

Final Survey Report

February 27, 2017

TIP: B-5507

PEF: CALYX Engineers +Consultants

Project No.: 55007.1.1

L&S # 01-16-110

Chowan County

Description: Bridge No. 24 over Warwick Swamp, Bridge No. 20 over Dillard Creek and Bridge No. 21 over Sand Run on NC 32

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

b5507_ncdot_fs.dgn.

b5507_ls_baseline.txt

- The Baseline Control for this project was established by CALYX.
- Baseline –BL- Beginning Station;
Bridge No. 20: B5507-1, Station 5+00.00.
Bridge No. 21: B5507-3, Station 5+00.00.
Bridge No. 24: B5507-5, Station 5+00.00.
- Project GPK file: b5507_ls_gpk.gpk.
- Localized Monument used for Project Control established by NCDOT: **P10**

<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>
935,771.324	2,695,092.349	28.14'
- The Average Combined Factor GROUND TO GRID is 1.0000437728

-EL- Existing Alignment

b5507_ncdot_fs.dgn.

- –EL- Beginning Station;
Bridge No. 20: Station 10+00.00.
Bridge No. 21: Station 10+00.00.
Bridge No. 24: Station 10+00.00.
The Existing Alignment –EL- was generated by a best fit of the existing bridge and the existing roadway centerline.

Field Surveys

This project was field surveyed between January 5th thru February 14, 2017.

CALYX performed the following survey tasks by conventional methods.

- Established (3) GPS Azimuth pairs
- Established Baseline Control
- Established (3) Benchmarks
- Pavement dtm's.
- Hydrographic surveys
- Supplemental dtm's
- Field Property ties and Property Analysis and Computations
- Classification.
- Location of planimetric features not in file from photogrammetry
- Location of Gravity Utilities and Pipe inverts.
- Performed pole data
- SUE – designation, location and mapping (Under separate Task Order).

Planimetric Mapping

B5507_ncdot_fs.dgn.

- All planimetric features shown were provided by NCDOT photogrammetry unit and supplemented conventionally by CALYX.

Existing Right of Way

b5507_ncdot_fs.dgn.

- A Right of Way Abstract was provided by NCDOT.
- The right of way was mapped at 60 feet wide (30 feet from centerline) based on the provided abstract, existing plats and deeds of record.

Properties

b5507_ncdot_fs.dgn.

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

Utility Information

B5507_ncdot_fs.dgn.

The following utilities were observed within the project limits.

- Power
- Telephone
- Telephone Fiber Optic
- Gas
- Water

DTM and TIN files

b5507_NCDOT_dtm.dgn.

b5507_ls_Bridge 20_tin.tin
b5507_ls_Bridge 21_tin.tin
b5507_ls_Bridge 24_tin.tin
b5507_ls_Bridge 20_dat.dat
b5507_ls_Bridge 21_dat.dat
b5507_ls_Bridge 24_dat.dat

- The DTM file is comprised of conventional topo (pavement dtm's, obscured and non-obscured dtm's and hydrographic dtm's), performed by CALYX and supplemented with dtp. file provided by NCDOT Photogrametry Unit.
- 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

Bridge 20 (Chowan) over Dillard Creek

- The existing bridge appears to have a concrete deck with an asphalt wearing surface, supported by concrete caps on timber piles and steel crutch bents.
- The bridge rail is concrete post and rail.

Bridge 21 (Chowan) over Sand Run

- The existing bridge appears to have a concrete deck with an asphalt wearing surface, supported by concrete caps on timber piles and steel crutch bents.
- The bridge rail is concrete post and rail.

Bridge 24 (Chowan) over Warwick Swamp

- The existing bridge appears to have a concrete deck with an asphalt wearing surface, supported by concrete caps on timber piles and steel crutch bents.
- The bridge rail is concrete post and rail.

Adjacent Land Uses and Traffic

- The vehicular traffic along on NC 32 (Virginia Road) was observed to be medium throughout the day.
- The land use around the project limits are single family residential, agricultural and undeveloped wooded tracts.

Deliverables

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

Surveyor's Report	b5507_ls_sr.pdf
Baseline Text File	b5507_ls_baseline.txt
GPK File	b5507_ls_gpk.gpk
Full Survey File	b5507_NCDOT_fs.dgn

DTM File	b5507_NCDOT_dtm.dgn
DAT File	b5507_Is_Bridge 20_dat.dat b5507_Is_Bridge 21_dat.dat b5507_Is_Bridge 24_dat.dat
TIN File	b5507_Is_Bridge 20_tin.tin b5507_Is_Bridge 21_tin.tin b5507_Is_Bridge 24_tin.tin
Pole Data File	b5507_Is_pdf.txt
Propcon Database	b5507_Is_poc.mdb
Deeds and Plats in pdf format	b5507_Is_deed book.pdf b5507_Is_plat book.pdf
Certification Letter	b5507_Certification Letter.pdf

PHOTOS BRIDGE 20



Facing North



Facing South



East Side Profile



West Side Profile



Facing Upstream



Facing Downstream

BRIDGE 21



Facing West



Facing East



North Side Profile



South Side Profile



Facing Downstream



Facing Upstream

BRIDGE 24



Facing South



Facing North



East Side Profile (1)



East Side Profile (2)



West Side Profile



Facing Downstream



Facing Upstream