

F. E. R. A. PROJECT NO. XS-F2-U4
LOCAL CONTROL SURVEY

LEVELING
IN
MASSACHUSETTS

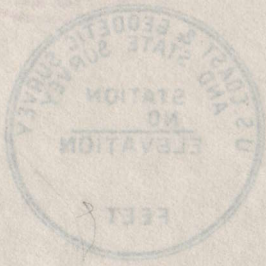


AUGUST 1, 1935
(First Edition)

MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
William F. Callahan, Commissioner
Elmer C. Houdlette, Administrator

LOCAL CONTROL SURVEY
F. E. R. A. PROJECT NO. X2-F2-4A

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General Statement

This publication contains the descriptions and elevations of Bench Marks in Massachusetts, established by the United States Coast and Geodetic Survey, Massachusetts Department of Public Works, Local Control Survey, and such other organizations which may be designated in the descriptions.

An effort has been made to consolidate into one booklet, the data available from the files of these various organizations, and indicate the order of accuracy with which each Bench Mark was established. Notations from the latest recoveries of all Bench Marks are included with the descriptions.

2 LOCAL CONTROL SURVEY

Approximately 340 miles of First and Second Order leveling have been run by the United States Coast and Geodetic Survey. The First, Second and Third Order lines run under the Massachusetts Department of Public Works total 1200 miles.

The Local Control Survey which started operations in December, 1933, have already completed and adjusted 875 miles of Second and Third Order leveling, generally in the eastern part of the State, with the exception of some leveling along the Connecticut River Valley. A number of Bench Marks have been established along the rivers and streams in this State by the Local Control Survey parties, which are also listed for use and regarded as Third Order accuracy. The work of this organization is still in progress.

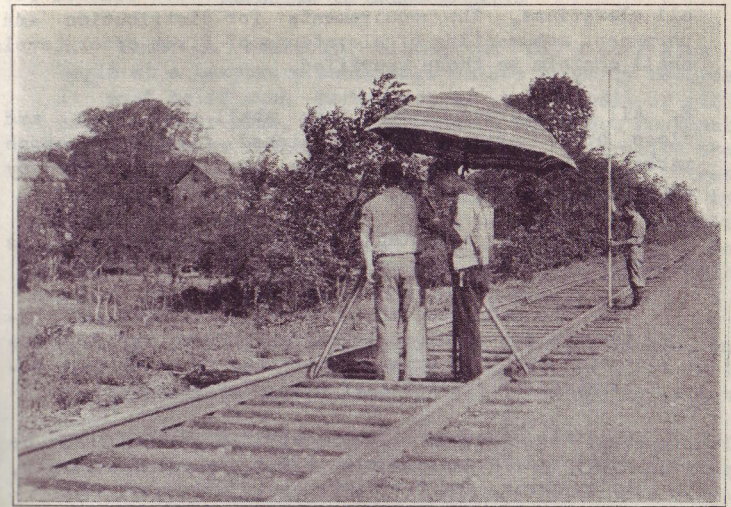
History of Leveling in Massachusetts

Apparently the first attempt to place elevations in Massachusetts on a mean-sea-level datum by means of spirit leveling of high precision was made by the Massachusetts Topographical Commission in 1893. C. H. Van Orden, an officer of the U.S. Coast and Geodetic Survey, was engaged to extend a line of precise levels from Boston westward across Massachusetts into New York to a connection with the precise leveling which had been previously run along the east side of the Hudson River by the U.S. Coast and Geodetic Survey.

The results of this leveling were published in the "Report of the Commissioners of the Topographical Survey-----1894". The report included a detailed statement concerning instrumental equipment and field methods used on that line. In 1923 and 1927, several lines of precise levels were run by the U.S. Coast and Geodetic Survey in Massachusetts. Finally in 1933 the Van Orden line from Springfield, Massachusetts to Albany, New York, was rerun by the U.S. Coast and Geodetic Survey.

At the time of this writing, the U. S. Coast and Geodetic Survey is running a line of levels in the western part of the State, from Sheffield northerly along the railroad through Pittsfield to North Adams, and thence easterly along the railroad to Greenfield. A second line is being extended south along the railroad from Worcester, through Webster to the Connecticut Line.

The Massachusetts Department of Public Works began to become actively interested in leveling in connection with their departmental work in 1920 and finally in July 1930, purchased a Fischer precise level and invar rods. With this new equipment they have leveled several hundred miles of First and Second Order lines, which have been submitted to Washington for verification and adjustment by the United States Coast and Geodetic Survey.



(Figure 1)
First Order Level Party
Showing Fischer Precise Level and Invar Faced Rods

The Local Control Survey is making a special effort to extend its network of levels to include Bench Marks recognized as part of other systems of leveling. These include particularly those established by the United States Coast and Geodetic Survey, Massachusetts Department of Public Works; United States Geological Survey; official Bench Marks of cities and towns or other organizations, and of railroads and other public utilities. The incorporation of other Bench Marks on the same mean-sea-level datum offers a valuable check on the leveling of these organizations. Ties to Bench Marks based on other than the mean-sea-level datum, particularly in the case of cities or towns which adopted independent datum planes, are of great importance. The tying together of different systems makes it possible to study projects, such as extensive water supply systems involving several municipalities, without the necessity of running special lines of levels to secure elevations based on some common datum. The establishment of a complete system of Bench Marks throughout the State based on the mean-sea-level datum is of great value to the civil engineering profession.

Specifications

All First Order leveling by the U.S. Coast and Geodetic Survey and the Massachusetts Department of Public Works, is being done in accordance with instructions and specifications given in the U.S. Coast and Geodetic Survey Special Publication #140, Manual of First Order Leveling.

1. First-Order levels constitute the basic control for all elevations. The requirements for distribution and permanent monumenting of elevations of first-order levels shall conform to those specified.
2. All first-order level lines shall start from, and close upon, previously established first-order bench marks, if available. Spur lines should be avoided by running closed circuits.
3. Criteria for acceptable final results shall be as follows:

- (a) The rods used shall be tested at frequent intervals for absolute length and index error. The coefficient of expansion of the rods shall be determined by the National Bureau of Standards.
- (b) All observed differences of elevation shall be corrected for collimation error, absolute length, index error, and temperature.
- (c) All discrepancies between backward and forward runnings over the same section shall agree within 0.017 feet \sqrt{M} , M being the length of the section in miles.
- (d) Final results shall be adjusted by the method of least squares or by simultaneous weighted junction points.

Second Order leveling by the Local Control Survey is being carried on by this organization under the following specifications.

1. All lines shall originate at, and close upon first order bench marks when available in the vicinity of the project. Spur lines must be avoided if a closed circuit can be run.
2. All levels must be run in loops. That is, there should be a forward and backward run on all stations.
3. The lines shall be leveled independently and preferably under different atmospheric conditions. That is the forward line of each section be run in the morning and the backward line be run in the afternoon or vice-versa.
4. Any permanent or temporary bench mark that is established on the forward run must also be included in the backward run.

5. Under no condition should the day's work stop or begin at a temporary bench mark unless properly recorded. It must be of such permanence as top of bolt or pin in signal tower base, chiseled squares on bridge abutments, piers, masonry retaining walls, masonry or granite steps of buildings. In such cases where the distance between temporary bench marks or stations does not permit termination at such a point, it is advisable to establish two check points within one set-up of each other to hold the elevation overnight. Be sure that such check points are properly described in the level notes.
6. The level should be tested for error of bubble, once each day. If out of adjustment by more than 0.01' in 100 feet, it should be returned to the office for adjustment.
7. The rod should be tested at frequent intervals for absolute length. When an extended rod is used the length must be carefully measured.
8. The difference in length between foresight and backsight for any set-up shall not exceed 25 feet. Distances may be paced. Lengths of sights should not be over extended in order to expediate progress. It should not be necessary to refocus the instrument when turning from backsight to foresight if they are nearly equidistant.
9. Portable turning points are required when suitable fixed objects are not available. Iron pins 12" - 18" long driven in ground will be suitable.
10. Criteria for acceptable final results shall be as follows:

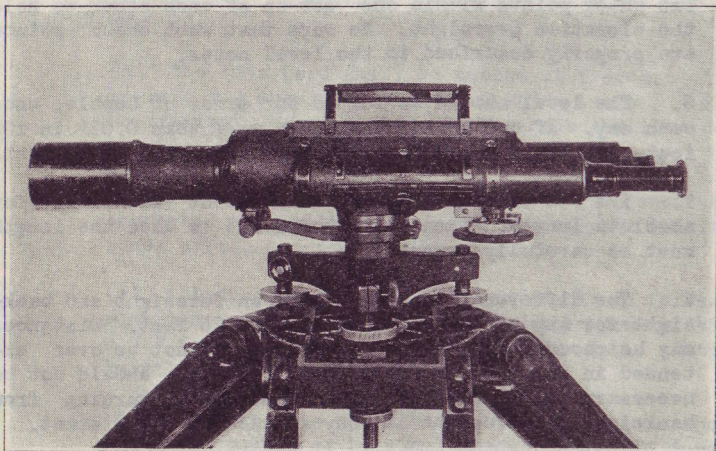
- (a) Maximum closing error of any circuit, loop, or section shall not exceed the allowable error of .04 feet \sqrt{M} , M being length of line, in miles.
- (b) Forward and backward runnings should be repeated again and again, if necessary, until the difference between the two is not in excess of the allowable.
- (c) If any measure over a section differs by more than .018 feet from the mean of all the measures over that section, it shall be rejected irrespective of the length of the section.

Instruments and Field Methods

The First-Order leveling by the U.S. Coast and Geodetic Survey in Massachusetts was all run with instrumental equipment either exactly like, or very similar to, that described in U.S. Coast and Geodetic Survey Special Publication #120, Geodetic Level and Rod.

Leveling by the Massachusetts Department of Public Works is now being done with a Fischer Precise Level (Figure 2) and invar rods.

Level work by the Local Control Survey is being done with 22" Wye levels of standard make and metal faced rods graduated in feet.



(Figure 2)

Computations and Adjustments

The office computation of the leveling done by the U.S. Coast and Geodetic Survey in Massachusetts was carried out in accordance with the instructions given in Special Publication #140, Manual of First-Order Leveling. Rod and temperature corrections were applied to the observed differences and, in cases where it was necessary, the level corrections and the corrections for index errors of the rods were also applied. These corrections, with modern leveling equipment especially with well graduated invar rods, are exceedingly small and usually are of small moment except in mountainous country where large differences in elevation are encountered.

The computations and corrections for the U.S. Coast and Geodetic Survey leveling were carried to four decimal places in meters until the final elevations were derived when they were rounded off to the nearest millimeter for publication. The elevations in feet were determined by converting the metric elevation using the factor, 1 meter = 3.2808333 feet.

The leveling by the Massachusetts Department of Public Works and Local Control Survey in this publication, will be found to have elevations given only in feet. The corresponding metric elevation may be found by using the conversion factor, 1 foot - 0.3048006 meter.

At the time of the 1912 adjustment of the precise level net in the United States, the only precise leveling in New England which could be included in the adjustment was the Van Orden line from Boston, Massachusetts, to Albany, New York. This line was included in the adjustment but the details of the line as then adjusted were never published by the U.S. Coast and Geodetic Survey.

In 1928, in order to furnish consistent elevations throughout the New England area to engineers and others who would have need of the data, the New England preliminary adjustment was made, and the descriptions of Bench Marks, with the elevations based on that adjustment, were issued in the form of ditto copies of the manuscript lists.

By 1929, so much additional leveling had been run throughout the United States that a new general adjustment was needed. It was believed that the net would be considerably strengthened by the introduction of the First-Order leveling of Canada. Upon request, the Geodetic Survey of Canada kindly placed at the disposal of the U.S. Coast and Geodetic Survey the results of some 20,000 miles of First Order leveling in the Dominion of Canada. This leveling, combined with about 40,000 miles of leveling in the United States, was all adjusted in a single least-squares adjustment in which mean sea level was held at zero, as observed at twenty six tidal stations (Twenty-one in the United States and five in Canada). The elevations resulting from the general adjustment are the best elevations obtainable from the data available at the time of the adjustment. All of the leveling by the U.S. Coast and Geodetic Survey was included in the 1929 General Adjustment, and the elevations of U.S. Coast and Geodetic Survey bench marks given in this publication are the direct result of fitting the various lines to the elevations of the junction Bench Marks as determined by that adjustment.

Field Adjustment

All elevations in this publication established by the Massachusetts Department of Public Works or Local Control Survey, have received a field adjustment although recorded as unadjusted in the descriptions. This term unadjusted refers to final adjustments by the U.S. Coast and Geodetic Survey Washington Office.

The difference in elevation for each section between contiguous Bench Marks is computed in the record book and the results are listed on a suitable form sheet for use in computing and adjusting the circuit and line closure.

Since second-order levels originate at and close upon Bench Marks of the first-order system, the problem of adjustment is greatly simplified. When the second-order level line runs directly between first-order Bench Marks, with no intersecting lines, or junction points, the closing discrepancy is distributed to the various sections comprising the line in direct proportion to their lengths.

The final field adjusted elevations of the Bench Marks are computed on the basis of the fixed elevations of the first-order Bench Marks.

Standard Bench Marks

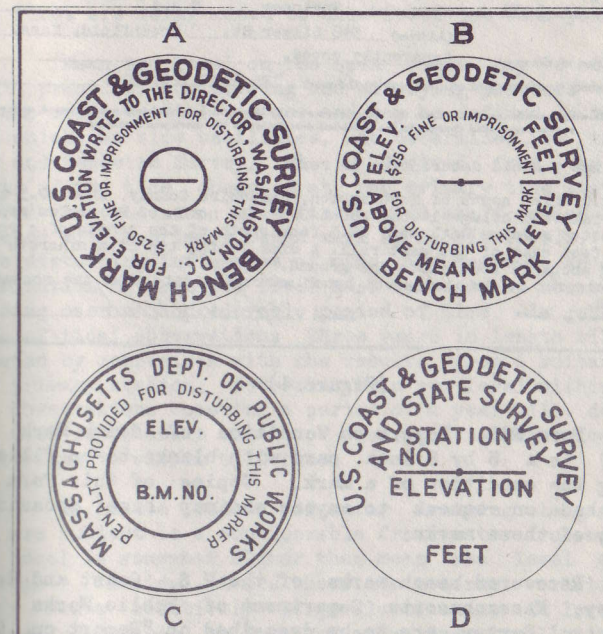
Various kinds of bench marks have been used to indicate the point of which the elevation was determined. Among these are nails in piles or other structures; small crosses and squares out in curbstones and doorsteps; bolts in ledges, boulders, and the foundations of building; and sometimes a well-defined point on a fixed object has been used. Since such marks may lack permanence and are often hard to identify, a standard bronze disk has been adopted as the best identification mark.

The standard bench mark disks used by the various organizations are shown in Figure 3. These disks are set in existing structures, in concrete monuments cast in place for the special purpose, and in outcrops of rock, where such outcrops are available. The concrete monuments extend deep enough below the surface of the ground to be reasonably free of disturbance from frost action. They usually project a few inches above the ground to aid in their recovery.

At present, the U.S. Coast and Geodetic Survey has two types of standard bench mark disks, as shown in Figure 3A and 3B. The type shown in Figure 3A was formerly used in all leveling work done by that bureau but is now used chiefly by hydrographic parties running short lines of levels, while the other type shown in Figure 3B, which provides a place for inserting the elevation above mean sea level, is used for lines of first-order level net of the United States. The other forms of the standard bronze disk shown by Figure 3C and 3D are in use by the Massachusetts Department of Public Works and the Local Control Survey, respectively.

In this publication will be found the descriptions and elevations for many points not marked with the standard disks illustrated herein. The United States Geological Survey and Metropolitan Water Works established many of the Bench Marks which are included in this publication. In all

cases, the character of the mark is given with the description.



(Figure 3)
Standard Bench Marks

Work of Preservation

A Bench Mark is useful only as long as it is recoverable. When changes occur, as they often do, in the surrounding natural and cultural features with relation to which the mark is described, it becomes increasingly difficult to find the mark by means of the published description. Engineers and others who have occasion to visit any Bench Marks established by Government or State organizations will be doing a public service if they will report the condition of the marks and make suggestions as to needed changes in the descriptions.

| DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY FORM 685 Ed. Oct., 1928 | | R |
|--|--|--|
| REPORT ON CONDITION OF BENCH MARK | | |
| NORTHAMPTON | | |
| Designation of mark | F 5 | State <u>Mass.</u> County <u>Hampshire</u> |
| Mark searched for or recovered by—(Name) | Robert H. Alberti | |
| Date <u>March 12, 1925</u> | (Occupation) | <u>Engineer</u> <u>E.R.A.</u> |
| | (Address) <u>348 Silver St., Greenfield, Mass.</u> | |
| Present condition of the mark | <u>Apparently moved.</u> | |
| Letters or numbers found stamped on (not cast in) the mark | <u>"F5 1927 120.731"</u> | |
| <small>Use the following space for reporting upon the thoroughness of the search in case mark was not recovered, or for suggesting needed changes in the published description, if the mark was recovered</small> | | |
| Change the old description to read: | | |
| " About 2.0 miles south of Northampton, Hampshire County, about 0.3 mile north of railroad bridge 14.86, about 0.5 mile north of Mount Tom station on the Boston & Maine Railroad, 12.5 feet south of the center of a road, and 14.7 feet east of the east rail. A disk in the top of a concrete post extending about 1½ feet above the ground." | | |
| Levels run to both adjacent bench marks indicate that the monument has heaved. | | |
| <small>U. S. GOVERNMENT PRINTING OFFICE: 1928 11-5097</small> | | Signed <u>R. H. Alberti</u> |

(Figure 4)

Form 685, Report on Condition of Bench Mark (see Figure 4) is a 5 by 8 inch card with blanks to be filled in regarding the condition of a mark. Copies of this form will be furnished on request to anyone who may have occasion to visit any of these marks.

Recovered bench marks of the U.S. Coast and Geodetic Survey, Massachusetts Department of Public Works and Local Control Survey, are to be described on "Report on Condition of Bench Mark" card. If the bench mark is found as described, only a skeleton description is sufficient to positively identify it, but in every case the present condition of the bench mark should be stated. If the description furnished no longer fits the facts, a complete new description should be written, with such parts of the old description repeated as still state the facts. It will not be sufficient to state that the mark was found as described and then note the exceptions to the furnished description. If there are any changes required in the description, a complete new description should be written.

Datum Planes

In all engineering work where it is necessary to determine differences in elevation by spirit levels, and especially where it is desired to coordinate the work of various surveys, it is in the interest of efficiency and economy that a uniform datum be used. It has frequently happened that the various engineers operating in the same locality have used different arbitrary datums, which has led to much confusion. This condition can be obviated by the adoption of a single,

reliable datum. Datums based on tidal definition are the best for both practical and scientific work, since they may be recovered even though all bench mark connections be destroyed.

Of all the tidal datums, mean sea level is the most nearly fixed and, in general, the most satisfactory for land elevations. By a network of first-order levels it has been carried to many parts of the interior of the country, and new level lines are being added to this level net each year.

Mean sea level on the open coast may be considered for all practical engineering and surveying purposes to be in the same equipotential surface and may be defined as the level about which the tide oscillates. As determined by the U. S. Coast and Geodetic Survey, it is derived from the hourly heights of the tide observed at the primary tide stations as referred to the zero of a fixed tide staff which has been connected with a primary bench mark by spirit levels. Because of the disturbing influences of wind and weather, an accurate determination of mean sea level must be based on observations extending over a considerable period of time. In general, a series of tidal observations three years in length will, when corrected by comparison with the results from a suitably located primary station, determine mean sea level within 0.02 foot; observations covering a period of a year will determine it to 0.05 foot, and a month of observations may be considered to determine it within 0.10 foot.

On inside bodies of water draining large areas which are subject to a considerable fresh-water run-off, mean water level is somewhat higher than mean sea level on the open coast. In tidal rivers where the seasonal variations in run-off cause relatively large fluctuations in level, it is sometimes preferable to speak of mean river level rather than mean water level, though mean river level is determined by averaging the hourly heights of the tide in precisely the same manner as mean sea level is determined.

While mean sea level is the most nearly uniform, or fixed, datum over a wide area and is the primary datum through which different surveys may be coordinated, other datums are also useful for hydrographic work and harbor engineering. These bench marks which have been connected with the first-order level net and are near a primary tide station are referred to mean sea level.

