

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE GOVERNOR EUGENE A. CONTI, JR. Secretary

July 8, 2010

| To: | Group Leaders |
|-----|----------------|
| | Area Engineers |

From: Charles W. Brown, PE, PLS State Location & Surveys Engineer

Subject: Proc 2010-1 Table of Right Of Way/Easement Points

Beginning now, we will implement a new procedure which will involve the creation of a table of right of way monuments and permanent easement, to be included in the TIP plans. These tables will provide station and offset and North/East coordinates. The attached letter to Jay Bennett, PE, State Roadway Design Engineer, provides details as to the process and timeline. The attached plan sheet samples show the full set of pages that L&S is responsible for in plans, including examples of the new tables of points. Emory Kincaid will be sending out instructions on use of an mdl application that will assist in the development of these tables.

You will now receive an LS number associated with preliminary field inspections. Under this number you should review plans for accuracy and completeness, including

- Verify/update planimetrics and any property (property subdivisions, name changes, etc.)
- Create initial monument/easement chart; verify correct placement (computed station/offset vs text). Any completed or anticipated revisions should be reported at the field inspection.

You already receive an LS number for Right Of Way staking. This will now include creation of the preliminary tables to be included in right of way plans. Any revisions to monuments/easements should be updated as you get them.

You already receive an LS number for final field verification of all right of way monuments. This will now include completion of the final and correct tables of monuments/easements, to be included in recorded plans.

This process should reduce or eliminate a small portion of the work you do. The surveyors that I have spoken to in North Carolina are very excited about this. This will help them in doing their work, and hopefully minimize your involvement. Designers are excited about the use of the program, to help them check point placement, which should minimize your corrections.

Thank you for your assistance in making this happen. If you have questions or comments, please don't hesitate to pass those on to your Regional Engineer or call Dale Burton or me directly.

CWB

Telephone: 919-250-4109 FAX: 919-250-4223

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION: CENTURY CENTER COMPLEX BUILDING B - ENTRANCE B4 1020 BIRCH RIDGE DRIVE RALEIGH NC 27610 Proc 2010-1.doc



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE GOVERNOR

To:

EUGENE A. CONTI, JR. Secretary

June 10, 2010

| Mr. J. A. Bennett, PE |
|-------------------------------|
| State Roadway Design Engineer |

From: Charles W. Brown, PE, PLS // State Location & Surveys Engineer

Subject: Addition of Survey Sheets to Highway Plans Centerline Control Points Coordinate List Right Of Way/Easement Points Coordinate List

In addition to the survey control data already included in the highway plans (baseline control, calibration data), Location & Surveys will be adding pages containing charts for coordinates of all centerline control points, right of way monuments, and permanent easement points. These sheets will be included in the Survey Data sheets (1A, 1B, etc.) on highway plans, beginning with the October 2010 Construction Let plans. Attached is a sample set of Survey Data Sheets, with proposed coordinate list included.

The creation of these sheets will be the responsibility of Location & Surveys personnel, with assistance from your staff. The process as defined will be:

Design

• L&S will prepare Project Calibration/Baseline Control sheets at time of RDU sending project to Hydro, for inclusion in plans (this has not changed)

Final Design Field Inspection/Combined Field Inspection (prior to Right Of Way authorization)

• At the time of printing and sending out the Final Design Field Inspection/Combined Field Inspection plans, RDU includes L&S in notification (current procedure). Upon receipt of the preliminary Right Of Way plans for Field Inspection, the L&S field office runs program to check monument locations for accuracy and reports to RDU at field inspection (Project Control sheets should be included at this time - if not, L&S prepares those at this time); RDU makes revisions to right of way based on field inspection comments

Right Of Way Plans Submittal

 RDU provides L&S a link to final R/W plans prior to R/W Plans distribution (email to L&S Unit head is sufficient – this is forwarded to appropriate field office)

MAILING ADDRESS: NC DEPARTMENT OF TRANSPORTATION LOCATION & SURVEYS UNIT 1588 MAIL SERVICE CENTER RALEIGH NC 27699-1588 TELEPHONE: 919-250-4109 FAX: 919-250-4223

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION: CENTURY CENTER COMPLEX BUILDING B -ENTRANCE B4 1020 BIRCH RIDGE DRIVE RALEIGH NC 27610 ROW Coordinate Lists - letter to bennett.doc Addition of Survey Sheets to Highway Plans May 3, 2010 Page 2 of 2

- L&S creates file of Centerline and R/W-Easement charts (labeled "Preliminary") for inclusion in plans. These charts go to RDU and to R/W Branch (Grady Morris) within 2 weeks of R/W Plans submittal.
- Grady Morris sends this file along with preliminary plans to County GIS/Tax offices
- RDU includes these sheets in any further transmittals of the R/W Plans

Final/Pre-Let Activities

- 12 weeks prior to Let RDU sends plans for plan checking, includes L&S in notification (current procedure)
- 10 weeks prior to Let L&S sends final r/w-easement chart (labeled "Final") to RDU for inclusion in plans
- Right Of Way Branch includes all sheets (1A, 1B, etc.) in plans to be recorded.

The inclusion of these right of way and easement point coordinates will help permanently monument NCDOT rights of way and easements, with or without the existence of monuments in the ground. This information will assist in NCDOT or private surveyors in the re-establishment of rights of way after construction has been completed. As such, it is imperative that an up-to-date and correct set of coordinates be included in future plans recorded in the appropriate Registers of Deeds offices.

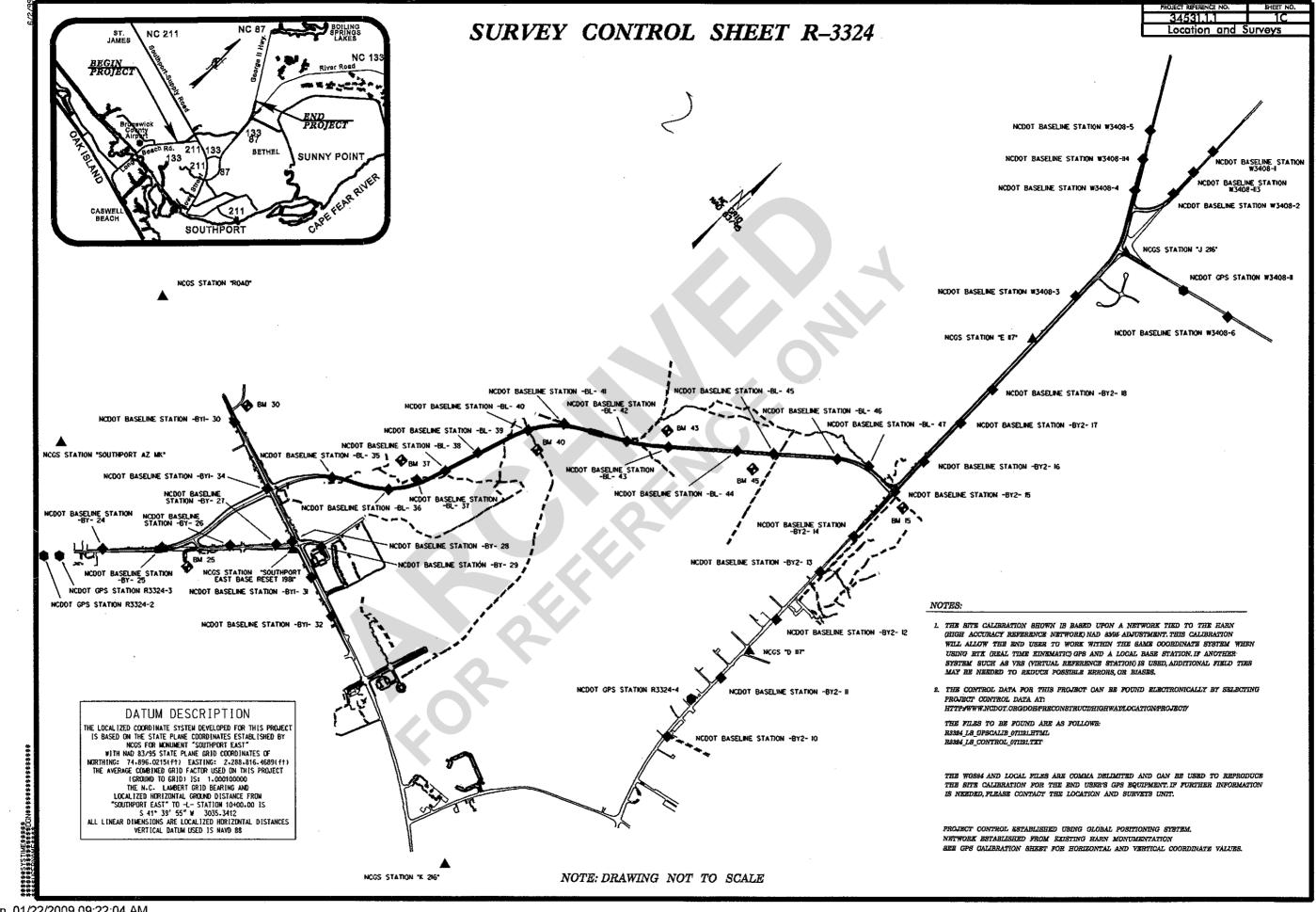
The process described above does not alter or replace the intent of the memo dated April 7, 2008 with Subject "Right Of Way Plan Sheet Revisions".

Thank you for your assistance in this matter. Someone from my staff will be available if needed to discuss the intent or actions involved in this procedure with the Roadway Design Unit, upon your request. Please do not hesitate to contact me with any questions or comments.

CWB

Attachment: Sample Survey Control Sheets Pages 1C – 1H

Cc: Mr. Art McMillan, PE Ms. Judy Joines Mr. Virgil Pridemore



r3324 ls_1c_071121.dgn 01/22/2009 09:22:04 AM

| GPS CALIBRATION REPORT | | | | | |
|--|--|-------------|---------------------------------|--|--|
| PROJECT : R3324 | | | | | |
| TIP NUMBER | R3324 | | | | |
| user name | JNEAL | DATE & TIME | 11:52:31 AM 10/10/2005 | | |
| | us state plane 1983(at ground) Naŭ 1983 (conus) | ZONE | NORTH CAROLINA 3200 | | |
| VERTICAL DATUM | | | GEOIDØ3 (CONUS) NC Suré Grid | | |
| COORDINATE UNITS DISTANCE UNITS HEIGHT UNITS | US SURVEY FEET US SURVEY FEET | | | | |
| LOCAL SITE INFORMAT LOCAL IZED AROUND LATITUDE LONGITUDE SITE SCALE FACTOR HEIGHT | TION 33>57*07.08872*N 78×02*51.95161*¥ 0.9999000100 -\$7.8847SFT | | | | |
| THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED. PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS. THIS FILE IS TO AND IN THE USE OF REAL TIME KINEMATIC (RTK) OPS DURING | | | | | |

ING CONSTRUCTION LAYOUT. *****

DATUM TRANSFORMATION PARAMETERS

DATUM TRANSFORMATION COMPUTATION NOT REQUESTED

UPDATED DEFAULT PROJECTION (TRANSVERSE MERCATOR) DEFINITION

.....

