Archive Highway Performance Monitoring System (HPMS) Data Item Descriptions for 1982-1987

The following data item descriptions should be used with HPMS universe and sample archive data files for years 1982 through 1987. These data item descriptions include the coding instructions and definitions originally used to create the files; item descriptions follow the same sequence as the comma delimited ASCII universe and sample files. *Note that all included text and software references are not applicable.*

IDENTIFICATION DATA ITEMS

Item 1 - Year (Length = 2)

Enter the last two digits of the calendar year for which the data apply. For example, the 1980 data reported in 1981 would be coded "80".

Item 2 - State Code (Length = 2)

The Federal Information Processing Standards (FIPS) codes are used. (See Federal Information Processing Standards Publication 5, "States of the United States".)

Item 3 - County Code (Length = 3)

Use the three-digit FIPS county code (see Federal Information Processing Standards Publication 6 "Counties of the States of the United States").

Item 4 - Rural/Urban Designation (Length = 1)

Federal-aid urban area boundaries apply - small urban and urbanized areas are defined as Federal-aid urban areas or portion thereof within the State boundary.

Code and Description

Code 1 = Rural

Code 2 = Small Urban (Population of 5,000 to 49,999)

Code 3 = Urbanized (Population of 50,000+)

Item 5 - Urban Area Code (Length = 5)

Area and Code

Rural = 00000

Small Urban = 5-digit FIPS code (one code per Small Urban Area)

Urbanized = 3-digit code, right justified

The States shall select small urban codes based on the FIPS Place Codes (see Federal Information Processing Standards Publication 55, "Codes for Named Populated Places and

Related Entities of the States of the United States"). For small urban areas, which encompass more than one place, the State shall select the code .for the major place within the area (i .e., from which it gets its name or the largest place). This code shall remain unchanged.

Item 6 - Type of Section/Grouped Data Identification (Length = 1)

Enter the code that indicates the type of section identification used.

Code and Description:

Code 1 = Route, Milepoint

Code 2 = A-Node, B-Node, Segment

Code 3 = Grouped Data - a countywide unique number

Code 4 = Local Section Data - a countywide unique number

See examples in Item 7.

Item 7 - Section/Grouped Data Identification (Length = 12)

This field is used as a location identifier or for unique identification. It provides a State with flexibility for identifying sections in accordance with their needs independent of the unique identification maintained for HPMS sample sections (see Item 28, Sample Number). The appropriate ID is as follows:

1) For all Interstate, use route-milepoint identification compatible with that used for the Interstate cost estimates.

2) For non-Interstate arterial and collector sections, including samples, use either route-milepoint or A-node, B-node identification.

3) For grouped data, use a unique identification number.

4) For sections, including samples, functionally classified as local, use a unique identification number.

Examples for each method follow:

1) Route, Milepoint (Item 6 = 1)

Inventory route number is coded in positions 15-20, right justified. Except for Interstate, the inventory route number is not necessarily the same as that posted along the roadway, but is a number used to uniquely identify a route within the State.

Milepoint is coded in positions 21-26, right justified, with an implied decimal point between positions 23-24. The milepoint represents the distance in miles from a set reference point to the beginning of this highway segment. The reference point could be a State or county line or the point where the particular route originates. The milepoint is the position along a route where one of the values in the segment record changes. The milepoint numbering format should be such that the combination of county, inventory route number, and milepoint will define a unique location.

Example: Inventory Route 50 with milepoint 79.20

Pos.	14	15	16	17	18	19	20	21	22	23	24	25	26
Code	1	0	0	0	0	5	0	0	7	9	2	0	0

2) A-Node, B-Node - Segment (Item 6 = 2)

A-Node is coded in Positions 15-19, right justified

B-Node is coded in Positions 20-24, right justified

Segment is coded in Positions 25-26, right justified

The node numbers are unique within the State. They are usually located at major intersections, political boundaries, etc.

The segment number provides the position of the roadway segment being coded on the link between the same A-node and B-node pair. The segment is the position along the roadway where one of the data items changes. The number in this field should be low for the segment that begins at the A-node, and must increase for each segment progressing toward the B-node. While sequential numbers may be used, it is advantageous to leave gaps in the numbering to provide for expansion of the number of coded segments over time. For instance, if a section now contains only one segment, a "50" could be coded in this field to allow for changes over time on either end. The maximum number of segments between any A-node, B-node pair is 99.

Example: A-Node -572, B-Node -691, Segment - 4

Pos.	14	15	16	17	18	19	20	21	22	23	24	25	26
Code	2	0	0	5	7	2	0	0	6	9	1	0	4

3) Grouped Data (Item 6 = 3)

Any countywide unique number with no more than 12 digits is coded, right justified.

Grouped data is an aggregation of roadway mileage, where the following data items are homogeneous across all mileage being combined: Items 1-10, and 13-23. NOTE: Interstate and sample sections cannot be grouped. All other arterials, collectors and locals can be grouped.

Example: 98365

Pos.	14	15	16	17	18	19	20	21	22	23	24	25	26
Code	3	0	0	0	0	0	0	0	9	8	3	6	5

Any countywide unique number with no more than 12 digits is coded, right justified.

The data items to be coded for local sample sections are: 1-24 (Universe Data), 27 (Record Continuation Code), 28 (Sample Number), 29 (Sample Subdivision), 31 (Expansion Factor), 32 (Surface/Pavement Type), and 33 (Surface/Pavement Width).

Example: 4321

Pos.	14	15	16	17	18	19	20	21	22	23	24	25	26
Code	4	0	0	0	0	0	0	0	0	4	3	2	1

NOTE: Items 1-7 contain the identification portion of the section records.

SYSTEM DATA ITEMS

Item 8 - Functional Class (Length = 2)

Rural

Code and Description

Code 01 = Principal Arterial - Interstate

Code 02 = Principal Arteral - Other

Code 06 = Minor Arterial

Code 07 = Major Collector

Code 08 = Minor Collector

Code 09 = Local

Urban

Code 11 = Principal Arterial - Interstate

Code 12 = Principal Arteral - Other Freeways and Expressways

Code 14 = Other Principal Arterial

Code 16 = Minor Arterial

Code 17 = Collector

Code 19 = Local

Codes 12 & 13 and 14 & 15 have been used in the past to identify non-connecting/connecting link portions of the urban Other Freeway and Expressway and Other Principal Arterial functional classes. Although codes 13 and 15 may still be used, if desired, codes 12 and 13 will be treated as code 12, and codes 14 and 15 will be treated as code 14.

Item 9 - Federal-Aid System (Length = 1)

Code and Descriptions:

Code 1 = Interstate

Code 2 = Federal-aid Primary (Other than Interstate)

Code 3 = Federal-aid Urban

Code 4 = Federal-aid Secondary (Rural Only)

Code 8 = Non Federal-aid

Item 10 - Federal-Aid System Status (Length = 1)

Code and Descriptions:

Code 1 = Federal-aid System open to traffic

Code 2 = Federal-aid System not yet built or not open to traffic

Code 8 = Non Federal-aid

Item 11 - Route Signing (Length = 1)

Only Interstate is required to be reported under this item. The reporting of routes other than Interstate is optional. These codes specify the manner in which the highway segment is or will be signed and do not necessarily bear any relationship to the Federal-aid system category. If not coded, this field should be coded "0".

