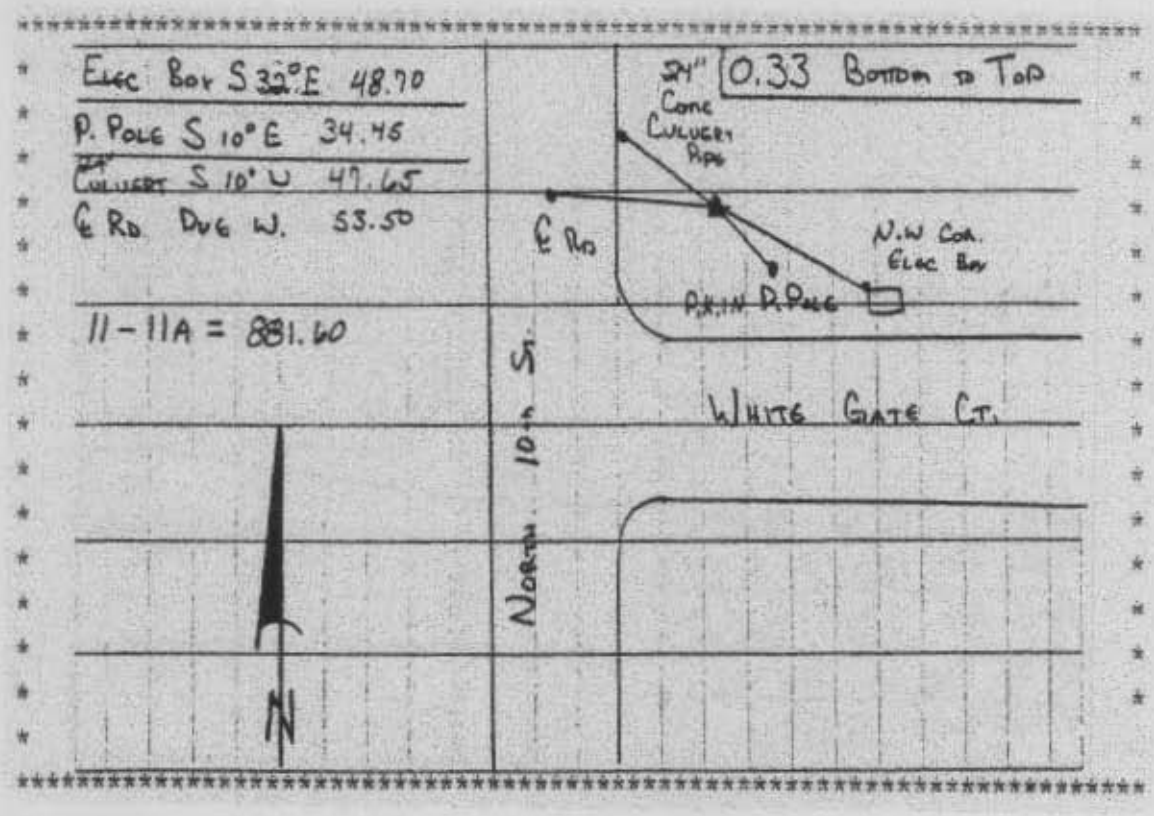
Northing: **3498404.87**sft Easting: **5437218.28**sft

Orthometric Height: **843.36**sft Ellipsoid Height: **738.25**sft **Geoid03**

Latitude: **42°04'52.00163"N** Longitude: **91°35'57.18394"W**

Mapping Angle: **1°17'18"** Combination Scale Factor: **0.99996218**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 11A**

**Designation:** Station 11A, Set by the Surdex Corp. for Linn County in 2000

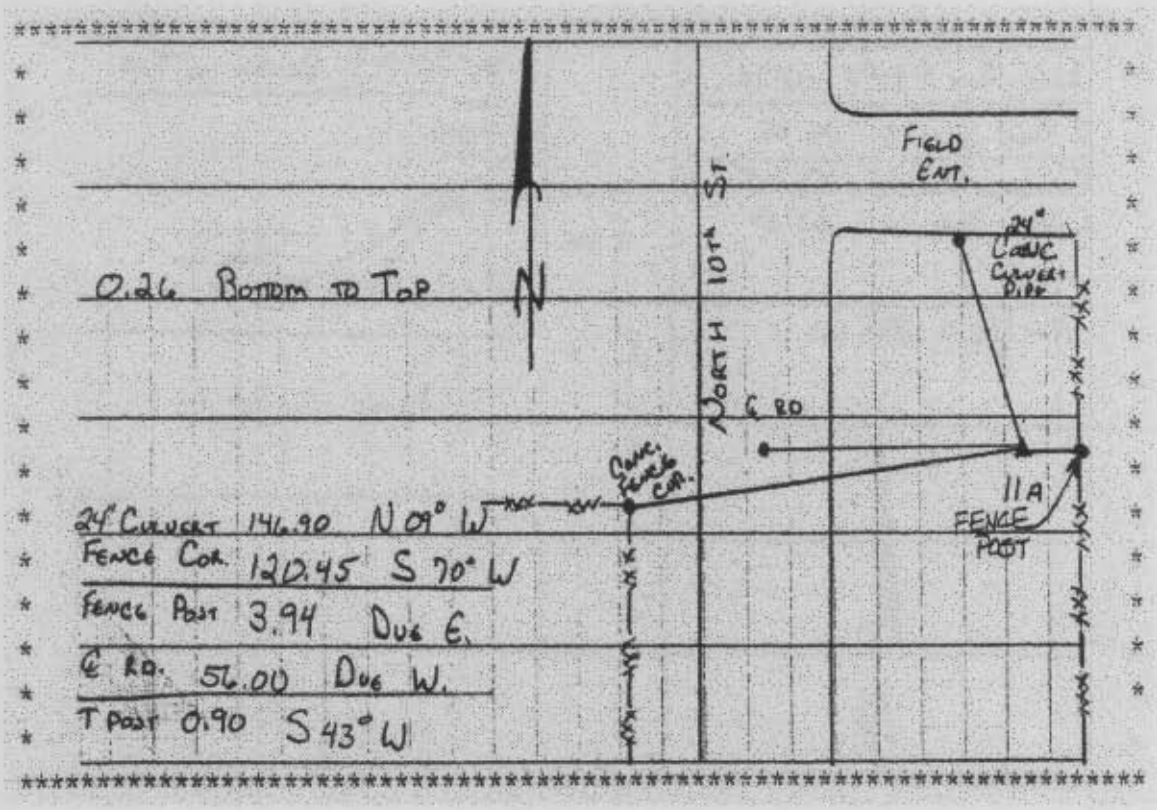
Northing: **3497523.58**sft Easting: **5437242.43**sft

Orthometric Height: **858.57**sft Ellipsoid Height: **753.44**sft **Geoid03**

Latitude: **42°04'43.29233"N** Longitude: **91°35'57.12659"W**

Mapping Angle: **1°17'18"** Combination Scale Factor: **0.99996189**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 12**

**Designation:** Station 12, Set by the Surdex Corp. for Linn County in 2000

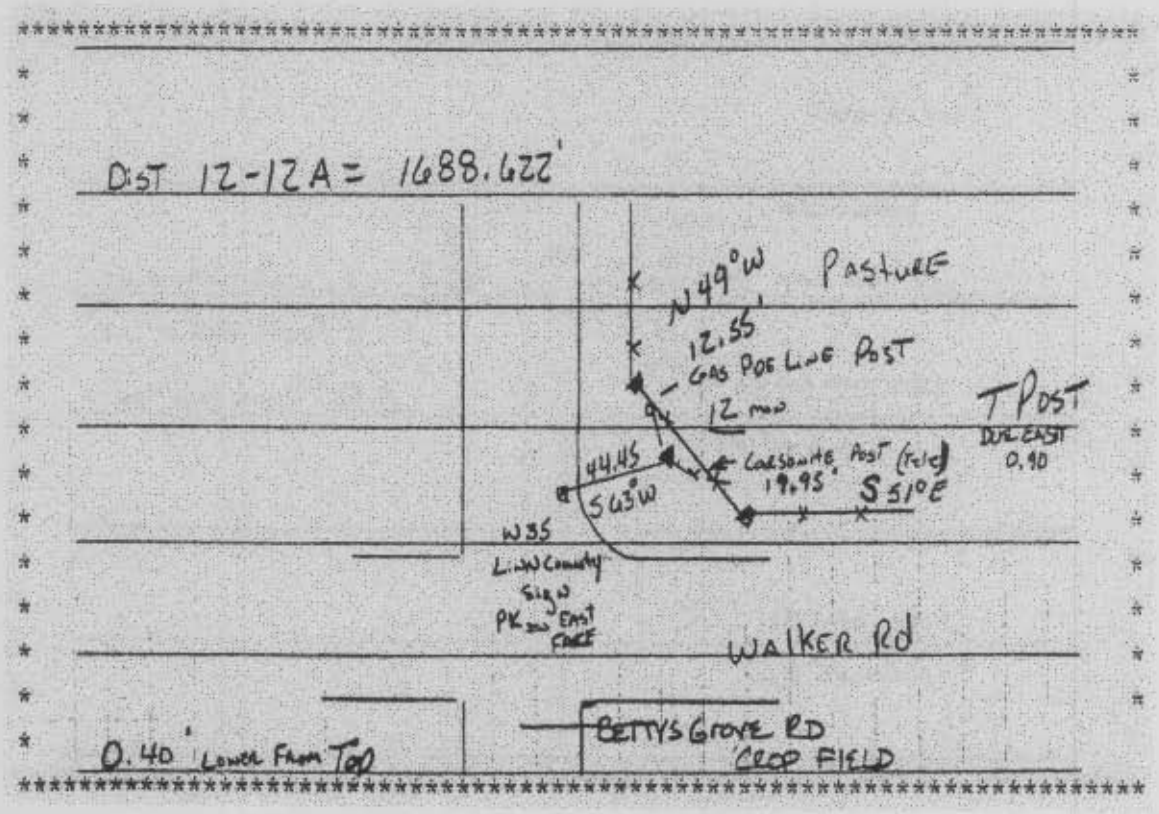
Northing: **3571351.66**sft Easting: **5388352.61**sft

Orthometric Height: **897.92**sft Ellipsoid Height: **796.00**sft **Geoid03**

Latitude: **42°17'02.81569"N** Longitude: **91°46'25.30335"W**

Mapping Angle: **1°10'12"** Combination Scale Factor: **0.99992966**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 12A**

**Designation:** Station 12A, Set by the Surdex Corp. for Linn County in 2000

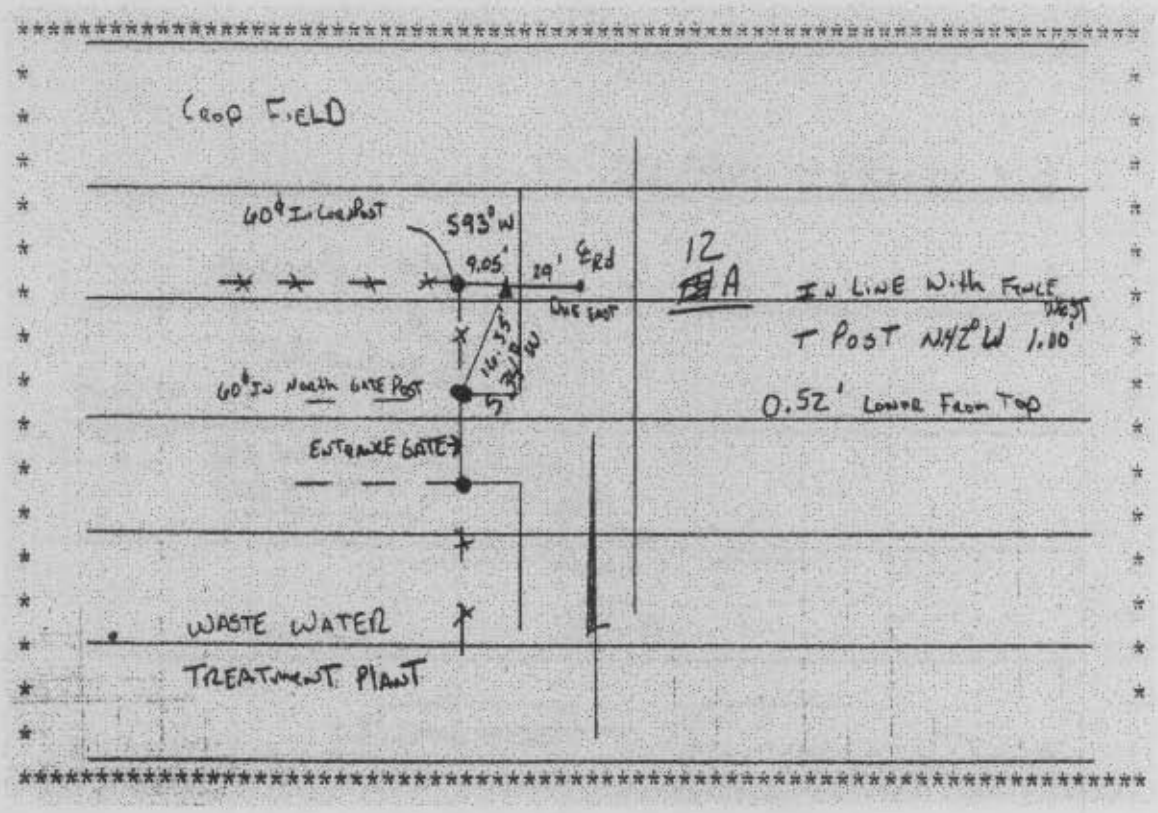
Northing: **3569665.46**sft Easting: **5388263.59**sft

Orthometric Height: **889.61**sft Ellipsoid Height: **787.65**sft **Geoid03**

Latitude: **42°16'46.17955"N** Longitude: **91°46'26.94540"W**

Mapping Angle: **1°10'11"** Combination Scale Factor: **0.99993060**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 13**

**Designation:** Station 13, Set by the Surdex Corp. for Linn County in 2000

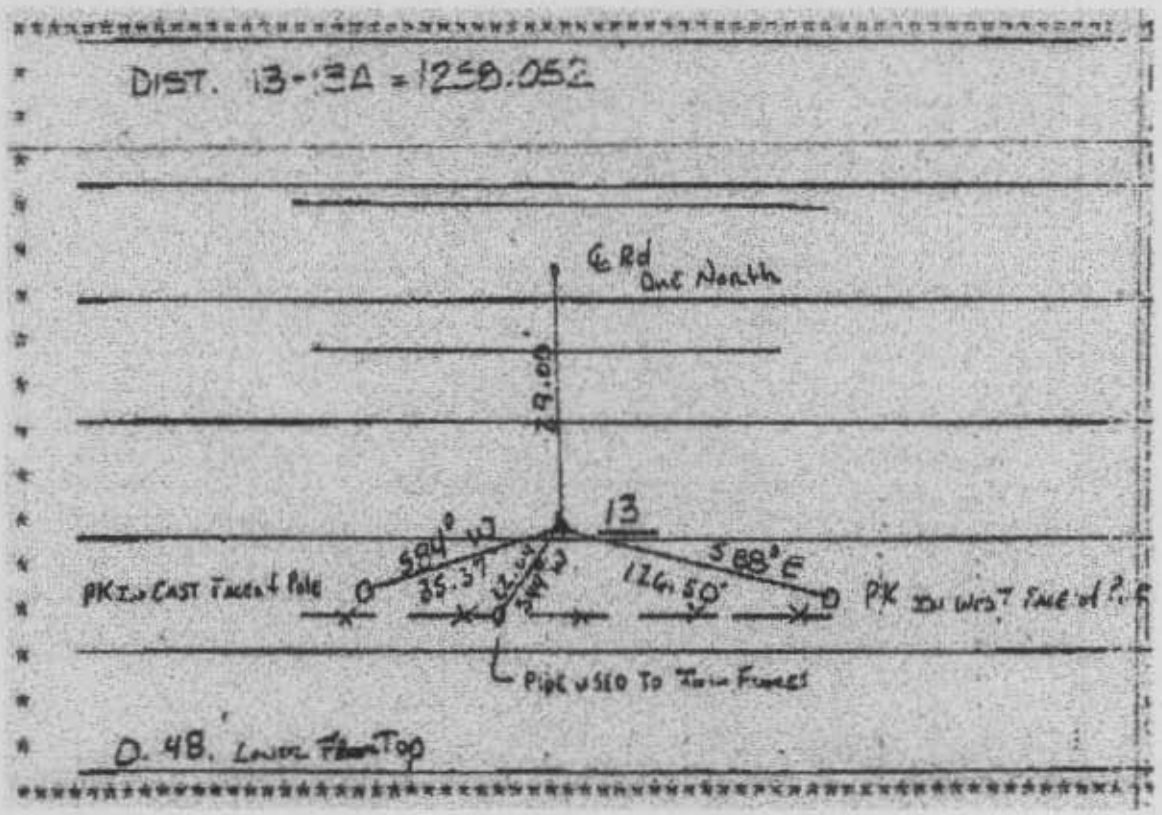
Northing: **3576446.20**sft Easting: **5373557.50**sft

Orthometric Height: **921.47**sft Ellipsoid Height: **819.92**sft **Geoid03**

Latitude: **42°17'56.07050"N** Longitude: **91°49'40.75648"W**

Mapping Angle: **1°08'00"** Combination Scale Factor: **0.99992684**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 13A**

**Designation:** Station 13A, Set by the Surdex Corp. for Linn County in 2000

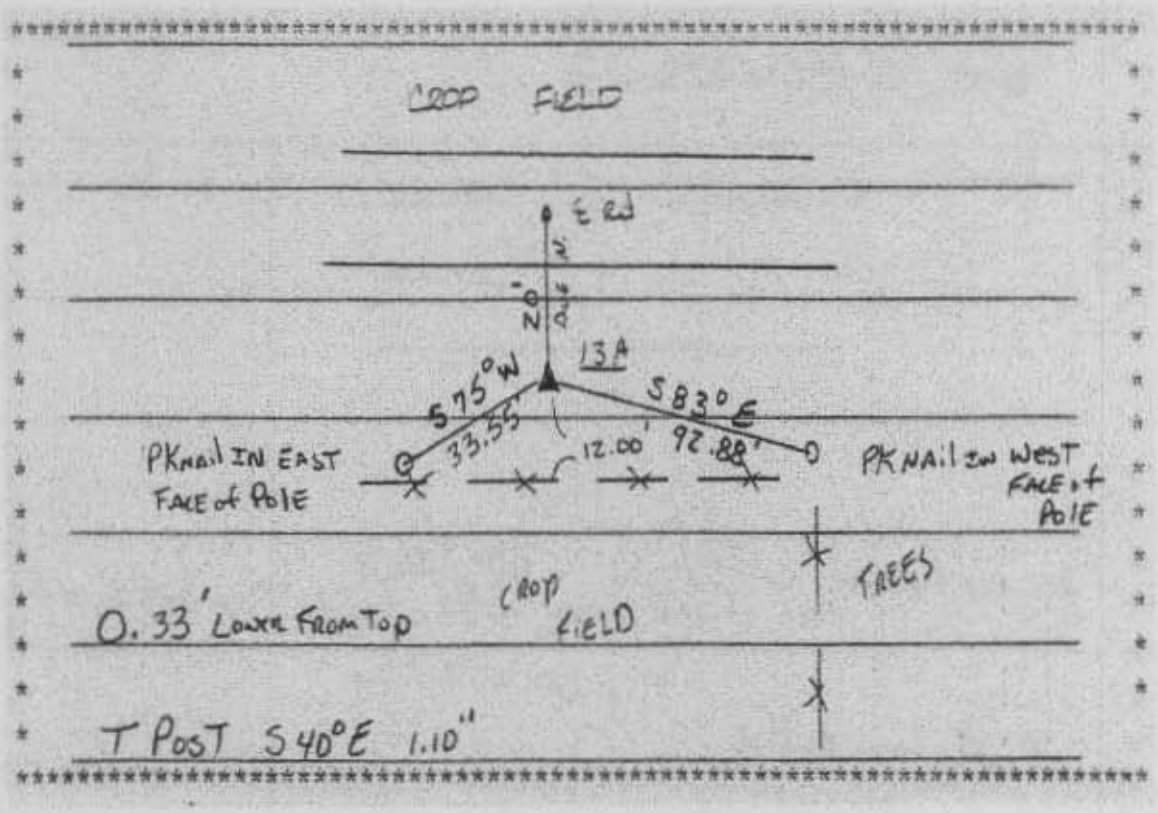
Northing: **3576435.50**sft Easting: **5374815.46**sft

Orthometric Height: **898.75**sft Ellipsoid Height: **797.17**sft **Geoid03**

Latitude: **42°17'55.71866"N** Longitude: **91°49'24.02290"W**

Mapping Angle: **1°08'11"** Combination Scale Factor: **0.99992794**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 14**

**Designation:** Station 14, Set by the Surdex Corp. for Linn County in 2000

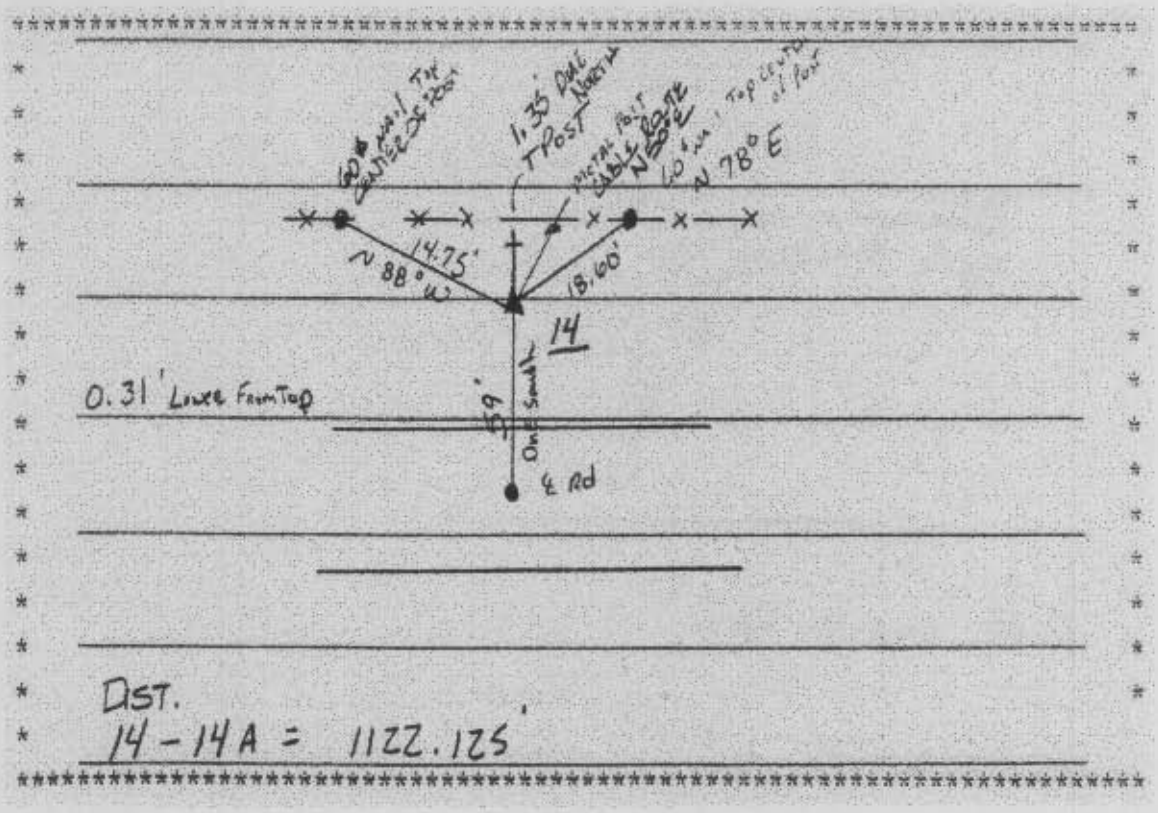
Northing: **3540054.04**sft Easting: **5392402.25**sft

