ELEVATION REFERENCE MARK CERTIFICATION

Person County
(As Established under the North Carolina Floodplain Mapping Program)
Maintenance FY 2010

This is to certify that all Elevation Reference Marks (ERMs) established in the conduct of NCFMP Maintenance Program for FY 2010 for the community of Person County were done in accordance with the Statement of Work and the General Provisions of Delivery Order 14 with the State of North Carolina and direct instructions from the State of North Carolina. In addition, all such work has been accomplished in accordance with the provisions contained in Guidelines and Specifications for Study Contractors and sound and accepted surveying practices within the contract provisions. ESP used a Real Time/VRS Network that is owned and operated by North Carolina Geodetic Survey. The ERMs were surveyed using conventional survey methods (total station) stemming from control pairs established using redundant VRS GPS observations on different days utilizing different satellite configurations. The network positional accuracy of the VRS derived horizontal and vertical positional information is 5 cm (0.16 ft) with 95% confidence. Horizontal positions are referenced to NAD 83/2007 and vertical positions are referenced to NAVD88 using (GEOID09).

The following is a list of the twelve ERMs established in Person County:

ERM P_FR_01	ERM P_NFRT_09
ERM P_MC_02	ERM P_SFR_03
ERM P_MCT2_02	ERM P_SFR_04
ERM P_NFR_03	ERM P_SFR_07
ERM P_NFR_06	ERM P_SFR_12
ERM P_NFR_11	ERM P_SFR_14

Signature: Date: 05/12/2011 Sealed:

James C. Gray Jr., PLS

NORTH CAROLINA PROFESSIONAL SEAL L-4778 LAND SURVEYOR JAMES C. GRAY, JR.

05/12/11

ESP Associates, P.A.
5121 Kingdom Way, Suite 208
Raleigh, NC 27607
919-678-1070
www.espassociates.com

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_FR_01
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 3/20/2011

Latitude: 36 14 32.46237
Longitude: -78 54 20.91662

North Carolina State Plane Coordinates (USFT)
Northing: 907137.13
Easting: 2027777.60
Horizontal Datum: NAD 83/2007

Elevation (USFT): 448.81
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete wing wall at NW corner of bridge

Location: Moores Mill Rd. over Flat River

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_MC_02
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 4/20/2011

Latitude: 36 28 59.42553
Longitude: -78 58 46.54208

North Carolina State Plane Coordinates (USFT)
Northing: 994804.03
Easting: 2005999.63
Horizontal Datum: NAD 83/2007

Elevation (USFT): 382.17
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete wing wall at SW corner of bridge

Location: Edwin Robertson Rd. over Marlowe Creek

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_MCT2_02
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 2/17/2011

Latitude: 36 24 55.97541
Longitude: -78 57 52.88453

North Carolina State Plane Coordinates (USFT)
Northing: 970183.08
Easting: 2010390.83
Horizontal Datum: NAD 83/2007

Elevation (USFT): 565.46
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square at SW corner of culvert

Location: Thaxton Rd. over Marlowe Creek

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_NFR_03
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 3/17/2011

Latitude: 36 17 24.38699
Longitude: -78 56 39.09364

North Carolina State Plane Coordinates (USFT)
Northing: 924515.16
Easting: 2016448.41
Horizontal Datum: NAD 83/2007

Elevation (USFT): 514.04
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete wing wall at NE corner of bridge

Location: Helena Rd. over North Flat River

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_NFR_06
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 4/25/2011

Latitude: 36 18 46.84543
Longitude: -78 58 17.67026

North Carolina State Plane Coordinates (USFT)
Northing: 932850.83
Easting: 2008375.45
Horizontal Datum: NAD 83/2007

Elevation (USFT): 544.70
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete head wall at NW corner of culvert

Location: US-501 over North Flat River

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_NFR_11
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 3/20/2011

Latitude: 36 20 30.47341
Longitude: -79 01 27.41965

North Carolina State Plane Coordinates (USFT)
Northing: 943330.62
Easting: 1992847.47
Horizontal Datum: NAD 83/2007