UPDATED DEFAULT PROJECTION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS

| NORTHING COORDINATE OF | |
|---------------------------|-----------------|
| ROTATION CENTER | 76973.8767SFT |
| EASTING COORDINATE OF | |
| ROTATION CENTER | 2288670.7106SFT |
| ROTATION ABOUT THE CENTER | |
| POINT | 0-00-00 |
| TRANSLATION NORTH | -0.0018SFT |
| TRANSLATION EAST | -0.0220SFT |
| SCALE FACTOR | 1.02090183 |

VERTICAL ADJUSTMENT PARAMETERS

| NORTHING COORDINATE OF | |
|------------------------------|-----------------|
| ORIGIN POINT | 86560.1485SFT |
| EASTING COORDINATE OF ORIGIN | |
| POINT | 2294460.6210SFT |
| VERTICAL SEPARATION AT | |
| ORIGIN | -0.0522SFT |
| SLOPE NORTH | -5,299PPM |
| SLOPE EAST | 0.521PPM |
| | |

-----GEOID MODEL DEFINITION

GEOID03 (CONUS) NC SUB GRID

RESIDUAL DIFFERENCES BETWEEN GPS (VGS84) AND LOCAL COORDINATES

SUMMARY

| | MAXIMUM ERROR | ROOT MEAN SQUARE ERROR | POINT |
|---------------------|---------------|------------------------|-------------|
| HORIZONTAL | 0.041SFT | 0.907 | K 216_0PS |
| VERTICAL | 0.006SFT | 0.001 | R3324-3_0PS |
| THREE - DIMENSIONAL | 0.041SFT | 0.007 | K 216_GPS |

| | POINT RESIDUALS | | |
|---|--|---|--|
| WGS84 COORDINATES | Calculated Point For Display Only | LOCAL COORDINATES | |
| POINT ¥3408-11_GPS LATITUDE 33-59*21.92596*N LONGITUDE 78-81*43.60234*¥ HEIGHT -84.5267SFT | EASTING 2294460.6210SFT ELEVATION 36.8964SFT | POINT W3408-11 NORTHING 85550.13355FT EASTING 2294460.62215FT ELEVATION 36.89635FT UTILIZED HORZ AND VERT ADJUSTED QUALITY | POINT SOUTHPORT LATITUDE 33-57-07.1 LONGITUDE 78-02-51. HEIGHT -87.1 |
| POINT J 216_GPS LATITUDE 33×58′59,62175*N LONGITUDE 78+01*54,71623*¥ HEIGHT -81,9499SFT | ELEVATION 39.4448SFT | OUALITY POINT J 216 NORTHING 96318.0651SFT EASTING 2293527.01873FT ELEVATION 39.4455SFT UTILIZED HORZ AND VERT QUALITY CONTROL QUALITY | POINT R3324 LATITUDE 33-56-37. LONGITUDE 78-03-24. HEIGHT -85. |
| POINT E 117_GPS LATITUDE 33•58*42.01259*N LONGITUDE 78•01*54.66794*¥ HEIGHT -85.47938FT | EASTING 2293548.4468SFT ELEVATION 35.9634SFT | POINT E 117 NORTHING 84538.0924SFT EASTING 2293548.4502SFT ELEVATION 35.9678SFT UTILIZED HORZ AND VERT QUALITY CONTROL QUALITY | POINT R3324 LATITUDE 33*56*28. LONGITUDE 78*83*33. HEIGHT -182 |
| POINT D 117_GPS LATITUDE 33+57'44,16419'N LONGITUDE 78+01'48,53524'V HEIGHT -90,5931SFT | NORTHING 78695.52685FT EASTING 2294122.02995FT ELEVATION 31.02035FT HORZ ERROR 0.01085FT VERT ERROR 0.01085FT 30 ERROR 0.01085FT | POINT D 117 NORTHING 78696,52928FT EASTING 2294122.03915FT ELEVATING 2094122.03915FT UTILIZED HORZ AND VERT ADJUSTED QUALITY OUALITY | POINT SOUTHPORT LATITUDE 33-55-38,1 LONGITUDE 78-94-44,2 HEIGHT 194,3 |
| PDINT R3324-4_GPS LATITUDE 33-57'33.90333'N LONGITUDE 78-01'48.81454'W HEIGHT -90,7804SFT | NORTHING 77658.8739SFT EASTINO 2294108.6372SFT ELEVATION 30.8585SFT NORZ ERROR 0.017SFT VERT ERROR 0.003SFT 3D ERROR 0.017SFT | PDINT R3324-4 NORTHING 77658.88725FT EASTING 2294108.64715FT ELEVATION 30,95595FT UTILIZED HORZ AND VERT ADJUSTED DUALITY UUALITY | POINT RO LATITUDE 33-57-59. LONGITUDE 78-06-28. HEIGHT -69. |
| POINT K 216_0PS LATITUDE 33-56-19,55166*N LONGITUDE 78-01'34.08894*V HEIGHT -99,24015FT | ELEVATION 22.6212SFT | POINT K 216 NORTHING 70153,70665FT EASTING 2295355,35256FT ELEVATION 22.62135FT UTILIZED HORZ AND VERT QUALITY CONTROL QUALITY | |

DATUM DESCRIPTION THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "SOUTHPORT EAST BASE RESET 1981" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 74-896-0215(ft) EASTING: 2-288-816-4689(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) 1S: 1.000100000 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SOUTHPORT EAST " TO -L- STATION 10+00-00 IS S 41°39' 55" W 3035-3412 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

- PROJECT CONTROL DATA AT:
 - RS384_LS_GPSCALIB_071121_RTML RS884_LS_CONTROL_071121_FXT

THE WGSH AND LOCAL FILES ARE COMMA DELIMITED AND CAN HE URED TO HEPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, FLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED UBING GLOBAL POSITIONING SYSTEM, NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION SEE OFS CALIERATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

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| T | PROJECT REFERENCE NO. | SHEET NO. |
|---|-----------------------|-----------|
| С | 34531.1.1 | 1 1D |
| Г | Location and | Surveys |

| THPORT EBGPS | NORTHING | 74896.0158SFT | POINT SOUTHPORT EB |
|------------------------|------------|-----------------|--|
| 57' 07.08872" N | EASTING | 2288816.4465SFT | NORTHING 74896.0215SFT |
| 02'51.95161'V | ELEVATION | 33.6079SFT | EASTING 2288816,4689SFT |
| -87.8941SFT | HORZ ERROR | Ø.023SF7 | ELEVATION 33.6023SFT |
| | VERT ERROR | Ø. ØØ6SFT | UTILIZED HORZ AND VERT |
| | 3D ERROR | 0.0245FT | QUALITY CONTROL QUALITY |
| | | | |
| R3324-3_GPS | NORTHING | 71868.6673SFT | POINT R3324-3 |
| 56' 37. 39808"N | EASTING | 2286117.3215SFT | NORTHING 71868.67315FT |
| 03°24.33096"V | ELEVATION | 35.5067SFT | EASTING 2286117.3230SFT |
| -85.9584SFT | HORZ ERROR | Ø.006SFT | ELEVATION 35.5132SFT |
| | VERT ERROR | 0.006SFT | UTILIZED HORZ AND VERT |
| | 3D ERROR | 0.009SFT | ADJUSTED |
| | | | QUALITY |
| | | | DUAL 1 TY |
| | | | |
| R3324-2_GPS | NORTHING | 70968.5914SFT | PDINT R3324-2 |
| 56'28.56678"N | EASTING | 2285350.7807SFT | NDRTHING 70968.5936SFT |
| 03133.52993*¥ | ELEVATION | 19.0419SFT | EASTING 2285350.7670SFT |
| -102.4122SFT | HORZ ERROR | Ø.014SFT | ELEVATION 19.0429SFT |
| | VERT ERROR | 0.001SFT | UTILIZED HORZ AND VERT |
| | 3D ERROR | 0.014SFT | AD JUSTED |
| | | | QUALITY |
| | | | QUALITY |
| | | | |
| THPORT AZ MK_ | NORTH1NG | 65045.3128SFT | POINT SOUTHPORT AZ HK |
| 55′3 0. 52359°N | | 2279444.5691SFT | NORTHING 65045.3104SFT |
| 04′44.27846 ¥ | ELEVATION | 16.9423SFT | EASTING 2279444.5312SFT |
| 104.3983SFT | HORZ ERROR | Ø.038SFT | ELEVATION 16.9422SFT |
| | VERT ERROR | 0.000SFT | UTILIZED HORZ AND VERT |
| | 3D ERROR | 0.038SFT | QUALITY CONTROL QUALITY |
| ROAD_GPS | NORTHING | 80010.4292SFT | POINT ROAD |
| 57'59.35969"N | | 2270526.3631SFT | NORTHING SOULD.4111SFT |
| 06'28.50573"V | ELEVATION | 51.3332SFT | EASTING 2270326.33455FT |
| -69.30785FT | | | EASTING 227/0526.35455FT ELEVATION 51.33195FT |
| -04,30/851 | HORZ ERROR | Ø.020SFT | UTILIZED HORZ AND VERT |
| | VERT ERROR | 0.001SFT | |
| | 30 Error | 0.020SFT | ADJUSTED |
| | | | QUALITY |
| | | | QUALITY |

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK THED TO THE HARN (HIGH ACCURACY REFERENCE NETWORE) NAD SUSS ADJUSTMENT. THIS CALIFRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE STREEM WHEN USING ETT (REAL THE RIVERATIC) OF AND A LOCAL BASE STATION IF ANOTHER STRTEM EUCH AS YES (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD THES MAY HE NEEDED TO REDUCE POSSIBLE REFORMOR OF BLASHES,

2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY BELECTING

HTTP-WWW.NCDOT.ORGDOE/PRECONSTRUCT/HIGHWAYLOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:

| POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|---|--|--|---|---|--|--|
| A34 | BY1-34 | 75202.5510 | 2287943.7399 | 33.71 | 39-14.83 | 52.90 LT |
| 35 | BL-35 | 75973.7432 | | 33.53 | 48-34.87 | 11.08 RT |
| 36 | BL-36 | 76455.7410 | 2289086.9850 | 33.45 | 56-58,15 | 10.71 RT |
| 37 | BL-37 | 76835,2150 | 2289248,9898 | 36.71 | 60.66.63 | 52,85 LT |
| 38 | BL-38 | | 2289426.1850 | 32.48 | 64.89.09 | 7.26 RT |
| 39 | BL-39 | | 2289545.0610 | 33.41 | 70.15.39 | 12.40 LT |
| 40 | BL-40 | 78456,1520 | 2289776.2710 | 33.89 | 77.77.62 | 1.86 RT |
| ¥1 | 8L-41 | 78885.4310 | 2290846.0910 | 31.46 | 82-81.82 | 28.28 LT |
| 42 43 | BL-42 BL-43 | 79375.0050 | 2292812.7152 | 38.37 | 91.85.92 | 1.06 RT |
| +3 | BL-44 | | 2291262,9340 2291943,3556 | 32.36 33.13 | 97-78.07 107-39.05 | 4.53 RT 6.72 LT |
| 15 | BL-45 | | 2292311.0410 | 36.10 | | 0.92 LT |
| 16 | BL-46 | | 2292965.1368 | 31.50 | 121 45.44 | 12.13 RT |
| 17 | BL-47 | | 2293330.6540 | 29.82 | 125-88.40 | 36.81 LT |
| 15 | BY2-15 | | 2293846.27% | 32,70 | | |
| | | | | | | |
| BY POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
| 4 | By-24 | 72935.5128 | 2287028.9762 | 33.74 | 13.82.96 | 24.63 LT |
| 25 | Br-25 | | 2287562.8770 | 11.95 | | 17.22 LT |
| | | | | | | |
| BY | | | | | | |
| POINT | DESC. | NORTH | EAST | ELEVATION | Y STATION | OFFSET |
| 26 | BY-26 | 74287.8300 | 2288185.0569 | 28.52 | 15-68.53 | 29.82 LT |
| 27 | BY - 27 | 74775.1852 | 2288603.7110 | 35.15 | 22.11.00 | 25.27 LT |
| 8 | BY -28 | 74968.1233 | 2288723.37% | 35.61 | 24+35,57 | 58.63 LT |
| | | | | | | |
| ÎY POINT | DESC. | NORTH | EAST | ELEVATION | Y5 STATION | OFFSET |
| ••••• | | | | | | |
| 29 | BY-29 | 75222.2089 | 2289047.3788 | 34.84 | 13.26.92 | 43.08 RT |
| | | | | | | |
| 3Y1 | | | EAST | ELEVATION | | OFFSET |
| POINT | DESC. | NORTH | DH01 | | Y1 STATION | |
| | | | •••••• | | | ~~~~~ |
| 10 | BY1-30 | 75483.9370 | 2286957.9690 | 20.17 | 14.00 12 | 28.05 RT |
| 30 34 | BY1-30 BY1-34 | 75483.9370 75202.5510 | 2286957.9690 2287943.7390 | 39.17 33.71 | 14+96.12 24+31.23 | 28.05 RT 36.80 RT |
| 19 14 128 | BY1-30 BY1-34 BY-28 | 75483.9370 75202.5510 74968.1233 | 2286957.9690 2287943.7390 2288723.3796 | 39.17 33.71 35.61 | 14+96.12 24+31.23 32+45.15 | 28.05 RT 36.80 RT 55.17 RT |
| 均 約 約 約 約 約 約 | BY1-30 BY1-34 | 75483.9370 75202.5510 | 2286957.9690 2287943.7390 2288723.3796 | 39.17 33.71 | 14+96.12 24+31.23 | 28.05 RT 36.80 RT |
| 均 約 約 約 約 約 約 | BY1-30 BY1-34 BY-28 BY1-31 | 75483.9370 75202.5510 74968.1233 74833.9320 | 2286957.9690 2287943.7390 2288723.3796 2289272.5890 | 39.17 33.71 35.61 32.91 | 14.96.12 24.31.23 32.45.15 38.10.26 | 28.05 RT 36.80 RT 55.17 RT 38.28 RT |
| 59 54 52 58 51 52 57 57 57 2 | BY1-30 BY1-34 BY-28 BY1-31 BY1-32 | 75483, 9370 75282, 5510 74968, 1233 74833, 9328 74679, 9338 | 2286957.9690 2287943.7390 2288723.3796 2289272.5890 2289272.5890 2239860.7030 | 30.17 33.71 35.61 32.91 27.99 | 14-86, 12 24-31, 23 32-45, 15 38-10, 26 44-18, 15 | 28.05 RT 36.80 RT 55.17 RT 38.28 RT 30.12 RT |
| 99 94 128 11 12 12 12 172 POINT | BY1-30 BY1-34 BY-28 BY1-31 BY1-32 DESC. | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 NORTH | 2286957.9690 2287943.7396 2289723.3796 2289272.5890 2289860.7030 EAST | 30.17 33.71 35.61 32.91 27.99 ELEVATION | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION | 28.65 RT 36.80 RT 55.17 RT 38.29 RT 38.29 RT 39.12 RT |
| 99 94 928 91 92 90 90 90 90 | BY1-30 BY1-34 BY-28 BY1-31 BY1-32 DESC. BY2-10 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 NORTH 77949.6880 | 2286957.9698 2287943.7398 2289723.3796 2289272.5898 2289272.5898 2289868.7038 EAST 2294238.9728 | 30.17 33.71 35.61 32.91 27.99 ELEVATION 29.07 | 14-06.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION | 28.65 RT 26.80 RT 55.17 RT 38.28 RT 38.12 RT 39.12 RT 0FFSET T LIMITS |
| 99 94 928 91 12 90 INT 99 1 | BY1-30 BY1-34 BY-28 BY1-31 BY1-32 DESC. BY2-10 BY2-11 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 NORTH 77049.6000 78154.4880 | 2286957.9690 2287943.7390 2289723.3796 2289272.5899 2289560.7030 EAST 2294238.9728 2294238.9728 2294137.8630 | 30.17 33.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC | 28.65 RT 36.80 RT 55.17 RT 38.28 RT 39.12 RT 0FFSET T LIMITS T LIMITS |
| 19 14 128 13 13 14 14 14 17 19 11 11 17 | BY1-30 BY1-34 BY-28 BY1-31 BY1-32 DESC. BY2-10 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 NORTH 77049.6000 78154.4880 78154.4880 | 2286957.9698 2287943.7398 2289723.3796 2289272.5898 2289272.5898 2289868.7038 EAST 2294238.9728 | 30.17 33.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.00 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC | 28.65 RT 26.80 RT 55.17 RT 38.28 RT 38.12 RT 39.12 RT 0FFSET T LIMITS T LIMITS T LIMITS |
| 9 9 14 28 11 12 POINT 9 1 1 117 2 | BY1-30 BY1-34 BY28 BY1-31 BY1-32 DESC. DESC. BY2-10 BY2-11 NCGS D 117 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 NORTH 77049.6000 78154.4880 | 2286957, 9698 2287943, 7398 2289723, 3796 228922, 5898 228922, 5898 2289262, 5898 2289262, 5898 2289262, 5898 2294238, 9728 2294238, 9728 2294137, 8638 2294122, 0398 | 30.17 33.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC | 28.65 RT 26.80 RT 55.17 RT 38.28 RT 30.12 RT 30.12 RT T LIMITS T LIMITS T LIMITS T LIMITS |
| 9 44 228 11 22 POINT 9 1 1 11 7 2 3 4 | BY1-30 BY1-34 BY1-34 BY1-38 BY1-31 BY1-32 DESC. BY2-10 BY2-11 NCGS D 111 BY2-12 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 74679.9330 78154.4880 78154.4880 78154.4880 78267.5290 | 2286957.9698 2287943.7398 2289723.3796 2289272.5898 2289272.5898 2289868.7838 2289868.7838 EAST 2294123.8638 2294122.8398 22944122.8398 | 30.17 31.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.00 31.82 30.83 31.93 20.07 | 14-06.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC | 28.65 RT 26.80 RT 55.17 RT 38.28 RT 30.12 RT 30.12 RT T LIMITS T LIMITS T LIMITS T LIMITS |
| 90 14 228 POINT 90 1 1 117 2 3 3 4 5 | BY1-30 BY1-34 BY-28 BY1-31 BY1-32 DESC. BY2-10 BY2-11 NCGS D 117 BY2-12 BY2-13 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 74679.9330 74679.9330 78154.4880 78154.4880 782655.5290 79267.9830 80169.6470 80859.2390 81695.4670 | 2286957.9690 2287943.7390 2288723.3796 2289272.5899 2289560.7030 EAST 2294238.9728 2294137.8630 2294137.8630 2294122.0390 2294466.6640 2293959.0540 | 30.17 31.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.00 31.82 30.83 30.87 32.76 | 14-06.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC | 28.65 RT 36.80 RT 55.17 RT 38.28 RT 38.12 RT 39.12 RT 0FFSET T LIMITS T LIMITS T LIMITS T LIMITS T LIMITS |
| 99 14 128 12 12 12 10 11 11 11 2 3 4 5 6 | BY1-30 BY1-34 BY-28 BY1-31 BY1-32 DESC. BY2-19 BY2-11 NCGS D 117 BY2-13 BY2-13 BY2-14 BY2-16 | 75483.9370 75202.5510 74968.1233 74968.1233 74833.9320 74679.9330 NORTH 77049.6000 78154.4880 78695.5290 79267.9830 50165.8470 90650.2390 81695.4670 82276.9570 | 2286957,9690 2287943,7390 2288723,3796 2289272,5890 2289560,7030 EAST 2294238,9720 2294238,9720 2294137,8630 2294137,8630 2294122,0390 2294046,6640 2293913,9220 2293913,9220 2293913,9220 | 30.17 33.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.02 30.69 31.93 39.67 32.70 33.16 | 14-06.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 15-22.19 23-70.16 29-55.50 | 28.65 RT 26.80 RT 55.17 RT 38.28 RT 38.28 RT 39.12 RT 0FFSET DFFSET T LIMITS T LIMITS T LIMITS T LIMITS T LIMITS 18.55 RT 19.55 RT 17.61 RT |
| 99 14 128 121 122 90 11 11 17 22 3 3 4 5 6 6 7 | BY1-30 BY1-34 BY1-34 BY1-32 BY1-31 BY1-32 DESC. BY2-10 BY2-13 BY2-14 BY2-14 BY2-15 BY2-15 BY2-17 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 74679.9330 74679.9330 74679.9330 78154.4880 78154.4880 78695.5570 79267.9838 60168.8470 80659.2370 81695.4690 8278.9578 83015.5630 | 2286957, 4698 2287443, 7390 2288723, 3796 2289222, 5899 22895860, 7030 EAST 2294238, 9728 2294137, 8630 2294137, 8630 2294137, 8630 2294137, 8630 2294137, 8630 2294964, 6640 2293969, 0540 2293969, 0540 2293969, 0540 2293969, 0540 2293969, 0540 2293969, 0540 2293969, 0540 22939799, 7050 | 30.17 30.17 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.02 30.83 31.93 30.87 32.76 33.16 33.26 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 72 STATION 0UTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 005-55,59 36-94.49 | 28.65 RT 26.80 RT 55.17 RT 36.28 RT 36.12 RT 36.12 RT 0FFSET T LIMITS T LIMITS T LIMITS T LIMITS I LIMITS I 18.55 RT 17.61 RT 15.67 RT |
| 5 5 5 5 5 5 5 5 6 7 8 5 5 6 7 8 5 5 6 7 8 5 6 7 8 5 6 7 8 5 6 7 7 8 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 | BY1-30 BY1-34 BY1-34 BY-28 BY1-31 BY1-32 DESC. BY2-10 BY2-11 NCGS D 11 BY2-12 BY2-13 BY2-13 BY2-15 BY2-15 BY2-16 BY2-18 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 74679.9330 74679.9330 78154.4880 78154.4880 78259.5290 792627.9830 80165.8470 801655.4670 82278.9570 83015.5630 83654.9940 | 2286957.9698 2287943.7398 2288723.3796 2289272.5898 2289272.5898 2289868.7838 2294122.0398 22944137.8638 22944122.0398 229446.6648 2293969.0548 2293913.9228 2293946.6648 2293984.52798 2293946.5848 | 30.17 31.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.80 31.93 30.87 31.93 30.87 33.81 33.61 33.81 | 14-06.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 0UTSIDE PROJEC 000 STATE 000 STATE | 28.65 RT 36.80 RT 55.17 RT 38.28 RT 39.12 RT 39.12 RT 10FFSET T LIMITS T LIMIT |