Half tide level is determined from the high and low water readings and lies midway between the planes of mean high water and mean low water. It should be carefully distinguished from mean sea level, which is determined from the hourly heights of the tide. For most places on the open coast half tide level does not differ much from mean sea level, and for practical purposes the two planes may be used as if identical. On inside waters especially on the upper reaches of tidal rivers, there may be a considerable difference in the elevations of the two planes. The relation between these two

RELATION OF DATUM PLANES

MASSACHUSETTS

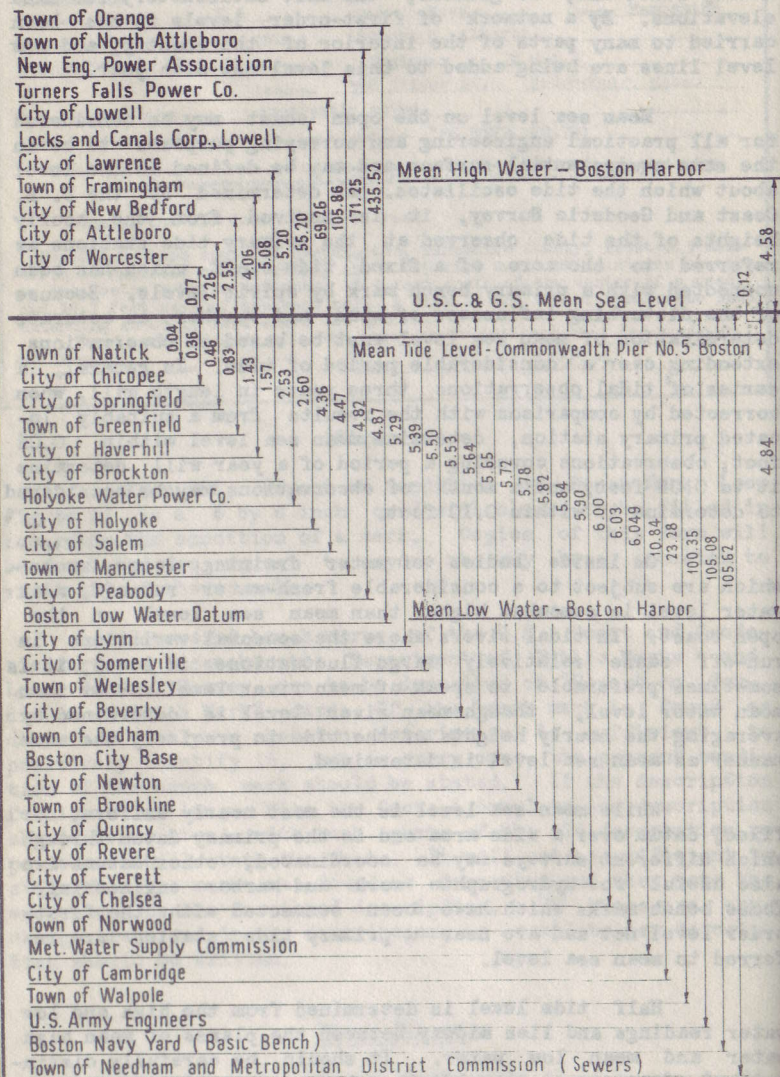


Figure 5

planes at any place is fairly constant, and for places where the relation has been accurately determined from a year or more of observations the one may readily be derived from the other. At Boston, from more than seven years' observations at Commonwealth Pier #5, mean sea level averages 0.12 foot above mean tide level.

Mean high water is the mean height of all high waters, and mean low water the mean height of all low waters for the period of the observations. The difference in height between mean high water and mean low water corresponds to the mean range of tide. The relation of mean high water and mean low water to half tide level at any point is equal to one half the mean range of tide above and below that datum. The mean range of tide varies considerably from place to place, depending in a large measure on the location, depth of water and configuration of the coast line. Therefore, mean high water and mean low water are not uniform datums over a large area, like mean sea level and half tide level, but vary in proportion to the difference in the mean range of tide over that area. Mean low water on the Atlantic Coast of the United States is of importance as the hydrographic datum to which all soundings on charts and the predicted heights in tide tables are referred.

A chart prepared by the Massachusetts Department of Public Works, with additions by the Local Control Survey, entitled "Relation of Datum Planes in Massachusetts", (Figure 5) shows some of the arbitrary datums now in use by many Cities and Towns. This chart is by no means complete at the present time, but it is the desire of the Local Control Survey to link all known datum planes still in use to the State network and tabulate for all time their relation to mean sea level datum. This data will furnish engineers with much valuable information, if the work is carried to completion.

Notations

For the purpose of economy of space in this manuscript the designation of all Bench Marks are followed by letters denoting the organization which established the Bench Marks, rather than the complete name in each case. Some Bench Marks carry the letters of as many as three organizations which indicates that they have been included in the level net of the respective groups. Some of the abbreviations used are as follows:

| | |
|-----------------|--|
| U.S.C.&G.S. | United States Coast and Geodetic Survey |
| P.W.D. | Massachusetts Department of Public Works |
| L.C.S. | Local Control Survey |
| M.W.S. | Metropolitan Water Supply Commission |
| M.S.S. | Massachusetts State Survey |
| B.A.A.R.R. | Boston and Albany Railroad |
| B.M.A.R.R. | Boston and Maine Railroad |
| N.Y.N.H.&H.R.R. | New York, New Haven & Hartford Railroad |

As many recovery reports as possible have been included with the descriptions of Bench Marks. A search for every listed Bench Mark will be made and reported on by the Control Survey in the next few months.

Reference is made to the following publications obtainable from the Superintendent of Documents, Washington, D.C.

Special Publication #140 (U.S.C.&G.S.) Manual of First Order Leveling

Special Publication #155 (U.S.C.&G.S.) Tidal Bench Marks in Massachusetts

Special Publication #181 (U.S.C.&G.S.) Leveling in Massachusetts, Rhode Island and Connecticut.

Supplements to the Local Control Survey publication will be issued from time to time, probably in the form of mimeographed sheets, to the various cities and towns in which additional work is accomplished, or changes in descriptions reported.

Persons desiring these supplements should write to the Department of Public Works, Engineering Division, 100 Nashua Street, Boston, Massachusetts.

The author desires to acknowledge his indebtedness to all who have aided in the publication of this report, especially to Wilbert H. Connor, Assistant Administrator, who prepared the text and to Anthony Tedesco who collected the data.

Notification of any errors which may be found will be gratefully received.

August 1, 1935
Boston, Massachusetts

Elmer C. Houdlette

* * * * *

DESCRIPTIONS AND ELEVATIONS

OF

BENCH MARKS.

All elevations are referred to the United States Coast and Geodetic Survey mean sea level datum.

ft. northwest of centerline of Bridge # 25.13 under Main St., 49.7' east of mile stone 25/25 and 16.9 feet north of north rail of northerly track. Set in a concrete monument flush with ground. U.S.C. & G. S. and State Survey standard disk. (First order unadjusted). January, 1934.

23-F (L.C.S.) 205.720 feet
On the Boston and Maine Railroad (Fitchburg Div.) about 42 feet southeast of the intersection of Martin St. and R.R. and 13.2 ft. southwest of the southwest rail of the southerly track. Set in a concrete monument flush with ground. U.S.C. & G.S. and State Survey standard disk. (First order unadjusted). January, 1934.

23-G (L.C.S.) 222.180 feet
Located on the Boston and Maine Railroad (Fitchburg Division) about 776 feet north west of the intersection of Arlington St. and Railroad, 50.8 feet southeast from Mile Post B-27 and 26.4 feet east of the east rail of the easterly track. Set in a concrete monument flush with ground. U.S.C. & G.S. and State Survey standard disk. (First order unadjusted). February, 1934.

23-H (L.C.S.) 211.212 feet
On the Boston and Maine Railroad (Fitchburg Div.) about 223 feet northwest from the intersection of Littleton Road and Railroad and 7.8 feet northeast of the northeast rail of the northeasterly track. Set in a concrete monument flush with ground. U.S.C. & G.S. and State Survey standard disk. (First order unadjusted). February, 1934.

B-26 (P.W.D.) 140.791 feet
Top ledge outcrop 176. feet north of intersection of Acton Center Road and N.Y.N.H. & H. R.R. (Boston Div.) and 43.0 feet east of east rail. A chiseled square. (Second order unadjusted).

T.B.M. # 360 (P.W.D.) 162.252 feet
Top boulder at edge of small swamp near private crossing, 1468. feet south of intersection of Lowell Road and N.Y.N.H. & H.R.R. (Boston Division), and 102. feet west of west rail. A chiseled square. December, 1931.

T.B.M.# 359 (P.W.D.) 176.278 feet
Top boulder, 184. feet southwest of intersection of Lowell Road and N.Y. N.H. & H. R.R. (Boston Div.) and 10.5 feet southeast of Southeast rail. A chiseled square. December, 1931.

T.B.M. # 361 (P.W.D.) 150.272 feet
Top boulder in field, 500. feet south of intersection of Great Road and N.Y. N.H. & H. R.R. (Boston Div.) and 137 feet west of west rail. A chiseled square. December, 1931.

AMESBURY

Essex County

U.S. Engr. # 6(L. C. S.) 15.866' feet
Set in cement in 1/2" Drill Hole located on easterly abutment of Powow River Bridge on southwest corner of abutment. This mark is in poor condition, being rusted and may be easily knocked out. 3/3" round Iron Pin. (Second order unadjusted). Year 1907.

T.B.M. #2004 (L.C.S.) 33.426 'feet
Located in Northeast corner of signal crossing tower Foundation at intersection of Rocky Hill Road and Amesbury Branch of B. & M. R. R., 21.6' \pm south of centerline of track; 15.6' \pm west of centerline of Rocky Hill Road and 2" above ground. 3/4" bolt. (Second order unadjusted). January, 1935.

#25 (Town of Amesbury) (L.C.S.) 58.210' feet
Located on Route 110A on the Salisbury-Amesbury Town Line, 500' feet south of the Boston and Maine R.P., Amesbury Branch. It is 33' feet north of the highway and 118' feet east of Route 110. In an 8" x 12" monument the top of which is 2.5 feet above the ground. A bronze disk marked "Town of Amesbury Bench Mark 25" (Second order unadjusted). No date.

T.B.M.#2005 (L.C.S.) 32.907' feet
Located in front of I.O.O.F. Building, #90 Powow River Lodge and 27.1' \pm south of N.E.T. & T. Co. Pole #2; 22.3' north of hydrant and 7.9' west of steps at Lodge #90 I.O.O.F. 5" from edge of curbing. Set in a granite curb and projecting about 1/4" above top of curbing. 3/4" Iron Pin. (Second order unadjusted). January, 1935.

ANDOVER

Essex County

M-1 (U.S.C.G.S.) 153.573 feet
At Andover, Essex County, on the abandoned Lawrence-Lowell line of the Boston & Maine railroad, 102 feet south of southerly end of old west abutment of what was the second bridge south of the old West Andover Station. (The bridge has been removed and filled in, but the old west abutment has been left in the fill). It is about 14 feet from the old center-line of location and in the face of a boulder. A standard disk. (First order adjusted). No date.
Discovered - November 15, 1932. Condition: Good.
Suggested in description: M-1 At Andover, Essex County, on the abandoned Lawrence-Lowell line of the Boston & Maine railroad, 102 feet south of southerly end of old west abutment of what was the second bridge south of the old west Andover station. (The bridge has been removed and filled in but the old west abutment has been left in the fill). It is about 14 feet from the old centerline of location and in the face of a boulder.

O-1 (U.S.C.G.S.) 122.375 feet
 At Andover, Essex County, on the abandoned Lawrence-Lowell line of the Boston & Maine railroad about 0.5 mile south of what was the old Haggetts Station, 447 feet south of center of road at Flints Crossing, 13.5 feet west of old centerline of location and in the face of the rock wall of a cut. A standard disk. (First order adjusted). No date.
 *Recovered November 15, 1932. Condition: Good
 Suggested in description: O-1 - At Andover, Essex County on the abandoned Lawrence-Lowell line of the Boston & Maine railroad about 0.5 mile south of what was the old Haggetts station 447 feet south of center of road at Flints Crossing, 13.5 feet west of old centerline of location and in the face of the rock wall of a cut.

M-28-D-Q (L.C.S.) 79.410' feet
 Located about 25 feet west of centerline of Route # 28 and about 129.9 feet south of culvert. A concrete monument flush with ground. A U.S.C.&G.S. and State Survey standard disk. (Second order unadjusted). August, 1934.

M-28-D-R (L.C.S.) 96.024' feet
 Located on west side of Massachusetts State Highway # 28 about 61 feet west of centerline of road, about 190.6 feet south of overpass and abreast station, 10 + 20 (Andover - 1930 Layout). A concrete monument 6 inches above ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). August, 1934.

M 125 A (L.C.S.) 90.064' feet
 Located on west side of Massachusetts State Highway # 125 and about 470 feet north of intersection of overpass. Abreast station # 22 + 75 (Andover - 1930 Layout) A concrete monument flush with shoulder. (Second order unadjusted). U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). August, 1934.

M-125-B (L.C.S.) 111.390' feet
 Located on East side of Route 125 421 $\frac{1}{2}$ feet northeast from intersection with Mill Street, 272 $\frac{1}{2}$ feet north from north end of concrete header of a culvert and 8.2 $\frac{1}{2}$ feet east of east edge of concrete roadway. A concrete monument. A lead plug. (Second order unadjusted). Year 1934.

M-125-C (L.C.S.) 145.69' feet
 Located on east side of Route 125, 22.9 $\frac{1}{2}$ feet northeast from southeast corner of concrete header of a culvert, 21.6 feet northeast from northeast corner of this header and 35 $\frac{1}{2}$ feet east of east edge of concrete roadway. A highway bound 10" above surface of the ground. This is a Temporary Bench Mark. A lead plug. (Second order unadjusted). Year 1934.

M-125-D (L.C.S.) 257.212' feet
 Located on Mass. Route # 125 abreast of station 82 + 10 (Andover 1930 Layout). The station is 20 feet east from the edge of the concrete pavement on a high cut about 19 feet above the

road, approximately 460 feet north of a concrete header over a ditch at station 77 + 40. A M.H.B. 14 inches above the ground. A U.S. C. & G. S. and State Survey standard disk. (Second order unadjusted). August, 1934.

M-125-E (L.C.S.) 261.799' feet
 Located on east side of Massachusetts State Highway # 125, 2 feet east of concrete road and about 750 feet north of Vine Street abreast station 128 + 20 (Andover - 1930 Layout). A concrete monument flush with ground. U.S.C.&G.S. and State Survey standard disk. (Second order unadjusted). August, 1934

M-125-F(L.C.S.) 269.195' feet
 Located on east side of Route 125, 3.1 $\frac{1}{2}$ feet east of east edge of concrete road, 176 $\frac{1}{2}$ feet north of Stinson Road, 27 $\frac{1}{2}$ feet south from the south corner of Salem Street, and 131.3 $\frac{1}{2}$ feet northwest of northwest corner of Lewis Vegetable Stand. A concrete monument. A lead plug. (Second order unadjusted). Year 1934.

M-125-G (L.C.S.) 274.895' feet
 Located on west side of Massachusetts State Highway # 125 about 24.2' west of concrete road and about 183' northwest from intersection of Prospect Hill Road with Massachusetts State Highway # 125. Abreast station 163 + 30 (Andover-1930 Layout). A granite monument flush with ground. A U.S.C. & G.S. and State Survey standard Bronze Disk. (Second order unadjusted). August, 1934.

M-125-H-(L.C.S.) 272.017' feet
 Located on west side of Massachusetts State Highway # 125 about 4.8 feet west of concrete road about 5 feet north of catch basin and abreast station 173 + 66 (Andover - 1930 Layout) A concrete monument at grade. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). August, 1934.

M-125-J (L.C.S.) 285.555' feet
 Located on the east side of Massachusetts Route # 125, 228 feet south from south end of concrete header, 590 feet east of east edge of concrete road. A concrete monument the top of which is flush with ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). December, 1934.

M-125-K (L.C.S.) 263.993' feet
 Located on the east side of Massachusetts Route # 125, 64.7 feet southeast from Town Line Post Line Post (Boundary Line) between Andover and North Andover, 43.9 feet North from north corner of concrete header and 5.1 feet east of east edge of concrete road. A concrete monument flush with ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). December, 1934.

BERLIN

Worcester County

T - 9 (P.W.D.) 254.811 feet
At the Southeast corner of the junction of Jones Road and South Street about 50 feet northerly of northeast corner of the foundation of the old Berlin Depot, on top of a granite post which forms a corner of a rail fence. Highest point of post. (Third order unadjusted). February, 1930.

U - 9 (P.W.D.) 255.064 feet
In Berlin, at the crossing of Linden Street and the New York New Haven & Hartford Railroad, on the left outer corner of the Southerly pier at the entrance to the transformer station. A left outer corner. (Third order unadjusted). February, 1930.

V - 9 (P.W.D.) 329.400 feet
At Berlin center, on the right outer corner of the entrance to the Orthodox Church. A square cut. (Third order unadjusted). March, 1930.

W - 9 (P.W.D.) 326.556 feet
At Berlin center, on the right outer corner of the lower stone step of the entrance to the Berlin Town Hall. A square cut. (Third order unadjusted). March, 1930.

BERNARDSTON

Franklin County

V-5 (U.S.C. & G.S.) 353.562 feet
At Bernardston, Franklin County, at Boston & Maine Railroad arch bridge over Falls River, between the ties on the east end of the bridge and 1.0 foot north of the north rail. A standard disk. (First order adjusted). No date.

T.B.M. # 40 (U.S.C. & G.S.) 358.529 feet
About 1.2 miles south of Bernardston, Franklin County, on the Boston & Maine Railroad at semaphore # 415 and on the southwest corner of the concrete base. A chiseled point. (First order adjusted). No date.

T.B.M. # 41 (U.S.C. & G.S.) 376.892 feet
About 0.75 mile north of Bernardston, Franklin County, on the Boston & Maine Railroad, at semaphore # 434 and on the southeast corner of the concrete base. A chiseled point. (First order adjusted). No date.

T.B.M. #43 (U.S.C. & G.S.) 386.318 feet
About 1 mile south of Mt. Hermon, Franklin County, at Boston & Maine Railroad bridge # 45.05 at a highway crossing and in the northeast corner of the west pier. A chiseled point. (First order adjusted). No date.

BEVERLY

Essex County

B-25 (P.W.D.) 30.535 feet
Southeast corner of wheelguard at crankcase pit at Barney's Service Station, Cabot Street. A copper plug. (Second order unadjusted). September, 1931.

B-26 (P.W.D.) 26.596 feet
Southwest end stone threshold of center door on southeast side of Beverly Station (Boston & Maine Railroad - Terminal Division). A copper plug. (Second order unadjusted). September, 1931.

B-28 (P.W.D.) 57.013 feet
Edge 219 feet west of center of Prides Station (Boston & Maine Railroad - Gloucester Branch) and 23.4 feet north of north rail. A copper plug. (Second order unadjusted). October, 1931.

B-29 (P.W.D.) 21.978 feet
Northwest corner north header, at 6.5' x 7.0' stone box culvert 80 feet east of center at Beverly Farms Station (Boston & Maine Railroad - Gloucester Branch), and 38.1 feet north of north rail (Main Line). A chiseled square. (Second order unadjusted). October, 1931.

T.B.M. # 335 (P.W.D.) 69.281 feet
Face 14" Maple on grass plot west of North Beverly station Boston & Maine Railroad Portland Division east. A railroad spike. (Second order unadjusted). September, 1931.

T.B.M. #336 (P.W.D.) 19.028 feet
East corner top stone northeast wingwall Boston & Maine Railroad (Terminal Division) Bridge #17.66 over Beverly Harbor. A chiseled square. (Second order unadjusted). September, 1931.

T.B.M. #340 (P.W.D.) 53.474 feet
Top of concrete base for electric crossing signal at intersection of Spring Street and Boston & Maine Railroad (Gloucester Branch), 17. feet east of center of Spring Street and 9. feet south of south rail. A copper plug. (Second order unadjusted). October, 1931.

T.B.M. #341 (P.W.D.) 61.660 feet
Top ledge outcrop at intersection of Foster Street and Boston & Maine Railroad (Gloucester Branch), 140 feet east of intersection (along north rail) and 21.6 feet north of north rail. A chiseled square. (Second order unadjusted). October, 1931.

T.B.M. #348 (P.W.D.) 11.998 feet
High point, just east of drill hole, in Manchester-Beverly town bound on north side of Hale Street. No mark. (Second order unadjusted). November, 1931.

T.B.M. # 349 (P.W.D.) 17.146 feet
Rim of manhole # 94 at the intersection of the centerlines of Bridge and River Streets. Note: - City of Beverly Bench Mark is invert of pipe in manhole # 94 which was found to be 11.46 feet below rim by measurement. (City of Beverly = 11.20). No mark. (Second order unadjusted). November, 1931.

T.B.M. # 350 (P.W.D.) 12.431 feet
Rim of manhole # 143 at the intersection of the centerlines of Pleasant and River Streets. Note: - City of Beverly Bench Mark is invert of pipe in manhole # 143 which was found to be 7.90 feet below rim by measurement. (City of Beverly = 10.08) No mark. (Second order unadjusted). November, 1931.

3-A (L.C.S.) 26.223 feet
In Beverly at railroad station. On Eastern Division of Boston and Maine Railroad at Beverly station. 19.8' ± from the easterly rail of the north-bound track, at the southerly end of the station platform shed, near two telegraph poles and 130' diagonally across the tracks, from the nearer end of the station. A concrete monument set flush with ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) September 7, 1934.

3-C (L.C.S.) 21.552 feet
In Beverly 0.3 mile north of Beverly Railroad Station. On Eastern Division of Boston and Maine Railroad 3.4' from the northeast corner of the nearest bridge girder about 35 feet from the centerline of Federal Street and 6.8 feet from the east rail of the north bound track. A concrete monument flush with the ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) September 7, 1934.

3-D (L.C.S.) 14.899 feet
0.50 miles north of Beverly. On the Eastern Division of Boston and Maine Railroad. The bound is 577' south of the c/1 of Elliott Street and 70.0' northwest of semaphore #P189. It is 4.9' west of the westerly rail of the south bound track. A concrete monument set 4" above the ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) September 1934.

3-E (L.C.S.) 14.007 feet
0.75 miles north from Beverly. On the Eastern Division of the Boston and Maine Railroad. The bound is 305.0' ± north of the centerline of Elliott Street and 263.0' ± south of the U.S.M. Corp. foot braidge. It is 2.6' west of the westerly rail of the south bound track. A concrete monument set 2" above ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) September 1934.

3-F (L.C.S.) 24.292 feet
1.09 miles north of Beverly station by rail. On Eastern Div. of Boston and Maine Railroad 53.6' ± southerly from centerline of Richmond St., 18.6' east of centerline of east track, 23.5' from gate post. A concrete monument. U.S.C. & G.S. and State

Survey standard disk. (Second order unadjusted) 9/12/34.