Orthometric Height: **898.86**sft Ellipsoid Height: **796.05**sft **Geoid03**

Latitude: **42°11'52.87926"N** Longitude: **91°45'40.00295"W**

Mapping Angle: **1°10'43"** Combination Scale Factor: **0.99994077**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 14A**

**Designation:** Station 14A, Set by the Surdex Corp. for Linn County in 2000

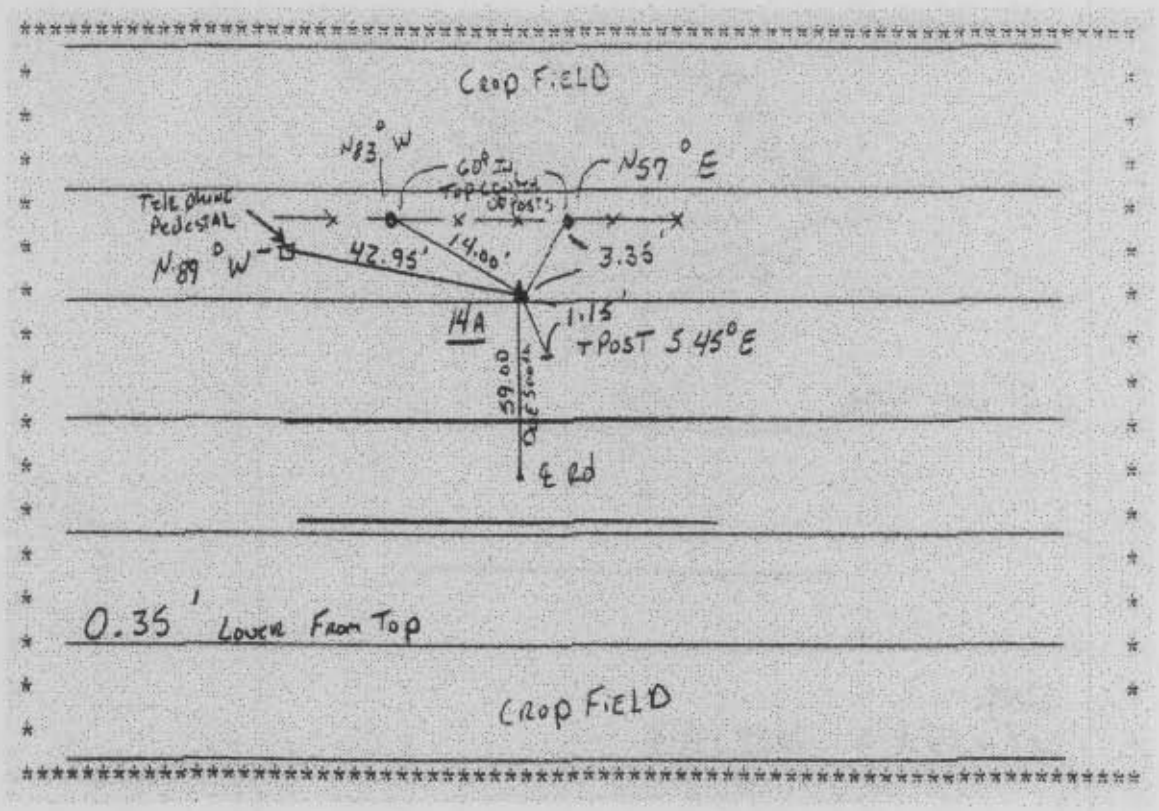
Northing: **3540080.02**sft Easting: **5393524.00**sft

Orthometric Height: **892.70**sft Ellipsoid Height: **789.85**sft **Geoid03**

Latitude: **42°11'52.90765"N** Longitude: **91°45'25.09581"W**

Mapping Angle: **1°10'53"** Combination Scale Factor: **0.99994106**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 15**

**Designation:** Station 15, Set by the Surdex Corp. for Linn County in 2000

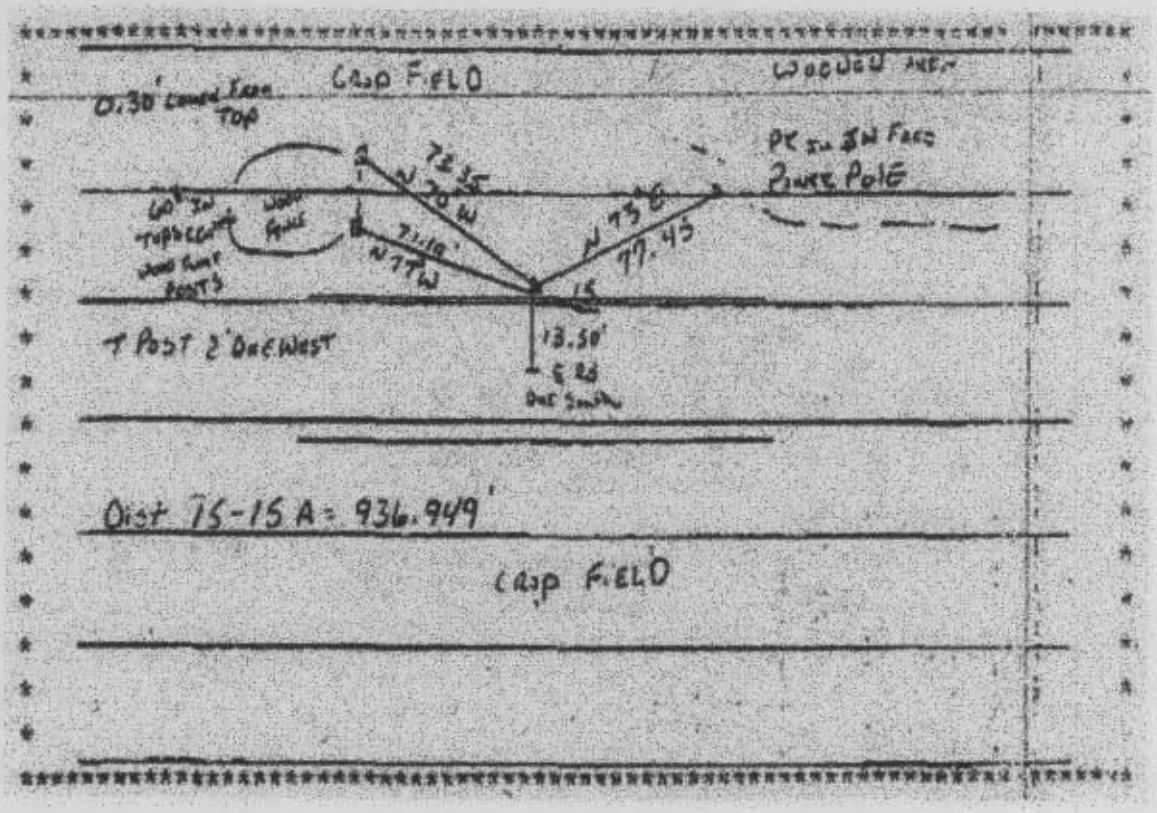
Northing: **3512931.40**sft Easting: **5373540.20**sft

Orthometric Height: **880.82**sft Ellipsoid Height: **777.66**sft **Geoid03**

Latitude: **42°07'28.74863"N** Longitude: **91°49'57.65484"W**

Mapping Angle: **1°07'48"** Combination Scale Factor: **0.99995287**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 15A**

**Designation:** Station 15A, Set by the Surdex Corp. for Linn County in 2000

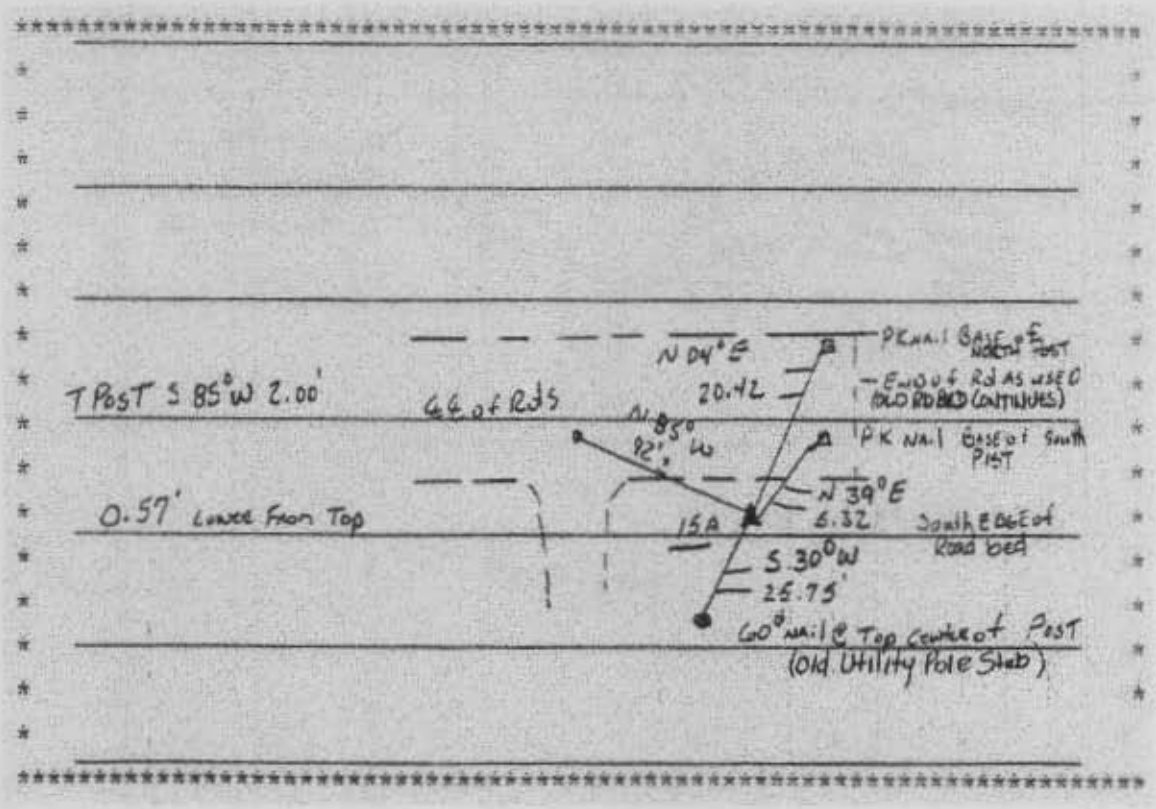
Northing: **3512930.27**sft Easting: **5374477.05**sft

Orthometric Height: **856.09**sft Ellipsoid Height: **752.90**sft **Geoid03**

Latitude: **42°07'28.55478"N** Longitude: **91°49'45.22547"W**

Mapping Angle: **1°07'56"** Combination Scale Factor: **0.99995406**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 16**

**Designation:** Station 16, Set by the Surdex Corp. for Linn County in 2000

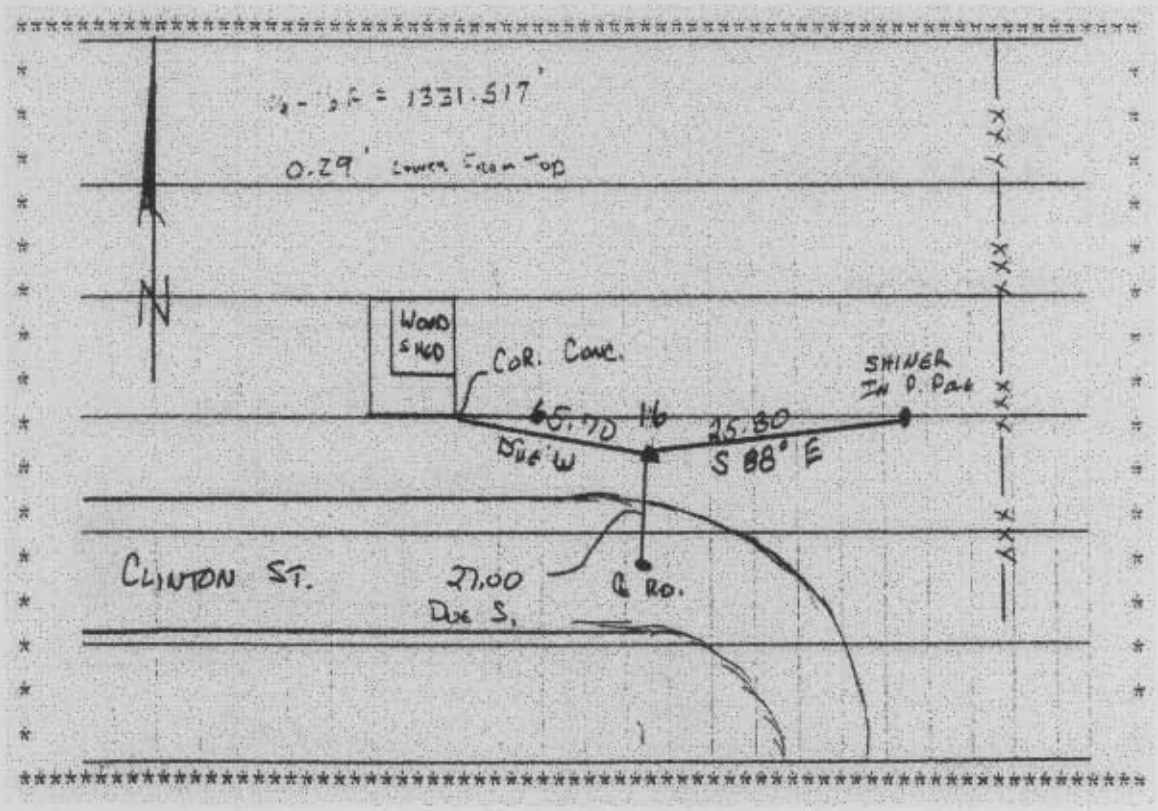
Northing: **3492191.21**sft Easting: **5384273.04**sft

Orthometric Height: **742.15**sft Ellipsoid Height: **638.12**sft **Geoid03**

Latitude: **42°04'01.78660"N** Longitude: **91°47'40.80904"W**

Mapping Angle: **1°09'21"** Combination Scale Factor: **0.99996946**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 16A**

**Designation:** Station 16A, Set by the Surdex Corp. for Linn County in 2000

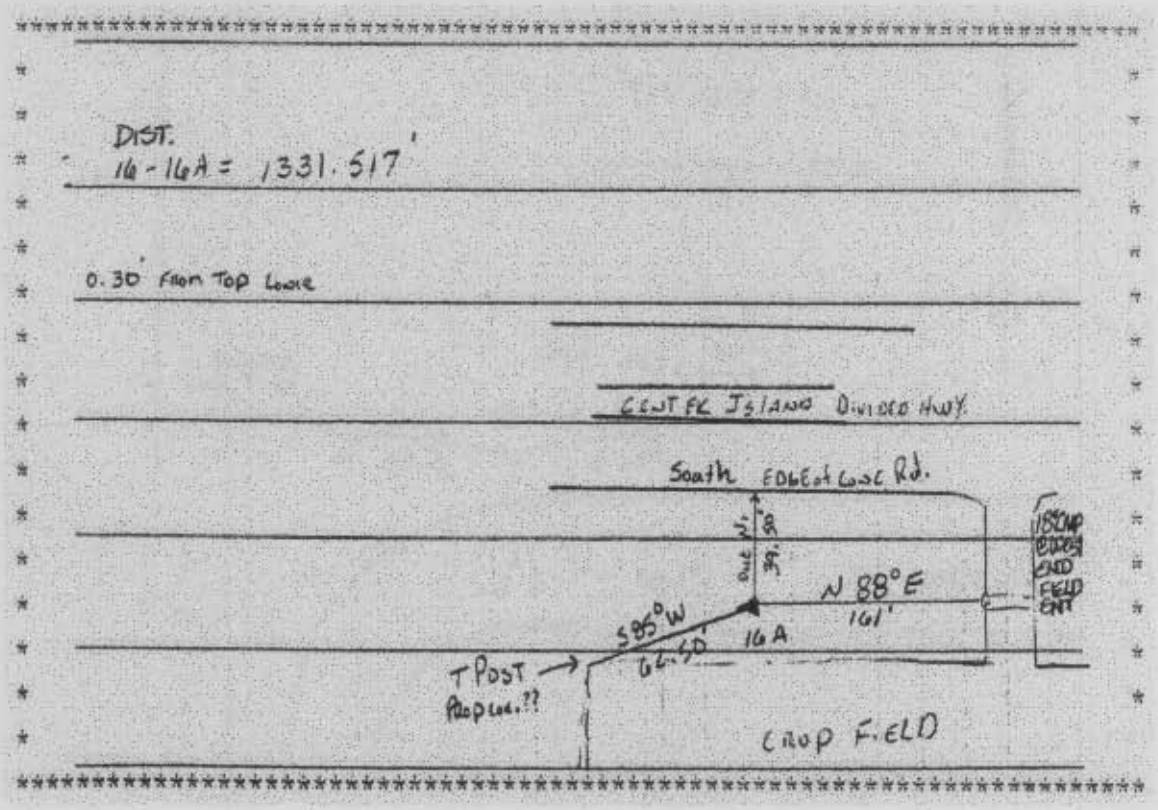
Northing: **3493520.67**sft Easting: **5384347.17**sft

Orthometric Height: **739.40**sft Ellipsoid Height: **635.40**sft **Geoid03**

Latitude: **42°04'14.90263"N** Longitude: **91°47'39.47081"W**

Mapping Angle: **1°09'22"** Combination Scale Factor: **0.99996893**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 17**

**Designation:** Station 17, Set by the Surdex Corp. for Linn County in 2000

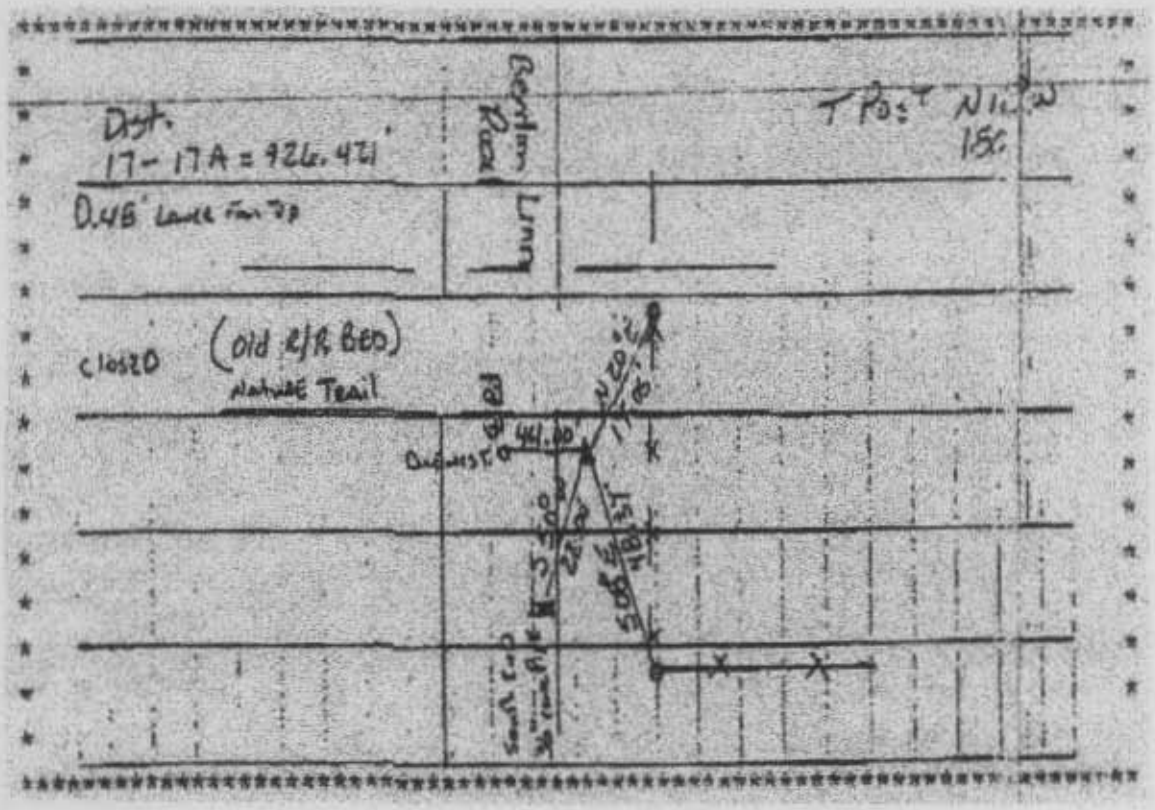
Northing: **3465871.04**sft Easting: **5374046.59**sft

Orthometric Height: **854.90**sft Ellipsoid Height: **750.55**sft **Geoid03**

Latitude: **41°59'43.84116"N** Longitude: **91°50'03.24067"W**

Mapping Angle: **1°07'44"** Combination Scale Factor: **0.99997786**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 1A**

**Designation:** Station 1A, Set by the Surdex Corp. for Linn County in 2000

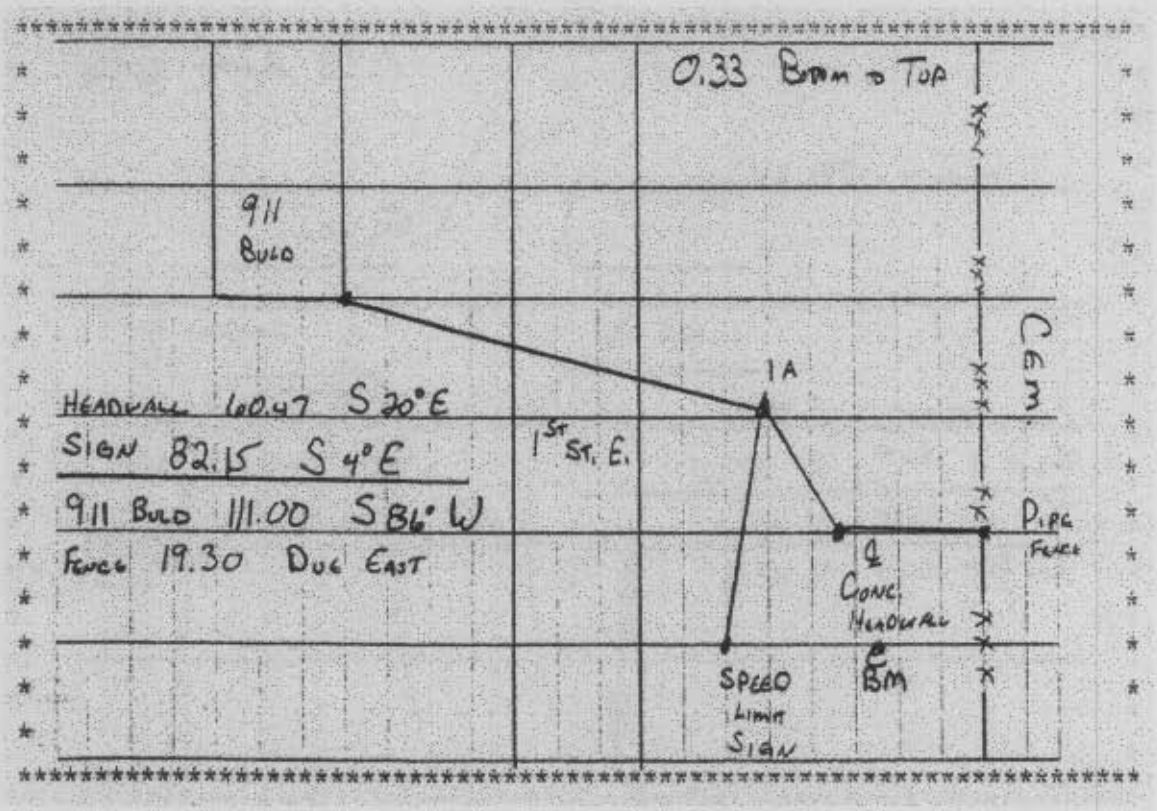
Northing: **3440066.38**sft Easting: **5490053.24**sft

