

Notes and References

1. Kate L. Gregg, *The Road to Santa Fe – The Journal and Diaries of George Champlin Sibley*, Albuquerque: University of New Mexico Press, Second Paperback Edition 1952 with Preface 1995, pp 6-7.
2. K. Gregg, p 54.
3. K. Gregg, pp 197-198, 203.
4. K. Gregg, p 78.
5. K. Gregg, p 199.
6. K. Gregg, pp 84-85, 118, 202.
7. K. Gregg, pp 105-106.
8. Sibley's Journal says Oct 30 (K. Gregg, p 111), but the Official Report says Oct 31(K. Gregg, p2 00).
9. K. Gregg, pp 116, 131.
10. K. Gregg, p 155.
11. K. Gregg, p 201.
12. K. Gregg, p 203.
13. K. Gregg, p 44.
14. A good example of this is in the vicinity of present-day Larned, Kansas. Going west in 1825, Sibley's diary clearly describes camping at and crossing the Pawnee Fork a mile above its mouth (K. Gregg, p 73), approximately where present-day Hwy 56 crosses the Pawnee River just southwest of downtown Larned. The location of that camp is confirmed by the map Brown prepared in Taos in November 1825, which Sibley then sent to Benjamin Reeves November 13, 1825 (K. Gregg, p 115; The State Historical Society of Missouri, Abiel Leonard Papers, Collection No. 1013, Folder 34). On the return trip east in 1826, the route was apparently "corrected" because the map in the Field Book clearly coincides with crossing the Pawnee Fork at present-day Larned State Hospital.
15. K. Gregg, pp 176, 203.
16. K. Gregg, pp 184, 193. The re-survey actually began at the western boundary of Missouri and ended a little over 3 miles west of Diamond Spring (See table in Appendix B).
17. K. Gregg, pp 193-194.
18. K. Gregg, pp 195, 210.
19. See Appendix B.
20. It is interesting to note that the maps are the odd-numbered pages appearing on the left-hand side of the book and the even-numbered pages are the mileages and written descriptions appearing on the right-hand side of the book. This is confirmed by the introductory text of the Field Book, Field Book Page 6. See Appendix A, page labeled [6].

21. Introductory Text of Field Book, Field Book Pages 5. See Appendix A, page labeled [5].
22. Introductory Text of Field Book, Field Book Pages 6. See Appendix A, page labeled [6].
23. K. Gregg, pp 16-17 and http://en.wikipedia.org/wiki/Joseph_C._Brown. The survey of St. Louis was actually performed by Brown 1815 -1818.
24. Hardy Peacock, *Everything Has to Start Somewhere...*, Arkansas Oil Marketers Association, Summer 2003.
25. K. Gregg, p 175.
26. Surveyor Brown used a four pole Gunter's Chain²² which was 66 feet long, there being 80 chains per mile. The chain had 100 links with a tag or tally every 10 links. For accurate chaining, the chain had to be pulled taut and level, with no twisting of the chain. The distance between points had to be accurately marked, and distances had to be measured along straight line segments with the bearing of the straight line segment recorded. If a change in direction was required, a "turning point" had to be established and the bearing of the next line segment determined. While sounding simple enough, accurate chaining, particularly over long distances and across country, is not easy to accomplish.
27. Bearings are horizontal angles stated in Degrees, Minutes, and Seconds from a north-south line; for example, a bearing of S38°45'10"W would be along a line running at an angle of 38 degrees 45 minutes 10 seconds west of due south. There are 360 degrees in a full circle, 60 minutes in a degree, and 60 seconds in a minute. Bearings were determined using a surveyor's compass. The compass would be set-up at a "turning point" in the survey, and sighted along the next straight-line segment to be chained. The compass would be read to determine the bearing of the line. The compass bearing would have to be corrected for magnetic declination, the difference between magnetic north and true north. Magnetic north varies depending on your location on the earth. The compass most likely could be read directly to 30 minutes and estimated with a device called a vernier to perhaps 5 minutes (personal correspondence with Steve Brosemer, Registered Land Surveyor). Great care was required to obtain consistently accurate determinations of bearings.
28. William H. Goetzmann, *Army Exploration in the American West*, New Haven: Yale University Press, 1959, Appendix C, p 451. [Special thanks to Mr. Andre Dumont, Dumont Maps and Books of the West, for identifying this reference.] Also see Appendix C of this Report.
29. See Appendix C of this Report.
30. The quote by Archibald Gamble is from K. Gregg, p 228. The 1808 Treaty established the western boundary of the Osage lands as "...beginning at Fort Clark, on the Missouri, five miles [along the Missouri] above Fire Prairie, and running thence a due south course to the river Arkansas..." (*Indian Affairs: Law and Treaties, Vol. II, Treaties*, Compiled and edited by Charles J. Kappler, Washington,

