

OKLAHOMA DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION (405) 521-2621 FAX (405) 522-0364

05/29/2013

To: Mr. Larry Reser, Chief of Surveys
From: Joseph H. Farmer, Professional Land Surveyor
Subject: Re: SWO 4844(1) - S.H. 34, Bridge over North Persimmon Creek, 7.6 miles North of the Dewey County Line, Woodward County, Oklahoma

Historical Letter and Written Report

1. GENERAL

- A. Survey began November 12, 2012
Survey completed April 16, 2013
- B. The measurement unit for this project was the U.S. Survey Foot.

2. SURVEY ASSIGNMENT

The above described survey was assigned to me by Mr. Larry Reser, Chief of Surveys, and completed by my crew at Cobb Engineering.

3. PURPOSE OF THIS SURVEY

The purpose of this survey is to furnish sufficient data to develop plans to construct a new bridge over North Persimmon Creek south of Sharon. The survey will include the Alignment, Topographic/Planimetric data, Surface Features/DTM data, Land Ties, Utilities, Drainage and all other pertinent information needed to aid in the design.

4. SURVEY LIMITS

This survey began at P.O.T. Sta. 2416+58.50 (EW-52 Section Line) and extends North to P.I. Sta. 2469+31.90 (EW-51 Section Line) = P.I. Sta. 2469+33.40 as established under SWO 1994(1) survey and shown on FAP No. F-418 (8) plans (approximate centerline length = 1.00 mile).

5. ALIGNMENTS

The Centerline of Survey for this project is along and identical to the centerline of present S.H. 34 as established under SWO 1994(1) survey and shown on FAP No. F-418 (8) plans.

6. STATIONING

Stationing for this survey was taken from SWO 1994(1) survey and FAP No. F-418 (8) plans.

7. HORIZONTAL CONTROL

- A. Horizontal Control for this survey is NAD 83 (1993) Oklahoma State Plane Coordinate System, Lambert Projection, North Zone, and derived utilizing static GPS.
- B. Primary Horizontal control was established on one (1) monument along this survey. It is a 3 inch aluminum cap marked W-77-740.
- C. Secondary horizontal control was established along the centerline of survey and referenced and shown on the survey data sheets of this survey.
- D. The primary control network, the secondary network and section boundaries for this survey are in compliance with NGS Second Order Class 11 standards for horizontal control. (1 : 20,000).

8. VERTICAL CONTROL

- A. Level datum for this survey is NGS, NAVD 88, taken from PRIMARY CONTROL POINT NO. W-77-740. A complete set of check levels was run throughout the survey using a Sokkia digital level.
- B. The adjusted levels and vertical differences between bench marks are shown in Following file: SWO4844_1_V1.dgn (SDS 3) and SWO4844_1_V1_Level Worksheet.pdf
- C. Accuracy - 3rd order or better before adjustment.

9. TOPOGRAPHY

Topography on this survey was obtained by utilizing the Topcon and Trimble GPS RTK systems and Total Station technology with the Trimble TSCI, TSCII, and TOPCON FC-2500 data collectors for field instruments. Centerline profile, bridge profiles, and drainage structures were obtained for the length of the project by utilizing conventional field methods. The supportive information pertaining to the surface features are available in the computer file SWO4844_1_V1_SFF.dgn and SWO 4844_1_V1_TOPO.dgn.

10. DTM / CROSS SECTIONS

Cross sections on this survey were provided by the Topcon and Trimble GPS RTK system and total station technology processed and output in the form of a DTM survey and placed in computer file SWO4844_1_V1_SFF.dgn

11. LAND TIES

Land ties for this survey were established for the following:

T-21-N, R-20-W, I.M. - Secs. 27 and 28

A search was made for any trace of the original monuments and/or accessories. All filed certified corners received from the Oklahoma Department of Libraries were researched and noted. The original survey and survey notes were used from the following survey:

Ehud Noble Darling 10/02/1873

A complete detailed account of each corner set or used follows:

NORTH QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-745, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 3 OF 3 REFERENCES ON OCCR FILED BY R. JVIDEN, LS 1083, ON 01-03-95.

