

U-2717 SURVEY CONTROL SHEET

CONTROL DATA

| BL | POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|----|-------|-----------|-------------|-------------|-----------|-----------|-----------|
| 1 | | *BL-1* | 246238.6860 | 522115.1330 | 263.147 | 10+45.680 | 8.162 RT |
| 2 | | *BL-2* | 246204.3600 | 522326.8850 | 266.273 | 12+59.795 | 4.958 LT |
| 3 | | *BL-3* | 246175.1780 | 522480.4090 | 264.928 | 14+16.775 | 5.313 LT |
| 4 | | *BL-4* | 246149.3000 | 522694.5670 | 268.662 | 16+32.325 | 7.780 RT |
| 5 | | *BL-5* | 246145.1440 | 522866.0070 | 266.394 | 18+03.616 | 5.346 LT |
| 6 | | *BL-6* | 246129.7550 | 522990.0590 | 264.952 | 19+28.619 | 4.997 LT |
| 7 | | *BL-7* | 246103.8780 | 523108.9060 | 266.444 | 20+49.716 | 6.389 RT |
| 8 | | *BL-8* | 246089.0660 | 523224.9060 | 264.852 | 21+66.656 | 7.133 RT |
| 9 | | *BL-9* | 246088.8300 | 523334.4460 | 264.588 | 22+75.428 | 5.815 LT |
| 10 | GPS | *U2717-4* | 246051.6650 | 523369.6160 | 258.429 | 25+52.118 | 7.268 LT |
| 11 | GPS | *BL-11* | 245961.5900 | 523731.6220 | 255.191 | 27+03.364 | 13.963 RT |
| 12 | | *BL-12* | 245907.3300 | 523813.5710 | 253.883 | 28+01.595 | 10.905 RT |
| 13 | | *BL-13* | 245835.4450 | 523916.0530 | 254.377 | 29+26.774 | 10.380 RT |
| 14 | | *BL-14* | 245739.7250 | 524061.5260 | 259.231 | 30+98.725 | 11.569 RT |
| 15 | | *BL-15* | 245712.1030 | 524239.7810 | 258.141 | 32+76.956 | 4.997 LT |
| 16 | | *BL-16* | 245681.1250 | 524373.8290 | 256.558 | 34+14.536 | 4.721 LT |
| 17 | | *BL-17* | 245643.0180 | 524557.2790 | 258.855 | 36+02.238 | 5.192 LT |
| 18 | | *BL-18* | 245624.8980 | 524700.1400 | 259.873 | 37+46.369 | 7.813 LT |
| 19 | | *BL-19* | 245604.5630 | 524798.1960 | 259.317 | 38+45.472 | 5.920 LT |
| 20 | NCGS | *SUNOCO* | 245492.9130 | 524931.4420 | 256.221 | 40+19.978 | 13.125 RT |
| 21 | | *BL-21* | 245405.1720 | 525038.9250 | 256.418 | 41+57.728 | 14.431 RT |
| 22 | | *BL-22* | 245310.0290 | 525197.9180 | 256.121 | 43+41.342 | 5.084 RT |
| 23 | | *BL-23* | 245255.0990 | 525354.6830 | 255.283 | 45+06.780 | 6.101 RT |

| BY1 | POINT | DESC. | NORTH | EAST | ELEVATION | Y1 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 201 | | *BL-1* | 246238.6869 | 522115.1330 | 263.147 | 10+08.597 | 8.788 RT |
| 30 | | *BY-30* | 246091.4120 | 522091.5280 | 257.855 | OUTSIDE PROJECT LIMITS | |

| BY2 | POINT | DESC. | NORTH | EAST | ELEVATION | Y2 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|--------|
| 31 | | *BY-31* | 246415.0090 | 522154.5220 | 263.416 | OUTSIDE PROJECT LIMITS | |
| 301 | | *BL-1* | 246238.6869 | 522115.1330 | 263.147 | OUTSIDE PROJECT LIMITS | |

| BY3 | POINT | DESC. | NORTH | EAST | ELEVATION | Y3 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 202 | | *BL-2* | 246204.3600 | 522326.8850 | 266.273 | OUTSIDE PROJECT LIMITS | |
| 32 | | *BY-32* | 246096.8000 | 522306.4630 | 264.046 | 11+03.653 | 3.819 RT |

| BY4 | POINT | DESC. | NORTH | EAST | ELEVATION | Y4 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 203 | | *BL-3* | 246175.1780 | 522480.4090 | 264.928 | OUTSIDE PROJECT LIMITS | |
| 33 | | *BY-33* | 246061.5840 | 522478.3760 | 263.756 | 11+07.797 | 6.799 LT |