| 59 54 528 51 52 52 50 50 51 51 51 55 66 7 7 88 51 51 51 52 53 54 55 56 56 7 7 11 7 56 56 57 51 51 51 52 51 52 52 52 52 52 52 52 52 52 52 52 52 52 | BY1-30 BY1-34 BY2-35 BY1-31 BY1-32 BY1-32 BY2-13 BY2-14 BY2-15 BY2-15 BY2-15 BY2-15 BY2-17 BY2-17 BY2-17 BY2-17 BY2-18 BY2-17 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-18 BY2-18 BY2-19 BY2-18 BY2-19 BY2-11 BY2-12 BY2-11 BY2-12 BY2-11 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-13 BY2-14 BY2-16 BY2-17 BY | 75483.9370 75202.5510 74968.1233 74968.1233 74679.9330 74679.9330 74679.9330 74679.6000 78154.4880 78695.5290 79267.9830 80168.8470 80659.2390 81695.4670 802579.9570 83915.5630 83254.9940 84533.9920 | 2286957, 9698 2287943, 7398 2288723, 3796 2289722, 2599 228922, 2599 228928, 2599 2289868, 7839 2294288, 9728 2294137, 8639 2294122, 0398 2293969, 0548 2293964, 0548 2293964, 0548 229394, 0548 22939740, 3648 22939740, 3648 | 30.17 33.71 35.61 32.91 27.99 27.99 ELEVATION 29.07 31.00 30.89 31.93 30.97 32.70 33.16 33.26 33.91 35.97 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 00155.50 36-94.49 43-35.92 52-27.35 | 28.65 RT 26.80 RT 55.17 RT 38.28 RT 38.28 RT 39.12 RT 39.12 RT 100FFSET 0FFSET 11.1115 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 8.55 RT 17.61 RT 15.67 RT 14.00 RT 56.78 LT |
| 872 POINT POINT 9 1 1 1 1 1 2 3 4 5 6 6 6 6 7 8 3 3 4 5 6 6 1 7 1 3 3 4 5 6 6 6 6 7 1 3 3 3 3 3 3 3 3 3 3 3 3 3 | BY1-30 BY1-34 BY1-34 BY1-32 BY1-31 BY1-32 DESC. BY2-10 BY2-12 BY2-12 BY2-12 BY2-13 BY2-14 BY2-15 BY2-16 BY2-16 BY2-17 BY2-18 BY2-19 NCGS E 117 NCGS E 117 NCGS E 117 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 74679.9330 74679.9330 74679.9330 78154.4880 78154.4880 78267.9830 80168.8470 80656.2390 81595.4690 82276.9570 83915.5630 83654.9040 84538.9220 85388.3730 | 2286957, 4690 228743, 7390 2288723, 3796 2289272, 5890 2289262, 7030 2289260, 7030 2294233, 9720 2294137, 8630 2294137, 8630 2294137, 8630 2294137, 8630 229396, 6540 2293966, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 | 30.17 30.17 35.61 32.91 27.99 27.99 ELEVATION 29.07 31.00 31.02 30.89 31.93 30.87 32.76 33.26 33.26 33.26 33.26 33.21 33.26 33.26 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 15-22.19 23-79.16 29-55.50 36-94.49 43-35.92 52-27.35 60-78.86 | 28.65 RT 36.80 RT 36.28 RT 36.12 RT 36.12 RT 36.12 RT 36.12 RT 100FFSET 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 8.55 RT 17.61 RT 15.67 RT 15.67 RT 12.9.66 LT |
| 39 34 328 372 POINT POINT 10 11 12 13 14 15 16 16 17 13 13 13 14 15 16 17 13 13 14 15 16 17 18 19 19 19 19 19 19 19 19 19 19 | BY1-30 BY1-34 BY2-35 BY1-31 BY1-32 BY1-32 BY2-13 BY2-14 BY2-15 BY2-15 BY2-15 BY2-15 BY2-17 BY2-17 BY2-17 BY2-17 BY2-18 BY2-17 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-17 BY2-18 BY2-18 BY2-18 BY2-19 BY2-18 BY2-19 BY2-11 BY2-12 BY2-11 BY2-12 BY2-11 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-12 BY2-13 BY2-14 BY2-16 BY2-17 BY | 75483.9370 75202.5510 74968.1233 74968.1233 74679.9330 74679.9330 74679.9330 74679.6000 78154.4880 78695.5290 79267.9830 80168.8470 80659.2390 81695.4670 802579.9570 83915.5630 83254.9940 84533.9920 | 2286957, 9698 2287943, 7398 2288723, 3796 2289722, 2599 228922, 2599 228928, 2599 2289868, 7839 2294288, 9728 2294137, 8639 2294122, 0398 2293969, 0548 2293964, 0548 2293964, 0548 229394, 0548 22939740, 3648 22939740, 3648 | 30.17 33.71 35.61 32.91 27.99 27.99 ELEVATION 29.07 31.00 30.89 31.93 30.97 32.70 33.16 33.26 33.91 35.97 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 00155.50 36-94.49 43-35.92 52-27.35 | 28.65 RT 26.80 RT 55.17 RT 38.28 RT 38.28 RT 39.12 RT 39.12 RT 100FFSET 0FFSET 11.1115 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 8.55 RT 17.61 RT 15.67 RT 14.00 RT 56.78 LT |
| 39 34 34 32 50 50 50 50 50 50 50 50 50 50 | BY1-30 BY1-34 BY1-34 BY1-32 BY1-31 BY1-32 DESC. BY2-10 BY2-12 BY2-12 BY2-12 BY2-13 BY2-14 BY2-15 BY2-16 BY2-16 BY2-17 BY2-18 BY2-19 NCGS E 117 NCGS E 117 NCGS E 117 | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 74679.9330 74679.9330 74679.9330 78154.4880 78154.4880 78267.9830 80168.8470 80656.2390 81595.4690 82276.9570 83915.5630 83654.9040 84538.9220 85388.3730 | 2286957, 4690 228743, 7390 2288723, 3796 2289272, 5890 2289262, 7030 2289260, 7030 2294233, 9720 2294137, 8630 2294137, 8630 2294137, 8630 2294137, 8630 229396, 6540 2293966, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 2293946, 2790 | 30.17 30.17 35.61 32.91 27.99 27.99 ELEVATION 29.07 31.00 31.02 30.89 31.93 30.87 32.76 33.26 33.26 33.26 33.26 33.21 33.26 33.26 | 14-96.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 15-22.19 23-79.16 29-55.50 36-94.49 43-35.92 52-27.35 60-78.86 | 28.65 RT 36.80 RT 36.28 RT 36.12 RT 36.12 RT 36.12 RT 36.12 RT 12.1115 T LIMITS T LIMITS T LIMITS T LIMITS 18.55 RT 17.61 RT 15.67 RT 15.67 RT 12.9.66 LT |
| 39 34 32 28 29 29 29 29 29 29 29 29 29 29 | BY1-30 BY1-34 BY1-34 BY1-32 BY1-31 BY1-32 DESC. BY2-19 BY2-13 BY2-14 BY2-13 BY2-14 BY2-15 BY2-15 BY2-15 BY2-16 BY2-17 BY2-18 NCGS J 116 DESC. | 75483. 9370 75202. 5510 74968. 1233 74833. 9320 74679. 9330 74679. 9330 74679. 6800 78154. 4880 78154. 4880 78659. 5590 79267. 9538 80168. 8470 80659. 2390 81695. 4690 82278. 9570 83015. 5630 83015. 5630 83015. 5630 83054. 9940 84538. 9920 | 2286957, 4698 2287443, 7390 2289723, 3796 2289272, 5899 2289272, 5899 2289568, 7039 2294238, 9728 2294137, 8639 2294137, 8639 2294137, 8639 2294137, 8639 2293969, 10548 2293969, 10548 2293969, 10548 2293969, 10548 2293969, 10548 2293946, 2799 2293740, 3648 2293948, 55919 2293740, 3648 2293589, 7679 2293597, 0199 2293597, 0199 | 30.17 33.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.02 30.67 32.76 33.61 33.26 33.81 33.26 33.81 33.26 33.81 35.49 34.45 | 14-86.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 0UTSIDE PROJEC 15-22.19 23-70.16 29-55.50 36-94.49 43-35.92 55-27.35 60-78.86 69-78.29 | 28.65 RT 36.80 RT 36.17 RT 38.28 RT 39.12 RT 39.12 RT 0FFSET 0FFSET 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 8.55 RT 17.61 RT 15.67 RT 14.00 RT 14.00 RT 188.37 RT 0FFSET |
| 30 34 34 32 50 50 50 50 50 50 50 50 50 50 | BY1-30 BY1-34 BY1-34 BY1-32 BY1-31 BY1-32 DESC. BY2-19 BY2-13 BY2-14 BY2-13 BY2-14 BY2-15 BY2-15 BY2-15 BY2-16 BY2-17 BY2-18 NCGS J 116 DESC. | 75483.9370 75202.5510 74968.1233 74833.9320 74679.9330 74679.9330 78154.4880 78154.4880 78695.5590 79267.9830 80168.8470 80656.2390 81695.4690 82278.9570 83015.5630 83654.9040 84538.9720 85388.3730 86318.0650 | 2286957, 4690 228743, 7390 2289723, 3796 2289272, 5890 2289262, 7030 EAST 2294233, 9720 2294137, 8630 2294122, 0390 2294127, 8630 2294157, 8630 229423, 9720 2293969, 0540 2293969, 0540 2293969, 0540 2293969, 5910 2293548, 4500 2293548, 4500 2293548, 4500 2293548, 4500 2293527, 0190 EAST | 30.17 30.17 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.02 30.87 32.76 33.16 33.26 33.81 33.26 33.81 33.26 33.81 33.26 33.81 33.26 33.41 39.45 | 14-06.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 0UTSIDE PROJEC 001510E PR | 28.65 RT 36.80 RT 55.17 RT 38.28 RT 39.12 RT 39.12 RT 10.12 RT 10.12 RT 11.11 11.15 T 11.11 15.55 RT 15.63 RT 15.63 RT 15.63 RT 15.63 RT 14.00 RT 56.78 LT 129.66 LT 108.37 RT |
| 49 44 428 472 POINT 10 11 12 13 14 15 16 17 13 14 15 16 17 13 13 14 15 16 17 13 12 13 14 15 16 17 13 14 15 16 17 17 18 19 19 19 10 11 17 12 13 14 15 16 17 17 17 18 19 19 19 10 10 11 17 12 13 14 15 16 17 17 17 17 17 17 17 17 17 17 | BY1-30 BY1-34 BY1-34 BY1-32 BY1-31 BY1-32 DESC. BY2-10 BY2-12 BY2-13 BY2-13 BY2-14 BY2-15 BY2-16 BY2-16 BY2-17 BY2-18 BY2-18 BY2-18 BY2-19 NCGS E 117 NCGS J 116 DESC. | 75483.9370 75202.5510 74968.1233 74968.1233 74679.9330 74679.9330 74679.9330 74679.6800 78154.4880 78695.5290 79267.9830 80163.8470 80859.2390 81695.4679 83015.5630 83054.9940 84538.9720 85388.3730 86518.650 | 2286957, 4698 2287443, 7390 2289723, 3796 2289272, 5899 2289272, 5899 2289568, 7039 2294238, 9728 2294137, 8639 2294137, 8639 2294137, 8639 2294137, 8639 2293969, 10548 2293969, 10548 2293969, 10548 2293969, 10548 2293969, 10548 2293946, 2799 2293740, 3649 2293588, 5810 2293588, 5810 2293588, 5810 2293589, 7670 2293597, 0199 | 30.17 33.71 35.61 32.91 27.99 ELEVATION 29.07 31.00 31.02 30.67 32.76 33.61 33.26 33.81 33.26 33.81 33.26 33.81 35.49 34.45 | 14-86.12 24-31.23 32-45.15 38-10.26 44-18.15 Y2 STATION OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC OUTSIDE PROJEC 0UTSIDE PROJEC 15-22.19 23-70.16 29-55.50 36-94.49 43-35.92 55-27.35 60-78.86 69-78.29 | 28.65 RT 36.80 RT 36.17 RT 38.28 RT 39.12 RT 39.12 RT 0FFSET 0FFSET 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 LIMITS 1 8.55 RT 17.61 RT 15.67 RT 14.00 RT 14.00 RT 188.37 RT 0FFSET |

