U. S. Coast and Geodetic Survey.

F. M. Thorne, Superintendent.

State: Illinois.

Descriptive Report.

Topographic Sheet No. 1877.

Locality:

The Great American Bottom.

1888.

Chief of Party:

J. E. McGrath.
Mr. F. M. Thorn
Superintendent, U. S. G. S. Survey,
Washington, D.C.

Sir:

Thereunto beg leave to make the following report upon the condition of the monuments that mark the ends of the U. S. G. S. Base Line in the great American Bottom, in St. Clair and Madison Counties, Illinois; the nature of the surroundings and condition of the line, and the execution of the topographical survey of the line, just completed and made in accordance with your instructions of February 8th and March 9th, 1858.

At Smith Base the monument seems to have never been disturbed; it stands erect, two of its faces parallel with the direction of the line, two face at right angles to this direction. The copper bolt in the top of this stone has been loosened from its fastenings and while it is yet so secured that it cannot be taken out without the aid of some tool, it is yet so loose
that it may be easily turned around in its cavity, using no greater force than can be applied by the unaided hands. The distance from the center of the base monument to the witness stone on the east of the line was found to be 62.1 feet; the distance from the center of the base monument to the witness stone on the west was 39.8 feet, in the description of the monument sent in by the office, these distances are given as 68 feet and 13 meters, respectively. The situation of the south base monument is one that is calculated to preserve it undisturbed; it is on the slope of a steep hill and is surrounded by a dense and tangled growth of thorny vines and bushes. The base monument at the north end of the line is on the slope of a steep hill which has been plowed once since the stone was set in place. When this plowing was done, the treasurer of the owner of the property informed me, special care was taken to avoid any interference with base monument and witness stones. The purpose of the owner of the estate upon which the end monuments of the north and south are situated, is to leave the field in which they are for grazing use, it being too steep for profitable cultivation.
The monument at both Base shows no sign of having ever been moved; the copper bolt in its top is firmly secured but the cross lines on the head of this bolt are nearly obliterated and seem to have been hammered out.

The two witness stones, referred to in the description, are standing the distances from the centre of each to the centre of the base monument was found to be 24 feet. The base monument stands erect, two of its faces being parallel with the direction of the baseline and two of its faces are at right angles to this direction.

Since the line was measured on orchard has been set out on the slope of the hill along which the northern end of the base line runs; this orchard extends from about Station 2 (100 feet from North Base) to Station 11 (500 feet from N. 13), one small tree being on the line. Twenty feet north of Station 21 (1070 feet from N. 13) a cottonwood tree has grown up on the line.

Commencing near Station 200 (1000 feet from N. 13) are the house, garden, vine yard, orchard, farm buildings, and orchard of Mr. F. Metzger; which have been erected and set out since the Base was measured in 1872. The line runs through the garden of the Metzger, avoiding all buildings and clear of any interference with
- the vineyard and orchard. The south end of the base line runs through an orchard but clear all the trees; the only obstruction encountered on this end of the line is the thickly growth that runs from station 474 to the monument at north base.

This section of country being generally clear of fences except in the vicinity of houses, where the gardens and buildings are usually enclosed, in making a re-measurement but little difficulty will be encountered on this score. From the north end of the base line three fences of the "Virginia Rail" variety are encountered at station 92 (4600 feet from N.B.) an orange grove hedge is met and crossed twice. This hedge is neither dense nor high being only of three or four years growth and properly trimmed, in crossing Mr. Metzels garden panel fences are encountered. Beyond this, going south the line is entirely clear of all fencing.

The houses at the north end of the base line, shown in detail on map are quite substantial including two excellent dwellings, a large barn, stables and one building which is in use for a quiet mill.

The house shown on the map near station 35 (1780.6 feet from N.B.) is a two story frame built in yellow and dilapidated.
-that it can never be used as a habitation again. Hay is
sometimes stored in it.

The houses shown on either side of the line, at that
portion where it runs through the suburbs of Maceysville,
are neat, well built substantial frame structures. The
houses at the southern end of the line are also frame
buildings and in good condition with the exception of
those near station 392 (19,619.5 feet from N. 13); the buildings
near this station are unoccupied and at present are in
bad order.

Commencing at station No. 280 (14,019.5 feet
from N. 13.) a bushy growth is encountered that con-
tinues for about four hundred feet; the line runs
through this thicket near its eastern edge and is
not much affected by it as the growth nearly runs out
here. The thicket extends for two or six hundred
feet west of the line over a low country that is
somewhat marshy, the water standing on it in
the wet seasons that prevail in the late fall,
winter, and early spring. If the line was moved
more than two hundred feet west of its present
position, between stations 280 and 288, its new lo-
cation would be through a piece of ground that
would be extremely marshy during the wet seasons mentioned; in the summer and early fall it dries this ground does well out.

The line crosses Big and Little Canuteen Creeks, one county road, that from Bellefonte to East W. Lines, and the tracks of the Vandalia and the Ohio & Mississippi Railroads.

Before commencing the survey of the true line small signals were erected at each end on the terminal monuments for use in securing proper direction while making measurements. The line was then measured with a 50 foot steel tape. Taking North Deer as station 0, staves were set in at each succeeding fifty feet until station 206 was reached; the distance between each station was 50 feet and a copper tack in the head of each stake was driven in and a 4 ft. by 4 in. with the center of it marked the station. Just beyond station 206 a large hay stack stood partly across the line necessitating the measurement around it by offsets. Station 207 was in consequence established 69.5 feet north of station 206. Starting again with station 0, station 207 the measurement was continued as before, stakes being set in at each succeeding fifty feet until station 0, 476.
was reached; the distance from the center of the copper tack in the head of this stud to the center of the copper bolt in the top of the second monument at south base being 18.4 feet; the distance given by this measurement for the length of the base line is 23,637.6 feet, compared as follows:

Station 0 (north base) to Station 206
Station 206 to Station 207
Station 207 to Station 476
Station 476 to south base

Total 726.1

The tape used in the measurement was one of

Chesterman's make. No temperatures were taken and no correction could be made for expansion and contraction of the tape due to thermometric variations, consequently I have no knowledge of any comparison ever being made between this tape and a standard and had no means to make any such myself. Being away from any locality where a possible standard could be obtained all possible care was taken to have the line horizontal in going up and down all slopes of the two chainmen were each provided with plumb-sets to secure the proper marking of the
ends of the measures when measuring wherever the ground was not level. The chainmen were always lined in and the tachometer by instrument, an engineer's transit being used for this purpose.

After the line was measured and marked out a line of levels was run over it; elevations being taken at every change of grade and where ditches, creeks, dykes, and railroad embankments were crossed at every point necessary to give an exact profile of the obstacle. In connection with the leveling, cross sections were made wherever they were necessary to obtain the proper position and courses of the center lines. In measuring to the various points, when the leveling rod was held, white cross sections, from the center and in making all the measurements to houses, fences, dimensions and lengths of the same and in measuring Reg and Little Canton creek the steel tape was always used. The Engineer's Transit, Y level and New York Rod used by me in making this survey were kindly furnished by Mr. August Rauschenbach, Assistant