Code and Description

Code 1 = Interstate

Code 2 = US

Code 3 = State

Code 4 = County

Code 5 = Township

Code 6 = Municipal

Code 7 = None of the above

When a route is signed with two or more identifiers (for example, Interstate Route 83 and U.S. Route 32), the code for the highest class of route should be used (Interstate in the above example). The hierarchy is in the order listed above.

Item 12 - Route - Number (Length = 5)

Enter the Interstate route number, right justified. This item is optional for non-Interstate routes. If two or more routes of the same hierarchy (see Item 11) are signed along a roadway section, the lowest route number should be entered in this field. If Item 11 is coded "0", zero fill this field

Item 13 - Public Road (Length = 1)

Code and Description:

Code 1 = Public Road

Code 2 = Non Public Road

Applicable definitions follow:

a. "A public road means any road under the jurisdiction of and maintained by a public authority and open to public travel." (23 U.S.C. 402(c)).

b. "The term 'maintenance' means the preservation of the entire highway, including surface, shoulders, roadsides, structures, and such traffic-control devices as are necessary for its safe and efficient utilization." (23 U.S.C. 101)

c. To be open to public travel a road must be available, except during scheduled periods, extreme weather or other emergency conditions, and open to the general public for use by 4-wheel passenger cars without restrictive gates, prohibitive signs, or regulation other than restrictions based on size, weight, or class of registration. Toll plazas of public toll facilities are not considered as restrictive gates. (FHPM, 4, 5, 3)

d. Primitive roads do not meet the criteria for "public roads" since they are defined as routes "on which there is no public maintenance."

e. A public authority is defined as a Federal, State, county, township, municipal or other local government or instrumentality thereof, with authority to finance, build, operate, or maintain higl1way facilities, either as toll or toll free. (FHPM 4, 5, 3)

If a roadway does not meet the above criteria, it is coded as non-public.

JURISDICTION DATA ITEMS

Item 14 - Governmental Level of Control (Length = 2)

This data element is used to identify the level of government that has responsibility for the facility. In the case of toll authorities, this code is not dependent upon a toll being charged.

Code and Description:

Code 01 = State Highway Agency

Code 02 = County Highway Agency

Code 03 = Town or Township Highway Aency

Code 04 = Municipal Highway Agency

Code 11 = State Park, Forest, or Reservation Agency

Code 12 = Local Park, Forest, or Reservation Agency

Code 21 = Other State Agencies

Code 25 = Other Local Agencies

Code 26 = Private

Code 31 = State Toll Authority

Code 32 = Local Toll Authority

Code 60 = Other Federal Agencies (not listed below)

Code 62 = Bureau of Indian Affairs

Code 64 = U.S. Forest Service

Code 66 = National Park Service

Code 68 = Bureau of Land Management

Code 70 = Military Reservation / Corps of Engineers

Item 15 - Administrative Classification (Length = 1)

The code in this field indicates the administrative highway classification based on State or local regulations or procedures to which the highway facility is assigned.

Code 1 = Primary

Code 2 = Secondary

Code 3 = Local

Code 4 = Other

The codes in Item 14, Governmental level of Control, indicate the level of control over the highway segment. This item supplements Item 14 by detailing particular administrative classifications. If a system of highway is subdivided into roads of primary and secondary importance then they should be shown as such by appropriately coding this position.

Item 15 (Cont.)

When there is no breakdown, the system as a whole should be considered as primary. In those states where all or part of county roads are under state control, then these are coded as "local" in this field and "state" in Item 14.

If a county controlled system is broken into a primary and secondary classification, then the level of control code, Item 14 would be "02" with the appropriate administrative classification coded.

This item should always be coded, either with the appropriate classification code for the state administered systems (primary, secondary, local), or, if known, the appropriate classification for a non-State administered system. If the classification is not known, use the primary code of "1".

Item 16 - Federal, State, and Local Domain (Length = 2)

The code in these positions identifies the Federal, State, or local agency, if any, having control over the land through which the highway segment passes. Where the highway falls between two domains, a judgement must be made as to the most appropriate domain to be coded. For example, if a State highway is the boundary for a National Forest, then it would not be considered to be within the National Forest, but if it were a Forest highway forming the boundary, then it would be considered to be within the National Forest.

Code and Description:

Code 01 = Private Land (Non public agency)

Code 10 = Local Agencies

Code 30 = State Agencies

Code 60 = Other Federal Agencies (not listed below)

Code 62 = Bureau of Indian Affairs

Code 64 = U.S. Forest Service

Code 66 = National Park Service

Code 68 = Bureau of Land Management

Code 70 = Military reservation / Corps of Engineers

Item 17 - Special Systems (Length = 2)

This field is used to code the special funding categories in which some highway segments fall. These special systems are separate and distinct from those outlined in previously defined fields. While a limited number of codes are defined below, two positions are provided so that codes can be added as their need becomes apparent.

Code and Description:

Code 01 = Not on a Special System

Code 02 = National Forest Highway System 1/

Code 03 = National Development Roads and Trails

Code 04 = National Park Service Parkway 1/

Code 05 = National Park Roads and Trails

Code 06 = Indian Reservation Roads and Bridges 1/

Code 07 = Economic Growth Center Development Highway (23 U.S.C. 143)

Code 10 = Appalachian Development Highway 2/

Code 15 = Appalachian Highway Access Road

Code 20 = Priority Primary Route (23 U.S.C. 147)

Code 25 = Great River Road (23 U.S.C. 147)

Code 30 = Defense Access Road (23 U.S.C. 210)

Code 40 = Addition to the Interstate System (23 U.S.C. 139 (a))

1/ These definitions are intended to be consistent with 23 U.S.C. 101(a), Definitions and Declaration of Policy.

2/ This definition is intended to be consistent with 23 U.S.C. 143(f) (2) and 23 U.S.C. 101(a).

These special systems may overlap previously defined systems. For example, the National Forest Highway System may include mileage under jurisdiction of a State or local government. However, if the mileage is part of the National Forest Highway System, it should be coded as such in this field.

OPERATION DATA ITEMS

Item 18 -Type of Facility (Length = 1)

Code and Description

Code 1 = One-way

Code 2 = Two-way

Code 3 = One-way, Part of a one way couplet

Definitions:

One-Way - A one-way is a roadway with traffic moving in one direction, only.

Two-Way - A road with two-way traffic during non-rush hours.

One-Way Couplet -A pair of one-way streets serving the same traffic corridor and performing as a divided facility. This code provides a method of determining chargeable Federal-aid system mileage. States report the one-way mileage for each leg of the couplet with a code 3 indicating that they are parts of a couplet. Then, in the analysis of chargeable Federal-aid mileage, only one-half of the total one-way mileage will be used.

Item 19 - Reversible Lanes/Roadway (Length = 1)

Code and Description:

Code 1 = None

Code 2 = Reversible Lanes

Code 3 = Reversible Roadway

Reversible refers to flow in the peak direction.

Item 20 - Trucks/Commercial Vehicles (Length = 1)

Code and Description:

Code 1 = Not a Parkway - Trucks / Commercial Vehicles Allowed

Code 2 = Parkway - Trucks / Commercial Vehicles Prohibited

Code 3 = Not a Parkway - Trucsk / Commerical Vehicles Prohibited - All Day

Code 4 = Not a Parkway - Trucks / Commercial Vehicles Prohibited - During Specific Periods

For purposes of this data element, a Parkway is a highway with full or partial access control usually located within a park or a ribbon of parklike developments that prohibits commercial vehicles.