Orthometric Height: **800.42**sft Ellipsoid Height: **693.98**sft **Geoid03**

Latitude: **41°55'03.53054"N** Longitude: **91°24'35.87886"W**

Mapping Angle: **1°24'59"** Combination Scale Factor: **0.99999727**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 2**

**Designation:** Station 2, Set by the Surdex Corp. for Linn County in 2000

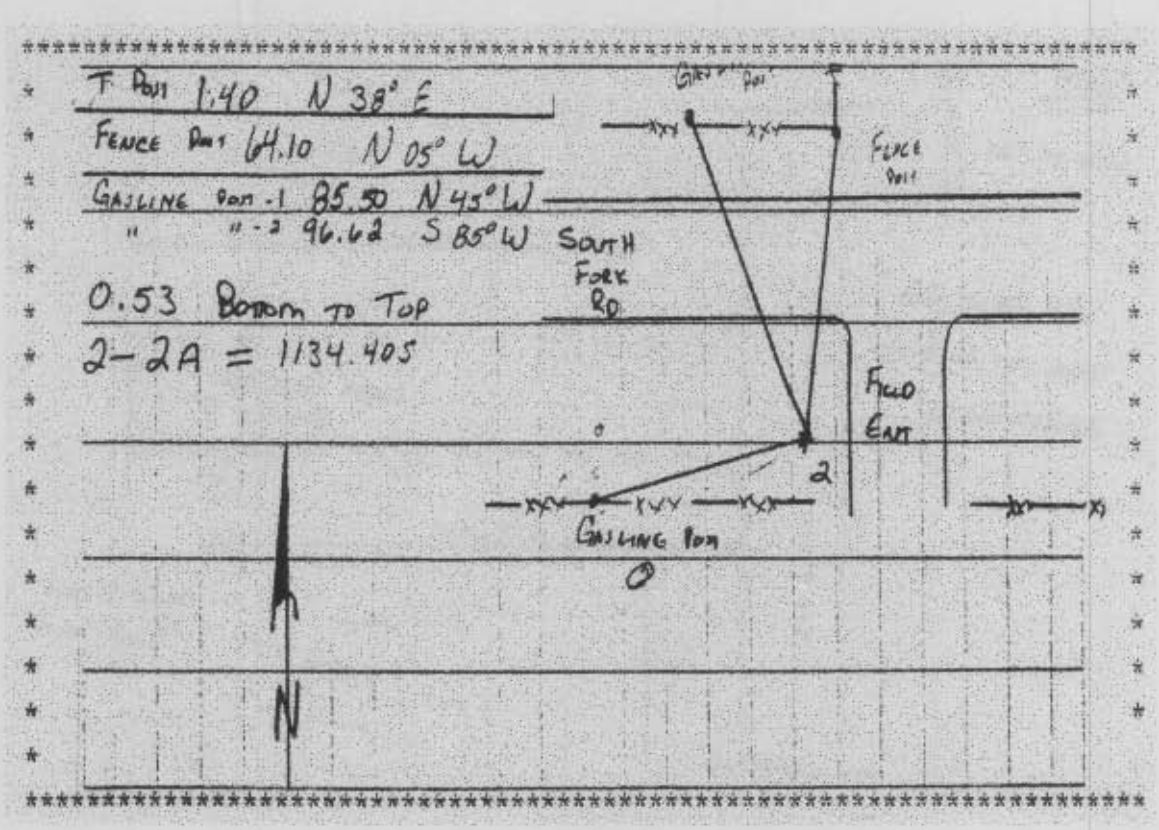
Northing: **3468386.31**sft Easting: **5501102.49**sft

Orthometric Height: **938.99**sft Ellipsoid Height: **832.70**sft **Geoid03**

Latitude: **41°59'40.48297"N** Longitude: **91°22'00.33001"W**

Mapping Angle: **1°26'45"** Combination Scale Factor: **0.99997413**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 3**

**Designation:** Station 3, Set by the Surdex Corp. for Linn County in 2000

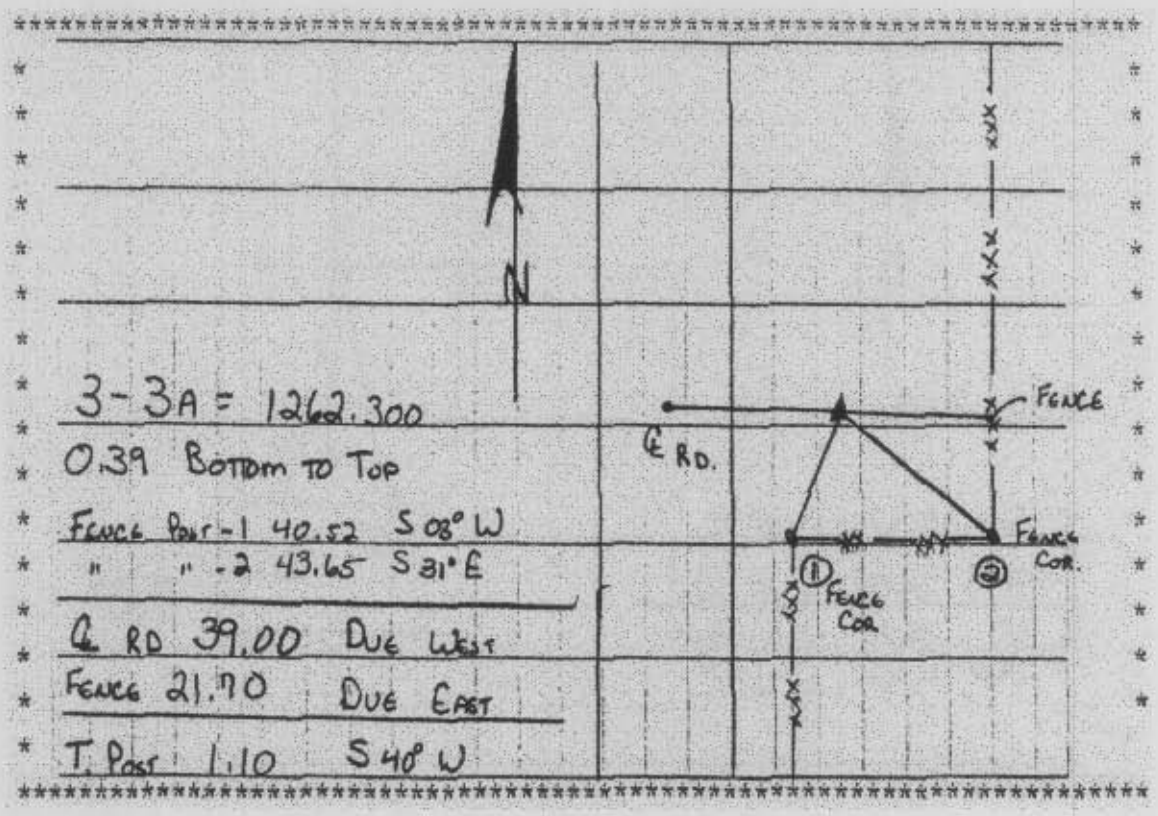
Northing: **3493383.23**sft Easting: **5479649.10**sft

Orthometric Height: **865.02**sft Ellipsoid Height: **759.10**sft **Geoid03**

Latitude: **42°03'52.59756"N** Longitude: **91°26'36.29608"W**

Mapping Angle: **1°23'38"** Combination Scale Factor: **0.99996415**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 3A**

**Designation:** Station 3A, Set by the Surdex Corp. for Linn County in 2000

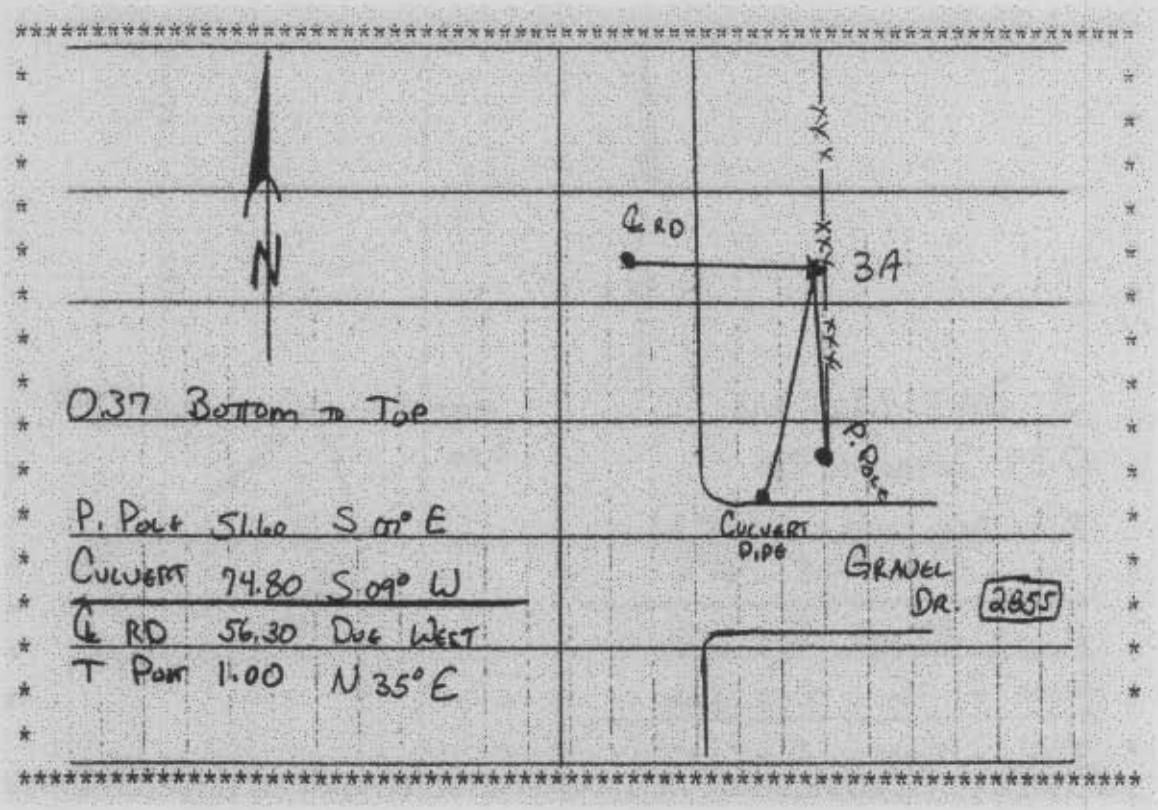
Northing: **3494645.32**sft Easting: **5479627.55**sft

Orthometric Height: **850.70**sft Ellipsoid Height: **744.80**sft **Geoid03**

Latitude: **42°04'05.06697"N** Longitude: **91°26'36.17475"W**

Mapping Angle: **1°23'38"** Combination Scale Factor: **0.99996421**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 4**

**Designation:** Station 4, Set by the Surdex Corp. for Linn County in 2000

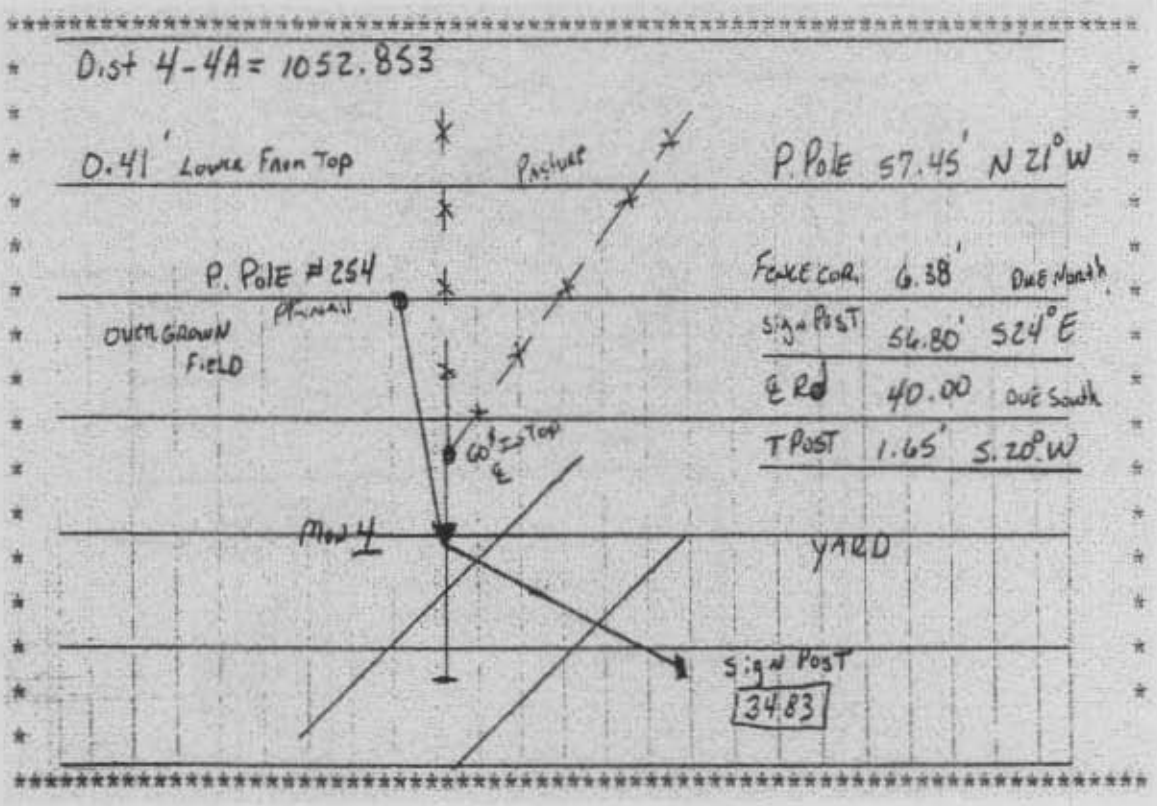
Northing: **3511506.73**sft Easting: **5499194.96**sft

Orthometric Height: **955.01**sft Ellipsoid Height: **849.16**sft **Geoid03**

Latitude: **42°06'46.79994"N** Longitude: **91°22'11.19543"W**

Mapping Angle: **1°26'37"** Combination Scale Factor: **0.99995140**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 4A**

**Designation:** Station 4A, Set by the Surdex Corp. for Linn County in 2000

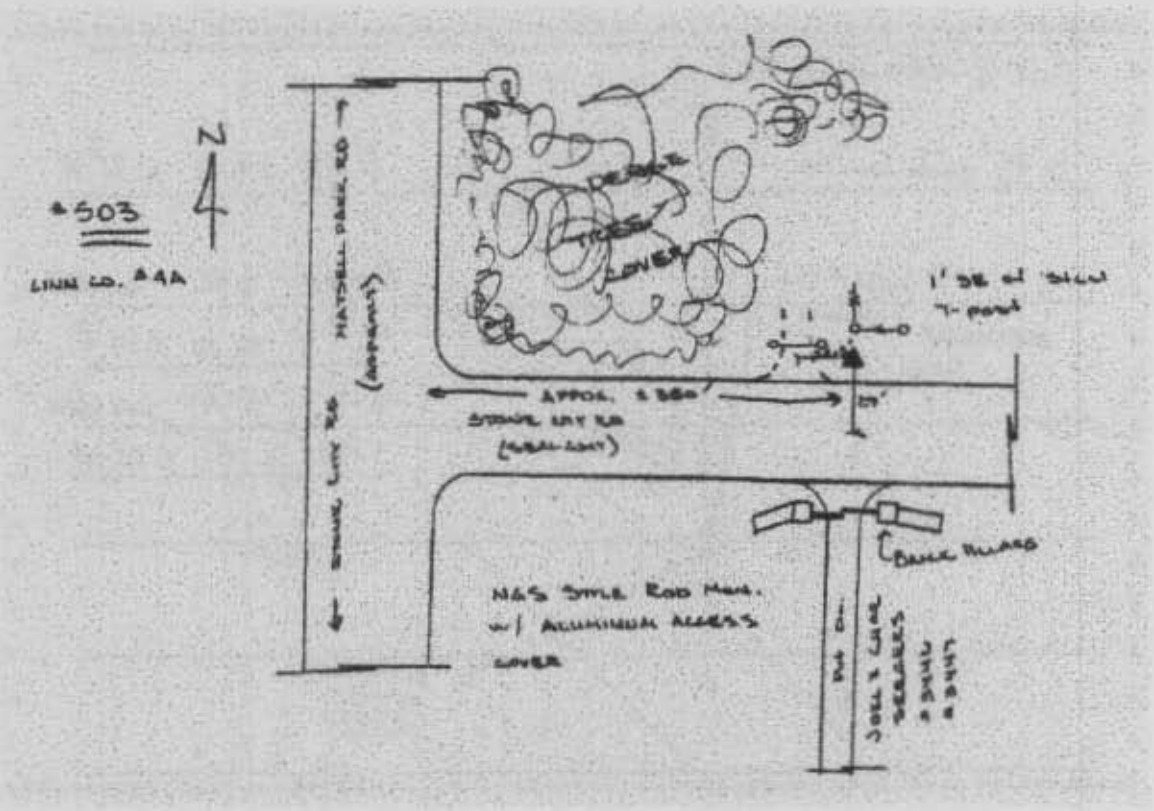
Northing: **3511331.80**sft Easting: **5498156.77**sft

Orthometric Height: **965.25**sft Ellipsoid Height: **859.41**sft **Geoid03**

Latitude: **42°06'45.33061"N** Longitude: **91°22'25.02384"W**

Mapping Angle: **1°26'28"** Combination Scale Factor: **0.99995097**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 5**

**Designation:** Station 5, Set by the Surdex Corp. for Linn County in 2000

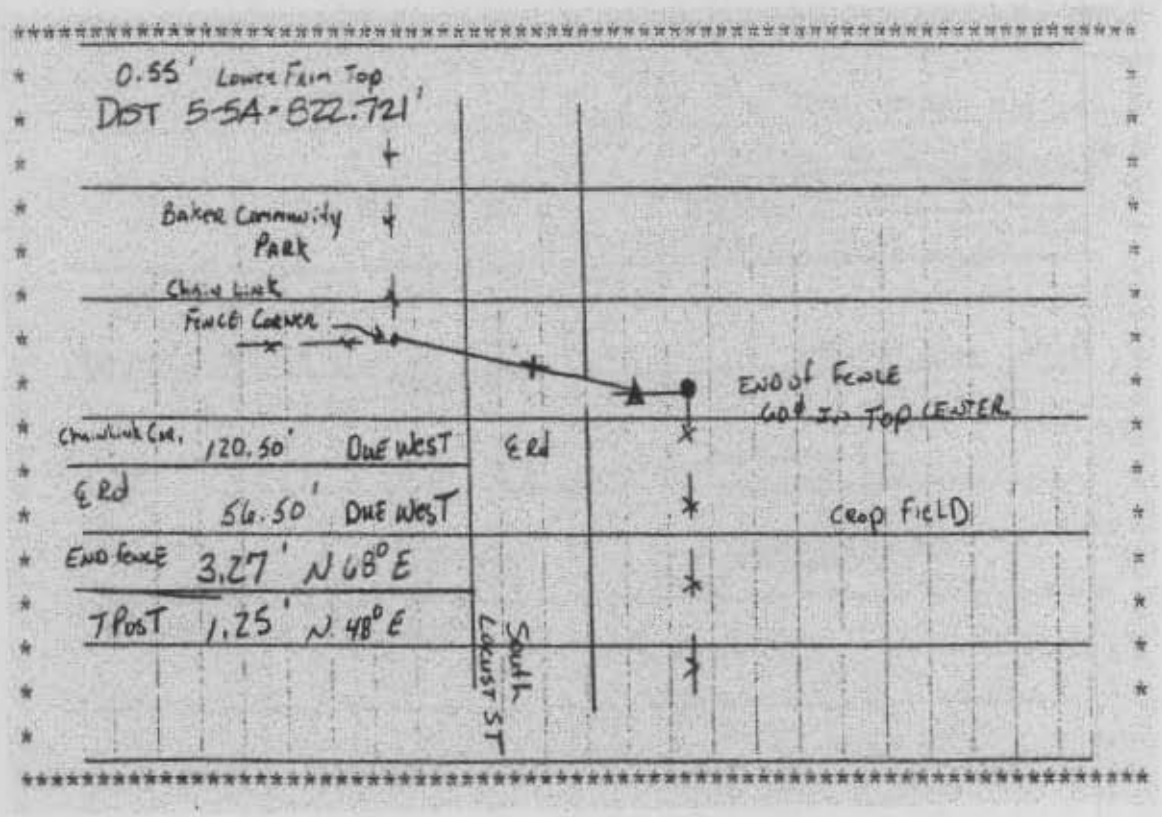
Northing: **3555481.10**sft Easting: **5483835.44**sft

Orthometric Height: **970.47**sft Ellipsoid Height: **866.06**sft **Geoid03**

Latitude: **42°14'04.85421"N** Longitude: **91°25'20.58221"W**

Mapping Angle: **1°24'29"** Combination Scale Factor: **0.99993243**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 5A**

**Designation:** Station 5A, Set by the Surdex Corp. for Linn County in 2000

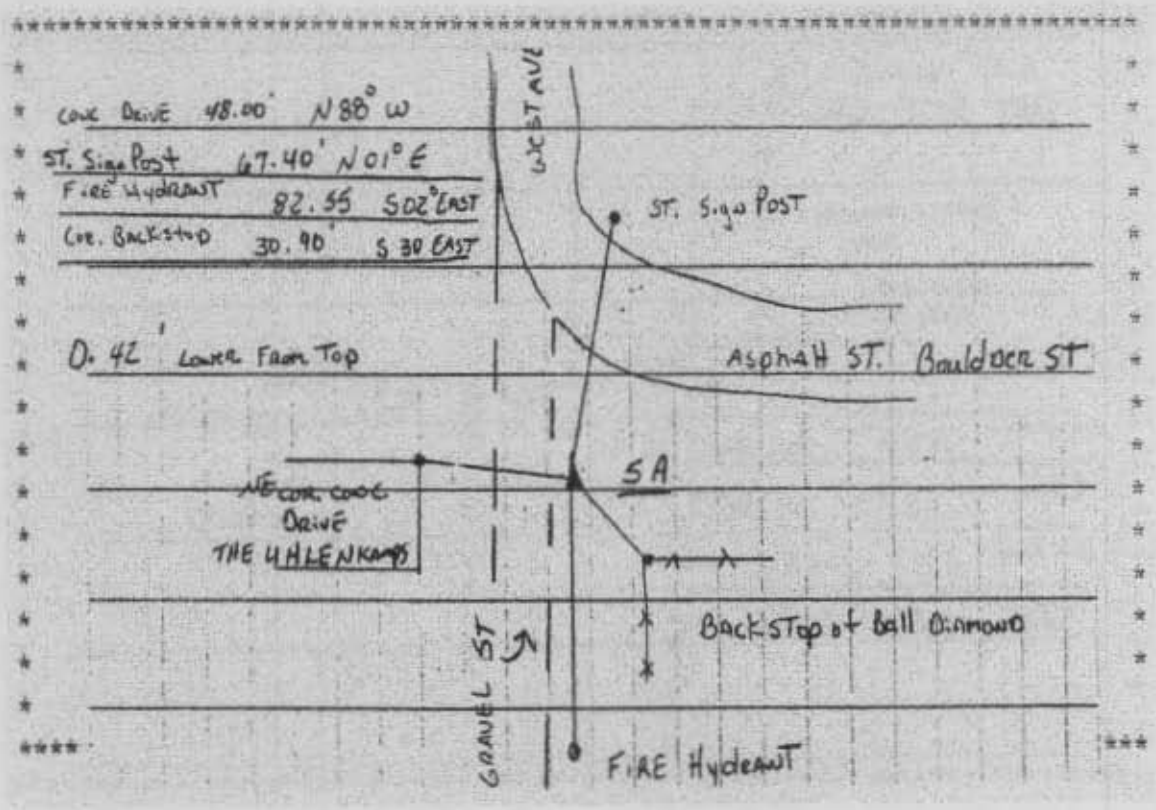
Northing: **3555750.77**sft Easting: **5483058.20**sft