(L.C.S.) 31.191 feet
0.5 miles north of Beverly Railroad station by rail. On Eastern Division of Boston and Maine Railroad 14.4' ± east of east rail, 23.3' ± north of northeast gate post on east side of railroad, 24.0' from c/1 of Cabot St., 99.1' ± from northeast corner of gate No. 492 Cabot St. A concrete monument. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) 9/12/34

(L.C.S.) 47.258 feet
0.5 miles south. 19.8 feet westerly of west rail, in line with telegraph poles. 50.3 feet from third pole from Hill St. 23.6 feet from fourth pole from Hill St., 266 ft. from c/1 Hill St. A concrete monument. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) 9/12/34

(L.C.S.) 55.441 feet
0.4 mile south. On Boston and Maine Railroad., Eastern Division, 6.8' ± west of westerly rail and 54.9' ± southeasterly of semaphore P2-4. A concrete monument set about 3" above ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) September 1934.

(L.C.S.) 63.581 feet
In Beverly. On Boston and Maine Railroad. (Eastern Division) 7.0' ± west of westerly rail and 31.4' ± northeast of northeast corner (masonry) of last house on north side of Main Street, North Beverly. A concrete monument set about 3" above the ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) September 1934.

(L.C.S.) 65.991 feet
In Beverly. On the Boston and Maine Railroad, Terminal Division, about 300 feet south of the Beverly Station. It is 100 feet south of the center of the Dodge Street Crossing; 100 feet south of the southeast corner of crossing tenders; 974 feet south of Milepost B21/P87 and 8.1 feet west of center of the west rail. A concrete monument set about 3" below top of rail. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) February 25, 1935.

DANVERS

Essex County

H-39 (P.W.D.) 80,482 feet
In ledge outcrop 265. feet southwest (along Turnpike) of intersection of Newburyport Turnpike and North Street and 88. feet southeast of center of Turnpike. Copper plug. (Third order unadjusted). February 28, 1934.

T.B.M. #620 (P.W.D.) 147,863 feet
In ledge outcrop 890. feet northeast (along Turnpike) of intersection of Newburyport Turnpike and Preston Street and 109. feet northwest of center of Turnpike. Copper plug. (Third order unadjusted). February 28, 1934.

T.B.M. #619 (P.W.D.) 137,902 feet
Top boulder 1176. feet northeast (along Turnpike) of intersection of Center Street and Newburyport Turnpike and 130. feet southeast of center of Turnpike. Copper plug. (Third order unadjusted). February 28, 1934.

T.B.M. #618 (P.W.D.) 79,943 feet
Top boulder 1036. feet northeast (along Turnpike) of intersection of Dayton Street and Newburyport Turnpike and 128. feet northwest of center of Turnpike. Copper plug. (Third order unadjusted). February 28, 1934.

G-39 (P.W.D.) 84,341 feet
Top ledge outcrop 404. feet northeast (along Turnpike) of intersection of Andover Street and Newburyport Turnpike and 221. feet southeast of center of Turnpike. Copper plug. (Second order unadjusted). February 28, 1934.

DEDHAM

Norfolk County

H-16 (P.W.D.) 111,606 feet
Top east corner post of curbing surrounding Dedham Court house lawn. (corner High and Pearl Streets). No mark. (Second order unadjusted.) June 20, 1930.

H-16 (P.W.D.) 96,251 feet
Top southeast end most southwesterly pier Spring Street bridge over Charles River. Chisel cut. (Second order unadjusted). June 20, 1930.

H-10 (P.W.D.) 115,274 feet
Southwest corner top course east abutment N.Y.N.H. & H. railroad bridge #10.60 over East Street. (Near Endicott railroad station). Chiseled square. (Second order unadjusted). June 20, 1930.

H-15 (P.W.D.) 115,949 feet
Top of north face of pylon at northwest corner south abutment of concrete bridge over Williams Street at Providence Turnpike. A standard disk. (Second order unadjusted). January 22, 1934.

T.B.M. #134 (P.W.D.) 51,668 feet
Top wire post B11-P33 on shore line of N.Y.N.H. & H. railroad at Green Lodge Street grade crossing. A chiseled square. (Second order unadjusted) June 17, 1930.

T.B.M. #136 (P.W.D.) 128,189 feet
Top corner stone, southwest corner northwest abutment, Elm Street bridge over abandoned portion of N.Y.N.H. & H. Railroad between Islington and Dedham. A chiseled square. (Second order unadjusted). June 20, 1930.

T.B.M. #137 (P.W. D.) 130,464 feet
Top large boulder south corner entrance to house 61 Elm Street. A chiseled square. (Second order unadjusted) June 20, 1930.

T.B.M. #138 (P.W.D.) 103,241 feet
Top point N.Y.N.H. & H railroad baseline stone bound at intersection of Eastern Avenue and abandoned railroad line between Islington and Dedham. No mark. (Second order unadjusted). June 20, 1930.

burg Division) Bridge #63.90 over Partridge Street. A copper plug. (Second order unadjusted). August 2, 1932.

T.B.M. #441 (P.W.D.) 1111.003 feet
Northeast end concrete footing for pier of Boston & Maine R.R. (Fitchburg Division) Bridge #62.20 (Railroad under Chapel St.). A copper plug. (Second order unadjusted) August 2, 1932.

T.B.M. #442 (P.W.D.) 1095.342 feet
Northwest corner, second concrete step from top northwest wing-wall, northeast abutment, Boston & Maine Railroad (Fitchburg Division) stone arch Culvert #61.51 over brook. A copper plug. (Second order unadjusted). August 2, 1932.

T.B.M. #458 (P.W.D.) 1107.002 feet
Top of buttress on north side of most northerly lowest set of steps on west side of Monument Park. A copper plug. (Second order unadjusted.) December 10, 1932.

T.B.M. 459 (P.W.D.) 1080.769 feet
Top of Boulder, 464. feet north of intersection of Park Street and Boston & Maine Railroad (Fitchburg Division) (Worcester Branch), and 31.3 feet east of east rail. A copper plug. (Second order unadjusted). December 10, 1932.

A-31 (P.W.D.) 1063.720 feet
In large boulder, 263. feet north of intersection of Stone St. and B. & M. R.R. (Fitchburg Division) (Worcester Branch) and 33.4 feet east of east rail. A copper plug. (Second order unadjusted). December 10, 1932.

T.B.M. #2104 (L.C.S.) 1072.09 feet
In the center of the top of a square granite monument marking the Gardner-Westminster Town line. It is about 42 feet north east of the centerline of Route 2, and 31 feet east from a P.W.D. sign marking Town line. A chiseled square. (Second order unadjusted). 1934.

GEORGETOWN

Essex County

D-1 (U.S.C. & G.S.) 74.298 feet
At Georgetown, Essex County, on the Georgetown-Newburyport line of the Boston & Maine railroad about 0.5 mile northeast of the station, 8 telegraph poles northeast of the northeast end of the yard, at culvert 166, in the top of the south end of the west abutment and 12 feet south of the south rail. A standard disk. (First order adjusted). A standard disk. *Recovered: November 4, 1932. Condition-Good.

Suggested description: At Georgetown, Essex County, on the Georgetown-Newburyport line of the Boston & Maine railroad about $\frac{1}{2}$ mile northeast of the station, 8 telegraph poles north east of the northeast end of the yard, at culvert 166, in the top of the south end of the west abutment and 12 feet south of the south rail.

GILL

Franklin County

AB-8 (P.W.D.) 204.856 feet
Middle of top, southwest side of most southwesterly of two concrete anchor blocks at pier of French King Bridge over Connecticut River. A standard disk. (Second order unadjusted). December 9, 1932.

W-8 (P.W.D.) 182.386 feet
About 2 feet above high water mark on north bank of Connecticut River, and 205 feet southeast of spring near sandy beach. Railroad spike in ledge. (Second order unadjusted). November 6, 1930.

GLOUCESTER

Essex County

Q-25 (P.W.D.) 53.897 feet
Top ledge outcrop 217. feet east of middle of West Gloucester Station (B. & M. R.R. - Gloucester Branch) and 11.3 feet north of north rail. A chiseled square. (Second order unadjusted). October 28, 1931.

R-25 (P.W.D.) 48.814 feet
In ledge 785 feet. (along southwest rail) northwest of center of Gloucester Station (B. & M. R.R. - Gloucester Branch) and 7.3 feet southwest of southwest rail. A copper plug. (Second order unadjusted). October 28, 1931.

S-25 (P.W.D.) 71.466 feet
In ledge 35 feet south of south side of stone arch bridge over B. & M. R.R. (Gloucester Branch) at Gloucester Avenue and 10 feet west of west rail. A copper plug. (Second order unadjusted). October 28, 1931.

T-25 (P.W.D.) 57.518 feet
Lower southeast corner most easterly buttress of steps at Warren Street entrance to Gloucester City Hall. No mark. (Second order unadjusted). November 24, 1931.

T.B.M. #345 (P.W.D.) 13.586 feet
Top of east bolt of hydrant on north side of Rogers Street, east east of Porter Street. No mark. (Second order unadjusted) November 24, 1931.

T.B.M. #346 (P.W.D.) 11.841 feet
Top of west bolt of hydrant on north side of Rogers Street in front of #12 Rogers Street. No mark (Second order unadjusted) November 24, 1931.

7T (L.C.S.) 63.183 feet
At Gloucester, about $1\frac{1}{2}$ miles northwest of Magnolia. On the Boston and Maine Railroad (Terminal Division), 758 feet west of milepost R7/B28 and 10.3 feet south of the south rail, east bound track. It is on the tangent of the south rail, east bound track, extended east. Set in a concrete monument. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted). August 4, 1934.

7U (L.C.S.) 61.475 feet
At Gloucester, about $1\frac{1}{2}$ miles northwest of Magnolia. On the Boston and Maine Railroad (Terminal Division), 535.5 feet east of mile post R7/B28, on tangent of south rail extended west; 213 feet east of the signal G282 on the north side of the track, and 6.1 feet south of the south rail, set in a concrete monument. A U. S. C. & G. S. and State Survey Standard Disk. (Second order unadjusted). August 4, 1934.

7V (L.C.S.) 55,031 feet
About $2\frac{1}{2}$ miles southwesterly of Gloucester. On the Boston and Maine Railroad (Terminal Division), about 4700 feet west of the West Gloucester Station, about 3900 feet west of Essex Avenue; 1000 feet west of the centerline of Bridge 29/12. It is also 234 feet east of mile post R6/B29 and 11.4 feet north of the north rail, west bound track. Set in a concrete monument. A U. S. C. & G. S. and State Survey Standard Disk. (Second order unadjusted). August 30, 1934.

7W (L.C.S.) 64.866 feet
About $2\frac{1}{4}$ miles southwesterly of West Gloucester. On the Boston and Maine Railroad (Terminal Division), about 1900 feet west of the west Gloucester Station and about 1300 feet west of Essex Avenue. It is also 196 feet east of Bridge 29/17 and 520 feet west of Bridge 29/31 and is 34.0 feet south of the south rail, east bound track. Set in rock ledge on top of high bank, about 16 feet above the rails. A U. S. C. & G. S. and State Survey Standard Disk. (Second order unadjusted). August 30, 1934.

7Y (L.C.S.) 71.222 feet
About two miles westerly of Gloucester. On the north side of the Boston and Maine Railroad (Terminal Division), about 1850 feet east of Essex Avenue, 1300 feet east of the west Gloucester Railroad Station; 687 feet east of signal post G297 and 45.5 feet north of the north rail. Set in a large boulder, about 13.2 feet above the rails. A U. S. C. & G. S. and State Survey Standard Disk. (Second order unadjusted). August 1934.

7 AA (L.C.S.) 61.362 feet
About two miles west of Gloucester. On the north side of the Boston and Maine Railroad, Terminal Division, about 2450 feet east of the West Gloucester Station, 256 feet east of the centerline of Stanwood Avenue; 493 feet west of the centerline of Bridge #30.11 and 37.5 feet north of the north rail. Set in a large boulder about 11.1 feet above the rail. A U.S.C.&G.S.

and State Survey Standard Disk. (Second order unadjusted). September 1934.

7 AB (L.C.S.) 35.714 feet
About 1.5 miles west. On the Boston and Maine Railroad, terminal division, about 4000 feet east of the west Gloucester R.R. station; 207 feet east of the centerline of Stanwood St., 1138 feet east of the centerline of Bridge #30.11 and 6.2 feet south of the south rail east bound track. It is also on the intersection of the station and the south rail of east bound track easterly from the station. Set in a concrete monument. U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted). 1934.

7 AC (L.C.S.) 21.086 feet
About 1.5 miles east. On the B.&M. R.R., Terminal Division, about 1.1 miles east of the West Gloucester Station and 0.9 miles east of the Gloucester station. It is 1572 feet west of mile post R31/R4 and about 1900 feet west of the centerline of the bridge over the Annisquam River. It is also 7.6 feet north of the north rail, east bound track and on the extension of the tangent of the same rail, easterly from this station. Set in concrete abutment of a culvert. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted). September 1934.

7 AD (L.C.S.) 13.373 feet
About one mile west. On the northeast side of Essex Avenue (Route #217) 2800 feet northwest of the junction with Western Avenue. It is 29.4 feet west of the south corner of house on Essex Avenue; 28.9 feet south of the west corner of the house and 22.7 feet southeast of the center of a catch basin on the northeast side of the highway. It is set in a concrete monument and covered by a 8 inch water gate cover, marked "water" which is set flush with the surface of the sidewalk. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted). October 18, 1934.

7 AE (L.C.S.) 14.181 feet
About $\frac{1}{4}$ mile southwest. In what is known as "Kent Circle", a small triangular grass plot at the junction of Western Avenue and Essex Avenue. It is in the sidewalk, near the east corner of grass plot; 28.4 feet northwest of the P.C. of curve of stone at east corner and 4.0 feet southwest of the curb. A concrete monument, set level with the top of curb. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted).

7 AF (L.C.S.) 10.645 feet
At the east end of sea wall at easterly end of Pavillion Beach, 1.4 feet west of the east end of the wall and 2.1 feet north of the south face. Set flush in the top of the sea wall. To reach station, from center of city, go southwesterly on Main Street to Western Avenue, thence westerly to point half way between Main and Middle Streets, then southerly across grass plot about 75 feet to sea wall. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted). October 1934.

HAMILTON

Essex County

T.B.M. # 331 (P.W.D.) 58.230 feet
Top 3d course, 4.3 feet above ground. Northeast corner of northwest abutment, Boston & Maine Railroad Portland Division East. Bridge # 24-29, railroad under Farms road. A chisel cut. (Second order unadjusted). September 22, 1931.

T.B.M. # 332 (P.W.D.) 56.288 feet
High point Hamilton-Wenham Town Bound on Main Street. Town Bound (Second order unadjusted). September 22, 1931.

T.B.M. # 2201 (L.C.S.) 52.281 feet
About $1\frac{1}{2}$ miles southwest of Hamilton. On Main Street, near north corner of the intersection with Walnut Street. It is 260 feet northeast of the centerline of the Hamilton and Wenham Station (Boston and Maine Railroad - Portland Division). 41.3 feet north of center of Walnut Street, 18.8 feet southeast of a fire hydrant; 41.8 feet east of the south side of the southerly of two crossing gate mechanisms; 22 feet east of the center of Main Street and 7.5 feet east of the sidewalk curb. A granite M.H.B. A chiseled square. (Second order unadjusted). April 12, 1935.

T.B.M. # 2202 (L.C.S.) 43.000 feet
About $\frac{1}{2}$ mile southwest of Hamilton. On Main Street, about 4.0 miles southwest of Bridge Street; 270 feet northeast of center of a private road to Myopia Hunt Club; 113.9 feet northeast of a M.H.B. on the southeast side of Main Street; 27.9 feet northeast of center of driveway to Estate of Miss I. M. Cammon (West Hill Estate) and 26.6 feet southeast of the center of Main Street. On a boulder in lower course of stone wall on property line of Myopia Hunt Club. A chiseled square. (Second order unadjusted). April 12, 1935.

T.B.M. # 2203 (L.C.S.) 49.621 feet
On Main Street on the southwest corner of buttress on west side of concrete steps to main entrance of the town hall. A copper plug. (Second order unadjusted). April 12, 1935.

T.B.M. # 2204 (L.C.S.) 26.782 feet
About 1 mile west of Hamilton. On Bridge Street about one-quarter mile from Main Street; 49.0 feet south from center of a crossing of the Boston & Maine Railroad (Essex Branch), 24.0 feet southwest of center of Bridge Street and 4.0 feet northwest of centerline of culvert over Miles River. In top of granite abutment of culvert. A copper plug. (Second order unadjusted). April 12, 1935.

T.B.M. # 2205 (L.C.S.) 165.814 feet
About $\frac{3}{4}$ miles northwest of Railroad Station at Hamilton. On top of hill, known as Cillys Hill, on property of Harvard University. It is about 0.3 miles northwest of Main Street and about $\frac{1}{4}$ mile southeast of the Boston and Maine Railroad, Port-

land Division. It is also 290 feet northeast of a boundary wall, close to woods. Set in a flat boulder which is bottom course of a ruined boundary wall running about east and west across top of hill. A copper plug. (Second order unadjusted). April 17, 1935.

T.B.M. # 2207 (L.C.S.) 70.649 feet
About 1 mile east of railroad station at Hamilton. On the Miles River Road at foot of a hill known as Brown's Hill and adjacent to property of G.S. Mandel. It is about 470 feet south of intersection with Bridge Street and about 100 feet north of the center of a private road leading up the hill to the Whitman and Peabody Estates. It is also 15 feet east of center of Miles River Road. In a large boulder about 4 feet above the ground. A chiseled square. (Second order unadjusted). April 19, 1935.

T.B.M. # 2208 (L.C.S.) 216.889 feet
About $1\frac{1}{4}$ miles east of Hamilton railroad station at Hamilton. On the top of Brown's Hill, on property of G.S. Mandel, about 306.5 feet northeast of boundary stone wall; about 45.0 feet southeast from an old stone wall in pasture. It is also about 1.0 feet from south side of an underground water reservoir and about 35.5 feet south of the southeast corner of square concrete vent from reservoir. Set in a concrete monument the top of which is 2 inches above the ground. A copper plug. (Second order unadjusted). April 23, 1935.

T.B.M. # 2209 (L.C.S.) 212.770 feet
About $1\frac{1}{2}$ miles east of Hamilton railroad station. On top of Brown's Hill on property of G. S. Mandel, about 364.5 feet northeast of Stone boundary wall; 121 feet northwest of old stone wall in pasture; 166.7 feet north from north corner of square underground water reservoir and 171.8 feet north of north corner of square concrete vent from reservoir. Set in large granite boulder about 4 inches above the ground. A copper plug. (Second order unadjusted). April 23, 1935.

T.B.M. # 2210 (L.C.S.) 31.652 feet
About $1\frac{3}{4}$ miles northeast of railroad station at Hamilton. At the intersection of the Boston & Maine Railroad-Portland Division, and Bridge Street. It is in the north header of a culvert passing a brook under Bridge Street, 26.1 feet northeast of the centerline of track and about 10.2 feet below level of crossing. In the westerly end of granite top of header. A chiseled square. (Second order unadjusted). April 23, 1935.

T.B.M. # 2211 (L.C.S.) 66.631 feet
About $2\frac{1}{4}$ miles east of Hamilton Station. On School Street about 400 feet southeast of the crossing of the Boston & Maine railroad, Portland Division. It is in the southeast end of the first concrete step of entrance to Adelaide Dodge Walsh School. A copper plug. (Second order unadjusted). April 25, 1935.

T.B.M. # 2212 (L.C.S.) 79.600 feet
About $2\frac{3}{4}$ miles northeast of railroad station. On Bridge Street about 500 feet northwest of intersection with Essex Street and about 800 feet southeast of junction with Sagamore Street. It is 232. feet southeast of the center of driveway to residence of John Holton and 19.0 feet south of center of Bridge Street. Set in ledge outcrop about 4 feet above the roadway. A copper plug. (Second order unadjusted). April 26, 1935.

T.B.M. # 2213 (L.C.S.) 41.064 feet
About $2\frac{1}{2}$ miles northeast of railroad station. On Moulton Street about 810 feet northwest of intersection with Sagamore Street, about 383 feet northwest of center of culvert over brook under Moulton Street. It is also 68.7 feet north of the seventh telephone pole from corner of Sagamore and 67.6 feet east of the eighth pole and 17.4 feet northeast from center of roadway. On a large boulder which is bottom course of an old boundary wall. A chiseled square. (Second order unadjusted). April 29, 1935.

T.B.M. # 2214 (L.C.S.) 51.629 feet
About $2\frac{1}{2}$ mile northeast of railroad station. On Moulton Street about 2400 feet east of Main Street, about 1500 northwest of a private drive to Hall estate and about 1175 feet southeast of center of bridge over Miles River. It is also 17.4 feet south west of the center of Moulton Street and 70.9 feet south of a cross cut in large boulder on north side of street. In a large boulder of an old boundary wall. A chiseled square. (Second order unadjusted). May 1, 1935.

T.B.M. # 2215 (L.C.S.) 47.365 feet
About $2\frac{1}{4}$ miles northeast of railroad station. On Moulton Street at intersection with Main Street. It is 94 feet south east of center of Main Street., 17.0 feet southwest of the center of Moulton Street, 103.7 feet south of the southwest corner of residence of Joe Wood and 11.5 feet northwest of an old ruined boundry wall. Set in concrete top of a fire cistern about 3 feet square and level with the ground. A copper plug. (Second order unadjusted). May 2, 1935.

