MANUAL

of

ROUTE LOG and PROGRESS CHART STANDARDS

March 1951

VERMONT STATE HIGHWAY DEPARTMENT
ROUTE LOG and PROGRESS CHART STANDARDS

- Table of Contents -

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Existing Surface</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>Construction and Maintenance Record</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Construction</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>III</td>
<td>Widths</td>
<td>2</td>
</tr>
<tr>
<td>IV</td>
<td>Road Diagram</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Stations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Intersecting Roads</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Bridges</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Overpasses &amp; Underpasses</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>R. R. Grade Crossings</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Main Route Bands</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Village and City Centers</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Population</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Village Limits</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Urban Area &amp; Urban Compact Lines</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Town Lines</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>County Lines</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>State Lines</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Project Lines</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Public Service Facilities - Underground</td>
<td>9</td>
</tr>
<tr>
<td>V</td>
<td>Mileage</td>
<td>9</td>
</tr>
<tr>
<td>VI</td>
<td>Sheet Numbers</td>
<td>10</td>
</tr>
<tr>
<td>VII</td>
<td>Leroy Lettering Standards</td>
<td>10</td>
</tr>
</tbody>
</table>
I  EXISTING SURFACE

The existing surface reflects just what the term implies and is obtained by projecting all the latest projects and road conditions up to this space. The extremities of each surface type are spotted by ticks placed on both sides of the symbol band. (See sample)

II  CONSTRUCTION AND MAINTENANCE RECORD

Construction data are obtained from the blueprints of the original route logs. These blueprints cover the year period 1936-1945. Any new projects occurring after this period have been recorded in colored pencil on these blueprints. Stations for all projects should be cleared of all equations before plotting on new logs. Wherever it is possible to combine these construction projects consecutively in regard to year of completion, it should be done to conserve space. These projects should carry, in the following order, the state or federal project number, the decimal equivalent to thousandths of a mile of the project length at the time it was put in, and the year of completion where project years have been combined on one line. If the design width of a project is known, it should be noted. This information is inked in slanting caps 0.10 high. (See sample) Missing project numbers for early projects (prior to 1936) can sometimes be obtained from the "thousand-mile logs." However, if no project number is available at any source, and it is known that the project is a state project, it should be noted as such. Where the exact year of a project's completion is not known, it is permissible to add + to the assumed year, e. g. - 1920 + . Where the mileage preceding the first project entered on the new logs is known, it should be shown, i. e. 1.240 - 1939 = 1.220 - 1940.
Maintenance data for the years 1939 - 1945 are obtained from the blueprints of the original route logs. Data for the years following 1945 are obtained from the yearly maintenance reports. This information is plotted on the new logs in hundredths of a mile but no attempt is made to provide stations for this work in sections less than 0.10 mile not to be shown. Retreatments are stippled with #( ___ ) and the abbreviation RET lettered in the band underneath the stipple. Resurfacings are stippled with #( ___ ) and the abbreviation RES lettered in the band underneath the stipple. These stipples should also be placed in the legend of the new logs. Where a District Commissioner has not ascertained whether his road maintenance falls in the category of resurfacing or retreatment, this information can sometimes be determined by referring to the District Commissioners' "Report of Maintenance Costs" for the particular year in question. Whereas this report does not log maintenance work, it does give resurfacing and retreatment totals by routes and it is possible to tie these totals in with the maintenance sheets, as they are directly relative. As in the plotting of projects on the new logs, an effort should be made, wherever possible, to combine the years where maintenance occurs. Each plotting of this maintenance work shall carry in slanting caps 0.10 high its decimal equivalent in hundredths of a mile plus the year this work was done, where year periods have been combined on one line. Where bituminous concrete resurfacing occurs, complete information as to type and method of application should be noted on the new logs. Resurfacings and retreatments that occur prior to a construction project need not be transferred to the new logs.

