

MANUAL

of

ROUTE LOG and PROGRESS CHART STANDARDS

March 1951

VERMONT STATE HIGHWAY DEPARTMENT



# ROUTE LOG and PROGRESS CHART STANDARDS

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ROUTE LOG AND PROGRESS CHART STANDARDS

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  $\frac{1}{2}$  to the assumed year, e. g. - 1920  $\frac{1}{2}$ . Where the mileage <sup>previous to</sup> ~~the~~ ~~project~~ ~~entered~~ preceding the first project ~~entered~~ 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 the road diagram. <sup>Sections less than 0.10 mile not to be shown.</sup> Retirements 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 retirement, this information can ~~sometimes~~ <sup>usually</sup> 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 retirement totals by routes and *towns 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 retirements 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 <sup>adjustment</sup> ~~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 mileages of the field notes to feet and applying an <sup>adjustment</sup> ~~error~~ factor to these stations, usable figures will be obtained that will be in near agreement with the stations on the original logs. The <sup>adjustment</sup> ~~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~~x~~ 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~~ <sup>feature</sup> that has already been established as being correctly located on the original log. When the footage from the established ~~road~~ <sup>feature</sup> ~~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~~ <sup>feature</sup> ~~road~~ on the original route log. The aforementioned method is also used in properly placing ~~new roads~~ <sup>omitted or</sup> 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 0.08 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~~ *extends beyond* the ~~third~~ *fourth* 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' are shown with a single dotted line; with a span <sup>of 4' thru 10'</sup> 10' to 20', <sup>thru</sup> are shown 0.05" wide; with ~~span~~ 20.1' and over, are shown 0.10 wide, ~~while those with a span of~~ <sup>and those</sup> over 200' 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 <sup>an investigation</sup> 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 <sup>U.S. Geological</sup> geologic 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 name 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 #960 Presto-tone.

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 "U.C.", indicating urban area, compact~~

Population figures will ~~be placed~~ be placed beneath the underlined village and city names. ~~Whereas, 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 and a town line are contiguous, the town line takes precedence over the village line.

Fed-aid 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-Winooski

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~~ <sup>duct</sup>, 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.

V

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~~ 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 ~~was~~ 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 <sup>for</sup> ~~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 <sup>three</sup> (thru) 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

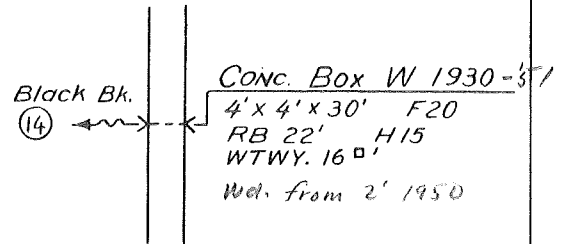
Surface Type Totals - "120" template #0 pen - Vertical Caps

Town and County Names - At town lines - "140" template #1 pen - Vertical caps

## DIMENSION DETAIL - BRIDGES

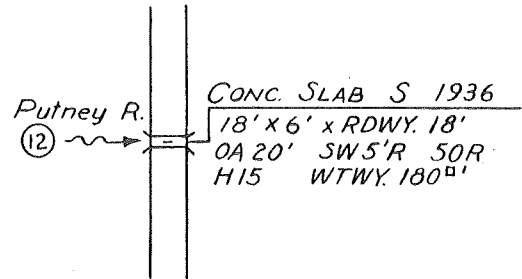
### CONCRETE BOX

Rail - cable on wood posts  
 Year built - 1930  
 Width - 4 ft.  
 Clear height - 4 ft.  
 Length - 30 ft.  
 Project number - F 20  
 Measurement between guard rails - 22 ft.  
 Loading - H 15  
 Waterway - 16<sup>sq</sup> ft



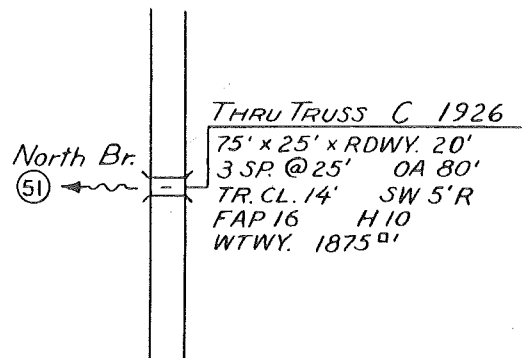
### CONCRETE SLAB

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 - H 15  
 Waterway - 180<sup>sq</sup> ft.