T.B.M. # 2216 (L.C.S.) 57.860 feet
About 2 miles northeast of railroad station. On Main Street about 2500 feet northeast of Farms Road, 226' northeast of the center of main driveway to Weldon Estate and about 27 feet southwest of the driveway to the chauffeur's house. It is at the end of a stone boundry wall., 1.5 feet from face of wall and 17.5 feet southeast from center of Main Street. The high point on a granite property bound. A chiseled square. (Second order unadjusted). May 2, 1935.

T.B.M. # 2217 (L.C.S.) 61.617 feet
About $1\frac{1}{2}$ miles northeast of railroad station. On Farms Road about 290 feet southwest of center of junction with Main Street and about 27.0 feet north of the northeast corner of a brick garage in back of Hamilton Congregational Church. It is also

4 feet south from center of Farms Road. In a large stone at end of stone wall. A chiseled square. (Second order unadjusted). April 29, 1935.

T.B.M. # 2218 (L.C.S.) 51.696 feet
About $1\frac{1}{2}$ mile northeast of railroad station. On Farms Road about 1700 feet south of Boston and Maine railroad (Portland Division-Eastern Route) 122.4 feet northwest of center of driveway to garage on property of Mr. Richard Smith., 114 feet west of northwest corner of house on Smith property., 119.3 feet southeast of center of private road to Black Brook Plantations (Harvard University) and 58.1 feet southwest of southerly gate post of drive to G. Von L. Myer. Set in a large boulder in old stone boundary wall of Black Brook Plantations. A copper plug. (Second order unadjusted). May 8, 1935.

T.B.M. # 2219 (L.C.S.) 37.693 feet
About $2\frac{1}{2}$ miles north of railroad station. On Farms Road about 2440 feet southeast of junction with Highland Street. Located on the southwest corner of first granite step to main entrance to residence of Major Francis T. Colby. A copper plug. (Second order unadjusted).

T.B.M. # 2220 (L.C.S.) 68.521 feet
About $2\frac{3}{4}$ miles north of railroad station. On the Winthrop estate on Highland Street, 262 feet northeast of center of Farms Road and about 434 feet southwest from center of driveway through Lamson Gate to Appleton Estate. It is also 52.6 feet northwest of center of Highland Street, 29 feet northwest of boundary wall of Winthrop Estate and 23.9 feet northwest of an Essex County bound which is in back of wall on Winthrop estate. Set in a large boulder about 10 feet above the road. A copper plug. (Second order unadjusted). May 9, 1935.

T.B.M. # 2221 (L.C.S.) 55.015 feet
About $2\frac{1}{2}$ miles north of railroad station. On Highland Street, at junction of Farms Road, about 55 feet southwest of center of drive to Winthrop Estate, 14.5 feet northwest of center of Highland Street, and 1.8 feet from face of stone wall of Winthrop estate. In the top of an Essex County Highway bound. A chiseled square. (Second order unadjusted). May 16, 1935.

T.B.M. # 2222 (L.C.S.) 55.559 feet
About $2\frac{1}{2}$ miles north of railroad station. On Highland Street about 182 feet southwest of driveway into Black Brook Farms (W.M. Adams Estate), 7.2 feet southwest of southwest side of barn of Black Brook Farm and 35 feet northeast of telegraph pole. It is also 17.2 feet east of centerline of Highland Street. In a large boulder about 5 feet above the ground. A chiseled square. (Second order unadjusted). May 6, 1935.

T.B.M. # 2223 (L.C.S.) 64.356 feet
About $2\frac{1}{2}$ miles north of railroad station. On Highland Street, on the estate of W. M. Palmer, 41.2 feet northwest of centerline of Highland Street and 19.3 feet northwest of center of the northerly branch of forked driveway leading to Palmer es-

tate. It is 8.29 feet north of a 3 foot oak tree in grass plot between driveway forks, 183.7 feet northeast of the northeast corner of gate keepers' lodge and 96.2 feet south of the southeast corner of the Gardner's house. In a ledge outcrop about 8 inches above the ground. A copper plug. (Second order unadjusted). May 16, 1935.

T.B.M. # 2224 (L.C.S.) 39.033 feet
About 2 miles north of railroad station. On Highland Street, 259 feet west of the northwest corner of barn on the Summer Pingree estate, 32 feet west of the center of Highland Street, 116 feet northwest of the service entrance to the Pingree mansion, 159 feet northeast of a stone wall on a private road and 10 feet south of another stone wall which crosses a brook. In the top at the southwest corner of a concrete culvert over this brook and about 4.0 feet below level of road. A copper plug. (Second order unadjusted). May 16, 1935.

T.B.M. # 2225 (L.C.S.) 63.757 feet
About $1\frac{1}{2}$ miles north of railroad station. On Highland Street, 195.8 feet south of entrance to servant's quarters of Pingree estate 36.5 feet east of a faced stone wall laid in the form of an arc. 18.8 feet east of the center of Highland Street. It is also 113.4 feet northeast of a stone pillar at the south end of Stone Wall and 40.4 feet southeast of a similar stone pillar at the north end of the same wall, located near a $1\frac{1}{2}$ story house on the Pingree Estate. In the top of a ledge outcrop about 2.8 feet above roadway. A copper plug. (Second order unadjusted). May 16, 1935.

T.B.M. # 2226 (L.C.S.) 47.205 feet
About 1 mile north of railroad station. On Highland Street near junction with Asbury Street, 91.2 feet southeast of the southeast corner of a house belonging to Asbury Grove, 116 feet northwest of the southwest corner of a house belonging to C. R. Killam, located on Asbury Street. It is also 29 feet east of the center of Highland Street, and 91.4 feet north of intersection of Asbury Street with Highland Street. In the southwest corner of concrete culvert, 3.2 feet below the level of the street. A copper plug. May 16, 1935.

T.B.M. # 2227 (L.C.S.) 71.596 feet
About $3/4$ mile north of railroad station. On Asbury Street, 157.8 feet southeast of the southeast corner of a house belonging to S. Goodhue, 138.3 feet northeast of east corner of a house belonging to S. Goodhue, 138.3 feet northeast of the northeast corner of a piazza on the T. Johnson residence, 100.8 feet northeast of the southeast corner of S. Goodhue's house and 46.2 feet east of a stone wall which is probably the street line. In an outcrop of ledge about 2.7 feet above level of the road and on land belonging to J.R. Mann. A copper plug. (Second order unadjusted). May 16, 1935.

T.B.M. # 2228 (L.C.S.) 68.351 feet
About $\frac{1}{4}$ mile northwest of railroad station. At the corner of Union Street and Linden Street extension in the easterly corner of the lower granite step of the main entrance to the Hamilton High School, on the south side of building. It is 43.7 feet southwest from the southeast corner of building and 13.2 feet south of the south face. A copper plug. (Second order unadjusted). May 16, 1935.

22 AA (L.C.S.) 59.767 feet
About $\frac{1}{2}$ mile north on the Boston and Maine railroad, Portland Division, Eastern Route; about 3333 feet north of the Hamilton and Wenham Station; 31.0 feet south of a private road crossing; 3177 feet south of milepost B24/P84; 1963 feet north of center of Asbury Street crossing and 11.8 feet west of the center of the west main track. A concrete monument set about 1.0 foot below the rails. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). February, 1935.

22 AB (L.C.S.) 54.820 feet
About 1 mile southwest on the Boston and Maine railroad, Portland division, Eastern Route; approximately 1444 feet north of the Hamilton and Wenham station; 104 feet north of the center of Asbury Street crossing and 1236 feet north of the center of Main Street, Route # 1A, crossing. It is 26.6 feet west of the center of the west main track. A concrete monument set about 2 inches below rail. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). February, 1935.

22 X (L.C.S.) 57.863 feet
About 1 mile north on the Boston & Maine railroad (Portland Division), about 6628 feet south of bridge # 25.63 over a private road, 498 feet north of bridge # 24.29 (Highway overpass) and 15.8 feet west of the center of the west track. A concrete monument, about 1.3 feet above the top of rail. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). March, 1935.

22 Y (L.C.S.) 54.518 feet
About $3/4$ mile northwest on the Boston and Maine railroad (Portland Division), about 1036 feet south of bridge # 24.29 (Highway overpass), 657 feet north of Milepost B24/P84 and 21.9 feet east of the center of the east track. A concrete monument set about 6 inches above the ground and 3.1 feet above top of rail. (Second order unadjusted). February, 1935.

22 Z (L.C.S.) 65.022 feet
About 1 mile north of Hamilton & Wenham railroad station on the Boston & Maine railroad, Portland Division, Eastern Route, about 3493 feet north of Asbury Street, which crosses the railroad north of the Hamilton & Wenham Station. It is 1500 feet north of a private grade crossing and is at the north end of the embankment on the west side of tracks near the south end of a long tangent which passes under a wood overhead bridge 3340 feet north of the point. It is also 21.5 feet west of centerline of west track, 11.3 feet east of right of way fence, 18.5 feet northeast of a telegraph pole and 1647 feet south of

Milepost B24/P84. A concrete monument, the top 8 inches above ground and about 4 feet above top of rails. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). February, 1935.

T.B.M. # 2052 (L.C.S.) 17.528 feet
3/4 miles northeasterly in the northeast corner of granite threshold of large door within the main entrance vestibule on the east side of the Home Pumping Station. To reach station, go northeasterly on School Street about 1/2 mile to Vine Street then east 1/4 miles to Lincoln Street, across Lincoln Street directly to driveway to Home Pumping Station. A brass bolt. (Second order unadjusted). February, 1935.

T.B.M. # 2054 (L.C.S.) 57.647 feet
About 2 1/2 miles northerly in the south end of granite threshold of large door in center of east side of the Gravel Pond Pumping Station. To reach station, from Manchester Town Hall, go west on Central Street, to Pine Street, thence northerly along Pine Street, about 2 1/2 miles to driveway to Pumping Station. A brass bolt. (Second order unadjusted). February, 1935.

HANSON

Plymouth County

T.B.M. #236 (P.W.D.) 72.997 feet
Top of mile post No. 27, 350 feet northwest of northwest side of Monponsett Station New York, New Haven and Hartford Railroad (Boston Division). A chiseled D (Second order unadjusted) February 2, 1931.

T.B.M. #237 (P.W.D.) 66.261 feet
Northeast corner concrete floor of porch of Wampatuck Hall, Main Street. A chiseled square. (Second order unadjusted). February 2, 1931.

T.B.M. #238 (P.W.D.) 68.721 feet
Top boulder 207 feet northwest of the northwest side of north Hanson Station New York, New Haven and Hartford Railroad of Boston Division and 50 feet northeast of northeast rail. A chiseled B. (Second order unadjusted).

T.B.M. #239 (P.W.D.) 65.530 feet
West corner top course southwest wing wall New York, New Haven and Hartford Railroad (Boston Division) concrete arch bridge #11.31 over Shumatuscacant River. A chiseled cut. (Second order unadjusted). February 2, 1931.

B-19 (P.W.D.) 76.438 feet
West corner most northwesterly window sill on southwesterly side of Burrage Station. New York, New Haven and Hartford Railroad (Boston Division). A chiseled cut. (Second order unadjusted). February 2, 1931.

HARDWICK

Worcester County

(U.S.C. & G.S.) 548.362 feet
Gilbertsville, Worcester County, 11 rails east of the east end of the B. & M. R.R. station, 35 feet south of the center of a concrete highway, 5.0 feet north of the north rail and in the east end of the north head wall of a concrete culvert. A standard disk. (First order adjusted).

(U.S.C. & G.S.) 590.005 feet
About 2 miles northeast of Gilbertville, Worcester County, about 0.5 mile northeast of the B. & A. Crossing on the B. & M. Railroad, on the right of way about 112 feet southeast of Elementary Station of the Boston & Albany Railroad, 11 feet south east of the south east rail, 27 feet south west of the center of a road and 2.5 feet south west of a board fence. A concrete post with disk in top. (First order adjusted).

(M.W.S.) 598.522 feet
1/2 mile west of the road between Old Furnace & Barre and 1/2 mile north of Old Furnace. Brass bolt in boulder (Second order unadjusted).

(M.W.S.) 775.300 feet
Near Moose Brook about 2 1/4 miles north of Old Furnace. Brass bolt in flat boulder. (Second order unadjusted).

(M.W.S.) 939.055 feet
On the road from Hardwick Center to Greenwich Village about 3/4 mile northwest from Hardwick Center. Brass bolt in boulder. (Second order unadjusted).

(M.W.S.) 607.450 feet
Northerly headwall of concrete culvert over Muddy Brook on the road between Hardwick and Greenwich Village about 1 1/2 miles from Hardwick Center. Brass bolt. (Second order unadjusted).

(M.W.S.) 576.648 feet
On road between Hardwick Center and Greenwich about 3 miles from Hardwick Center. Brass bolt in ledge outcrop. (Second order unadjusted).

(P.W.D.) 583.798 feet
Concrete step northeast end of southeast abutment B. & M. R.R. bridge #116 (69.10) (B. & A. Railroad bridge #388-A (68.00) over B. & A. Railroad tracks. A chisel cut and 3/8" hole marked "V B". (Third order unadjusted). May 21, 1930.

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T.B.M. # 2507 (L.C.S.) 155.008 feet
 About 1.4 miles west, bench mark 9-MA is a galvanized iron pin set in the top of a concrete post extending 2 inches above the ground surface. It is situated on the abandoned New York, New Haven & Hartford railroad, in the town of Hatfield; about 3½ miles north of Northampton; about 29.7 feet south of parapet of south abutment of highway underpass on road to Hatfield (Bridge Street), and 10 feet west of west rail. A galvanized iron pin set in top of concrete post. (Second order unadjusted). February, 1935.

HAVERRHILL

Essex County

G-1 (U.S.C. & G.S.) 21.762 feet
 At Haverhill, Essex County, on the Georgetown-Bradford line of the B. & M. R.R. 392 feet southeast of the stone bound at the center of the road at Island Park station, 21 feet southwest of a circular brick-walled pit, 12 feet northeast of the northeast rail and in the northwest end of a stone at the northwest end of an old building foundation. A standard disk. (First order adjusted).
 *Recovered November 4, 1932. Condition - good.

H-1 (U.S.C. & G.S.) 37.917 feet
 At Haverhill, Essex County, on the Western Division of the Boston and Maine R.R., 5.5 rails northeast of the northeast end of the platform at Bradford Station, 29.7 feet southwest of the face of the southwest wingwall of the southerly abutment of bridge #A-34, which is the bridge over Elm St., 19.6 feet northwest of the northwest rail and in the top of a boulder. (This bench is liable to settle, as it is only a boulder on slope of a heavy fill). A standard disk. (First order adjusted).
 *Recovered November 15, 1932. Condition - good.

J-1 (U.S.C. & G.S.) 55.745 feet
 At Haverhill, Essex County, about 0.5 mile west of Ward Hill Station on the Western Division of the Boston & Maine Railroad 659.5 feet north of signal D-301, 8.5 feet east of the east rail and at the same elevation as the top of rail and in the face of a ledge in the side of a cut. A standard disk. (First order adjusted).
 *Recovered November 15, 1932. Condition - good.

107 (U.S.C. & G.S.) (U.S.E.) 26.138 feet
 At Haverhill, Essex County, on the Georgetown-Bradford line of the B. & M. R.R. about 0.4 mile northeast of the Bradford station, about 300 yards west of the easterly county bridge across the Merrimac River, at Main St., about 3 feet north of the north rail and 6 inches above the ground. A brass rod projecting 2 inches from a 6 inch square concrete bound lettered U.S.E. on top. (First order adjusted).
 *Recovered November 4, 1932. Condition - Brass rod has been hammered on top. Probably good to nearest hundredth.

HINGHAM

Plymouth County

A 14 (P.W.D.) 15.303 feet
 Top of end concrete fence post, northwest corner bridge over inlet to Mill Pond at Hingham Cove. Chiseled square. (Second order unadjusted). June 9, 1930.

B 14 (P.W.D.) 20.822 feet
 North corner northwest wingwall, third step from top New York, New Haven and Hartford Railroad Bridge #0.64 (Nantasket Branch) (over Rockland Street). Chiseled square. June 9, 1930.

D 14 (P.W.D.) 17.028 feet
 Ledge outcrop 1638 feet west of west girder New York, New Haven and Hartford Railroad, Bridge #0.64 (Nantasket Branch) and 63 feet south of center of Rockland Street. Chiseled square. (Second order unadjusted). June 16, 1930.

M 16 (P.W.D.) 42.931 feet
 Top ledge outcrop at southwest intersection of Summer Street and New York, New Haven and Hartford Railroad (Boston Division) 25.0 feet south of south rail and 97 feet southwest of southwest corner of Nantasket Junction Station. Chiseled square. (Second order unadjusted). July 23, 1930.

N 16 (P.W.D.) 14.997 feet
 Southwest corner lowest granite step of main entrance to Saint Paul's Roman Catholic Church, North Street. Chiseled square. (Second order unadjusted). July 23, 1930.

T.B.M. #186 (P.W.D.) 42.482 feet
 Ledge outcrop opposite North Cohasset Station (New York, New Haven and Hartford Railroad - Boston Division), 11.5 feet north of north rail and 2.0 feet east of east side of bottom granite step. Chiseled square. (Second order unadjusted). July 23, 1930.

T.B.M. #187 (P.W.D.) 17.653 feet
 Top of stone retaining wall, 49 feet northeast of northeast side of West Hingham Station (New York, New Haven and Hartford Railroad - Boston Division), and 29.6 feet southeast of northwest end of wall. Chiseled square. (Second order unadjusted). July 23, 1930.

6A62 (L.C.S.) 27.476 feet
 About two miles east on the north side of the N.Y.N.H.&H R.R. between Nantasket Junction and North Cohasset Railroad Stations. It is about 682 feet northeast of Kilby Street, 7 feet northeast of northeast rail, 21.5 feet southeast of fence, 21.8 feet southwest and 69.8 feet east respectively from two telephone poles along fence. A concrete monument flush with the ground. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted).

HUNTINGTON

Hampshire County

P-6 (U.S.C.&G.S.)

381.909 feet
At Huntington, Hampshire County, in the south face of the B. & A.R.R. station, 5 feet west of the entrance to the women's waiting room, 18 feet north of the center line of the westbound track, and 5 feet higher than the top of the rail. A standard disk stamped "P 6 1933" and set vertically. (First order adjusted) June, 1933.

G-22 (P.W.D.)

378.592 feet
In ledge outcrop southeast of Huntington Station (Boston & Albany R.R. - Main Line), 96.2 feet south of south side of station (along rail) and 72.0 feet east of east rail. Drill hole marked "B". (First order adjusted). 1933.

120.67 (B & A.R.R.)

416.184 feet
About 1.4 miles west along the B.&A.R.R. From the station at Huntington, Hampshire County, about 110 feet north of the Westfield-Pittsfield highway, at bridge 120.67, in the top of the east end of the north spandrell wall, 15 feet north of the center line of the westbound track, and 5 feet lower than the top of the rail. A drill hole. (First order adjusted). June 1933.

369.47 (?) (U.S.C.&G.S.)

369.468 feet
About 0.3 mile southeast along the B.&A.R.R. from the station at Huntington, Hampshire County, at bridge 118.93 over North Branch River, on the top of the southend of the west concrete abutment, 15 feet south of the center line of the eastbound track, and 2 feet lower than the top of the rail. A chiseled square. (First order adjusted). June, 1933.

369.51 (?) (U.S.C.&G.S.)

369.514 feet
About 0.3 mile southeast along the B.&A.R.R. from the station at Huntington, Hampshire County, at bridge 118.93 over North Branch River, on the top of the north corner of the west abutment. 6 feet north of the center line of the westbound track, and 3 feet lower than the top of the rail. A chiseled square (First order adjusted). June 1933.

371.90 (M.S.T.S.) (U.S.C.&G.S.)

375.213 feet
About 1/4 mile southeast along the B.&A.R.R. from the station at Huntington, Hampshire County, about 210 feet west of the west abutment of bridge 118.93 over North Branch River, 35 ft. south of the center line of the east bound track, on the apex of milepost B119, and 3 feet higher than the top of the rail. A chiseled square. (First order adjustment) June 1933.

378.1 (?) (U.S.C.&G.S.)

376.069 feet
Hampshire County, on the B.&A.R.R. about 509 feet west of the station, at bridge 119.36 over Westfield River, in the top of the north end of the east concrete abutment. 15 feet north of the center line of the westbound track, and 2 feet lower than

the top of the rail. A chiseled square. (First order adjusted) June, 1933.

(U.S.S.) (U.S.C. & G.S.)

381.951 feet
Huntington, Hampshire County, at the B. & A. R.R. station on wooden panel in front of the train dispatcher's bay window, between the men's and women's waiting rooms, and 5 feet lower than the top of the rail. A Massachusetts State Survey copper plate set vertically. (First order adjusted). June 1933.

(P.W.D.)

406.414 feet
Northeast end southeast concrete railing of Norwich Bridge over Westfield River. A copper plug. (Second order unadjusted) June 8, 1931.

(P.W.D.)

411.729 feet
Boulder about 0.8 miles north of Norwich Bridge; 113.0 feet east of center of Worthington Road and 22.0 feet north of a stream. A chiseled square (Second order unadjusted). June 8, 1931.

#284 (P.W.D.)

452.906 feet
West corner west header of 3' x 3' concrete box culvert over Worthington Road, about 100 feet north of intersection of Worthington and Pond Brook Roads. A chisel out. (Second order unadjusted). June 8, 1931.

IPSWICH

Essex County

(P.W.D.)