Orthometric Height: **965.54**sft Ellipsoid Height: **861.15**sft **Geoid03**

Latitude: **42°14'07.70595"N** Longitude: **91°25'30.82330"W**

Mapping Angle: **1°24'22"** Combination Scale Factor: **0.99993256**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 6**

**Designation:** Station 6, Set by the Surdex Corp. for Linn County in 2000

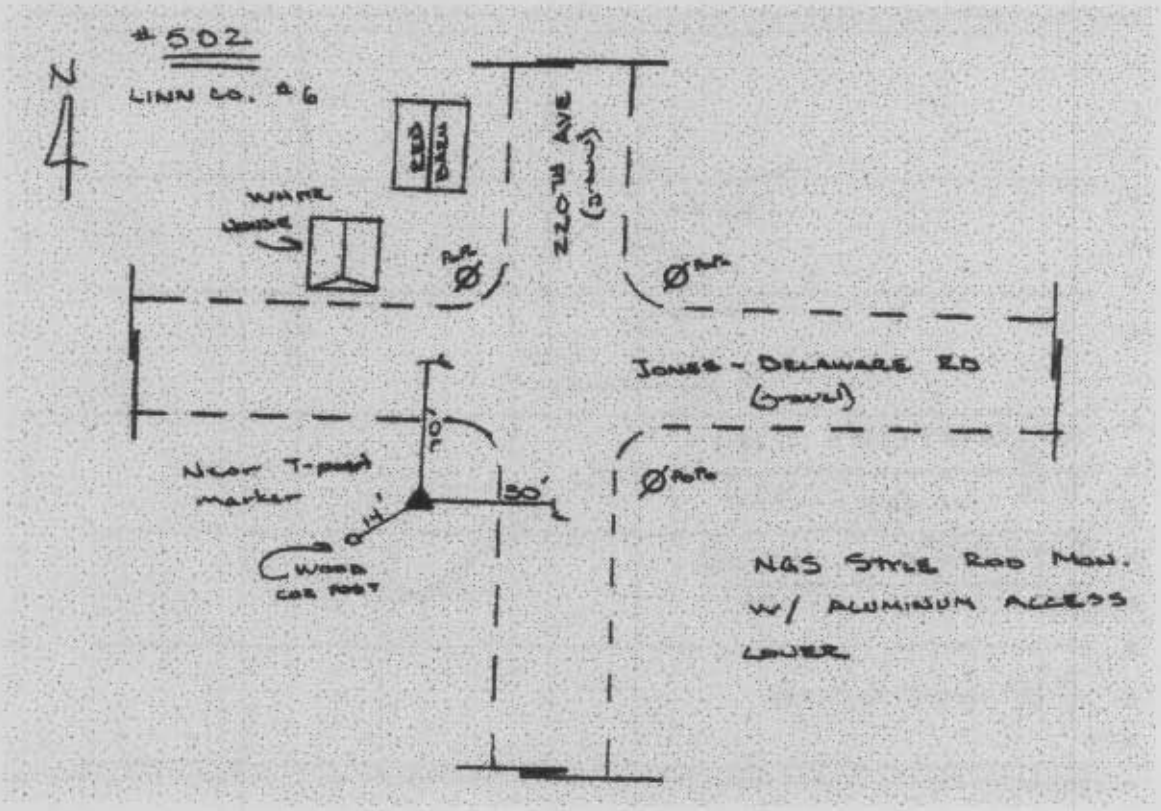
Northing: **3578308.49**sft Easting: **5499240.43**sft

Orthometric Height: **1038.53**sft Ellipsoid Height: **934.62**sft **Geoid03**

Latitude: **42°17'46.49738"N** Longitude: **91°21'48.19451"W**

Mapping Angle: **1°26'53"** Combination Scale Factor: **0.99992167**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 6A**

**Designation:** Station 6A, Set by the Surdex Corp. for Linn County in 2000

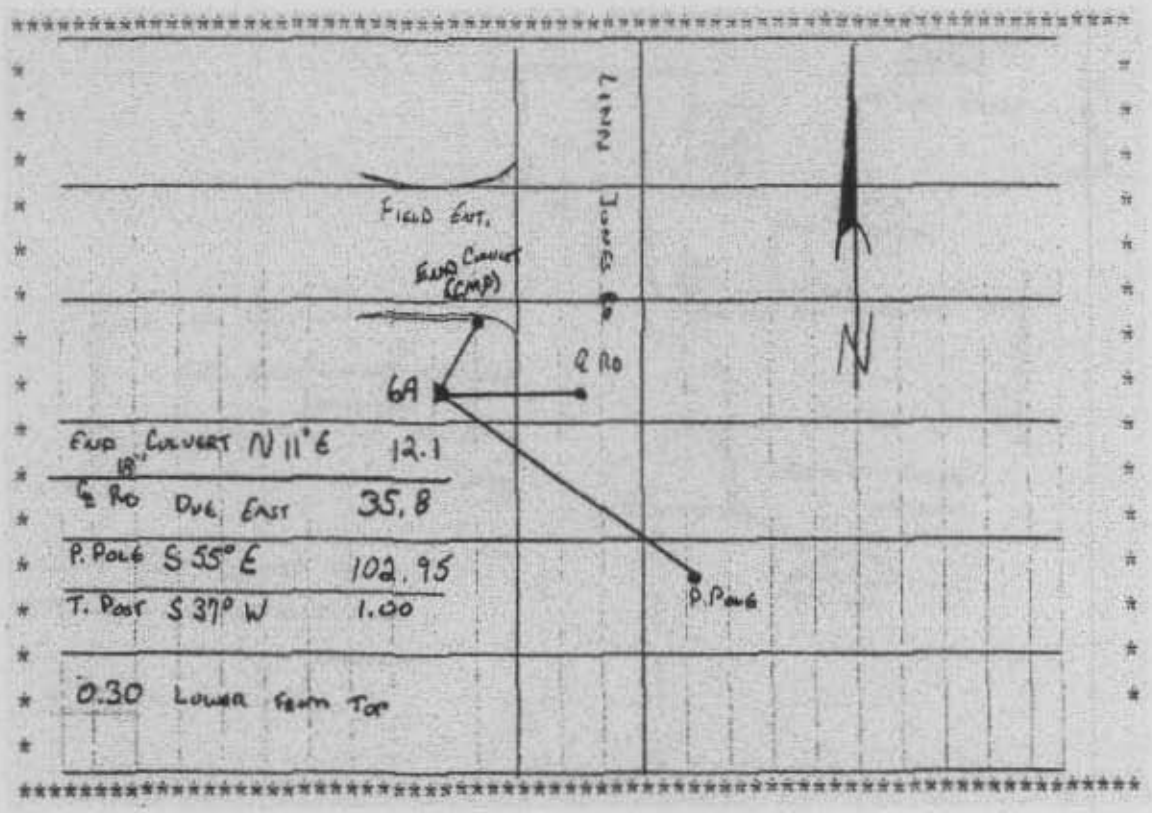
Northing: **3576544.95**sft Easting: **5499269.74**sft

Orthometric Height: **1007.25**sft Ellipsoid Height: **903.27**sft **Geoid03**

Latitude: **42°17'29.07409"N** Longitude: **91°21'48.39770"W**

Mapping Angle: **1°26'53"** Combination Scale Factor: **0.99992371**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 7**

**Designation:** Station 7, Set by the Surdex Corp. for Linn County in 2000

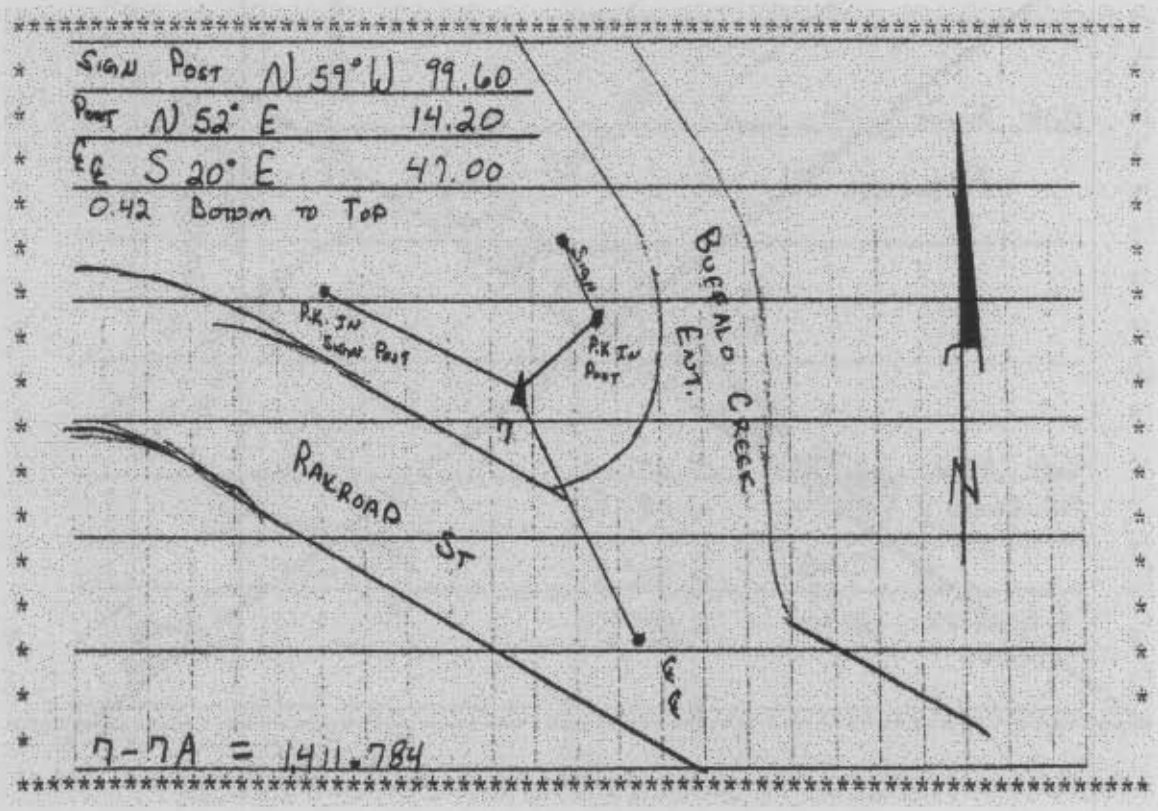
Northing: **3571823.01**sft Easting: **5451673.42**sft

Orthometric Height: **910.27**sft Ellipsoid Height: **807.07**sft **Geoid03**

Latitude: **42°16'53.83286"N** Longitude: **91°32'22.97264"W**

Mapping Angle: **1°19'43"** Combination Scale Factor: **0.99992943**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 8**

**Designation:** Station 8, Set by the Surdex Corp. for Linn County in 2000

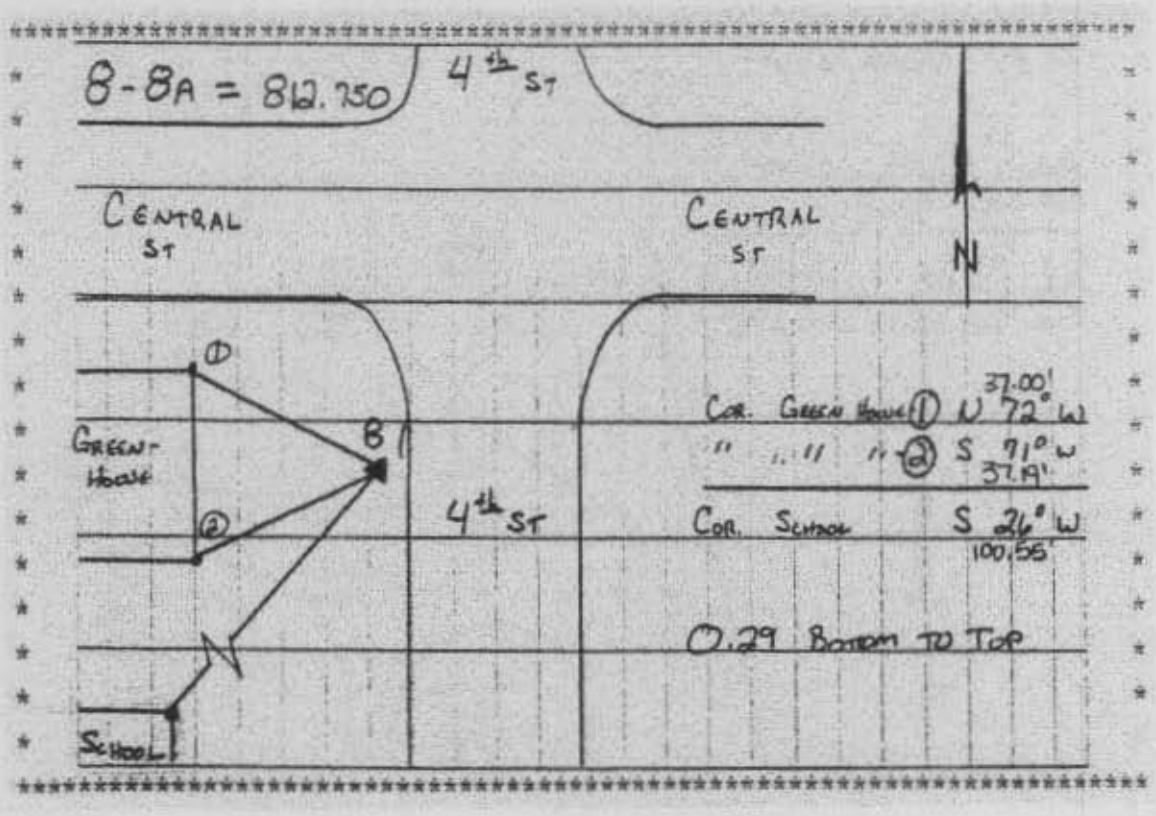
Northing: **3545508.42**sft Easting: **5456511.12**sft

Orthometric Height: **844.28**sft Ellipsoid Height: **740.02**sft **Geoid03**

Latitude: **42°12'32.83557"N** Longitude: **91°31'26.81405"W**

Mapping Angle: **1°20'21"** Combination Scale Factor: **0.99994188**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 8A**

**Designation:** Station 8A, Set by the Surdex Corp. for Linn County in 2000

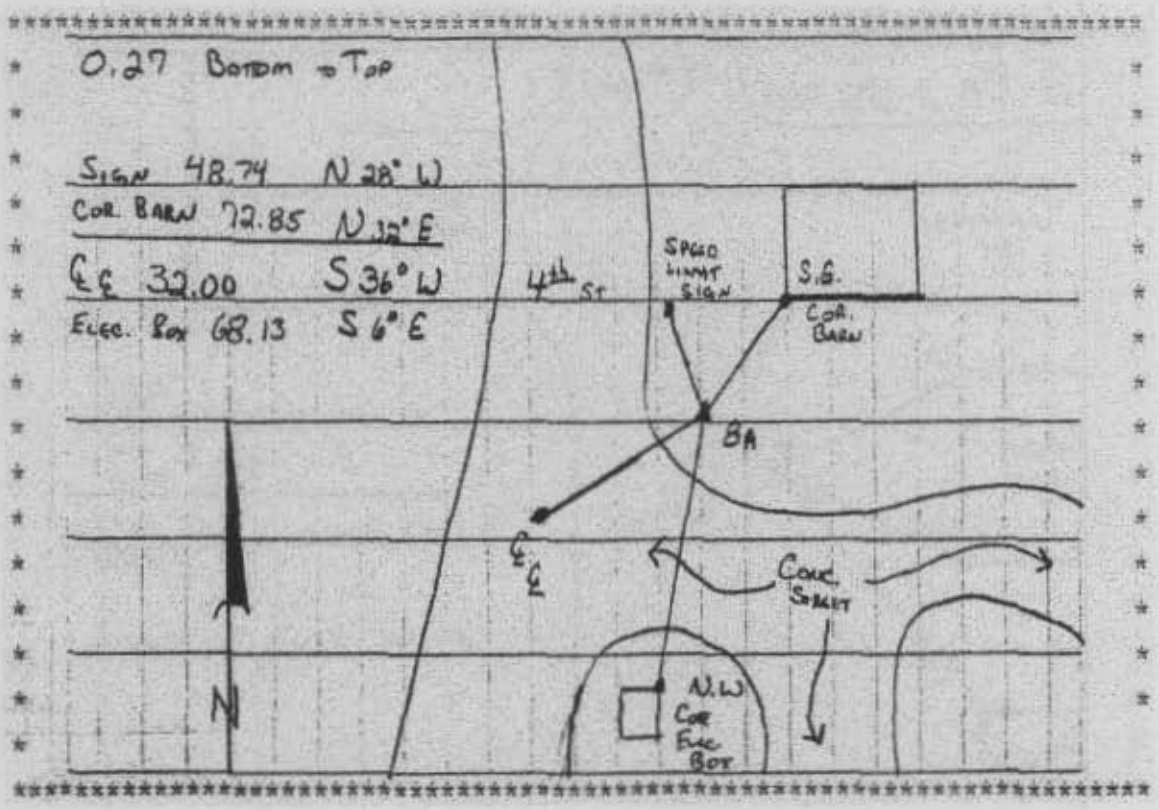
Northing: **3546320.63**sft Easting: **5456540.80**sft

Orthometric Height: **878.64**sft Ellipsoid Height: **774.42**sft **Geoid03**

Latitude: **42°12'40.85007"N** Longitude: **91°31'26.16753"W**

Mapping Angle: **1°20'21"** Combination Scale Factor: **0.99993994**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 9**

**Designation:** Station 9, Set by the Surdex Corp. for Linn County in 2000

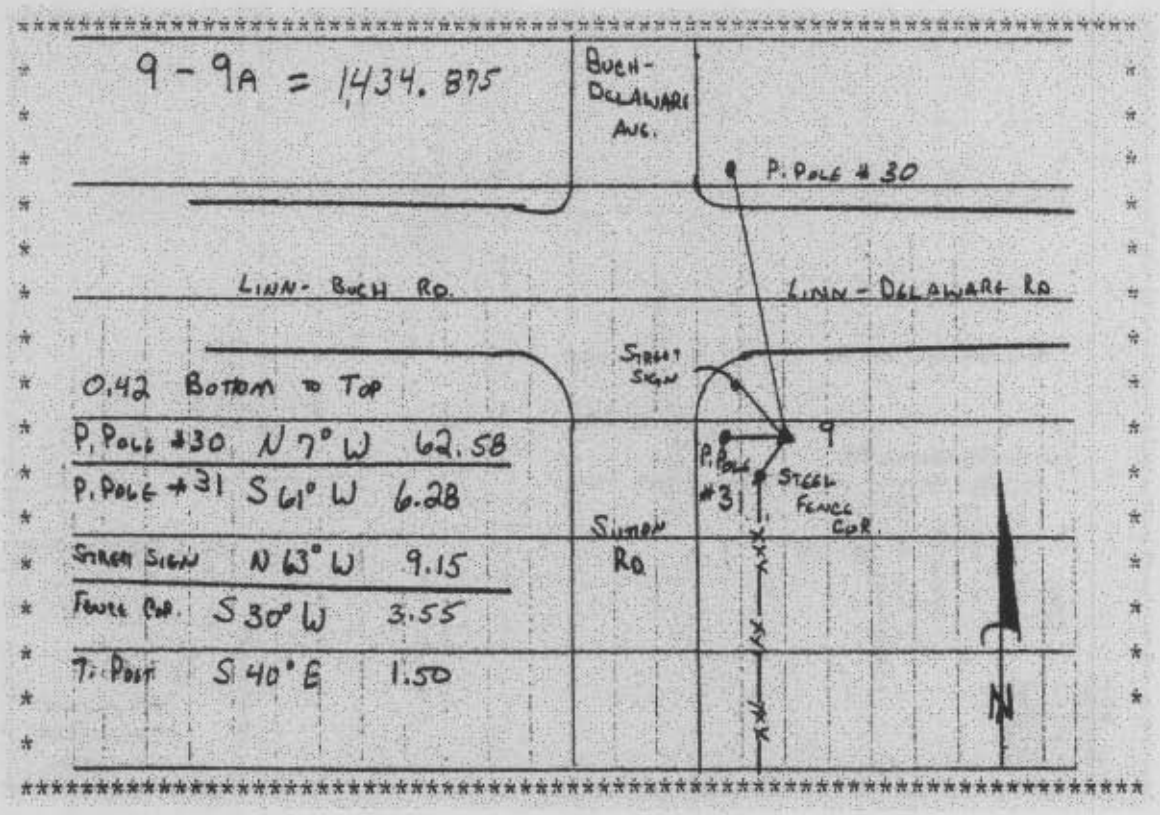
Northing: **3576824.94**sft Easting: **5436095.50**sft

Orthometric Height: **997.45**sft Ellipsoid Height: **894.71**sft **Geoid03**

Latitude: **42°17'46.74876"N** Longitude: **91°35'48.66042"W**

Mapping Angle: **1°17'23"** Combination Scale Factor: **0.99992356**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*