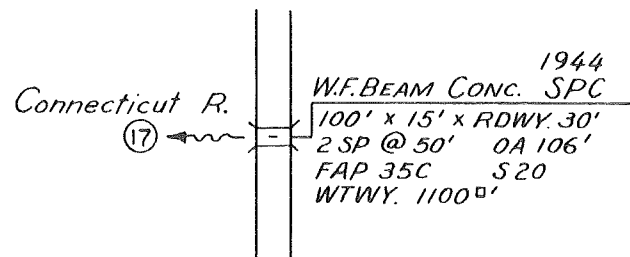
### THRU TRUSS

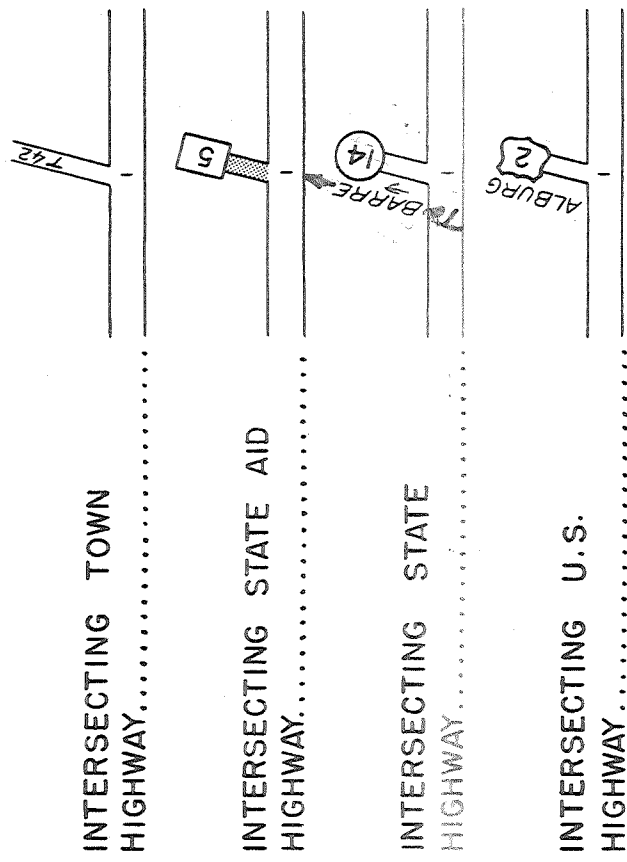
Rail - collision  
 Year built - 1926  
 Clear span - 75 ft.  
 Clear height - 25 ft.  
 Roadway - 20 ft.  
 Spans - 3 @ 25 ft.  
 Overall - 80 ft.  
 Traffic clearance - 14 ft.  
 Sidewalk - 5 ft. right  
 Project number - FAP 16  
 Loading - H 10  
 Waterway - 1875<sup>sq</sup> ft.



### 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 - S 20  
 Waterway - 1100<sup>sq</sup> ft.





INTERSECTING TOWN HIGHWAY.....

INTERSECTING STATE AID HIGHWAY.....

INTERSECTING STATE HIGHWAY.....

INTERSECTING U.S. HIGHWAY.....

STATE AID CONNECTING LINK.....

STATE LINE.....

COUNTY LINE.....

TOWN AND/OR CITY LINE.....

VILLAGE LINE.....

FEDERAL AID URBAN AREA LINE.....

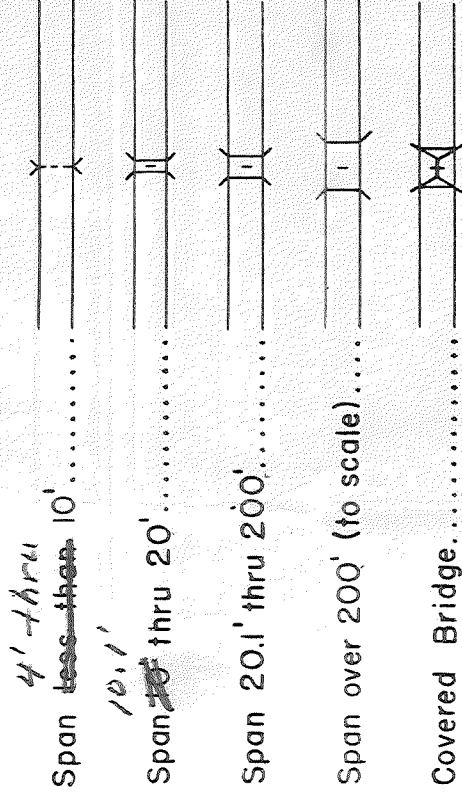
URBAN COMPACT LINE.....