III WIDTHS

The surface and roadbed widths are obtained from the 1949 - 1950 state highway inventory field notes. The surface consists of the actual pavement width, while the roadbed includes the combined widths of the pavement and the shoulders. The widths obtained from the state highway inventory notes take precedence over widths obtained from project data on the blueprints of the
original logs. This is due to the fact that resurfacing and retreatment, as well as hardsurfacing of shoulders, sometimes actually extend the width of the road beyond its original measurements. However, if a project has been put in after the highway was inventoried, the widths of the new project shall take precedence over the highway inventory field notes. On a section of highway where no shoulders exist, the surface measurement is usually confined by curbs and note of this condition should be made in the following manner. The surface measurement is placed in its proper location on the line marked "surface" and this same surface measurement is also placed on the line marked "roadbed". However, in this latter instance, the measurement is followed by the abbreviation "C-C", denoting a curb to curb measurement. To obtain the nearest possible accuracy from the field notes in the location of these varying widths, their stations should be factored with the same factor obtained in processing the field notes for comparison with the original logs. The factor mentioned here does not refer to the error factor obtained in the field for each individual vehicle but to the error factor arrived at by comparing the over-all mileage of a town, obtained by the field party, to the over-all mileage of the same town given on the original route log.

IV ROAD DIAGRAM

Stations for intersecting roads, structures, and other features, such as town and project lines, are obtained primarily from the blueprints of the original logs. Before recording these stations on the new logs, all equations should be removed. Reference is then made to the 1949-1950 state highway field notes. It has been found that by converting the decimal mileage of the field notes to feet and applying an error factor to these stations, usable figures will be obtained that will be in near agreement with the stations on the original logs. The error factor for each town is arrived at by comparing the over-all mileage of a town, from the inventory notes, to the over-all
mileage of the same town from the original route log, and adjusting the former to agree with the latter. Whereas these factored stations will not compare exactly with the original log stations, they serve as a basis for comparison and enable detection of any gross error that may have existed in the location of a road or structure on the original log. A change from the original log station to the factored station is made only when the original log station is found to be 0.10 of a mile or more in error. When it has been definitely established that the location of an intersecting road or structure has been in error, it is not advisable to replace this original log station with the factored station. A new station must be established by finding from the factored stations the difference in feet between the road in question and the nearest road that has already been established as being correctly located on the original log. When the footage from the established road to the road in question has been found, the footage is then added or subtracted, as the case may be, to the station of this established road on the original route log. The aforementioned method is also used in properly placing new roads on the new logs that were not shown on the original route logs.

Stations are inked on the new logs in slanting numerals 0.06 high. A half-inch line is used as a base for these stations and a corresponding dash is placed in the center of the main route band.

**Intersecting Roads** are placed at their proper stations along the main route band. These roads are 0.10 wide and project from the side of the main route band 0.50 of an inch. Where features occur in such proximity as to prevent their clear placement, it is permissible to distort the locations of the stations slightly. This is done only in the specific area where congestion occurs and should cause distortion at no other stations on the sheet. However, if too much distortion is necessary, it is advisable to transfer this area to a 1" = 1000' sheet, where more room will be available. Note of this
area transfer should be made on the 1" = 2000' sheet. (See sample) An effort should be made to place the area on the 1" = 1000' sheet in proper relationship to its mileage on the route. (See sample) If the area transfer occurs after the third-mile, the mile figures in the circles on the enlarged sheet should be changed accordingly. Where a congested area is so small that it seems inadvisable to transfer it to a 1" = 1000' sheet, and yet its remaining on the 1" = 2000' sheet would cause too much distortion, an inset of the area, at a larger scale, may be made and placed in whatever blank space is available on the 1" = 2000' sheet. (See sample sheet).