Benton Co 2003-79
Facing NE


Benton Co 2003-80
Facing NE


Benton Co 2003-81
Facing NE


Benton Co 2003-082
Facing NW


Benton Co 2003-083
Facing NE


Benton Co 2003-084
Facing NE


Buchanan Co 2002-260
Facing N


Johnson Co 92-08
Facing SW


Buchanan Co 2002-262
Facing N


Buchanan Co 2002-261
Facing NW

CID GP 1 (PID: AJ8568) Facing East


Delaware Co 2001-75
Facing NE


Delaware Co 2001-76
Facing SE


Johnson Co 92-01
Facing SW


Benton Co 2003-85
Facing SW


Johnson Co 92-05
Facing SE


Johnson Co 92-04
Facing SW


Johnson Co 92-09
Facing NW


Johnson Co 92-06
Facing SE

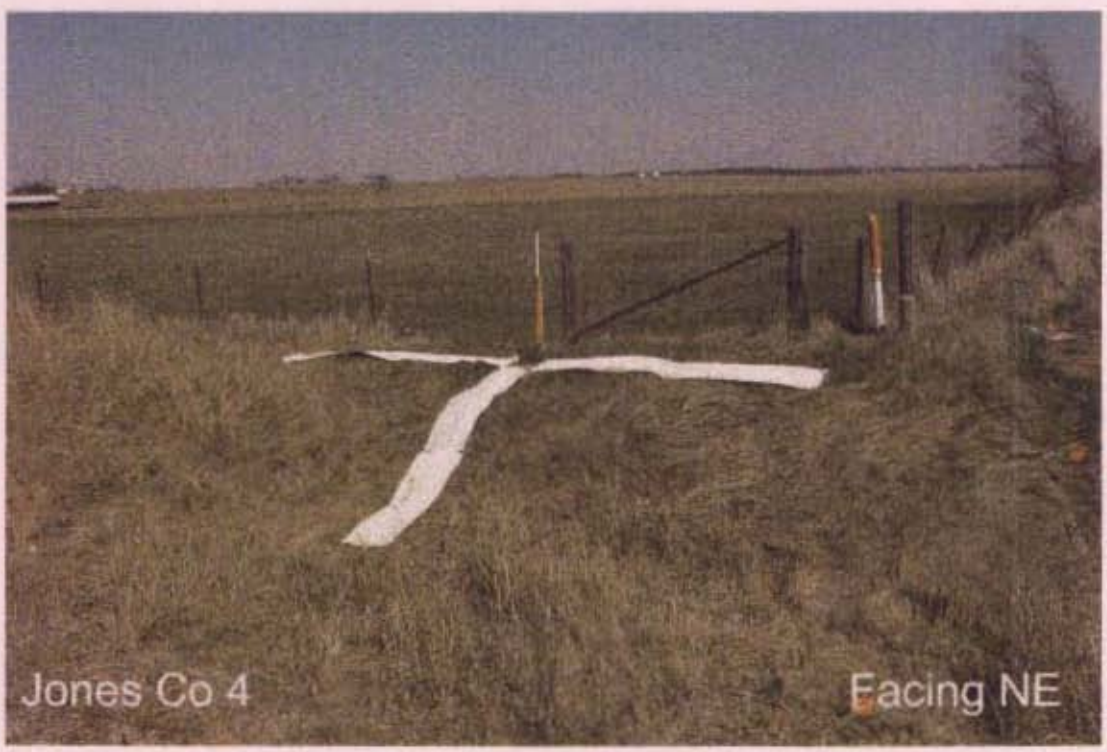

Johnson Co 92-07
Facing NW


Delaware Co 2001-74
Facing NE


Jones Co 1
Facing N


Jones Co 2
Facing NW


Jones Co 3
Facing NE


Jones Co 4
Facing NE

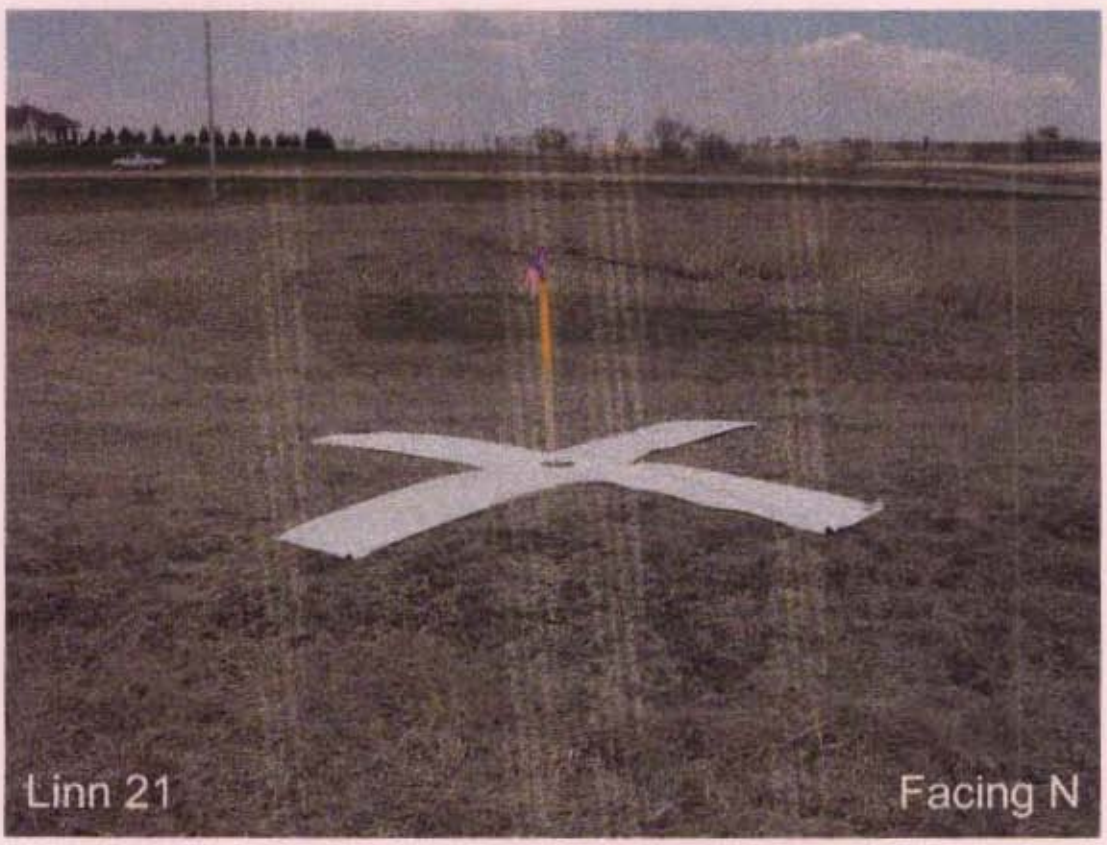

Jones Co 6
Facing SE


Jones Co 7
Facing NW


Jones Co 8
Facing NE

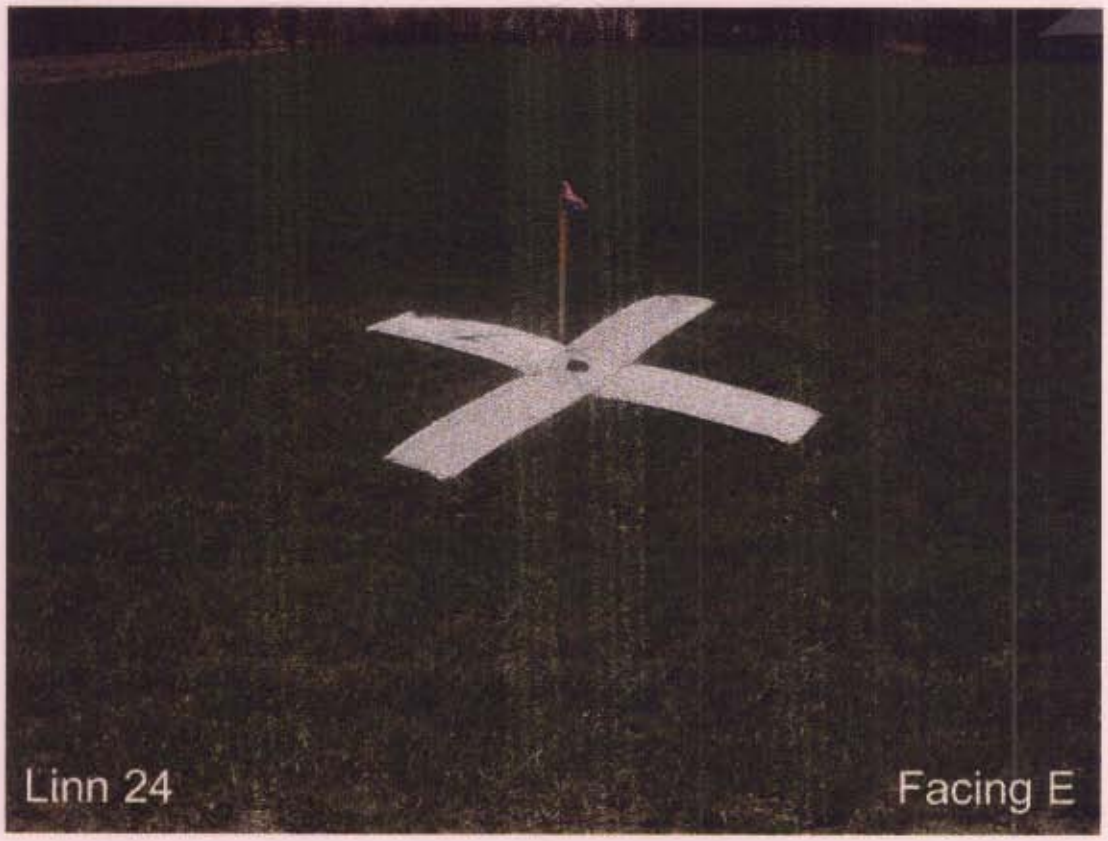

57-27
Facing NW


Linn 20
Facing S

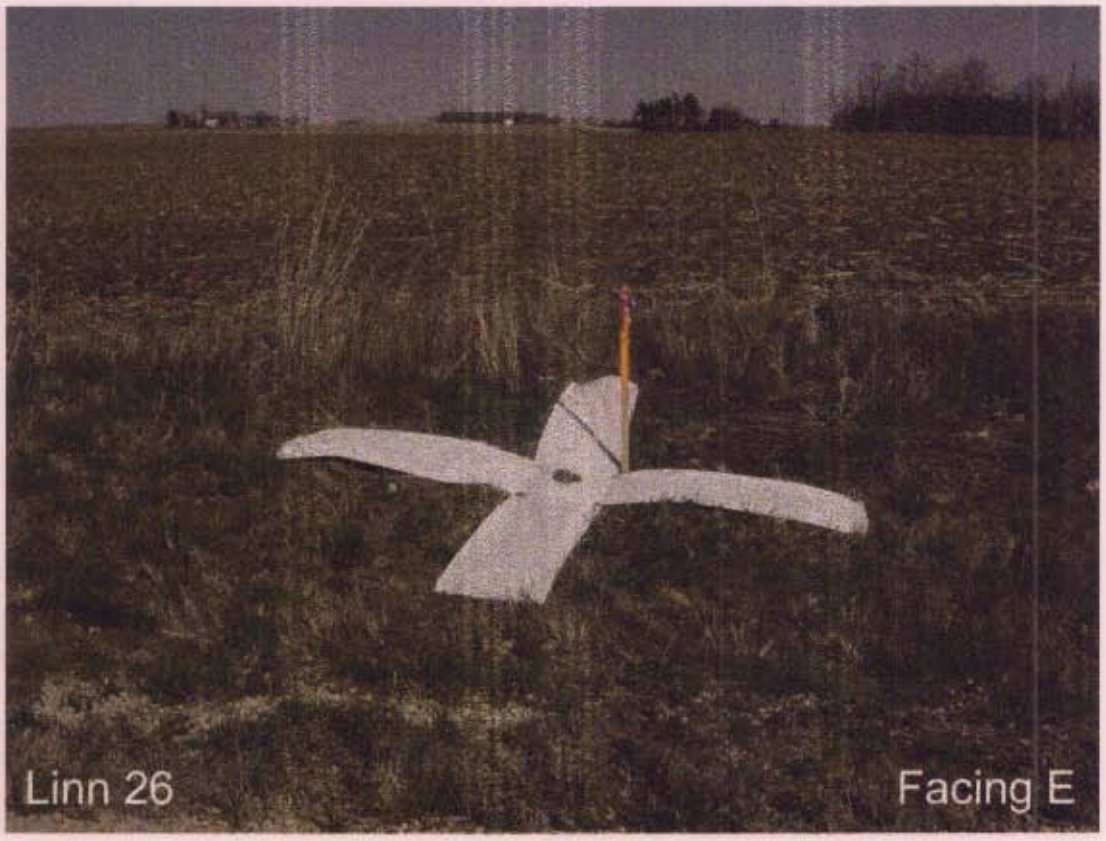

Linn 21
Facing N


Linn 22
Facing W


NO
PARKING
Linn 23
Facing E


Linn 24
Facing E

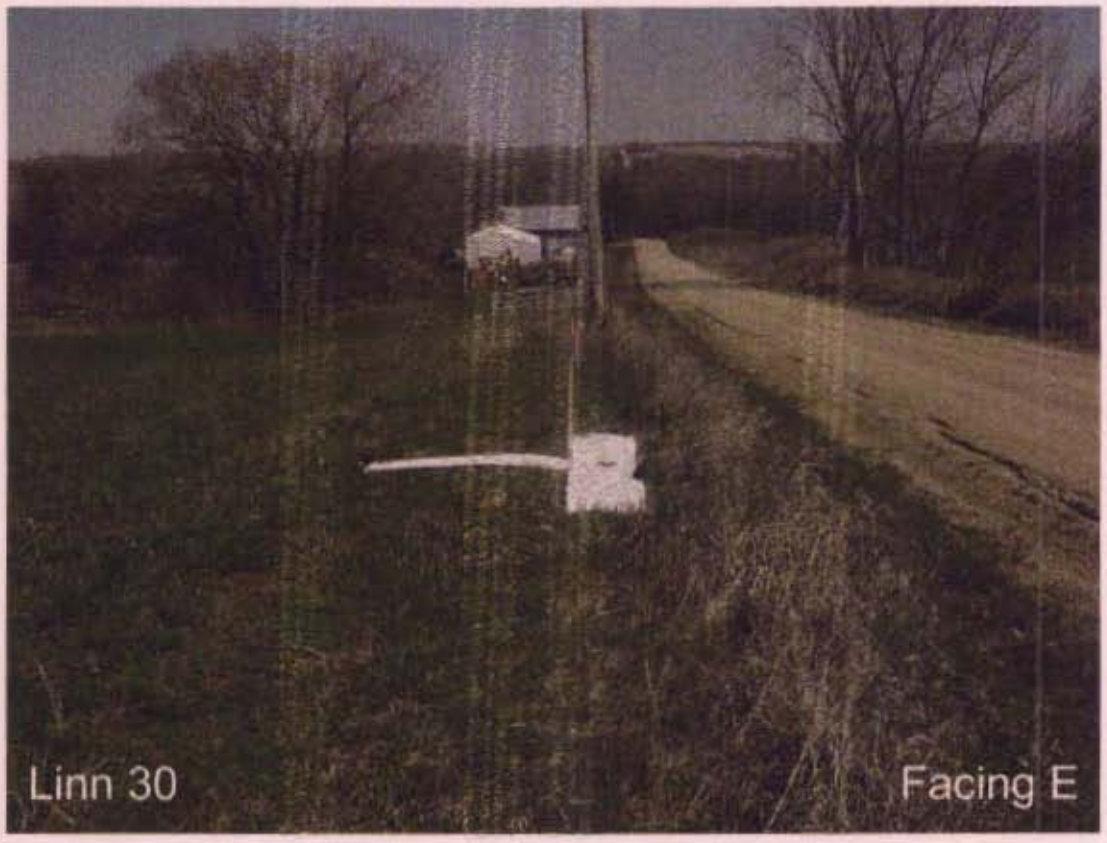

Linn 25
Facing N

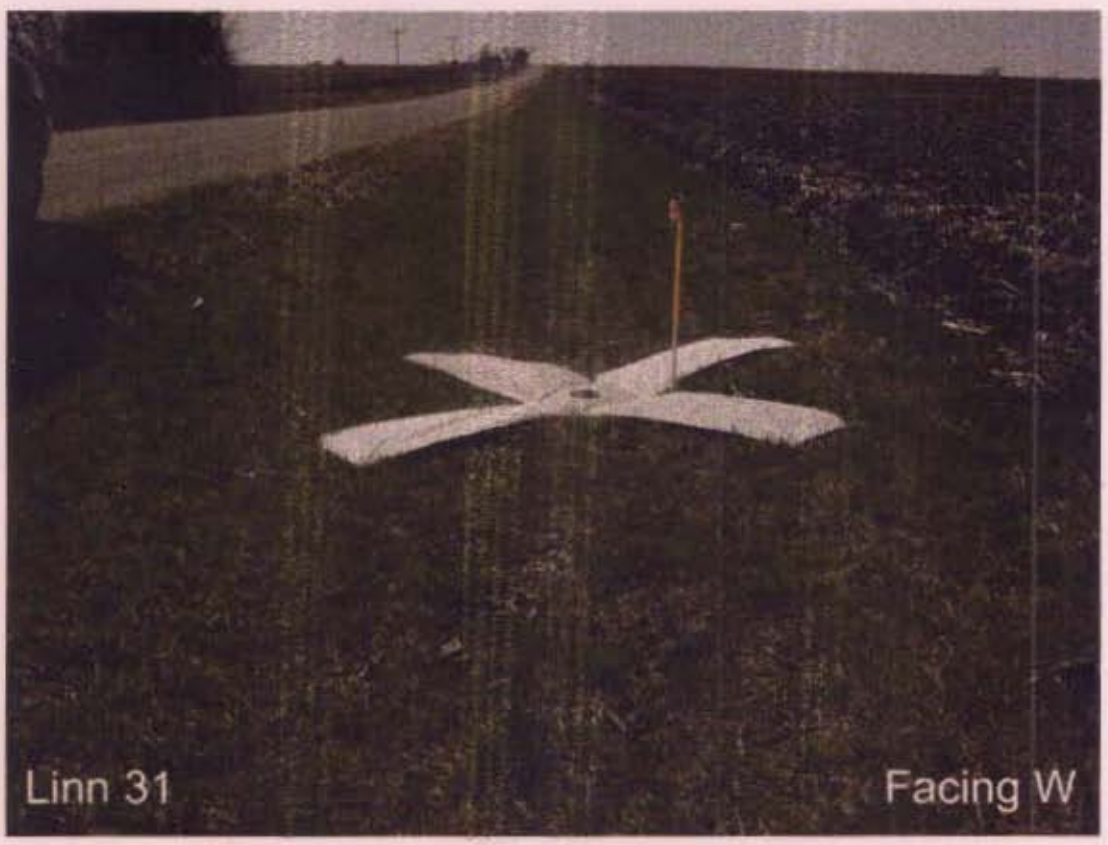

Linn 26
Facing E


Linn 27
Facing E


Linn 28
Facing SE


Linn 29
Facing S


Linn 30
Facing E

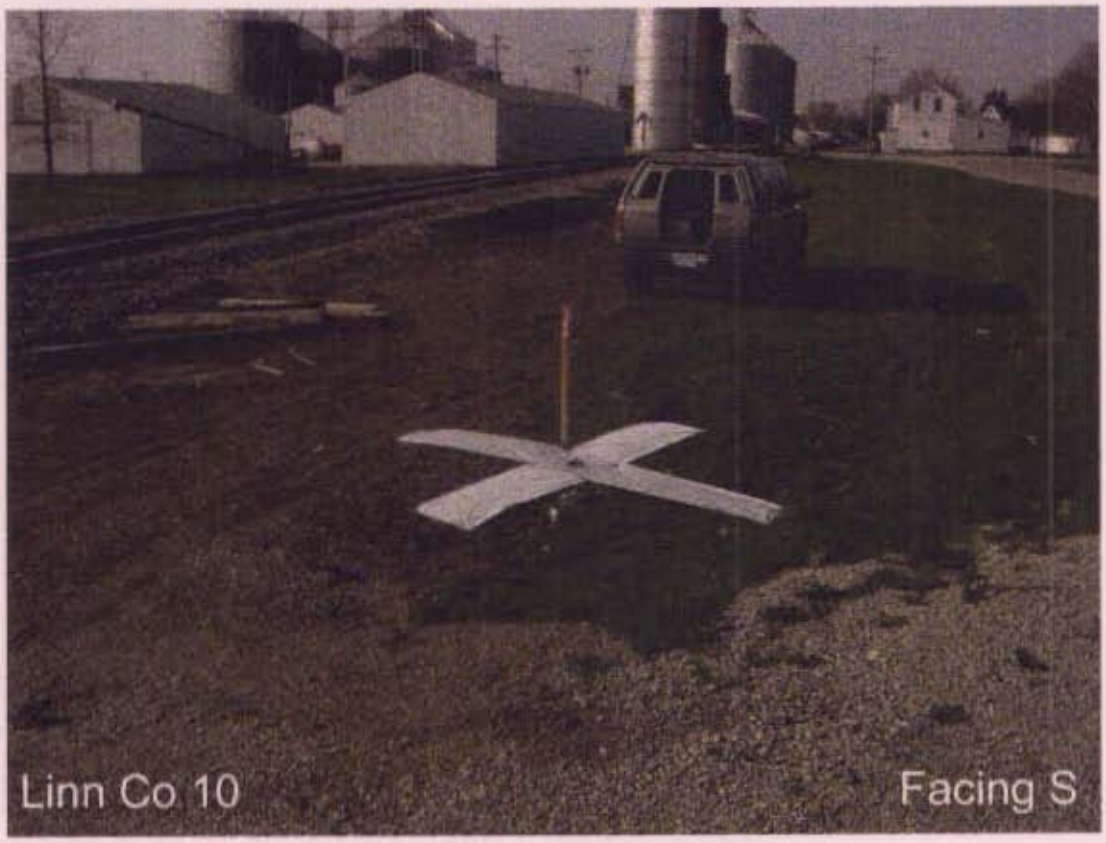

Linn 31
Facing W


Linn 32
Facing NE

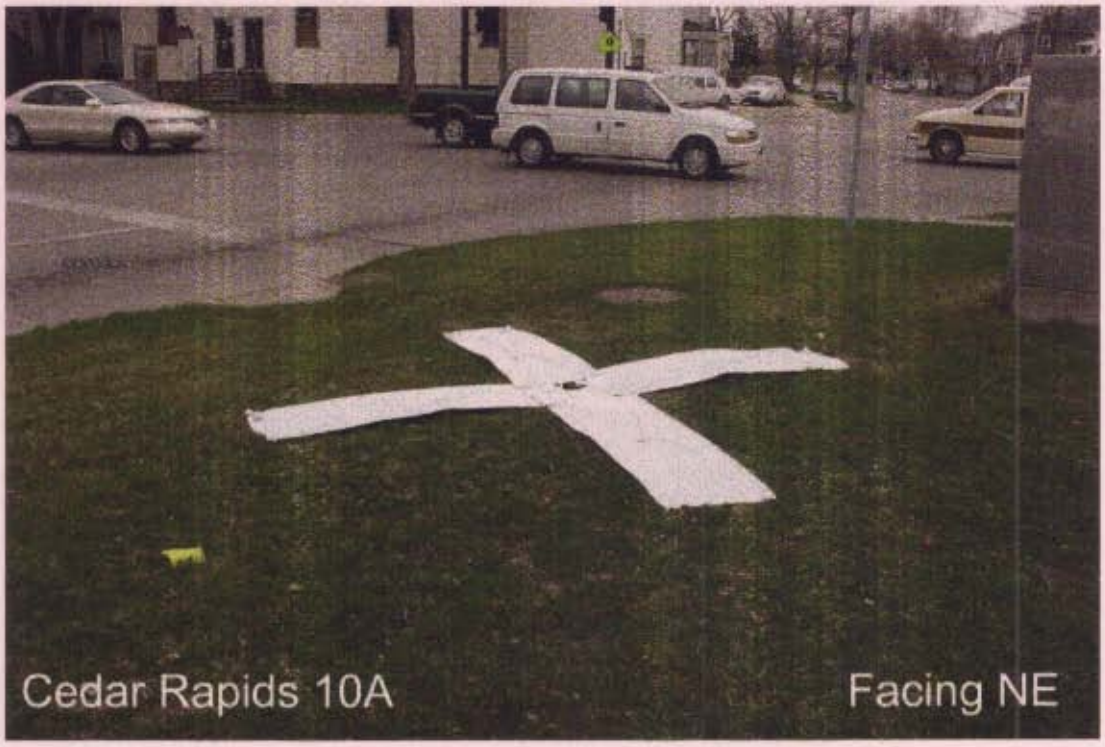

CID 6
Facing S


Linn Co 1
Facing SE


Linn Co 2A
Facing SE


Linn Co 10
Facing S

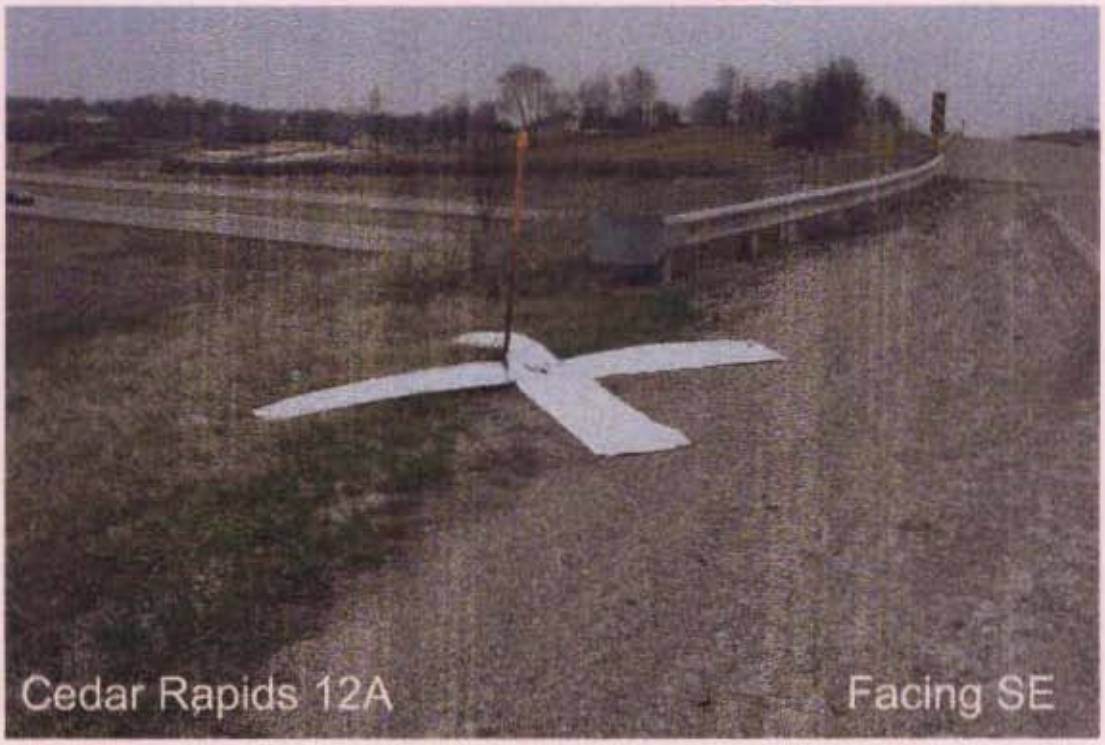

Linn Co 11
Facing N


Cedar Rapids 10A
Facing NE


LIVE BAIT
Cedar Rapids 11A
Facing N


Linn Co 12
Facing NE

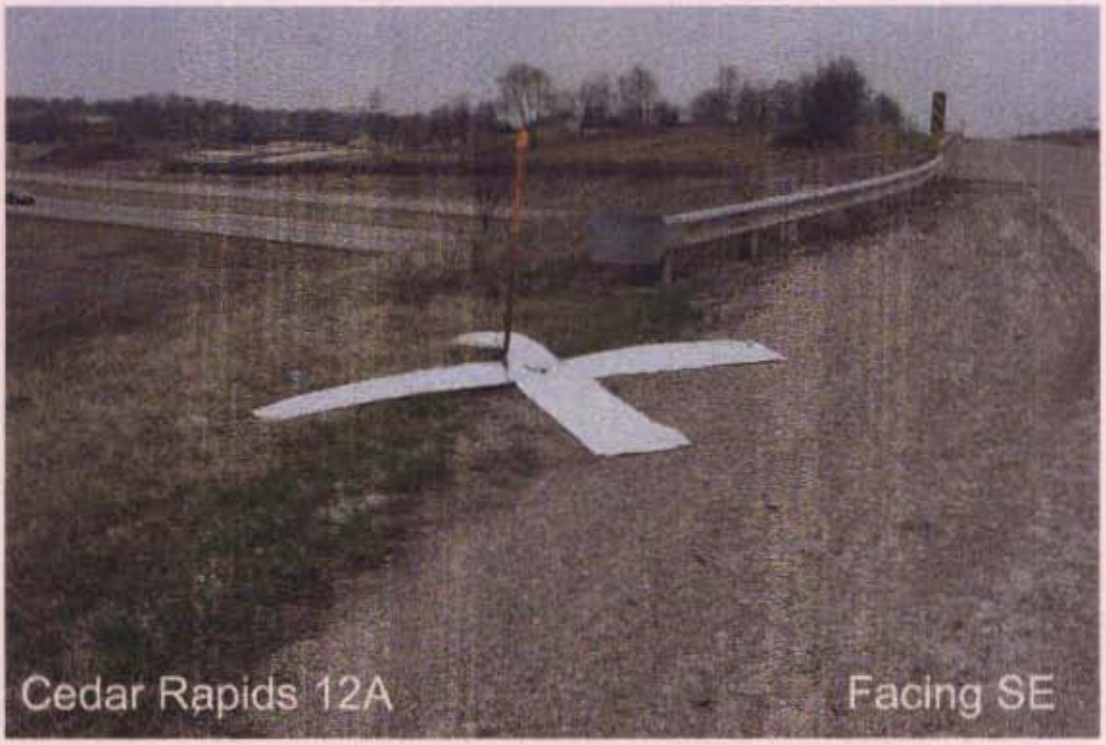

Linn Co. 13
Facing SW


Cedar Rapids 12A
Facing SE


Cedar Rapids 13A
Facing NE


