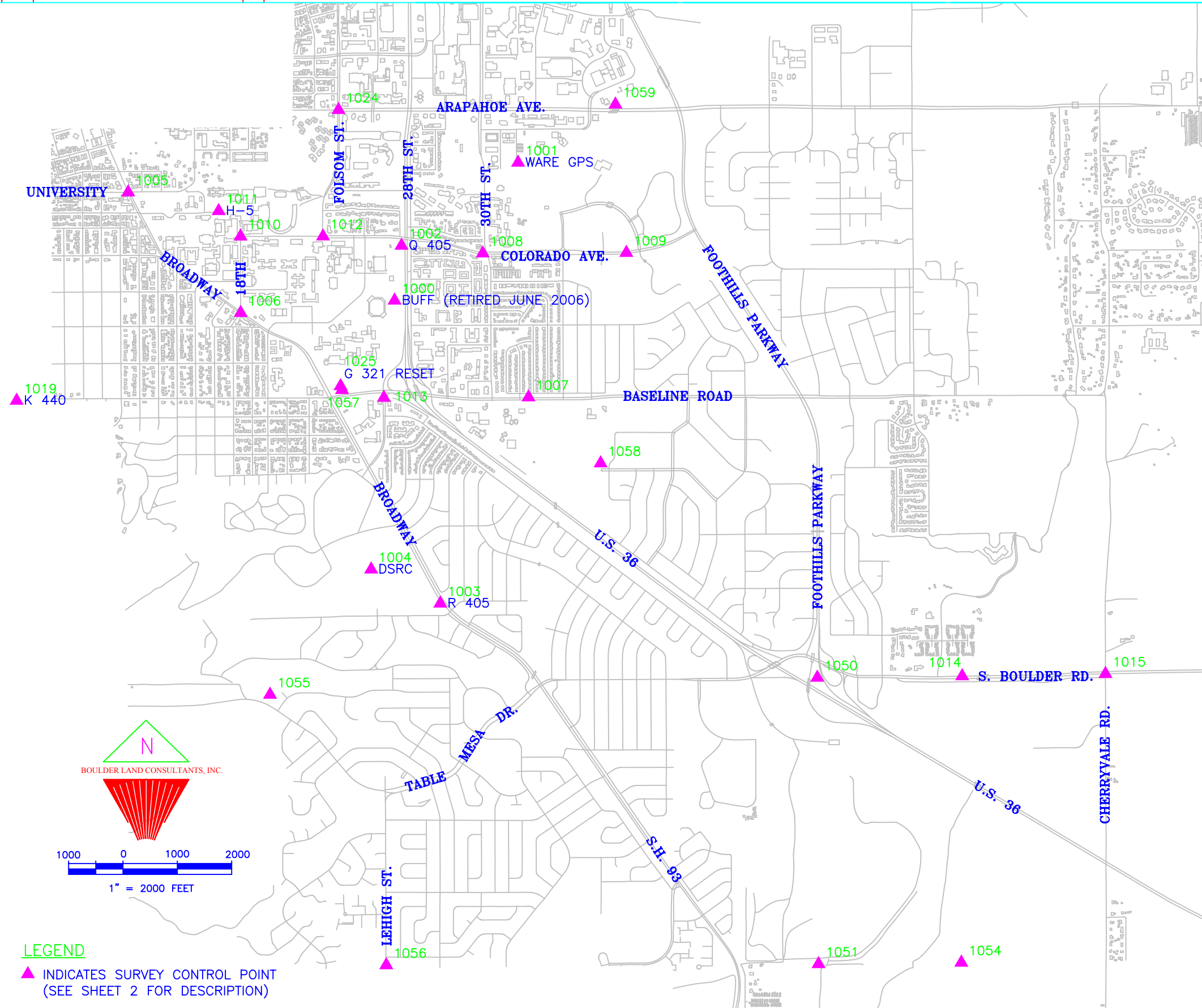


# University of Colorado at Boulder

## Survey Control Diagram

THIS MAP WAS PREPARED BY  
 BOULDER LAND CONSULTANTS, INC.  
  