30.009 feet
East corner granite retaining wall, 134.0 feet along rail east of south side of Ipswich station, B. & M. R.R., Portland Division east. 9.4 feet west of west rail. A chiseled square. (Second order unadjusted). September 22, 1931. Recovered March 15, 1935. Condition - good.

(P.W.D.)

40.473 feet
West corner bottom course, north wingwall B. & M. R.R., Portland Division, east bridge #25.63 R.R. under Woldingfield Road. A chiseled square. (Second order unadjusted). September 22, 1931. Recovered March 15, 1935. Condition - good.

#530 (P.W.D.)

39.587 feet
East corner, bottom step, northwest wingwall of abandoned B. & M. R.R. bridge, Portland Division, east bridge #28.53 R.R. over High Street. A chiseled square. (Second order unadjusted) September 22, 1931. Recovered for March 15, 1935. Mark was not recovered. Bridge and wingwall over tracks for High Street have been removed.

K-39 (P.W.D.) 87.481 feet
Top ledge outcrop, 251. feet southeast (along Linebrook Road) of intersection of Linebrook Road and Newburyport Turnpike and 34.8 feet northeast of center of Linebrook Road. A Monel Metal plug. (Third order unadjusted). February 28, 1934.

T.B.M. #627 (P.W.D.) 93.911 feet
Top ledge outcrop under south wall of hen house, 148. feet northeast (along Turnpike) of intersection of Oldright Road and Newburyport Turnpike and 95. feet southeast of center of Turnpike. A Monel Metal plug. (Third order unadjusted). February 28, 1934.

22 R (L.C.S.) 32.042 feet
About one mile northwest. On the Boston and Maine Railroad, (Portland Division), approximately 2885 feet north of the centerline of a private crossing and 22.6 feet west of the centerline of the west track. A concrete monument, the top of which is three inches above the ground. A U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). January 19, 1935.

22 S (L.C.S.) 44.458 feet
About $\frac{1}{2}$ mile northwest, on the Boston and Maine Railroad, Portland Division, about 3936 feet north of the Ipswich Railroad Station; 130 feet south from the center of bridge #28.35 (Route #1A Overpass) and 28.8 feet west of centerline of west track. A concrete monument the top of which is about 4.2 feet above top of rail. A U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). March 12, 1935.

22 T (L.C.S.) 40.968 feet
In Ipswich on the Boston and Maine Railroad, Portland Division, about 2670 feet north of the Ipswich Station; 165 feet north of the centerline of Line Brook Road and 19.6 feet west of the centerline of the west track. A concrete monument, the top of which is 2.6 feet above the top of rail. U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). April 4, 1935.

22 U (L.C.S.) 35.214 feet
In Ipswich, on the Boston and Maine Railroad (Portland Division), on land owned by Mr. Barker, about 125 feet south of the Ipswich Station. It is 110.8 feet southeast from the southeast corner of the station, 109.8 feet southwest from the southwest corner of the house #22 Market Street, 51.3 feet north from the center of Salt Stall Street, and 149 feet east of the centerline of the east track. A concrete monument, the top of which is 8.7 feet above top of rail. U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). March 12, 1935.

22 V (L.C.S.) 39.170 feet
About $1\frac{1}{4}$ miles south. On the Boston and Maine Railroad (Portland Division) about 7834 feet south of the Ipswich Station. It is 2282 feet south of the Ipswich River Bridge #26.72, 540 feet north of bridge #26.19 (Waldingfield Road) and 13.8 feet west of the center of the west track. A ledge outcrop,

1.0 feet above top of rail. U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). March 12, 1935.

22 W (L.C.S.) 44.202 feet
About two miles south, on the Boston and Maine Railroad (Portland Division) about 2900 feet south of bridge #26.19 (Waldingfield Road). 14.0 feet north of bridge 25.63 over a private road, and 12.4 feet east of the center of the east track. A ledge outcrop 7.3 feet above top of rail. U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). March 12, 1935.

KINGSTON

Plymouth County

H-16 (P.W.D.) 18.429 feet
North corner top course southeast abutment N.Y.N.H. & H. Railroad (Boston Division) bridge #22.26, over Jones River. A chiseled square. (Second order unadjusted). July 23, 1930.

T.B.M. #168 (P.W.D.) 22.904 feet
North corner old concrete foundation of Cordage Station (N.Y. N.H. & H. Railroad - Boston Division), 60. feet northwest of north corner of present station and 11.3 feet southwest of southwest rail. A chiseled square. (Second order unadjusted) July 23, 1930.

T.B.M. #169 (P.W.D.) 24.679 feet
North corner, 2nd course southwest abutment N.Y.N.H. & H. Railroad (Boston Division) bridge #23.53 (Railroad under Howlands Lane). A chiseled square. (Second order unadjusted) July 23, 1930.

T.B.M. #170 (P.W.D.) 26.944 feet
East corner stone foundation for most southeasterly basement window grating on northeast side of Kingston Station. (N. Y. N.H. & H. Railroad - Boston Division). A chisel cut. (Second order unadjusted). July 23, 1930.

T.B.M. #171 (P.W.D.) 82.879 feet
Southeast corner of doorsill on south side of garage at north intersection of Summer and Tremont Streets. A chisel cut. (Second order unadjusted). July 23, 1930.

T.B.M. #233 (P.W.D.) 39.089 feet
Southeast corner of second course north abutment N.Y.N.H. & H. R.R. (Boston Division), Bridge 20.69 R.R. under Pembroke Street. A chiseled square (Second order unadjusted). February 2, 1931.

T.B.M. #234 (P.W.D.) 51.717 feet
Southeast corner bottom course south abutment N.Y. N.H. & H. R.R. Boston Division Bridge #19.42 R.R. under Grove Street. A chiseled square. (Second order unadjusted). February 2, 1931.

T.B.M. #235 (P.W.D.) 71.445 feet
Southeast corner top concrete step on south side of Plympton Station N.Y.N.H. & H. R.R. (Boston Division) A chiseled out. (Second order unadjusted). February 2, 1931.

29AU (L.C.S.) 12.115 feet
About one half mile north, located on the west side of Landing Road about 1500 feet south of the Kingston-Duxbury Town line, about 810 feet northeast of the centerline of highway bridge over the Jones River, 18.5 feet from the centerline of the pavement, 30.8 feet northeast of N.E.T.&T.Co. pole No. 24/808 and 7.4 feet northeast of the west end of a concrete culvert. Set in a concrete monument the top of which is 2" above the surface of the ground. U.S.C.&G.S. and State Survey Disk set in concrete post. (Second-Order Unadjusted) March 18, 1935

29AV (L.C.S.) 40.955 feet
About one half mile northeast, located on the N.Y.N.H.&H.R.R. (Plymouth Division), about 550 feet west of the centerline of R.R. bridge over Landing Road, 53 feet north of the northerly rail of the North Track and 127 feet southeast of the southeast corner of E.S. Wright's house off Maple St. It is on an embankment north of the track at a point about 6 or 7 hundred feet southeast of the Kingston R.R. Station. Set in a concrete post the top of which is flush with the surface of the ground. A U.S.C.&G.S. and State Survey disk set in a concrete post. (Second-Order Unadjusted) March 18, 1935

29AW (L.C.S.) 24.561 feet
About one and one-half miles southeast, located on the N.Y.N.H.&H.R.R. (Plymouth Division), 6.4 feet West of the most West-erly rail at a point about 240 feet northwest of the centerline of Kennedy Lane, running easterly from Route 3 to the R.R. It is also 87.7 feet and 70 feet southeast and north respectively from two telegraph poles on the West side of the track, Set in a concrete monument, the top of which is flush with the surface of the ground. A U.S.C.&G.S. and State Survey disk set in concrete post. (Second-Order Unadjusted) March 20, 1935

LAKEVILLE

Plymouth County

A-17 (P.W.D.) 81.006 feet
Southwest corner second step from bottom of east abutment, N.Y.N.H. & H. R.R. (Boston Division) bridge #69.72 Railroad under Howland Avenue. A chiseled cut. (Second order unadjusted). December 3, 1931.

T.B.M. #160 (P.W.D.) 49.064 feet
Top milepost (Middleboro 2) 575. feet east of intersection of Bedford Street and N.Y. N.H. & H. R.R. (Old Colony Division)

9. feet north of the north rail. A chiseled square. (Second order unadjusted). July 23, 1930.

Relation to Bedford St. datum 44.464 feet
Root of 8" Birch, 79.5 feet south of south rail at southeast intersection of Bedford St. and N.Y.N.H. & H. Railroad (Taunton-Middleboro Branch). A Railroad Spike. (Second order unadjusted) August 14, 1930.

LAWRENCE

Essex County

L-1 (U.S.C. & G.S.) 35.279 feet
At Lawrence, Essex County, about 0.25 mile west of the North Andover station of the B. & M. R.R., at the Merrimac Street bridge over the Shawsheen River, 61.5 feet into Lawrence from the Lawrence-North Andover Town Line and in the top of the south end of the west abutment. A Standard Disk. (First order adjusted). Recovered November 4, 1932. Condition - good.

L-1 (U.S.C. & G.S.) 61.096 feet
At South Lawrence, Essex County, in the southeast corner of a triangular grass plot on the west side of the station, 15. feet west of the east curb and 17. feet north of the south curb of the plot. A concrete post with disk in top. (First order adjusted). Recovered April 1, 1935. Condition - good.

T.B.M. #2002 (L.C.S.) 32.77 feet
Located on east side of Boston and Maine R.R., Portland Division, Western Route, 1.1 miles north of Merrimac Street Bridge, over Shawsheen River and about 8.6 feet east of east rail. In north-west corner of foundation of Semaphore Signal Tower D 283. A bolt. (Second order unadjusted). 1934.

LEICESTER

Worcester County

A-24 (P.W.D.) 728.653 feet
Southwest corner 3d course northwest wingwall B. & A. R.R. "Main Line" Bridge #53.03 R.R. under Pleasant Street. A chiseled cut. (Second order unadjusted). July 21, 1931.

T.B.M. #299 (P.W.D.) 717.413 feet
Top stone north end of east abutment B. & A. R.R. "Main Line" bridge #52.81 over French River. A drill hole. (Second order unadjusted). July 21, 1931.

16FF (L.C.S.) 105,542 feet
On the B. & M. R.R. (Southern Division) about 301 feet east from the center of Bridge #26.31 (under Walker Street) 78.5 feet east from the southeast corner of Lamson Company Building and 11.8 feet north of the north rail of the northerly track. Set in a concrete monument flush with ground. A U.S.C. & G.S. and State Survey Standard Disk. (First order unadjusted). April, 1934.

16GG (L.C.S.) 104,588 feet
On the B. & M. R.R. (Southern Division) about 2475 feet westerly from the center of Bridge #26.89 (Under Pawtucket Street) 206.8 feet northwest from center of a black water tank and 7.6 feet south of south rail of southerly track (main line). Set in the southwest corner of top of concrete base of water spout. A U. S.C. & G.S. and State Survey Standard Disk. (First order unadjusted). April, 1934.

LUDLOW

Hampden County

D-3 (U.S.C. & G.S.) 244,967 feet
About 2 miles north-northeast of North Wilbraham, Hampden County, at Red Bridge Station on the Athol Branch of the B. & A. R.R., 175 feet east of a road crossing at mile 10.19, in the north end of the west abutment of a red highway bridge across the Chicopee River. A standard disk. (First order adjusted).

U-3 (U.S.C. & G.S.) 232,388 feet
About 0.25 mile north of North Wilbraham, Hampden County, 4 rails west of a road crossing at mile 8.27 on the Athol Branch of the B. & A. R.R., 29.5 feet east of the northeast corner of Collins station on the right of way, 13.9 feet south of the south rail. A concrete post with disk in top. (First order adjusted).

V-3 (U.S.C. & G.S.) 245,885 feet
At Ludlow, Hampden County, near the intersection of Hubbard and East Streets, in the north end of the concrete footing of a steel tower carrying an electric power line, 32.8 feet south of the southernmost rail of the B. & A. R.R., 23 feet northwest of the near curb of East St. and 5.8 feet south of the south right-of-way fence. A standard disk. (First order adjusted).

RREB (B.&A. R.R.) (U.S.C. & G.S.) 248,887 feet
About 2.25 miles north-northeast of North Wilbraham, Hampden County, in the northwest corner of the parapet wall of a large masonry culvert at mile 10.32 of the Athol Branch of the B.&A. R.R. A chiseled square. (First order adjusted).

LUNENBERG

Worcester County

T. B. M. #382 (P.W.D.) 370,742 feet
W. Corner of west parapet wall of stone arch bridge over Baker Pond at Summer Street Extension. A chiseled square. (Third order unadjusted). February 24, 1932.

T.D.M. #386 (P.W.D.) 372,212 feet
Northwest corner concrete header for 20 inch corrugated iron culvert on the north side of Lancaster Avenue and 63. feet northwest of northwest rail B. & M. R.R. (Fitchburg Division). A copper plug. (Third order unadjusted). February 24, 1932.

LYNN

Essex County

J-26 (P.W.D.) 36,781 feet
North end bridge seat northeast abutment B. & M. R.R. (Terminal Division) Bridge #11.52 over Central Square. A copper plug. (Second order unadjusted). September 22, 1931.
*Recovered May 13, 1935. Condition - good.

K-26 (P.W.D.) 23,887 feet
Top southeast wingwall southwest abutment B. & M. R.R. (Terminal Division) Bridge #10.59 over Commercial Street. An iron bolt. (Second order unadjusted). September 22, 1931.
*Recovered May 13, 1935. Condition - good.

M-26 (P.W.D.) 34,692 feet
Top of stone underpinning at northeast corner of City Hall. No mark. (Second order unadjusted). December 1, 1931.
*Recovered May 13, 1935. Condition - City Hall Underpinning City Hall, Lynn, good.

T. B. M. #339 (P.W.D.) 15,664 feet
West corner northeast abutment B. & M. R.R. (Terminal Division) Bridge #9.55 over Saugus River. A chiseled square. (Second order unadjusted). September 22, 1931.
*Recovered May 13, 1935. Condition - good.

T. B. M. #352 (P.W.D.) 18,208 feet
Stone bound at northeast corner of Central Avenue and Oxford Street. A drill hole. (Second order unadjusted). December 1, 1931.
*Recovered May 13, 1935. Condition - good.

37-K (L.C.S.) 33.667 feet
On the Boston and Maine Railroad, Portland Division, Eastern Route, 58 feet south of the Swampscott-Lynn City line. It is 1108 feet south of the center of Burrill Street Underpass, Bridge #12.84; 832 feet south of the center of Swampscott Depot; 238 feet north of the center of Eastern Avenue Underpass; 13.2 feet east of the center of the east main track; 152.7 feet southeast of the southeast corner of an abandoned building of the Standard Oil Company of New York. 46.8 feet north of the northeast corner of a Pickering Coal Company and 1.4 feet below top of east rail. A concrete monument set flush with the ground. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted).

37-L (L.C.S.) 41.541 feet
On the Boston & Maine Railroad; Portland Division, Eastern Route, in top of parapet wall near northwest end of northeast abutment of the bridge over Silsbee Street; approximately 1 mile southwest from the Swampscott City Line. It is 912 feet southwest from the center of Green Street bridge over railroad; 31 feet northeast from the center of Silsbee Street; 197 feet northeast from the center of Lynn Depot; 66.2 feet north of the northwest end of a concrete covering for stairs to Silsbee Street; 41 feet west of east rail of Boston bound main track; 11.4 feet east of southwest corner of concrete retaining wall at Silsbee Street; 38.5 feet northwest from the center of the northwest main track and 0.2 feet below the top of the northwest rail. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted). May 23, 1935.

37-M (L.C.S.) 25.305 feet
On the Boston & Maine Railroad, Portland Division, Eastern Route about two miles southwest of Swampscott-Lynn City Line. It is 4640 feet southwest of the center of the Lynn Depot; 662 feet southwest of the center of the railroad bridge over Shephard St. 38.2 feet southwest of the northeast end of H.P. Hood & Son's large brick building; 19.5 feet west of concrete platform of the same building; 288 feet northeast of the center of the West Lynn Depot; 594 feet northeast of the center of the railroad bridge over Commercial Street; 30.4 feet southeast of center of the southeast main track and 1.8 feet below the top of the southeast rail at the southeast main track. A concrete monument flush with the ground. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted) May 29, 1935.

37-N (L.C.S.) 13.712 feet
1700 feet southwest from West Lynn Depot. Located on the Boston & Maine Railroad, Portland Division, Eastern Route; about 2 miles southwesterly from the Swampscott-Lynn City Line. It is 1702 feet southwesterly from the center of the West Lynn Depot.; 1396 feet southwesterly from the center of the railroad bridge over Commercial Street; 96.7 feet southwesterly from a signal pole and 6.4 feet southeasterly from the nearest rail of the southeasterly main track. A granite monument flush with the ground and 2 feet below the top of rail. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted). May 29, 1935.

LYNNFIELD

Essex County

V.B.M. #613 (P.W.D.) 111.035 feet
Top large boulder 1357 feet north (along turnpike) from Lynnfield - Saugus town line and 111 feet west of center of turnpike. A copper plug. (Second order unadjusted). February 28, 1934.

V.B.M. #614 (P.W.D.) 142.748 feet
Stone post marked "Bill M. W.P. 21", 161 feet southwest of intersection of Boston and Maine Railroad (Wakefield Branch) (abandoned) and Newburyport Turnpike and 29 feet southeast of center of turnpike. High point. (Second order unadjusted). February 28, 1934.

V.B.M. #615 (P.W.D.) 137.819 feet
Top boulder 651. Feet east of junction of Newburyport Turnpike and Railroad Avenue and 14 feet south of center of Railroad Avenue. A chiseled square. (Second order unadjusted). February 28, 1934.

4-J (L.C.S.) 90.715 feet
About 500 feet southwest from Summer Street. Located on the Boston and Maine Railroad (Newburyport Branch) 276 feet south of the south corner of the Lynnfield Center Railroad station, 68.8 feet south of stone bound in center of railroad track. 38.2 feet south of switch point, 9.0 feet east of centerline of track. A concrete monument, the top of which is two inches above the ground. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted). August 1934.

4-K (L.C.S.) 107.121 feet
In Lynnfield Center. Located on the Boston and Maine Railroad (Newburyport Branch), about one-sixth mile northeast of Summer Street, 40.5 feet north of centerline of railroad, 72.4 feet north of railroad switch stand and about 66 feet south of center of old well. A concrete monument, the top of which is one inch above the ground and about four feet above the rail. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted). August 1934.

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MANCHESTER

Essex County

N-25 (P.W.D.) 19.696 feet
West end concrete base of granite retaining wall, 27. feet east of east side of B. & M. R.R. (Gloucester Branch) Bridge #24.36 and 4.8 feet north of north rail. (R.R. under Harbor Street). A copper plug. (Second order adjusted). October 28, 1931.
*Recovered May 14, 1935. Condition - good.

P-25 (P.W.D.) 12.752 feet
West end stone threshold most westerly door on north side of Manchester Station (B. & M. R.R. - Gloucester Branch). A copper plug. (Second order adjusted). October 28, 1931.
*Recovered May 14, 1935. Condition - good.

V-25 (P.W.D.) 14.940 feet
West corner lower granite step on north side of Towne Memorial Fountain, Manchester Square. No mark. (Second order adjusted) November 24, 1931.
*Recovered May 21, 1935. Condition - good.

T.B.M. #342 (P.W.D.) 30.444 feet
East corner southwest abutment B. & M. R.R. (Gloucester Branch) Bridge #26.16 over Summer Street. A chiseled square. (Second order adjusted). October 28, 1931.
*Recovered May 14, 1935. Condition - good.

T.B.M. #347 (P.W.D.) 11.455 feet
High point stone bound, 72. feet northwest of northwest corner of Manchester Station. (B. & M. R.R. - Gloucester Branch), and on south side of Summer Street Extension. No mark. (Second order adjusted). November 24, 1931.
*Recovered - May 21, 1935. Condition - good.

T.B.M. #348 (P.W.D.) 11.998 feet
High point, just east of drill hole, in Manchester-Beverly Town Bound on north side of Bridge Street. No mark. (Second order adjusted). November 25, 1931.

7G (L.C.S.) 10.816 feet
About 1 1/2 miles southwest. On the Boston and Maine R.R., Terminal Division in the northwest abutment of bridge over Chubbs Creek at the Beverly-Manchester line; about 1800 feet west of the West Manchester station and 7.6 feet north of the north rail, west bound track. It is 407 feet west of a private crossing to a greenhouse and is 86.2 feet northwest from corner of seawall near greenhouse. Set in a granite block of bridge abutment. A U.S.C.&G.S. and State Survey Standard Disk (Second order unadjusted) July 24, 1934

7H (L.C.S.) 45.269 feet
About one half mile southwest, just north of the Boston and Maine R.R. Terminal Division, about 18.6 feet east of the east side of a private bridge over the railroad. It is about 37.4

feet east from the north end of the west bridge railing and 65.9 feet northeast of the south end of the east railing. Set in top of high ledge about 30 feet above the tracks. U.S.C.&G.S. and State Survey Standard Disk. (Second Order Unadjusted) July 24, 1934.

7J (L.C.S.) 13.600 feet
In Manchester on the Boston and Maine R.R., Terminal Division, about 320 feet east of the Manchester Station; 149 feet east of the east end of the station platform and 10.8 feet north of the north rail. It is opposite a power station; 31.1 feet south-east of its southwest corner and 26.9 feet southwest of the southeast corner. A concrete monument. A U.S.C.&G.S. and State Survey Standard Disk. (Second order Unadjusted) July 24, 1934.