Linn Co 14
Facing N


Linn Co 15
Facing NW


Cedar Rapids 12A
Facing SE

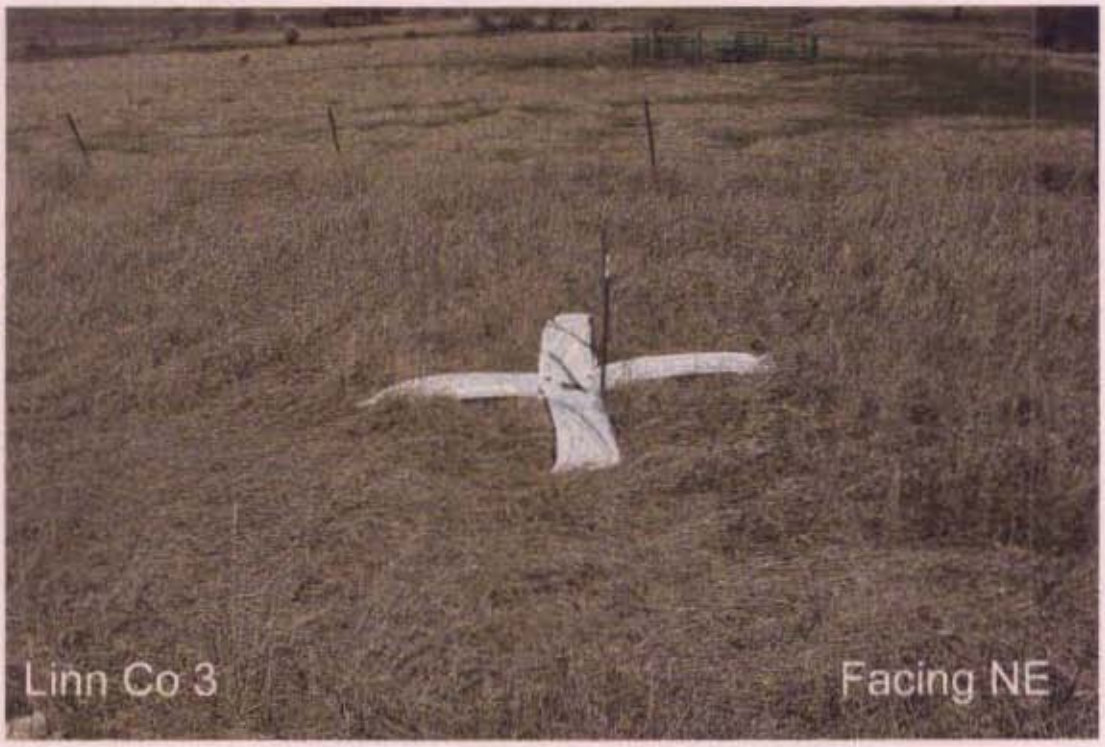

Cedar Rapids 13A
Facing NE


Linn Co 16
Facing NE


Linn Co 17
Facing NE


Linn 18A
Facing S

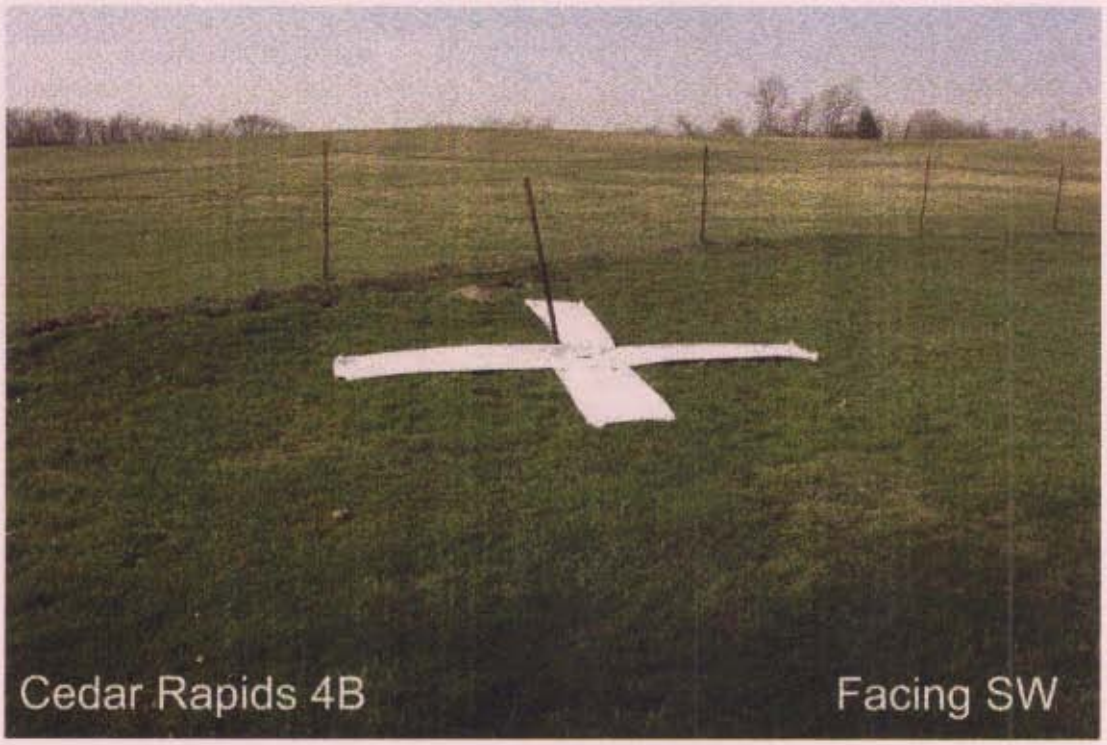

Cedar Rapids 2A
Facing N


Linn Co 3
Facing NE


Linn Co 4
Facing NW


Linn Co 4A
Facing NE


Linn Co 5
Facing NE


Cedar Rapids 4B
Facing SW


Cedar Rapids 8B
Facing E


Cedar Rapids 5A
Facing NE


Cedar Rapids 9A
Facing NE


Linn Co 6
Facing NW


Linn Co 7
Facing E


Linn Co 8
Facing NE

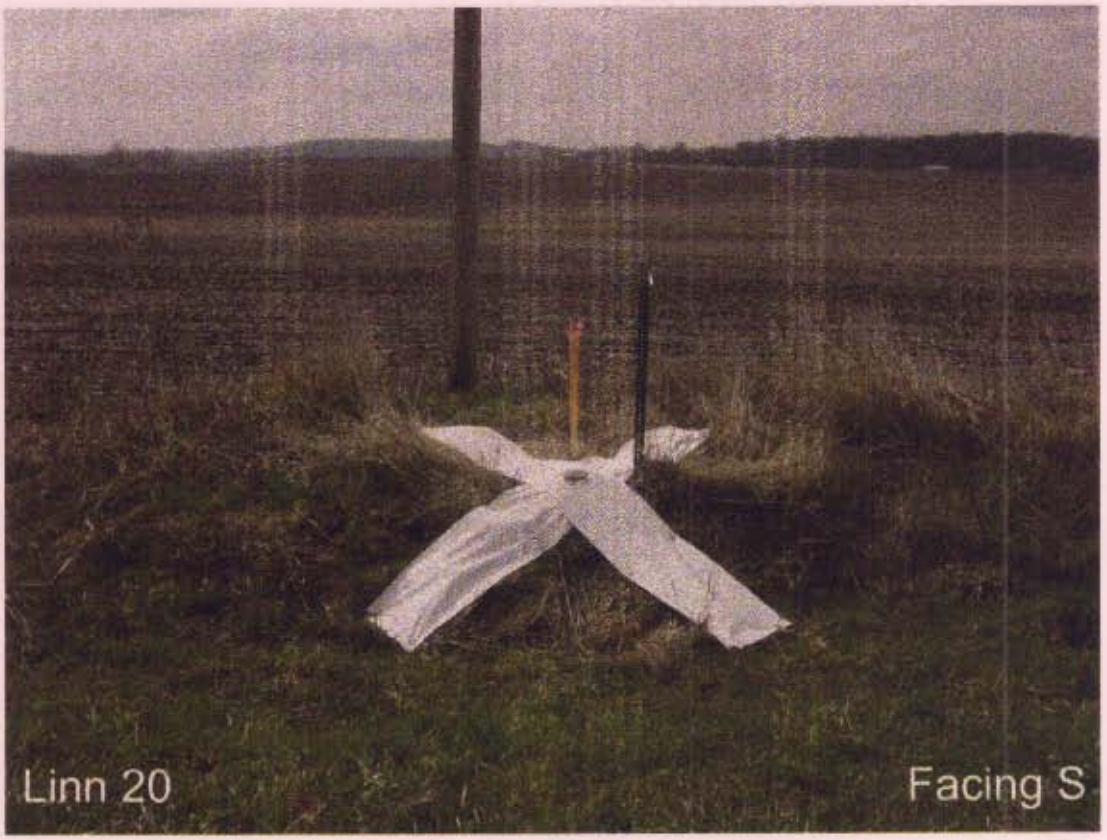

Linn Co 9A
Facing SE

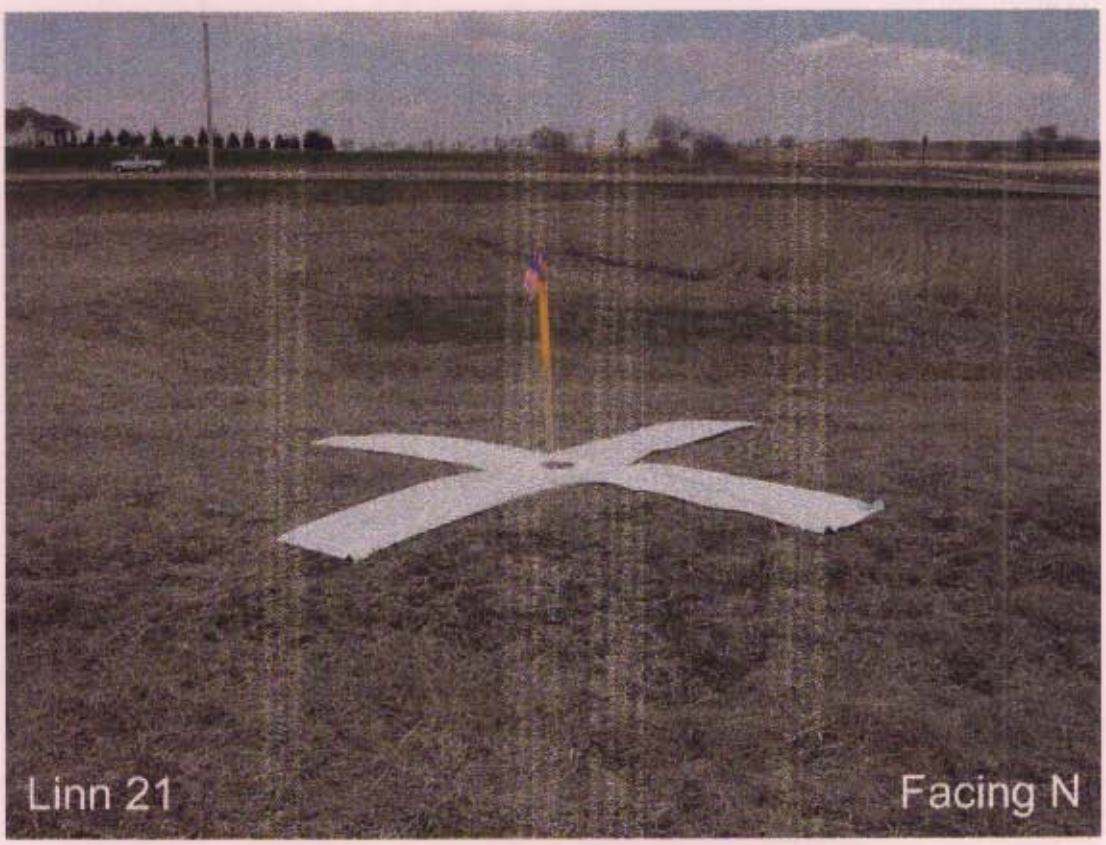

Marion C10
Facing SE


Marion C12
Facing NE


Marion C18
Facing E


TBM near Y80
Facing E


Linn 20
Facing S


Linn 21
Facing N


BM818
Facing W


Marion C9
Facing S

# Linn County
# And
# City of Cedar Rapids
# Iowa

## G.P.S. Survey
## Control Network

## **Monument**
## **Site Pictures**

## 2005

Dan Corbin, Inc.
28 River Ridge Lane
Cedar Falls, IA 50613

DC Inc.

Cell: (319) 231-7047
Fax: (319) 266-3398
E-Mail: dcorbin@cfu.net

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 17A**

**Designation:** Station 17A, Set by the Surdex Corp. for Linn County in 2000

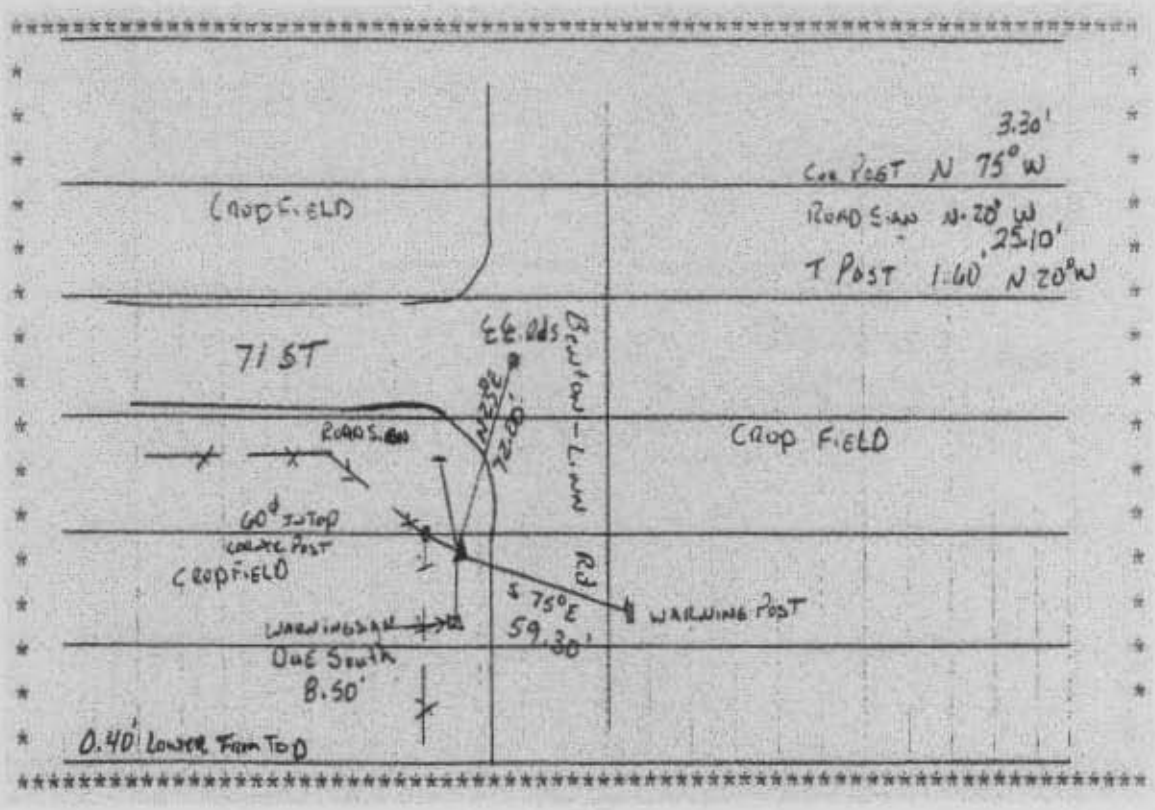
Northing: **3464945.42**sft Easting: **5374009.11**sft

Orthometric Height: **851.31**sft Ellipsoid Height: **746.94**sft **Geoid03**

Latitude: **41°59'34.70625"N** Longitude: **91°50'03.97846"W**

Mapping Angle: **1°07'44"** Combination Scale Factor: **0.99997855**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 18A**

**Designation:** Station 18A, Set by the Surdex Corp. for Linn County in 2000

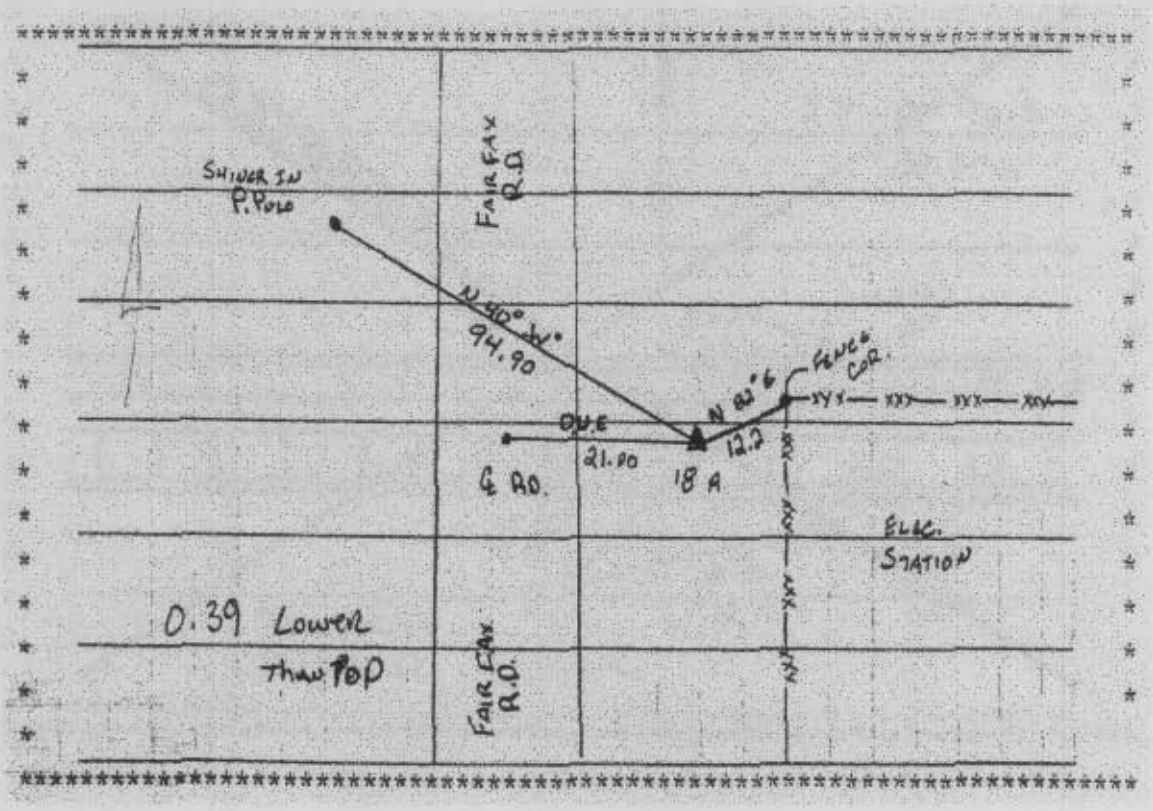
Northing: **3437186.35**sft Easting: **5391025.13**sft

