The MIT Geodetic Observatory - An Overview

In early antiquity, civilizations wanted to determine the shape and size of the earth. Some thinkers thought it was flat, while others thought it was rectangular. Over time, through observation and study, a greater understanding developed about the true shape of the earth. Leading thinkers like Pythagoras, Aristotle, Plato and Eratosthenes applied math, science, and time. The engineering, science and practice of Geodesy was born. As this was formalized in later centuries, the Massachusetts Institute of Technology (MIT) introduced a number of related educational programs - in Geodesy - for the classroom and the field.

The November 10, 1897 Metropolitan Parks Commission (MPC) minutes document MIT’s desire to build a Geodetic Observatory in the Middlesex Fells Reservation. The MPC - as precursor to the Massachusetts Department of Conservation and Recreation (DCR) - approved MIT’s request.

“The Secretary presented request of Massachusetts Institute of Technology, through Professor George F. Swain, dated October 26th, 1897, for leave to locate a Geodetic Observatory in the Middlesex Fells Reservation, together with report of Landscape Architects, dated November 9th, with recommendations as to location of same. On motion of Mr. Haskell the Secretary was authorized to issue a permit for building of said observatory on location suggested, provided the plans of the building are approved by the Landscape Architects.”

MIT’s request carried the added authority of Professor Swain who also served as the President of the Boston Society of Civil Engineer around this time. The MIT Geodetic Observatory was established by the MIT Civil Engineering Department in 1898 to incorporate a real-world experience into their Geodesy curriculum. For reasons that were purely scientifically driven, the Middlesex Fells location proved ideal for this use. A small structure was built on conservation land that lies within the Middlesex Fells, just inside the northern border of the City of Malden. (Image of the 1987 minutes of the MPC provided courtesy Sean Fisher and Massachusetts Department of Conservation and Recreation.)

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Digital Trail Guide for the MIT Geodetic Observatory

The first three waypoints (1. Parking, 2. Hike Begins, and 3. First Fork) are in Melrose. The remainder of the hike is in the City of Malden. The rough rectangular area of Malden shown in this TRAIL IMAGE covers approximately 40-acres of the Middlesex Fells Reservation. (The perimeter of this land is over 1,800 yards.) The walking distance from the parking area to the MIT Geodetic Observatory, is about a half-mile. There is some climbing up and down rocky, steep inclines. Sharp, poky branches line the path.

Waypoint 1: “Parking” (image) (map)
42° 26' 33.990" N, 71° 04' 45.830" W  ( 42.44277° , -71.0794 )

Waypoint 2: “Hike Begins” (image) (map)
42° 26' 31.640" N, 71° 04' 46.150" W  ( 42.44212° , -71.07949 )

Waypoint 3: “First Fork” (image) (map)
42° 26' 30.080" N, 71° 04' 55.770" W  ( 42.44169° , -71.08216 )

Waypoint 4: “Second Fork” (image) (map)
42° 26' 31.860" N, 71° 05' 1.840" W  ( 42.44218° , -71.08384 )

Waypoint 5: “MIT Way” (image) (map)
42° 26' 29.960" N, 71° 05' 0.210" W  ( 42.44166° , -71.08339 )

Waypoint 6: “BLOOM 1934” (image) (map)
42° 26' 28.500" N, 71° 05' 3.600" W  ( 42.44125° , -71.08433 )

Waypoint 7 - “MIT Geodetic Observatory” (image) (map) (video)
42° 26' 28.590" N, 71° 05' 6.480" W  ( 42.44127° , -71.08513 )

Alternate route, convenient to pedestrians visiting this site from the City of Malden, could begin as follows:

Waypoint 1a: “Jerry Jingle Gate” (image) (map)
42° 26' 16.830" N, 71° 04' 58.960" W  ( 42.43801° , -71.08304 )
Enter the Middlesex Fells Reservation at the well-marked Middlesex Fells Gate 55

Waypoint 2a: “M-M Monument” (image1) (image2) (map) (video) (detail)
N 42 26.331,W071 04.976

Waypoint 3a: “Two Hydrants” (image) (map)
42° 26' 29.000" N, 71° 04' 59.000" W  ( 42.44139° , -71.08306 )
After Waypoint 3a, your next destination is Waypoint 5 - “MIT Way” - described above.