In this instance, buses are not considered commercial vehicles.

"Through Trucks Prohibited" regulations will be ignored when coding this item. The intent is to identify facilities such as parkways or others which prohibit truck usage.

Item 21 - Special High Occupancy Vehicle (HOV) Lanes (Length = 1)

Code and Description:

Code 1 = None

Code 2 = HOV with Flow-All day

Code 3 = HOV with Flow-Specific periods

Code 4 = HOV Contra-Flow - All day

Code 5 = HOV Contra-Flow - Specific periods

Code 6 = Buses only with Flow - All day

Code 7 = Buses only with Flow - Specific periods

Code 8 = Buses Only Contra-Flow - All day

Code 9 = Buses Only Contra-Flow - Specific periods

HOV - High Occupancy Vehicles include buses, carpools, and vanpools.

With-Flow -A reserved lane(s), whereby a portion of the roadway normally used for the same direction of flow is designated solely for the use of high occupancy vehicles.

Contra-Flow -A reserved lane(s), whereby a portion of the roadway that normally serves opposing traffic flow is used to supplement peak-direction capacity and one or more of these lanes is designated for the exclusive use of high occupancy vehicles.

Item 22 - Toll (Length = 1)

Code and Description:

Code 1 = Non-Toll

Code 2 = Toll

If portions of a roadway can be traversed without the payment of a toll, but a toll is charged on other portions, the segment is considered to be toll. This applies if a vehicle can enter and exit from the main through route without payment of a toll. If a toll is charged in only one direction, the "free" direction is also considered to be toll.

TRAVEL DATA ITEMS

Item 23 - Section/Group Length (0.001 mile) (Length = 6)

The section length is coded XXX.XXX with an assumed decimal point between positions 52 and 53. For lower type highways where records by category of mileage are grouped, the total mileage in the category is coded. Should it be necessary to code a number larger than 999.999, two or more records should be included so as to produce the required sum. Care should be taken to avoid splitting the mileage equally between records so that the possibility of mistaking these for duplicate records can be avoided.

While provision has been made for coding to a maximum precision of 0.001 miles, the various submitted records should reflect the precision normally utilized by the State. This not only provides maximum precision, but alleviates rounding, programming, and checking problems. A minimum precision to the nearest tenth of a mile should be provided.

The field should be coded with trailing and leading zeros, depending on the precision obtained, i.e., 56.2 miles would be coded "056200".

Item 24 -AADT (Required for all Interstate sections, and all sample sections; optional for remaining non-sample sections.) (Length = 6)

Enter the section's annual average daily traffic (total both directions) for the given year. Since many applications, including VMT estimates will be based on sample section AADTs', the States are encouraged to concentrate on counts for sample sections of the highway

system to provide "actual counts" adjusted to represent AADT rather than "estimates" as previously reported. The field is zero filled when not used.

For example, an AADT of 25,300 vehicles per day is coded "025300".

Item 25 - Number of Interstate Lanes Open to Traffic 5 Years or More (Interstate only) (Length = 2)

This item will be used to apportion Interstate 3R funds. A lane on a section is considered "open to traffic" when it is available to normal traffic and provides reasonable service for local and interstate traffic volumes. Only Interstate lanes on final location, designated as Interstate for 5 or more years are to be reported here. Total number of lanes will be reported in Item 26. For Interstate toll sections without the prescribed agreement to make the section a free section as outlined under section 105 of the 1978 Highway Act, code "99" to indicate the lanes are not counted. For those toll road sections with proper agreement, report the number of lanes open to traffic for 5 or more years, and designated for 5 or more years.

The information reported here for open to traffic lanes must be consistent with status groups 1, 2 and 6b(1) as defined in Volume 6, Chapter 1, Section 1, Subsection 5 (PR511 Reports) of the Federal-Aid Highway Program Manual. This entry shall include Interstate segments designated under Sections 103(e) and 139(a), Title 23, U.S.C.

Enter "00" for all non-Interstate sections.

Item 26 - Number of Through Lanes (For all Interstate and for all arterial/collector sample sections only) (Length = 2)

Enter the prevailing number of lanes in both directions (excluding parking and turning lanes) carrying through traffic in the off-peak period. Exclude truck climbing lanes unless the length and importance is sufficient to warrant inclusion.

Enter "00" for all non-Interstate, non-sample sections.

Item 27 - Record Continuation Code (Length = 8)

This field must be present in all records. It indicates what type of section record is being coded. Consists of six elements and is normally encoded by software. NOTE: This is the end of the record for all non-sample sections.

SAMPLE IDENTIFICATION ITEMS

Item 28 - Sample Number (Length = 12)

Code the sample section identifier used for this section in the original HPMS submission or a unique number for a new sample section. This number may be route-milepoint or A-node, B-node, Segment, but will be considered as a unique number that may not change in the future. It will be assigned to all subdivided portions of the sample sections. Local samples may be assigned any unique number.

Item 29 - Section Subdivision (Length = 1)

This field will be used if it becomes necessary to subdivide a K section due to operational or capital improvements on part of the section's length. Initially, this field is coded "0". If the section is subdivided over time, the code "0" is changed to 1, 2, 3, etc, depending upon the number of subdivisions (sections) created from the original section. Item 28, Sample Number, always remains unchanged.

COMPUTATIONAL ELEMENTS

Item 30 - AADT Volume Group Identifier (Length = 2)

Enter the code representing the AADT volume group from which this sample section was selected. This item is not required for local sample sections.

Item 31- Expansion Factor (Length = 5)

Enter the factor to the nearest one hundredth (decimal point is implied between the third and fourth digits). The calculation of the expansion factor varies according to whether the sample section is for the arterial and collector systems or functionally classified as local.

(a) Arterial and Collector Sample Sections

By definition, the expansion factor is the ratio of the total mileage in a volume group to the total sampled volume group mileage.

Item 31 (Cont.)

Expansion Factor = Total miles in Volume Group / Sampled miles in Volume Group

For small urban and rural areas, code the expansion factor for the volume group within the functional system to which the section belongs to the nearest hundredth. For urbanized areas, code the expansion factor for the volume group within the functional system and urbanized area to which the section belongs.

If, for any reason, the expansion factor for a given group exceeds 100.00, additional sections in the volume group should be selected for sampling until the expansion factor is reduced to a maximum of 100.00.

It should be stressed that the same expansion factor is used for all sample sections in the same volume group and functional system. Experience has shown that more than one expansion factor has been erroneously reported for sample sections in the same volume group. A tabular summary of expansion factors by volume group within functional system and geographic area will be prepared by the State and submitted along with the required data. The table would contain the following:

Table IV-1

Expansion Factor Computation

Area, System, and Volume Group	(A) Total Mileage of Sample Section	(B) Total Mileage of Volume Group	(C) Expansion Factor Col B / Col A
Rural Interstate			
Group 1			
Group 2			
Group 3			
Etc.			
Rural, Other Principal Arterial			
Group 1			
Group 2			
Group 3			
Etc.			
Etc.			

Item 31 (Cont.)