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| BY4 POINT | DESC. | NORTH | EAST | ELEVATION | Y2 STATION | OFFSET |
|--------------|------------|------------|--------------|-----------|----------------|---------|
| | | | | | | |
| W5 | ¥34Ø8-5 | 87699-0560 | 2292504.3530 | 38.32 | 86-71.71 | 17.15 L |
| W114 | ¥3498-114 | 87356.7850 | 2292730.5580 | 37.68 | 82-61.44 | 17.53 L |
| ¥4 | ¥34Ø8-4 | 86986.0020 | 2292975.6170 | 37.31 | 78-16.99 | 17.94 L |
| BY4 | | | | | | |
| POINT | DESC. | NORTH | EAST | ELEVATION | Y3 STATION | OFFSET |
| J216 | NCGS J 216 | 86318.0650 | 2293527.0190 | 39.45 | 11.07.56 | 21.91 L |
| VII | ¥3408-11 | 86560.1340 | 2294468.6228 | 36.90 | OUTSIDE PROJEC | |
| ¥6 | ¥3408-6 | 86777.3810 | 2295147.7760 | 35.75 | OUTSIDE PROJEC | |
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BH25 ELEVATION - 20.24 N 73647 E 2208003 Y STATION 11-39 333' RIGHT SDUARE CUT IN CONCRETE CURB