 5690 VALMONT RD. BOULDER, CO 80301  
 (303) 443-3616

|   |                |               |           |                     |
|---|----------------|---------------|-----------|---------------------|
| Project Number: 420cu04                                 |                |               |           |                     |
| Project Location: University of Colorado Survey Control |                |               |           |                     |
| Project Location: City of Boulder                       |                |               |           |                     |
| Project Code:   | Last Mod. Date | Subset Sheets | Sheet No. | Total No. of Sheets |
|   | July 05, 2004  | of            | 1         | 2                   |



**COORDINATE DATUM:** Geodetic coordinates are based on NAD 83(1992) – Epoch 2000. State Plane coordinates are Colorado North Zone (501)–NAD 83(1992) – Epoch 2000. Units are in US Survey feet.  
 Colorado High Accuracy Reference Network (CHARN) Stations and NGS CORS stations held fixed in the final horizontal least squares adjustment of the GPS data are as follows:

- BUFF – PID LL1403
- TT 23 J – PID KK0655
- X 438 – PID LL1137
- OVERLOOK – PID KK2060
- R 405 – PID LL1351
- TMGO – PID AB6369
- DSRC – PID AJ7970

**BASIS OF ELEVATIONS:** Orthometric Heights are shown in NAVD88. On site, elevations were established by GPS fast static observations based on a high-resolution Geoid model "GEOID03". National Geodetic Survey First Order, Class II Bench Marks observed as part of the GPS control network and held fixed during the final vertical least squares adjustment of the GPS data are listed as follows:

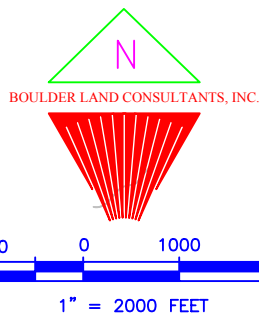
- G 321 RESET – PID LL0704 NAVD88 5387.00 (feet)
- K 440 – PID LL1143 NAVD88 5673.14 (feet)
- Q 405 – PID LL1094 NAVD88 5314.71 (feet)
- R 405 – PID KK1351 NAVD88 5398.70 (feet)
- TT 23 J – PID KK0655 NAVD88 5901.97 (feet)
- W 413 – PID KK1549 NAVD88 5459.59 (feet)
- WARE GPS – PID LL1093 NAVD88 5264.69 (feet)
- X 438 – PID LL1137 NAVD88 5289.64 (feet)

**NOTE:** This map does not represent a boundary survey, land survey plat or title search performed by Boulder Land Consultants, Inc. Coordinates on this project are for the exclusive use of the University of Colorado for mapping and survey control purposes only. Land Corners as shown hereon are GIS Land Positions only see C.R.S. 38–51–102(7.5).

**NOTE:** In accordance with C.R.S. 13–80–105:  
**Notice:** According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the statement shown.

**SURVEYOR'S STATEMENT:** I, Jason Emery, a Professional Land Surveyor in the State of Colorado, do hereby state to the University of Colorado that this Survey Control Diagram was prepared, and the field survey it depicts was performed, under my responsible charge; is based upon my knowledge information and belief; and was executed in accordance with applicable standards of practice. This statement is not a guaranty or warranty either expressed or implied (per Colorado State Board Rule 6.2.2).

Jason Emery, P.L.S. 20134

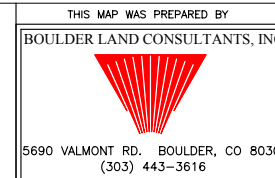


**LEGEND**  
 ▲ INDICATES SURVEY CONTROL POINT  
 (SEE SHEET 2 FOR DESCRIPTION)



# University of Colorado at Boulder

## Survey Control Diagram



|   |                |               |           |                     |
|---|----------------|---------------|-----------|---------------------|
| Survey Control Diagram                                  |                |               |           |                     |
| Coordinate Summary Table of Project Control             |                |               |           |                     |
| Project Number: 420cu04                                 |                |               |           |                     |
| Project Location: University of Colorado Survey Control |                |               |           |                     |
| Project Location: City of Boulder                       |                |               |           |                     |
| Project Code:   | Last Mod. Date | Subset Sheets | Sheet No. | Total No. of Sheets |
|   | July 05, 2004  | of            | 2         | 2                   |