STATE HIGHWAY LIMITS.....

COMBINED STATE HIGHWAY LIMITS & VILLAGE LINE.....

PROJECT LINE.....

BRIDGES:



Span ~~less than~~ 4' thru 10'.....

Span 10.1' thru 20'.....

Span 20.1' thru 200'.....

Span over 200' (to scale).....

Covered Bridge.....

BRIDGE DATA ABBREVIATIONS:

OA.....OVERALL LENGTH is the length measured along the centerline of the bridge from back to back of backwalls of abutments, if possible. Otherwise the length is measured from end to end of bridge floor.

RB.....ROADBED is the central portion of the highway between outside shoulder lines including the shoulders and roadway surface.

RDWY.....ROADWAY is the portion of the highway between the curbs of structure, or the distance measured from curb to curb.

SW.....SIDEWALK—This measurement is followed by L or R denoting left or right.

TR.CL.....TRAFFIC CLEARANCE is the minimum vertical clearance through a structure.

H..... followed by number indicates the load capacity of a structure.

SP.....SPAN—Clear span is the length measured along the centerline of a bridge from face to face of abutments. Where more than one span is involved, the measurement is made from face of abutment to face of next abutment.

BRIDGE DATA ABBREVIATIONS (Cont.):

WC.....CONCRETE POST WITH WOOD GUARD RAIL

PS.....SPINDLE RAIL SET IN STEEL POST

PSC.....SPINDLE RAIL SET IN CONCRETE POST

P.....ALL PIPE RAIL

L.....LATTICE RAIL

W.....WOOD OR CABLE GUARD ON WOOD POSTS SET IN GROUND

PLG.....PLATE GIRDER

CO.....COLLISION RAIL

SC.....STEEL POST WITH CABLE RAIL

N.....NO RAIL

BRIDGE NUMBER..... (14)

DIRECTION OF FLOW.....

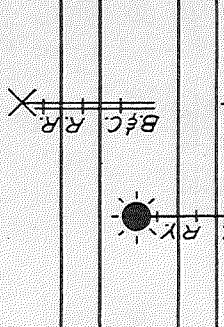
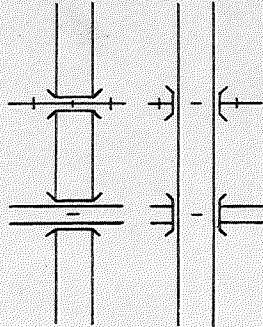
HIGHWAY UNDERPASSES.....

HIGHWAY OVERPASSES.....

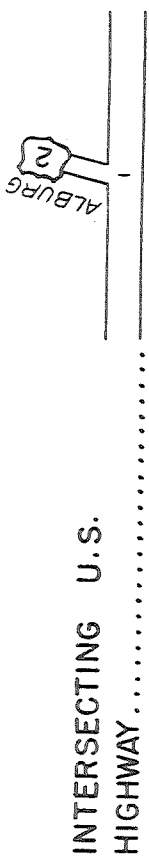
RAILROAD GRADE CROSSINGS:

Signs only—two tracks.....

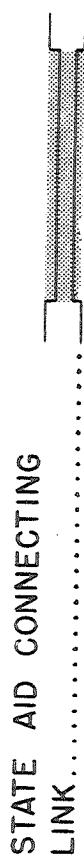
Flashing lights.....