Elevation (USFT): 602.96
Vertical Datum: NAVD 1988 (Geoid09)

Description: 2-3/4" metal bolt cap in wood rail base at NE corner of bridge

Location: Paynes Tavern Rd. over North Flat River

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_NFRT_09
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 2/21/2011

Latitude: 36 21 57.31053
Longitude: -78 57 58.78672

North Carolina State Plane Coordinates (USFT)
Northing: 952113.57
Easting: 2009914.50
Horizontal Datum: NAD 83/2007

Elevation (USFT): 650.17
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square at NE corner of culvert

Location: Oxford Rd. over North Flat River Tribuatary

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_SFR_03
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 4/25/2011

Latitude: 36 15 23.55974
Longitude: -78 56 39.83579

North Carolina State Plane Coordinates (USFT)
Northing: 912295.93
Easting: 2016394.49
Horizontal Datum: NAD 83/2007

Elevation (USFT): 500.47
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete wing wall at SW corner of bridge

Location: US-501 Southbound over Sorth Flat River

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_SFR_04
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 4/25/2011

Latitude: 36 15 26.70579
Longitude: -78 57 47.71550

North Carolina State Plane Coordinates (USFT)
Northing: 912611.50
Easting: 2010834.67
Horizontal Datum: NAD 83/2007

Elevation (USFT): 503.18
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete wing wall at NW corner of bridge

Location: Ned Moore Rd. over South Flat River

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_SFR_07
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 3/23/2011

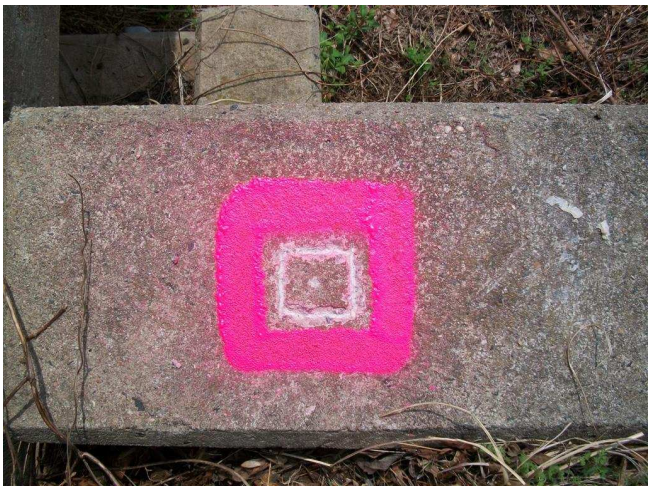
Latitude: 36 15 43.13218
Longitude: -79 00 43.05911

North Carolina State Plane Coordinates (USFT)
Northing: 914270.89
Easting: 1996473.48
Horizontal Datum: NAD 83/2007

Elevation (USFT): 540.18
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete wing wall at NW corner of bridge

Location: Berry Pearce Rd. over South Flat River



North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_SFR_12
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 3/24/2011

Latitude: 36 17 41.34776
Longitude: -79 03 53.53841

North Carolina State Plane Coordinates (USFT)
Northing: 926232.03
Easting: 1980881.10
Horizontal Datum: NAD 83/2007

Elevation (USFT): 594.83
Vertical Datum: NAVD 1988 (Geoid09)

Description: Chiseled square on concrete wing wall at NW corner of bridge

Location: Charlie Long Rd. over South Flat River

North Carolina Floodplain Mapping Program

Benchmark Data Sheet

County: Person
Benchmark Name/Identifier: ERM P_SFR_14
Surveyed By: ESP Associates, P.A.
Date Benchmark Established: 4/23/2011

Latitude: 36 17 45.11163
Longitude: -79 05 03.55171

North Carolina State Plane Coordinates (USFT)
Northing: 926616.98
Easting: 1975149.70
Horizontal Datum: NAD 83/2007

Elevation (USFT): 605.70
Vertical Datum: NAVD 1988 (Geoid09)

Description: 2-1/2" metal bolt in wood rail base at NW corner of bridge

Location: Robert Whitfield Rd. over South Flat River