### GEODETIC COORDINATE SUMMARY TABLE (ADJUSTED FIELD DATA)

Points output in USFEET:

| POINT NO. | GEODETIC COORDINATES ARE NAD-83(92) - EPOCH 2000 |                      | ELLIP. HEIGHT | ELEV. NAVD88 | MAPPING ANGLE    | SCALE      | NAD-83(92) ZONE 501 |            | DESCRIPTION  |
|-----------|--|----------------------|---------------|--------------|------------------|------------|---------------------|------------|--|
|           | LATITUDE   | LONGITUDE            |               |              |                  |            | NORTHING            | EASTING    |  |
| 1000      | 40° 00' 17.99850" N                              | 105° 15' 33.96976" W | 5324.63       | 5376.24      | 0° 09' 19.57109" | 0.99996599 | 1244759.46          | 3067389.83 | NGS HARN STATION "BUFF" PID LL1403. JUNE 2006: BUFF POINT NO LONGER EXISTS   |
| 1001      | 40° 00' 42.99834" N                              | 105° 15' 04.67907" W | 5212.77       | 5264.69      | 0° 09' 38.49594" | 0.99996548 | 1247295.40          | 3069661.98 | NGS FIRST ORDER BENCH MARK & FIRST ORDER HORIZONTAL MARK "WARE GPS" PID LL1093.  |
| 1002      | 40° 00' 27.96545" N                              | 105° 15' 32.29856" W | 5263.06       | 5314.71      | 0° 09' 20.65093" | 0.99996579 | 1245768.33          | 3067517.13 | NGS FIRST ORDER BENCH MARK "Q 405" PID LL1094.   |
| 1003      | 39° 59' 22.90518" N                              | 105° 15' 23.36291" W | 5347.04       | 5398.70      | 0° 09' 26.42457" | 0.99996717 | 1239187.00          | 3068230.51 | NGS FIRST ORDER BENCH MARK & FIRST ORDER HORIZONTAL MARK "R 405" PID KK1351.   |
| 1004      | 39° 59' 29.12990" N                              | 105° 15' 39.67584" W | 5437.25       | 5488.82      | 0° 09' 15.88419" | 0.99996703 | 1239813.40          | 3066959.14 | BOULDER CORS L1 PHASE CENTER, CORS ID DSRC, PID AJ7970.  |
| 1005      | 40° 00' 37.78510" N                              | 105° 16' 36.88577" W | 5359.67       | 5410.69      | 0° 08' 38.91896" | 0.99996559 | 1246748.80          | 3062489.02 | FOUND 2" DIA. BRASS CAP FLUSH WITH CONC. AT THE C.L. INTER. OF BROADWAY & UNIVERSITY, CAP MARKED "CITY OF BOULDER 24959".  |
| 1006      | 40° 00' 15.81498" N                              | 105° 16' 10.34429" W | 5373.40       | 5424.67      | 0° 08' 56.06830" | 0.99996604 | 1244531.00          | 3064559.94 | FOUND 2" DIA. ALUM. CAP FLUSH WITH BRICK IN MEDIAN IN BROADWAY AT 18TH ST., CAP MARKED "CITY OF BOULDER LS 24959".   |
| 1007      | 40° 00' 00.34531" N                              | 105° 15' 02.36090" W | 5278.66       | 5330.58      | 0° 09' 39.99466" | 0.99996636 | 1242979.98          | 3069854.48 | FOUND 2.5" DIA. ALUM. CAP IN RANGE BOX IN BASELINE RD. WEST BOUND LANE BETWEEN 32ND ST. & 33RD ST., CAP MARKED "CITY OF BOULDER 1/4 SEC. 5"  |
| 1008      | 40° 00' 26.52815" N                              | 105° 15' 13.09064" W | 5235.90       | 5287.71      | 0° 09' 33.06180" | 0.99996582 | 1245627.01          | 3069012.13 | FOUND 2.5" DIA. ALUM. CAP IN RANGE BOX IN COLORADO AVE. WEST OF 30TH ST., CAP MARKED IN PART "LS 13842 1984".  |
| 1009      | 40° 00' 26.54665" N                              | 105° 14' 39.14232" W | 5213.64       | 5265.76      | 0° 09' 54.99695" | 0.99996582 | 1245636.36          | 3071653.70 | FOUND 3 1/4" DIA. ALUM. CAP IN RANGE BOX IN COLORADO AVE. JUST WEST OF DISCOVERY DRIVE, CAP ILLEGIBLE.   |