| BY5 | POINT | DESC. | NORTH | EAST | ELEVATION | Y5 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------|-----------|
| 204 | | *BL-4* | 246149.3000 | 522694.5670 | 268.662 | 10+05.683 | 34.140 LT |
| 34 | | *BY-34* | 246069.2520 | 522658.2250 | 269.031 | 10+89.409 | 7.337 LT |

| BY6 | POINT | DESC. | NORTH | EAST | ELEVATION | Y6 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 35 | | *BY-35* | 246295.0720 | 522886.7680 | 268.824 | OUTSIDE PROJECT LIMITS | |
| 305 | | *BL-5* | 246145.1440 | 522866.0070 | 266.394 | 11+43.221 | 7.250 RT |

| BY7 | POINT | DESC. | NORTH | EAST | ELEVATION | Y7 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 205 | | *BL-5* | 246145.1440 | 522866.0070 | 266.394 | OUTSIDE PROJECT LIMITS | |
| 36 | | *BY-36* | 246071.0600 | 522879.7110 | 265.222 | 10+86.694 | 5.642 LT |

| BY8 | POINT | DESC. | NORTH | EAST | ELEVATION | Y8 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 206 | | *BL-6* | 246129.7550 | 522990.0590 | 264.952 | OUTSIDE PROJECT LIMITS | |
| 37 | | *BY-37* | 246031.2670 | 522994.2020 | 261.976 | 10+92.960 | 5.421 LT |

| BY9 | POINT | DESC. | NORTH | EAST | ELEVATION | Y9 STATION | OFFSET |
|-----|-------|---------|-------------|-------------|-----------|------------------------|-----------|
| 39 | | *BY-39* | 246217.7780 | 523034.4520 | 266.875 | 10+54.448 | 5.815 LT |
| 38 | | *BY-38* | 246114.3420 | 523022.5330 | 265.613 | OUTSIDE PROJECT LIMITS | |
| 306 | | *BL-6* | 246129.7550 | 522990.0590 | 264.952 | 11+45.139 | 32.836 RT |

| BY10 | POINT | DESC. | NORTH | EAST | ELEVATION | Y10 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|-------------|----------|
| 207 | | *BL-7* | 246103.8780 | 523108.9060 | 266.444 | 10+07.052 | 8.187 LT |
| 40 | | *BY-40* | 246037.2600 | 523094.1140 | 264.375 | 10+74.235 | 3.781 RT |

| BY11 | POINT | DESC. | NORTH | EAST | ELEVATION | Y11 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|------------------------|--------|
| 41 | | *BY-41* | 246248.1120 | 523208.7190 | 259.869 | OUTSIDE PROJECT LIMITS | |
| 308 | | *BL-8* | 246089.0660 | 523224.9060 | 264.852 | OUTSIDE PROJECT LIMITS | |

| BY12 | POINT | DESC. | NORTH | EAST | ELEVATION | Y12 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 208 | | *BL-8* | 246089.0660 | 523224.9060 | 264.852 | 10+07.583 | 5.363 LT |
| 42 | | *BY-42* | 245940.3600 | 523209.7520 | 259.569 | OUTSIDE PROJECT LIMITS | |

| BY13 | POINT | DESC. | NORTH | EAST | ELEVATION | Y13 STATION | OFFSET |
|------|-------|-----------|-------------|-------------|-----------|-------------|----------|
| 43 | | *BY-43* | 246121.0030 | 523347.7140 | 265.679 | 11+16.870 | 6.139 LT |
| 309 | GPS | *U2717-3* | 246088.8300 | 523334.4460 | 264.588 | 11+48.052 | 9.310 RT |

| BY14 | POINT | DESC. | NORTH | EAST | ELEVATION | Y14 STATION | OFFSET |
|------|-------|-----------|-------------|-------------|-----------|------------------------|----------|
| 45 | | *BY-45* | 246199.6270 | 523449.0690 | 266.429 | 10+20.785 | 5.772 RT |
| 44 | | *BY-44* | 246092.8140 | 523471.6450 | 262.181 | 11+39.134 | 6.408 LT |
| 310 | GPS | *U2717-4* | 246051.6650 | 523609.6160 | 258.429 | OUTSIDE PROJECT LIMITS | |

| BY15 | POINT | DESC. | NORTH | EAST | ELEVATION | Y15 STATION | OFFSET |
|------|-------|-----------|-------------|-------------|-----------|-------------|-----------|
| 46 | | *BY-46* | 246185.3570 | 523570.0160 | 265.094 | 10+27.893 | 7.658 RT |
| 210 | GPS | *U2717-4* | 246051.6650 | 523609.6160 | 258.429 | 11+64.317 | 21.156 LT |