(b) Local Sample Sections

All sample sections in a given State geographic area -rural, small urban (5-25 thousand population group), small urban (25-50 thousand population group), and individual urbanized - will have the same expansion factor, expressed to the nearest hundredth. The

maximum expansion factor for locals is 999.99. These are calculated from the following ratios:

Rural - Statewide rural local road and street mileage /

Total sampled rural local mileage in State

Small Urban (5-25 thousand population) -Statewide small urban local road and street mileage / Total sampled local mileage in the small urban group

Small Urban (25-50 thousand population) -Statewide small urban local road and street mileage/ Total sampled local mileage in the small urban group

Individual Urbanized -Total local road and street mileage in a given urbanized area / Total sampled local mileage in a given urbanized area

PAVEMENT DATA ITEMS

Item 32 - Surface/Pavement Type (Length = 2)

Enter the code that represents the type of surface on the section.

Code **20**: Unimproved Road -A road using the natural surface and maintained to permit bare passability for motor vehicles, but not conforming to the requirements for a graded and drained earth road. The road may have been bladed and minor improvements may have been made locally. (Road Type B 1/)

Code **30**: Unimproved Road -A road using the natural surface and maintained to permit bare passability for motor vehicles, but not conforming to the requirements for a graded and drained earth road. The road may have been bladed and minor improvements may have been made locally. (Road Type B 1/)

Code **40**: Soil, Gravel, or Stone -A road, the surface of which consists of mixed soil, stabilized soil, gravel, or stone. Gravel or stone surfaces may be stabilized. (Road Types D, E 1/)

Code **51**: Bituminous Surface-Treated -An earth road, a soil- surfaced road, or a gravel or stone road to which has been added by any process a bituminous surface course with or without a seal coat, the total compacted thickness of which is less than 1 inch. Seal coats include those known as chip seals, drag seals, plant- mix seals, and rock asphalt seals. (Road Type F 1/)

Code **52**: Mixed Bituminous -Low type (less than 7-inches combined thickness surface and base)- A road, the surface course of which is 1 inch or more in compacted thickness

composed of gravel, stone, sand, or similar material, mixed with bituminous material under partial control as to grading and proportions. (Road type G-1 1/)

1/ As defined in the Federal Highway Program Manual.

Item 33 - Surface/Pavement Width (Local sample sections only) (Length = 2)

For local surfaced facilities the paved width from edge-to-edge of surface, including paved shoulders, or curb-to-curb is reported. For unpaved facilities, the width of the highway, including shoulders, available for use by vehicles is reported. Code "99" where the roadway is 100 feet or greater. Code "00" for non-local sample sections.

NOTE: This is the end of the record for all local sample sections. The following items are reported only for the arterial and collector sample sections.

Item 34 - Pavement Section (Length = 1)

Enter the appropriate code to indicate that the structural number' ("SN"-for flexible pavements) or the slab thickness ("D" - for rigid pavements) is known or the code for the type of pavement section (heavy, medium, light) where detailed data are not known. To assist in determining the type of pavement section, the table below has been prepared showing three typical pavement sections. This guide includes typical thicknesses of surface, base and subbase, and the minimum combined depth of pavement structure. Unpaved facilities are those designated as graded and drained earth and soil, gravel, or stone roads (codes 30/40 in Item 32).

Code **0** = Unpaved

Code **1** = "SN" Known

Code **2** = "D" Known

Code **3** = Heavy

Code **4** = Medium

Code **5** = Light

Table IV-2

Pavement Section Coding

Code	Type of Section (Flexible Pavement)	"SN" Range (Flexible Pavement)	Surface Type and Thick. (Flexible Pavement)	Base Type and Thick. (Flexible Pavement)	Subbase Type and Thick (Flexible Pavement)	Combined Depth 1/ (Flexible Pavement)	Range in Pavement Thickness "D" (Rigid Pavement)
3	Heavy	4.6-6.0	4" Asphaltic Concrete	9" Crushed Stone to Asphaltic Concrete	4" Gravel 2/	12"	9.1-11.0" (*8" if continously Reinforced*)
4	Medium	3.1-4.5	3" Asphaltic Concrete	8" Gravel to Penetration macadam	4" Gravel	11 - 12"	7.1-9.0" (*6" if continously Reinforced*)
5	Light	1.3-3.0	Surface Treatment to 2" Asphaltic Concrete	6" Gravel or Crushed Stone	2" Gravel or Sand	10"	6.0-7.0"

1/ Used as a guide when the total depth is known or estimated.

2/ Subbase course not necessary under portland cement concrete base.

Item 35 - Structural Number (SN) or Thickness (D) (Length = 2)

Enter the structural number (to the nearest 0.1 -decimal point is implied) for those sections coded "1" in Item 34. Enter the slab thickness (in whole inches) for those sections coded "2" in Item 34. Otherwise code "00".

Item 36 - Pavement Condition (Length = 2)

Enter the pavement condition, actual Present Serviceability Rating (PSR) or equivalent, to the nearest tenth, for all paved sections. A decimal point is implied between the two positions. For unpaved sections (defined in Item 34), code "00". The ratings are equivalent to those used in making a PSR, so recent PSR and Present Serviceability Index (PSI) ratings may be used where available. Also if current sufficiency ratings of pavement condition (but excluding geometrics) are available, a correlation between the sufficiency rating scale and the PSR scale or rating factors may be developed so that such existing ratings may be used. If there are no recent PSR, PSI, or sufficiency ratings that can be adapted, the section should be rated from the following table. In view of the growing national concern regarding pavement deterioration, careful attention to realistic pavement condition ratings is strongly suggested. Estimates to the nearest tenth within the applicable range should be made, e.g. -2.3. This is most important for comparisons to prior years.

Table IV-3

Pavement Condition Rate *(Use full range of values)*

PSR Verbal Rating	Description
5.0 = Very Good	5.0 Only new (or nearly new) pavements are likely to be smooth enough and sufficiently free of cracks and patches to qualify for this category. All pavements constructed or resurfaced during the data year would normally be rated very good.
4.0 = Good	7.0 Pavements in this category, although not quite as smooth as those described above, give a first class ride and exhibit few, if any, visible signs of surface deterioration. Flexible pavements may be beginning to show evidence of rutting and fine random cracks. Rigid pavements may be beginning to show evidence of slight surface deterioration, such as minor cracks and spalling
3.0 = Fair	9.0 The riding qualities of pavements in this category are noticeably inferior to those of new pavements, and may be barely tolerable for high speed traffic. Surface defects of flexible pavements may include rutting, map cracking, and more or less extensive patching. Rigid pavements in this group may have a few joint failures, faulting and cracking, and some pumping.

PSR Verbal Rating	Description
2.0 = Poor	11.0 Pavements that have deteriorated to such an extent that they are in need of resurfacing
1.0 = Very Poor	13.0 Pavements that are in an extremely deteriorated condition and may even need complete reconstruction.
0.0	

Item 37 - Skid Resistance (Length = 2)

For all paved rural arterial (Interstate, other principal arterial and minor arterial) sections and for urban freeways or expressways, as defined in the "Highway Capacity Manual" - 1965, which are functionally classified as Interstate or Other Freeways and Expressways, enter the skid number to the nearest whole number as measured by a locked wheel skid trailer per ASTM E274. For all other facilities, enter "00".

GEOMETRICS/CONFIGURATION DATA ITEMS

Item 38 - Access Control (Length = 1)

Enter the code for the type of access control, as defined below:

Code 1 = Full Access Control -Preference has been given to through traffic movements by providing interchanges with selected public roads and by prohibiting crossing at grades or by prohibiting direct driveway connections.