Where it is known that an intersecting road does not meet the main route at a right angle, the angle is shown by placing the road at an angle of about 15° from vertical in the direction it takes. The use of any angle greater than 15° has been found to interfere with the ease of reading the numbers and names placed within the road bands. The latest town road numbers are obtained from the large town maps, that have been corrected to 1949. In cities, street names are lettered within the road band in inclined lower case letters. Due to the lack of space the word street is omitted after the name. However, where room is available, abbreviated designations such as ave., pl., and rd. are used. For standards for state, U. S., and state aid numbering, refer to "Leroy Standards", contained in this Manual. In cities where the state, U. S., or state aid designation is available, as well as the street name, both designations should be used. State aid roads are stippled with #960 Presto-tone. Road destinations, plus an arrow, are given for State and U. S. routes. (See legend sheet) These destinations are lettered in 0.08 inclined caps and are usually the names of the nearest large or important settlement.
Bridges are placed on the new logs according to the dimension detail standards included in this Manual. Bridges with a span less than 10 ft are shown with a single dotted line; with a span 10 ft to 20 ft, 0.05" wide; with a span 20 ft to 80 ft, 0.10" wide; while those with a span of over 200 ft are shown to the route log scale wherever possible. (See legend sheet.) Complete bridge information is derived from the 1949-1950 "Bridge Inspection Reports", and supersedes information already present on the original logs. These bridges are spotted in the field according to the original log stations and new bridges are interposed in their proper location and a station given. Bridge information is placed above the main route band. The titular data (name, rail type and date) are lettered in 0.10 slanting caps and 0.08 slanting caps. Information below the title line is lettered in 0.08 slanting caps. All abbreviations for this information can be found on the legend sheet, while dimension detail standards can be found on the dimension detail sheet for bridges included in this Manual. Where additional information of importance occurs, it should be noted. The direction of stream flow is obtained from the geodetic sheets and placed opposite the bridge, below the main route band, and the stream name added in 0.05 lower case inclined letters. Bridges are numbered consecutively along each route. This number is placed within a 0.15 diameter circle in line with the direction of flow arrow on the lower side of the main route band.

Overpasses and Underpasses — Information for overpasses and underpasses is obtained from the 1949 - 1950 "Bridge Inspection Reports", and set on the new logs in the same manner as bridge information. For symbol standards, see legend sheet.

R. R. Grade Crossings — The stations for grade crossings will appear on the original route logs. The basic information pertaining to protection at these crossings can come from the route log data, but the field inventory notes should be checked for additional information regarding protection. The number
of tracks at a grade crossing should be shown graphically and the railroad
ame lettered in 0.08 inclined caps, parallel to the tracks. For symbols
and protection abbreviations, see legend sheet.

Main Route Bands are 0.20 wide except in sections known as state aid
connecting links. In this case, the width of the band drops to 0.10 wide and
is stippled with #60 Presto-tones.

Village and City Centers are portrayed by a solid black circle 0.08 in
diameter. The corresponding name is placed horizontally below the main route
band, within one-half inch of this band, wherever possible. Where it is
known that a village is not incorporated, the name should be followed by
the suffix "unincorporated." etc.

Population figures will eventually be placed beneath the underlined
village and city names. Where these figures are not yet available, it
should be borne in mind that space must be allotted for them.

Village Limits are shown as per established standards. Where a
village line and a state highway limit line are contiguous, a combination
of the two symbols is used. (See legend sheet) These lines are projected
vertically to cover the whole sheet, extending from the space allotted for
traffic through the space allotted for existing surface. Where a village line as
a town line are contiguous, the town line takes precedence over the village
line.


Urban Area and Urban Compact Lines are shown as per standards. (see
legend sheet) Urban compact line locations obtained from the original logs,
while locations for urban area lines are obtained from the federal aid
descriptions and maps of these areas. Following is the list of federal-aid
urban areas:

Barre
Bennington and Old Bennington
Brattleboro
Burlington-Sinooski
Montpelier
Newport
Rutland
St. Albans
St. Johnsbury
Springfield
White River Jct.

Town Lines are shown as per established standards and are projected vertically to cover the whole sheet, extending from the space allotted for traffic through the space allotted for existing surface. Town lines are labeled with both town names. County and State lines take precedence over town lines.

County Lines are shown as per established standards and are projected vertically to cover the whole sheet, extending from the space allotted for traffic through the space allotted for existing surface. This line shall carry both county names as well as both town names.

State Lines are shown as per established standards and are projected to cover the whole sheet, extending from the space allotted for traffic through the space allotted for existing surface. A state line takes precedence over county, town, project and state highway limit lines. The names of both states, and abutting towns, shall appear parallel to the state line.

