OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				

REVISIONS	
DESCRIPTION	DATE

HISTORICAL LETTER AND WRITTEN REPORT
SWO 4564(1) – J/P 24261(04) & J/P 24263(04) – S.H. 99 – Osage County

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

January 31, 2011

To: Mr. Larry D. Reser, PLS, Chief of Surveys

From: John M. Hughett, Professional Land Surveyor

Subject: SWO 4564(1), J/P 24261(04) & J/P 24263(04) – SH 99 – Osage County
Bridge over an Abandoned Railroad, 11.6 miles North of S.H. 20 &
Bridge over Birch Creek, 1.4 Miles South of S.H. 11

I. GENERAL

Survey Began: November 10, 2010
Survey Completed: January 31, 2011
The measurement unit for this project is the U.S. Survey feet.

II. SURVEY ASSIGNMENT

This survey was assigned to Lemke Land Surveying, Inc. (LLS) under Engineering Contract Number 1298–G, Task Order No. 2. A survey packet was delivered to LLS containing Survey Special Provisions with attachments. The alignment was to be tied to F.A.P. NO. 416, Sec. "C" plans.

III. PURPOSE OF THE SURVEY

The purpose of this survey was to obtain adequate information for the design and construction of new bridges over an abandoned railroad and over Birch Creek.

IV. SURVEY LIMITS

The survey began at P.O.T Sta. 995+00.00 and extended Northerly to P.O.T. Sta. 1108+00 as shown on FAP No. 416–C (1938) plans.

V. ALIGNMENT

The centerline alignment for S.H. 99 was previously established under FAP No. 416, Sec "C" plans. The present centerline alignment was established by determining the existing centerlines of the two bridges that will be replaced. These bridges are approximately 3750 feet apart. After establishing the location of the centerline of these bridges, the centerline, as described in the FAP No. 416, Sec ?C? plans, was extended North and South, to the limits of this survey. Existing drainage structures along the path of the calculated centerline were also located and their position compared to the location per the above referenced plans. The greatest variance of location of the existing structures to the calculated centerline was .3 feet. The calculated centerline was accepted.

VI. STATIONING

As directed by the Special Provisions, the Stationing was established using the FAP 416 Plans. The stationing was held at Sta. 995+00.00 and will increase to the North from this point, field measured distance, to the End of Survey.

VII. HORIZONTAL CONTROL

A. Horizontal control for this survey was established by static GPS observations to the project site control and NGS CORS stations. The primary control stations were LMNO, OKPR, and OKTU. Coordinates shown on this survey are NGS Oklahoma State Plane Coordinate System NAD83(CORS96) Lambert Projection North Zone. The distances and coordinates shown on this survey are in U.S. survey feet. All angles and bearings are shown in degrees, minutes and

B. Primary control for this survey was established following ODOT Survey Division Standards. Control points were established using a minimum of 6 hour static GPS sessions.

C. When possible, the Primary Control points were set within sight distance of each other. Secondary Control points were established by multiple observations using RTK and utilizing the Primary Control points for base station setups.

VIII. VERTICAL CONTROL

A. Vertical control for this survey was taken from ODOT Monument O–57–179 and several benchmarks established under the FAP No. 416–C (1938) plans.

B. ODOT monuments O–57–932, O–57–933, O–57–934, O–57–935, O–57–936 and O–57–937 were established with additional benchmarks set as needed to meet ODOT Standards for the minimum distance between control points.

C. Level datum for this survey is NGS NAVD 88.

D. All Control Leveling for this project was done using Differential leveling techniques.

E. Several benchmarks from FAP No. 416–C plans were found. Those benchmarks are shown and referenced in the Check Levels Table.

F. Benchmarks established or used on this survey are within the accuracy requirements of NGS Third Order standards as a minimum.

G. A BENCHMARKS AND CHECK LEVELS list was placed in the .DGN file and a hardcopy submitted with the completed survey showing the benchmark number, the differences of each run between benchmarks, and the elevation and full description of each benchmark.

IX. PHOTO CONTROL

No Photo Control was performed for this project.

X. TOPOGRAPHY AND DTM

Observable surface feature information was collected and compiled into a traditional design topographic survey and included items such as drainage structures, utility structures, building structures, underground utility markings and observable utility evidence, bridges, roadway, mailboxes, fencing, etc. Ground surface contours were generated at 1–foot contour intervals. Topographic information was collected in an area, as a minimum, the area delineated in the Survey Special Provisions. The surface area was mapped using total station ground surveying techniques and surface point/break–line methodology. A Digital Terrain Model was generated, analyzed and a final edit made of areas where the automated computer process left misleading information (such as open bridge faces, manmade inverts such as a sewer manhole, manmade peaks such as an elevated manhole or utility riser, etc.)

XI. LAND TIES

Land ties for this survey consisted of the establishment of the corners of Sections 2, 11, 14, and 15, Township 24 North, Range 9 East of the Indian Meridian. A search was made at all corner locations for any trace of original monuments and/or accessories.