7K (L.C.S.) 13.247 feet
In Manchester on the Boston and Maine R.R., Terminal Division, at the south end of Ashland Avenue, 7.8 feet east of its center line and 6.0 feet north of the north rail, west bound track. It is also about 1630 feet west of the Manchester Railroad station and 54.7 feet northwest of the northwest corner of the Calderwood Boat Shops. Set in a concrete monument. A U.S.C.&G.S. and State Survey Standard Disk. (Second Order Unadjusted) July 2, 1934.

7L (L.C.S.) 13.258 feet
In Manchester on the Boston and Maine R.R., Terminal Division; about 1300 feet west of the Manchester Station; 340 feet east of centerline of Ashland Avenue; 5.2 feet north of north rail, east bound track. Set in a concrete monument. A U.S.C.&G.S. and State Survey Standard Disk. (Second Order Unadjusted) July 23, 1934.

7M (L.C.S.) 56.460 feet
About 1/4 mile north, on lawn between houses #52 and #54 Pine Street. It is on the west side line of the street, about 1300 feet north of the junction of Bridge, Bennett, Central and Pine Streets at highway Route #127; 46.4 feet north of the northeast corner of house #52 and 42.5 feet south of the southeast corner of house #54. Set in an Essex County highway bound. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted) July 25, 1934.

7N (L.C.S.) 68.377 feet
About 3/4 mile northerly on the northwest corner of lawn of McFurner Residence at the corner of Pine and Pleasant Streets. It is about 3450 feet north of the junction of Highway Route #127 and Pine Street, 16.7 feet southeast from a hydrant on the corner of Pine Street and Route #127, 21.8 feet west of the northwest corner of McFurner residence and 20.4 feet north-west from the northwest corner of porch of this same house. Set in an Essex County Highway bound. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted) July 23, 1934.

7P (L.C.S.) 32.776 feet
About 1 mile east, on the Boston and Maine Railroad, Terminal Division, 246 feet west of milepost B26/R9, 455 feet west of center of a private underpass for driveway of the Morris Estate and 8.4 feet south of the south rail of east bound tracks. It is also 1450 feet west of Bridge #28.16 over highway Route #127 Set in a low ledge. A U.S.C.&G.S. and State Survey Standard Disk (Second-order Unadjusted) July 28, 1934.

7Q (L.C.S.) 40.318 feet
About 1 1/2 miles easterly; A U.S.C.&G.S. and State Survey Standard Disk on the Boston and Maine Railroad, Terminal Division, about 1325 feet east of Bridge #28.16 over highway route #127 and 7.4 feet north of the north rail of the west bound track extended easterly. Set in a concrete monument. A U.S.C.&G.S. and State Survey Standard Disk. (Second-order Unadjusted) July 28, 1934.

7R (L.C.S.) 59.218 feet
About two miles easterly, on the Boston and Maine R.R., Terminal Division, 363 feet west of milepost R8/B27; 1735 feet west of an overhead bridge #27.17 and 1955 feet west of the center of Magnolia Station. It is also on the tangent of the south rail of east bound track extended east and is 5.7 feet south of the south rail, east bound track. Set in a concrete monument. A U.S.C.&G.S. and State Survey Standard Disk (Second-order Unadjusted) August 4, 1934

7S (L.C.S.) 72.494 feet
About 1 1/2 miles northwest, on the Boston and Maine Railroad, Terminal Division, 562 feet east of overhead bridge 27.17; 348 feet east of the center of the Magnolia Station, 39 feet east of the end of station platform and 5.4 feet south of the south rail east bound track. Set in a concrete monument. A U.S.C.&G.S. and State Survey Standard Disk. (Second order unadjusted) August 4, 1934.

Pipe Line (L.C.S.) 62.977 feet
About 1 1/2 miles northwesterly, on the east side of Pipe Line Road, about 4250 feet from its junction with Pleasant Street and 450 feet west of road leading to the dump. It is 22.7 feet east of center of Pipe Line Road; 27.8 feet north of telegraph pole and 54.4 feet east of twin oak trees. Set in top of a boulder. A U.S.C.&G.S. and State Survey Standard Disk (Second order Unadjusted).

T.B.M. 2053 (L.C.S.) 198.979 feet
About 1 mile northwest, located at the Manchester Water Tower; 8.1 feet south of the face of the tower and 32.4 feet southeast of the south corner of a gate house at the southwest side of the tower. The tower is about 480 feet northeast of Pine Street. Set in a ledge. A Brass bolt. (Second order Unadjusted).

MANSFIELD

Bristol County

(U.S.C. & G.S.) 144.560 feet
About 1 mile south of West Mansfield, Bristol County, on the Shore Line of the N. Y. N.H. & H. R.R., 24 telegraph poles south east of bridge #28.60 at Gilbert Street, 27.3 feet southeast of the southeast rail, 4 feet southeast of the railroad fence and in a flat boulder. A standard disk. (First order adjusted). Discovered September 29, 1932. Condition - good.

(U.S.C. & G.S.) 144.235 feet
About 0.5 mile north of West Mansfield station, Bristol County, on the Shore Line of the N. Y. N.H. & H. R.R. at culvert No. 27. 13, 12.5 feet southwest of the northeast end of the southeast headwall and 6.5 feet southeast of the southeast rail. A standard disk. (First order adjusted). Discovered September 29, 1932. Condition - good.

(U.S.C. & G.S.) 166.401 feet
West Mansfield, Bristol County, on the Shore Line of the N. Y. N.H. & H. R.R., 54 feet southwest of the crossing at the station, at culvert #24.95, 22.5 feet northwest of the northwest rail and on the northwest end of the southwest abutment. A standard disk. (First order adjusted). Discovered June 18, 1935. Condition - good.

(U.S.C. & G.S.) 151.358 feet
West Mansfield, Bristol County, 19.25 feet south of West Street, 36 feet west of Union Street, 16 feet west of the east wall and 2.8 feet north of the north wall of the Town Hall and flush with the ground. A concrete post with disk in top. (First order adjusted). Discovered June 19, 1935. Condition - good.

P.W.D. #153 (P.W.D.) 124.116 feet
In ledge outcrop in field at northeast intersection of Fruit St. and N.Y.N.H. & H. R.R. (Old Colony Division), 3 feet east of east right of way fence and 57. feet north of south corner of the same fence. A chiseled square. (Second order unadjusted). July 23, 1930. Discovered June 21, 1935. Condition - good.

NEWBURY

Essex County

Z - (U.S.C. & G.S.) 43.592 feet
 At Newbury, Essex County, about 3 miles southwest of Newburyport station on the Georgetown-Newburyport line of the B. & M. RR., 2 rails west of culvert 168-0, 1.5 rails west of a private road crossing, in a pasture, 57 feet south of the south rail, 3 feet above the ground and in a rock outcrop. A Standard Disk. (First order adjusted).
 *Recovered July 2, 1935. Condition - good.

C-1 (U.S.C. & G.S.) 65.676 feet
 At Newbury, Essex County, at Byfield station on the Georgetown-Newburyport line of the B. & M. RR., 23.5 rails east of the station, 376 feet east of the center of the road at the most easterly crossing at Byfield station, 11 feet north of the north rail, 3.8 feet higher than the track and in the top of a large boulder. A standard disk. (First order adjusted).
 *Recovered July 1, 1935. Condition - good.

T.B.M. #327 (P.W.D.) 16.994 feet
 Northwest corner granite footing on east side of B. & M. RR. (Portland Division - East), 1060. feet south of intersection of B & M RR (Portland Division) and Newburyport Turnpike. This footing is part of a bridge formerly used by the Bay State Street Railway Company. A chiseled square. (Second order unadjusted) September 22, 1931.
 *Recovered March 28, 1935. Condition - good.

T.B.M. #323 (P.W.D.) 19.520 feet
 Top boulder 170.0 feet along rail north of intersection of Hay Street and B. & M. RR. Portland Division East. 27.0 feet east of east rail. A chiseled square. (Second order unadjusted) September 27, 1931.
 *Recovered March 28, 1935. Condition - good.

M-39 (P.W.D.) 18.161 feet
 In ledge outcrop 190. feet northeast (along Turnpike) of intersection of Boston Road and Newburyport Turnpike and 167. feet northwest of center of Turnpike. Monel Metal Plug. (Second order unadjusted). February 28, 1934.

T.B.M. #631 (P.W.D.) 14.649 feet
 Top boulder 240. feet northeast (along Turnpike) of junction of Middle Street and Newburyport Turnpike and 116. feet northwest of center of Turnpike. Monel Metal Plug. (Second order unadjusted). February 28, 1934.

T.B.M. #632 (P.W.D.) 7.209 feet
 In ledge outcrop 652. feet northeast (along Turnpike) of center of highway bridge over Parker River and 290. feet southeast of center of Turnpike. Monel Metal Plug. (Second order unadjusted) February 28, 1934.

NEWBURYPORT

Essex County

2-1 (U.S.C. & G.S.) 34.157 feet
 At Newburyport, Essex County, on the Eastern Division of the Boston & Maine railroad, at the bridge over Merrimac Street in the north face and near the west end of the parapet of the south abutment and 10.5 feet west of the west rail. A standard disk. (First order adjusted).
 *Recovered: January, 1934. Condition: Good.

2-1 (U.S.C. & G.S.) 26.634 feet
 At Newburyport, Essex County, in the Police Court Building on Green Street in the face of the southwest wall, near the west corner and 30 inches above the ground. A Standard Disk. (First order adjusted).
 *Recovered: June 28, 1935. Condition: Good.

2-18 (P.W.D.) 128.01 feet
 North corner granite window sill, larger window on northwest side Newburyport pumping station # 2. No mark. (Second order unadjusted).
 *Recovered: June 29, 1935. Condition: Good.

2-18 (P.W.D.) 84.355 feet
 East corner granite base foremost southeasterly cannon at Civil War Memorial, Atkinson Common. No mark. (Second order unadjusted)
 *Recovered: June 29, 1935. Condition: Good.

2-20 (L.C.S.) 31.123 feet
 About $\frac{1}{4}$ mile north on the Boston and Maine railroad in the south abutment of bridge over the Merrimac River. It is 724 feet north of the centerline of bridge # 37.37 over Merrimac Street, 3.3 feet south of the face of abutment and 10.8 feet west of the centerline of the west track. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). March, 1935.

2-22 (L.C.S.) 37.109 feet
 At Newburyport, on the Boston & Maine railroad in foundation of water column, 350.0 feet north of the center of the Newburyport station, 90.2 feet south of the center of bridge # 37.37 over Merrimac Street and 6.7 feet east of the centerline of the east track. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted). March, 1935.

2-23 (L.C.S.) 57.336 feet
 At Newburyport on the Boston & Maine Railroad, about 1245 feet south of the Newburyport Station, 447.6 feet south of the south side of the High Street bridge over the railroad 269.5 feet south of a signal tower, 154.0 feet north of the center of a Junction Tool House, 1.4 feet south of double signal, P370:NB392 and 48.1 feet west of the centerline of the west track. Set in a concrete monument, the top of which is flush with the surface of the ground and about 15.5 feet above the top of rail. A U.S. & G.S. and State Survey Standard Disk. (Second order unad-

justed). March, 1935.

22 K (L.C.S.) 32,142 feet
About $\frac{1}{2}$ mile south on the Boston & Maine railroad about 4030 feet southerly from the Newburyport station, 35.4 feet south of signal P 367, 25.8 feet north of milepost B39/N1 and 14.0 feet west of centerline of west track. A concrete monument the top of which is 4 inches above the ground. A U.S.C. & G.S. and State Survey Standard disk. (Second order unadjusted). March, 1935.

22 L (L.C.S.) 29,245 feet
About 1 mile south on the Boston and Maine railroad in north end of east abutment of an abandoned Bay State Street railway bridge over the railroad. It is 37.8 feet east of the centerline of the east main line track, 399 feet north of the center of a highway grade crossing and 7.4 feet south of the north end of the abutment, about 15.4 feet above the top of the rails. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). March, 1935.

22 M (L.C.S.) 22,903 feet
About $3\frac{1}{2}$ miles south, on the Boston & Maine railroad, about 3200 feet north of the Parker River bridge, 108.3 feet north of Farm Road bridge # 34.06 and 17.0 feet east of the centerline of the east track. It is also about 1900 feet south of Hay Street crossing. In a ledge outcrop about 8.0 feet above the top of rails. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). January, 1935.

* * * * *

NEWTON

Middlesex County

2 (U.S.C. & G.S.) 45,151 feet
Newtonville, Middlesex County, on the main line of the B. & A. RR, 6 rails west of the station, in the face of the north abutment of bridge 8.20, 10 feet north of the north rail and 18.5 feet west from the east end of the abutment and 0.5 feet higher than the track. A standard disk. (First order adjusted) discovered October 13, 1932. Condition - good.

2 (U.S.C. & G.S.) 71,050 feet
About 1 mile west of Amburndale, Middlesex County, on the main line of the B. & A. RR., at the foot subway under the tracks at the Riverside station, 15 feet southwest of signal bridge No. 10.07, 9 feet northwest of the northwest rail and in the top of the coping at the northwest end of the subway. A standard disk. (First order adjusted). Discovered July 18, 1934. Condition - good.

2 (U.S.C. & G.S.) 105.75 feet
Woodland, Middlesex County, on the Highland Circuit of the B. & A. RR. 31 rails south of the south end of the Woodland station, 403.5 feet south of the southerly corner of the first course of masonry of the easterly abutment of bridge N.H.9.04, 18 feet east of the east rail and in the top of a large boulder. A Standard Disk. (U.S.C. & G.S.) First order adjusted). Discovered October 13, 1932. Condition - Has been tampered with. Probably good within a hundredth.

2 (U.S.C. & G.S.) 142,605 feet
Newton Center, Middlesex County, on the Highland Circuit of the B. & A. RR., 8 rails east of the east end of the station, in the west end of the north abutment of bridge N.H. 5.62 and 2 feet north of the north rail. A standard disk. (First order adjusted). Discovered October 13, 1932. Condition - good.

2 (B. & A. RR) (U.S.C. & G.S.) 48,291 feet
Newtonville, Middlesex County, on the main line of the Boston & Albany RR, at mileage 8.57, on the south abutment of bridge N.H. 8.57 and in the corner of the east stone of the first course of masonry. A chiseled mark. (First order adjusted). Discovered October 13, 1932. Condition - good.

Amburndale (B. & A. RR) (U.S.C. & G.S.) 66,811 feet
Amburndale, Middlesex County, on the main line of the B. & A. RR, at the door to the baggage room of the station and in the northwest corner of the sill. A chiseled mark. (First order adjusted). Discovered September 19, 1934. Condition - good.

Newton (B & A RR) (U.S.C. & G.S.) 33,497 feet
Newton, Middlesex County, on the main line of the B. & A. RR. at the station, in the northeast corner of the sill of the base-

NORTH ANDOVER

Essex County

- AA-41 (P.W.D.) (L.C.S.) 91.851 feet
In top of buttress on northwest side of steps at main entrance to Town Offices, Main Street. A Mass. Dept. of Public Works Standard Disk. (First order unadjusted). 1935.
- AB-41 (P.W.D.) (L.C.S.) 176.165 feet
In top of buttress on east side of steps at main entrance to Town Hall, Main Street. A Mass. Dept. of Public Works Standard Disk. (First order unadjusted). March, 1935.
- A-41 (P.W.D.) (L.C.S.) 91.964 feet
In the west corner stone steps at main entrance to Fire Station, Main Street. A Monel Metal Plug. (First order unadjusted). 1935.
- B-41 (P.W.D.) (L.C.S.) 216.013 feet
In a flat ledge outcrop, 241 feet west of intersection of Peters Street and Chickering Road and 104 feet south of the center of Peters Street. A Monel Metal Plug. (First order unadjusted). March 26, 1935.
- C-41 (P.W.D.) (L.C.S.) 133.014 feet
In top of flat ledge outcrop 436 feet southeast (along Pleasant Street) of southeast side of Stephens Mill, produced, and 46 feet southwest of center of Pleasant Street. A Monel Metal Plug. (First order unadjusted). March 28, 1935.
- D-41 (P.W.D.) (L.C.S.) 158.383 feet
Northwest corner of bottom visible course, west wing of World War Monument in Stevens Memorial Park. No mark. (First order unadjusted). April 3, 1935.
- T.B.M. #677 (P.W.D.) (L.C.S.) 73.730 feet
In a boulder at the base of a stone wall at south intersection of Railroad and Massachusetts Avenues and 33 feet south west (along wall). A Monel Metal Plug. (First order unadjusted) March, 1935.
- T.B.M. #678 (P.W.D.) (L.C.S.) 93.970 feet
In top of boulder 110 feet south of intersection of Lawrence Turnpike and Railroad Avenue and 39 feet west of center of Turnpike. The bench mark is on line of stone wall on west side of Turnpike and 104 feet north of angle in wall. A copper plug. (First order unadjusted). March, 1935.
- T.B.M. #679 (P.W.D.) (L.C.S.) 188.563 feet
In top of boulder (remains of stone wall), 56 feet south of intersection of Chickering Road and Massachusetts Avenue and 77 feet west of center of Chickering Road. A Monel Metal Plug. (First order unadjusted). March 28, 1935.
- T.B.M. #680 (P.W.D.) (L.C.S.) 220.109 feet
In top of buttress on east side of steps at entrance on south side of Center School, Milk Street. A Monel Metal Plug. (First order unadjusted). March 28, 1935.
- T.B.M. #681 (P.W.D.) (L.C.S.) 176.035 feet
On rim at back of G. H. Gilbert fountain on east side of Main Street. A Monel Metal Plug. (First order unadjusted). March 28, 1935.
- T.B.M. #682 (P.W.D.) (L.C.S.) 163.109 feet
In top of boulder in stone wall on south side of Prescott Street, 114 feet west of intersection of Chickering Road and Prescott Street and 26 feet south of center of Prescott Street. A Monel Metal Plug. (First order unadjusted). April 4, 1935.
- T.B.M. #683 (P.W.D.) (L.C.S.) 151.328 feet
In top of boulder at Northwest intersection of Clark and Sutton Streets, 42 feet north of center of Sutton Street and 18 feet west of center of Clark Street. A copper plug. (First order unadjusted) April 2, 1935.
Discovered June 11, 1935. Condition - good.
- T.B.M. #684 (P.W.D.) (L.C.S.) 116.351 feet
In the northwest corner of granite rim of manhole set on east side of triangular grass plot formed by intersection of Sutton, Hadwick and High Streets. A copper plug. (First order unadjusted). April 2, 1935.
Discovered June 11, 1935. Condition - good.
- T.B.M. #685 (P.W.D.) (L.C.S.) 53.897 feet
In a rock projecting from the northeast corner of Storehouse #2 of Sutton Mills, Sutton Street. A Monel Metal Plug. (First order unadjusted). April 2, 1935.
- 2126L (L.C.S.) 249.703 feet
Located in triangular grass plot at intersection of Mass. Route #114 and Route #114, 61.5 feet southeast from sign post marked Route #114 and 4.5 feet southwest from westerly rail of Eastern Mass. Railway Co. A concrete monument flush with the ground. A U.S.C. & G.S. and State Survey Standard Disk. December 18, 1934. (First order unadjusted).
- T.B.M. 2000 (L.C.S.) 214.608 feet
Located on the east side of Mass. Route #114, 17 feet northeast from Signal Tower at northeast corner of Route #114 and Andover Street 80 feet west from telephone pole on north side of Andover Street and 62 feet from telephone pole C1786V on west side of Route #114. A concrete Mass. Highway Bound 6 inches above ground and about 2 feet below road. A Lead plug. (First order unadjusted) December 18, 1934.
- T.B.M. #2001 (L.C.S.) 83.375 feet
Located on the east side of Mass. Route #114 near northeast corner of Route #114 and Railroad Avenue, 17 feet northwest from western Mass. Street Ry. Co. Pole C1828 on north side of Railroad Ave., 77.5 feet east from E.M.S.Ry. Co. Pole C1824, 2.3 feet south from concrete Town Line Post boundary line between No. Andover and Lawrence and 134.8 feet north from Hydrant. Set in a

PEABODY

Essex County

F-39 (P.W.D.) 187.286 feet
Top large rock, 2275. feet southwest (along Turnpike) of junction of Forest Street and Newburyport Turnpike and 93. feet southeast of center of Turnpike. A copper plug. (Second order unadjusted). February 1934.

T.B.M. # 616 (P.W.D.) 80.707 feet
Top boulder 117. feet west of intersection of Newburyport Turnpike and Boston and Maine Railroad (Newburyport Branch) and 40.2 feet north of north rail. A copper plug. (Second order unadjusted). February 1934.

T.B.M. #617 (P.W.D.) 114.453 feet
Top flat ledge outcrop, 370. feet northeast (along Turnpike) of intersection of Lowell Street and Newburyport Turnpike and 14.2 feet northwest of center of Turnpike. A chiseled square. (Second order unadjusted). February 1934.

4-P (L.C.S.) 81.784 feet
1921 feet west of railroad station. On Boston and Maine Railroad Newburyport Branch, 921 $\frac{1}{2}$ feet west of the centerline of the overhead bridge leading to Oak Grove Cemetery; 39.5 feet south of pole #96 of the Eastern Mass. Elec. Co.'s high voltage line. 121.8 feet east of a concrete post ring signal which is on the north side of track; 5.8 feet south of south rail and on the tangent of the north rail extended westerly. A concrete monument set 1 ft. below top of rail and about flush with ground. U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) August 1934.