B430 ELEVATION - 32.34 N 75768 E 2286901 YI STATION 12-75 231 / LEFT RR SPIKE IN BASE OF 10" PINE

EM37 ELEVATION • 34.91 N 75861 E 2263905 L STATION 59-13 374' LEFT RR SPIKE IN BASE OF 10' BAY TREE

BM40 ELEVATION - 34.29 N 78358 E 2290056 L STATION 78-30 301 RIGHT RR SPIKE IN BASE OF 15 PINE TREE

BM43 ELEVATION - 34.39 N 79897 E 2291883 L STATION 97-48 221' LEFT RR SPIKE IN BASE OF 10' PINE

BM45 ELEVATION - 34.27 N 80429 E 229273 L STATION 109-71 228' RIGHT RR SPIKE IN BASE OF 12' PINE

BM15 ELEVATION - 40.92 N 81634 E 2294882 Y2 STATION 22-99 249' RIGHT RR SPIKE IN BASE OF 14' PINE

NOTE: DRAWING NOT TO SCALE

N\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$

\$\$\$\$\$7\STIME\$\$\$\$\$ \$\$\$\$\$\$\$\$\$\$\$\$\$\$ \$4!!GEDNAME&\$&

| PROJECT REFERENCE NO. | \$HEET NO. |
|-----------------------|------------|
| 34531.1.1 | 16 |
| Location and S | Surveys |
| | |

DATUM DESCRIPTION THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "SOUTHPORT EAST BASE RESET 1981 " WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 74.896.0215(ft) EASTING: 2.288.816.4689(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000100000 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SOUTHPORT EAST " TO -L- STATION 10+00.00 IS S 41*39' 55' M 3035.3412 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

1 THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 6396 ADJUSTMENT, THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (RRAL THE KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD THES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BLAESS.

2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

ETTP/WWW.NCDOT.ORG/DOE/PRECONSTRUCT/HIGHWAYLOCATION/PROJECT/

THE FILES TO RE FOUND ARE AS FOLLOWS: R3324_LS_GPSCALIB_071121.HTML R3324_LS_CONTROL_071121.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIERATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

FROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION SZE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

Design Alignments

| TYPE | STATION | NORTH | EAST |
|------|-----------|-------------|--------------|
| POT | 10.00.00 | 72628.4940 | 2286798.6440 |
| TS | 19.73,00 | 73367.8553 | 2287431.1579 |
| SC | 21-23.00 | 73483.4874 | 2287526.6769 |
| CS | 29.54.28 | 74248.1507 | 2287822.6445 |
| SRS | 31+04.28 | 74397.9589 | 2287829.8658 |
| SC | 32-54.28 | 74547,7246 | 2287837.7323 |
| CS | 33+78.60 | 74670.6048 | 2287856.1991 |
| ST | 35+28.60 | 74816.0672 | 2287892.7005 |
| TS | 40.48.60 | 75317.5858 | 2288030.1015 |
| SC | 41+98.60 | 75461.3727 | 2288072.7340 |
| CS | 49-94.47 | 76077.9146 | 2288552.7393 |
| SRS | 51-44.47 | 76154,5059 | 2288681.6810 |
| SC | 52-94.47 | 76230.9328 | 2288810.7238 |
| CS | 61-55.68 | 76898, 3353 | 2289329.0413 |
| ST | 63+05.68 | 77042.2814 | 2289371.1443 |
| TS | 74+82.68 | 78178.1927 | 2289679.4207 |
| SC | 76+32.68 | 78322.1728 | 2289721.4136 |
| CS | 84-56.05 | 78976.6564 | 2290199.1746 |
| ST | 86-06.05 | 79060.5282 | 2290323.5095 |
| PC | 91+55.55 | 79359.2146 | 2290784.7434 |
| PT | 96+10.38 | 79642,4574 | 2291139.6637 |
| T\$ | 120+07.19 | 81315.1268 | 2292856,3089 |
| SC | 121.57.19 | 81417.2592 | 2292966.1234 |
| CS | 127+63.10 | 81661.5255 | 2293511.8751 |
| ST | 129-13.10 | 81675.3786 | 2293661.2014 |
| POT | 130.80.63 | 81686.9712 | 2293828.3326 |

| | | Y | |
|------|----------|------------|--------------|
| TYPE | STATION | NORTH | EAST |
| POT | 10.81.68 | 74070.8509 | 2287796.8501 |
| PC | 12.51.59 | 74080.2776 | 2287966.5033 |
| PT | 14.14.13 | 74150.7248 | 2288108.0370 |
| POT | 25.23.46 | 74997.3110 | 2288824,9153 |

| | | Y1 | |
|------|----------|------------|--------------|
| TYPE | STATION | NORTH | EAST |
| POT | 10-00.00 | 75619,1169 | 2286573.9762 |
| POT | 51.00.00 | 74527.4095 | 2290525,9599 |
| | | | |

| | | Y2 | |
|------|----------|------------|--------------|
| TYPE | STATION | NORTH | EAST |
| POT | 10.00.00 | 80328.2317 | 2293937.1030 |
| POT | 23-63.09 | 81686.9712 | 2293828.3326 |
| TS | 65-86.68 | 85897.7176 | 2293499.0912 |
| SC | 67+36.68 | 86046.9467 | 2293484.1812 |
| CS | 71.74.68 | 86458,6423 | 2293342.4850 |
| ST | 73.24.68 | 86585.4376 | 2293262.3937 |
| POT | 97+44.52 | 88602.9923 | 2291926.3106 |

| | | Y3 | |
|------|----------|------------|--------------|
| TYPE | STATION | NORTH | EAST |
| POT | 10.00.00 | 86265.0834 | 2293430,8853 |
| POT | 18+00.00 | 86503.6319 | 2294194,4917 |

| | | · Y4 | |
|------|----------|------------|--------------|
| TYPE | STATION | NORTH | EAST |
| POT | 10-00.00 | 86794.1431 | 2293124.1828 |
| PC | 10-56.44 | 86825.3070 | 2293171.2420 |
| PT | 15+87,38 | 87280.1451 | 2293393.7314 |
| POT | 30+87.38 | 88775,8158 | 2293279,8493 |

| | | Y5 | |
|------|----------|------------|--------------|
| TYPE | STATION | NORTH | EAST |
| POT | 10.00.00 | 74997.3110 | 2288824.9153 |
| PC | 11-25.00 | 75109.7115 | 2288879.6065 |
| PT | 12-02.33 | 75171.0652 | 2288925.8779 |
| POT | 13-43.80 | 75265.5481 | 2289031.1767 |

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDS FOR MONDART "SOUTHPORT EAST BASE RESET 1981" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 74.896.0215(ft) EASTING: 2.288.816.4689(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000100000 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SOUTHPORT EAST " TO -L- STATION 10+00.00 IS SOUTHPORT EAST " TO -L- STATION 10+00.00 IS S 41*39' 55" ¥ 3035.3412 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

- 1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK THED TO THE HARN (HIGH ACCURACY REFERENCE NETWORE) NAD 8395 ADJUSTMENT. THIS CALIBRATION USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BLASES.
- 2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT: ETTP-WWW.NCDOT.ORG/DOH/PRSCONSTRUCT/HIGHWAYLOCATION/PROJECT/
- THE FILES TO BE FOUND ARE AS FOLLOWS: R3824_LS_GPSCALIB_071121.HTML R3324_LS_CONTROL_071121.TXT

THE WOSS4 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S OPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

| T | PROJECT REFERENCE NO. | SHEET NO. |
|---|-----------------------|-----------|
| Γ | 34531.1.1 | 1F |
| I | Location and S | urveys |
| | | |

WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN SYSTEM SUCH AS VES (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES

| ALIGN L | STATION 11-74.69 11-74.69 11-74.71 13-04.55 13-04.57 14-90.00 16-90.27 17-60.00 18-25.00 19-92.57 19-73.00 19-92.61 21-90.00 21-23.00 21-35.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-88.59 23-80.10 24-53.34 | OFFSET -50.00 -28.04 31.86 65.00 65.00 95.00 95.00 -50.00 -50.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | PIN AND CAP NORTH 72793.7396 72779.4820 72839.2062 72839.2062 73028.7196 73028.7196 73028.7196 73144.2450 73029.6350 73369.6350 73322.3507 73423.6727 73504.5182 73521.9128 73423.6942 73426.6620 73481.1477 | EAST 2286874.2085 228690.9060 2287020.8269 2287046.0230 2287166.5683 2287254.2078 2287364.9823 2287364.9823 2287366.8804 2287386.1397 2287366.8804 2287484.3494 2287495.9933 2287463.1547 2287476.7499 2287451.7055 | | 60.00.00 61.55.68 61.55.68 62.45.68 62.45.68 62.45.68 63.05.68 63.05.68 63.06.55 63.06.55 63.70.00 65.25.00 | RKER IRON PI 75.00 - - 75.00 - 105.00 -105.95 - - 70.95 - - -208.00 - 105.90 -105.00 - - 70.08 - - -85.00 - - | N AND CAP 76721.8031 76874.4833 76931.7282 77013.1329 76965.2003 77040.7856 77069.7828 77023.9473 7703.9473 77126.6191 77226.2081 | 2289338.3643 2289400.1474 2289229.4927 2289253.2659 2289423.5473 2289155.0291 2289269.8998 2289438.7007 2289170.9446 2289305.9582 |
|---|---|--|--|---|---------------------------------|--|---|--|--|
| L L L L L L L L L L L L L L L L L L L | STATION 11-74.69 11-74.69 11-74.71 13-04.55 13-04.57 14-90.00 16-90.27 17-60.00 18-25.00 19-92.57 19-73.00 19-92.61 21-90.00 21-23.00 21-35.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-88.59 23-80.10 24-53.34 | OFFSET -50.00 -28.04 31.86 65.00 65.00 95.00 95.00 -50.00 -50.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | NORTH 72793.7386 72779.4820 72839.2062 72817.6741 72958.5890 73028.7196 73144.2450 73028.7196 73144.2450 73209.8038 73359.6350 73322.3507 73423.6727 73504.6182 73521.9128 73422.6942 73426.6620 73481.1477 | 2286874.2085 2296890.9060 2287020.8269 2287046.0230 2287166.5683 2287254.2078 2287364.8823 2287388.1397 2287366.8804 2287484.3494 2287495.9933 2287463.1547 2287463.7499 | | 61.55.68 61.55.68 62.45.68 62.45.68 62.45.68 63.05.68 63.05.68 63.05.68 63.06.55 63.70.00 65.25.00 | 75.00 -105.00 -105.95 -208.00 -105.00 70.00 -207.68 -85.00 | 76874.4833 76931.7282 77013.1329 76965.2003 77040.7856 77069.7828 77023.9473 77097.5155 77126.6191 | 2289400.1474 2289229.4927 2289253.2659 2289423.5473 2289155.0291 2289269.8998 2289438.7007 2289170.9446 2289305.9582 |
| L L L L L L L L L L L L L L L L L L L | 11-74.71 13-04.55 13-04.55 13-04.57 14-90.00 16-90.27 17-60.00 18-25.00 19-32.57 19-73.00 19-32.61 21-90.00 21-23.00 21-35.00 21-35.00 21-35.00 21-35.00 22-90.00 22-10.00 22-88.59 23-88.10 24-53.34 | -28.04 31.86 65.00 65.00 95.00 70.00 -50.00 70.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | 72779.4820 72839.2062 72817.6741 72958.5800 73028.7196 73144.2450 73209.8888 73369.6350 73322.3507 73423.6727 73504.5182 73521.9128 73422.6942 73426.6620 73481.1477 | 2286890.9060 2287020.8269 2287046.0230 2287166.5683 2287254.2078 2287364.8823 2287388.1397 2287366.8804 2287484.3494 2287484.3494 2287463.1547 2287463.7499 | | 61-55.68 62-45.68 62-45.68 62-45.68 63-05.68 63-05.68 63-06.55 63-00.55 63-70.00 65-25.00 | - 105.00 - 105.95 - 208.00 - 105.00 - 105.00 - 70.00 - 207.68 - 85.00 | 76931.7282 77013.1329 76965.2003 77040.7856 77069.7828 77023.9473 77097.5155 77126.6191 | 2289229.4927 2289253.2659 2289423.5473 2289155.0291 2289269.8098 2289438.7007 2289170.9446 2289305.9582 |
| | 13.04.55 13.04.55 14.90.00 16.90.27 17.60.00 18.25.00 19.32.57 19.73.00 19.92.61 21.90.00 21.35.00 21.35.00 21.35.00 21.35.00 22.90.00 22.10.00 22.88.59 23.88.10 24.53.34 | 31.86 65.00 65.00 96.00 95.00 70.00 -50.00 70.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | 72839.2062 72817.6741 72958.5800 73028.7196 73144.2450 73209.8888 73369.6350 73322.3507 73423.6727 73504.5182 73521.9128 73422.6942 73426.6620 73481.1477 | 2287020.8269 2287046.0230 2287166.5683 2287254.2078 2287364.0823 2287388.1397 2287366.8804 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 61-55.68 62-45.68 62-45.68 62-45.68 63-05.68 63-05.68 63-06.55 63-00.55 63-70.00 65-25.00 | - 105.00 - 105.95 - 208.00 - 105.00 - 105.00 - 70.00 - 207.68 - 85.00 | 76931.7282 77013.1329 76965.2003 77040.7856 77069.7828 77023.9473 77097.5155 77126.6191 | 2289229.4927 2289253.2659 2289423.5473 2289155.0291 2289269.8098 2289438.7007 2289170.9446 2289305.9582 |
| | 13.04.55 13.04.55 14.90.00 16.90.27 17.60.00 18.25.00 19.32.57 19.73.00 19.92.61 21.90.00 21.35.00 21.35.00 21.35.00 21.35.00 22.90.00 22.10.00 22.88.59 23.88.10 24.53.34 | 31.86 65.00 65.00 96.00 95.00 70.00 -50.00 70.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | 72839.2062 72817.6741 72958.5800 73028.7196 73144.2450 73209.8888 73369.6350 73322.3507 73423.6727 73504.5182 73521.9128 73422.6942 73426.6620 73481.1477 | 2287020.8269 2287046.0230 2287166.5683 2287254.2078 2287364.0823 2287388.1397 2287366.8804 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 62.45.68 62.45.68 62.45.68 63.05.68 63.05.68 63.06.55 63.70.00 65.25.00 | - 105, 95 70, 95 - 208, 00 - 105, 00 70, 00 - 207, 68 - 85, 00 | 77013.1329 76965.2003 77040.7856 77069.7828 77023.9473 77097.5155 77126.6191 | 2289253.2659 2289423.5473 2289156.0291 2289269.8998 2289438.7007 2289170.9446 2289305.9582 |
| L L L L L L L L L L L L L L L L L L L | 13-04.57 14-90.00 15-90.27 17-60.00 18-25.00 19-32.57 19-73.00 19-92.61 21-90.00 21-35.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-88.59 23-80.10 24-53.34 | 65.00 65.00 86.00 95.00 70.00 -50.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | 72817.6741 72958.5800 73028.7196 73144.2450 73209.8888 73369.6350 73322.3507 73423.6727 73504.5182 73521.9128 73422.6942 73426.6620 73481.1477 | 2287046.0230 2287166.5683 2287254.2078 2287384.8823 2287388.1397 2287366.8804 2287484.3494 2287495.9933 2287463.1547 2287476.7499 | | 62-45.68 62-45.68 63-05.63 63-05.68 63-06.55 63-70.00 65-25.00 | 70.95 -208.00 -105.00 70.00 -207.68 -85.00 | 76965.2003 77040.7856 77069.7828 77023.9473 77097.5155 77126.6191 | 2289423.5473 2289155.0291 2289269.8098 2289438.7007 2289170.9446 2289305.9582 |
| | 14.90.00 16.90.27 17.60.00 18.25.00 19.92.57 19.73.00 19.92.61 21.90.00 21.23.00 21.35.00 21.35.00 21.35.00 21.97.50 22.90.00 22.10.00 22.88.59 23.80.10 24.53.34 | 65.00 86.00 95.00 70.00 -50.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | 72958.5800 73028.7196 73144.2450 73209.8888 73359.6350 73322.3507 73423.6727 73504.5182 73521.9128 73432.6942 73426.6620 73481.1477 | 2287166.5683 2287254.2078 2287364.6823 2287388.1397 2287366.8804 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 62+45.68 63+05.68 63+05.68 63+06.55 63+70.00 65+25.00 | -208.00 -105.00 70.00 -207.68 -85.00 | 77040.7856 77069.7828 77023.9473 77097.5155 77126.6191 | 2289155.0291 2289269.8098 2289438.7007 2289170.9446 2289305.9582 |
| L L L L L L L L L L L L L L L L L L L | 16.00.27 17.60.00 18.25.00 19.32.57 19.73.00 19.92.61 21.00.00 21.23.00 21.35.00 21.35.00 21.97.50 22.00.00 22.10.00 22.88.59 23.80.10 24.53.34 | 86.00 95.00 70.00 -50.00 70.00 -63.00 -63.00 100.00 110.00 110.00 68.00 61.23 | 73028.7196 73144.2450 73209.8838 73369.6350 73322.3507 73423.6727 73504.5182 73521.9128 73432.6942 73426.6620 73481.1477 | 2287254.2078 2287364.8823 2287388.1397 2287366.8804 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 63+05.68 63+05.68 63+06.55 63+70.00 65+25.00 | -105.00 70.00 -207.68 -85.00 | 77069.7828 77023.9473 77097.5155 77126.6191 | 2289269.8098 2289438.7007 2289170.9446 2289305.9582 |
| L L L L L L L L L L L L L L L L L L L | 17.60.00 18.25.00 19.32.57 19.73.00 19.92.61 21.90.00 21.23.00 21.35.00 21.35.00 21.35.00 22.00.00 22.10.00 22.88.59 23.80.10 24.53.34 | 95.00 70.00 -59.00 -63.00 -63.00 -63.00 100.00 110.00 110.00 68.00 61.23 | 73144.2450 73209.8868 73369.6350 73322.3507 73423.6727 73504.6182 73521.9128 73432.6942 73426.6620 73481.1477 | 2287364.8823 2287388.1397 2287366.8804 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 63.05.68 63.06.55 63.70.00 65.25.00 | 70.00 -207.68 -85.00 | 77023.9473 77097.5155 77126.6191 | 2289438.7007 2289170.9446 2289305.9582 |
| L | 18-25.00 19-32.57 19-73.00 19-92.61 21-90.00 21-35.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-88.59 23-88.10 24-53.34 | 70.00 -50.00 70.00 -63.00 -63.00 100.00 110.00 110.00 110.00 68.00 61.23 | 73209.8898 73369.6350 73322.3507 73423.6727 73504.5182 73521.9128 73432.6942 73426.6620 73481.1477 | 2287388.1397 2287366.8804 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 63.06.55 63.70.00 65.25.00 | -207.68 -85.00 | 77097.5155 77126.6191 | 2289170,9446 2289305,9582 |
| L | 19-32.57 19-73.00 19-92.61 21-90.00 21-23.00 21-35.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-88.59 23-88.10 24-53.34 | -50.00 70.00 -63.00 -63.00 100.00 110.00 110.00 61.23 | 73369.6350 73322.3507 73423.6727 73504.6182 73521.9128 73426.642 73426.6620 73481.1477 | 2287366.8804 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 63+70.00 65+25.00 | -85,00 | 77126.6191 | 2289305.9582 |
| | 19-73.00 19-92.61 21-90.00 21-23.00 21-35.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-88.59 23-80.10 24-53.34 | 70.00 -63.00 -63.00 -63.00 100.00 110.00 110.00 -68.00 61.23 | 73322,3507 73423,6727 73504,5182 73521,9128 73432,6942 73426,6620 73481,1477 | 2287484.3494 2287395.9933 2287463.1547 2287476.7499 | | 65+25.00 | | | |
| L L L L L L L L L L L L L L L L L L L | 19.92.61 21.93.00 21.23.00 21.35.00 21.35.00 21.97.50 22.00.00 22.10.00 22.83.59 23.88.10 24.53.34 | -63.00 -63.00 -63.00 100.00 110.00 110.00 -68.00 61.23 | 73423.6727 73504.6182 73521.9128 73432.6942 73426.6620 73481.1477 | 2287395.9933 2287463.1547 2287476.7499 | L . | | -82.00 | //2/6-2081 | |
| L | 21-80.00 21-35.00 21-35.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-83.59 23-88.10 24-53.34 | -63.00 -63.00 100.00 110.00 110.00 -68.00 61.23 | 73504.5182 73521.9128 73432.6942 73426.6620 73481.1477 | 2287463.1547 2287476.7499 | | | | | 2289346.5553 |
| L L L L L L L L L L L L L L L L L L L | 21-23.00 21-35.00 21-35.00 21-97.50 22-00.00 22-10.00 22-88.59 23-88.10 24-53.34 | -63.00 100.00 110.00 110.00 -68.00 61.23 | 73521.9128 73432.6942 73426.6620 73481.1477 | 2287476.7499 | | 66-00.00 | 75.00 | 77306.6832 | 2289520.6136 |
| L L L L L L L L L L L L L L L L L L L | 21-35.00 21+35.00 21+97.50 22-00.00 22+10.00 22+88.59 23-88.10 24+53.34 | 100.00 110.00 110.00 -68.00 61.23 | 73432.6942 73426.6620 73481.1477 | | | 71-20.00 | -60.00 | 77824.5880 | 2289521.2835 |
| L | 21+35.00 21+97.50 22-00.00 22-10.00 22+88.59 23-80.10 24+53.34 | 110.00 110.00 -68.00 61.23 | 73426.6620 73481.1477 | 2287613.7055 | | 74-82.68 | -60.00 | 78193.9079 | 2289621.5154 |
| L | 21-97.50 22-00.00 22-10.00 22-88.59 23-80.10 24+53.34 | 110.00 -68.00 61.23 | 73481.1477 | 1 | L · | 74.82.68 | 60.00 | 78162.4779 | 2289737,3262 |
| | 22-00.00 22-10.00 22-88.59 23-80.10 24-53.34 | -68.00 61.23 | | 2287621.6791 | L | 76.32.68 | 55.00 | 78304.8017 | 2289773,5983 |
| | 22-10.00 22-88.59 23-80.10 24-53.34 | 61.23 | | 2287661.0824 | L | 76+32.68 | -65.00 | 78342.7024 | 2289659.7408 |
| | 22+88.59 23+80.10 24+53.34 | | 73584.2807 | 2287515.9846 | L | 76+94.63 | -521.63 | 78568.0647 | 2289255.6091 |
| | 23-80.10 24-53.34 | 100 40 | 73519.6155 | 2287628.3132 | L | 77+46.31 | -65,00 | 78454.0393 | 2289702.1598 |
| L L L L L L | 24+53.34 | -137.19 | 73690.9260 | 2287502.4198 | L | 77+65.30 | -537.35 | 78665.2868 | 2289279.0540 |
| | | -119.92 | 73755.2634 | 2287558.2047 | L | 77.66.11 | 55.00 | 78423.9467 | 2289820.0096 |
| L | | -101.86 | 73808.1512 | 2287604.0619 | L | 78+43.17 | -65.00 | 78545.7966 | 2289745.7018 |
| L | 27+50.00 | -120.00 | 74073.0274 | 2287674,5042 | L | 78.72.83 | 55.00 | 78515.5221 | 2289865,5681 |
| <u>է</u> L L | 28+50.00 | -105.00 | 74160.7902 | 2287706.5593 | L L | 80.50.00 | -73.00 | 78734,4799 | 2289853.8446 |
| L L | 28+85.00 | 85.00 | 74168.2156 | 2287899,5548 | | 80.70.00 | 90.03 | 78652.7265 | 2289996.2854 |
| L L | 29-54.28 | 80.00 | 74241.5462 | 2287902.3714 | | 80.70.00 | 55.00 | 78673.9265 | 2289968.3950 |
| L | 29-54.28 | -110.00 | 74257.2318 | 2287713.0200 | | 83.75.00 | -75.00 | 78984.6317 | 2290087.3781 |
| | 29.89.00 | 75.73 | 74278.1288 | 2287900.7173 | | 84+56.05 | - 80.00 | 79041.2511 | 2290151.9780 |
| | 29.94.00 | 68.B4 | 74283.7215 | 2287894.1471 | the second second second second | | | | |
| | | -114.90 | 74401.4838 | | | 84.56.05 | 85,00 | 78908.0245 | 2290249.3210 |
| <u> </u> | 31-04.28 | | 74395.9496 | 2287715.9187 | L | 86+06.05 | -85.00 | 79131.8746 | 2290277,3067 |
| <u> </u> | 31.04.28 | 65.00 | | 2287894.8335 | | 86.06.05 | 85.00 | 78989.1817 | 2290369.7119 |
| L | 31.04.38 | 58.00 | 74396.2660 | 2287887.8399 | | 88-25.00 | -85.00 | 79250.8871 | 2290461.0868 |
| L | 31-70.00 | 66.50 | 74460.7570 | 2287898.6056 | | 91+55.55 | -70.00 | 79417.9705 | 2290746.6942 |
| L | 32.30.00 | 67.00 | 74518.4239 | 2287902.4577 | L L | 91+55.55 | 85.00 | 79287.8681 | 2290830.9460 |
| L | 32-54.28 | -120.00 | 74559.1763 | 2287718.2799 | L | 92.10.00 | 85.90 | 79319.1168 | 2290877.9709 |
| L | 32+54.28 | 44.00 | 74543.5254 | 2287881.5298 | L | 93-00.00 | -70.00 | 79497.7397 | 2290861.7829 |
| L | 33+10.00 | 40.00 | 74597.3163 | 2287883.9663 | L | 93.00.00 | 75.00 | 79381.2177 | 2290948.0825 |
| L | 33-15.00 | -115.00 | 74624.9376 | 2287731.3603 | L | 93.60.00 | -70.00 | 79532.9688 | 2290908.0746 |
| Ľ | 33-78.60 | 75.00 | 74655.5028 | 2287929.6612 | L | 93.60.00 | 75,00 | 79418.7376 | 2290997.3842 |
| L | 33•78.67 | -108.99 | 74692.6206 | 2287749.4597 | L L | 96-10.38 | -70.00 | 79692.5929 | 2291090.8126 |
| L | 34-22.00 | 98.00 | 74690.1649 | 2287960.9673 | L | 96+10.38 | 75.00 | 79588.7408 | 2291192.0043 |
| Ļ | 34-29.85 | -106.09 | 74745.7503 | 2287764.4308 | | 97-10.00 | 75.00 | 79658.2645 | 2291263.3557 |
| L | 34-76.00 | 99.50 | 74739.7726 | 2287975.1060 | | 97.45.00 | 90.00 | 79671.9467 | 2291298.8916 |
| L | 34+76.22 | -104.81 | 74792.4065 | 2287777.6901 | L | 98.90.00 | 90.00 | 79773.1384 | 2291402.7436 |
| L | 35+28.60 | 100.27 | 74789.5713 | 2287989.4108 | | 100.25.00 | 75.00 | 79878.0946 | 2291488.9654 |
| L | 35+32.61 | -104.47 | 74845.6109 | 2287792.4717 | | 103-00.00 | 75.00 | 80070.0098 | 2291685.9262 |
| L | 38+40.00 | 101.50 | 75089.5788 | 2288072.8794 | | 103.00.00 | 75.00 | 80070.0098 | 2291685.9262 |
| L | 38-50.00 | -103.33 | 75153.3482 | 2287877.9681 | | 103.00.00 | -70.00 | 80173.8619 | 2291584.7345 |
| L | 41-10.00 | -95,00 | 75402.8069 | 2287955.1745 | i | 103-60.00 | -70,00 | 80215.7343 | 2291627.7078 |
| | 41-20.00 | 65.00 | 75368.2970 | 2288111.7310 | L | 103-60.00 | 75.00 | 80111.8822 | 2291728.8994 |
| L . | 41+98.60 | 63.00 | 75440.9633 | 2288132.3365 | L | 106-50.00 | 80.00 | | |
| L | 41+98.60 | -85.00 | 75488.9088 | 2287992.3178 | | 106-60.00 | -75.00 | 80310.6844 80428.6774 | 2291940.0929 2291839.0848 |
| | 41-98.60 | -80.00 | 75588.0150 | 2288036.3663 | | | | | |
| <u>L</u> | | | 75615.6798 | | <u> </u> | 112-10.00 | 70.00 | 80708.6557 | 2292334.1980 |
| | 43+90.98 | 46.59 | | 2288190.4498 | | 112-10.00 | 85.00 | 80697.9124 | 2292344.6661 |
| | 45+04.24 | | 75705.0724 | 2288252.3373 | | 112+60.00 | -70.00 | 80843.8204 | 2292272.3068 |
| <u> </u> | 45-50.00 | -65.00 | 75810.4544 | 2288180.4831 | L | 112.60.00 | -80.00 | 80850.9826 | 2292265.3280 |
| <u>L</u> | 46.00.00 | 55.00 | 75778.6257 | 2288306.5815 | L | 112-95.00 | 65.00 | 80771.5561 | 2292391.5874 |
| <u> </u> | 46+53.52 | -65,00 | 75896.2430 | 2288247.8753 | L | 112.95.00 | 85.00 | 80757.2317 | 2292405.5449 |
| L | 47+53.52 | -65.00 | 75973.3044 | 2288319.7626 | | 113-50.00 | -80.00 | 80913.7912 | 2292329.7879 |
| L | 49-94.47 | 55.00 | 76031.8388 | 2288582.7730 | | 113-50.00 | -65.00 | 80903.0479 | 2292340.2561 |
| L | 49-94.47 | -65.00 | 76132.3677 | 2288517.2449 | L | 120-07.19 | -55.00 | 81354.5223 | 2292817.9270 |
| L . | 51.44.47 | 65.00 | 76097.9419 | 2288713.7048 | | 120-07.19 | 60.00 | 81272.1557 | 2292898.1836 |
| | 51.44.47 | -60.00 | 76206.7185 | 2288652.1202 | | 121.57.19 | 65.00 | 81367.6578 | 2293008.1317 |
| L | 52.94.47 | -70.00 | 76289.7218 | 2288772.7258 | L | 121.57.19 | -65.00 | 81466,8647 | 2292924.1199 |
| L | 52+94.47 | 75,00 | 76167.9446 | 2288851.4361 | L | 122.50.00 | -65.00 | 81527.1501 | 2293001.8791 |
| L | 54.50.00 | -70,00 | 76376.8287 | 2288891.0471 | L | 122.50.00 | 65.00 | 81421.0685 | 2293077.0237 |
| L | 54.50.00 | 75.00 | 76265.4986 | 2288983.9481 | L | 123.10.00 | 65.00 | 81452.3533 | 2293123.9092 |
| L | 55.30.00 | 75.00 | 76321.7575 | 2289847.2346 | L | 123.18.00 | -65.00 | 81562,4616 | 2293054.7994 |
| L | 55+30.00 | 115.00 | 76292.7078 | 2289074.7321 | | 126.90.00 | 65.00 | 81585.3316 | 2293453.2428 |
| | 55+50.00 | 115.00 | 76307.8170 | 2289090.4439 | <u> </u> | 127.63.10 | -65.00 | 81725.8984 | 2293502.8680 |
| | 55+50.00 | -70.00 | 76440,1671 | 2288961.1828 | L | 127.63.10 | 80.00 | 81582.2973 | 2293522.9608 |
| ī | 58+28.50 | -70.00 | 76643.0833 | 2289128.0899 | L | 128-20.00 | -49.00 | 81716.8806 | 2293563.6883 |
| | 59+00-00 | 115.00 | 76608.1462 | 2289323.7157 | | 128-80.00 | -40.00 | 81712.9472 | 2293625.2823 |
| | 59-75.00 | -85.00 | 76769.7666 | 2289183.7138 | <u></u> | 129-13.10 | 80.00 | 81595.5705 | 2293666.7394 |
| | 11111 | 00.00 | /0/01./000 | 220 1103- / 130 | | | | 81595.5705 | |
| L. | | | | | | 129+20.00 | -40.00 | 1 BL/112 /BUT / | 2293665.3194 |
| | | | | | L L | 129+91.96 | -76.14 | 81756.7911 | 2293734.6047 |