Orthometric Height: **755.71**sft Ellipsoid Height: **650.37**sft **Geoid03**

Latitude: **41°54'57.16442"N** Longitude: **91°46'26.19661"W**

Mapping Angle: **1°10'11"** Combination Scale Factor: **0.99999975**

**Monument Type:** Aluminum Cap on 6-foot Rebar set in a 6" dia. PVC pipe with an aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 19**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-019, set by DCI for Linn Co. in 2005

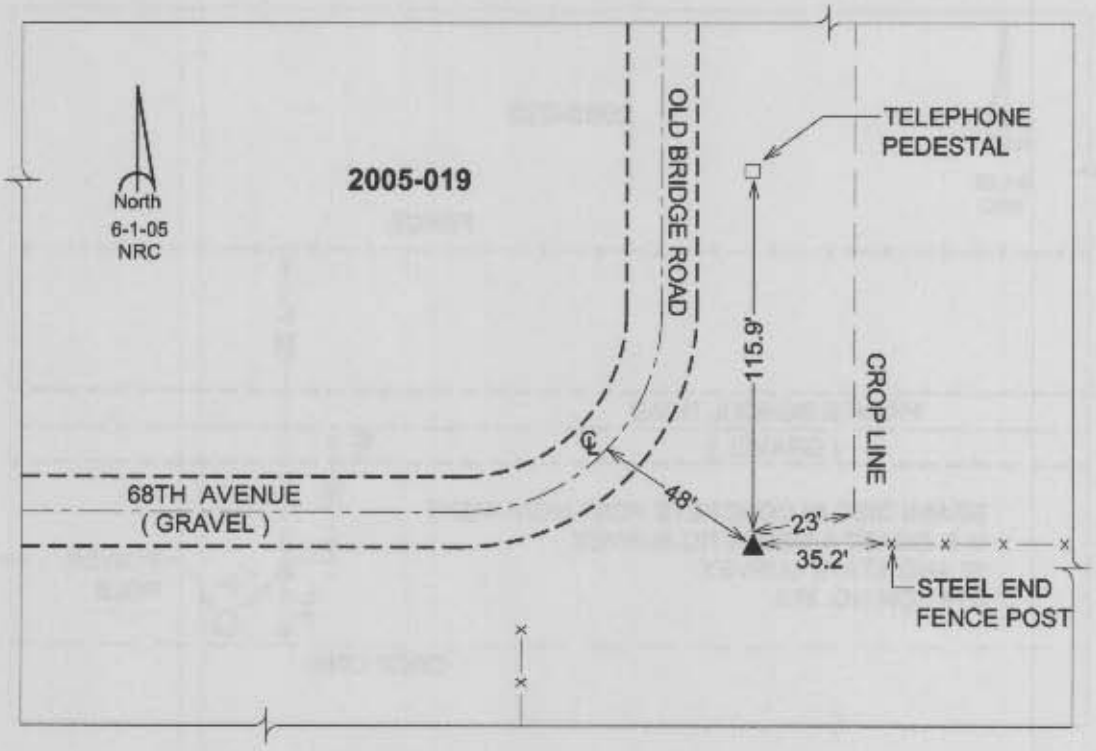
Northing: **3436353.86**sft Easting: **5403001.45**sft

Orthometric Height: **797.12**sft Ellipsoid Height: **691.52**sft **Geoid03**

Latitude: **41°54'46.49607"N** Longitude: **91°43'48.05985"W**

Mapping Angle: **1°11'59"** Combination Scale Factor: **0.99999846**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 20**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-020, set by DCI for Linn Co. in 2005

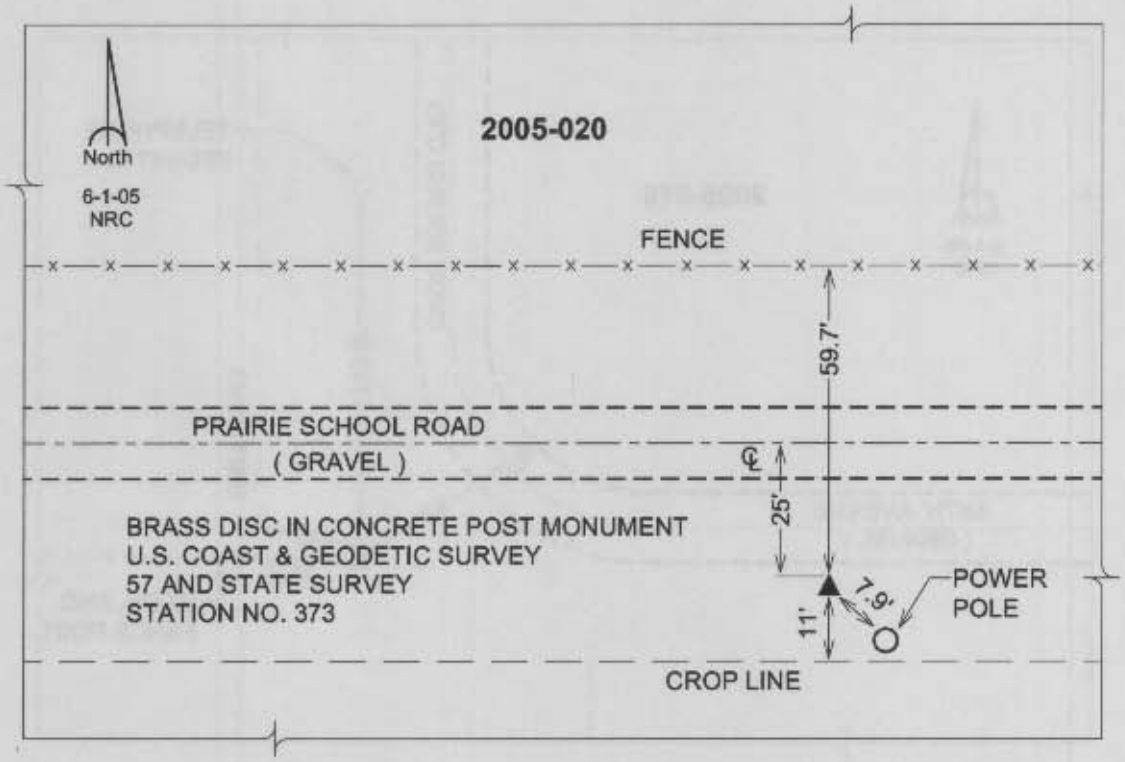
Northing: **3433963.71**sft Easting: **5437925.13**sft

Orthometric Height: **827.34**sft Ellipsoid Height: **721.21**sft **Geoid03**

Latitude: **41°54'15.40598"N** Longitude: **91°36'06.99750"W**

Mapping Angle: **1°17'11"** Combination Scale Factor: **0.99999902**

**Monument Type:** United States Coast & Geodetic Survey and State Survey disk, stamped "Station No. 373" and set in the top of a concrete monument. Monument appears to have been reset in recent history.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 21**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-021, set by DCI for Linn Co. in 2005

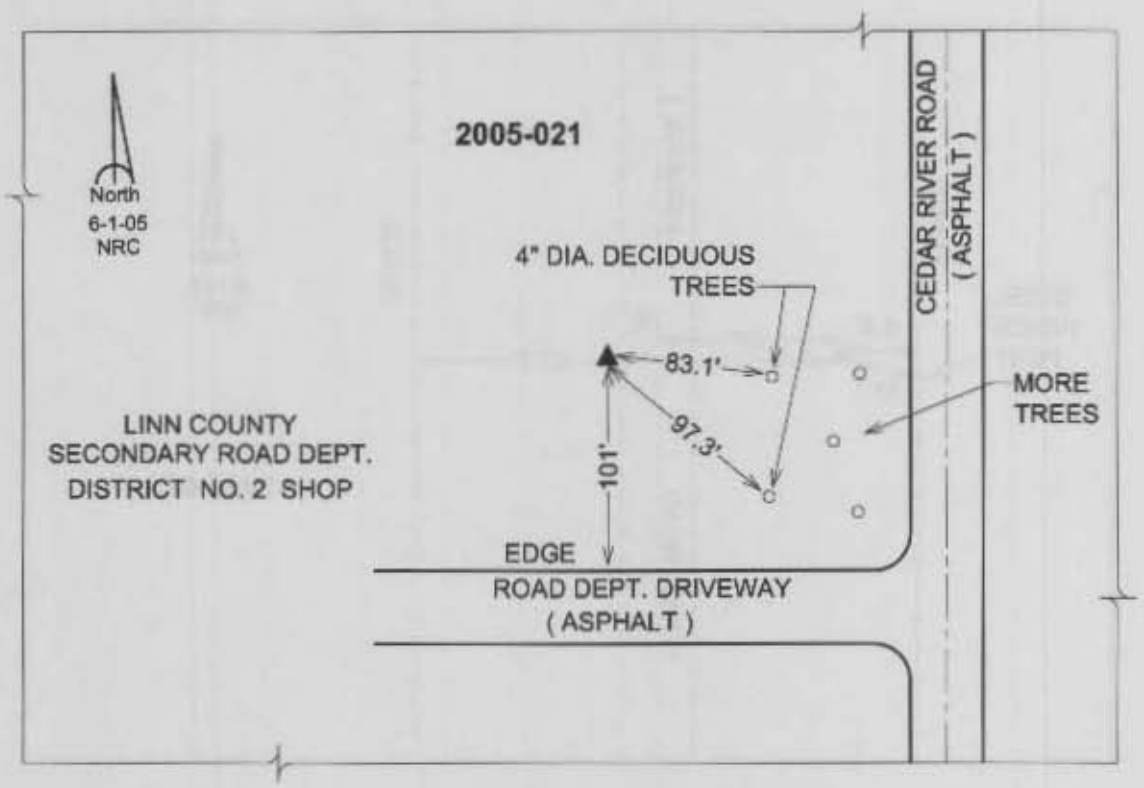
Northing: **3439373.85**sft Easting: **5470325.83**sft

Orthometric Height: **764.02**sft Ellipsoid Height: **657.66**sft **Geoid03**

Latitude: **41°55'01.42513"N** Longitude: **91°28'56.95059"W**

Mapping Angle: **1°22'02"** Combination Scale Factor: **0.99999914**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 22**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-022, set by DCI for Linn Co. in 2005

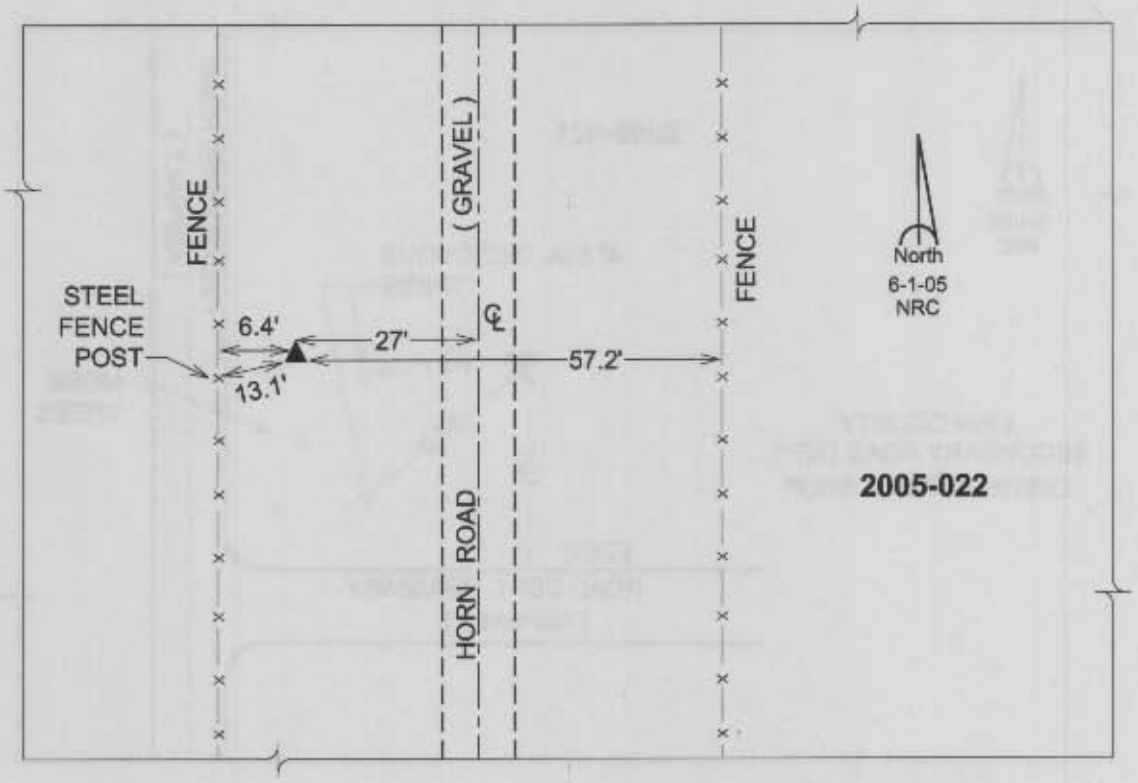
Northing: **3466824.10**sft Easting: **5469806.66**sft

Orthometric Height: **824.68**sft Ellipsoid Height: **718.56**sft **Geoid03**

Latitude: **41°59'32.64483"N** Longitude: **91°28'55.14932"W**

Mapping Angle: **1°22'04"** Combination Scale Factor: **0.99998002**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 23**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-023, set by DCI for Linn Co. in 2005

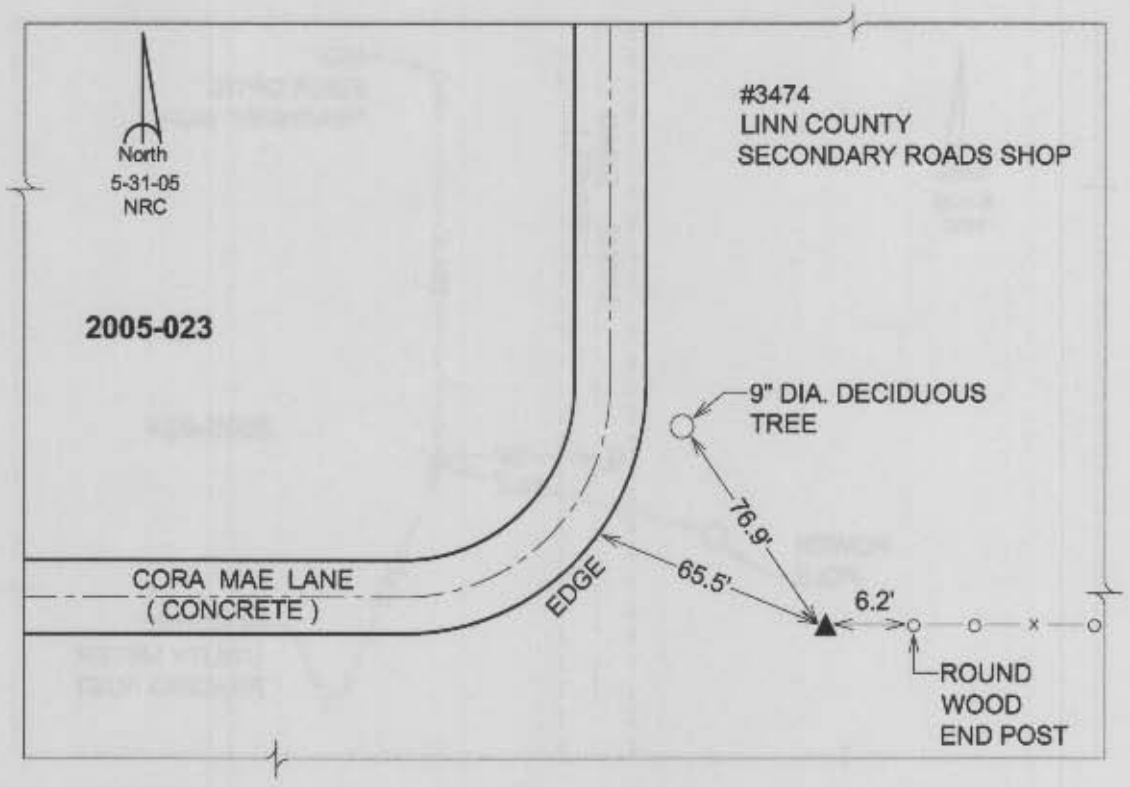
Northing: **3501836.88**sft Easting: **5408749.13**sft

Orthometric Height: **816.48**sft Ellipsoid Height: **712.13**sft **Geoid03**

Latitude: **42°05'32.04661"N** Longitude: **91°42'13.66040"W**

Mapping Angle: **1°13'03"** Combination Scale Factor: **0.99996148**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 24**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-024, set by DCI for Linn Co. in 2005

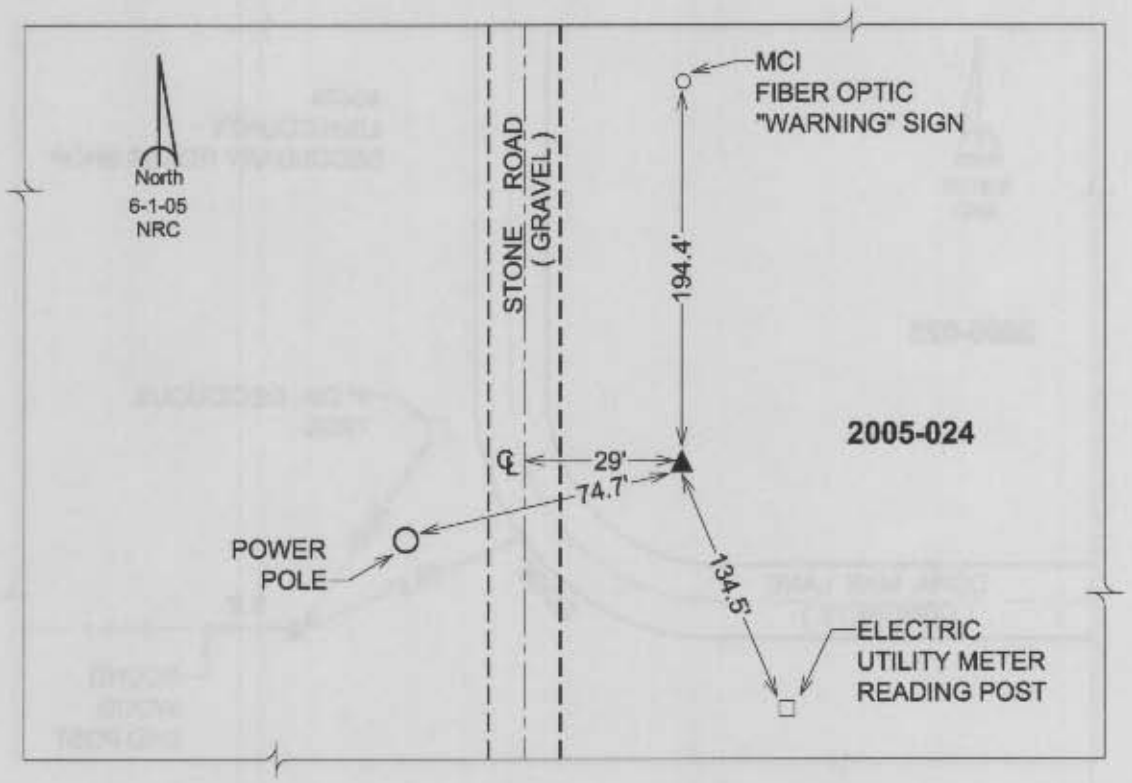
Northing: **3498523.20**sft Easting: **5469183.14**sft

Orthometric Height: **878.09**sft Ellipsoid Height: **772.39**sft **Geoid03**

Latitude: **42°04'45.85118"N** Longitude: **91°28'53.38210"W**

Mapping Angle: **1°22'05"** Combination Scale Factor: **0.99996086**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 25**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-025, set by DCI for Linn Co. in 2005

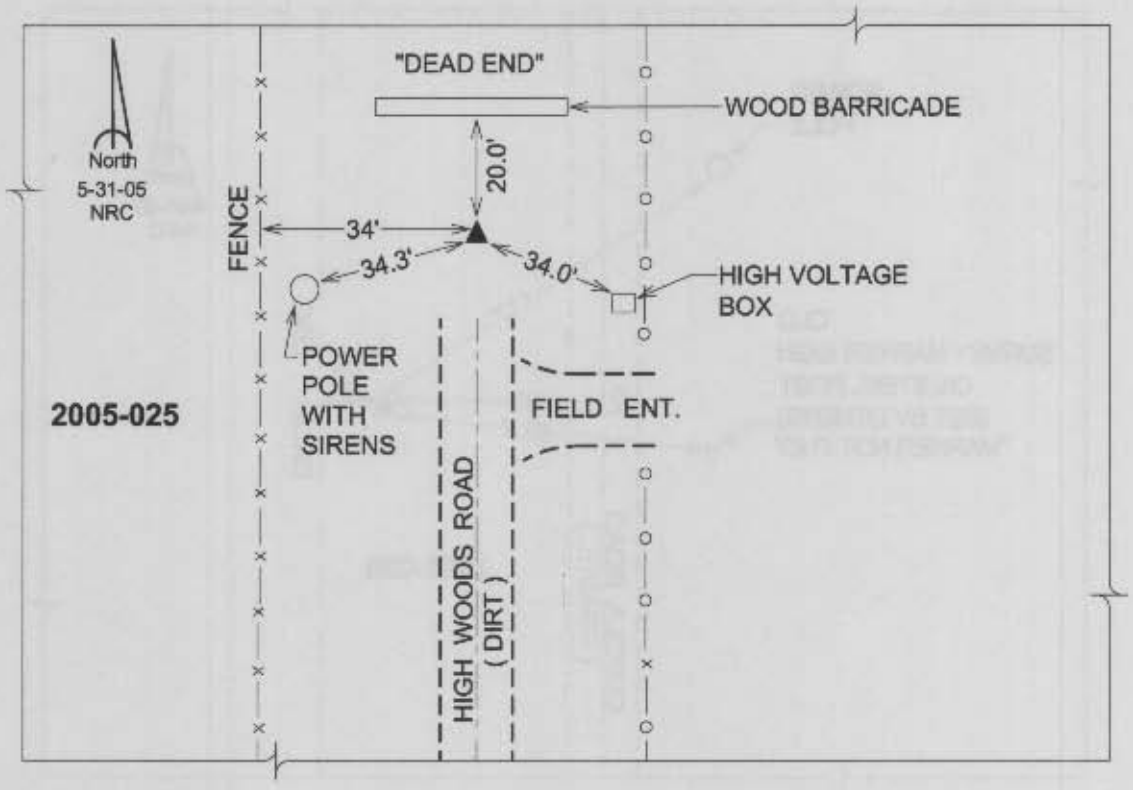
Northing: **3528548.23**sft Easting: **5388872.91**sft