4-Q (L.C.S.) 72.914 feet
In West Peabody. Located on the Boston and Maine Railroad. (Newburyport Branch) 129.3 feet east of the east corner of the West Peabody station, 11.5 feet south of c/1 of Newburyport branch track, 15.7 feet north of c/1 of Salem Branch Railroad and 40.2 feet east of point of frog. A concrete monument, the top of which is one inch above the ground and about two feet above tracks. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) August 1934.

32-D (L.C.S.) 16.718 feet
1/8 mile southeast. On Boston and Maine Railroad, Lowell Branch about 1/8 mile southeast of Peabody Station at Wallis Street, 17.7' west of point of switch of the South Reading Branch. 12.3 $\frac{1}{2}$ east of an iron fence post at the corner of east street line and south right of way line. 2.8 feet east of east street line and 8.5 feet south of south rail of southerly track. A concrete monument, set flush with the ground. U.S.C. & G.S. and State Survey standard bronze disk. (Second order unadjusted) August 26, 1934.

32-E (L.C.S.) 44.080 feet
About 1.1 miles northwest of Peabody Station. On the Boston and Maine Railroad, Lowell Branch, about 2000' west of Endicott St., 369 feet west of culvert marked 19/14, 20.3 feet south of Peabody Elec. Light Pole #17, 90.6 feet southeast of a drill hole in a triangle in a boulder on the north side of track, 5.2 feet north of the north rail and on the tangent of the south rail extended east. A concrete monument set 3" above ground. U.S.C. & G. S. and State Survey Standard Disk. (Second order unadjusted) August 1934.

32-F (L.C.S.) 64.894 feet
West 1 $\frac{3}{4}$ miles Located on the Boston & Maine Railroad (Lowell branch), 9.1 feet south of centerline of rails. 127 $\frac{1}{2}$ feet north of hydrant on Lowell St. 99.1 feet southeast of east front corner of Joseph O'Connor's house. A square monument the top of which is three inches below the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) August 1934.

32-G (L.C.S.) 65.621 feet
About 1/2 mile east of W. Peabody Railroad station. On Boston and Maine Railroad, Lowell Branch, about 1877 feet east of centerline of Newburyport Turnpike. About 90. feet east of a private crossing; 67.0 feet east of a small culvert 21/10; 18.8 feet south of south rail; 3.5 feet north of a telegraph pole and 214.6 feet southwest of the base of a semaphore signal. A concrete monument, set 4 inches above ground and about 1.5 feet below top of rail. A U.S. C. & G.S. and State Survey Standard disk. (Second order unadjusted) August 1934.

32-H (L.C.S.) 69.942 feet
About 1000 feet East-Station. Located on the Boston & Maine Railroad (Lowell Branch), 9.5 $\frac{1}{2}$ feet north of northerly rail 260. $\frac{1}{2}$ feet west of centerline of Newburyport Turnpike and 226.1 feet west of State Highway bound on west side of Turnpike. A concrete monument the top of which is four inches above the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted.) August 1934.

City B.M. (City of Peabody) (L.C.S.) 24.789 feet
The northeast corner of the plinth block of the monument commemorating the Revolutionary War. The mark is the north east corner of the first course of granite above the grade of the street at the granite monument commemorating the Revolutionary War in Peabody Square. No mark. (Second order unadjusted)

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RICHMOND

Berkshire County

J-7 (U.S.C. & G.S.) 1144.637 feet
At Richmond Summit, Berkshire County, about 120 feet east of the Boston & Albany Railroad station, at an overhead highway bridge, in the top of the north back wall, 5 feet north of the north rail, and 3 feet higher than the top of the rail. A standard disk, stamped "J 7 1933". (First order adjusted). June, 1933.

*Recovered: January, 1934. Condition: Good.
Suggested description: At Richmond Summit, Berkshire County, about 120 feet east of the Boston and Albany Railroad Station, at an overhead highway bridge, in the face of the north abutment 5 feet north of the north rail, and 3 feet higher than the top of the rail. A standard disk, set vertically, stamped "J 7 1933".

K-7 (U.S.C. & G.S.) 1057.137 feet
At Richmond, Berkshire County, in the south face of the Boston & Albany Railroad station, on the south side of the east door, 15 feet north of the north rail, and 5 feet higher than the grade. A standard disk, stamped "K 7 1933" and set vertically.
*Recovered: January, 1934. Condition: Good.
Suggested description: At Richmond, Berkshire County, in the south face of the Boston and Albany Railroad station, on the south side of the east door, 16 feet north of the north rail, and 5 feet higher than grade. A standard disk, stamped "K 7 1933" and set vertically. Elevation not checked.

L-7 (U.S.C. & G.S.) 1003.348 feet
At Richmond Furnace, Berkshire County, about 150 feet west of the Boston & Albany Railroad station, 39 feet south of the south rail, and level with the top of the rail. A standard disk, stamped "L 7 1933" and set in top of concrete post.
*Recovered: January, 1934. Condition: Good.
Suggested description: At Richmond Furnace, Berkshire County, about 160 feet west of the Boston and Albany Railroad station, 34.9 feet south of the south rail and level with the top of the rail. A standard disk, stamped "L 7 1933" and set in the top of a concrete post. Elevation not checked.

157.55 (B. & A. R.R.) (U.S.C. & G.S.) 1107.711 feet
About 0.8 mile southwest along the Boston & Albany Railroad from the station at Richmond Summit, Berkshire County, at bridge 157.55, on the coping at the foot of the southeast concrete wingwall, 12 feet south of the south rail, and 2 feet higher than the top of the rail. A chiseled square. (First order adjusted). June, 1933.
*Recovered: January, 1934. Condition: Good.

1056.2 (M.S.S.) (U.S.C. & G.S.) 1056.376 feet
At Richmond, Berkshire County, at the Boston & Albany Railroad station, on the east casing of the east door, 18 feet north of the north rail, and 5.5 feet above the sidewalk. A Mass. State Survey standard copper plate, stamped "STATE SURVEY 1056.2 and

set vertically. (First order adjusted). June 1933.
*Recovered: January 1934. Condition: Good.
Suggested description: At Richmond, Berkshire County, at the Boston and Albany Railroad station, on the east casing of the east door, 18 feet north of the north rail and 5.5 feet above the sidewalk. A Massachusetts State Survey Standard copper plate, stamped "STATE SURVEY 1056.2" and set vertically.

ROCHESTER

Plymouth County

P.B.M. # 213 (P.W.D.) 84.801 feet
Top of boulder, at south intersection of "Red Gate Road" and New York, New Haven & Hartford railroad "Boston Division", 20.0 feet southwest of southwest rail and 23.0 feet south of center of "Red Gate Road". A chiseled square. (Second order unadjusted). December, 1931.
*Recovered: February, 1935. Condition: Good.

ROCKPORT

Essex County

P.W.D. # 25 (P.W.D.) 62.809 feet
Top ledge outerop 17. feet southeast of east corner Rockport Exchange of New England telephone and Telegraph Company, corner of Main and Hale Streets. A copper plug. (Second order unadjusted). October, 1931.
*Recovered: May, 1935. Condition-Good.

P.B.M. #343 (P.W.D.) 79.540 feet
Top of milepost R I (Boston and Maine Railroad-Gloucester Branch) a chiseled square. (Second order unadjusted). October, 1931.
*Recovered: May, 1935. Condition: Good.

P.B.M. #344 (P.W.D.) 60.938 feet
East corner of stone base for stationary crane (abandoned), 86 feet southwest of center of Rockport station (Boston and Maine Railroad-Gloucester Branch) and 77.7 feet southeast of southeast rail. A chiseled square. (Second order unadjusted). October, 1931.
*Recovered: May, 1935. Condition-Good.

ROWE

Franklin County

K-33 (P.W.D.) 680.947 feet
On shelf in ledge, 235. feet southeast (along northeast rail) of center of Boston & Maine railroad (Fitchburg Division) Culvert # 133.31 and 12.1 feet northeast of northeast rail. A copper plug. (Second order unadjusted). May, 1933.

L-33 (P.W.D.) 739.563 feet
On shelf in ledge, 675 feet southeast of center of Hoosac Tunnel Station (Boston & Maine railroad-Fitchburg Division) and 7.2 feet northeast of northeast rail. A copper plug. (Second order unadjusted). May, 1933.

T.B.M. # 516 (P.W.D.) 703.173 feet
West end north concrete header Boston & Maine railroad (Fitchburg Division) Culvert # 134.02. A copper plug. (Second order unadjusted). May, 1933.

ROWLEY

Essex County

A-25 (P.W.D.) 19.923 feet
In Ledge, 70.0 feet along east rail, north of north side of Boston & Maine Railroad Portland Division East concrete arch bridge # 31.91, and 9.6' feet east of east rail. A copper plug. (Second order unadjusted). September, 1931.
*Recovered: March, 1935. Condition: Good.

T. B. M. # 329 (P.W.D.) 25.234 feet
Top boulder at foot of slope, 247.0 feet north of intersection of Railroad Avenue and Boston & Maine Railroad, Portland Division East, and 180.0 feet west of west rail (Main Line). A chiseled square. (Second order unadjusted). September, 1931.
*Recovered: March, 1935. Condition: None.
Suggested description: Mark was not found. A large boulder was located near slope in sand pit, but not at foot of slope. Boulder showed evidence of having been turned over. No chiseled square was found on this boulder.

L-39 (P.W.D.) 28.712 feet
Top boulder 430. feet southwest (along Turnpike) of junction of Central Street and Newburyport Turnpike and 95. feet southeast of center of Turnpike. A Monel Metal plug. (Second order unadjusted). February, 1934.

T.B.M. # 628 (P.W.D.) 69.290 feet
Top ledge outcrop 300. feet northeast (along Turnpike) from Ipswich-Rowley Town Line and 131.5 feet northwest of center of Turnpike. A Monel metal plug. (Second order unadjusted). February, 1934.

T.B.M. # 629 (P.W.D.) 59.706 feet
Top flat boulder 326. feet southeast (along Haverhill Street) of intersection of Haverhill Street and Newburyport Turnpike and 55.5 feet south of center of Haverhill Street. A Monel metal plug. (Second order unadjusted). February, 1934.

T.B.M. # 630 (P.W.D.) 72.526 feet
In ledge outcrop 1027. feet southwest (along Turnpike) of junction of Kressey Street and Newburyport Turnpike and 161. feet northwest of center of Turnpike. A copper plug. (Second order unadjusted). February, 1934.

Q (L.C.S.) 14.027 feet
About one mile northeast. On the Boston and Maine Railroad, (Portland Division, Eastern Route), in the west end of the north abutment of Bridge #30.94 over Rowley River. It is approximately 951 feet south of the center of the Rowley Station, 54 feet north of the centerline of bridge, 4.4 feet north of the face of the abutment and 17.2 feet west of the center of the west track. In abutment about four feet below top of rail. U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). January 19, 1935.

P (L.C.S.) 22.050 feet
About $1\frac{1}{2}$ miles northeast. On the Boston and Maine Railroad, about 1079 feet north of highway at Rowley Station, 2918 feet south from centerline of bridge #31.91 (Route #1A over Railroad) and 18.4 feet east of the centerline of the east track. A concrete monument, the top of which is about four inches above the ground and about six inches above the top of rail. A U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). January 19, 1935.

R (L.C.S.) 22.381 feet
About two miles northeast. On the Boston and Maine Railroad 300 feet north of center of bridge #31.91 (Route #1A over Railroad), 115.5 feet south of signal P318, about 4000 feet south of the Rowley Station and 15.5 feet west of the centerline of the west track. In a ledge outcrop about six feet above top of rails. A U.S.C.&G.S. and State Survey Standard disk. (Second order unadjusted). January 19, 1935.

ROYALSTON

Worcester County

T.B.M. # 430 (P.W.D.) 823.796 feet
Southwest corner east wheelguard of concrete bridge over Mill River at Baldwinville Road. A copper plug. (Second order unadjusted). August, 1932.

T.B.M. # 431 (P.W.D.) 832.693 feet
In ledge outcrop, 360. feet east of Boston & Maine railroad (Fitchburg Division) Culvert # 74.38 and 8.0 feet south of west rail. A copper plug. (Second order unadjusted). August, 1932.

RUTLAND

Worcester County

M.W.S. # 5 (M.W.S.) (U.S.C. & G.S.) 931.740 feet
About 1.5 miles west of Rutland, Worcester County, 16 rails west of the Boston & Maine Railroad bridge # 182, on the right of way and 24 feet south of the south rail. A standard bench mark of the Metropolitan Water Supply Commission. The point on which the rod is held is the upper end of a 3/4 inch iron rod the lower end of which is embedded in a block of concrete about 1.5 feet square and set 6 feet below the ground. The rod comes to the surface inside a 4 inch iron pipe which is spread at the bottom and capped at the top. (First order adjusted). No date.

M.W.S. # 6 (M.W.S.) (U.S.C. & G.S.) 1024.916 feet
About 1 mile north of Rutland, Worcester County, at the siding for shaft # 5 of the Metropolitan Water Supply Tunnel, on the right of way of the Boston & Maine Railroad, 80 feet east of the east end of the spur, 32 feet east of the east rail and 28 feet southwest of telephone pole # 8869. A standard bench mark of the Metropolitan Water Supply Commission. The point on which the rod is held is the upper end of a 3/4 inch iron rod, the lower end of which is imbedded in a concrete block about 1.5 feet square and set 6 feet below the ground. The rod comes to the surface inside a 4 inch iron pipe which is spread at the bottom and capped at the top. (First order adjusted). No date.

M.W.S. # 7 (M.W.S.) (U.S.C. & G.S.) 921.652 feet
About 2 miles northwest of Jefferson, Worcester County, about 800 feet west of the side of shaft # 4 of the Metropolitan Water Supply tunnel, on the right of way of the Boston & Maine Railroad and on the right of way of the power transmission line following the line of the tunnel, 23.5 feet east of the east rail of the track and 20 feet north of the line of poles of the power line. A standard bench mark of the Metropolitan Water Supply Commission. The point on which the rod is held is the upper end of a 3/4 inch iron rod, the lower end of which is imbedded in a concrete block about 1.5 feet square and set 6 feet below the ground. The rod comes to the surface inside a 4 inch iron pipe which is spread at the bottom and capped at the top. (First order adjusted). No date.

T.B.M. # 56 (U.S.C. & G.S.) 992.071 feet
About 0.25 mile west of Rutland, Worcester County, about 300 yards west of the Rutland station of the Boston & Maine Railroad, at the west end of the south guard rail of Bridge # 180. The top of the bolt. (First order adjusted). No date.

T.B.M. # 58 (U.S.C. & G.S.) 1022.954 feet
About 2 miles northeast of Rutland, Worcester County, about midway between Summit Siding and Muschopauge station on the Boston & Maine Railroad, 15 feet east of milepost B 52 - N 53, and in the northeast corner of the north wall of a concrete culvert. A chiseled cut. (First order adjusted). No date.

SALEM

Essex County

P.W.D. 10.877 feet
Southeast corner stone threshold of easterly entrance at north-east corner of Salem Station (Boston & Maine Railroad - Terminal Division). A copper plug. (Second order unadjusted). September, 1931.
Discovered: May, 1935. Condition: Good.

P.W.D. 23.217 feet
Wall in ledge, 33 feet (along southeast rail) southwest of southwest side of Boston & Maine Railroad (Terminal Division) bridge # 15.17, and 8 feet southeast of southeast rail. A copper plug. (Second order unadjusted). September, 1931.
Discovered: May, 1935. Condition: Good.

P.W.D. # 337 (P.W.D.) 12.436 feet
Southwest corner most easterly window-sill on south side of Salem Roundhouse (Boston & Maine Railroad - Terminal Division). A copper plug. (Second order unadjusted). September, 1931.
Discovered: February, 1935. Condition: Good.

P.W.D. # 351 (P.W.D.) 12.397 feet
Southeast corner granite doorsill at # 4 Norman Street. No mark. November, 1931.
Discovered: May, 1935. Condition: Good. No mark.

Tidal B. M. # 19 (U.S.C. & G.S.) (P.W.D.) 13.664 feet
In southwest corner of U. S. Custom House, corner Derby and Orange Streets. A standard disk set vertically in wall. (Second order unadjusted). November, 1931.
Discovered: May, 1935. Condition: Good - A standard disk.

L.C.S. 23.789 feet
In Salem. On southeastern abutment of March Street Overpass. 54.2' south of centerline of March St., 54.5' northeast of telephone P-173, 130 feet west of house No. 17 No. March St. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted).

L.C.S. 7.265 feet
1/4 mile east. On Boston and Maine Railroad, Portland Division, Eastern Route, north of Salem Tunnel, 240 ft. northeast of southeast corner of Salem Roundhouse, 50.5 feet southeast of frog of track leading to coal hopper, 171.2 feet southwest of point of switch of a track leading off track to Roundhouse, 20.7 feet northwest of west rail of west track of main line and on the tangent of the south rail of the Lowell Branch extended easterly. A concrete monument set flush with the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) August 28, 1934.

L.C.S. 9.230 feet
About 1 mile northeast. On the Boston and Maine Railroad,

Lowell Branch, about 578 feet from Carletonville Station at Flint Street, on the tangent of the west rail of the west track extended south, 145.2 feet west of a drill hole in a triangle in retaining wall of drainage canal, 201.6 feet northeast of 1 story frame building on north side of canal, 135.5 feet south of a drill hole in a triangle, 2 feet above top of rail, in the face of retaining wall on north side of tracks: 6.0 feet east of east rail of siding to Helburn-Thompson Leather Co. and 106.8 feet from point of frog of an abandoned siding to the east. A concrete monument set 2" above ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) April 27, 1934.

32-C (L.C.S.) 9.385 feet
1-1/4 mile northeast. Located on Boston and Maine Railroad, Lowell Branch about 890.± west of Grove Street about 109.± feet west of a foot bridge over drainage canal, 108.± northwest of northwest corner of the Peter Sim Factory, 34.0 feet northeast of a jog in right-of-way fence at gate over siding, 154.± east of a concrete post ring signal and 8.2 feet north of the north rail. A concrete monument set 3" above the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) August 26, 1934.

37-A (L.C.S.) 26.610 feet
In Salem. Located 617 feet north of Town House Square; 4.3 feet west from the face of stone retaining wall along the west side of Washington St., and 4.4 feet north from the face of stone retaining wall along the north side of Federal Street. It is also 56.4 feet west from the center of the Boston and Maine Railroad track at the north end of the tunnel under Washington Street; 40.0 feet north from the center of Federal Street; 25.9 feet southeast from the southeast corner of Essex County Court House. A concrete monument 1 inch below the surface of the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) April 3, 1935.

37-AA (L.C.S.) 7.840 feet
At Salem Roundhouse. On the Boston and Maine Railroad, Portland Division, Eastern Route; approximately 1128 feet north of Town House Square. It is also 240.5 feet north from the center of Bridge Street; 94.8 feet east from the center of the Turntable; 82.4 feet southeast from the southeast corner of the Round House; 63.2 feet west from the center of the main track and 0.6 feet below the top of the rails. A concrete monument flush with the surface of the ground. This is a temporary bench mark. A copper tack in a lead plug. (Second order unadjusted) April 3, 1935.

37-AB (L.C.S.) 21.738 feet
In Salem. In sidewalk along the east side of the Boston and Maine Railroad, Portland Division, Eastern Route, Tunnel under Washington Street at the south end of tunnel, about 108 feet south of Town House Square. It is 12.2 feet east of the center of the railroad tunnel at its south end and 1.8 feet west of the face of the sidewalk curb. In a drill hole in a granite step. A copper nail. (Second order unadjusted)

37-B (L.C.S.) 9.022 feet
In Salem. Located on the Boston and Maine Railroad, Portland Division, Eastern Route; approximately 798 feet south of Town House Square. The station is 138 feet south from the center of Derby Street; 166.4 feet west from the center of Washington Street; 38.5 feet east from the center of the east main track. A concrete monument set flush with the ground, 1.1 feet below the top of the rail of the east main track and 1.5 feet below the top of depot platform curb. A U.S.C. & G.S. and State Survey, Standard Disk. (Second order unadjusted) April 3, 1935.

37C (L.C.S.) 15.728 feet
South Salem. On the Boston and Maine Railroad, Portland Division, Eastern Route approximately 4582 feet south of Town House Square. The station is 375 feet north from the center of Ocean Avenue. Bridge over railroad; 40.5 feet south of a semaphore signal marked "Yard"; 22.4 feet east from the center of the east main track and 0.6 feet below the top of the east rail of the east main track. A concrete monument set flush with the ground. A U.S.C. & G.S. and Standard Disk. (Second order unadjusted) April 4, 1935.

37D (L.C.S.) 27.990 feet
About 2 miles south of Salem. Located on the Boston and Maine Railroad, Portland Division, Eastern Route; 3814 feet south of the center of Jefferson Ave. bridge, over the railroad, 2722 feet south of mile post B15/P93; 298 feet south of semaphore signal P 146, 120 feet east of the center of the east main track and 1.7 feet below the top of the east rail. A concrete monument 2 inches above the surface of the ground. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted) April 4, 1935.

37E (L.C.S.) 37.153 feet
1 1/2 miles south of Salem. On the Boston and Maine Railroad, Portland Division, East Route, on the tangent of the west rail of east main track, extended south, approximately 985 feet north from the Salem, Swampscott City Line. The station is 310.5 feet north of semaphore signal, P139; 9 feet south of mile post B14/P94; 10.3 feet west of the center of the west main track and 1.3 feet below the top of the west rail. A concrete monument set two inches above ground. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted) April 4, 1935.

SALISBURY

Essex County

Y - (U.S.C. & G.S.) 14.134 feet
At Salisbury, Essex County, on the Eastern Division of the Boston & Maine Railroad, 1/8 mile south of the station, at bridge # 52, in the West abutment, 15 feet north of the South end of the abutment and 7 feet west of the west rail. A standard disk. (First order adjusted). No date.
*Recovered: November, 1932. Condition: Good.