Just prior to the investigation of Lemke Surveying into the establishment of the corners of the above mentioned Sections, the Bureau of Land Management, out of the New Mexico State Office, had completed the field portion of their effort to re–establish all of the section and quarter section corners in the above mentioned sections, except for the E/4 corner of Section 11. At the time of this survey submittal, the BLM had not "officially" accepted the corner locations. The BLM representative for the survey indicated he was confident the locations would not change but would be several months before the BLM officially accepted them.

The following is a detailed explanation of how each corner was re–established:

NE Corner of Section 2 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. A corner record was filed for this location, however, no references were found.

N/4 Corner of Section 2 – Found and accepted a No. 3 Bar with cap stamped "JR PLS 1614" at location. No previous corner record was filed for this location.

NW Corner of Section 2 – Found and accepted a No. 3 Bar at location. Location fits previously filed reference.

W/4 Corner of Section 2 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner references were found that matched the accepted location.

SW Corner of Section 2 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. Location fits previously filed reference. Also found 2 references from a previously filed corner record.

S/4 Corner of Section 2 – Found and accepted a No.3 Bar at location. No previous corner records were filed for this location.

SE Corner of Section 2 – Found and accepted a Brass monument at location. Monument surface is not readable but parts of it appear to read "ODOT".

E/4 Corner of Section 2 – Found and accepted a No. 3 Bar at location. A corner record was filed for this location, however, no references were found.

W/4 Corner of Section 11 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner record was filed for this location.

SW Corner of Section 11 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. Found one reference from a previously filed corner record.

S/4 Corner of Section 11 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner record was filed for this location.

SE Corner of Section 11 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner record was filed for this location.

E/4 Corner of Section 11 – Set #4 Bar with Cap "CA 2054" at location. This corner was re–established using single proportionate method from monuments north/south. No previous corner records were filed for this location.

W/4 Corner of Section 14 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

SW Corner of Section 14 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

S/4 Corner of Section 14 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

SE Corner of Section 14 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

E/4 Corner of Section 14 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

N/4 Corner of Section 15 – Found and accepted a No.6 Bar at location. Monument appears to be in harmony with the surrounding improvements. No previous corner records were filed for this location.

NW Corner of Section 15 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

W/4 Corner of Section 15 – Found and accepted a 1908 GLO Brass Monument at location. No previous corner records were filed for this location.

SW Corner of Section 15 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

S/4 Corner of Section 15 – Found and accepted a BLM Brass Monument recently established by a cadastral surveyor of the Bureau of Land Management. No previous corner records were filed for this location.

XII. EXISTING RIGHT OF WAY

The right–of–way along S.H. 99 was established from the existing plans, right–of–way documents, and right–of–way occupation. Existing right–of–way, easements, and property ownerships for this survey were obtained from deeds on file at the Osage County Court House and the ODOT Right–of–Way Division, Engineering Branch.

XIII. UTILITIES

There are several underground utilities within the project extents. CALL OKIE was contacted on November 11, 2010 with Order No. 10112915282569 and 10112915292573. The lines, except for a rural waterline, were flagged and painted within a week of the order. The Rural water was flagged by Evergreen Rural Water at a later date.

XIV. HAZARDOUS WASTE

During the performance of required conventional survey work, survey crew members watched for areas/sites that could have previously or now being used to store or dispose of possible contaminants. None were found.

XV. DRAINAGE INFORMATION

A. Drainage areas for all drains crossing the Survey Centerline were taken from USGS quad maps that have been scanned into a Microstation Design File. These areas (divide lines), where possible, were field checked for accuracy prior to submittal of the projects.

B. After talking with the local residents and the employees of the local Sinclair convenience store, it was determined that there is no problem with High Water in the vicinity of this project. High water was never observed rising above the bridges.

XVI. SURVEY DATA SHEETS

Survey Data Sheets were submitted in the form of a Microstation Design File as per ODOT Survey Division Standards.

XVII. SUBMISSION OF SURVEY DATA

Upon completion of this survey, a hard copy of the following were submitted, in addition to the digital survey data:

A. Historical Letter & Written Report
B. Form SD–1, Transmittal Letter
C. Form SD–7, Public and Private Owned Utilities List
D. Form SD–11, Position and Description of Survey Monuments
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. Copies of the Oklahoma Certified Corner Records

XVIII. PERSONNEL

John M. Hughett, PLS
Pierce Tranum, Survey Technician
Ed Painter, Senior Survey Technician
Jason Favors, Survey Technician
Clark Fisher, Survey Technician
Terry Glad, Survey Technician

John M. Hughett, PLS
Lemke Land Surveying, Inc.

			OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION	
PLS	JMH		SH-99 OVER BIRCH CREEK	OSAGE COUNTY
DRAWN	TG		SURVEY DATA SHEET	
CHECKED	JMH		STATE JOB NO. 24261(04)	SHEET NO. 12
APPROVED				
CREW	PT,JF,CF,SA			