NORTHEAST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-746, T-21-N, R-20-W, I.M. FOUND 60D NAIL 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS 2 REMAINING REFERENCES ON OCCR FILED BY R. JVIDEN, LS 1083, ON 08-14-85.

EAST QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-747, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP 6" DEEP. SINGLE PROPORTION MEASUREMENT BETWEEN SECTION CORNERS 0.5 MILE NORTH AND 0.5 MILE SOUTH.

SOUTHEAST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-754, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN 2" DEEP. MATCHES MONUMENT DESCRIPTION ON OCCR FILED BY T. JVIDEN, LS 1149, ON 08-14-85.

SOUTH QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-753, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP 6" DEEP. MONUMENT WAS SET ON-LINE BETWEEN SECTION CORNERS 0.5 MILE EAST AND 0.5 MILE WEST AND IN-LINE WITH FENCE RUNNIN SOUTH.

SOUTHWEST CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-752, T-21-N, R-20-W, I.M. FOUND 3/4" IRON PIN 10" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS DISTANCE TO CENTERLINE OF SURVEY FOR SH-34 AS CALLED OUT ON SH-34 FAP NO. F-418(8) HIGHWAY PLANS.

WEST QUARTER CORNER OF SECTION 27, O.D.O.T. MONUMENT W-77-748, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET FROM SH-34 FAP F-418(8) HIGHWAY PLANS.

NORTH QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-743, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS REFERENCES ON OCCR FILED BY R. JVIDEN, LS 1083, ON 07-22-08.

NORTHEAST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-744, T-21-N, R-20-W, I.M. FOUND BENT 3/4" IRON PIN 12" DEEP. MONUMENT FITS DISTANCE TO CENTERLINE OF SURVEY FOR SH34 AS CALLED OUT ON SH-34 FAP NO. F-418(8) HIGHWAY PLANS.

SOUTH QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-751, T-21-N, R-20-W, I.M. FOUND 1/2" IRON PIN WITH LS 1083 CAP 6" DEEP. MATCHES MONUMENT DESCRIPTION AND FITS REFERENCES ON OCCR FILED BY R. JVIDEN, LS 1083, ON 12-26-07.

SOUTHEAST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-750, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET ON NORTH SIDE OF 8" WOOD FENCE POST. MONUMENT FITS WITHIN 0.03' OF PROPORTIONAL DISTANCE TO QUARTER SECTION CORNER 0.5 MILE EAST. OLD FENCE LINE 0.5 MILE NORTH FITS WITHIN 1' OF SINGLE PROPORTION MEASUREMENT BETWEEN THIS CORNER AND SECTION CORNER 1 MILE NORTH.

WEST QUARTER CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-749, T-21-N, R-20-W, I.M. SET 5/8" IRON PIN WITH CA 32 CAP. MONUMENT WAS SET ON-LINE BETWEEN SECTION CORNERS 0.5 MILE NORTH AND 0.5 MILE SOUTH AND IN-LINE WITH OLD FENCE RUNNING EAST AND WEST.

NORTHWEST CORNER OF SECTION 28, O.D.O.T. MONUMENT W-77-742, T-21-N, R-20-W, I.M. FOUND 60D NAIL 6" DEEP. MONUMENT FITS PROPORTIONAL DISTANCE TO QUARTER SECTION CORNER 0.5 MILE EAST. MONUMENT ALSO FALLS IN CENTER OF EAST-WEST ROAD AND IN-LINE WITH ROAD RUNNING NORTH.

12. EXISTING RIGHT-OF-WAY

Existing right of way as shown on this survey is based off of FAP-418 (8) Plans and verified with right-of-way deeds where available.

13. UTILITIES

- A. All utility companies servicing this survey project were contacted through "CALL OKIE". Contacts for the town of Sharon water lines and sanitary sewer lines were provided by Ed Laird (Director of Environmental Services, Woodward Public Works Dept.) (580) 254-8554.