| BY17 | POINT | DESC. | NORTH | EAST | ELEVATION | Y17 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|-------------|-----------|
| 212 | | *BL-12* | 245907.3300 | 523813.5710 | 253.883 | 10+05.585 | 23.118 RT |
| 47 | | *BY-47* | 245821.2000 | 523789.3310 | 252.406 | 10+89.613 | 6.850 LT |

| BY18 | POINT | DESC. | NORTH | EAST | ELEVATION | Y18 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|------------------------|-----------|
| 214 | | *BL-14* | 245739.7250 | 524061.5260 | 259.231 | 10+11.222 | 12.098 LT |
| 48 | | *BY-48* | 245606.8340 | 524025.6640 | 258.769 | OUTSIDE PROJECT LIMITS | |

| BY19 | POINT | DESC. | NORTH | EAST | ELEVATION | Y19 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|------------------------|----------|
| 217 | | *BL-17* | 245643.0180 | 524557.2790 | 258.855 | OUTSIDE PROJECT LIMITS | |
| 49 | | *BY-49* | 245487.0640 | 524536.6130 | 253.272 | 11+52.141 | 5.162 RT |

| BY20 | POINT | DESC. | NORTH | EAST | ELEVATION | Y20 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|-------------|-----------|
| 50 | | *BY-50* | 245743.3890 | 524714.6550 | 257.654 | 10+23.974 | 5.621 LT |
| 318 | | *BL-18* | 245624.8980 | 524700.1400 | 259.873 | 11+42.384 | 12.433 RT |

| BY21 | POINT | DESC. | NORTH | EAST | ELEVATION | Y21 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|-------------|----------|
| 51 | | *BY-51* | 245718.2240 | 524881.2420 | 259.975 | 10+04.684 | 4.033 RT |
| 319 | | *BL-19* | 245604.5630 | 524798.1960 | 259.317 | 11+45.512 | 9.274 RT |

| BY22 | POINT | DESC. | NORTH | EAST | ELEVATION | Y23 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|-------------|------------|
| 221 | | *BY-52* | 245405.1720 | 525038.9250 | 256.418 | 10+01.616 | 124.060 RT |
| 56 | | *BY-56* | 245310.0290 | 525029.5500 | 255.787 | 10+87.956 | 83.471 RT |
| 57 | | *BY-57* | 245205.5410 | 525050.2220 | 253.281 | 11+67.271 | 12.884 RT |

| BY23 | POINT | DESC. | NORTH | EAST | ELEVATION | Y22 STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|-------------|-----------|
| 55 | | *BY-55* | 245753.5020 | 525365.5760 | 252.598 | 20+31.243 | 19.278 RT |
| 54 | | *BY-54* | 245534.6840 | 525116.9970 | 250.688 | 17+05.356 | 19.243 RT |
| 52 | | *BY-52* | 245425.9370 | 524809.4330 | 251.763 | 13+82.844 | 23.029 LT |
| 53 | | *BY-53* | 245288.3310 | 524542.4140 | 249.805 | 10+82.491 | 18.231 LT |

BENCHMARK DATA

| | | | |
|---|---------------------|---------------------------------------|---------------------|
| BM1 | ELEVATION = 257.530 | BM4 | ELEVATION = 261.244 |
| N 246259 | E 521915 | N 245767 | E 524167 |
| L STATION 9+60 | | L STATION 31+94 42 LEFT | |
| S 86° 51' 14.9" W DIST 118.528 | | RR SPIKE IN ROOT OF 3100MM BEECH | |
| RR SPIKE IN ROOT OF TRIPLE LOCUST | | | |
| BM2 | ELEVATION = 265.358 | BM5 | ELEVATION = 253.378 |
| N 246255 | E 522738 | N 245199 | E 525519 |
| L STATION 16+68 100 LEFT | | L STATION 45+54 | |
| CHISELED SQUARE IN NE CORNER OF CONC | | S 65° 59' 03.6" E DIST 128.306 | |
| DOUBLE DROP INLET | | CHISELED SQUARE IN CORNER OF CONC PAD | |
| | | FOR WATER VALVE | |
| BM3 | ELEVATION = 255.145 | | |
| N 245997 | E 523479 | | |
| L STATION 24+30 68 RIGHT | | | |
| RR SPIKE IN ROOT OF 1400MM MAPLE BEHIND | | | |
| FIRST WESLEYAN CHURCH | | | |

NOTES

- THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAYBE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/FILE](http://www.doh.dot.state.nc.us/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/FILE)
U2717_LS_GPSCALIB_040712.TXT
U2717_LS_WGS84_040712.TXT
U2717_LS_LOCAL_040712.TXT
U2717_LS_CONTROL_040712.TXT
THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "SUNOCO" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 245492.913(m) EASTING: 524931.442(m) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999913125 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SUNOCO" TO L- STATION 9+80.00 IS N 75° 03' 28.9" W 2,979.321(m) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29