| 1010      | 40° 00' 29.70828" N                              | 105° 16' 10.34611" W | 5342.44       | 5393.70      | 0° 08' 56.06712" | 0.99996575 | 1245936.81          | 3064556.15 | FOUND 1.5" DIA ALUM. CAP FLUSH WITH ASPH. AT THE C.L. INTER. OF 18TH & COLORADO AVE., CAP MARKED "BLC LS 20134".   |
| 1011      | 40° 00' 34.35209" N                              | 105° 16' 15.50422" W | 5345.26       | 5396.47      | 0° 08' 52.73430" | 0.99996566 | 1246405.67          | 3064153.58 | FOUND 3 3/4" DIA. BRASS CAP SET FLUSH IN TOP OF 8" X 8" RED SAND STONE, NORTH OF NORLIN LIBRARY, CAP MARKED "U.S. GEOLOGICAL SURVEY B.M.". (ALSO KNOWN AS CITY OF BOULDER BENCH MARK H-5). |
| 1012      | 40° 00' 29.69696" N                              | 105° 15' 50.85247" W | 5315.38       | 5366.83      | 0° 09' 08.66262" | 0.99996575 | 1245939.66          | 3066072.96 | FOUND 1/2" DIA. SMOOTH STEEL ROD IN RANGE BOX AT THE C.L. INTER. OF FOLSOM ST. & COLORADO AVE.   |
| 1013      | 40° 00' 00.32829" N                              | 105° 15' 36.55796" W | 5313.81       | 5365.39      | 0° 09' 17.89879" | 0.99996636 | 1242970.92          | 3067193.27 | FOUND 2.5" DIA. BRASS CAP IN RANGE BOX IN THE MEDIAN OF 27TH WAY JUST SOUTH OF BASELINE RD., CAP MARKED "CITY OF BOULDER".   |
| 1014      | 39° 59' 09.41783" N                              | 105° 13' 20.06037" W | 5288.65       | 5341.35      | 0° 10' 46.09446" | 0.99996747 | 1237850.47          | 3077831.65 | FOUND 3.25" DIA. BRASS CAP IN RANGE BOX IN WEST BOUND LANE OF S. BOULDER RD. EAST OF 55TH ST., CAP MARKED IN PART "T1S R70W S3 S10".   |
| 1015      | 39° 59' 09.73819" N                              | 105° 12' 46.19022" W | 5300.37       | 5353.33      | 0° 11' 07.97910" | 0.99996746 | 1237891.28          | 3080467.87 | FOUND 3.25" DIA. BRASS CAP IN RANGE BOX IN THE INTER. OF S. BOULDER RD. & CHERRYVALE, CAP MARKED "T1S R70W 1/4 S3 S10 1986 LS 23047".  |
| 1018      | 39° 58' 01.27002" N                              | 105° 11' 18.68937" W | 5625.83       | 5679.30      | 0° 12' 04.51632" | 0.99996904 | 1230986.22          | 3087302.91 | NGS HARN STATION "OVERLOOK" PID KK2060.  |
| 1019      | 39° 59' 59.96560" N                              | 105° 17' 03.37110" W | 5622.36       | 5673.14      | 0° 08' 21.80629" | 0.99996637 | 1242916.86          | 3060437.55 | NGS FIRST ORDER BENCH MARK & FIRST ORDER HORIZONTAL MARK "K 440" PID L1143.  |
| 1020      | 40° 07' 51.34512" N                              | 105° 13' 57.71720" W | 5492.10       | 5544.28      | 0° 10' 21.76311" | 0.99995902 | 1290653.91          | 3074741.39 | TABLE MOUNTAIN CORS L1 PHASE CENTER, CORS ID TMGO, PID AB6369.   |
| 1021      | 40° 02' 11.39028" N                              | 105° 14' 05.37373" W | 5237.23       | 5289.64      | 0° 10' 16.81597" | 0.99996380 | 1256252.88          | 3074249.57 | NGS FIRST ORDER BENCH MARK & FIRST ORDER HORIZONTAL MARK "X 438" PID LL1137.   |
| 1022      | 39° 55' 40.61368" N                              | 105° 13' 59.89777" W | 5849.91       | 5901.97      | 0° 10' 20.35413" | 0.99997263 | 1216712.82          | 3074794.40 | NGS FIRST ORDER BENCH MARK & FIRST ORDER HORIZONTAL MARK "TT 23 J" PID KK0655.   |
| 1023      | 39° 59' 14.88261" N                              | 105° 10' 30.97171" W | 5405.79       | 5459.59      | 0° 12' 35.34830" | 0.99996735 | 1238448.14          | 3090990.81 | NGS FIRST ORDER BENCH MARK "W 413" PID KK1549.   |