- B. No utilities of any kind were located by USIC (Utility Locator). There were multiple correspondences between Tanner Wentworth (Cobb Engr. Survey Party Chief) and the USIC utility line locator. The USIC utility line locator said he would mark the lines and then provided dates as to when he would mark them on three separate occasions. After each occasion The USIC locator mentioned that he was "too busy" and could not mark the lines. After two weeks and multiple attempts to get the lines marked by USIC, Tanner Wentworth left messages with Jason Dewey (USIC Northwest Supervisor) and Dave Stewart (USIC West supervisor) in an attempt to get the lines marked. No USIC representatives responded to these messages.
- C. Information regarding type, size, ownerships, location, depth, etc. is placed in computer file SWO4844_1_V1_SD7.pdf.

14. Environmental Concerns

There were no environmental concerns that were encountered.

15. DRAINAGE INFORMATION

Drainage areas were determined from USGS Stream Stats and USGS Quad Maps. Drainage data was taken from USGS Basin Characteristics Report. Data was field verified for accuracy placed in computer file SWO4844_1_V1_DRA.dgn and SWO4844_1_V1_USGS Drainage.pdf

16. SURVEY DATA SHEETS

Survey Data Sheets were submitted in the form of a Microstation Design File archived on the O.D.O.T. Mainframe Computer, as per O.D.O.T. Survey Division Standards. These will be incorporated into the set of design drawings and will be in substantial conformity with the O.D.O.T. Survey Division Standards for Survey Data Sheets, as maintained on O.D.O.T.(s) Intranet.

17. SUBMISSION OF SURVEY DATA

- A. Historical Letter & Written Report.
- B. Form SD-1, Transmittal Letter w/FSVARCH INDEX attached.
- C. Form SD-7, Public and Privately Owned Utilities List w/ vicinity maps where available.
- D. Form SD-11, Position and Description of Survey Monuments (GPS control monuments, Brass/Aluminum Caps for benchmarks, etc.) (if applicable).
- E. Form SD-20, Survey Control Data Statement.
- F. Form SD-41, Surveyor's Certification.
- G. Cogo Data (coordinate list with alignments).
- H. Benchmarks & Check Levels list, including the SWO and description of the project.
- I. Original and reduced copy (8" x 11") of each Certified Land Corner form.
- J. NGS Recovery Form for each horizontal and vertical monument recorded or used during the course of the survey.

18. EQUIPMENT USED

Topcon GR3 GPS
Topcon Hiper II GPS
Topcon IS 3" Imaging Robotic Total Station
Topcon FC-2500 Data Collectors
GPT-9005A 5" robotic Total Station
Topcon GTP 3000W Total Station
Topcon GPT 3005W Total Station
Topcon GTS 3000 Total Station
Topcon GTS 313 Total Station
Trimble TSC 1 Data Collectors
Trimble TSC 2 Data Collectors
Trimble 5700 GPS
Trimble 5800 GPS
Sokkia SDL 30 Digital Level
Inroads working in a Microstation Platform
AutoCAD Civil 3D
Microstation V8

19. Personnel

Joe Farmer, P.L.S. Technician Manager 2
Tanner Wentworth, L.S.I. Survey Intern 1
Brian Bird, L.S.I. Survey Intern 1
Corey Simmons, Technician 1
Sam McGee, Technician 1
Eric Mentzer, Technician 3
Eric Oldham, Technician 1
Matthew Overall, Technician 1
Rebecca Robichaux, Technician 1
Parker Kugler, Technician 1
Matthew Chernicky, Lead ROW Agent

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
DESCRIPTION					DATE

P.L.S.	J.H.F.	05/29/13	S.H. 34, BRIDGE OVER N. PERSIMMON CREEK, 7.6 MILES N. OF THE DEWEY COUNTY LINE	WOODWARD COUNTY
DRAWN	J.E.M.	05/29/13	HISTORICAL LETTER & WRITTEN REPORT	
CHECKED	T.J.W.	05/29/13		
APPROV.	J.H.F.	05/29/13		
CREW CHIEF	T.J.W.			
SWO NO. <u>4844(1)</u> J/P NO. <u>28827(04)</u> SHEET NO. <u>11</u>				