A-1 (U.S.C. & G.S.) 19.970 feet
At Salisbury, Essex County, on the Eastern Division of the Boston & Maine Railroad, about 1 mile south of the station and west of station 49+0 of the Salisbury South State Highway, 223 feet south of milepost B 38 - P 70, 51.5 feet east of the east rail and in a rock outcrop. A standard disk. (First order adjusted). No date.

*Recovered: November, 1932. Condition: Good.
Suggested description: A-1 At Salisbury, Essex County, on the Eastern Division of the Boston & Maine Railroad, about one mile south of the station and west of station 49+0 of the Salisbury south state Highway, 223 feet south of milepost B 38 - P 70, 51.5 feet east of the east rail and in a rock outcrop.

T.B.M. # 2005 (L.C.S.) 39.530 feet
1.6 miles east of Amesbury Town Line located in the southwest corner of signal crossing tower foundation # 176 at intersection of Cushing Street and Amesbury Branch of Boston & Maine Railroad located 15.5'± North of centerline of track, 15.5'± east of centerline of Cushing Street and 1' above the rail. A 3/4 ø (round) bolt. (Second order unadjusted). January, 1935.

22-A (L.C.S.) 73.477 feet
On the Boston and Maine Railroad, 758 feet south of the center of the Atlantic N.H.R.R. Station, 507 feet south of Center of Bridge #41.42, 450 feet south of the Mass.- N.H. state line and 39.5 feet east of the centerline of the east track. In a ledge, 171 feet above top of rails. A copper tack in lead plug surrounded by chiseled triangle. (Second order unadjusted) April 1, 1935.

22-B (L.C.S.) 30.062 feet
On the Boston and Maine Railroad, in the west end of the north abutment of bridge over U.S. HIGHWAY Route #1. It is 2.6 feet north of the face of the abutment, 3 feet below top of rail and 10 feet west of the center of the west track. U.S.C. & G.S. and State Survey Standard disk. (Second order unadjusted) April 1, 1935.

22-C (L.C.S.) 25.476 feet
About 1/8 mile west. On the Boston and Maine Railroad, 760 feet north of the center of the Salisbury Station, 654 feet north of the center of bridge #39.34, 260 feet north of Milepost SO/A4, 389.5 feet south of a signal, 18.6 feet east of the Amesbury branch

tracks, 91.0 feet west of the center of Railroad Avenue and 23.8 feet west of the centerline of the west main track. Set in top of masonry wingwall of a C.I. Culvert. U.S.C. & G.S. and State Survey Standard disk. (Second unadjusted) April 1, 1935.

22-D (L.C.S.) 30.425 feet
About 1/2 mile southwest. On the Boston & Maine Railroad about 1272 feet south of the center of the Salisbury Station, in the north end of east abutment of highway bridge #39.07 over the Railroad. It is 14.0 feet north of the center of east end of the bridge, 28 feet south of north end of east abutment, 4.0 feet east of face of abutment and 15.3 feet east of centerline of easterly main track. In bridge abutment, 16.0 feet above the top of the rails. U.S.C. & G.S. and State Survey Standard disk. (Second order unadjusted) April 1, 1935.

22-E (L.C.S.) 23.624 feet
About 1 mile south. On the Boston & Maine Railroad, 339 feet west of U.S. Highway Route #1 31.5 feet north of Signal P. 363, 164.0 feet north of center of a private crossing and 28.4 feet west of centerline of west track. Set in a ledge outcrop about 13 feet above the top of rails. U.S.C. & G.S. and State Survey Standard disk. (Second order unadjusted).

22-F (L.C.S.) 26.164 feet
About 1 1/2 miles south. On the Boston & Maine Railroad, about 2300 feet north of the center of bridge over the Merrimac River, 378.9 feet north of Milepost B38/P70, 273 feet west of centerline of U.S. Highway Route #1 and 271.1 feet east of centerline of east track. Set in a ledge outcrop about 7.2 feet above top of rails. U.S.C. & G.S. and State Survey Standard disk. (Second order unadjusted) March 27, 1935.

22-G (L.C.S.) 73.865 feet
About 2 miles south. On the Boston and Maine Railroad, Portland Division, near the northwest corner of bridge #41.42. It is about 240 feet south of the centerline of Atlantic, N.H. Station; 14.6 feet north of highway centerline and 41.5 feet west of centerline of bridge. In top of a large granite bound marking Massachusetts-New Hampshire State Line. U.S.C. & G.S. and State Survey Standard disk. (Second order unadjusted) April 1, 1935.

SANDWICH

Barnstable County

22-H (P.W.D.) 15.786 feet
North corner stone threshold of most northwesterly entrance to waiting room on northeast side of Sandwich Station (New Haven Railroad-Boston Division). A copper plug. (Second order unadjusted). June, 1933.

C-34 (P.W.D.) 23.575 feet
In boulder, at north intersection of Spring Hill Road and New Haven Railroad (Boston Division), 141. feet northeast of north east rail and 44. feet northwest of center of Spring Hill Road. A copper plug. (Second order unadjusted). June, 1933.

T.B.M. # 527 (P.W.D.) 6.415 feet
Northwest end southwest concrete header New Haven Railroad (Boston Division) Culvert # 60.73 over brook. A copper plug. (Second order unadjusted). June, 1933.

T.B.M. # 528 (P.W.D.) 17.196 feet
Top boulder 513. feet northwest of intersection of Beach Road and New Haven Railroad (Boston Division) and 65.4 feet southwest of southwest rail. A copper plug. (Second order unadjusted). June, 1933.

T.B.M. # 529 (P.W.D.) 17.608 feet
Top east end granite retaining wall on north side of Liberty Street and 9.1 feet west of west rail. (New Haven Railroad - Boston Division) A copper plug. (Second order unadjusted). June, 1933.

T.B.M. # 530 (P.W.D.) 31.825 feet
East corner concrete platform for gasoline pumps of L.F. Dunham Filling Station. Kings Highway, about 670. feet north of East Sandwich Station (New Haven Railroad - Boston Division). A copper plug. (Second order unadjusted). June, 1933.

T.B.M. # 531 (P.W.D.) 27.749 feet
South corner southwest concrete header of 12" concrete pipe culvert under Kings Highway about 350. feet northwest of East Sandwich Station (New Haven Railroad - Boston Division). A copper plug. (Second order unadjusted). June 1933.

T.B.M. # 532 (P.W.D.) 23.763 feet
In boulder flush with ground, 42. feet northwest of intersection of Old Barnstable Road and New Haven Railroad (Boston Division) and 5.4 feet northeast of northeast rail. A copper plug. (Second order unadjusted). June 1933.

T.B.M. # 533 (P.W.D.) 53.300 feet
North corner second step from bottom northwest wingwall southwest abutment New Haven Railroad (Boston Division) Bridge # 66. 98 (Railroad under Old Barnstable Road). A copper plug. (Second order unadjusted). June 1933.

T.B.M. # 534 (P.W.D.) 41.883 feet
Top boulder 41. feet northwest of intersection of Scotton Hay Road and New Haven Railroad (Boston Division) and 130.3 feet southwest of southwest rail. A copper plug. (Second order unadjusted). June, 1933.

AD-34 (P.W.D.) 24.935 feet
Top of World War Memorial Boulder on grass plot in center of Clark-Haddad Square. A standard disk. (Second order unadjusted). July 18, 1933.

SAUGUS

Essex County

B-49 (P.W.D.) 46.882 feet
Top ledge outcrop, three feet north (along turnpike) of junction of Collins Avenue and Newburyport Turnpike and 105 feet west of center of turnpike. A copper plug. (Second order unadjusted). February, 1934.

B-49 (P.W.D.) 42.993 feet
Top ledge outcrop, 89 feet north (along turnpike) of junction of Newburyport Turnpike and road to Prankers Pond, and 172 feet southeast of center of turnpike. A copper plug. (Second order unadjusted). February 1934.
Discovered: May 1935. Condition: Good.

B-49 (P.W.D.) 67.931 feet
Top ledge outcrop 109 feet southwest (along turnpike) of junction of Newburyport Turnpike and Pinehurst Avenue and 78 feet northwest of center of turnpike. A copper plug. (Second order unadjusted). February 1934.

T.B.M. #611 (P.W.D.) 67.257 feet
Top ledge outcrop 497 feet north (along turnpike) of intersection of Newburyport Turnpike and Main Street and 132 feet east of center of turnpike. A copper plug. (Second order unadjusted). February 1934.
Discovered: May 1935. Condition: Good.

T.B.M. #612 (P.W.D.) 45.027 feet
Southwest corner concrete step at northwest corner Mr. Cegger's house, 329 feet southwest (along turnpike) of intersection of Newburyport Turnpike and Walnut Street, and 147 feet southeast of center of turnpike. A copper plug. (Second order unadjusted). February 1934.
Discovered: May 1935. Condition: Good.

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ument, set flush with the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). December, 1934.

21 AD (L.C.S.) 336.976 feet
About 4 miles southeast in a triangular grass plot at the intersection of Carr Street and Whitinsville Road. It is 45.7 feet due west of the west corner of a small red school. It is 21.5 feet north of the centerline of Whitinsville Road and is 28.2 feet east of a U.S. Mail Box. A concrete monument set flush with the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). December, 1934.

21 AE (L.C.S.) 320.127 feet
About 1 1/4 miles west on the Whitinsville-Douglas Road on the southwest corner of the Lackey Dam. It is 8.9 feet west of the west abutment of the Dam and 11.4 feet north of the south abutment. It is also in line with the crest of the Dam and is 25.5 feet south of the centerline of the highway. Set in a projecting granite ledge. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). December, 1934.

21 AF (L.C.S.) 333.975 feet
About 1 mile west in Whitinsville near the intersection of the Whitinsville-Douglas road and the Williams Hill Road. It is 219.8 feet east of the intersection, 116 feet south of the Williams Hill road and 132 feet north of the Whitinsville-Douglas Road. It is situated on a slight rise in a small clearing in the center of a pine grove. A concrete monument set 6 inches above the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). December, 1934.

21 W (L.C.S.) 352.977 feet
A standard disk set in the southwest bridge seat of Bridge # 35.64 on the New York, New Haven & Hartford railroad (Providence Division) over the Providence Turnpike. A U.S.C. & G.S. and state survey standard bronze disk. (Second order unadjusted). Year, 1934.

SWAMPSCOTT

Essex County

H-25 (P.W.D.) 50.718 feet
In ledge, 102. feet (along northwest rail), northeast of northeast side of Boston & Maine Railroad (Terminal Division) Bridge # 13.40, and 9 feet northwest of northwest rail. A copper plug. (Second order unadjusted). September, 1931.
*Recovered: May, 1935. Condition: Good.

T.B.M. # 338 (P.W.D.) 37.946 feet
Northwest corner top stone north wingwall northeast abutment Boston & Maine Railroad (Terminal Division) Bridge # 12.84 over Burrill Street. A chisel cut. (Second order unadjusted). September, 1931.
*Recovered: May, 1935. Condition: Good.

11-F (L.C.S.) 48.281 feet
About 3/4 mile north, on the Boston and Maine Railroad, Portland Division, Eastern Route, about 186 feet south of the Salem-Swampscott city line. It is 1180 feet south of Mile Post, B14/P94; 860 feet south of Semaphore Signal P139; 1100 feet north of the center of the Danvers Street bridge # 13.60, over the railroad; 22.5 feet west of the center of the west main track and 6.2 feet above the top of the west rail. A concrete monument set one inch above ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). April, 1935.

11-G (L.C.S.) 50.074 feet
About 1/2 mile north, located on the Boston & Maine railroad, Portland Division, Eastern Route; approximately 1802 feet south of the Salem-Swampscott city line. It is also 2795 feet south of Mile Post B14/P94; 516 feet south of Danvers Street bridge, 13.60 over the railroad; 594 feet north of the center of Essex Street bridge # 13.40 over the railroad; 14.6 feet east of the center of the east main track and 1.6 feet above the top of the east rail. The station is at the rear of # 324 Essex Street. A concrete monument 2 inches above the surface of the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). April, 1935.

11-H (L.C.S.) 44.884 feet
About 1/2 mile north, located on the Boston and Maine railroad, Portland Division, Eastern Route; approximately 2895 feet south of the Salem-Swampscott city line. It is also 1610 feet south of the center of Danvers Street bridge # 13.60, 746 feet north of north side of signal light trestle over tracks, 499 feet south of the center of Essex Street bridge # 13.40 over railroad; 11.2 feet east of the center of east main track and 1.0 foot below the top of east rail. A concrete monument flush with the surface of the ground. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). April, 1935.

11-I (L.C.S.) 38.021 feet
On the Boston and Maine railroad, Portland Division, Eastern Route, about 4453 feet south of the Salem-Swampscott city line and 1619 feet north of the Swampscott-Lynn city line. It is 144.2 feet south of Mile Post B13/P95; 52.9 feet southwest of a granite monument; 145.2 feet southwest of Mile Post B13/M4; 14.7 feet southeast of the center of the branch track; 469 feet north of the center of Burrill Street underpass bridge # 12.84; 141 feet north of center of Swampscott depot; 76.9 feet to northwest corner of house at # 94 Norfolk Avenue. Set in an abandoned concrete signal foundation. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). May, 1935.

TOPSFIELD

Essex County

- J-39 (P.W.D.) 54.360 feet
Top flat boulder, 500. feet north east (along Turnpike) of intersection of Ipswich Road, Newburyport Turnpike, and 352. feet southeast of center of Turnpike. A monel metal plug. (Second order unadjusted). February, 1934.
- T.B.M. # 621 (P.W.D.) 116.249 feet
Top boulder, 477. feet northeast (along Turnpike) from Danvers-Topsfield Town Line and 116. feet southeast of center of Turnpike. A copper plug. (Second order unadjusted). February, 1934.
- T.B.M. # 622 (P.W.D.) 137.633 feet
Top boulder, 610. feet southwest (along Turnpike) of intersection of Garden Street and Newburyport Turnpike and 95.7 feet northwest of center of Turnpike. A copper plug. (Second order unadjusted). February, 1934.
- T.B.M. # 623 (P.W.D.) 143.776 feet
Top flat boulder, 224. feet north (along Salem Road) of intersection of Salem Road and Newburyport Turnpike and 27. feet east of center of Salem Road. A copper plug. (Second order unadjusted). February, 1934.
- T.B.M. # 624 (P.W.D.) 44.117 feet
South corner top stone southwest end northwest sidewall Boston and Maine railroad (Newburyport Branch) Culvert # 23.83 over brook and 278. feet northwest of intersection of Newburyport Turnpike. A copper plug. (Second order unadjusted). February, 1934.
- T.B.M. # 625 (P.W.D.) 174.225 feet
Top boulder, 344. feet southwest (along Turnpike) of center of overpass bridge (over Howlett Road), 149. feet northwest of center of Newburyport Turnpike. A copper plug. (Second order unadjusted). February, 1934.
- T.B.M. # 626 (P.W.D.) 81.665 feet
Top ledge outcrop, 128. feet northeast (along Turnpike) of junction of Wilde Street and Newburyport Turnpike and 89. feet southeast of center of Turnpike. A monel metal plug. (Second order unadjusted). February, 1934.

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TRURO

Barnstable County

- J-38 (P.W.D.) 12.588 feet
Top boulder, 186. feet north of center of Truro Station (New Haven Railroad-Boston Division) and 39.2 feet west of west rail (Main Line). A copper plug. (Second order unadjusted). August, 1933.
- J-35 (P.W.D.) 36.209 feet
Top boulder, 47. feet southeast of intersection of Kings Highway and New Haven Railroad (Boston Division) and 28.9 feet southwest of southwest rail. A copper plug. (Second order unadjusted). August, 1933.
- J-34 (P.W.D.) 9.442 feet
Top east end concrete retaining wall of Cobb Memorial Library, West Road. A copper plug. (Second order unadjusted). September, 1933.
- J-33 (P.W.D.) 11.021 feet
Top boulder, 720. feet southwest of west side of U. S. Coast Guard (Pamet River) Station (constructed 1933), 165. feet north of north bank of Pamet River and 327. feet west of U.S. Coast Geodetic Survey Tidal Bench Mark XII (1888). A copper plug. (Second order unadjusted). September, 1933.
- T.B.M. # 577 (P.W.D.) 18.081 feet
Field stone in center of top of north gatepost on west side of tracks opposite South Truro Station (New Haven Railroad - Boston Division) A cross cut. (Second order unadjusted). August, 1933.
- T.B.M. # 578 (P.W.D.) 41.513 feet
Top New Haven Railroad (Boston Division) Milepost 109. A copper plug. (Second order unadjusted). August, 1933.
- T.B.M. # 579 (P.W.D.) 21.458 feet
Top New Haven Railroad (Boston Division) Milepost 110. A copper plug. (Second order unadjusted). August, 1933.
- T.B.M. # 580 (P.W.D.) 14.506 feet
Top New Haven Railroad (Boston Division) Milepost 111. A copper plug. (Second order unadjusted). August, 1933.
- T.B.M. # 581 (P.W.D.) 65.171 feet
Top New Haven Railroad (Boston Division) Milepost 112. A copper plug. (Second order unadjusted). August, 1933.
- T.B.M. # 582 (P.W.D.) 53.460 feet
Top New Haven Railroad (Boston Division) Milepost 113. A copper plug. (Second order unadjusted). August, 1933.

WENHAM

Essex County

T.B.M. # 332 (P.W.D.) 56.238 feet
High Point Hamilton-Wenham town bound on Main Street. A town bound. (Second order unadjusted). September 22, 1931.
*Recovered February 26, 1935. Condition - good.

T.B.M. # 333 (P.W.D.) 50.442 feet
Corner of most northwesterly of the two most northeasterly granite footings under water tower, 220.0 feet southwest of Hamilton-Wenham station Boston & Maine railroad, Portland Division East. A chiseled square. (Second order unadjusted). September 22, 1931. (Second order unadjusted).
*Recovered February 26, 1935. Condition - good.

T.B.M. # 334 (P.W.D.) 53.405 feet
Top of end stone wall, 55.0 feet southeast of intersection of Larch Row and Boston & Maine railroad Portland Division East and 200 feet northeast of center of Larch Row. A chiseled square. (Second order unadjusted). September 22, 1931.
*Recovered: February 26, 1935. Condition: good.

22-AC (L.C.S.) 48.218 feet
About $\frac{1}{2}$ mile northeast. On the Boston and Maine railroad, Portland Division, Eastern Route: about 326 feet south of the Hamilton and Wenham station; 535 feet south of the center of Main Street, Route # 1A, crossing; 4.4 feet south of a water column and 6.8 feet east of the center of the east main track. A concrete monument set about 11 inches below the rail. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted). February 26, 1935.

22-AD (L.C.S.) 53.351 feet
About $\frac{1}{2}$ mile southeast. On the Boston and Maine railroad, Portland Division, Eastern route, approximately 2753 feet south of the Hamilton and Wenham Station; 19 feet south of the center of Larch Row; 41 feet south of the southwest corner of crossing tenders cabin and 10.3 feet east of the center of the east rail. A concrete monument set about 1.6 feet below the rail. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted). February 26, 1935.

22-AE (L.C.S.) 60.120 feet
About $\frac{1}{2}$ mile south. On the Boston and Maine railroad, Portland Division, Eastern Route, approximately 3908 feet south of the Hamilton and Wenham station; 17.3 feet west of the center of the west track; 1180 feet south of the center of Larch Row crossing measured along the west track and 216 feet north of milepost B22/P86. A concrete monument set about 5 feet above the rail. A U.S.C. & G.S. and State Survey standard disk. (Second order unadjusted) February 26, 1935.

22-AF (L.C.S.) 40.255 feet
About $\frac{1}{2}$ miles south. On the Boston and Maine railroad, Port-

Division, Eastern Route, about 1 mile south of the Hamilton and Wenham Station; 1534 feet south of Milepost B22/P86; 1073 feet south of the center of culvert over outlet brook from Wenham Lake; 1073 feet north of a private road (Waters) crossing and 12.6 feet west of the center of the west track. A concrete monument set about 2.4 feet below the rail. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted). February 26, 1935.

(L.C.S.) 43.776 feet
About 1 mile south. On the Boston and Maine Railroad, Portland Division, Eastern Route, approximately 1 mile south of the Hamilton and Wenham Station; 3280 feet north of the North Wenham station; 1309 feet south of a culvert over outlet brook from Wenham Lake; 30 feet south of a private road crossing and 2 feet west of the center of the west track. A concrete monument set 2 inches below the top of rails. A U.S.C. & G.S. and State Survey Standard Disk. (Second order unadjusted). February 26, 1935.

WENDELL

Franklin County

(P.W.D.) 497.210 feet
Southwest corner east abutment B. & M. R.R. (Fitchburg Division) over Millers River. A copper plug. (Second order unadjusted). August 2, 1932.

#414 (P.W.D.) 334.617 feet
16.5 feet west of centerline of B. & M. R.R. (Fitchburg Division) Culvert #95.57 and 16. feet south of south rail. A copper plug. (Second order unadjusted). August 2, 1932.

#415 (P.W.D.) 410.955 feet
Along southeast, 830. feet (along southeast rail) southwest of intersection of Bridge St. and B. & M. R.R. (Fitchburg Division), 16.2 feet southeast of southeast rail. A copper plug. (Second order unadjusted). August 2, 1932.

#416 (P.W.D.) 500.169 feet
Southwest corner concrete foundation for basement window grating on east side of Wendell Station (B. & M. R.R. -Fitchburg Division). A copper plug. (Second order unadjusted). August 2, 1932.