Government Printing Office ,1904, “Treaty With the Osage, 1808. --- Nov. 10, 1808/7 Stat., 107./Ratified Apr. 28, 1810”). “Joseph C. Brown, Deputy surveyor, under instruction from William C. Rector, Surveyor General of Missouri and Illinois, surveyed the Osage Indian line of 1808 from Fort Clark to the Arkansas River. He had Archibald Gamble assigned to assist him as an assistant surveyor. Brown and Gamble with John A. Taylor, Rueben M. Hatton, Wm. Hatton, Jahoyda Martin, David Briggs, Andres Hunter, Solomon Wells, Owen Wingfield and Andrew Harrison, as chainmen, markers, pack-horsemen and hunters, at one dollar per day each, commenced the survey at Fort Clark, on the 15th day of August, and reached the Arkansas River October 16, 1816.” (John L. Thomas, “*Some Historic Lines in Missouri*”, Missouri Historical Review, Vol. 3, No.3, April 1909, pp 216-217). John L. Thomas apparently had some very detailed information for his April 1909 article. However, we have not been able to find any records from the survey. “The suggestion that it [Osage Line of 1808] be run and some adjustment made in the difficulties between the Osage, Cherokees and Quapaws was made by [William] Clark, [Ninian] Edwards and August Chouteau in 1816.” Further, it was stated that the “... Osage boundary line strikes the [Arkansaw] river at Frog Bayou...” However there is no reference to the line actually being surveyed. (*Before the Indian Claims Commission, The Osage Nation of Indians, Petitioner, v. The United States of America, Defendant*, Docket Nos. 106-106 (Consolidated), Decided Sept 20, 1968, 19 Ind. Cl. Comm 477.) [As an aside, this latter reference is a fascinating history of the Osage Nation, describing location of villages, hunting grounds, population, treaties, cessations, extent of the buffalo, and so forth from time immemorial.] Pending discovery of specific information which defines the location of the Osage line, the ‘point of commencement’ stated in the text of this report appears to fit the available data.

31. North-south on the Field Book maps is indicated as being parallel to the western boundary of Missouri.
32. Topographic map of Sibley, MO area with the location of the Osage Trace plotted thereon, provided to the Authors by Mr. James Harlan, Dept. of Geography, University of Missouri at Columbia, August 4, 2011.
33. This comparison is not exactly correct (although nearly so) because of the curvature of the earth and the way the Field Book maps are drawn; nevertheless, it is indicative of the remarkable overall accuracy of the survey.
34. Map is available at: [http://memory.loc.gov/cgi-bin/map_item.pl?data=/home/www/data/gmd/gmd405/g4052/g4052s/ct000190.sid&itemLink=r?ammem/gmd:@field%28NUMBER+@band%28g4052s+ct000190%29%29&title=\[Santa+Fe+route\].&style=gmd&legend](http://memory.loc.gov/cgi-bin/map_item.pl?data=/home/www/data/gmd/gmd405/g4052/g4052s/ct000190.sid&itemLink=r?ammem/gmd:@field%28NUMBER+@band%28g4052s+ct000190%29%29&title=[Santa+Fe+route].&style=gmd&legend)
35. “...surveyor Brown prepared at least seven maps of the Santa Fe Road, only five of which have been located. The five known maps vary in content and presentation from each other and include the three that accompanied the official report of 1827, a

- sectional map sent to Commissioner Benjamin Reeves in November 1825 from Taos, and a map drawn by Brown for Sibley after the arrival of the surveying team in Taos, New Mexico, on October 30, 1825. The latter map [Appendix F] was Brown's first map of the Santa Fe Road [and] was recently [1975] uncovered in the cartographic collections of the Library of Congress where it had remained unidentified as to purpose or author since its purchase in 1937 from Goodspeed's in Boston. This map [Appendix F] shows the route followed by the commissioners on their outbound journey from Fort Osage which ended with Sibley's arrival in Taos on October 30, 1825. ... The three manuscript maps submitted with the official report of 1827 show the final route of the Santa Fe Road following Sibley and Brown's resurvey and marking. Preserved in the Cartographic Archive Division of the National Archives, these maps are drawn, respectively, to scales of four miles to an inch, twelve miles to an inch, and four miles to an inch in 32 sections." (John R. Hebert, *Mapping the Road to Santa Fe, 1825-1827*, Terrae Incognitae, The Journal for the History of Discoveries, Vol. 7, No.1, 1975, pp 47-48) Commissioners Benjamin Reeves and Thomas Mather were sent a map of the survey in November 1825. (K. Gregg, p 115) Governor Narbona was sent a map of the survey in January 1826. (K. Gregg, p. 137) Brown discusses the various maps to be included with the Commissioner's report. (Appendix B of this report)
36. In a conversation with Mr. James Harlan, Dept. of Geography, University of Missouri at Columbia, he indicated many old maps show Ft. Osage on the south side of the bend of the river instead of on the east side of the bend. The old maps show the location of Ft. Osage as being where Clark made the treaty with the Osage in 1808 --- at the Great Osage Camp on the "High Bottom" on the south side of the bend as shown on Clark's map of Ft. Osage (copies of this map are available at Ft. Osage National Historic Landmark).
 37. Of particular note is information on the location and character of major streams such as the Rio Colorado, Red River of Natchitoches, Canadian, Arkansas, and Rio Grande del Norte. (K. Gregg, pp 209-210) "The maps and field notes prepared by Joseph Brown became valuable reference sources for future western exploration; the Corps of Topographical Engineers' 1844 map of Texas is but one example of its use. As late as 1855, Lt. G. K. Warren of the Army's Corps of Topographical Engineers remarked that Brown's 'maps, though not displaying great skill in topographical representation, were constructed from a survey more elaborate than any subsequent one over the same route. They are, therefore, of much value at the present time.' " (John R. Hebert, *Mapping the Road to Santa Fe, 1825-1827*, Terrae Incognitae, The Journal for the History of Discoveries, Vol. 7, No.1, 1975, pp 50)
 38. Fayette, Missouri, where Sibley arrived October 8, 1827. He left Fayette October 13, 1827 and arrived in St. Charles October 14, 1827. (K. Gregg, pp 194).
 39. In this case, the "Field book" is the actual surveyor's field notes, not the Field Book of Appendix A.

40. Return: A report, list, etc, especially a formal or official report; a set of tabulated statistics (Funk and Wagnalls Standard Desk Dictionary, 1974)
41. N.B.: Note Well (Funk and Wagnalls Standard Desk Dictionary, 1974)
42. Viz: Namely (Funk and Wagnalls Standard Desk Dictionary, 1974)