Code 2 = Partial Access Control -Preference has been given to through traffic movement. In addition to interchanges there may be some crossings at-grade with public roads, but direct private driveway connections have been minimized.

Code 3 = No Access Control.

Item 39 - Lane Width (Length = 2)

Enter the prevailing traffic lane width (through lanes) to the nearest whole foot.

Item 40 - Approach Width (Urban only) (Length = 3)

For sections, which are not freeways or expressways, as defined in the Highway Capacity Manual, enter the approach width (curb to curb for one-way streets or curb to division line for two-way streets), including parking lanes but excluding separate turn lanes, for a typical

intersection. Entries should be to the nearest whole foot. Code "000" for freeways and expressways.

Item 41 - Shoulder Type (Length = 1)

Enter the code for the predominant type of shoulder on the section. If shoulder types differ, the right shoulder type should normally be considered to be the predominant type. If the section has both shoulders and curbs (i .e., a shoulder bounded by a curb or a mountable curb and then a shoulder), code the shoulders.

Code 1 = Surfaced -A portland cement concrete or bituminous surface course on a granular or stabilized base

Code 2 = Stabilized -Gravel or other granular material, with or without admixture, capable of supporting most loads even in wet weather.

Code 3 = Earth -Natural earth, with or without turf.

Code 4 = Curbed -No shoulders exist. Section is curbed.

Code 5 = None -No shoulders or curb.

Item 42 - Shoulder Width (Length = 4)

42a - Right Shoulder - Enter the width to the nearest whole foot. Enter "00" if no right shoulder exists. (Length =2)

42b - Left Shoulder - On divided highways, enter the width of the left (median) shoulder to the nearest whole foot. Enter "00" where no left shoulder exists and for undivided or 2- or 3-lane facilities. (Length = 2)

Item 43 - Median Type (Length = 1)

Enter one of the following codes:

Code 1 = Curbed

Code 2 = Positive barrier

Code 3 = Unprotected

Code 4 = None

Item 44 - Median Width (Length = 2)

Enter the predominant median width (including shoulders, if any), measured between the inside edges of the through roadways, to the nearest whole foot. Enter "00" for undivided roadways. Enter "99" where the median width is 100 feet or greater.

Item 45 - Existing Right-of-Way Width (Length = 3)

Enter the prevailing right-of-way width in whole feet for the section. Where data are unavailable, estimates are sufficient. In heavily built up areas such as the CBD where the only space between the curbs and buildings is the sidewalk area, enter the curb-to-curb width. Code "999" where the right-of-way is 1000 feet or greater.

Item 46 - Widening Feasible? (Length = 1)

Enter the appropriate code to indicate the extent to which it is feasible to widen the existing road. Consider only the physical features along the roadway section, such as buildings, severe terrain, cemeteries and park land; do not consider restrictions because of current right-of-way width, State practices concerning widening, or projected traffic.

Code 1 = No

Code 2 = Yes, less than one lane

Code 3 = Yes, one lane

Code 4 = Yes, two lanes

Code 5 = Yes, more than two lanes

	Item 47 - Horizontal Alignment Adequacy	Item 48 - Curves by Class	Item 49 - Vertical Alignment Adequacy	Item 50 - Grades by Class
Paved - Rural				
Principal Arterial	Code "0"	Required	Code "0"	Required
Minor Arterial	Code "0"	Required	Code "0"	Required
Major Collector	Required	Not Req'd	Required	Not Req'd
Minor Collector	Required	Not Req'd	Required	Not Req'd
Paved - Urban				

	Item 47 - Horizontal Alignment Adequacy	Item 48 - Curves by Class	Item 49 - Vertical Alignment Adequacy	Item 50 - Grades by Class
Principal Arterial	Code "0"	Required	Code "0"	Required
Minor Arterial	Not Req'd	Not Req'd	Code "0"	Not Req'd
Collector	Not Req'd	Not Req'd	Not Req'd	Not Req'd

Item 47 - Horizontal Alignment Adequacy (Rural only) (Length = 1)

This item is required for paved Rural Collectors. (See Table IV-4, above.) Code "0" when Item 48 -Curves by Class -is reported or when this item is not required. The following codes will be used:

Codes and Discriptions:

Code **1** = All curves meet appropriate design standards. Reduction of curvature would be unnecessary even if reconstruction were required to meet other deficiencies, i.e., capacity, vertical alignment, etc.

Code **2** = Although some curves are below appropriate design standards for new construction, all curves can be safely and comfortably negotiated at the prevailing speed limit on the section. The speed limit was not established by the design speed of curves

Code **3** = Infrequent curves with design speeds less than the prevailing speed limit on the section. Infrequent curves may have reduced speed limits for safety purposes.

Code **4** = Several curves uncomfortable and/or unsafe when traveled at the prevailing speed limit on the section, or the speed limit on section is severely restricted due to the design speed of curves.

Item 48 - Curves by Class (Length = 91)

This item is required for paved Rural Arterials and Urban Principal Arterials. (See Table IV-4, above.) Zero-fill this item when it is not required. The following data will be re ported:

Degree of Curvature	No. of Curves (right justified)	Positions	Total Length in Curves of Class (implied decimal 00.000 miles)	Positions
a. 0.0-0.4	--	124-125	- - - - -	126-130

Degree of Curvature	No. of Curves (right justified)	Positions	Total Length in Curves of Class (implied decimal 00.000 miles)	Positions
b. 0.5-1.4	--	131-132	- - - - -	133-137
c. 1.5-2.4	--	138-139	- - - - -	140-144
d. 2.5-3.4	--	145-146	- - - - -	147-151
e. 3.5-4.4	--	152-153	- - - - -	154-158
f. 4.5-5.4	--	159-160	- - - - -	161-165
g. 5.5-6.9	--	166-167	- - - - -	168-172
h. 7.0-8.4	--	173-174	- - - - -	175-179
i. 8.5-10.9	--	180-181	- - - - -	182-186
j. 11.0-13.9	--	187-188	- - - - -	189-193
k. 14.0-19.4	--	194-195	- - - - -	196-200
1. 19.5-27.9	--	201-202	- - - - -	203-207
m. 28+	--	208-209	- - - - -	210-214

The format is a (13 x 7 =) 91-position field with thirteen -classes of curves reported. For each of the thirteen curve classes, the number of curves (2 positions) and class length (5 positions. with implied decimal 00.000 mile) are reported. The sum of the lengths of curves must equal the section length.

Item 49 - Vertical Alignment Adequacy (Rural only) (Length = 1)

This item is required for paved Rural Collectors. (See Table IV-4, above.) Code "0" when Item 50 -Grades by Class -is reported or when this item is not required. The following codes will be used:

Code and Descriptions:

Code **1** = All grades (rate and length) and vertical curves meet minimum design standards appropriate for the terrain. Reduction in rate or length of grade would be unnecessary even

if reconstruction were required to meet other deficiencies, i.e., capacity, horizontal alignment, etc.

Code **2** = Although some grades (rate and/or length) and vertical curves are below appropriate design standards for new construction, all grades and vertical curves provide sufficient sight distance for safe travel and do not substantially affect the speed of trucks

Code **3** = Infrequent grades and vertical curves that impair sight distance and/or affect the speed of trucks if truck climbing lanes are not provided.)