Orthometric Height: **858.11**sft Ellipsoid Height: **755.03**sft **Geoid03**

Latitude: **42°09'59.95402"N** Longitude: **91°46'30.00162"W**

Mapping Angle: **1°10'09"** Combination Scale Factor: **0.99994733**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 26**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-026, set by DCI for Linn Co. in 2005

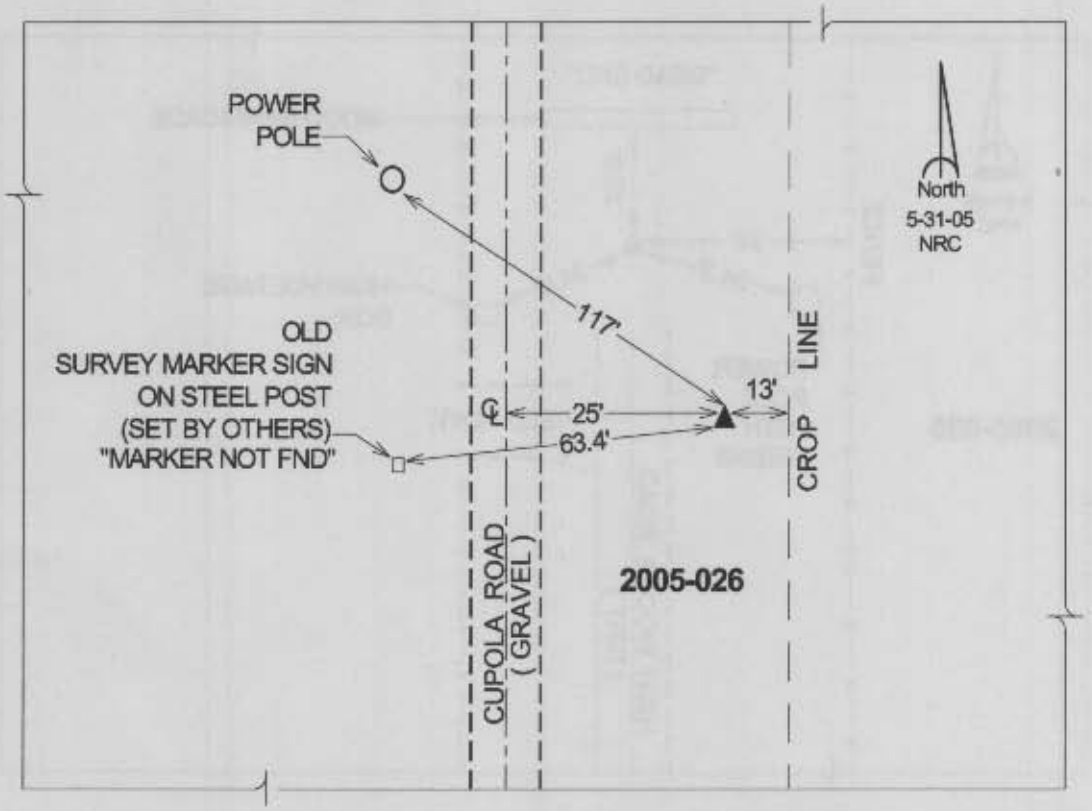
Northing: **3529865.78**sft Easting: **5420772.39**sft

Orthometric Height: **902.49**sft Ellipsoid Height: **798.63**sft **Geoid03**

Latitude: **42°10'06.31791"N** Longitude: **91°39'26.12732"W**

Mapping Angle: **1°14'56"** Combination Scale Factor: **0.99994498**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 27**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-027, set by DCI for Linn Co. in 2005

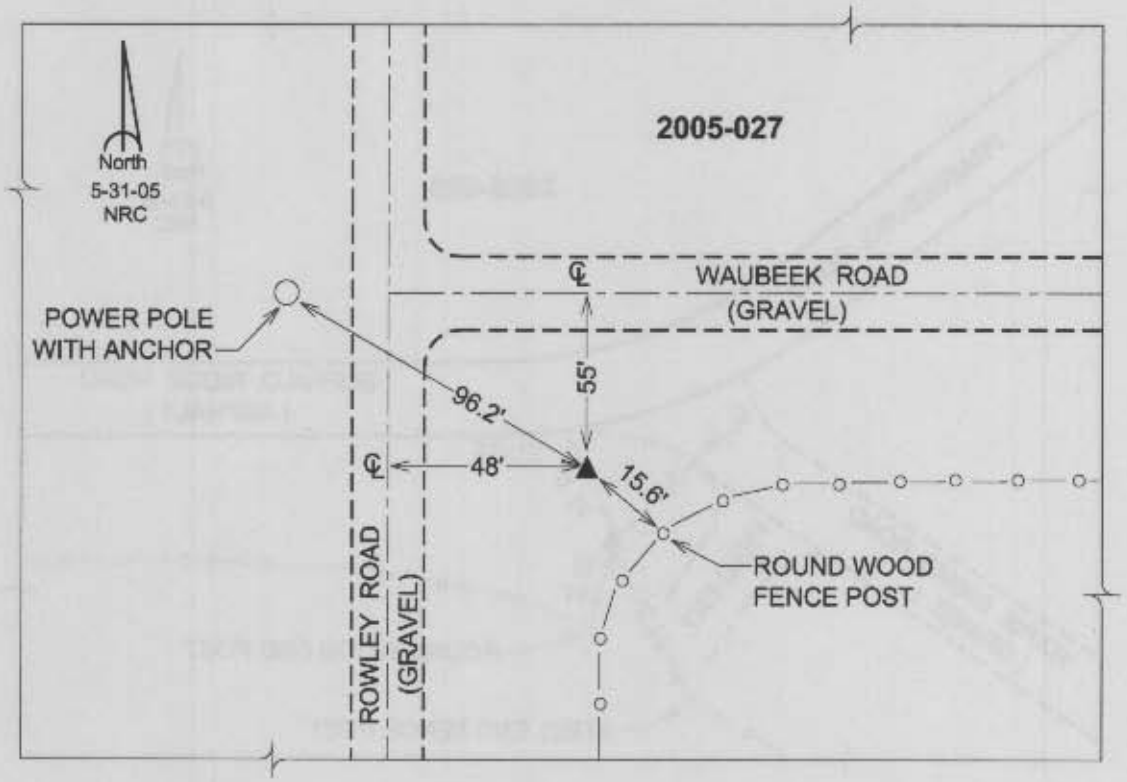
Northing: **3531254.52**sft Easting: **5453945.11**sft

Orthometric Height: **920.95**sft Ellipsoid Height: **816.29**sft **Geoid03**

Latitude: **42°10'12.65356"N** Longitude: **91°32'05.30437"W**

Mapping Angle: **1°19'55"** Combination Scale Factor: **0.99994387**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 28**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-028, set by DCI for Linn Co. in 2005

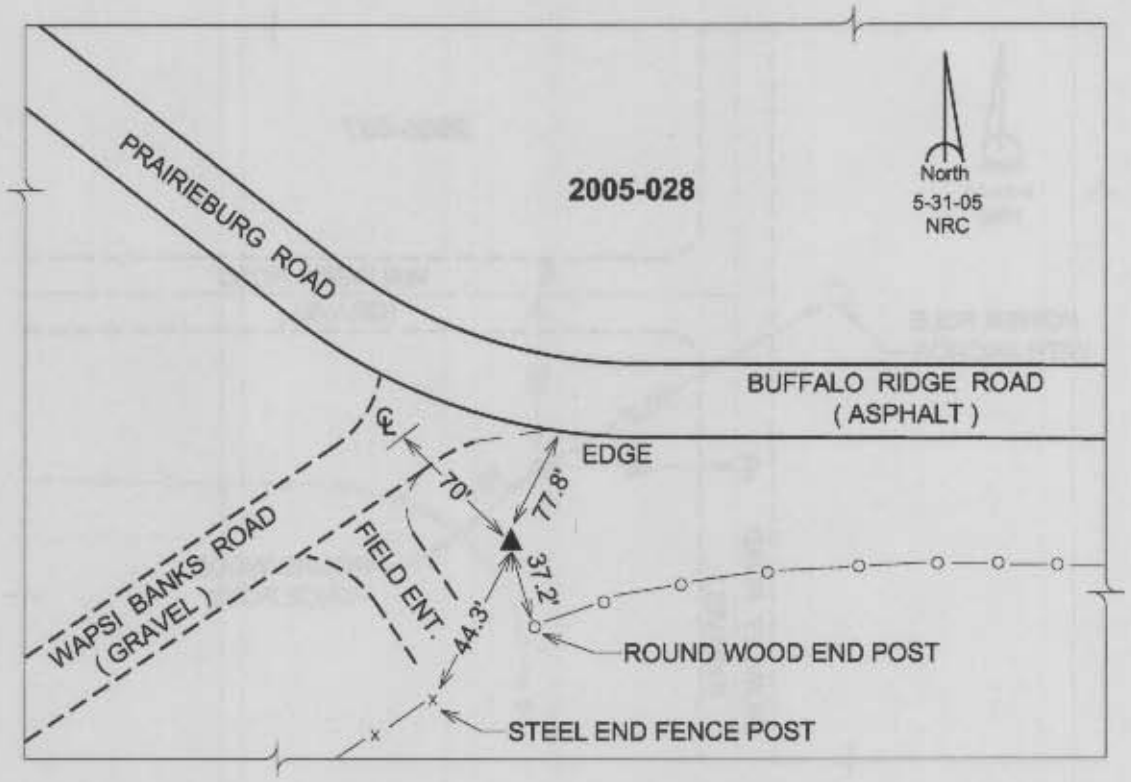
Northing: **3531726.11**sft Easting: **5487505.88**sft

Orthometric Height: **946.54**sft Ellipsoid Height: **841.29**sft **Geoid03**

Latitude: **42°10'09.36195"N** Longitude: **91°24'39.60688"W**

Mapping Angle: **1°24'57"** Combination Scale Factor: **0.99994282**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 29**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-029, set by DCI for Linn Co. in 2005

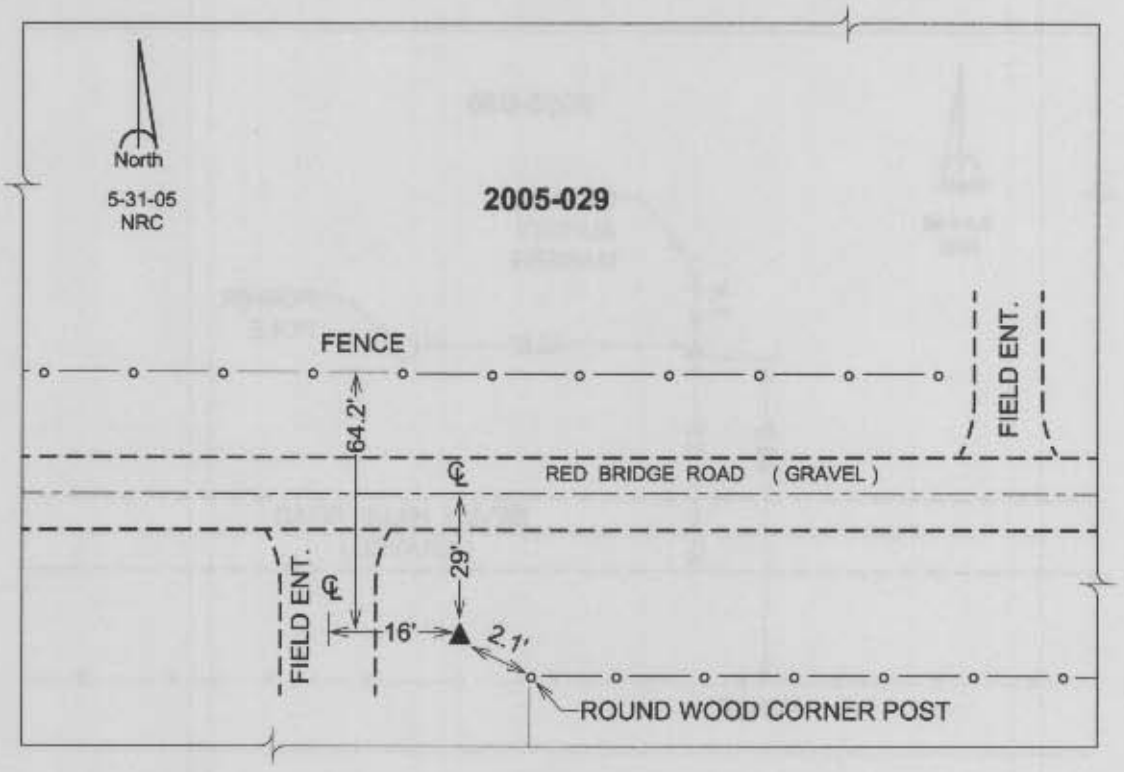
Northing: **3561765.16**sft Easting: **5470147.52**sft

Orthometric Height: **902.78**sft Ellipsoid Height: **798.85**sft **Geoid03**

Latitude: **42°15'10.19743"N** Longitude: **91°28'20.48530"W**

Mapping Angle: **1°22'27"** Combination Scale Factor: **0.99993331**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 29**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-029, set by DCI for Linn Co. in 2005

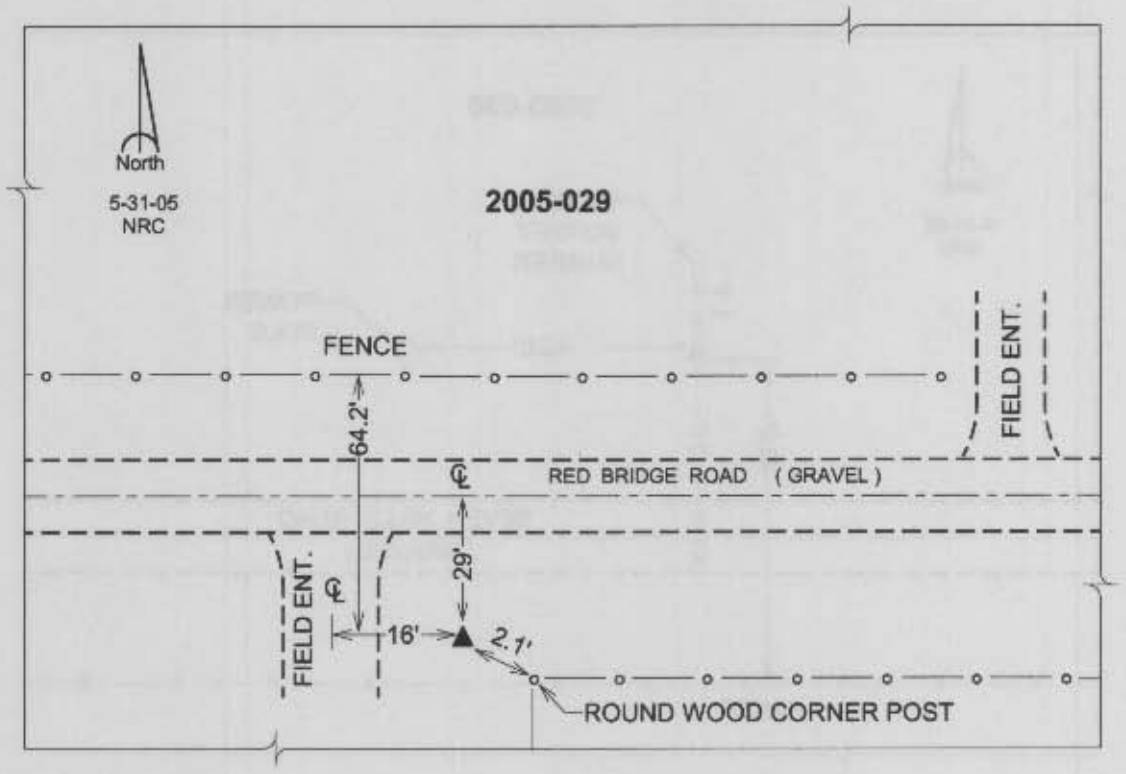
Northing: **3561765.16**sft Easting: **5470147.52**sft

Orthometric Height: **902.78**sft Ellipsoid Height: **798.85**sft **Geoid03**

Latitude: **42°15'10.19743"N** Longitude: **91°28'20.48530"W**

Mapping Angle: **1°22'27"** Combination Scale Factor: **0.99993331**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.

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**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 32**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-032, set by DCI for Linn Co. in 2005

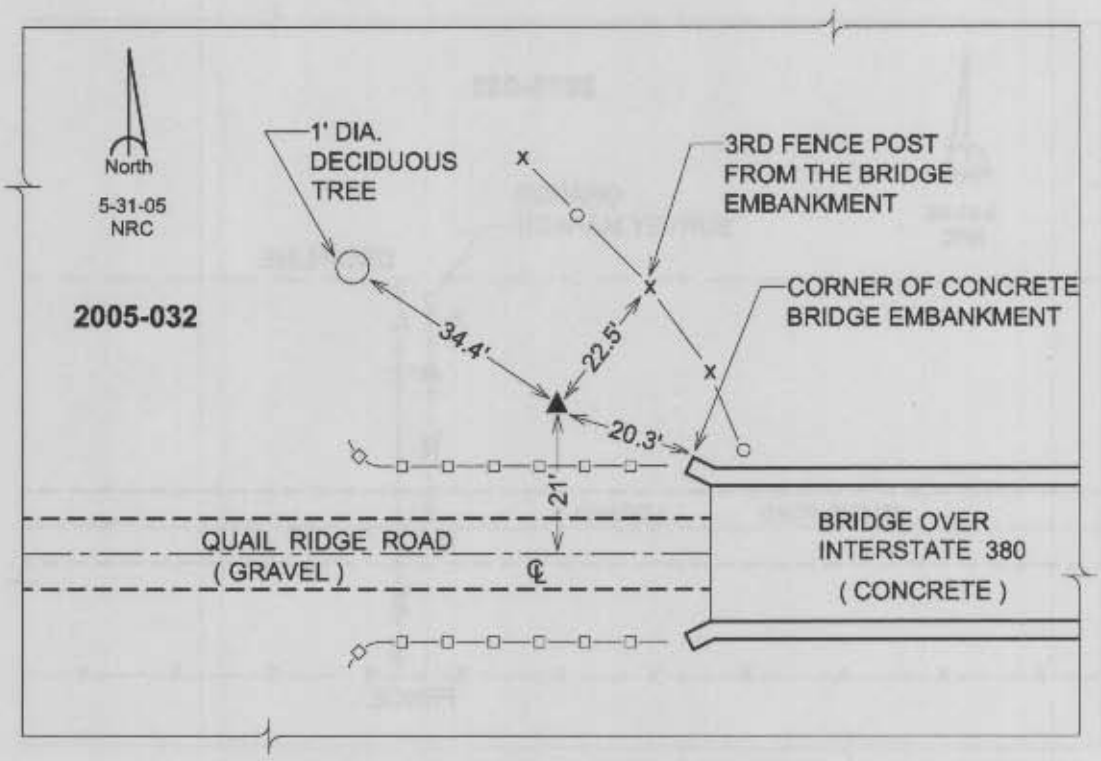
Northing: **3519101.25**sft Easting: **5398889.03**sft

Orthometric Height: **818.46**sft Ellipsoid Height: **714.83**sft **Geoid03**

Latitude: **42°08'24.60924"N** Longitude: **91°44'19.63960"W**

Mapping Angle: **1°11'37"** Combination Scale Factor: **0.99995336**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.




**Linn County and the City of Cedar Rapids, Iowa**
*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*

**Linn County and the City of Cedar Rapids, Iowa**
Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **Linn 32**

**Designation:** LINN COUNTY GPS CONTROL PT. 2005-032, set by DCI for Linn Co. in 2005

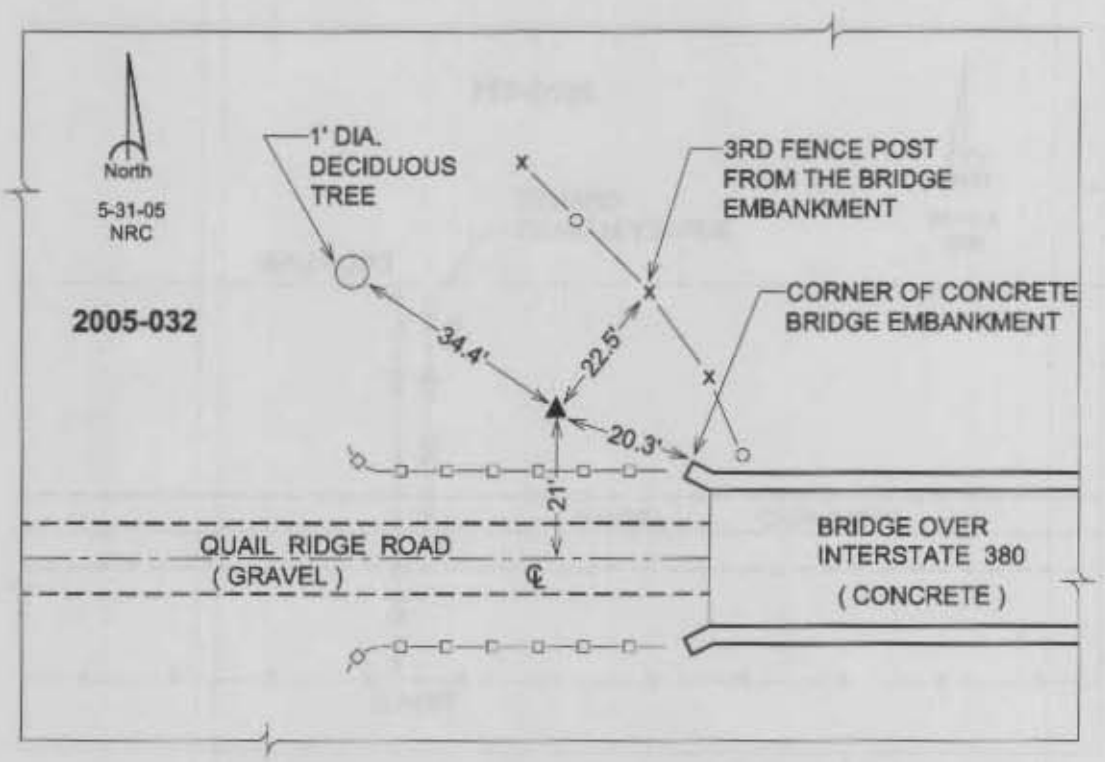
Northing: **3519101.25**sft Easting: **5398889.03**sft

Orthometric Height: **818.46**sft Ellipsoid Height: **714.83**sft **Geoid03**

Latitude: **42°08'24.60924"N** Longitude: **91°44'19.63960"W**

Mapping Angle: **1°11'37"** Combination Scale Factor: **0.99995336**

**Monument Type:** Berntsen Top Security Rod Monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a 5"dia. PVC pipe with a NGS style aluminum access cover.



Iowa North Zone (1401)
Horiz. Datum: NAD83(1996)
Vert. Datum: NAVD 1988
US Survey Feet
**2005**

Point Name: **TBM near Y80**

**Designation:** NGS 2nd order vertical control station. PID: NJ0547 DESIGNATION: Y 80

Northing: **3479220.72**sft Easting: **5406955.55**sft

Orthometric Height: **811.94**sft Ellipsoid Height: **707.14**sft **Geoid03**

Latitude: **42°01'49.05211"N** Longitude: **91°42'43.78720"W**

Mapping Angle: **1°12'42"** Combination Scale Factor: **0.99997306**

**Monument Type:** Point occupied is a 5/8" Rebar driven flush with the ground approx. 300ft east of the station mark and located on the east embankment of the abandoned railroad fill.


*Prepared by DCI and GBC for Linn Co. and the City of Cedar Rapids, Iowa (Revised 08-05-05).*