| 1024      | 40° 00' 52.66176" N                              | 105° 15' 47.10110" W | -----         | -----        | 0° 09' 11.08650" | 0.99996529 | 1248264.17          | 3066358.65 | FOUND 2.5" DIA. ALUM. CAP IN RANGE BOX AT THE C.L. INTER. OF FOLSOM ST. & ARAPAHOE AVE., CAP MARKED "CITY OF BOULDER SEC. COR."  |
| 1025      | 40° 00' 02.46702" N                              | 105° 15' 46.79259" W | 5335.51       | 5387.00      | 0° 09' 11.28585" | 0.99996632 | 1243185.19          | 3066396.23 | NGS FIRST ORDER BENCH MARK "G 321 RESET" PID LL0704.   |
| 1050      | 39° 59' 09.22872" N                              | 105° 13' 54.30334" W | 5308.71       | 5361.11      | 0° 10' 23.96893" | 0.99996747 | 1237823.12          | 3075166.37 | FOUND 2" DIA BRASS CAP SET FLUSH IN CONC. IN 12" DIA CMP, W. OF FOOTHILLS OFF RAMP, N. OF US 36, CAP MARKED IN PART "LS 11372 1/4 4 9 1975 T1S R70W".                                      |
| 1051      | 39° 58' 17.17292" N                              | 105° 13' 54.21487" W | 5353.40       | 5405.74      | 0° 10' 24.02611" | 0.99996866 | 1232555.80          | 3075189.19 | FOUND 2.5" DIA. ALUM. CAP MARKED "FRANK R. DREXEL 1/4 COR. S9 S16 1976 T1S R70W 2149".   |
| 1052      | 39° 57' 25.52355" N                              | 105° 13' 53.55066" W | 5445.79       | 5498.06      | 0° 10' 24.45528" | 0.99996991 | 1227329.74          | 3075256.73 | FOUND 2" DIA. ALUM. CAP MARKED "MERRICK COMPANY DENVER, COLORADO 94".  |
| 1053      | 39° 57' 24.78083" N                              | 105° 13' 19.88814" W | 5510.60       | 5563.14      | 0° 10' 46.20577" | 0.99996992 | 1227262.66          | 3077878.23 | FOUND 2.5" DIA. ALUM. CAP 0.8' OUT OF THE GROUND, CAP MARKED "T1S R70W S15 S16 S21 S22" MERRICK POINT 95.  |
| 1054      | 39° 58' 17.35954" N                              | 105° 13' 20.46907" W | 5381.90       | 5434.51      | 0° 10' 45.83040" | 0.99996866 | 1232582.77          | 3077816.33 | FOUND 2" DIA. ALUM. CAP MARKED "CITY OF BOULDER GPS 85".   |
| 1055      | 39° 59' 06.41359" N                              | 105° 16' 03.65507" W | 5637.75       | 5689.05      | 0° 09' 00.39045" | 0.99996753 | 1237509.85          | 3065098.87 | FOUND 2" DIA. ALUM. CAP MARKED "CITY OF BOULDER 78".   |
| 1056      | 39° 58' 17.19506" N                              | 105° 15' 36.35373" W | 5588.82       | 5640.28      | 0° 09' 18.03077" | 0.99996866 | 1232535.25          | 3067237.40 | FOUND 1.5" DIA ALUM. CAP IN RANGE BOX, IN LEHIGH ST. S. OF HEIDELBURG, CAP MARKED "SECTION CORNER 7 8 18 17 RLS 5255" MERRICK POINT 146.   |
| 1057      | 40° 00' 01.76843" N                              | 105° 15' 46.45084" W | 5335.65       | 5387.15      | 0° 09' 11.50667" | 0.99996633 | 1243114.57          | 3066423.02 | FOUND REMAINDER OF 2.5" DIA BRASS CAP SET FLUSH IN 6" DIA. CONC. SET CUT "X" IN CENTER OF REMAINING BRASS.   |
| 1058      | 39° 59' 48.30793" N                              | 105° 14' 45.36796" W | 5281.40       | 5333.44      | 0° 09' 50.97436" | 0.99996662 | 1241765.71          | 3071180.36 | FOUND 2.5" DIA BRASS CAP MARKED IN PART "SEC NW NE 4 SE T1S".  |
| 1059      | 40° 00' 53.51990" N                              | 105° 14' 41.62587" W | 5200.52       | 5252.65      | 0° 09' 53.39224" | 0.99996527 | 1248365.14          | 3071452.60 | FOUND 2" DIA ALUM CAP NORTH OF ARAPAHOE AVE., WEST OF BOULDER CREEK, CAP STAMPED "CITY OF BOULDER 64".   |