Code **4** = Frequent grades and vertical curves that impair sight distance and/or severely affect the speed of trucks and truck climbing lanes are not provided.

Item 50 - Grades by Class (Length = 42)

This item is required for paved Rural Arterials and Urban Principal Arterials. (See Table IV-4, above.) Zero-fill this item when it is not required. The following data will be reported:

Gradient (%)	No. of Grades (Right Justified)	Positions	Total Length of Grades in Class (implied decimal) (00.000 miles)	Positions
a. 0.0-0.4	--	216-217	-----	218-222
b.0.5-2.4	--	223-224	-----	225-229
c. 2.5-4.4	--	230-231	-----	232-236
d. 4.5-6.4	--	237-238	-----	239-243
e. 6.5-8.4	--	244-245	-----	246-250
f. 8.5 +	--	251-252	-----	253-257

The format is a (6 x 7 =) 42 positions field with six classes of grades reported. For each of the six grade classes, the numbers of grades (2 positions) and the grade length (5 positions, with implied decimal 00.000 miles) are reported. The sum of the lengths of grades must equal the section length.

Item 51 - Percent of Length With Sight Distance of 1500 Feet (Rural 2-lane facilities only) (Length = 3)

For all paved rural two-lane facilities, excluding dense rural sections, enter the percent of the section length (estimated to the nearest 10 percent) which has an available passing

sight distance (as measured from the driver's eye to the road surface) of at least 1500 feet. Code "000" for non-applicable sections including dense rural.

Item 52 - Speed Limit (Length = 2)

Enter the daytime speed limit for automobiles posted or legally mandated on the greater part of the section.

Item 53 - Average Highway Speed (Rural only) (Length = 2)

This item is required for all paved rural collectors with type of development -rural (Item 64 = 1). Code "DO" for all sections for which average highway speed is not supplied. Enter the average highway speed, to the nearest 5 m.p.h. The average highway speed is determined by weighting the design speed of the individual horizontal curves and tangents in the section by the length of each.

TRAFFIC/CAPACITY DATA ITEMS

Item 54 - Percent Trucks (Peak and Off-Peak) (Length = 4)

It is recognized that this item will likely not be available for peak and off-peak periods on many facilities. Where this is the case, the same value may be coded for both periods. On certain routes, e.g., recreational, the differences are significant and will have major impact on the calculation of capacity. In these cases, separate values are urged even if they must be estimated.

54a - Peak Percent Trucks (Length = 2)

Enter the percentage of commercial vehicles to the nearest whole percent, excluding pickups, panels, and light (two-axle, four-tired) trucks for the peak period. In this instance, buses are considered commercial vehicles.

54b - Off-Peak Percent Trucks (Length = 2)

Enter the percentage of commercial vehicles to the nearest whole percent, excluding pickups, panels, and light (two-axle, four-tired) trucks for the off-peak period. In this instance, buses are considered commercial vehicles.

Item 55 - K Factor (Length = 2)

Enter the K factor -the design hour volume (30th highest hour) as a percentage of the annual average daily traffic -to the nearest whole percent.

Item 56 - Directional Factor (Length = 3)

Enter the percentage of the design hour volume (30th highest hour) flowing in the peak direction, to the nearest 5 percent. Code "100" for one-way facilities.

Item 57 - Capacity (Peak and Off-Peak) (Length = 10) 57a - Peak Capacity (Length = 5)

1) Urban

Enter the present hourly capacity (in one direction) reflecting the peak-period situation taking into consideration the peak-period parking regulations, signalization, local bus movements, etc. The procedures described in the 1965 "Highway Capacity Manual" should be used for these calculations. For a recommended aid in simplifying the calculation of capacity, see "Capacity Analysis Techniques for Design of Signalized Intersections" by Jack E. Leisch, August 1967 and October 1967 issues of "Public Roads". For purposes of this data element, a capacity consistent with level of Service "E" as defined in the 1965 "Highway Capacity Manual" should be calculated and entered on the inventory worksheet. This corresponds to "possible capacity" as used in the AASHTO "Blue Book". Thus, when using the Leisch charts, the value obtained directly from the chart must be multiplied by an appropriate factor to get level of Service "E" or "possible capacity."

Often urban street capacity is governed by a critical intersection in the section under study. When this is the case, code the capacity for the critical intersection. Otherwise, code the capacity of a typical intersection. Where detailed information is not known, assumptions will necessarily have to be made regarding such items as percent right and left turns in order to calculate capacity by section.

Item 57 (Cont.)

2) Rural (Optional

Enter the present hourly capacity (total of both directions for two-lane facilities and for one direction on multi-lane facilities). Capacity is the maximum service volume at Level of Service "E", as described in the 1965 "Highway Capacity Manual" (HCM). (This corresponds to possible capacity as used in the 1965 AASHTO "Blue Book.") The procedures described in the HCM should be used for this calculation.

In built-up areas of small towns (population less than 5,000), it may be more reasonable to calculate capacity using the procedures described in Chapter VI of the HCM for urban areas, but the capacity should still be reported as a total of both directions for two-lane facilities and for one direction on multi-lane facilities.

This field should be zero filled when not reported.

57b- Off-Peak Capacity (Urban only) (Length = 5)

1) Urban

Enter the present hourly capacity (in one direction) reflecting the off-peak situation. For further information, see the instructions for peak-period capacity.

2) Rural

This field should be zero filled for "rural" sample sections.

Item 58 - Prevailing Type of Signalization (Urban only) (Length = 1)

Enter the appropriate code that best describes the signal system on the section.

Code and Description:

Code 1 = Uncoordinated Fixed Time

Code 2 = Traffic Actuated

Code 3 = Progressive

Code 4 = No Signal System

Item 59 - Typical Percent Green Time (Urban only) (Length = 2)

Enter the typical percent green time in effect during peak hours at the signalized intersections in this section. Enter "00" if no signalized intersections exist.

Item 60 - Parking (Peak and Off-Peak) (Length = 2)

60a- Peak Parking (Urban only) (Length = 1)

Enter the appropriate code reflecting the type of parking in the peak-hour situation, if any that is allowed or exists on the section. If parking regulations a re routinely ignored, use the code reflecting the actual situation rather than the regulations.

Code and Description:

1 = One side

2 = Both sides

3 = None

60b - Off-Peak Parking (Urban only) (Length = 1)

Enter the appropriate code reflecting the type of parking in the off-peak situation, if any that is allowed or exists on the section. If parking regulations are routinely ignored, use the code reflecting the actual situation rather than the regulations.

Code and Description:

1 = One side

2 = Both sides

3 = None

Item 61 - Future AADT (Year-2000) (Length = 6)

Enter the forecasted annual average daily traffic (total both directions) for the year 2000. Ideally, travel forecasts are to be for an appropriate 20-year period but should not be for less than 17 years. Beginning with data year 1983, the travel forecast will be updated from 2000 to 2005, and thereafter the time projection will be incremented 5 years for every 5-year period.

ENVIRONMENT DATA ITEMS

Item 62 - Drainage Adequacy (Length = 1)

Enter the code for the drainage adequacy of the section. Adequacy is based on the height of the grade line, the design of the cross section, and the capability of the cross drains, both in condition and capacity, to maintain a well-drained surface on a stable sub-grade.

Code Ratings and Descriptions

1 = Good (Fully adequate drainage and cross section design. No evidence of flooding, erosion, ponding, or other water damage.)