Project Lines are shown as per established standards and are projected from the main route band only as far as the year line of the specific project. Village, town, county, state, and state highway limit lines take precedence over project lines where they are contiguous.
Public Service Facilities - Underground - Where the location of underground public service facilities such as telephone and power cables, gas pipe, and water pipe, is known, they should be shown on the logs as per established standards. (See legend sheet) Stations, as well as a distance in feet from the pavement edge where the facility runs parallel to the road, should be given. Where a road has been widened, after the plotting of the facility on the new log, the distance from the pavement edge should be changed to comply.

MILEAGE

The mileage of each existing surface type is added and listed in its proper location in the mileage block. The blank symbol space at the left of the mileage block is established for surfaces that do not occur frequently enough throughout the state system to warrant carrying a permanent symbol on each sheet. Granite block is an example of such a surface type and where it occurs, the symbol for granite block should be added and labeled as such. It should be observed that there is a separate listing made for state highway and state aid highway surface types. The date below the final mileage reflects the year period to which the mileage totals are correct. When a mileage change occurs after the final compilation of these new logs, this date should be made to read January of the year in which the change occurred. The mileage prior to this change should be entered in the blank line to the left of the date line, e.g. - 1.250 - 1950.

Entry for Urban Ext. of St. Hwy. where it occurs.
VI

SHEET NUMBERS

The sheet numbers appear in the designated space at the lower right-hand corner of the sheet, e.g. 1/3 - 2/3 - 3/3. The first number refers to the sheet number, while the last number refers to the total number of sheets necessary to portray the route. In the event that more than one log sheet is necessary for a single town, the two sheets shall be numbered consecutively. The first shall be marked 1/2 sheets and the second 2/2 in the margin below the sheet number.

VII

LETTERING STANDARDS:

Title: (County, Town, Route, District, and Sheet Numbers) - "175" template
#2 pen = Vertical Caps

Construction and Maintenance Years:
"175" template #1 pen = Vertical Caps

State Aid Boxes: "A" template #0 pen with "100" template #0 pen for enclosed number = Vertical

State Highway Symbols = Shield for U. S. Routes - "A" template #0 pen
Vermont Routes = .25 dia circle with "100" template #0 pen for enclosed number = Vertical.

Where a (three-digit route number occurs, it is permissible to hand letter the number in order that it will fit within the standard route symbol.

Village and City Names = "100" template #0 pen = Slanting Caps

Surface Type Totals = "120" template #0 pen = Vertical Caps

Town and County Names = At town lines - "1/0" template #1 pen = Vertical caps
### CONCRETE BOX
- Rail: cable on wood posts
- Year built: 1930
- Width: 4 ft.
- Clear height: 4 ft.
- Length: 30 ft.
- Project number: F20
- Measurement between guard rails: 22 ft.
- Loading: H15
- Waterway: 16\(^{\circ}\) ft.

### CONCRETE SLAB
- Rail: solid
- Year built: 1936
- Clear span: 18 ft.
- Clear height: 6 ft.
- Roadway: 18 ft.
- Overall length: 20 ft.
- Sidewalk: 5 ft. right
- Project number: 50R
- Loading: H15
- Waterway: 180\(^{\circ}\) ft.

### THRU TRUSS
- Rail: collision
- Year built: 1926
- Clear span: 75 ft.
- Clear height: 25 ft.
- Roadway: 20 ft.
- Spans: 3@25 ft.
- Overall: 80 ft.
- Traffic clearance: 14 ft.
- Sidewalk: 5 ft. right
- Project number: FAP16
- Loading: H10
- Waterway: 1875\(^{\circ}\) ft.

### WIDE FLANGE BEAM, CONCRETE
- Rail: spindle on concrete
- Year built: 1944
- Clear span: 100 ft.
- Clear height: 15 ft.
- Roadway: 30 ft.
- Spans: 2@50 ft.
- Overall: 106 ft.
- Project number: FAP 35C
- Loading: S20
- Waterway: 1100\(^{\circ}\) ft.