.

NOTE: DRAWING NOT TO SCALE

ALIGN STA 12. Y 13. Y Y 24 v 23 Y 18-19. Y 19. 13. Y

ALIGN ST ¥1 23 ¥1 26 ¥1 23 18 ¥1 26 18 Y1 ¥1 Y1 26• ¥1 23 Yİ 19 ¥1 28 27 Υl 35 ¥1 35. ¥1 ¥1 43. ¥1 Y1 45 32 29 ۲1 ¥1 ¥1 29. Υ1 32.

Y1

NOTES:

- PROJECT CONTROL DATA AT:

R3324 LS OPSCALIB 071121.HTML R3324 LS CONTROL 071181.TXT

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

r3324 ls 1g 090120.dgn 01/22/2009 09:28:50 AM

| | | PROJECT REF | ERENCE NO. | SHEET NO. |
|----------|-------------|-------------|------------|-------------|
| | | 3453 | 1.1.1 | 1G |
| | | Locat | ion and | Surveys |
| | | | | |
| ROW I | MARKER IRON | PIN AND CAP | | |
| STATION | OFFSET | NORTH | EA: | ST |
| 14-14.13 | -44.00 | 74179.1597 | 228807 | - |
| 12+51,59 | -70.00 | 74150.1706 | 228796 | 2.6136 |
| 13.00.00 | -57.00 | 74143,2538 | 228799 | 7.3285 |
| 24-04.09 | 52.00 | 74872,6066 | 228878 | 7.4550 |
| 23+49.32 | -44.00 | 74892,8485 | 228867 | 3.8019 |
| 18.30.00 | 38.91 | 74442,9548 | 228840 | 5.4805 |
| 19-40.00 | 55,00 | 74516.5037 | 228848 | 9.8438 |
| 19+67.00 | 52.00 | 74539.0474 | 228850 | 5,0024 |
| 13-50.00 | -44.00 | 74146.7761 | 228803 | 5,6171 |
| | | | | |
| | | PIN AND CAP | | |
| STATION | OFFSET | NORTH | EA | |
| 23.50.00 | 75.85 | 75186.5412 | 228785 | |
| 26-20.00 | -95.00 | 75279.3301 | 228816 | |
| 23.40.00 | -95.00 | 75353,8858 | 228789 | |
| 18-05.64 | -95,00 | 75496,1684 | 228737 | |
| 26.10.00 | 76.04 | 75117,1258 | 228810 | |
| 18.05.50 | -74.55 | 75476.4967 | 228737 | |
| 26+80.00 | 76.09 | 75098.4371 | 228817 | |
| 23.20.00 | 75.83 | 75194.5511 | 228782 | |
| 19.10.00 | -95.00 | 75468.3814 | 228747 | |
| 28.00.00 | -90.00 | 75226.5816 | 228833 | |
| 27.10.00 | -95.00 | 75255.3654 | 228824 | |
| 35-80.00 | -90.00 | 75018.8909 | 228908 | |
| 35.80.00 | -73.24 | 75002,7379 | 228908 | |
| 34.25.00 | 1 76.64 | 74899.5353 | 228889 | |
| 43.71.90 | 77.34 | 74646.7301 | 228980 | |
| 45.58.91 | 77.48 | 74596.8025 | 228998 | |
| 32.55.00 | -73.48 | 75089.5091 | 228876 | |
| 29.02.04 | -90.00 | 75199.4135 | 228843 | 1.3143 |
| 29.01.92 | -73.75 | 75183.7761 | 228842 | 6.8668 |
| 32.70.00 | -90.00 | 75101.4346 | 228878 | 5.9900 |
| | | | | |

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR WONUMENT "SOUTHPORT EAST BASE RESET 1981" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 74,896,0215(ft) EASTING: 2,288,816,4689(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000100000 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SOUTHPORT EAST " TO -L- STATION 10+00-00 IS S 41*39' 55" ¥ 3035-3412 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE BARN (HIGH ACCURACY REFERENCE NETWORK) NAD 3305 ADJUSTMENT, THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) OPS AND A LOCAL BASE STATION, IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BLASES.

2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING

HTTP/WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:

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.

| ALIGN | STATION | OFFSET | NORTH | EAST |
|-------|----------|--------|------------|---------------|
| ٢Z | 25-00.00 | -60.00 | 81818.7912 | 2293757.8423 |
| Y2 | 71+57.56 | 171.83 | 86526.9341 | 2293501.2278 |
| Y2 | 77-00.00 | 75.00 | 86939.7716 | 2293117.6960 |
| Y2 | 16+49.95 | 50.34 | 80980.1238 | 2293935.4192 |
| Y2 | 83-50.00 | -75,00 | 87398.8923 | 2292633.7458 |
| Y2 | 72+33.30 | 101.53 | 86562.8624 | 2293398,2026 |
| Y2 | 28+85.00 | -60.00 | 82202.6195 | 2293727.8284 |
| Y2 | 31-20.00 | -60.00 | 82436,9044 | 2293709,5095 |
| ¥2 | 26-77.73 | 50.30 | 82004.5755 | 2293853.9496 |
| ¥2 | 26+76.60 | 75.30 | 82005.4010 | 2293878.962 |
| Y2 | 22-13.84 | -50.04 | 81534.2040 | 2293790.3652 |
| Y2 | 72+44.03 | -74.51 | 86477.9524 | 2293243.618 |
| ¥2 | 66+64.54 | -74.50 | 85968,2009 | 2293418,409 |
| Y2 | 63+46.02 | -75.59 | 85651.8891 | 2293442.4952 |
| Y2 | 48.84.85 | -79.17 | 84194.8866 | 2293552.8279 |
| Y2 | 43.30.44 | -78.57 | 83642.2131 | 2293596.6455 |
| Y2 | 63-45.68 | 74,41 | 85663.2466 | 2293592.0644 |
| ¥2 | 48-84.74 | 70.83 | 84206.4775 | 2293702.3796 |
| Y2 | 43-30.75 | 71.43 | 83654.2183 | 2293746.1643 |
| Y2 | 33-84.27 | 74,36 | 82710.8400 | 2293822.8628 |
| Y2 | 31.23.77 | -75.30 | 82439.4739 | 2293693.9676 |
| Y2 | 32.65.00 | -75.48 | 82580.2565 | 2293682.773 |
| Y2 | 33-40.00 | -85.00 | 82654.2861 | 2293667.4360 |
| Y2 | 34-55.00 | -85.00 | 82768,9362 | 2293658.4714 |
| Y2 | 36.00.00 | -76.31 | 82914.1726 | 2293655.8345 |
| Y2 | 27.60.00 | -60.00 | 82078.0000 | 2293737.5746 |
| Y2 | 26.72.00 | -60.00 | 81992.2678 | 2293744.4345 |
| Y2 | 26.12.00 | -60.00 | 81938.4584 | 2293749, 1116 |
| Y2 | 31-55.00 | -75.34 | 82470.6024 | 2293691,4921 |
| Y2 | 32-15.00 | -75.42 | 82530.4136 | 2293686.7356 |
| Y2 | 32-75.00 | 74.51 | 82601.9179 | 2293831.5249 |
| Y2 | 32.15.00 | 74,58 | 82542,1067 | 2293836.2814 |
| Y2 | 59.99,82 | 73,57 | 85318.3729 | 2293618,1803 |
| Y2 | 60.59.82 | 73,71 | 85378.2014 | 2293613,6497 |
| Y2 | 60-00.17 | -76.43 | 85307.0269 | 2293468.6100 |
| Y2 | 68-60.19 | -76.29 | 85366.8750 | 2293464.078 |
| Y2 | 37+15.00 | 73.15 | 83040.4736 | 2293795.8769 |
| ¥2 | 37+15.00 | 275.00 | 83056.2082 | 2293997.1103 |
| ¥2 | 37+75.00 | 275.00 | 83116.0256 | 2293992.4331 |
| ¥2 | 37+75.00 | 73.15 | 83100.2910 | 2293791.1997 |
| Y2 | 68-92.99 | 101.37 | 86227.4619 | 2293549.1031 |
| Y2 | 70.96.45 | 194.05 | 86474.4087 | 2293553.546 |
| Y2 | 69+12.65 | 127.60 | 86255.5899 | 2293568.1828 |
| Y2 | 70-07.00 | 163.00 | 86367.4512 | 2293566.6816 |

| | ROW I | MARKER IRON | PIN AND CAP | |
|-------|----------|-------------|-------------|--------------|
| ALIGN | STATION | OFFSET | NORTH | EAST |
| Y4 | 11.50.38 | -60.00 | 86927.1591 | 2293202.3538 |
| ¥4 | 12+68.61 | 60.00 | 86943.9938 | 2293369.1805 |
| ¥4 | 11-00.32 | 60.00 | 86804.1777 | 2293244.1016 |
| ¥4 | 15-27.83 | -60.00 | 87223.2269 | 2293334.7659 |
| ¥4 | 14.48.37 | 71.87 | 87127.4362 | 2293455.4109 |
| ¥4 | 20.00.00 | 50.00 | 87695.3739 | 2293412.2586 |
| ¥4 | 20.00.00 | -50.00 | 87687.7815 | 2293312.5473 |
| ¥4 | 15+87.38 | -60.00 | 87275.5898 | 2293333.9046 |
| ¥4 | 16-40.00 | -50.00 | 87328.8194 | 2293339.8781 |

NOTES:

- PROJECT CONTROL DATA AT:
- THE FILES TO BE FOUND ARE AS FOLLOWS: R8894_LS_QPSCALIB_071121.HTML R3324_LS_CONTROL_07112LTXT

NOTE: DRAWING NOT TO SCALE

r3324_ls_1h_090120.dgn 01/22/2009 09:30:40 AM

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| PROJECT REFERENCE NO. | SHEET NO. |
|-----------------------|-----------|
| 34531.1.1 | 1H |
| Location and | Surveys |

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE CORDUNATES ESTABLISHED BY NCGS FOR MONUMENT "SOUTHPORT EAST BASE RESET 1981" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 74.896.0215(ft) EASTING: 2,288,816.4689(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000100000 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SOUTHPORT EAST " TO -L- STATION 10+00.00 IS \$ 41*39' 55" ¥ 3035.3412 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORE) NAD 8395 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 MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BLASES.

2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING

ETTP-WWW.NCDOT.ORGDOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE WOSS4 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, FLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VEBTICAL COORDINATE VALUES.