2 = Fair (Height of grade line, cross section, or culvert capacity somewhat below the standard that would comply with standards if rebuilt. Drainage structures are structurally sound. Some added maintenance effort required due to drainage and sedimentation problems.)

3 = Poor (Evidence of severe flooding, ponding, erosion, or other drainage problems. Drainage structures may be in poor condition. Considerable excess maintenance effort required due to drainage and sedimentation problems.)

Item 63 - Type of Terrain (Rural only) (Length = 1)

Enter the code for the predominant terrain type through which the section passes.

Code **1** = **Flat Terrain** - That condition where highway sight distances, as governed by both horizontal and vertical restrictions, are generally long or could be made to be so without construction difficulty or major expenses.

Code **2** = **Rolling Terrain** - That condition where the natural slopes consistently rise above and fall below the highway grade line and where occasional steep slopes offer some restriction to normal highway horizontal and vertical alignment.

Code **3** = **Mountainous Terrain** - That condition where the longitudinal and transverse changes in the elevation of the ground with respect to the highway are abrupt and where the roadbed requires frequent benching or side hill excavation.

Item 64 - Type of Development (Rural only) (Length = 1)

Enter the code for the predominant type of development.

Code 1 = Rural -All areas outside of Federal-aid urban boundaries (cities of 5,000 or more population) excluding those described as "dense".

Code 2 = Dense -Those areas outside of Federal-aid urban boundaries which have urban characteristics (i.e., small towns) or areas in which major recreational facilities, such as parks, ski resorts, scenic overlooks, and rest areas, have significant impact on traffic operation of the adjacent facility.

Item 65 - Urban Location (Urban only) (Length = 1)

Enter the appropriate code that best reflects present land use in the area adjacent to the section. The definitions for CBD, fringe, outlying business district, and residential are discussed in the 1965 "Highway Capacity Manual." If an area appears to fit two of these categories, the code for the higher density of development should be used.

Code and Descriptions:

Code 1 = CBD

Code 2 = Fringe

Code 3 = Outlying Business District

Code 4 = Residential

Code 5 = Rural in character

Item 66 - Number of Grade-Separated Interchange (Length = 2)

For all freeway and expressway facilities as defined in the "Highway Capacity Manual" - 1965, enter the number of grade - separated interchanges. Enter "00" if none exist or if the facility being sampled is not a freeway or an expressway.

Item 67 - Number of At-Grade Intersections with Public Roads (Length = 6)

This data item pertains to the type of traffic controls on the route being inventoried and not those of the intersecting route. It consists of three elements. Only those controls facing (controlling) the route being inventoried are counted. If a section begins and ends with an intersection, only one intersection is counted.

67a - Signals - Enter the number of signalized intersections. If none, enter "00". A signal that cycles through red, yellow, and green for all or a portion of the day shall be counted as a signalized intersection. (Length = 2)

67b - Stop Signs - Enter the number of intersections controlled by stop signs. A continuously operating flashing red ball shall be counted as a stop sign control. If none, code "00". (Length = 2)

67c - Other or No Controls - Enter the number of intersections controlled by other types of signing or having no controls. A continuously operating flashing yellow signal ball shall be considered as "other or no control". If none, code "00". (Length = 2)

Item 68 - Number of Major Commercial/Industrial/Recreational Access Points (Length = 2)

Enter the number of such entrances/exits that are estimated to have at least 500 vehicle movements (access plus egress) per week for all arterials not having full control of access. This count does not include intersections with public highways or access points controlled by traffic signals. Adjacent entrances or exits should be counted as one. If none or for other functional systems, code "00".

An option is available to report the number of access connections by ranges. Coding one of the following instead of an actual number indicates an average over the whole section. The ranges are:

Code and Range:

Code RO = Range 0/mile

Code R1 = Range 1-4/mile

Code R2 = Range 5-9/mile

Code R3 = 10-14/mile

Code R4 = 15-19/mile

Code R5 = 20-24/mile

Code R6 = > 24/mile

Item 69 - Number of Structures (Length = 2)

Enter the number of structures located within the section. Include structures built over a depression or an obstruction such as water, highway, or railway, and having a passageway for carrying traffic or other moving loads and having a length measured along the center of the over crossing of 20 or more feet. Twin (side by side) structures are to be reported as two separate structures. All highway grade separated structures are to be reported only once, generally as part of the facility of highest functional class. (What is intended is that the structure be reported in conjunction with the highway system which would logically finance its improvement.) If the higher type facility were not part of the sample, then the structure would not be reported. This would not result in an underestimate of structures as might first be thought, because these unreported structures are accounted for through the expansion of the sample. If two sections intersect by means of a structure and both roadways are on the same functional system, report the structure data with the roadway on which the deck is located, the "over" facility. For any structure included in this field, the corresponding structure identification number will be recorded in Item 71 Code "00" if no structures exist.

A maximum of "50" may be coded in this field. If more than that number of structures exist on the section, the section should be subdivided.

Item 70 - Number of At-Grade Railroad Crossings (Length = 2) E

Enter the number of at-grade railroad crossings on the section. Multiple tracks should be reported as a single crossing. For any grade crossing in this field, the corresponding grade crossing identification number will be recorded in Item 72. Code "00" if no at-grade-crossings exist.

A maximum of "15" may be coded in this field. If more than that number of railroad crossings exist on the section, the section should be subdivided.

SUPPLEMENTAL DATA ITEMS

NOTE: The following items constitute the variable portion of the sample record. The items are not reported if the data do not exist on the section.

Item 71 - Structure Identification Numbers (Variable -Length = 15 x Item 69)

For each structure reported in Item 69, the appropriate 15-digit unique structure identification number is coded from the bridge inventory and appraisal of the nation's bridges. For example, if Item 69 = 3, this item will contain three structure ID fields, each 15-digits long for a total of 45 digits. A maximum of 50 structure ID's may be coded in this field.

If there are more than 50 structures on this section, it must be split into two or more segments. If there are no structures on the section, this item is not coded.

Item 72 - At-Grade Railroad Crossing Identification Numbers (Variable - Length = 7 x Item 70)

For each at-grade railroad crossing reported in Item 70, the appropriate seven-digit railroad grade crossing ID is coded from the "National Railroad Highway Crossing Inventory". For example, if Item 70 = 3, this item will contain three railroad crossing ID fields, each 7 digits long for a total of 21 digits. A maximum of 15 railroads crossing ID's may be coded in this field. If more than 15 railroad crossings exist on this section, it must be split into two or more segments. If there are no railroad crossings on this section, this item is not coded.

Item 73 - Type of Improvement (Length = 2)

This item is coded, right-justified, as defined below for all improvements completed during the reporting year. If completed improvements overlap, use the one with the highest priority (lowest code). If no improvements were completed during the reporting year, this item is not coded. If only a portion of the section was improved and completed during the reporting year, the section should be split into two or more segments. Use one of the following codes:

Code Improvement Type Definitions

1 NEW ROUTE - Construction of a new facility that will not replace or relocate an existing facility. A new facility will provide: (a) a facility where none existed or (b) an additional and alternate facility to an existing facility that will remain open and continue to serve through traffic

2 RELOCATION - Construction of a facility on new location that replaces an existing route. The new facility carries all of the through traffic with the previous facility closed or retained as a land-service road only.

