

## Final Survey Report

March 18, 2016

TIP: B-5692

PEF: CALYX Engineers +Consultants

Project No.: W0377

L&S # 06-16-007

Bladen County

Description: Bridge 11 on NC 53 over Ellis Creek

### Datum

- This is an English project.
- The Horizontal Datum is NAD 1983 (conus) NA 2011.
- The Vertical Datum is NAVD 88.
- All distances and coordinate units are US Survey Feet.

### Baseline Alignment

b5692\_ncdot\_fs.dgn.

b5692\_ncdot\_baseline.txt

- The Baseline Control for this project was established by NCDOT.
- Baseline –BL- Beginning Station; BL-1, Station 5+00.00.
- Project GPK file: b5692\_ls\_gpk.gpk.
- Localized Monument used for Project Control: **B5692 BL-3**

| <u>Northing</u> | <u>Easting</u> | <u>Elevation</u> |
|-----------------|----------------|------------------|
| 344,441.619     | 2,102,138.435  | 52.13'           |
- The Average Combined Factor GROUND TO GRID is 0.999922406

### -EL- Existing Alignment

b5692\_ncdot\_fs.dgn.

- –EL- Beginning Station; Station 10+00.00.  
The Existing Alignment –EL- was generated by a best fit of the existing roadway centerline.

### Field Surveys

This project was field surveyed between February 25, 2016 and March 15, 2016.

CALYX performed the following survey tasks by conventional methods.

- Pavement dtm's.
- Gravity utilities and Pipe inverts.
- Classification.
- Field Property ties.
- Location of planimetric features
- Supplemental dtm's

- Hydrographic surveys
- Location of wetlands (delineated by others)
- Location of TBM set by NCDOT
- SUE – designation, location and mapping

### **Planemetric Mapping**

b5692\_ncdot\_fs.dgn.

- All planemetric features in the mapping were conventionally surveyed by CALYX.
- No data from photogrammetry was provided.

### **Existing Right of Way**

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- A Right of Way Abstract was not provided by NCDOT.
- The right of way was mapped at 60 feet wide (30 feet from centerline) based on existing plats of record and visual observation of NCDOT maintenance.

### **Properties**

b5692\_ncdot\_fs.dgn.

- Property Lines were drawn from deeds and plats obtained from the Register of Deeds Office.

### **Utility Information**

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The following utilities were observed within the project limits.

- Power
- Telephone

### **DTM and TIN files**

b5692\_ls\_dtm.dgn.

b5692\_ls\_tin.tin

- The DTM file is comprised of conventional topo (pavement dtm's, obscured and non-obscured dtm's and hydrographic dtm's), performed by CAYLX and a small amount of QL2 LiDar provided by NCDOT.

- Curve and Stroke Tolerance was set at 0.15 feet and with a minimum length of 30 feet. Side Dissolve option was used with a Side Length of 100 feet.

#### **Existing Bridge**

- The existing bridge consists of a concrete deck with an asphalt wearing surface, supported concrete caps on timber piles.
- The bridge rail is open concrete.

#### **Adjacent Land Uses and Traffic**

- The vehicular traffic along on NC 53 was observed to be medium throughout the day.
- The land use around the project limits are undeveloped wooded tracts.

#### **Deliverables**

The following is a list of the files and data submitted at the completion of the Survey.

|                               |                                |
|-------------------------------|--------------------------------|
| Surveyor's Report             | b5692_ls_sr.pdf                |
| Baseline Text File            | b5692_ls_baseline.txt          |
| GPK File:                     | b5692_ls_gpk.gpk               |
| Full Survey File              | b5692_ncdot_fs.dgn             |
| DTM File                      | b5692_ls_dtm.dgn               |
| DAT File                      | b5692_ls_dat.dat               |
| TIN File                      | b5692_ls_tnl.tin               |
| Pole Data File                | b5692_ls_pdf.txt               |
| Propcon Database              | b5692_ls_poc.mdb               |
| Deeds and Plats in pdf format | b5692_ls_deeds                 |
| Certification Letter          | b5692_Certification Letter.pdf |

## PHOTOS



LOOKING NORTHWEST



LOOKING SOUTHWEST





LOOKING UPSTREAM



LOOKING DOWNSTREAM





BRIDGE PROFILE (LOOKING NORTH)



BRIDGE PROFILE (LOOKING NORTH)