HIGHWAY



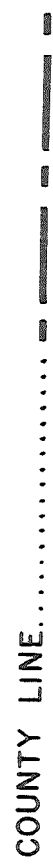
INTERSECTING U.S. HIGHWAY



STATE AID CONNECTING LINK



STATE LINE



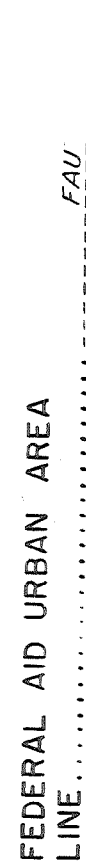
COUNTY LINE



TOWN AND/OR CITY LINE



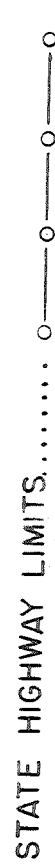
VILLAGE LINE



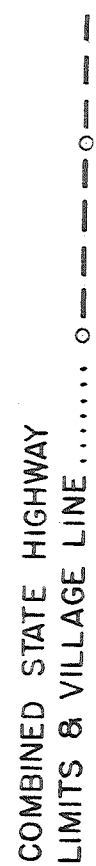
FEDERAL AID URBAN AREA LINE



URBAN COMPACT LINE



STATE HIGHWAY LIMITS



COMBINED STATE HIGHWAY LIMITS & VILLAGE LINE



PROJECT LINE



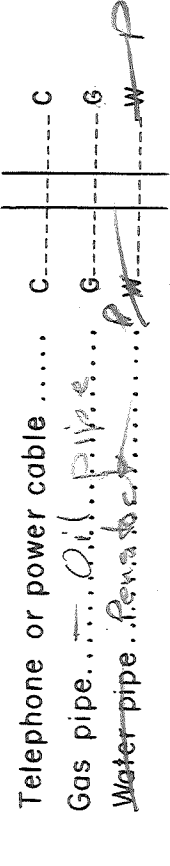
VILLAGE OR CITY CENTER



TRAFFIC SIGNAL



PUBLIC SERVICE FACILITIES - UNDERGROUND:



Span over 200' (to scale)



Covered Bridge



BRIDGE DATA ABBREVIATIONS:

OA..... OVERALL LENGTH is the length measured along the centerline of the bridge from back to back of backwalls of abutments, if possible. Otherwise the length is measured from end to end of bridge floor.

RB..... ROADBED is the central portion of the highway between outside shoulder lines including the shoulders and roadway surface.

RDWY..... ROADWAY is the portion of the highway between the curbs of structure, or the distance measured from curb to curb.

SW..... SIDEWALK - This measurement is followed by L or R denoting left or right.

TR.CL..... TRAFFIC CLEARANCE is the minimum vertical clearance through a structure.

H..... followed by number indicates the load capacity of a structure.

SP..... SPAN - Clear span is the length measured along the centerline of a bridge from face to face of abutments. Where more than one span is involved, the measurement is made from face of abutment to face of pier and vice versa.

WTWY..... WATERWAY is the clear span times the clear height.

S..... SOLID CONCRETE RAIL

SB..... BALUSTRADE RAIL

CC..... CONCRETE POST WITH CABLE RAIL

PSC..... SPINDLE RAIL SET IN CONCRETE POST

P..... ALL PIPE RAIL

L..... LATTICE RAIL

W..... WOOD OR CABLE GUARD ON WOOD POSTS SET IN GROUND

PLG..... PLATE GIRDER

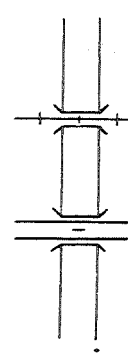
CO..... COLLISION RAIL

SC..... STEEL POST WITH CABLE RAIL

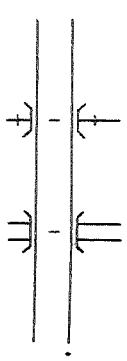
N..... NO RAIL

BRIDGE NUMBER..... (14)

DIRECTION OF FLOW.....



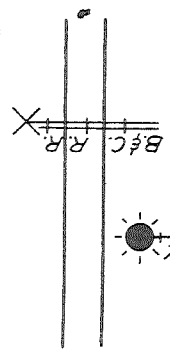
HIGHWAY UNDERPASSES



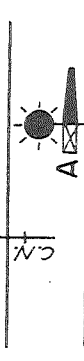
HIGHWAY OVERPASSES

RAILROAD GRADE CROSSINGS:

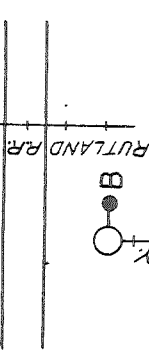
Signs only - two tracks



Flashing lights



Flashing lights - automatic gate A=Automatic gate



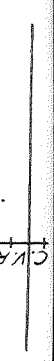
Bells



Wigwag lights - bells



Watchman



The source document is from the files of the Vermont Agency of Transportation Mapping Unit, Montpelier, Vermont.

Original format: typewritten on paper.

It was digitally scanned into PDF, 300 dpi, using a Ricoh Aficio MP C5000 Super G3, August 2010.