3 RECONSTRUCTION - Construction on approximate alignment of an existing route where old pavement structure is removed and replaced. Such reconstruction may be to the existing number of lanes or may include widening to provide continuous additional lane(s) or dualizing, adding or revising interchanges or otherwise substantially changing the general character of the highway.

4 MAJOR WIDENING - The addition of lanes or dualization of an existing facility where the existing pavement is salvaged. Also included, where necessary, is the resurfacing of existing pavement and other incidental improvements such as drainage and shoulder improvements.

5 MINOR WIDENING - The addition of 2 or more feet of width per lane to an existing facility without adding lanes. In many cases, the improvement will include resurfacing of the existing pavement and other incidental improvements such as shoulder and drainage improvements.

6 RESTORATION and REHABILITATION - Work required to return an existing pavement or bridge deck (including shoulders and expansion joint devices) to a condition of adequate structural support or to a condition adequate for placement of an additional stage of construction (i .e., bridge deck protective system or resurfacing). There may be some upgrading of unsafe features or other incidental work in conjunction with restoration and rehabilitation. Typical improvements would include replacing spalled or malfunctioning joints; substantial pavement undersealing when essential for pavement stabilization prior to resurfacing; grinding/grooving of rigid pavements; replacing deteriorated materials; reworking or strengthening bases or subbases; adding underdrains; and bridge deck repair.

7 RESURFACING - Placement of additional surface material over the existing roadway or bridge deck to improve serviceability or to provide additional strength. There may be some minor widening, upgrading of unsafe features, and other incidental work in conjunction with resurfacing. Where surfacing is constructed by separate project as a final stage of construction, the type of improvement should be the same as that of the preceding stage -- new route, relocation, reconstruction, minor widening, etc.

8 BRIDGE REPLACEMENT - This is the replacement of a bridge due to structural inadequacy or functional obsolescence on an existing facility. Includes widening to standard and incidental roadway approach work.

9 BRIDGE REHABILITATION - Work involving the substructure and superstructure of a bridge that has been determined structurally inadequate. This would include the necessary substructure and superstructure construction to conform to current geometric and structural standards. Work involving only the bridge deck slab or plate would not be included here. (See Code 6.)

10 SAFETY and TRAFFIC ENGINEERING IMPROVEMENTS - The following are typical projects that would be included: High hazard location improvements and elimination of roadside obstacles, traffic engineering improvements requiring lane configuration changes, traffic control devices and features, delineation, arid railroad-highway grade crossing improvements.

11 OTHER HIGHWAY IMPROVEMENTS -This category includes improvements that do not provide any increase in the level of service, the condition of the facility or safety. Typical improvements that would fall in this category would be noise barriers, beautification, and

other environmentally related features not built as part of the above identified improvement types

Item 74 - Improvement Cost Data (Length = 35)

Costs (in thousands of dollars) are reported for each improvement for the year in which they occur, as defined in Table IV-5, below. All six elements plus the total are to be reported. If there were no costs for a particular element, zeros will be entered. If no capital improvements were made during the year, this item is not coded. If only a portion of the section was improved and completed during the reporting year, the section should be split into two or more segments.

74a - Preliminary and Construction Engineering (Length = 5)

74b - Right-of-Way and Utility Adjustment (Length = 5)

74c - Grading and Drainage (Length = 5)

74d - Surfacing (Length = 5)

74e - Other Improvements (Length = 5) 74f - Structure Improvements (Length = 5) 74g - Total Capital Improvement Cost (Length = 5)

Table IV-5

Cost Element Definitions

Costs are to be reported for the following categories:

a. Preliminary and Construction Engineering -Included are the costs for field engineering and inspection, consultant fees, aerial surveys, material testing, boring, etc. Also, includes preparation of PS & E and other reports, traffic and related studies on specific projects and other engineering costs assignable to construction.

b. Right-of-Way and Utility Adjustments - Costs for acquisition of necessary rights-of-way and, where applicable, those for access control. Include costs for all lands acquired, including any developments thereon, easements including scenic, access rights and consequential damages, appraisals, legal fees, special engineering surveys, preparation of right-of-way plats, relocation pavements, etc. Also includes costs for all types of utility adjustments (private and public) within (or to clear) the right-of-way. (Betterments are not included.)

c. Grading and Drainage -Includes all earthwork preparatory to surface channels, flumes, dikes, under drains, outfalls, and minor drainage structures, culvert (as usually defined) and special fill treatment. Also, include the same Items for interchange and frontage roads.

Include cost of storm sewer adjustment and all new major storm sewer lines and appurtenances such as pumping stations and equipment. Include all costs for demolishing buildings, moving fences, clearing and grubbing, etc.

d. Base and Surface - Includes costs of all base course and surfacing, including shoulders, for the through roadway, interchanges, and frontage roads. Include all curbs and sidewalks.

e. Other - Include all roadway items not included in b, c, and d above. Includes traffic control devices, roadside improvements (such as sodding, planting, roadside rests, etc.), lighting, guard-fence, median barriers, and railroad crossing protection (excluding separations).

f. Structure -Includes the costs for all new structures and all structural improvements. This includes railroad crossing grade separation structures.

g. Total -Includes all costs for all improvements.

Item 75 Accident Data (Length = 23)

The reference for this item indicating assignment of accidents to systems may be found in the "Manual on Classification of Motor Vehicle Accidents" (ANSI D16.1, November -1976, as amended). This item consists of six elements. If accidents are not reported, this item is not coded.

For assignment of accidents at intersections and on interchange ramps, the highway systems are ranked as follows:

- Federal-aid Interstate/Arterial
- Federal-aid Other Primary/Arterial Federal-aid Urban/Arterial Non-Federal-aid/Arterial
- Federal-aid Urban/Collector
- Federal-aid Secondary/Collector Non-Federal-aid/Collector Non-Federal-aid/Local

At intersections, accidents should be assigned to the highway system that the involved vehicle(s) was using or, if more than one system was being used by vehicles involved in the accident, to the higher-ranking system. This rule applies to all intersections, including those within interchanges. An accident on an interchange ramp should be assigned to the higher ranking system served by the ramp. Accidents on a frontage road should be assigned to the same system as the travel for that frontage road.

75a- Fatal Accidents (Length = 3)

Enter the number of motor vehicle accidents involving one or more fatalities including pedestrians.

75b- Non-Fatal Injury Accidents (Length = 5)

Enter the number of motor vehicle accidents resulting in non-fatal injuries to one or more persons, including pedestrians.

75c- Fatalities (Length = 3)

Enter the number of persons fatally injured in motor vehicle accidents. The fatalities that were included for previous years are those (1) which resulted from accidents that occurred during the relevant calendar year and (2) in which the fatally injured person died within 30 days of the accident. Included are pedestrians who are also reported separately in Item 75e.

75d- Non-fatally Injured Persons (Length = 5)

Enter the number of injured persons who are not injured fatally in motor vehicle accidents. Included are pedestrians who are also reported separately in Item 75f.

75e- Pedestrian Fatalities (Length = 3)

Enter the number of pedestrians injured fatally in motor vehicle accidents. The number of pedestrians included here is also included in Item 75c.

75f- Non-Fatally Injured Pedestrians (Length = 4)

Enter the number of pedestrians injured non-fatally in motor vehicle accidents. The number of pedestrians included here is also included in Item 75d. This definition does not include pedal cyclists as pedestrians, which is different from past practices in several States.